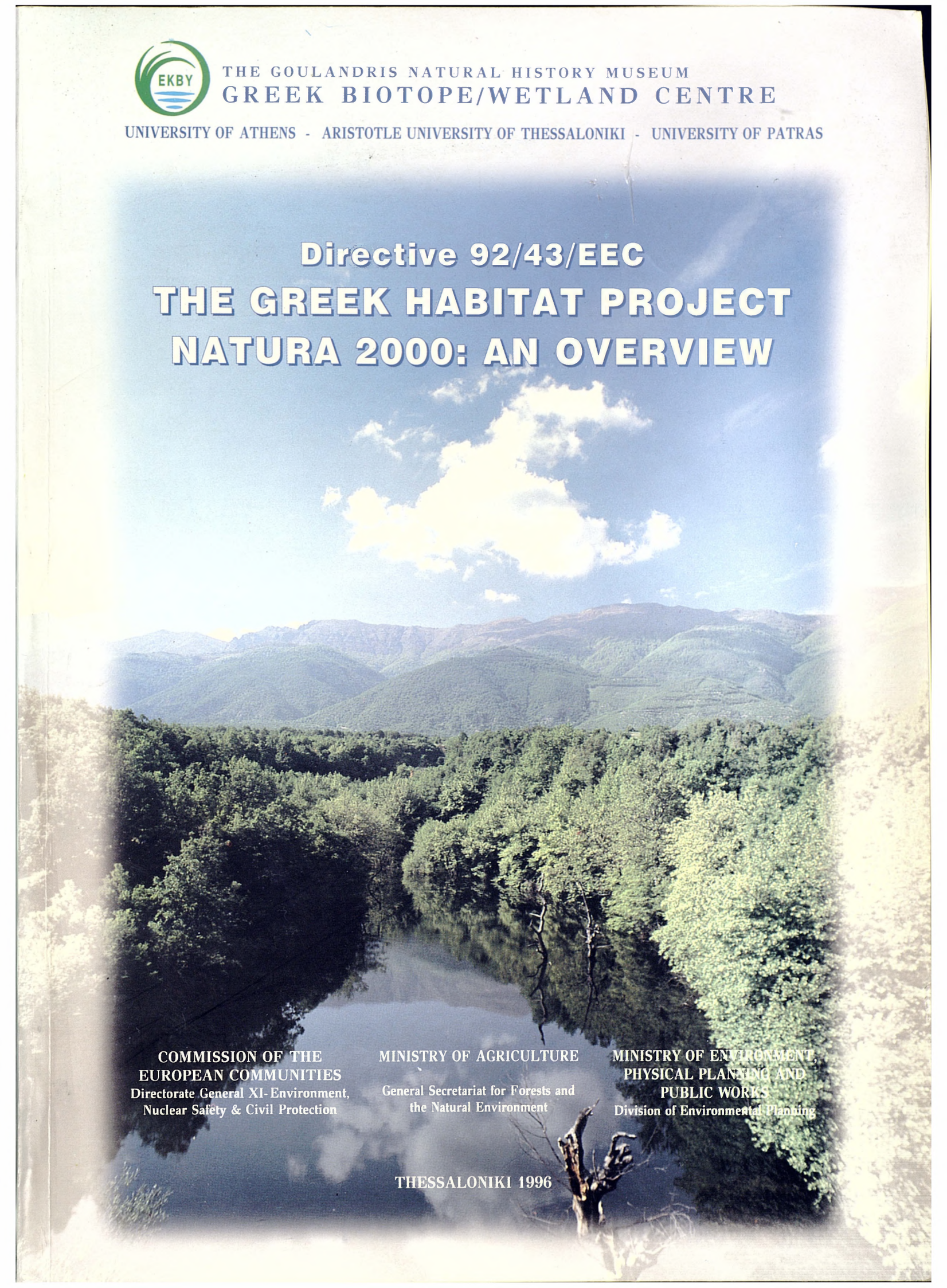
THE GOULANDRIS NATURAL HISTORY MUSEUM
GREEK BIOTOPE/WETLAND CENTRE
UNIVERSITY OF ATHENS - ARISTOTLE UNIVERSITY OF THESSALONIKI - UNIVERSITY OF PATRAS

Directive 92/43/EEC

THE GREEK HABITAT PROJECT
NATURA 2000: AN OVERVIEW



COMMISSION OF THE EUROPEAN COMMUNITIES
Directorate General XI- Environment, Nuclear Safety & Civil Protection

MINISTRY OF AGRICULTURE
General Secretariat for Forests and the Natural Environment

MINISTRY OF ENVIRONMENT, PHYSICAL PLANNING AND PUBLIC WORKS
Division of Environmental Planning

THESSALONIKI 1996

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NATURA 2000: AN OVERVIEW

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"Biodiversity must be conserved as a matter of principle, as a matter of survival, and as a matter of economic benefit"

(UNEP, IUCN & WWF 1992)

PREFACE

The course of Europe towards the year 2000 would be problematic if the Single Act which set the basis of the European Policy on Environment, had not been signed.

Europe was the scene, where major historical events took place for thousands of years. Rich in natural resources, it not only supported its people, but at the same time became a field of conflicts, battles, and rivalries.

For the last few centuries, Europe was the main field of the industrial revolution, while during the last decades its nations have written one of the most significant pages of their history by forming an Economic Community, i.e. the joining of the countries with closed economies and the effort for an harmonious regulation of the inequities among its Member States. Thus, Europe would ensure its cohesion and solidarity, based on a balanced economy and aiming at the promotion of economic growth.

During this course, the pace needed to speed up. The scientific and technological progress put into practice techniques of resource use which deteriorated the quality of life and led to over-exploitation of natural resources.

The urban, industrial and transport policies which were followed led to the fragmentation of the European landscape. The list of endangered plant and animal species is getting longer and longer.

One crucial issue nowadays is the isolation of small populations which cannot reach the natural resources of the ecosystems they were part of.

With a delay of many decades, the European Union gradually tries to change its conventional economic policies into ones that will take into consideration the need to conserve the natural environment. Among the pertinent efforts is to establish a network of sites hosting valuable natural habitats and species through Directive 92/43/EEC. The implementation of this Directive must be based on sufficient and reliable scientific data.

Nowadays, it is recognised that the conservation and restoration of the natural environment must be an integral part of the improved economic and social policies in Europe.

The execution of this project on the inventory and mapping of areas with high biodiversity and high ecological value in Europe is a demonstration of this improved policy.

The development of this European model is based on the common roots among the Member States; on Geography, History, and Civilisation, which offer a high potential for a uniform organisation and management of land and safeguard the earth. This mechanism will prevail in the future world.

The "inventory and mapping" turns a new page in European history. This project searches for the basic principles of ecological balance and the preservation of all life forms, so as to save the natural diversity and order which is left to be saved. It also consists the first evaluation at a European scale, of natural habitats and wild fauna and flora. It is a sound base of reference, highlighting the priorities for an integrated approach and global action.

The maps will be useful to study the life quality of the Europeans as related to their land. They will help in the planning of economic activities, so as not only to prevent the discontinuity of ecosystems of Europe, but also to enhance its natural richness.

The project is valuable from many aspects: at local, national and European level.

Greece is situated in the South East part of Europe, and consists the crossroads of three continents, having its terrestrial part bound up to the great massifs of inland Europe, and its insular part scattered in the Aegean, Ionian and Libyan Seas. Human presence is tightly connected to its natural environment. For thousands of years, the various interventions of humans were recorded in history. The small area of Greece contains a remarkably great number of natural and semi-natural habitats that host rich and valuable components of the natural heritage of Europe. In Greece, many ecosystems retain their biological functions undisturbed, while extended areas, although with clear signs of degradation, still preserve their high diversity in plants and animals. The landscape is also diverse: fields, rivers and lakes, forests, coastal areas and sand dunes, pastures. Both the natural and the man-made environment need our respect because what is good for the natural systems is good for the man-made systems and vice-versa.

The project "Inventory, identification, evaluation and mapping of the habitat types, and flora and fauna species in Greece (Directive 92/43/EEC)", especially for our country, gives a valid picture of the Greek nature. It also proves the tolerance of Greek land to its use by Man for thousands of years, and depicts the mosaic of diversity and complexity of the areas that escaped deterioration caused by humans and preserved their coherence and functions. It also evaluates the richness of Greek nature and the particularities of the landscape, as part of the European heritage. Traditional cultivations proved to be ecologically and economically valuable today, were also considered within the project.

The Goulandris Natural History Museum undertook the execution of the European project "Inventory, identification, evaluation and mapping of the habitat types, and flora and fauna species in Greece (Directive 92/43/EEC)". The Greek Biotope/Wetland Centre (EKBY) drew up the working plan and assembled the scientific community of the country under the inspirational steering of Prof. Spyros Dafis. Within a limited time, it managed to carry out the project and promptly submit to the Ministry of Agriculture and the Ministry of Environment, Physical Planning and Public Works a list of 296 sites in the country, as worthy of inclusion in the "Natura 2000" network.

The Goulandris Natural History Museum would like to thank the Directorate General XI of the European Commission, and the Ministry of Agriculture and the Ministry of Environment, Physical Planning and Public Works for their trust and for making available to the project their pertinent scientific bodies.

Niki Goulandris

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This volume is an overview of a project entitled "Inventory, identification, evaluation and mapping of the habitat types and flora and fauna species in Greece (Directive 92/43/EEC)". It provides us with the opportunity to express our deepest appreciation to DG XI of the Commission of European Communities for supporting (by 75%) the project. Also to the Ministers Kostas Laliotis (IPEHODE) and Ioannis Potakis (Agriculture) for providing the remaining 25% of the funds and their continuous encouragement. Our appreciation is extended to the Deputy Minister Ms. Elisavet Papazoi (IPEHODE) and to the General Secretaries Mr. Alexandros Voulgaris (Environment) and Mr. Ioannis Sbokos (Forests and the Natural Environment) for facilitating the project's progress in multiple ways.

The General Directors Mr. Ioannis Vournas (Environment) and Mr. Vassilios Giotakis (Forests and the Natural Environment) have embraced the idea of the project and have intervened in its favor up to its end. The Directors of the two Ministries Mrs. Theano Kelaidi, Mr. Charalambos Markou and Mr. Evangelos Papaevangelou have given the project their full attention and contributed to their success by expediting the collection of information and other procedures. The Section Heads of the two Ministries Mr. Panagiotis Drougas, Ms. Dimitra Spala and Mrs. Sophia Markopoulou assisted by Mr. Georgios Handrinos, Mrs. Stavroula Spyropoulou, Mrs. Katia Marmara and Mr. Spyros Plessas, have steered the project, offered invaluable advice on several key issues, and were instrumental in promoting the high spirit of cooperation among all bodies and persons who participated in the project. To all the above as well to all the experts and scientific collaborators of the project who worked enthusiastically and under heavy time-pressure we are grateful.

Special acknowledgment is due to the late Christodoulos Mavrovitis, General Secretariat of Forests and the Natural Environment, who was the first to start working on the planning of the project and who worked up to his last day for its proper implementation.

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CONTENTS

INTRODUCTION 1
I. THE NATURAL FEATURES OF GREECE 3
Geographical position 3
Geology-petrology 3
Orography-relief 4
Climate 4
History 5
Flora 5
Vegetation 6
Fauna 9
II. BIODIVERSITY IN GREECE AND THE ROLE OF THE NATURA 2000 NETWORK 10

PART A

THE GREEK HABITAT PROJECT: "INVENTORY, IDENTIFICATION, EVALUATION, AND MAPPING OF HABITAT TYPES AND FLORA AND FAUNA SPECIES IN GREECE (DIRECTIVE 92/43/EEC)".

A.1. STRUCTURE OF THE GREEK HABITAT PROJECT 15
A.2. DIRECTIVE IMPLEMENTATION - SITE SELECTION PROCEDURE 17
A.3. GENERAL INFORMATION ON THE PROPOSED SITES 39
Designation types at regional, national, and international level 41
A.4. DATABASE DEVELOPMENT 52

PART B

SUMMARIZED DATA OF THE PROPOSED SITES

EXPLANATORY NOTES 57
GR1110001 DELTA EVROU 58
GR1110002 DASOS DADIAS-SOUFLI 59
GR1110003 TREIS VRISES 60
GR1110004 FENGARI SAMOTHRAKIS 61
GR1110005 VOUNA EVROU 62
GR1110006 APALOS 63
GR1120001 LIMNI VISTONIDA KAI LIMNOTHALASSA PORTO LAGOS 64
GR1120002 LIMNOTHALASSES LAFRI & LAFROUDA 65
GR1120003 OROS CHAIDOU-KOULA & GYRO KORYFES 66
GR1120004 AISTHITIKO DASOS NESTOU 67
GR1130001 LIMNI MITRIKOU 68

GR1130002 LIMNOTHALASSA XIROLIMNI....69
GR1130003 LIMNOTHALASSA KARATZA....70
GR1130004 LIMNOTHALASSA ALYKI (MESI)....71
GR1130005 LIMNOTHALASSA PTELEA....72
GR1130006 POTAMOS - KOILADA FILIOURI....73
GR1130007 KOILADA KOMSATOU....74
GR1130008 MARONEIA-SPILAION....75
GR1130009 LIMNES & LIMNOTHALASSES TIS THRAKIS....76
GR1140001 DASOS FRAKTOU....77
GR1140002 RODOPI (SIMYDA)....78
GR1140003 PERIOCHI ELATIA....79
GR1140004 KORYFES OROUS FALAKRO....80
GR1140005 KEFALARI....81
GR1140006 MYLOPOTAMOS....82
GR1140007 PARTHENO DASOS KENTRIKIS RODOPIS....83
GR1150001 DELTA NESTOU....84
GR1150002 LIMNOTHALASSES KERAMOTIS....85
GR1150003 OROS YPSARI THASOU....86
GR1150004 VOUNA LIMNIA....87
GR1150005 KORYFES OROUS PANGAIO....88
GR1150006 AKROTIRIO PRINOU-PACHI....89
GR1150007 LIMENARIA-AKROTIRIO KEPHALAS....90
GR1150008 ORMOS POTAMIAS....91
GR1150009 KOLPOS PALAIOU-ORMOS ELEFTHERON....92
GR1150010 DELTA NESTOU & LIMNOTHALASSES KERAMOTIS....93
GR1210001 OROS VERMIO....94
GR1210002 STENA ALIAKMONA....95
GR1220001 LIMNES VOLVI KAI LAGKADA....96
GR1220002 DELTA AXIOU-LOUDIA-ALIAKMONA....97
GR1220003 STENA RENTINAS....98
GR1220004 LIMNOTHALASSA EPANOMIS....99
GR1220005 LIMNOTHALASSA ANGELOCHORIOU....100
GR1220006 PROIN LIMNI LANTZA....101
GR1220007 POTAMOS AXIOS....102
GR1220008 AGIA TRIADA....103
GR1230001 LIMNI PIKROLIMNI....104
GR1230002 YDROCHARES DASOS MOURION....105
GR1240001 KORYFES OROUS VORAS....106
GR1240002 ORI TZENA....108
GR1240003 OROS PAIKO....109
GR1240004 LIMNI AGRA....110
GR1240005 STENA APSALOU-MOGLENITSAS....111
GR1250001 OROS OLYMPOS....112
GR1250002 PIERIA ORI....114
GR1250003 OROS TITAROS....115
GR1250004 ALYKI KITROUS....116
GR1250005 ETHNIKOS DRYMOS OLYMPOU....117
GR1260001 LIMNI KERKINI-KROUSIA-KORYFES OROUS BELES....118
GR1260002 EKVOLES POTAMOU STRYMONA....119

GR1260003 AI GIANNIS 120
GR1260004 KORYFES OROUS MENOIKIO-OROS KOUSKOURAS 121
GR1260005 KORYFES OROUS ORVILOS 122
GR1260006 OROS KERDYLLIA 123
GR1260007 ORI VRONTOUS-LAILIAS 124
GR1260008 TECHNITI LIMNI KERKINIS 125
GR1270001 OROS CHOLOMONTAS 126
GR1270002 OROS ITAMOS-SITHONIA 127
GR1270003 CHERSONISOS ATHOS 128
GR1270004 LIMNOTHALASSA AGIOU MAMA 129
GR1270005 OROS STRATONIKON 130
GR1270006 ORMOS TORONIS 131
GR1270007 AKROTIRIO ELIA-AKROTIRIO KASTRO 132
GR1270008 PALIOURI 133
GR1270009 PLATANITSI-SYKIA 134
GR1270010 AKROTIRIO PYRGOS-ORMOS KYPSAS 135
GR1270011 AFYTOS 136
GR1310001 VASILITSA 137
GR1310002 ETHNIKOS DRYMOS PINDOU 138
GR1310003 ETHNIKOS DRYMOS PINDOU (VALIA KALDA) (EVRYTERI PERIOCHI). 139
GR1320001 LIMNI KASTORIAS 140
GR1320002 KORYFES OROUS GRAMMOS 141
GR1330001 OROS VOURINO (MESIANO NERO) 142
GR1330002 KORYFES OROUS SINIATSIKO 143
GR1330003 ARKEUTHI KOZANIS-PTOLEMAIDAS 144
GR1330004 OROS PORTA 145
GR1340001 ETHNIKOS DRYMOS PRESPON 146
GR1340002 LIMNI MIKRI PRESPA 147
GR1340003 ORI VARNOUNTA 148
GR1340004 LIMNES VEGORITIDA-PETRON 149
GR1340005 LIMNES CHEIMADITIDA-ZAZARI 150
GR1340006 OROS VERNON-KORYFI VITSI 151
GR1410001 PERIOCHI LIMNIS TAVROPOU 152
GR1410002 AGRAFA 153
GR1420001 KATO OLYMPOS 154
GR1420002 DELTA PINEIOU-TEMPI 155
GR1420003 AISTHITIKO DASOS OSSAS 156
GR1420004 KARLA - MAVROVOUNI - KEFALOVRYSO VELESTINOU 158
GR1420005 AISTHITIKO DASOS KOILADAS TEMPON 160
GR1430001 OROS PILIO 161
GR1430002 ELOS SOURPIS - KOURI ALMYROU 163
GR1430003 SKIATHOS: KOUKOUNARIES 164
GR1430004 ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS 165
GR1440001 ASPROPOTAMOS 167
GR1440002 KERKETIO OROS (KOZIAKAS) 168
GR1440003 ANTICHASIA ORI - METEORA 169
GR1440004 STENA KALAMAKIOU 170
GR2110001 AMVRAKIKOS KOLPOS, DELTA LOUROU KAI ARACHTHOU (EVRYTERI PERIOCHI) 171

GR2110002 ORI ATHAMANON (TZOUMERKA) 173
GR2110003 KOILADA ACHELOOU 174
GR2110004 AMVRAKIKOS KOLPOS 175
GR2120001 EKVOLES (DELTA) KALAMA 177
GR2120002 ELOS KALODIKI 178
GR2120003 LIMNI LIMNOPOULA PARAMYTHIAS 179
GR2120004 STENA KALAMA 180
GR2130001 ETHNIKOS DRYMOS VIKOU-AOOU 181
GR2130002 KORYFES OROUS SMOLIKAS 182
GR2130003 ORAIOKASTRO, LIMNI DELVINAKIOU, DASOS MEROPIS KAI KOILADA GORMOU. 183
GR2130004 KENTRIKO TMIMA ZAGORIOU 184
GR2130005 LIMNI IOANNINON 185
GR2130006 PERIOCHI METSOVOU (ANILIO-KATARA) 186
GR2130007 OROS LAKMOS (PERISTERI) 187
GR2130008 OROS MITSIKELI 188
GR2140001 EKVOLES ACHERONTA KAI STENA ACHERONTA 189
GR2140002 ORI ZALONGOU 190
GR2140003 PARAKTIA THALASSIA ZONI APO PARGA EOS AKROTIRIO AGIOS THOMAS (PREVEZA) 191
GR2210001 PARAKTIA ZONI VOREIODYTIKIS ZAKYNTHOU 192
GR2210002 KOLPOS LAGANA ZAKYNTHOU KAI NISIDES MARATHONISI KAI PELOUZO 193
GR2210003 NISOI STROFADES 194
GR2220001 KALON OROS KEFALONIAS 195
GR2220002 ETHNIKOS DRYMOS AINOU 196
GR2220003 ESOTERIKO ARCHIPELAGOS IONIOU (THALASSIA PERIOCHI MEGANISIOU, KALAMOU, KASTOU, ARKOUDIOU, ATOKOU KAI NHSOI ECHINADES) 197
GR2220004 PARAKTIA THALASSIA ZONI APO ARGOSTOLI EOS VLACHATA (KEFALONIA) 198
GR2230001 LIMNOTHALASSA ANTINIOTI (KERKYRA) 199
GR2230002 LIMNOTHALASSA KORISSION (KERKYRA) 200
GR2230003 ALYKI LEFKIMIS (KERKYRA) 201
GR2230004 NISOI PAXI KAI ANTIPAXI 202
GR2230005 PARAKTIA THALASSIA ZONI APO KANONI EOS MESONGI (KERKYRA) 203
GR2230006 PARAKTIA THALASSIA ZONI APO PALAIOKASTRITSA EOS GLYFADA (KERKYRA) 204
GR2240001 LIMNOTHALASSES STENON LEFKADAS (PALIONIS-AVLIMON) KAI ALYKES LEFKADAS 205
GR2240002 PERIOCHI CHORTATON (LEFKADA) 206
GR2310001 DELTA ACHELOOU, LIMNOTHALASSA MESOLONGIOU-AITOLIKOU KAI EKVOLES EVINOU 207
GR2310002 LIMNOTHALASSES MESOLONGIOU 209
GR2310003 ORI AKARNANIKA 211
GR2310004 OROS PANAITOLIKO 212
GR2310005 OROS VARASOVA 213
GR2310006 LIMNES VOULKARIA KAI SALTINI 214
GR2310007 LIMNI AMVRAKIA 216
GR2310008 LIMNI OZEROS 217
GR2310009 LIMNES TRICHONIDA KAI LYSIMACHIA 219
GR2310010 OROS ARAKYNTHOS KAI STENA KLEISOURAS 221
GR2320001 LIMNOTHALASSA KALOGRIAS, DASOS STROFILIAS KAI ELOS LAMIAS 222
GR2320002 OROS CHELMOS KAI YDATA STYGOS 224
GR2320003 FARANGI VOURAIKOU 225

GR2320004 AISTHITIKO DASOS KALAVRYTON 226
GR2320005 ORI MARMPAS KAI KLOKOS, FARANGI SELINOUNTA 227
GR2320006 ALYKI AIGIOU 228
GR2320007 OROS PANACHAIKO 229
GR2320008 OROS ERYMANTHOS 231
GR2320009 SPILAIO KASTRION 232
GR2330001 EKVOLES (DELTA) ALFEIOU 233
GR2330002 OROPEDIO FOLOIS 234
GR2330003 EKVOLES (DELTA) PINEIOU 235
GR2330004 OLYMPIA 236
GR2330005 THINES KAI PARALIAKO DASOS ZACHAROS, LIMNI KAIAFA 237
GR2330006 LIMNOTHALASSA KOTYCHI 238
GR2330007 PARAKTIA THALASSIA ZONI APO KALOGRIA EOS KYLLINI 240
GR2330008 THALASSIA PERIOCHI KOLPOU KYPARISSIAS 241
GR2410001 LIMNES YLIKI & PARALIMNI - SYSTIMA VOIOTIKOU KIFISSOU 242
GR2410002 ETHNIKOS DRYMOS PARNASSOU 243
GR2420001 OROS OCHI - KAMPOS KARYSTOU - POTAMI - AKROTIRIO KAFIREFS 244
GR2420002 DIRFYS: DASOS STENIS - DELFI 245
GR2420003 OROS KANTILI - KOILADA PROKOPIOU - DELTA KIREA 246
GR2420004 MEGALO KAI MIKRO LIVARI - DELTA XIRIA - YDROCHARES DASOS AG. NIKOLAOU 247
GR2420005 TELETHRIO - LICHADA - GIALTRA 248
GR2420006 SKYROS: OROS KOCHYLAS 249
GR2430001 OROS TYMFRISTOS (VELOUCHI) 250
GR2430002 TECHNITI LIMNI KREMASTON 251
GR2440001 YGROTOPOS KAI NISIA TOU KOLPOU ATALANTIS 252
GR2440002 KOILADA KAI EKVOLES SPERCHEIOU - MALIAKOS KOLPOS 253
GR2440003 FARANGI GORGOPOTAMOU 255
GR2440004 ETHNIKOS DRYMOS OITIS 256
GR2450001 ORI VARDOUSIA 258
GR2450002 OROS GKIONA 259
GR2450003 POTAMOS MORNOS KAI TECHNITI LIMNI MORNOU 260
GR2450004 PARALIAKI ZONI APO NAFPAKTO EOS ITEA 261
GR2450005 NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS 262
GR2510001 OROS ARACHNAIO 264
GR2510002 OROS DIDYMO 265
GR2510003 AKRONAFPLIA KAI PALAMIDI 267
GR2520001 OROS MAINALO 268
GR2520002 LIMNI TAKA 269
GR2520003 PERIOCHI PARALIOU ASTROUS KAI LIMNOTHALASSAS MOUSTOU 270
GR2520004 OROS ORIONTAS 271
GR2520005 MONI ELONAS KAI CHARADRA LEONIDIOU 272
GR2520006 OROS PARNONAS (KAI PERIOCHI MALEVIS) 273
GR2530001 KORYFES OROUS KYLLINI (ZIREIA) KAI CHARADRA FLAMPOURITSA 274
GR2530002 LIMNI STYMFALIA 275
GR2530003 AKROKORINTHOS 276
GR2530004 OROS OLIGYRTOS 277
GR2530005 ORI GERANIA 278

GR2540001 ORI GIDOVOUNI, CHIONOVOUNI, GAIDOUROVOUNI, KORAKIA, KALOGEROVOUNI, KOULOCHERA KAI PERIOCHI MONEMVASIAS 279
GR2540002 PERIOCHI NEAPOLIS (VOION) KAI NISOS ELAFONISOS 280
GR2540003 EKVOLES EVROTA 281
GR2540004 NOTIA MANI, OROS SANGIAS KAI AKROTIRIO TAINARO 282
GR2540005 LAGKADA TRYPIS 283
GR2550001 FARANGI KAI EKVOLES NEDONA 284
GR2550002 PIGES KAI EKVOLES PAMISOU 286
GR2550003 NISOI SAPIENTZA KAI SCHIZA, AKROTIRIO AKRITAS 288
GR2550004 LIMNOTHALASSA PYLOU (DIVARI) KAI NISOS SFAKTIRIA 289
GR2550005 THINES KYPARISSIAS 290
GR2550006 OROS TAYGETOS 291
GR2550007 THALASSIA PERIOCHI STENOY METHONIS 292
GR3000001 OROS PARNITHA 293
GR3000002 OROPOS - EKVOLES ASOPOU 294
GR3000003 SCHINIAS 295
GR3000004 VRAVRONA 297
GR3000005 SOUNIO - NISIDA PATROKLOU 298
GR3000006 YMITTOS - AISTHITIKO DASOS KAISARIANIS - LIMNI VOULIAGMENIS 300
GR3000007 KYTHIRA: KARAVAS EOS MYLOPOTAMO - PALAIOPOLI - AVLEMONAS 301
GR3000008 ANTIKYTHIRA - PRASSONISI KAI LAGOUVARDO 302
GR3000009 ETHNIKOS DRYMOS PARNITHAS 303
GR4110001 LIMNOS: CHORTAROLIMNI - LIMNI ALYKI 304
GR4110002 AGIOS EFSTRATIOS 306
GR4110003 LESVOS: DYTIKI CHERSONISOS - APOLITHOMENO DASOS 307
GR4110004 LESVOS: KOLPOS KALLONIS 308
GR4110005 LESVOS: KOLPOS GERAS, ELOS NTIPI KAI OROS OLYMPOS 309
GR4120001 SAMOS: ALYKI 310
GR4120002 SAMOS: OROS AMPELOS (KARVOUNIS) 311
GR4120003 SAMOS: OROS KERKETEFS - MIKRO KAI MEGALO SEITANI - DASOS KASTANIAS KAI LEKKAS 312
GR4120004 IKARIA - FOURNOI 314
GR4130001 VOREIA CHIOS KAI NISOI OINOUSES 316
GR4210001 KASOS KAI KASONISIA 317
GR4210002 KENTRIKI KARPATHOS: KALILIMNI - LASTHOS - KYRA PANAGIA 319
GR4210003 VOREIA KARPATHOS KAI SARIA 320
GR4210004 KASTELLORIZO KAI NISIDES RO KAI STRONGYLI 321
GR4210005 RODOS: AKRAMYTIS, ARMENISTIS, ATTAVYROS 322
GR4210006 RODOS: PROFITIS ILIAS - EPTA PIGES - PETALOUDES 323
GR4210007 NISYROS KAI STRONGYLI 324
GR4210008 KOS: AKROTIRIO LOUROS - LIMNI PSALIDI - OROS DIKAIOS - ALYKI 325
GR4210009 ASTYPALAIA: ANATOLIKO TMIMA, GYRO NISIDES KAI OFIDOUSA 326
GR4210010 ARKOI, LEIPSOI, AGATHONISI KAI VRACHONISIDES 327
GR4210011 VRACHONISIA NOTIOU AIGAIOU: VELOPOULA, FALKONERA,A NANES, CHRISTIANA, PACHEIA, FTENO, MAKRA, ASTAKIDONISIA, SYRNA-GYRO NISIA 328
GR4220001 ANDROS: ORMOS VITALI KAI KENTRIKOS OREINOS OGKOS 330
GR4220002 ANAFI: CHERSONISOS KALAMOS - ROUKOUNAS 331
GR4220003 SANTORINI: NEA KAI PALIA KAMENI - PROFITIS ILIAS 332
GR4220004 FOLEGANDROS ANATOLIKI MECHRI DYTIKI SIKINO 333
GR4220005 DYTIKI MILOS 334

GR4220006 NISOS POLYAIGOS....336
GR4220007 NISOS ANTIMILOS....337
GR4220008 SIFNOS: PROFITIS ILIAS MECHRI DYTIKES AKTES....338
GR4220009 NOTIA SERIFOS....339
GR4220010 VOREIODYTIKI KYTHNOS: OROS ATHERAS KAI AKROTIRIO KEFALOS....340
GR4220011 ANATOLIKI KEA....341
GR4220012 VOREIA AMORGOS KAI KYNAROS, LEVITHA, MAVRIA....342
GR4220013 MIKRES KYKLADES: APO KERO MECHRI IRAKLEIA....343
GR4220014 KENTRIKI KAI NOTIA NAXOS: ZEFS KAI VIGLA EOS MAVROVOUNI....344
GR4220015 ALYKI NAXOU....345
GR4220016 NISOS PAROS: PETALOUDES....346
GR4220017 NISOI DESPOTIKO KAI STRONGYLO....347
GR4220018 SYROS: OROS SYRINGAS OS PARALIA....348
GR4220019 TINOS: MYRSINI - AKROTIRIO LIVADA....349
GR4310001 ALMYROU FARANGI KAI YGROTOPOS....350
GR4310002 GIOUCHTAS - FARANGI AGIAS EIRINIS....351
GR4310003 NISOS DIA....352
GR4310004 DYTIKA ASTEROUSIA (APO AGIOFARANGO OS KOKKINO PYRGO)....353
GR4310005 ASTEROUSIA (KOFINAS)....354
GR4310006 DIKTI: OMALOS VIANNOU (SYMI - OMALOS)....355
GR4320001 MILATOS (MECHRI AKROTORIO AGIOU IOANNI)....356
GR4320002 DIKTI: OROPEDIO LASITHIOU, KATHARO, SELENA, KRASI, SELEKANOS....357
GR4320003 NISOS CHRYSI....358
GR4320004 MONI KAPSA (FARANGI KAPSA KAI GYRO PERIOCHI)....359
GR4320005 OROS THRYPTIS KAI GYRO PERIOCHI....360
GR4320006 VOREIOANATOLIKO AKRO KRITIS: DIONYSADES, ELASA KAI CHERSONISOS SIDERO (AKRA MAVROVOUNI - VAI - AKRA PLAKOS)....361
GR4320007 NOTIOANATOLIKO AKRO KRITIS KAI NISIDES KAVALLOI....362
GR4320008 NISOS KOUFONISI....363
GR4320009 AISTHITIKO DASOS VAI....364
GR4330001 PETRE FARANGI KAI PETRES EOS PARALIA ZOURIDA....365
GR4330002 OROS KEDROS....366
GR4330003 KOURTALIOTIKO FARANGI - MONI PREVELI - EVRYTERI PERIOCHI....367
GR4330004 PRASIANO FARANGI - PATSOS - SFAKORYAKO REMA - PARALIA RETHYMNOU KAI EKVOLI GEROPOTAMOU....368
GR4330005 IDI OROS....370
GR4340001 IMERI KAI AGRIA GRAMVOUSA - TIGANI KAI FALASARNA - PONTIKONISI....371
GR4340002 NISOS ELAFONISOS - APENANTI PARALIA (APO CHRYSOSKALITISSA MECHRI AKROTIRIO KRIOS)....372
GR4340003 CHERSONISOS RODOPOU - PARALIA MALEME....374
GR4340004 ELOS - TOPOLIA - SASALOS - AGIOS DIKAIOS....375
GR4340005 SOUGIA - BARDIA - FARANGI LISSOU MECHRI ANYDROUS....376
GR4340006 LIMNI AGIAS - PLATANIAS - REMA KAI EKVOLI KERITI - KOILADA FASAS....377
GR4340007 FARANGI THERISSOU....378
GR4340008 LEFKA ORI....379
GR4340009 VOREIO AKROTIRIO: AGIA TRIAS - MONI TSAGAROLON - GOUVERNETOU - KATHOLIKO....381
GR4340010 DRAPANO (VOREIOANATOLIKES AKTES) - PARALIA GEORGIOUPOLIS - LIMNI KOURNA....382

GR4340011 FRE - TZITZIFES - NIPOS 383
GR4340012 ASFENDOU - KALLIKKRATIS 384
GR4340013 NISOI GAVDOS KAI GAVDOPOULA 385
GR4340014 ETHNIKOS DRYMOS SAMARIAS 386

PART C

HABITAT TYPES

C.1. LIST OF THE HABITAT TYPES OF ANNEX I TO DIRECTIVE 92/43/EEC, ENCOUNTERED IN GREECE 391
C.2. HABITAT TYPES PRESENT IN GREECE 402
C.2.1. Habitat types of Annex I to Directive 92/43/EEC 402
C.2.2. Habitat types not included in Annex I to Directive 92/43/EEC 417
C.2.3. Data Analysis 419
C.2.4. Conclusions 434

PART D

FLORA

D.1. THE RICHNESS AND THE RARITY OF THE GREEK FLORA 437
D.2. PLANT SPECIES OF ANNEX II TO DIRECTIVE 92/43/EEC, ENCOUNTERED IN GREECE 439
D.2.1. Description of plant species of Annex II to Directive 92/43/EEC, that are present in Greece 443
Bryophyta 443
Pteridophyta 443
Spermatophyta 445
D.3. OTHER IMPORTANT PLANT SPECIES 468
D.3.1. Other Important Plant species in the administrative regions of Greece (NUTS codes) 468
Distribution in NUTS 1 level 468
Distribution in NUTS 2 level 469
D.3.2. Other Important Plant Species in the Phytogeographical Regions of Greece 470
D.3.3. Other Important Plant Species in the proposed Natura 2000 sites 473
D.3.4. Other Important Plant Species - Motivation 479
Distribution of the different motivation categories in Greece 479
Distribution of the different motivation categories in NUTS 1 level. 479
Distribution of the different motivation categories in NUTS 2 level. 480

Distribution of the different motivation categories in the phytogeographical regions....482
D.3.5. Other Important Plant Species - The richest sites....483

PART E

FAUNA

E.1 THE DIVERSITY OF THE FAUNA OF GREECE....489
E.1.1. Introduction....489
E.1.2. Methods....491
E.1.3. General comments....494
E.1.4. Habitat Directive Annex II species and Birds Directive Annex I and migratory species....498
E.1.5. Other Important Animal Species....511
E.2. MAMMALS....514
E.2.1.Introduction....514
E.2.2. Mammals of Greece listed in Annex II to Directive 92/43/EEC....516
E.3. BIRDS....551
E.3.1. Introduction....551
E.3.2. Birds of Greece listed in Annex I to Directive 79/409/EEC....553
E.4. REPTILES....567
E.4.1.Introduction....567
E.4.2. Reptiles of Greece listed in Annex II to Directive 92/43/EEC....570
E.5. AMPHIBIANS....594
E.5.1. Introduction....594
E.5.2.Amphibians of Greece listed in Annex II to Directive 92/43/EEC....597
E.6. FRESHWATER FISHES....604
E.6.1. Introduction....604
E.6.2. Fishes of Greece listed in Annex II to Directive 92/43/EEC....612
E .7. INVERTEBRATES....636
E.7.1. Introduction....636
E.7.2. General comments....638
E.7.3. Intertebrates of Greece listed in Annex II to Directive 82/43/EEC....647

BIBLIOGRAPHY....653

APPENDICES

Appendix 1: Natura 2000 Network, Standard Data Form....711

Appendix 2: Nomenclature of Statistical Territorial Units (NUTS) 725
Appendix 3: Impacts and activities 729
Appendix 4: Distribution maps of habitat types and flora and fauna species in the proposed Natura 2000 sites 735
Appendix 5: List of "Other Important Plant Species" 801
Appendix 6: List of "Other Important Animmal Species" 841

INDEXES

Index of Habitat types 877
Index of dir. 92/43/EEC species 887

INTRODUCTION

Greece is situated in the south of the Balkan peninsula and is a part of the European East Mediterranean Region. Its territory expands in approximately 132,000 km^2, its coast line is 15,000 km long, and has a great variety of geomorphological formations and rocks. In general, the climate of Greece can be regarded as Mediterranean, with mild winter and dry summer. The rainfall period is mainly during autumn and spring. The diverse composition of the substrate, the mountainous character of the country resulting in a diverse ground relief, the existence of about 42 mountains higher than 2000 m, the long coast line and the numerous peninsulas and islands all account for the high diversity of the landscape. Furthermore, distinctive and isolated biotopes result in a relatively great number of endemic or rare plant and animal species.

Greece has a wide range of climate types, ranging from the semi-arid, semi-desert climate of south-eastern Crete to the cold, humid continental climate of Rhodope. The flora has a Mediterranean, Central European and Irano-Caspian character. The physical relief is also complex; 70% of the land is mountainous. Equally varied are the geology and petrology of the country.

The diversity of bioclimates created by the interaction of the above parameters is reflected in the diversity and mosaic of vegetation and the high number of plant and animal species. Approximately six thousand plant species have been identified in Greece. In Europe, only the Iberian peninsula can show more. The diversity of vegetation, flora and fauna resulted in numerous ecosystems, from the semi-desert palm forest at Vai in Crete to the boreal forests of birch, scots pine and spruce in Rhodope mountain range. This diversity of ecosystems is crowded into a relatively small space; in travelling 150 km from the town of Kavala to central Rhodope all the vegetation zones i.e. Mediterranean, Central European and Northern (Scandinavian) are observed.

The climatic changes that have taken place during the Earth's history, and especially since the Ice Ages, have played a major role in the high degree of biodiversity in the Mediterranean basin. The north to south alignment of the Dinaric Alps and the Greek mountains facilitated the southerly movement of many species, thus enriching the flora and fauna of the region and creating many hybrids, especially among the forest trees (e.g. fir, beech). These channels of communication remain open even today. Thus, a significant number of purely mid-European species are encountered in Greece.

There is also a great variety of non-zonal wetland ecosystems (shallow coastal areas, lagoons, lakes, marshes, rivers, deltas, artificial lakes, salt works, etc.). These ecosystems are influenced more by their hydrological characteristics than by climate, and are thus classified as non-zonal.

The ecosystems of Greece, both dry land and non-zonal wetland, share a remarkable feature. Despite intense human activity which resulted in three quarters of the wetlands having been destroyed, and one of the lowest percentages of forest cover (25%) in the European Mediterranean area, these ecosystems have, to a large extent, retained their original composition. In no other Mediterranean or European country has such great biodiversity been preserved in such a natural state. Unfortunately this national and cultural heritage has not been adequately studied, evaluated, and inventoried to date. Although the existing studies provide much valuable information, they are the result of individual efforts which are scattered in various libraries and archives. It is essential to find and record all the work that has been done to date and to work out a plan of action to acquire all the information necessary for the rational management and protection of rare and unique habitats and species in Greece.

Following the adoption of the Convention on Biological Diversity at the Rio Summit in 1992, various efforts have been undertaken aiming to preserve the world biodiversity. In order to further promote the protection of natural resources, the Bern Convention on the conservation of European wildlife and natural habitats and the Directive 92/43/EEC were the next steps.

The Directive 92/43 of the EEC Council of 21 May 1992, commonly referred to as the "Habitat Directive" aims at contributing to the preservation of biodiversity through the conservation of natural habitats and wild fauna and flora within the territory of the Member States of the European Union. It provides for the development of a network of Special Areas of Conservation (SAC), called "NATURA 2000" which aims at ensuring a protection status for the natural habitats and species of Community interest. This network will consist of sites that host various types of natural habitats and flora and fauna species listed in Annexes I and II respectively. It is expected that the above network will ensure the conservation and hopefully the restoration of the various types of natural habitats and habitats of species within their natural boundaries.

In the context of the effort of the European Union for the identification and evaluation of biodiversity, the implementation of the Directive has started in June 1994 in Greece, with the execution of a project entitled "Inventory, Identification, Evaluation and Mapping of the Habitat types and Flora and Fauna species in Greece (Directive 92/43/EEC)". The creation of the NATURA 2000 network, to which the Greek Government is committed, will help protect endangered species and their habitats by ensuring their restoration or maintenance at a favourable conservation status.

The aim of this publication is to present the results of the inventory of natural habitat types and species included in Annex I and II to Directive 92/43/EEC respectively, in a concise and intelligible manner. Special emphasis was placed on the interpretation, evaluation, and illustration of the data recorded in the Standard Data Forms. To this end, distribution maps of natural habitats and species are annexed. Finally, data on species not listed in Annex II to the directive, which are referred to by the project as "Other Important Species" and which are present in the studied sites are also included in the present publication.

I. THE NATURAL FEATURES OF GREECE

by Spyros Dafis

Geographical position

Greece is the southern extension of the Balkan peninsula, and part of the European Eastern Mediterranean region. Its total land surface, including the islands, is 132,000 km² or 13.2 million hectares. It is situated from 34° 45′ N to 41° 45′ N latitude, and from 19° 30′ E to 29° 45′ E longitude. It is bordered to the north by Albania, Former Yugoslavia, and Bulgaria, and to the east by Turkey, while the coasts are washed by the Aegean, Libyan and Ionian seas.

Geology- Petrology

Greece presents a great variety of rock formations. Geologically and petrologically the rocks of Greece can be divided into pre-Alpine, Alpine and post-Alpine formations.

The pre-Alpine formations contain the crystalline schist rocks of the crystalline masses of Greece, and some small areas of sedimentary and igneous rocks. The Alpine and post-Alpine formations include the greater part of the sedimentary cover of Greece, as well as quite large igneous outcrops.

a) **Crystalline schist regions**: The crystalline schist rocks of Greece are found in the inner Hellenids zones (Rhodope massif, Serbomacedonian, Paionia, Almopea, Paiko, Pelagonian massif, and the Attico-Cycladic massif).

These zones include crystalline schist rocks found in Central and Eastern Macedonia, Thrace and on the islands of North Aegean and are composed of high grade metamorphic rocks (gneiss, marble, amphibolites) mainly of Palaeozoic.

The Pelagonian massif runs NW-SE, and extends from the Greek-Former Yogoslavia border (Varnous, Voras, Jena, Vermion, Pieria, Kamvounia, Ossa, Pelion, Orthrys) through the Attico-Cycladic massif into Asia Minor. It contains high, medium and low grade metamorphic rocks (gneiss, amphibolite, marble, phyllite, greenschist, etc.). In southern Greece crystalline schist rocks are also found.

b) **Limestone regions**: The limestones of Greece were mostly formed during the Mesozoic (Triassic, Jurassic and Cretaceous), and together with the paleogene strata and up to the flysch form the crystalline mass mountains of Greece. The mountain peaks of the Ionian islands, Epirus and Akarnania (Adriatic-Ionian region), Pindos, Agrafa, Tymfristos, Tzoumerka, the Aetolean, Tripoli and Parnon mountains, and most of the mountains in Crete consist of limestone.

c) **Flysch regions**: Flysch-strata of sandstone rich in quartz, alternating with clay schist, occupy a huge area in Greece, covering entire regions to a depth of up to 1000 m. The largest

paleogene flysch region extends from the Adriatic-Ionian mountains to the Olonos-Pindos systems, from the Albanian border to the southern Peloponnese.

d) **Neogene regions**: The neogene rocks (marine, riverine or lacustrine) consist mainly of mollasic formations (sands, clays, conglomerates, marls), travertines, and lignites porous limestones and cover large areas of low-lying land in horizontal strata. They are found mainly in Elis, on the north coast of the Peloponnese and in Corinth, in Attica, in the Kassandra peninsula in Chalkidiki, in north Evoia, in the area between Kalambaka and Kastoria, in the highest levels of the Serres-Sidirokastro-Nigrita depression and in many other parts of the country.

e) **Igneous rocks regions**: Igneous rocks (volcanic, rocks-plutonic, rocks-dikes) cover considerable areas, chiefly in northern Greece. The volcanic rocks appear as domes, napes or flows, and more rarely as dikes. Extensive extrusions, mostly of Tertiary volcanic rocks, exist in Rhodope, Thrace and Almopea, while other extrusions are scattered elsewhere in Greece, particularly in the Aegean islands (Lesvos, Limnos, Santorini, Melos, Kos, etc.). Plutonic rocks outcrop chiefly in Macedonia (granite, diorite, gabbro). The granite outcrops of Vrontou, Florina and Xanthi are important because of their size. Most of the igneous rocks in Greece are Tertiary, though some are Paleozoic. Ultrabasic rocks and ophiolites outcrop in many parts of Greece.

Orography- relief

Greece is a mountainous country, two thirds of which are largely covered by mountains of medium height. The great mountain masses run the length of the country from NNW to SSE (the Pindos complex, the Agrafa, Tymfristos, Panetolikon, Oiti, Vardousia, Parnassos, Giona in northern and central Greece, and Panachaikon, Erymanthos, the Aroania mountains, Kyllene, Maenalon, Parnon, Taygetos in the Peloponnese) and divide it into two distinct climatic and phytogeographic regions. The mountain ranges of Eastern Greece (Vermion, Pieria, Olympus, Ossa, Mavrovouni, Pelion) also run north to south and their eastern slopes face the easterly rain-laden winds, that are more humid than the western slopes, and therefore support lusher vegetation. Finally the mountain ranges of Northern Greece (Voras, Tzena, Paiko, Beles, Angistro, Falakron mountains and the Rhodope range) run east-west, shielding the country from the cold north winds. Olympus, the highest mountain in Greece, reaches a height of 2917 m and is the second highest mountain in the Balkans after Mt. Rila. Forty-one other peaks exceed 2000 m. The mountainous nature of the country produces intense relief, with steep and frequently precipitous slopes and many deep valleys, each of which, in combination with the variety of rocks, produces a distinct local environment. This creates conditions of isolation and endemism, a phenomenon very pronounced in Greece. The numerous islands and islets, chiefly in the Aegean Sea, also contribute to endemism.

Climate

The climate of Greece can be generally classed as Mediterranean, with spring and autumn rainfall, mild winters, hot summers and a varying period of drought. Within this general climate there are local climatic conditions, which have a considerable effect on the appearance of the vegetation in the area. In Greece, the following five climatic regions can be distinguished (Mariolopoulos 1938):

a) **The mountain region**, including the great mountain range which runs NNW to SSE, and the other mountains of Northern and Central Greece, the Peloponnese and Crete. The higher

the altitude, the cooler the summers, the harsher the winters, and the heavier and more even the rainfall. The climate, particularly that of Northern Greece, approaches the corresponding Continental and Central European climate.

b) **The region of Northern Greece**, consisting of Epirus, Thessaly, Macedonia and Thrace. The climate is transitional between the Mediterranean and the Continental and is marked by a relatively large annual temperature range (larger than 20°C), a more even distribution of rainfall and the reduction of the period of drought to 1-2 months.

c) **The Ionian region** (maritime Mediterranean), including the western coast of Greece and the Ionian islands. The climate is characterised by mild winters, greater rainfall which falls mainly in the winter but also in spring and autumn, and a relatively small annual temperature range of 16-17°C.

d) **The Aegean region** (continental Mediterranean). This region includes all of SE Greece as far as Thessaly, and the Aegean islands and Crete. The climate is similar to that of the Ionian region, but is cooler in winter, and drier. The annual rainfall is significantly lower, being almost half of that of Western Greece. The annual temperature range fluctuates between 13.7°C and 19.0°C, and is least on the Aegean islands. Due to the dry climate the atmosphere in this region possesses an exceptional clarity, as a result of which the sky is unusually blue.

e) **The region of Southern Crete** (semi-desert Mediterranean) has a climate transitional between the Mediterranean and the semi-desert, with low annual rainfall, mild winters and a long period of drought.

In Greece we thus meet with a wide range of climate types, from the purely Mediterranean (maritime and continental) to transitional Central European and Continental. Within these climatic regions, and in conjuction to the altitude, the relief and the nature of the rocks, there are many local variations, which are reflected in the vegetation.

History

The history of Greece has been as turbulent as the land is rugged. The early appearance of civilisation in Greece and especially in South-Eastern Greece, the cradle of ancient Greek civilisation, resulted in the early degradation and destruction of the natural vegetation, particularly in the lowlands and the islands. During its more than three thousand years of history, Greece has known triumph and disaster, and has suffered defensive and aggressive wars, conquest and pillage, all of which have left their mark on nature. Land clearance, fires, rapacious logging, overgrazing by goats etc. have so changed the original vegetation as to make a restoration practically difficult, if not impossible.

Flora

The main floristic regions found in Greece are the Mediterranean, the European (Eurasian) and the Irano-Caspian. The Mediterranean flora is found in a zone of varying width along the coasts and on the islands of the Ionian and Aegean Seas. The width of this zone and the altitude to which it reaches both decrease with increasing latitude. The Central European flora predominates on the mountains of Northern and Central Greece, gradually losing ground as we move south. Representatives of the Irano-Caspian flora, such as the oriental oak and others, are found in North-East Greece (Thrace) and on the islands of the North-East Aegean. In Crete representatives of the north-African flora are also found. Due to the geographical position and the coexistence of the above-mentioned flora regions, the flora of

Greece, in proportion to its area, is one of the richest in Europe, consisting of approximately 6,000 phanerogamous plants. Also, the country's mountainous nature and many islands favour conditions of isolation and endemism. As a result, significant proportion of plant species and subspecies (13%) are endemic. Finally, it should also be noted, that out of the 6,000 plant taxa, 263 taxa are considered as rare and threatened, according to the recently publiced Red Data Book of rare and threatened plant species (Phitos et al. 1995).

Vegetation

The interaction of all the above factors has created five vegetation zones, each with a distinct ecology, physiognomy, flora and history. The boundaries between these zones cannot be clearly distinguished, as the zones often overlap, so that representing them on a map of Greece will inevitably involve some simplification and distortion.

Coastal, hill and sub-mountain zone with Mediterranean vegetation (Quercetalia ilicis).

This zone, also known as the zone of evergreen broad-leaved vegetation, runs more or less continuously along the western, south-eastern and eastern coasts of Greece, the Ionian and Aegean islands, eastern coast and south of Chalkidiki, as well as along the Macedonian and Thracian coasts. This Mediterranean vegetation zone is divided into two sub-zones with distinct ecology, flora and physiognomy: the Oleo-Ceratonion sub-zone of olive and carob, which occupies the drier south-eastern and eastern part of Greece as far north as Mt. Pelion, the south Aegean islands, the low-lying land in the fingers and south of the Chalkidiki peninsula, and part of the Ionian islands, and the Quercion ilicis sub-zone of holm oak, which includes the wetter coasts of Western Greece, the eastern foothills of Pelion, Ossa and Olympus, the hill country of Southern Chalkidiki and the higher areas in the fingers, Eastern Chalkidiki from Stratoni to Stavros, the lower part of Mount Athos and the coasts of Eastern Macedonia and Western Thrace, while it also appears in the wetter locations on the islands of the north Aegean.

Each sub-zone is further divided into more growth zones-associations, such as Oleo-lentiscetum, Oleo-ceratonietum in Oleo-ceratonion, and Adrachno-Quercetum ilicis, Orco-Quercetum ilicis, Lauro-Quercetum ilicis etc. in Quercion ilicis. The broad-leaved evergreen zone also includes the pyrogenic associations of aleppo pine and brutia pine, the domestic pine and the spreading cypress (in Crete and Rhodes). Plant association research in this zone is limited and presents many gaps, despite its interest and the great variety of vegetation.

Sub-Mediterranean-Para-Mediterranean vegetation zone. Hill, sub-mountain, mountain (Quercetalia pubescentis-petraeae (dalechampii)).

Ascending the mountains or moving inland, we gradually leave the Mediterranean vegetation behind and enter an unusual transitional zone which appears similar to a zone of evergreen broad-leaved vegetation, from which it differs in terms of ecology and flora, or to a zone of drought-resistant broad-leaved deciduous trees and especially oak forest.

The climate here becomes gradually more Continental, with harsher winters and heavier rainfall. The dry season still clearly exists, however, although restricted. During the winter, temperatures fall below zero, and snow can last from several weeks to more than two months. This zone can also be divided into two or three sub-zones with distinct ecology, physiognomy and flora: Ostryo-Carpinion and Quercion confertae (frainetto)-cerris. For Southern Greece

(Crete-Peloponnese-Central Greece up to Lamia) a third sub-zone, that of Quercion cocciferae, can be distinguished.

i) Ostryo-Carpinion sub-zone (sub-Mediterranean):

The Mediterranean and sub-Mediterranean vegetation zones are clearly and easily distinguished in Central and Northern Greece. In Southern Greece and Crete, however, the boundaries are less clear, since *Quercus coccifera* appears in Oleo-Ceratonion, thus creating a distinct growth area (association), that of Cocciferetum mixtum. Here we see a series of growth areas (associations) such as Cocciferetum, Coccifero-carpinetum and Carpinetum orientalis (Sibljak).

ii) Drought-resistant deciduous forest zone (sub-mountain) (Quercion frainetto-cerris).

With increasing altitude we meet a zone of broad-leaved deciduous forest, which is part of the Quercion frainetto-cerris (Quercion confertae-cerris) co-association or sub-zone.

This sub-zone is a continuation of the previous (drought-resistant succession-zoning) or is found directly above the Mediterranean vegetation (moisture-loving succession-zoning). In Greece this sub-zone covers a large area, which decreases from north to south. About one third of all Greek forests belong to this sub-zone. The climate is transitional between Mediterranean and Continental (para-Mediterranean to sub-Continental), the winters are harsher and the snow lasts for several weeks, up to 2.5 months. The soil is either mountain para-Mediterranean or purely mountain brown forest soil.

This sub-zone is found on the hills, semi-mountainous and mountainous districts of Northern and Central Greece (Epirus, Western, Central and Eastern Macedonia, Thrace, Chalkidiki, Thessaly) as well as in Central Greece (Sterea Ellada) and the Peloponnese. Here too we can distinguish more growth zones: Quercetum frainetto, Tilio-Castanetum, Aceri-Castanetum, Quercetum montanum (Quercetum cerris and Quercetum dalechampii) etc.

Although this zone has been better studied than the previous one, due to its economic value, there are still many gaps in our knowledge, that represent a challenge to the new generation of plant association specialists.

Zone of beech, beech-fir and mountain para-Mediterranean conifer forests (Fagetalia). Mountain-sub Alpine

As moving up into the mountains the climate becomes mountain Mediterranean, approaching that of central Europe. The winters are harsher, the summers cooler, rainfall increases and is more evenly distributed throughout the year, the snow lasts several months and the dry season, although it does not disappear completely, is restricted to 1 to 1.5 months.

After the zone of para-Mediterranean broad-leaved deciduous trees (Quercetalia pubescentis-dalechampii), in Southern Greece up to Parnassos appears the zone of mountain para-Mediterranean conifers (*Abies cephalonica* and *Pinus nigra ssp. pallasiana*), while in Central and Northern Greece there is the sub-zone of hybrid fir forests, black pine forests, mixed fir and beech forests and beech forests, which extend up to the man-made treeline (1800-1900 m). This zone is also divided into two, or possibly three, sub-zones with distinct ecology, physiognomy and flora; the sub-zone of Abietion cephalonicae, the sub-zone of Fagion moesiacae or Fagion hellenicum and possibly also the soil dependent sub-zone of Pinion nigrae on dolomitic and ophiolitic rocks.

The first sub-zone is dominated by the cephalonian fir (*Abies cephalonica*), which is of

great value in Greek forestry. It is questionable, however, whether the cephalonian fir forests should be included in Fagetalia and this may be subject to reconsideration. The cephalonian fir frequently intrudes into the Quercetalia pubescentis-dalechampii region, and even into the higher region of Quercetalia ilicis, and many fir forests have occupied the sites of older oak forests. The undergrowth is also dominated by Quercetalia pubescentis species, while the Fagetalia species appear more rarely and in the most favourable sites. Here more growth zones can be distinguished.

The sub-zone of Fagion moesiacae or Fagion hellenicum can be divided into the growth zones, Fagetum moesiacum, Abietum borisii regis and Abieti-Fagetum moesiacae. The beech forests do not appear in a continuous band as in Central Europe or Former Yugoslavia, but in groves on north, north-east and north-west facing sites and almost exclusively on silicate rocks. Fagetum moesiacae, which could comprise a separate sub-zone (Fagion hellenicum), is further divided into more growth zones (associations): Luzulo-Fagetum, Galio odorati-Fagetum, Taxo-Fagetum, Fagetum nudum, Aceri-Fagetum etc.

The forests of hybrid fir (Abietum borissi regis) are found chiefly in central Pindos and belong to Fagetalia and Fagion moesiacae, with the flora of which they have much in common. Here more growth zones can be distinguished.

In medium sites, where beech is less able to compete, mixed forests of beech and hybrid fir (Abieti-Fagetum or Fagetum moesiacae-Abietosum) are encountered.

As mentioned earlier, of special importance are the forests of black pine, which usually occupy the same geographical areas as those of beech and fir, but mainly on ophiolithic or dolomitic rocks, where they create continuous communities dependent on soil conditions. Black pine and hybrid fir also appear in Quercetalia pubescentis-dalechampii areas. The black pine communities have very little in common with the flora of the fir, and even less with that of the beech.

Zone of boreal conifers (Vacinio-Picetalia) Mountain, sub-Alpine

This zone appears only in Northern Greece on the high mountains (Olympus, N. Pindos, Pieria, Orvilos, Rhodope, the highland arc of Aridea) and consists mainly of forest remnants. The climate is Continental with harsh winters, even rainfall distribution, no droughts and long periods of snow cover. Here two sub-zones can be distinguished; that of Pinion heldreichii, which is found chiefly on dolomitic-limestone and ophiolithic rocks on Olympus, N. Pindos and Orvilos, and that of Vaccinio-Piceion, which is found mainly on silicate rocks. To this sub-zone belong the Scots pine forests of Pieria, Rhodope, Lailias, the spruce forests of Rhodope, the birch forests of Rhodope and the highland arc of Aridea, as well as the forests of the Balkan pine (*Pinus peuce*). Here too the plant communities need to be further studied.

Highland zone above the treeline, mountain Mediterranean, sub-Alpine and Alpine (Astragalo-Acantholimonetalia, Daphno-Festucetalia).

Above the largely man-made treeline, scrubs and grasslands are found which have suffered from overgrazing, as these areas have been used as summer pasture for centuries by nomadic shepherds. Three sub-zones can be distinguished again: Astragalo-Daphnion on the limestone mountains of Central and Southern Greece, consisting of the thorny semi-shrub *Astragalus gr. tragacantha, Berberis cretica, Daphne oleoides, Stipa pennata, Festuca* sp. etc., the Junipero-Daphnion which appears on the mountains of Northern Greece, where are found *Juniperus communis* ssp. *hemisphaerica, Dapne oleoides, Festuca* sp. etc., and a purely Alpine zone

at the tops of the highest mountains of Northern Greece (Olympus, Tymfi, Smolikas, Voras, Falakron) with purely Alpine vegetation (Poion violacea etc.).

Fauna

The geographical position of Greece which is located between Europe, Asia and Africa, the climate and the variety of biotopes contribute to the special character and the large number of its animal species. However, the expansion and intensification of human activities have increased the pressures to the wildlife of Greece. Today there are still many gaps in our knowledge of the Greek fauna. Although invertebrates are the most poorly studied group of animals, there may also be vertebrates that have not yet been recorded. In particular, the total vertebrates number encountered in Greece is around 670 species and subspecies, whereas invertebrates are estimated to reach 20,000 although an invertebrate chek-list for Greece has not yet been produced.

II. BIODIVERSITY IN GREECE AND THE ROLE OF THE NATURA 2000 NETWORK

by Spyros Dafis

After the Rio Convention in 1992 the term "biodiversity" entered our lives, more or less as a panacea which would solve all ecological problems. However the term had been used long before Rio to express the diversity of life forms to be found in a particular place. Despite the simplicity and clarity of the term its content is one of the most abstract and debatable in ecology. The reason is that there are not one but many biodiversities at different levels of biological organisation, and that there is no uniform method of expressing or rather assessing this. In practice, four different levels of biodiversity can be distinguished, each having its own special value while at the same time being an inseparable part of the whole.

The **first level** is that of "**genetic diversity**". Genetic diversity refers to the range of genotypes in a particular species. The greater the range the more tolerent the species in the face of external stresses such as pests and diseases, adverse climatic changes, etc. It is clear that natural species have a far greater range of genotypes than artificial or genetically improved species and hence are more robust and adaptable than the latter. In Greece, due to its geographical position, variety of climate zones, mountainous terrain and history, plant and especially tree species show a high degree of genetic diversity, which has so far been very little studied. During the Ice Age, many Central and Northern European species migrated southwards and reached Greece, thus creating either heterogeneous populations of one species or hybrids with the pre-existing species, and in this way expanding the range of genotypes. Well-known examples are the King Boris fir which is hybrid of cephalonian and silver fir, and the moesiac beech, hybrid of oriental and common beech. In these hybrid populations one meets all the variations and intermediate stages between the one species and the other, depending on the latitude and local climate. Another example of heterogeneity and consequently great genetic diversity comes from the population analysis of the scots pine in Pieria and the spruce in Rhodope. These species reached Greece during the Ice Ages from different regions, whose characteristics they bear even today. Thus within a small area the scots pine is to be found in all its forms from tall, narrow, thin-branched Alpine types to rounded, thick-branched types from the plains of Poland. The same goes for the Norway spruce: types dispersed in Central Europe are found in Greece gathered together in a relatively small area. This large genetic diversity of the above species (fir, beech, scots pine and spruce) is to be found in almost all Greek forest species. The same is probably true for other Greek plant and animal species. This, together with the great advantage that the country's ecosystems have, despite considerable degradation, remained qualitatively in their natural composition, makes Greece very important as a gene bank and in general a reserve of genetic material that needs to be studied and conserved.

The **second level** is that of **species biodiversity**. This biodiversity is expressed as the

number of plant and animal species to be found in a particular area. For many researchers however this definition is insufficient. They believe that the number of species does not always give a true measure of biodiversity, as the species population, the size of individuals, their biomass and the dominance of certain species also enter into the equation. Others measure biodiversity by the number of functions performed by the species in a particular ecosystem, in other words the number of niches. Since, however, it is difficult to evaluate all these parameters, for the time being we must be content to define species biodiversity as the number of plant and animal species found in a particular area or ecosystem. Species biodiversity is of obvious importance to ecological balance, the stability and operation of the feedback mechanisms in an ecosystem. The more species there are in an ecosystem, the more stable the system, the denser the food web and the biosystems, the smoother the biomass and energy flows and nutrient recycling, and the more efficient the operation of the feedback mechanisms. Apart from this, many organisms have in the course of their ontogenetic development become closely associated with other organisms, so that the existence of the one depends on the existence of the other. This is why the extinction of a species can have unforseable consequences. Greece, for the reasons mentioned above, presents high species diversity. Indeed, for its size it contains the greatest biodiversity of all Member States of the European Union. Although this level of biodiversity has been studied more than any other, there is still need for further work, particularly as regards the spatial distribution of species.

The **third level** is that of **habitat diversity**, expressed as the number of links between plant and animal species (habitats) found in a particular area. The number of habitats and their spatial distribution form a mosaic of habitat types which puts its stamp on the landscape of the area, so by protecting habitats not only one protects the species that compose them but also preserves the character of the landscape. Greece, due to its large number of links between plant and animal species, presents great habitat diversity, which unfortunately has been insufficiently studied despite its obvious importance. The competent authorities should accept the pressing need to map the country's plant communities, as being of vital importance for the conservation of Greece's natural environment.

The **fourth level** of biodiversity is that of **landscape diversity**, expressed as the number of landscape types in an area. Landscapes include not only natural habitats but also man-made ecosystems such as farmland and human habitations. The number of natural or man-made habitat types, their spatial distribution and relative frequency determine the character of the landscape. In addition to landscape architecture, which is taught in many educational institutions, recently the new science of landscape ecology has been developed, to study the interactions and interrelationships between the ecosystems that compose a landscape and especially between natural and man-made ecosystems.

Greece has great landscape biodiversity, for the same reasons that it has great genetic, species and habitat biodiversity. The landscapes range from the semi-desert of Eastern Crete to the Scandinavian (northern) of Rhodope and the Alpine of Mts. Olympus, Smolikas, Timfi, Voras and the other mountain ranges of Northern Greece. Within the relatively short distance from town Amphipolis to Central Rhodope one meets all the landscape types from the Mediterranean, with olives, holm oak and *Arbutus sp.*, to the northern landscapes of boreal conifer forests with Norway spruce, Scots pine and birch.

To sum up, one can say that Greece possesses a high degree of biodiversity at all levels-genetic, species, habitat and landscape.

Regardless of the distinctions between the different levels, biodiversity must be conserved as a continuum, as one entity. The conservation of each level depends on the conservation of

the levels above and below. Landscape protection and conservation depends on the conservation of the biodiversity of the component habitats. The stability of the habitats depends on protection and conservation of the species that contribute to their structure, that is the species biodiversity, and the protection and survival of the species depends on the conservation of their genetic biodiversity, the conservation of the full range of genotypes.

In closing we would like to stress that the conservation of biodiversity at all levels is not a romantic ideal but a precondition for the sustainable management of natural resources, and consequently for the survival of man himself.

The implementation of Directive 92/43/EEC for the conservation of natural habitats and wildlife and the creation of the European NATURA 2000 network will contribute significantly to biodiversity conservation. The greatest strength of the directive is that it aims to protect species and habitats via a network of protected sites. This will provide comprehensive protection of biodiversity, the principal aim of the directive and the NATURA 2000 network. Unfortunately, the Annexes to the directive listing the natural habitat types and plant and animal species of Community interest do not make allowance for the great biodiversity found in Greece. A significant number of habitat types and an even larger number of native endangered species of the country's wealth of flora and fauna have been left out of these Annexes. The competent Greek authorities must work to ensure that these habitat types and native plant and animal species are included in the forthcoming adaptation of the Directive. The inventory being drawn up as part of the implementation of Directive 92/43/EEC in Greece could contribute significantly to this goal, as could the researchers whose dedicated work has made it possible.

PART A

THE GREEK HABITAT PROJECT:

"INVENTORY, IDENTIFICATION, EVALUATION AND MAPPING OF THE HABITAT TYPES AND FLORA AND FAUNA SPECIES IN GREECE (DIRECTIVE 92/43/EEC)"

A.1. STRUCTURE OF THE GREEK HABITAT PROJECT

by Maria Papageorgiou

The identification of sites eligible to be insluded in the "Natura 2000" network has been carried out in all Member States of the European Union since 1992, and is considered as the backbone of all the activities on environmental protection. Given the great biodiversity and composition of the natural habitats, our country is going to play an important role in this European effort.

The implementation of the Directive 92/43/EEC in Greece started with the execution of the project "Inventory, Identification, Evaluation and Mapping of the Habitat types and Flora and Fauna species in Greece (Directive 92/43/EEC)" which was approved by the competent Community committees (Habitat Committee 3-4/6/94 and Life Committee 5-6/10/94) and has been executed by the Goulandris Natural History Museum through the Greek Biotope/Wetland Centre (EKBY), in co-operation with the Schools of Biology at the Universities of Athens, Thessaloniki and Patras between 1/6/1994 and 31/3/1996, following a three-month extension. The project was funded 75% by the EU and 25% by the Greek National Authorities, i.e, the Ministry of Environment, Phusical Planning and Public Works and the Ministry of Agriculture (General Secreteriat of Forests and Natural Environment). The total amount of funding came up to 1,301,333 ECUs.

The beneficiary (i.e. The Goulandris Natural History Museum) through the project's Management Team and with the full coordinative and scientific support from the Greek Biotope/Wetland Centre, coordinated the project. A Management team comprising the Project Manager, the Deputy Project Manager, the Administration Officer, and the Accountant was responsible for putting at the disposal of those in charge of the scientific work, the available information, in order to best implement the project. The above team was also responsible for the general co-ordination, and for passing information and discussion issues to the Steering Committee. The latter, consisted of representatives of the two Ministries, the Project Manager, the Deputy Project Manager, the Administrative Officer and three scientific co-ordinators (leaders), representing the three University Schools that participated in the project.

The scientific structure of the project, integrated a multidisciplinary team of about one hundred scientists which together spanned the whole range of specializations required by the directive. The Greek Biotope/Wetland Centre along with the three Schools of Biology of the Universities of Athens, Thessaloniki and Patras and also relevant research organisations (such as the National Centre for Marine Research, the Institute of Forestry Research etc.), formed the working team.

For the purposes of the project, Greece had been divided into three geographical regions, for every one of which, a scientific co-ordinator, was put in charge. More specifically, Dr. Dimitrios Babalonas, Associate Professor of Botany at the School of Biology of the University of Thesssaloniki, led the team that had undertaken the execution of the project in the

geographical region of Thrace, Eastern, Central and Western Macedonia and part of Thessaly. Dr. Kyriacos Georghiou, Assistant Professor of Botany at the School of Biology of the University of Athens, was the scientific co-ordinator of the team that had undertaken the execution of the project in the geographical region of Sterea Ellada, Attika, part of Thessaly, Northern and Southern Aegean and Crete. Professor Theodoros Georgiadis, from the School of Biology of the University of Patras, was the scientific co-ordinator of the team that had undertaken the execution of the project in the geographical region of Epirus, Western Greece, the Peloponnese and the Ionian islands.

The members of the working team provided the required information, filled in the Standard Data Forms (SDFs) and delivered them centrally at EKBY. Interchange of information between the different working teams was essential throughout the project. Additional literature research and field visits were conducted in order to cover the identified gaps while quality control was further enhanced with the formation of groups of experts on flora, fauna and habitat types, in order to further clarify nomenclature and distribution problems.

The output of the project serves as the baseline for the development of a national strategy towards environmental protection and wise use of habitat types and plant and animal species of special value.

A.2. DIRECTIVE IMPLEMENTATION - SITE SELECTION PROCEDURE

by ***Thalia Lazaridou, Maria Papageorgiou*** *and* ***Vasiliki Tsiaoussi***

In the framework of the project, 296 sites were selected and studied mainly with regard to the habitat types of Annex I and the plant and animal species of Annex II (Dafis & Collaborators 1995). A significant number of other important species which occur in Greece, not included in Annex II, i.e., endangered, rare, endemics and/or protected species under several international conventions were also identified and recorded. Out of the 255 habitat types listed in Annex I to Directive 92/43/EEC, 110, that is about 43% are present in Greece. Furthermore, 76 animal and 39 plant species have been encountered in Greece between those mentioned in the directive giving a percentage of 38.2% and 9% respectively. It is obvious, that as far as it regards the richness of the Greek flora, the directive does not reflect the biodiversity and the need for conservation of the species present in Greece. Twenty six out of the 110 habitats are priority ones (Table A.1). Ten of the total 76 animal species are priority species and belong to the following groups: 2 mammals, 3 invertebrates, 3 fish, and 2 reptiles. Finally, 26 out of the 39 plant species encountered in Greece are priority species (Table A.1).

TABLE A.1. Summary table of habitat types and species in Greece, in comparison with those listed in Annexes I and II of the Directive, respectively.

	Directive 92/43/EEC		G R E E C E			
	Total No	No of Priority (*)	Total No No	No of Priority (*)	% Total	% Priority
HABITAT TYPES	**255**	**91**	**110**	**26**	**43**	**28.6**
Coastal and halo-phytic habitats	22	5	14	5	63.6	100
Coastal sand dunes and continental dunes	30	12	10	2	33	17
Freshwater habitats	19	2	11	1	58	50
Temperate heath and scrub	9	5	1	-	11	-
Sclerophyllous scrub (matorral)	21	3	13	1	62	33
Natural and semi- natural grassland formations	26	8	17	8	65	100
Raised bogs, mires and fens	10	6	4	4	40	67
Rocky habitats and caves	23	2	12	1	52	50
Forests	66	30	31	9	47	30
ANIMALS (total)	**199**	**27**	**76**	**10**	**38.2**	**37**
Mammals	38	11	22	2	58	18.2
Reptiles	19	3	10	2	53	67
Amphibians	19	3	4	-	21	-
Fish	62	5	28	3	45.2	60
Invertebrates	61	5	12	3	19.7	60
PLANTS	**433**	**164**	**39**	**26**	**9**	**16**

The sites studied cover the entire country: 19 are in Thrace, 25 in Eastern Macedonia, 33 in Central Macedonia, 13 in Western Macedonia, 16 in Thessaly, 19 in Epirus, 20 in Central Greece, 27 in Western Greece, 15 in the Ionian islands, 26 in the Peloponnese, 9 in Attica, 10 in the North Aegean, 30 in the South Aegean and 34 in Crete. Altogether they cover 18% of the land surface of Greece, or approximately 2,360,000 ha, excluding the entirely marine sites.

The choice and delineation of the above sites was based on a combination of the following two approaches: biodiversity, according to which the boundaries followed the outline of the habitat types of Annex I, and landscape ecology, according to which the boundaries include a larger number of habitat types and mostly follow natural boundaries. The list of the studied sites for which Standard Data Forms (S.D.F.) have been filled in is given in table A.2.

TABLE A. 2. List of sites for which S.D.F. have been filled in.

SITECODE	SITE NAME
GR1110001	DELTA EVROU
GR1110002	DASOS DADIAS-SOUFLI
GR1110003	TREIS VRISES
GR1110004	FENGARI SAMOTHRAKIS
GR1110005	VOUNA EVROU
GR1110006	APALOS
GR1120001	LIMNI VISTONIDA KAI LIMNOTHALASSA PORTO LAGOS
GR1120002	LIMNOTHALASSES LAFRI & LAFROUDA
GR1120003	OROS CHAIDOU-KOULA & GYRO KORYFES
GR1120004	AISTHITIKO DASOS NESTOU
GR1130001	LIMNI MITRIKOU
GR1130002	LIMNOTHALASSA XIROLIMNI
GR1130003	LIMNOTHALASSA KARATZA
GR1130004	LIMNOTHALASSA ALYKI (MESI)
GR1130005	LIMNOTHALASSA PTELEA
GR1130006	POTAMOS - KOILADA FILIOURI
GR1130007	KOILADA KOMSATOU
GR1130008	MARONEIA-SPILAION
GR1130009	LIMNES & LIMNOTHALASSES TIS THRAKIS
GR1140001	DASOS FRAKTOU
GR1140002	RODOPI (SIMYDA)
GR1140003	PERIOCHI ELATIA
GR1140004	KORYFES OROUS FALAKRO
GR1140005	KEFALARI
GR1140006	MYLOPOTAMOS
GR1140007	PARTHENO DASOS KENTRIKIS RODOPIS
GR1150001	DELTA NESTOU
GR1150002	LIMNOTHALASSES KERAMOTIS
GR1150003	OROS YPSARI THASOU
GR1150004	VOUNA LIMNIA
GR1150005	KORYFES OROUS PANGAIO
GR1150006	AKROTIRIO PRINOU-PACHI
GR1150007	LIMENARIA-AKROTIRIO KEPHALAS
GR1150008	ORMOS POTAMIAS
GR1150009	KOLPOS PALAIOU-ORMOS ELEFTHERON
GR1150010	DELTA NESTOU & LIMNOTHALASSES KERAMOTIS
GR1210001	OROS VERMIO
GR1210002	STENA ALIAKMONA
GR1220001	LIMNES VOLVI KAI LAGKADA
GR1220002	DELTA AXIOU-LOUDIA-ALIAKMONA
GR1220003	STENA RENTINAS
GR1220004	LIMNOTHALASSA EPANOMIS
GR1220005	LIMNOTHALASSA ANGELOCHORIOU
GR1220006	PROIN LIMNI LANTZA

TABLE A.2. (cont.)

SITECODE	SITE NAME
GR1220007	POTAMOS AXIOS
GR1220008	AGIA TRIADA
GR1230001	LIMNI PIKROLIMNI
GR1230002	YDROCHARES DASOS MOURION
GR1240001	KORYFES OROUS VORAS
GR1240002	ORI TZENA
GR1240003	OROS PAIKO
GR1240004	LIMNI AGRA
GR1240005	STENA APSALOU-MOGLENITSAS
GR1250001	OROS OLYMPOS
GR1250002	PIERIA ORI
GR1250003	OROS TITAROS
GR1250004	ALYKI KITROUS
GR1250005	ETHNIKOS DRYMOS OLYMPOU
GR1260001	LIMNI KERKINI-KROUSIA-KORYFES OROUS BELES
GR1260002	EKVOLES POTAMOU STRYMONA
GR1260003	AI GIANNIS
GR1260004	KORYFES OROUS MENOIKIO-OROS KOUSKOURAS
GR1260005	KORYFES OROUS ORVILOS
GR1260006	OROS KERDYLLIA
GR1260007	ORI VRONTOUS-LAILIAS
GR1260008	TECHNITI LIMNI KERKINIS
GR1270001	OROS CHOLOMONTAS
GR1270002	OROS ITAMOS-SITHONIA
GR1270003	CHERSONISOS ATHOS
GR1270004	LIMNOTHALASSA AGIOU MAMA
GR1270005	OROS STRATONIKON
GR1270006	ORMOS TORONIS
GR1270007	AKROTIRIO ELIA-AKROTIRIO KASTRO
GR1270008	PALIOURI
GR1270009	PLATANITSI-SYKIA
GR1270010	AKROTIRIO PYRGOS-ORMOS KYPSAS
GR1270011	AFYTOS
GR1310001	VASILITSA
GR1310002	ETHNIKOS DRYMOS PINDOU
GR1310003	ETHNIKOS DRYMOS PINDOU (VALIA KALDA). (EVRYTERI PERIOCHI).
GR1320001	LIMNI KASTORIAS
GR1320002	KORYFES OROUS GRAMMOS
GR1330001	OROS VOURINO (MESIANO NERO)
GR1330002	KORYFES OROUS SINIATSIKO
GR1330003	ARKEUTHI KOZANIS-PTOLEMAIDAS
GR1330004	OROS PORTA
GR1340001	ETHNIKOS DRYMOS PRESPON
GR1340002	LIMNI MIKRI PRESPA
GR1340003	ORI VARNOUNTA
GR1340004	LIMNES VEGORITIDA-PETRON
GR1340005	LIMNES CHEIMADITIDA-ZAZARI
GR1340006	OROS VERNON-KORYFI VITSI
GR1410001	PERIOCHI LIMNIS TAVROPOU
GR1410002	AGRAFA
GR1420001	KATO OLYMPOS
GR1420002	DELTA PINEIOU-TEMPI

TABLE A.2. (cont.)

SITECODE	SITE NAME
GR1420003	AISTHITIKO DASOS OSSAS
GR1420004	KARLA - MAVROVOUNI - KEFALOVRYSO VELESTINOU
GR1420005	AISTHITIKO DASOS KOILADAS TEMPON
GR1430001	OROS PILIO
GR1430002	ELOS SOURPIS - KOURI ALMYROU
GR1430003	SKIATHOS: KOUKOUNARIES
GR1430004	ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS
GR1440001	ASPROPOTAMOS
GR1440002	KERKETIO OROS (KOZIAKAS)
GR1440003	ANTICHASIA ORI - METEORA
GR1440004	STENA KALAMAKIOU
GR2110001	AMVRAKIKOS KOLPOS, DELTA LOUROU KAI ARACHTHOU (EVRYTERI PERIOCHI)
GR2110002	ORI ATHAMANON (TZOUMERKA)
GR2110003	KOILADA ACHELOOU
GR2110004	AMVRAKIKOS KOLPOS
GR2120001	EKVOLES (DELTA) KALAMA
GR2120002	ELOS KALODIKI
GR2120003	LIMNI LIMNOPOULA PARAMYTHIAS
GR2120004	STENA KALAMA
GR2130001	ETHNIKOS DRYMOS VIKOU-AOOU
GR2130002	KORYFES OROUS SMOLIKAS
GR2130003	ORAIOKASTRO, LIMNI DELVINAKIOU, DASOS MEROPIS KAI KOILADA GORMOU.
GR2130004	KENTRIKO TMIMA ZAGORIOU
GR2130005	LIMNI IOANNINON
GR2130006	PERIOCHI METSOVOU (ANILIO-KATARA)
GR2130007	OROS LAKMOS (PERISTERI)
GR2130008	OROS MITSIKELI
GR2140001	EKVOLES ACHERONTA KAI STENA ACHERONTA
GR2140002	ORI ZALONGOU
GR2140003	PARAKTIA THALASSIA ZONI APO PARGA EOS AKROTIRIO AGIOS THOMAS (PREVEZA)
GR2210001	PARAKTIA ZONI VOREIODYTIKIS ZAKYNTHOU
GR2210002	KOLPOS LAGANA ZAKYNTHOU KAI NISIDES MARATHONISI KAI PELOUZO
GR2210003	NISOI STROFADES
GR2220001	KALON OROS KEFALONIAS
GR2220002	ETHNIKOS DRYMOS AINOU
GR2220003	ESOTERIKO ARCHIPELAGOS IONIOU(THALASSIA PERIOCHI MEGANISIOU, KALAMOU, KASTOU, ARKOUDIOU, ATOKOU KAI NISOI ECHINADES)
GR2220004	PARAKTIA THALASSIA ZONI APO ARGOSTOLI EOS VLACHATA (KEFALONIA)
GR2230001	LIMNOTHALASSA ANTINIOTI (KERKYRA)
GR2230002	LIMNOTHALASSA KORISSION (KERKYRA)
GR2230003	ALYKI LEFKIMIS (KERKYRA)
GR2230004	NISOI PAXI KAI ANTIPAXI
GR2230005	PARAKTIA THALASSIA ZONI APO KANONI EOS MESONGI (KERKYRA)
GR2230006	PARAKTIA THALASSIA ZONI APO PALAIOKASTRITSA EOS GLYFADA (KERKYRA)
GR2240001	LIMNOTHALASSES STENON LEFKADAS (PALIONIS-AVLIMON) KAI ALYKES LEFKADAS
GR2240002	PERIOCHI CHORTATON (LEFKADA)
GR2310001	DELTA ACHELOOU, LIMNOTHALASSA MESOLONGIOU-AITOLIKOU KAI EKVOLES EVINOU

TABLE A.2. (cont.)

SITECODE	SITE NAME
GR2310002	LIMNOTHALASSES MESOLONGIOU
GR2310003	ORI AKARNANIKA
GR2310004	OROS PANAITOLIKO
GR2310005	OROS VARASOVA
GR2310006	LIMNES VOULKARIA KAI SALTINI
GR2310007	LIMNI AMVRAKIA
GR2310008	LIMNI OZEROS
GR2310009	LIMNES TRICHONIDA KAI LYSIMACHIA
GR2310010	OROS ARAKYNTHOS KAI STENA KLEISOURAS
GR2320001	LIMNOTHALASSA KALOGRIAS, DASOS STROFILIAS KAI ELOS LAMIAS
GR2320002	OROS CHELMOS KAI YDATA STYGOS
GR2320003	FARANGI VOURAIKOU
GR2320004	AISTHITIKO DASOS KALAVRYTON
GR2320005	ORI MARMPAS KAI KLOKOS, FARANGI SELINOUNTA
GR2320006	ALYKI AIGIOU
GR2320007	OROS PANACHAIKO
GR2320008	OROS ERYMANTHOS
GR2320009	SPILAIO KASTRION
GR2330001	EKVOLES (DELTA) ALFEIOU
GR2330002	OROPEDIO FOLOIS
GR2330003	EKVOLES (DELTA) PINEIOU
GR2330004	OLYMPIA
GR2330005	THINES KAI PARALIAKO DASOS ZACHAROS, LIMNI KAIAFA
GR2330006	LIMNOTHALASSA KOTYCHI
GR2330007	PARAKTIA THALASSIA ZONI APO KALOGRIA EOS KYLLINI
GR2330008	THALASSIA PERIOCHI KOLPOU KYPARISSIAS
GR2410001	LIMNES YLIKI & PARALIMNI - SYSTIMA VOIOTIKOU KIFISSOU
GR2410002	ETHNIKOS DRYMOS PARNASSOU
GR2420001	OROS OCHI - KAMPOS KARYSTOU - POTAMI - AKROTIRIO KAFIREFS
GR2420002	DIRFYS: DASOS STENIS - DELFI
GR2420003	OROS KANTILI - KOILADA PROKOPIOU - DELTA KIREA
GR2420004	MEGALO KAI MIKRO LIVARI - DELTA XIRIA - YDROCHARES DASOS AG. NIKOLAOU
GR2420005	TELETHRIO - LICHADA - GIALTRA
GR2420006	SKYROS: OROS KOCHYLAS
GR2430001	OROS TYMFRISTOS (VELOUCHI)
GR2430002	TECHNITI LIMNI KREMASTON
GR2440001	YGROTOPOS KAI NISIA TOU KOLPOU ATALANTIS
GR2440002	KOILADA KAI EKVOLES SPERCHEIOU - MALIAKOS KOLPOS
GR2440003	FARANGI GORGOPOTAMOU
GR2440004	ETHNIKOS DRYMOS OITIS
GR2450001	ORI VARDOUSIA
GR2450002	OROS GKIONA
GR2450003	POTAMOS MORNOS KAI TECHNITI LIMNI MORNOU
GR2450004	PARALIAKI ZONI APO NAFPAKTO EOS ITEA
GR2450005	NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS
GR2510001	OROS ARACHNAIO
GR2510002	OROS DIDYMO
GR2510003	AKRONAFPLIA KAI PALAMIDI
GR2520001	OROS MAINALO
GR2520002	LIMNI TAKA

TABLE A.2. (cont.)

SITECODE	SITE NAME
GR2520003	PERIOCHI PARALIOU ASTROUS KAI LIMNOTHALASSAS MOUSTOU
GR2520004	OROS ORIONTAS
GR2520005	MONI ELONAS KAI CHARADRA LEONIDIOU
GR2520006	OROS PARNONAS (KAI PERIOCHI MALEVIS)
GR2530001	KORYFES OROUS KYLLINI (ZIREIA) KAI CHARADRA FLAMPOURITSA
GR2530002	LIMNI STYMFALIA
GR2530003	AKROKORINTHOS
GR2530004	OROS OLIGYRTOS
GR2530005	ORI GERANIA
GR2540001	ORI GIDOVOUNI, CHIONOVOUNI, GAIDOUROVOUNI, KORAKIA, KALOGEROVOUNI, KOULOCHERA KAI PERIOCHI MONEMVASIAS
GR2540002	PERIOCHI NEAPOLIS (VOION) KAI NISOS ELAFONISOS
GR2540003	EKVOLES EVROTA
GR2540004	NOTIA MANI, OROS SANGIAS KAI AKROTIRIO TAINARO
GR2540005	LAGKADA TRYPIS
GR2550001	FARANGI KAI EKVOLES NEDONA
GR2550002	PIGES KAI EKVOLES PAMISOU
GR2550003	NISOI SAPIENTZA KAI SCHIZA, AKROTIRIO AKRITAS
GR2550004	LIMNOTHALASSA PYLOU (DIVARI) KAI NISOS SFAKTIRIA
GR2550005	THINES KYPARISSIAS
GR2550006	OROS TAYGETOS
GR2550007	THALASSIA PERIOCHI STENOY METHONIS
GR3000001	OROS PARNITHA
GR3000002	OROPOS - EKVOLES ASOPOU
GR3000003	SCHINIAS
GR3000004	VRAVRONA
GR3000005	SOUNIO - NISIDA PATROKLOU
GR3000006	YMITTOS - AISTHITIKO DASOS KAISARIANIS - LIMNI VOULIAGMENIS
GR3000007	KYTHIRA: KARAVAS EOS MYLOPOTAMO - PALAIOPOLI - AVLEMONAS
GR3000008	ANTIKYTHIRA - PRASSONISI KAI LAGOUVARDO
GR3000009	ETHNIKOS DRYMOS PARNITHAS
GR4110001	LIMNOS: CHORTAROLIMNI - LIMNI ALYKI
GR4110002	AGIOS EFSTRATIOS
GR4110003	LESVOS: DYTIKI CHERSONISOS - APOLITHOMENO DASOS
GR4110004	LESVOS: KOLPOS KALLONIS
GR4110005	LESVOS: KOLPOS GERAS, ELOS NTIPI KAI OROS OLYMPOS
GR4120001	SAMOS: ALYKI
GR4120002	SAMOS: OROS AMPELOS (KARVOUNIS)
GR4120003	SAMOS: OROS KERKETEFS - MIKRO KAI MEGALO SEITANI - DASOS KASTANIAS KAI LEKKAS
GR4120004	IKARIA - FOURNOI
GR4130001	VOREIA CHIOS KAI NISOI OINOUSES
GR4210001	KASOS KAI KASONISIA
GR4210002	KENTRIKI KARPATHOS: KALILIMNI - LASTHOS - KYRA PANAGIA
GR4210003	VOREIA KARPATHOS KAI SARIA
GR4210004	KASTELLORIZO KAI NISIDES RO KAI STRONGYLI
GR4210005	RODOS: AKRAMYTIS, ARMENISTIS, ATTAVYROS
GR4210006	RODOS: PROFITIS ILIAS - EPTA PIGES - PETALOUDES
GR4210007	NISYROS KAI STRONGYLI
GR4210008	KOS: AKROTIRIO LOUROS - LIMNI PSALIDI - OROS DIKAIOS - ALYKI
GR4210009	ASTYPALAIA: ANATOLIKO TMIMA, GYRO NISIDES KAI OFIDOUSA
GR4210010	ARKOI, LEIPSOI, AGATHONISI KAI VRACHONISIDES

TABLE A.2. (cont.)

SITECODE	SITE NAME
GR4210011	VRACHONISIA NOTIOU AIGAIOU: VELOPOULA, FALKONERA, ANANES, CHRISTIANA, PACHEIA, FTENO, MAKRA, ASTAKIDONISIA, SYRNA-GYRO NISIA
GR4220001	ANDROS: ORMOS VITALI KAI KENTRIKOS OREINOS OGKOS
GR4220002	ANAFI: CHERSONISOS KALAMOS - ROUKOUNAS
GR4220003	SANTORINI: NEA KAI PALIA KAMENI - PROFITIS ILIAS
GR4220004	FOLEGANDROS ANATOLIKI MECHRI DYTIKI SIKINO
GR4220005	DYTIKI MILOS
GR4220006	NISOS POLYAIGOS
GR4220007	NISOS ANTIMILOS
GR4220008	SIFNOS: PROFITIS ILIAS MECHRI DYTIKES AKTES
GR4220009	NOTIA SERIFOS
GR4220010	VOREIODYTIKI KYTHNOS: OROS ATHERAS KAI AKROTIRIO KEFALOS
GR4220011	ANATOLIKI KEA
GR4220012	VOREIA AMORGOS KAI KYNAROS, LEVITHA, MAVRIA
GR4220013	MIKRES KYKLADES: APO KERO MECHRI IRAKLEIA
GR4220014	KENTRIKI KAI NOTIA NAXOS: ZEFS KAI VIGLA EOS MAVROVOUNI
GR4220015	ALYKI NAXOU
GR4220016	NISOS PAROS: PETALOUDES
GR4220017	NISOI DESPOTIKO KAI STRONGYLO
GR4220018	SYROS: OROS SYRINGAS OS PARALIA
GR4220019	TINOS: MYRSINI - AKROTIRIO LIVADA
GR4310001	ALMYROU FARANGI KAI YGROTOPOS
GR4310002	GIOUCHTAS - FARANGI AGIAS EIRINIS
GR4310003	NISOS DIA
GR4310004	DYTIKA ASTEROUSIA (APO AGIOFARANGO OS KOKKINO PYRGO)
GR4310005	ASTEROUSIA (KOFINAS)
GR4310006	DIKTI: OMALOS VIANNOU (SYMI - OMALOS)
GR4320001	MILATOS (MECHRI AKROTORIO AGIOU IOANNI)
GR4320002	DIKTI: OROPEDIO LASITHIOU, KATHARO, SELENA, KRASI, SELEKANOS
GR4320003	NISOS CHRYSI
GR4320004	MONI KAPSA (FARANGI KAPSA KAI GYRO PERIOCHI)
GR4320005	OROS THRYPTIS KAI GYRO PERIOCHI
GR4320006	VOREIOANATOLIKO AKRO KRITIS: DIONYSADES, ELASA KAI CHERSONISOS SIDERO (AKRA MAVROVOUNI - VAI - AKRA PLAKOS)
GR4320007	NOTIOANATOLIKO AKRO KRITIS KAI NISIDES KAVALLOI
GR4320008	NISOS KOUFONISI
GR4320009	AISTHITIKO DASOS VAI
GR4330001	PETRE FARANGI KAI PETRES EOS PARALIA ZOURIDA
GR4330002	OROS KEDROS
GR4330003	KOURTALIOTIKO FARANGI - MONI PREVELI - EVRYTERI PERIOCHI
GR4330004	PRASIANO FARANGI - PATSOS - SFAKORYAKO REMA - PARALIA RETHYMNOU KAI EKVOLI GEROPOTAMOU
GR4330005	IDI OROS
GR4340001	IMERI KAI AGRIA GRAMVOUSA - TIGANI KAI FALASARNA - PONTIKONISI
GR4340002	NISOS ELAFONISOS - APENANTI PARALIA (APO CHRYSOSKALITISSA MECHRI AKROTIRIO KRIOS)
GR4340003	CHERSONISOS RODOPOU - PARALIA MALEME
GR4340004	ELOS - TOPOLIA - SASALOS - AGIOS DIKAIOS
GR4340005	SOUGIA - BARDIA - FARANGI LISSOU MECHRI ANYDROUS
GR4340006	LIMNI AGIAS - PLATANIAS - REMA KAI EKVOLI KERITI - KOILADA FASAS
GR4340007	FARANGI THERISSOU
GR4340008	LEFKA ORI

TABLE A.2. (cont.)

SITECODE	SITE NAME
GR4340009	VOREIO AKROTIRIO: AGIA TRIAS - MONI TSAGAROLON - GOUVERNETOU - KATHOLIKO
GR4340010	DRAPANO (VOREIOANATOLIKES AKTES) - PARALIA GEORGIOUPOLIS - LIMNI KOURNA
GR4340011	FRE - TZITZIFES - NIPOS
GR4340012	ASFENDOU - KALLIKRATIS
GR4340013	NISOI GAVDOS KAI GAVDOPOULA
GR4340014	ETHNIKOS DRYMOS SAMARIAS

The first phase of the project was completed on 20 April 1995, when all the Standard Data Forms (SDF) were returned to EKBY. This was followed by evaluation and checking of the data in the SDF's. The assessment of the above sites was based on the criteria laid down in Annex III to Directive 92/43/EEC and on the relevant scientific information. The criteria adopted for the Annex I habitat types were representativity, relative surface, conservation status, the possibility of restoration and the global assessment of the sites with respect to habitat types. The criteria used to evaluate the sites with regard to the Annex II species were assessment of population size and density, degree of preservation of habitat features of value to the species and the possibility of their restoration, the degree of isolation of the populations as well as the global assessment of the sites with regard to these criteria.

The sites were grouped into three categories (Table A.3) by taking into consideration the above criteria and also the presence of certain Annex I habitat types and Annex II species at the same site, their limited extent, the bird life, the presence of other important plant and animal species (threatened, endemic, protected under international conventions, etc.) and the protection status at national and/or international level (e.g. GR codes). All these sites are considered important for the conservation and effective restoration of natural habitat types and species habitats within their natural boundaries. Sites in categories A and B are of higher priority than those in category C.

Category A includes sites hosting Annex I habitat types or Annex II species not found elsewhere, sites with great biodiversity, priority habitats or species (Annexes I and II respectively), and sites with large numbers of other important Greek species. Category B covers sites with significant biodiversity but without unique habitat types or species. In addition, habitat types and priority species are less well represented than in category A sites. Category B sites meet at least some of the requirements of Annex III or contain important features, and for these reasons are proposed for inclusion in the NATURA 2000 network. Category C includes sites for which there are insufficient data to justify their urgent inclusion in the NATURA 2000 Network. Table A.4 includes the sites for which supplementary inventory forms have been completed (e.g. SPA sites etc.), although they are part of larger sites listed in Table A.3.

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network

CATEGORY A						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
1	GR1110001	DELTA EVROU	D	26° 00′ 00″	40° 52′ 00″	9267
2	GR1110003	TREIS VRISES	E	26° 01′ 10″	41° 08′ 00″	10300
3	GR1110004	FENGARI SAMOTHRAKIS	B	25° 30′ 00″	40° 28′ 00″	9550
4	GR1110005	VOUNA EVROU	I	26° 11′ 20″	41° 07′ 10″	42170
5	GR1120003	OROS CHAIDOU-KOULA & GYRO KORYFES	B	24° 48′ 00″	41° 20′ 00″	3209
6	GR1120004	AISTHTIKO DASOS NESTOU	C	24° 42′ 00″	41° 07′ 00″	2380
7	GR1130007	KOILADA KOMSATOU	K	25° 07′ 00″	41° 10′ 00″	9500
8	GR1130008	MARONEIA-SPILAION	B	25° 35′ 00″	40° 56′ 40″	
9	GR1130009	LIMNES & LIMNOTHALASSES TIS THRAKIS	J	25° 11′ 00″	41° 03′ 00″	2456
10	GR1140001	DASOS FRAKTOU	I	24° 30′ 00″	41° 32′ 40″	1072
11	GR1140002	RODOPI (SIMYDA)	B	24° 07′ 00″	41° 29′ 00″	7233
12	GR1140003	PERIOCHI ELATIA	B	24° 17′ 00″	41° 31′ 00″	6982
13	GR1140005	KEFALARI	B	24° 16′ 00″	41° 05′ 00″	500
14	GR1150005	KORYFES OROUS PANGAIO	B	24° 05′ 00″	40° 55′ 00″	10000
15	GR1150008	ORMOS POTAMIAS	E	24° 47′ 00″	40° 43′ 00″	289
16	GR1150009	KOLPOS PALAIOU-ORMOS ELEFTHERON	B	24° 20′ 00″	40° 51′ 00″	1220
17	GR1150010	DELTA NESTOU & LIMNOTHALASSES KERAMOTIS	F	24° 48′ 00″	40° 58′ 00″	21857
18	GR1210001	OROS VERMIO	B	22° 05′ 00″	40° 35′ 00″	22068
19	GR1220001	LIMNES VOLVI KAI LAGKADA	J	23° 20′ 00″	40° 41′ 00″	16388
20	GR1220002	DELTA AXIOU-LOUDIA-ALIAKMONA	J	22° 43′ 00″	40° 30′ 00″	11808
21	GR1220003	STENA RENTINAS	K	23° 40′ 00″	40° 40′ 00″	2878
22	GR1220007	POTAMOS AXIOS	K	22° 39′ 00″	40° 47′ 00″	7700
23	GR1230002	YDROCHARES DASOS MOURION	B	22° 45′ 00″	41° 13′ 00″	530
24	GR1240001	KORYFES OROUS VORAS	E	21° 55′ 00″	40° 58′ 30″	38917
25	GR1240002	ORI TZENA	E	22° 12′ 00″	41° 06′ 30″	12740
26	GR1240003	OROS PAIKO	E	22° 18′ 20″	41° 01′ 50″	35545
27	GR1250001	OROS OLYMPOS	I	22° 25′ 00″	40° 08′ 00″	17420
28	GR1250002	PIERIA ORI	E	22° 12′ 00″	40° 15′ 00″	17936
29	GR1250004	ALYKI KITROUS	G	22° 40′ 00″	40° 22′ 00″	1500
30	GR1260001	LIMNI KERKINI-KROUSIA-KORYFES OROUS BELES	I	23° 05′ 00″	41° 15′ 00″	72000
31	GR1260002	EKVOLES POTAMOU STRYMONA	B	23° 50′ 00″	40° 48′ 00″	1300
32	GR1260004	KORYFES OROUS MENOIKIO-OROS KOUSKOURAS	B	23° 50′ 00″	41° 14′ 00″	22800

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY A						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
33	GR1260005	KORYFES OROUS ORVILOS	B	23º 37′ 00″	41º 23′ 00″	5000
34	GR1260007	ORI VRONTOUS-LAILIAS	B	23º 50′ 00″	41º 16′ 00″	11500
35	GR1270002	OROS ITAMOS-SITHONIA	E	23º 50′ 00″	40º 09′ 00″	20000
36	GR1270003	CHERSONISOS ATHOS	B	24º 13′ 00″	40º 16′ 00″	22000
37	GR1270005	OROS STRATONIKON	B	23º 47′ 00″	40º 33′ 00″	9100
38	GR1270007	AKROTIRIO ELIA-AKROTIRIO KASTRO	E	23º 43′ 00″	40º 10′ 00″	165
39	GR1270008	PALIOURI	B	23º 40′ 00″	39º 58′ 00″	193
40	GR1270009	PLATANITSI-SYKIA	B	24º 00′ 00″	40º 00′ 50″	800
41	GR1310001	VASILITSA	E	21º 07′ 10″	40º 04′ 00″	8164
42	GR1310003	ETHNIKOS DRYMOS PINDOU (VALIA KALDA). (EVRYTERI PERIOCHI).	I	21º 08′ 00″	39º 54′ 00″	6780
43	GR1320002	KORYFES OROUS GRAMMOS	B	20º 50′ 20″	40º 21′ 00″	35000
44	GR1330001	OROS VOURINO (MESIANO NERO)	B	21º 40′ 00″	40º 11′ 00″	8340
45	GR1330002	KORYFES OROUS SINIATSIKO	B	21º 33′ 00″	40º 26′ 10″	7930
46	GR1340001	ETHNIKOS DRYMOS PRESPON	F	21º 05′ 00″	40º 46′ 00″	19470
47	GR1340003	ORI VARNOUNTA	E	21º 12′ 02″	40º 52′ 00″	6126
48	GR1340004	LIMNES VEGORITIDA-PETRON	B	21º 45′ 00″	40º 45′ 00″	12077
49	GR1340006	OROS VERNON-KORYFI VITSI	B	21º 26′ 10″	40º 40′ 00″	8194
50	GR1410001	PERIOCHI LIMNIS TAVROPOU	B	21º 47′ 00″	39º 20′ 00″	569
51	GR1410002	AGRAFA	B	21º 36′ 00″	39º 15′ 00″	10147
52	GR1420001	KATO OLYMPOS	E	22º 25′ 00″	39º 55′ 00″	12300
53	GR1420002	DELTA PINEIOU-TEMPI	I	22º 41′ 00″	39º 55′ 00″	9800
54	GR1420003	AISTHITIKO DASOS OSSAS	D	22º 41′ 00″	39º 48′ 00″	16900
55	GR1420004	KARLA - MAVROVOUNI - KEFALOVRYSO VELESTINOU	E	22º 49′ 00″	39º 37′ 00″	39520
56	GR1430001	OROS PILIO	E	23º 02′ 00″	39º 27′ 00″	30487
57	GR1430003	SKIATHOS: KOUKOUNARIES	B	23º 24′ 00″	39º 09′ 00″	32
58	GR1430004	ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS	B	24º 04′ 00″	39º 35′ 00″	251440
59	GR1440001	ASPROPOTAMOS	E	21º 16′ 00″	39º 39′ 00″	22853
60	GR1440002	KERKETIO OROS (KOZIAKAS)	B	21º 32′ 00″	39º 35′ 00″	45000
61	GR1440003	ANTICHASIA ORI - METEORA	B	21º 35′ 00″	39º 45′ 00″	56136
62	GR1440004	STENA KALAMAKIOU	B	22º 15′ 00″	39º 39′ 00″	1500
63	GR2110001	AMVRAKIKOS KOLPOS, DELTA LOUROU KAI ARACHTHOU (EVRYTERI PERIOCHI)	I	21º 00′ 00″	39º 00′ 00″	50637

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY A						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
64	GR2110002	ORI ATHAMANON (TZOUMERKA)	B	21º 09′ 00″	39º 26′ 00″	21873
65	GR2110003	KOILADA ACHELOOU	B	21º 23′ 00″	39º 18′ 00″	8467
66	GR2120001	EKVOLES (DELTA) KALAMA	B	20º 11′ 00″	39º 32′ 00″	8481
67	GR2120002	ELOS KALODIKI	B	20º 27′ 00″	39º 18′ 00″	845
68	GR2120003	LIMNI LIMNOPOULA PARAMYTHIAS	B	20º 27′ 00″	39º 29′ 00″	867
69	GR2130001	ETHNIKOS DRYMOS VIKOU-AOOU	C	20º 49′ 00″	40º 00′ 00″	12600
70	GR2130002	KORYFES OROUS SMOLIKAS	E	20º 55′ 30″	40º 06′ 00″	22000
71	GR2130003	ORAIOKASTRO, LIMNI DELVINAKIOU, DASOS MEROPIS KAI KOILADA GORMOU	B	20º 28′ 00″	39º 58′ 00″	21917
72	GR2130004	KENTRIKO TMIMA ZAGORIOU	E	20º 54′ 00″	39º 52′ 00″	33570
73	GR2130005	LIMNI IOANNINON	B	20º 53′ 00″	39º 40′ 00″	2707
74	GR2130007	OROS LAKMOS (PERISTERI)	E	21º 07′ 00″	39º 41′ 00″	20020
75	GR2140001	EKVOLES ACHERONTA KAI STENA ACHERONTA	E	20º 30′ 06″	39º 15′ 00″	4935
76	GR2140003	PARAKTIA THALASSIA ZONI APO PARGA EOS AKROTIRIO AGIOS THOMAS (PREVEZA)	E	20º 20′ 00″	39º 10′ 00″	1460
77	GR2210001	PARAKTIA ZONI VOREIODYTIKIS ZAKYNTHOU	B	20º 41′ 00″	37º 51′ 00″	2000
78	GR2210002	KOLPOS LAGANA ZAKYNTHOU KAI NISIDES MARATHONISI KAI PELOUZO	B	20º 52′ 00″	37º 43′ 00″	5013
79	GR2210003	NISOI STROFADES	B	21º 00′ 30″	37º 15′ 00″	553
80	GR2220002	ETHNIKOS DRYMOS AINOU	C	20º 41′ 00″	38º 09′ 00″	2862
81	GR2220003	ESOTERIKO ARCHIPELAGOS IONIOU (THALASSIA PERIOCHI MEGANISIOU, KALAMOU, KASTOU, ARKOUDIOU, ATOKOU KAI NISOI ECHINADES)	B	20º 56′ 00″	38º 30′ 00″	111144
82	GR2220004	PARAKTIA THALASSIA ZONI APO ARGOSTOLI EOS VLACHATA (KEFALONIA)	B	20º 34′ 00″	38º 06′ 00″	1050
83	GR2230001	LIMNOTHALASSA ANTINIOTI (KERKYRA)	B	19º 52′ 00″	39º 49′ 00″	200
84	GR2230002	LIMNOTHALASSA KORISSION (KERKYRA)	B	19º 55′ 00″	39º 27′ 00″	2350
85	GR2230004	NISOI PAXI KAI ANTIPAXI	B	20º 11′ 00″	39º 11′ 00″	5745
86	GR2230005	PARAKTIA THALASSIA ZONI APO KANONI EOS MESONGI (KERKYRA)	B	19º 55′ 00″	39º 33′ 00″	553
87	GR2310001	DELTA ACHELOOU, LIMNOTHALASSA MESOLONGIOU-AITOLIKOU KAI EKVOLES EVINOU	F	21º 15′ 00″	38º 20′ 00″	33687
88	GR2310003	ORI AKARNANIKA	B	21º 00′ 00″	38º 45′ 00″	32587
89	GR2310004	OROS PANAITOLIKO	E	21º 35′ 00″	38º 42′ 00″	18597
90	GR2310005	OROS VARASOVA	B	21º 36′ 00″	38º 21′ 00″	1487
91	GR2310008	LIMNI OZEROS	B	21º 13′ 00″	38º 39′ 00″	1253
92	GR2310009	LIMNES TRICHONIDA KAI LYSIMACHIA	B	21º 28′ 00″	38º 34′ 00″	14240

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY A						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
93	GR2310010	OROS ARAKYNTHOS KAI STENA KLEISOURAS	B	21° 26′ 00″	38° 28′ 00″	13327
94	GR2320001	LIMNOTHALASSA KALOGRIAS, DASOS STROFILIAS KAI ELOS LAMIAS	K	21° 22′ 00″	38° 10′ 00″	7093
95	GR2320002	OROS CHELMOS KAI YDATA STYGOS	E	22° 12′ 00″	37° 58′ 00″	17653
96	GR2320003	FARANGI VOURAIKOU	B	22° 10′ 00″	38° 05′ 00″	2167
97	GR2320005	ORI MARMPAS KAI KLOKOS, FARANGI SELINOUNTA	B	22° 02′ 00″	38° 09′ 00″	6113
98	GR2320007	OROS PANACHAIKO	B	21° 52′ 00″	38° 12′ 00″	12170
99	GR2320008	OROS ERYMANTHOS	B	21° 51′ 00″	37° 59′ 00″	19376
100	GR2320009	SPILAIO KASTRION	E	22° 08′ 00″	37° 57′ 00″	307
101	GR2330001	EKVOLES (DELTA) ALFEIOU	E	21° 27′ 00″	37° 37′ 00″	4957
102	GR2330002	OROPEDIO FOLOIS	B	21° 43′ 00″	37° 46′ 00″	9723
103	GR2330005	THINES KAI PARALIAKO DASOS ZACHAROS, LIMNI KAIAFA	E	21° 36′ 00″	37° 30′ 00″	3127
104	GR2330006	LIMNOTHALASSA KOTYCHI	J	21° 18′ 00″	38° 00′ 00″	6302
105	GR2330007	PARAKTIA THALASSIA ZONI APO KALOGRIA EOS KYLLINI	E	21° 17′ 00″	38° 01′ 00″	4385
106	GR2330008	THALASSIA PERIOCHI KOLPOU KYPARISSIAS	E	21° 30′ 00″	37° 20′ 00″	4910
107	GR2410001	LIMNES YLIKI & PARALIMNI - SYSTIMA VOIOTIKOU KIFISSOU	B	23° 13′ 00″	38° 25′ 00″	14000
108	GR2420001	OROS OCHI - KAMPOS KARYSTOU - POTAMI - AKROTIRIO KAFIREFS	B	24° 28′ 00″	38° 04′ 00″	15700
109	GR2420002	DIRFYS: DASOS STENIS - DELFI	B	23° 50′ 50″	38° 35′ 50″	1000
110	GR2420003	OROS KANTILI - KOILADA PROKOPIOU - DELTA KIREA	B	23° 25′ 00″	38° 43′ 00″	14000
111	GR2430001	OROS TYMFRISTOS (VELOUCHI)	B	21° 49′ 00″	38° 57′ 00″	4000
112	GR2440002	KOILADA KAI EKVOLES SPERCHEIOU - MALIAKOS KOLPOS	B	22° 27′ 30″	38° 52 36″	34000
113	GR2440004	ETHNIKOS DRYMOS OITIS	J	22° 17′ 00″	38° 50′ 00″	7210
114	GR2450001	ORI VARDOUSIA	B	22° 08′ 00″	38° 41′ 00″	19483
115	GR2450002	OROS GKIONA	B	22° 15′ 00″	38° 39′ 00″	21907
116	GR2450005	NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS	I	22° 23′ 00″	38° 31′ 30″	18400
117	GR2520001	OROS MAINALO	B	22° 17′ 00″	37° 39′ 00″	22796
118	GR2520006	OROS PARNONAS (KAI PERIOCHI MALEVIS)	E	22° 37′ 00″	37° 17′ 00″	55593
119	GR2530001	KORYFES OROUS KYLLINI (ZIREIA) KAI CHARADRA FLAMPOURITSA	B	22° 24′ 00″	37° 56′ 00″	24530
120	GR2530002	LIMNI STYMFALIA	B	22° 28′ 00″	37° 51′ 00″	1317
121	GR2530004	OROS OLIGYRTOS	B	22° 23′ 00″	37° 48′ 00″	8620
122	GR2530005	ORI GERANIA	B	23° 08′ 00″	38° 01′ 00″	6989

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY A						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
123	GR2540001	ORI GIDOVOUNI, CHIONOVOUNI, GAIDOUROVOUNI, KORAKIA, KALOGEROVOUNI, KOULOCHERA KAI PERIOCHI MONEMVASIAS	B	22° 55′ 00″	36° 55′ 00″	29093
124	GR2540002	PERIOCHI NEAPOLIS (VOION) KAI NISOS ELAFONISOS	B	23° 01′ 00″	36° 31′ 00″	26880
125	GR2540003	EKVOLES EVROTA	B	22° 42′ 00″	36° 49′ 00″	5820
126	GR2540004	NOTIA MANI, OROS SANGIAS KAI AKROTIRIO TAINARO	B	22° 26′ 00″	36° 39′ 00″	31387
127	GR2540005	LAGKADA TRYPIS	E	22° 18′ 00″	37° 05′ 00″	1607
128	GR2550003	NISOI SAPIENTZA KAI SCHIZA, AKROTIRIO AKRITAS	E	21° 46′ 00″	36° 44′ 00″	11253
129	GR2550004	LIMNOTHALASSA PYLOU (DIVARI) KAI NISOS SFAKTIRIA	B	21° 40′ 00″	36° 58′ 00″	3350
130	GR2550005	THINES KYPARISSIAS	E	21° 40′ 00″	37° 15′ 00″	1087
131	GR2550006	OROS TAYGETOS	E	22° 21′ 00″	36° 57′ 00″	53625
132	GR3000001	OROS PARNITHA	I	23° 43′ 00″	38° 11′ 00″	14950
133	GR3000003	SCHINIAS	B	24° 02′ 00″	38° 09′ 00″	5000
134	GR3000004	VRAVRONA	B	24° 01′ 00″	37° 56′ 00″	4000
135	GR3000005	SOUNIO - NISIDA PATROKLOU	B	24° 01′ 50″	37° 41′ 00″	5150
136	GR3000006	YMITTOS - AISTHITIKO DASOS KAISARIANIS - LIMNI VOULIAGMENIS	B	23° 48′ 00″	37° 56′ 00″	8123
137	GR3000007	KYTHIRA: KARAVAS EOS MYLOPOTAMO - PALAIOPOLI - AVLEMONAS	B	22° 59′ 00″	36° 16′ 30″	11000
138	GR3000008	ANTIKYTHIRA - PRASSONISI KAI LAGOUVARDO	B	23° 18′ 00″	35° 52′ 00″	2100
139	GR4110001	LIMNOS: CHORTAROLIMNI - LIMNI ALYKI	B	25° 27′ 00″	39° 57′ 00″	18000
140	GR4110003	LESVOS: DYTIKI CHERSONISOS - APOLITHOMENO DASOS	B	25° 59′ 00″	39° 13′ 00″	16100
141	GR4110004	LESVOS: KOLPOS KALLONIS	B	26° 13′ 00″	39° 10′ 00″	14500
142	GR4120003	SAMOS: OROS KERKETEFS - MIKRO KAI MEGALO SEITANI - DASOS KASTANIAS KAI LEKKAS	B	26° 38′ 50″	37° 45′ 00″	6110
143	GR4120004	IKARIA - FOURNOI	B	26° 14′ 00″	37° 36′ 00″	14500
144	GR4130001	VOREIA CHIOS KAI NISOI OINOUSES	B	26° 00′ 00″	38° 33′ 00″	32200
145	GR4210001	KASOS KAI KASONISIA	B	26° 55′ 00″	35° 24′ 00″	15700
146	GR4210002	KENTRIKI KARPATHOS: KALILIMNI - LASTHOS - KYRA PANAGIA	B	27° 09′ 00″	35° 35′ 00″	9350
147	GR4210003	VOREIA KARPATHOS KAI SARIA	B	27° 14′ 00″	35° 49′ 00″	8300
148	GR4210004	KASTELLORIZO KAI NISIDES RO KAI STRONGYLI	B	29° 35′ 00″	36° 08′ 00″	1400
149	GR4210005	RODOS: AKRAMYTIS, ARMENISTIS, ATTAVYROS	B	27° 49′ 00″	36° 09′ 00″	17600
150	GR4210006	RODOS: PROFITIS ILIAS - EPTA PIGES - PETALOUDES	B	27° 57′ 00″	36° 20′ 00″	6900
151	GR4210007	NISYROS KAI STRONGYLI	B	27° 11′ 00″	36° 37′ 00″	5700
152	GR4210008	KOS: AKROTIRIO LOUROS - LIMNI PSALIDI - OROS DIKAIOS - ALYKI	B	27° 16′ 00″	36° 52′ 00″	9500

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY A						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
153	GR4210009	ASTYPALAIA: ANATOLIKO TMIMA, GYRO NISIDES KAI OFIDOUSA	B	26º 25′ 00″	36º 36′ 00″	9500
154	GR4210011	VRACHONISIA NOTIOU AIGAIOU: VELOPOULA,ANANES,FALKONERA, ANANES, CHRISTIANA, PACHEIA, FTENO, MAKRA, ASTAKIDONISIA, SYRNA-GYRO NISIA	B	25º 10′ 00″	36º 13′ 00″	6350
155	GR4220001	ANDROS: ORMOS VITALI KAI KENTRIKOS OREINOS OGKOS	B	24º 51′ 00″	37º 51′ 00″	7240
156	GR4220003	SANTORINI: NEA KAI PALIA KAMENI - PROFITIS ILIAS	B	25º 25′ 00″	36º 24′ 10″	1150
157	GR4220004	FOLEGANDROS ANATOLIKI MECHRI DYTIKI SIKINO	B	25º 07′ 00″	36º 41′ 00″	6500
158	GR4220005	DYTIKI MILOS	B	24º 22′ 00″	36º 40′ 00″	13500
159	GR4220006	NISOS POLYAIGOS	B	24º 37′ 00″	36º 45′ 00″	4400
160	GR4220007	NISOS ANTIMILOS	B	24º 13′ 00″	36º 47′ 00″	2150
161	GR4220008	SIFNOS: PROFITIS ILIAS MECHRI DYTIKES AKTES	B	24º 41′ 30″	36º 57′ 40″	1700
162	GR4220010	VOREIODYTIKI KYTHNOS: OROS ATHERAS KAI AKROTIRIO KEFALOS	B	24º 25′ 00″	37º 27′ 00″	2100
163	GR4220012	VOREIA AMORGOS KAI KYNAROS, LEVITHA, MAVRIA	B	26º 02′ 00″	36º 53′ 00″	5000
164	GR4220014	KENTRIKI KAI NOTIA NAXOS: ZEFS KAI VIGLA EOS MAVROVOUNI	B	25º 30′ 00″	37º 01′ 00″	8155
165	GR4220015	ALYKI NAXOU	B	25º 22′ 0 0″	37º 04′ 00″	122
166	GR4220019	TINOS: MYRSINI - AKROTIRIO LIVADA	B	25º 13′ 40″	37º 35′ 30″	1800
167	GR4310002	GIOUCHTAS - FARANGI AGIAS EIRINIS	B	25º 08′ 0″	35º 14′ 00″	600
168	GR4310004	DYTIKA ASTEROUSIA (APO AGIOFARANGO OS KOKKINO PYRGO)	B	24º 46′ 00″	35º 01′ 00″	3700
169	GR4310005	ASTEROUSIA (KOFINAS)	B	25º 06′ 10″	34º 58′ 00″	15400
170	GR4310006	DIKTI: OMALOS VIANNOU (SYMI - OMALOS)	E	25º 26′ 00″	35º 3′ 00″	3400
171	GR4320001	MILATOS (MECHRI AKROTORIO AGIOU IOANNI)	B	25º 39′ 10″	35º 19′ 30″	4400
172	GR4320002	DIKTI: OROPEDIO LASITHIOU, KATHARO, SELENA, KRASI, SELEKANOS	E	25º 30′ 00″	35º 08′ 00″	32050
173	GR4320003	NISOS CHRYSI	B	25º 42′ 50″	34º 51′ 40″	700
174	GR4320005	OROS THRYPTIS KAI GYRO PERIOCHI	B	25º 52′ 00″	35º 05′ 00″	8550
175	GR4320006	VOREIOANATOLIKO AKRO KRITIS: DIONYSADES, ELASA KAI CHERSONISOS SIDERO (AKRA MAVROVOUNI - VAI - AKRA PLAKOS)	I	26º 14′ 00″	35º 14′ 00″	9630
176	GR4320007	NOTIOANATOLIKO AKRO KRITIS KAI NISIDES KAVALLOI	B	26º 14′ 00″	35º 04′ 00″	10700
177	GR4320008	NISOS KOUFONISI	B	26º 08′ 20″	34º 56′ 30″	700
178	GR4330002	OROS KEDROS	B	24º 35′ 00″	35º 10′ 00″	4500
179	GR4330003	KOURTALIOTIKO FARANGI - MONI PREVELI - EVRYTERI PERIOCHI	B	24º 28′ 00″	35º 10′ 00″	3425
180	GR4330004	PRASIANO FARANGI - PATSOS - SFAKORYAKO REMA - PARALIA RETHYMNOU KAI EKVOLI GEROPOTAMOU	E	24º 28′ 00″	35º 20′ 00″	14500
181	GR4330005	IDI OROS	E	24º 50′ 00″	35º 15′ 00″	44800

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY A						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
182	GR4340001	IMERI KAI AGRIA GRAMVOUSA - TIGANI KAI FALASARNA - PONTIKONISI	B	23º 35′ 00″	35º 35′ 00″	5500
183	GR4340002	NISOS ELAFONISOS - APENANTI PARALIA (APO CHRYSOSKALITISSA MECHRI AKROTIRIO KRIOS)	B	23º 32′ 30″	35º 16′ 45″	3133
184	GR4340004	ELOS - TOPOLIA - SASALOS - AGIOS DIKAIOS	B	23º 40′ 00″	35º 23′ 00″	5700
185	GR4340005	SOUGIA - BARDIA - FARANGI LISSOU MECHRI ANYDROUS	B	23º 46′ 20″	35º 15′ 05″	3846
186	GR4340006	LIMNI AGIAS - PLATANIAS - REMA KAI EKVOLI KERITI - KOILADA FASAS	E	23º 56′ 00″	35º 28′ 00″	410
187	GR4340008	LEFKA ORI	I	24º 02′ 00″	35º 17′ 00″	54283
188	GR4340010	DRAPANO (VOREIOANATOLIKES AKTES) - PARALIA GEORGIOUPOLIS - LIMNI KOURNA	B	24º 16′ 00″	35º 23′ 00″	3092
189	GR4340012	ASFENDOU - KALLIKRATIS	B	24º 15′ 30″	35º 14′ 30″	13400
190	GR4340013	NISOI GAVDOS KAI GAVDOPOULA	B	24º 05′ 00″	34º 51′ 00″	3600

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY B						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
1	GR1130006	POTAMOS - KOILADA FILIOURI	K	25º 23′ 00″	41º 00′ 00″	1950
2	GR1140004	KORYFES OROUS FALAKRO	B	24º 05′ 50″	41º 17′ 40″	10560
3	GR1140006	MYLOPOTAMOS	B	24º 04′ 00″	41º 09′ 00″	250
4	GR1150003	OROS YPSARI THASOU	E	24º 40′ 00″	40º 40′ 00″	25000
5	GR1210002	STENA ALIAKMONA	B	22º 14′ 00″	40º 25′ 00″	3610
6	GR1220004	LIMNOTHALASSA EPANOMIS	B	22º 54′ 30″	40º 23′ 00″	900
7	GR1240004	LIMNI AGRA	B	21º 54′ 00″	40º 47′ 00″	1480
8	GR1260003	AI GIANNIS	B	23º 35′ 00″	41º 05′ 00″	510
9	GR1260006	OROS KERDYLLIA	B	23º 40′ 00″	40º 48′ 00″	8800
10	GR1270001	OROS CHOLOMONTAS	B	23º 30′ 00″	40º 27′ 00″	5500
11	GR1270010	AKROTIRIO PYRGOS-ORMOS KYPSAS	B	23º 20′ 00″	40º 04′ 40″	318
12	GR1320001	LIMNI KASTORIAS	B	21º 18′ 00″	40º 30′ 00″	4700
13	GR1340005	LIMNES CHEIMADITIDA-ZAZARI	B	21º 33′ 00″	40º 37′ 00″	3947
14	GR1430002	ELOS SOURPIS - KOURI ALMYROU	B	22º 50′ 00″	39º 10′ 00″	500
15	GR2130006	PERIOCHI METSOVOU (ANILIO-KATARA)	B	21º 11′ 00″	39º 47′ 00″	7395
16	GR2310007	LIMNI AMVRAKIA	B	21º 11′ 00″	38º 45′ 00″	2226
17	GR2320004	AISTHITIKO DASOS KALAVRYTON	C	22º 06′ 00″	38º 02′ 00″	1750
18	GR2320006	ALYKI AIGIOU	B	22º 06′ 00″	38º 15′ 00″	20
19	GR2330003	EKVOLES (DELTA) PINEIOU	B	21º 14′ 00″	37º 49′ 00″	970
20	GR2420004	MEGALO KAI MIKRO LIVARI - DELTA XIRIA - YDROCHARES DASOS AG. NIKOLAOU	B	23º 08′ 00″	39º 00′ 00″	450
21	GR2420005	TELETHRIO - LICHADA - GIALTRA	B	23º 09′ 00″	38º 54′ 00″	21192
22	GR2420006	SKYROS: OROS KOCHYLAS	B	24º 38′ 00″	38º 49′ 00″	4300
23	GR2430002	TECHNITI LIMNI KREMASTON	B	21º 32′ 00″	38º 56′ 00″	21600
24	GR2440001	YGROTOPOS KAI NISIA TOU KOLPOU ATALANTIS	B	23º 05′ 00″	38º 35′ 00″	1470
25	GR2520005	MONI ELONAS KAI CHARADRA LEONIDIOU	E	22º 46′ 00″	37º 09′ 00″	7163
26	GR2550002	PIGES KAI EKVOLES PAMISOU	B	22º 01′ 00″	37º 01′ 00″	4463
27	GR2550007	THALASSIA PERIOCHI STENOY METHONIS	E	21º 40′ 00″	36º 40′ 00″	973
28	GR4110002	AGIOS EFSTRATIOS	B	25º 00′ 00″	39º 31′ 00″	4600
29	GR4110005	LESVOS: KOLPOS GERAS, ELOS NTIPI KAI OROS OLYMPOS	B	26º 26′ 00″	39º 04′ 00″	8500
30	GR4120002	SAMOS: OROS AMPELOS (KARVOUNIS)	B	26º 49′ 00″	37º 46′ 00″	4960
31	GR4210010	ARKOI, LEIPSOI, AGATHONISI KAI VRACHONISIDES	B	26º 45′ 00″	37º 19′ 00″	12667

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY B						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
32	GR4220002	ANAFI: CHERSONISOS KALAMOS - ROUKOUNAS	B	25º 50′ 00″	36º 21′ 00″	700
33	GR4220013	MIKRES KYKLADES: APO KERO MECHRI IRAKLEIA	B	25º 34′ 00″	36º 54′ 00″	15690
34	GR4220016	NISOS PAROS: PETALOUDES	B	25º 06′ 00″	37º 03′ 00″	100
35	GR4220017	NISOI DESPOTIKO KAI STRONGYLO	B	24º 57′ 00″	36º 57′ 00″	2193
36	GR4220018	SYROS: OROS SYRINGAS OS PARALIA	B	24º 54′ 30″	37º 28′ 30″	700
37	GR4310001	ALMYROU FARANGI KAI YGROTOPOS	B	25º 01′ 00″	35º 20′ 20″	700
38	GR4310003	NISOS DIA	B	25º 13′ 00″	35º 27′ 00″	1250
39	GR4320004	MONI KAPSA (FARANGI KAPSA KAI GYRO PERIOCHI)	B	26º 03′ 00″	35º 02′ 00″	1250
40	GR4330001	PETRE FARANGI KAI PETRES EOS PARALIA ZOURIDA	B	24º 24′ 00″	35º 21′ 00″	4000
41	GR4340009	VOREIO AKROTIRIO: AGIA TRIAS - MONI TSAGAROLON - GOUVERNETOU - KATHOLIKO	B	24º 08′ 00″	35º 34′ 00″	1300

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY C						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
1	GR1110006	APALOS	E	25° 58′ 00″	40° 50′ 00″	1245
2	GR1150004	VOUNA LIMNIA	B	24° 29′ 00″	41° 09′ 00″	26500
3	GR1150006	AKROTIRIO PRINOU-PACHI	E	24° 36′ 00″	40° 47′ 00″	1350
4	GR1150007	LIMENARIA-AKROTIRIO KEPHALAS	B	24° 31′ 00″	40° 38′ 00″	191
5	GR1220005	LIMNOTHALASSA ANGELOCHORIOU	B	22° 49′ 00″	40° 29′ 00″	800
6	GR1220006	PROIN LIMNI LANTZA	B	23° 31′ 00″	40° 46′ 00″	2875
7	GR1220008	AGIA TRIADA	B	22° 50′ 10″	40° 30′ 04″	116
8	GR1230001	LIMNI PIKROLIMNI	B	22° 49′ 00″	40° 50′ 00″	1087
9	GR1240005	STENA APSALOU-MOGLENITSAS	B	22° 10′ 00″	40° 50′ 00″	6048
10	GR1250003	OROS TITAROS	E	22° 11′ 00″	40° 10′ 00″	5631
11	GR1270004	LIMNOTHALASSA AGIOU MAMA	B	23° 20′ 00″	40° 13′ 00″	1000
12	GR1270006	ORMOS TORONIS	B	23° 50′ 30″	40° 00′ 10″	588
13	GR1270011	AFYTOS	B	23° 27′ 00″	40° 06′ 00″	194
14	GR1330003	ARKEUTHI KOZANIS-PTOLEMAIDAS	B	21° 45′ 00″	40° 35′ 00″	4000
15	GR1330004	OROS PORTA	B	21° 57′ 00″	40° 05′ 00″	3600
16	GR2120004	STENA KALAMA	B	20° 28′ 30″	39° 37′ 30″	1867
17	GR2130008	OROS MITSIKELI	E	20° 54′ 00″	39° 43′ 00″	8520
18	GR2140002	ORI ZALONGOU	B	20° 40′ 00″	39° 08′ 00″	2333
19	GR2220001	KALON OROS KEFALONIAS	B	20° 35′ 00″	38° 20′ 00″	2590
20	GR2230003	ALYKI LEFKIMIS (KERKYRA)	B	20° 04′ 00″	39° 27′ 00″	217
21	GR2230006	PARAKTIA THALASSIA ZONI APO PALAIOKASTRITSA EOS GLYFADA (KERKYRA)	B	19° 45′ 00″	39° 37′ 30″	510
22	GR2240001	LIMNOTHALASSES STENON LEFKADAS (PALIONIS-AVLIMON) KAI ALYKES LEFKADAS	B	20° 42′ 00″	38° 50′ 00″	2120
23	GR2240002	PERIOCHI CHORTATON (LEFKADA)	B	20° 36′ 00″	38° 43′ 00″	1255
24	GR2310006	LIMNES VOULKARIA KAI SALTINI	B	20° 50′ 00″	38° 52′ 00″	3223
25	GR2330004	OLYMPIA	B	21° 37′ 00″	37° 38′ 00″	317
26	GR2440003	FARANGI GORGOPOTAMOU	K	22° 21′ 30″	38° 48′ 50″	1
27	GR2450003	POTAMOS MORNOS KAI TECHNITI LIMNI MORNOU	B	22° 10′ 00″	38° 31′ 00″	2953
28	GR2450004	PARALIAKI ZONI APO NAFPAKTO EOS ITEA	B	22° 13′ 00″	38° 22′ 00″	10927
29	GR2510001	OROS ARACHNAIO	B	22° 59′ 00″	37° 39′ 00″	10670
30	GR2510002	OROS DIDYMO	B	23° 13′ 00″	37° 29′ 00″	6525
31	GR2510003	AKRONAFPLIA KAI PALAMIDI	B	22° 48′ 00″	37° 34′ 00″	360
32	GR2520002	LIMNI TAKA	B	22° 22′ 00″	37° 26′ 00″	1020

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

CATEGORY C						
No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)
33	GR2520003	PERIOCHI PARALIOU ASTROUS KAI LIMNOTHALASSAS MOUSTOU	B	22º 45′ 00″	37º 23′ 00″	3747
34	GR2520004	OROS ORIONTAS	B	22º 45′ 00″	37º 15′ 00″	2473
35	GR2530003	AKROKORINTHOS	B	22º 52′ 00″	37º 53′ 00″	610
36	GR2550001	FARANGI KAI EKVOLES NEDONA	E	22º 06′ 00″	37º 01′ 00″	2383
37	GR3000002	OROPOS - EKVOLES ASOPOU	B	23º 44′ 00″	38º 20′ 00″	420
38	GR4120001	SAMOS: ALYKI	B	27º 01′ 00″	37º 42′ 40″	240
39	GR4220009	NOTIA SERIFOS	B	24º 29′ 00″	37º 09′ 00″	3400
40	GR4220011	ANATOLIKI KEA	B	24º 20′ 00″	37º 36′ 00″	6900
41	GR4340003	CHERSONISOS RODOPOU - PARALIA MALEME	E	23º 45′ 00″	35º 36′ 00″	13275
42	GR4340007	FARANGI THERISSOU	B	23º 59′ 00″	35º 26′ 00″	1
43	GR4340011	FRE - TZITZIFES - NIPOS	B	24º 09′ 00″	35º 22′ 00″	1175

TABLE A. 3. Sites eligible to be included in the "Natura 2000" Network (cont.)

No	SITECODE	SITE NAME	TYPE	LONGITUDE	LATITUDE	AREA (ha)	Sitecode*
1	GR1110002	DASOS DADIAS-SOUFLI	H	26° 12′ 10″	41° 05′ 20″	7290	GR1110005
2	GR1120001	LIMNI VISTONIDA KAI LIMNOTHALASSA PORTO LAGOS	G	25° 11′ 00″	41° 03′ 00″	8987	GR1130009
3	GR1120002	LIMNOTHALASSES LAFRI & LAFROUDA	E	25° 03′ 00″	41° 00′ 00″	3548	GR1130009
4	GR1130001	LIMNI MITRIKOU (SPA)	G	25° 19′ 00″	40° 59′ 00″	2175	GR1130009
5	GR1130002	LIMNOTHALASSA XIROLIMNI	G	25° 09′ 00″	40° 58′ 00″	425	GR1130009
6	GR1130003	LIMNOTHALASSA KARATZA	G	25° 11′ 00″	40° 57′ 00″	562	GR1130009
7	GR1130004	LIMNOTHALASSA ALYKI(MESI)	G	25° 13′ 00″	40° 58′ 00″	975	GR1130009
8	GR1130005	LIMNOTHALASSA PTELEA	G	25° 16′ 00″	40° 57′ 00″	1250	GR1130009
9	GR1140007	PARTHENO DASOS KENTRIKIS RODOPIS (SPA)	H	24° 30′ 00″	41° 32′ 40″	589	GR1140001
10	GR1150001	DELTA NESTOU	G	25° 05′ 00″	40° 50′ 00″	12100	GR1150010
11	GR1150002	LIMNOTHALASSES KERAMOTIS	G	24° 47′ 00″	40° 53′ 00″	4300	GR1150010
12	GR1250005	ETHNIKOS DRYMOS OLYMPOU (SPA)	H	22° 24′ 00″	40° 04′ 00″	4450	GR1250001
13	GR1260008	TECHNITI LIMNI KERKINIS (SPA)	H	23° 09′ 00″	41° 12′ 00″	9000	GR1260001
14	GR1310002	ETHNIKOS DRYMOS PINDOU (SPA)	H	21° 08′ 00″	39° 54′ 00″	3360	GR1310003
15	GR1340002	LIMNI MIKRI PRESPA	G	21° 05′ 00″	40° 46′ 00″	4900	GR1340001
16	GR1420005	AISTHITIKO DASOS KOILADAS TEMPON (SPA)	H	22° 34′ 00″	39° 53′ 00″	1762	GR1420002
17	GR2110004	AMVRAKIKOS KOLPOS (SPA)	H	20° 55′ 00″	39° 06′ 00″	25000	GR2110001
18	GR2310002	LIMNOTHALASSES MESOLONGIOU (SPA)	G	21° 26′ 00″	38° 20′ 00″	14270	GR2310001
19	GR2410002	ETHNIKOS DRYMOS PARNASSOU (SPA)	H	23° 30′ 08″	38° 31′ 00″	3513	GR2450005
20	GR3000009	ETHNIKOS DRYMOS PARNITHAS (SPA)	H	23° 43′ 00″	38° 11′ 00″	3812	GR3000001
21	GR4320009	AISTHITIKO DASOS VAI (SPA)	H	26° 15′ 00″	35° 15′ 00″	20	GR4320006
22	GR4340014	ETHNIKOS DRYMOS SAMARIAS (SPA)	H	23° 57 36″	35° 17 44″	4850	GR4340008

* Correspondence of the sitecodes listed in Table A.4 with the codes of the wider sites of Table A.3 in which they are included

The majority of the 296 sites included in the project are protected at national/regional or international level. Of the 190 category A sites, half are protected at national/regional level (10 have been designated as National Parks, 11 as Natural Monuments, 10 as Aesthetic Forests, six as Game Breeding Stations, 68 as Game Reserves and six as Controlled Hunting Areas), while at international level at least 28 are protected (13 have been characterised as Ramsar sites, 12 as Biogenetic Reserves, one site has been awarded the Diploma of the Council of Europe, seven are protected under the Barcelona Convention and two have been characterised as Biosphere Reserves). Of the category B sites, 16 are protected at national/regional level (one Natural Monument, two Aesthetic Forests, 12 Game Reserves and one Controlled Hunting Area) and one is a Ramsar site, protected at international level. Of the category C sites, 14 are protected at national/regional level, as game reserves, and one at international level.

It should also be mentioned that, the proposed inventory of sites includes the habitat types and species in Annexes I and II of Directive 92/43/EEC at least once, so as to ensure the conservation of the natural habitats and wild flora and fauna of Greece.

A preliminary list of sites to be studied was communicated to the associated services in September 1994 in order to take under consideration their comments and suggestions. In June 1995 an evaluated list of sites under investigation was sent to the associated services (the ministries of Environment and Agriculture) and the European Commission (DG-XI), attached to the annual technical report of the project. The preliminary delineation of the studied sites (maps in scale 1:100,000) were also included in the package. In December 1995 the final version of the database (diskettes) and the completed Standard Data Forms (paper) were promptly sent to the associated services and the EU. Following the three month extension of the project (until 31/3/1996) an updated version of the Database and maps with the final boundaries of the sites were developed.

A.3. GENERAL INFORMATION ON THE PROPOSED SITES

by Vasiliki Tsiaoussi

Several interesting conclusions can be drawn from the statistics of the results risen during the course of this research. The distribution of proposed "Natura 2000" sites in the different administrative regions of Greece is shown in Fig. A.1.

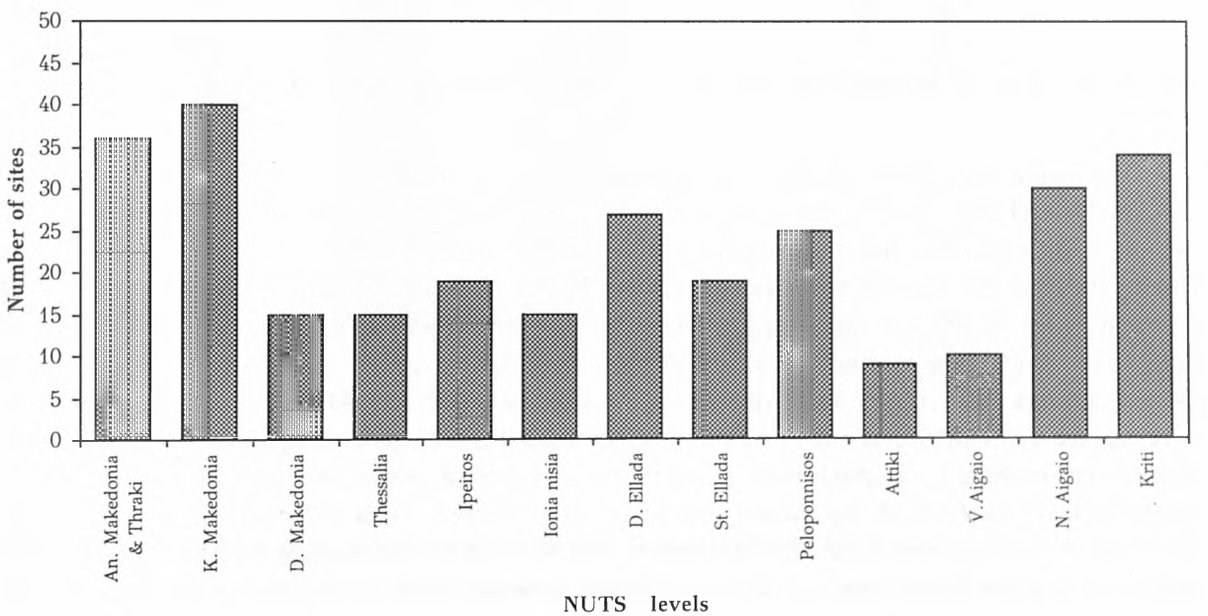


Fig. A.1. Distribution of proposed Natura 2000 sites in the administrative regions of Greece, divided according to NUTS nomenclature.

Kentriki Makedonia hosts the highest number of sites (40), accounting for 13.5% of all sites, with Anatoliki Makedonia-Thraki and Kriti island being second and third in rank (36 and 34 sites respectively). Insular sites (Ionia nisia, Voreio and Notio Aigaio and Kriti) account for 30% of the sites selected, reflecting the high number of Greek islands. The sites studied in this project cover a surface of ≈3,000,000 ha. The terrestrial part of their surface (≈2,350,000 ha) corresponds approximately to 18% of the total land area of Greece. The area covered by the proposed sites in relation to the total area of thirteen different administrative regions of Greece, is shown in Fig. A.2.

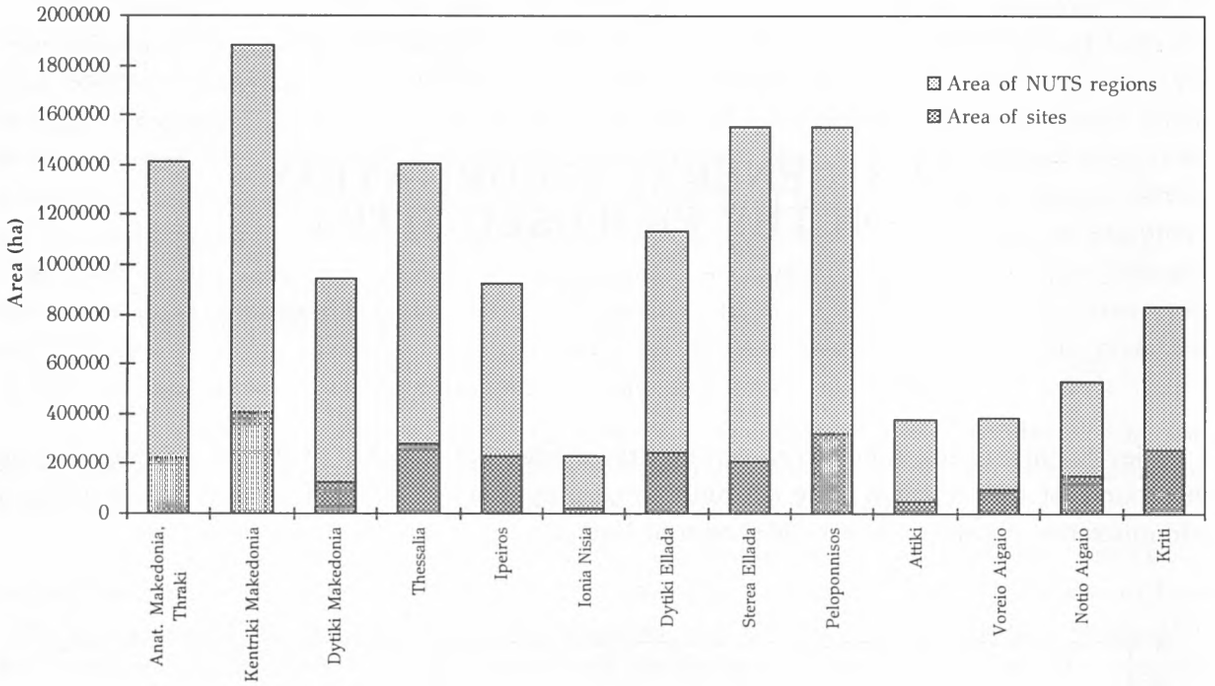


Fig. A.2. Area of the proposed sites in the different administrative regions of Greece.

The percentage cover of the sites situated in the region of Attiki is comparatively one of the smallest (12%), due to the presence of industrialized and highly urbanised areas in the region. Furthermore, the development of intensive tourist activities has resulted in the degradation of the natural environment and therefore to the reduction of the sites cover. The smallest value (7.6%) is attributed to the area of Ionia nisia mainly due to the presence of sites that incorporate marine areas within their boundaries, which are not taken into account (e.g. Laganas bay, inner archipelagos of Ionian islands). In Kriti, the highest cover of investigated sites (31%) is encountered. This is not surprising since large areas of undisturbed natural environment, coupled with a substantial degree of endemism and intensified by the geographical position of the island are favourable factors. It is noteworthy, that although Kentriki Makedonia and Anatoliki Makedonia-Thraki, include the highest number of sites, their total area reaches 21.6% and 15.7% respectively, whereas Kriti comes first in the area of sites, although third in rank in sites number.

Regarding site magnitude, small sites (0-1000 ha) make up around 15% of all sites, whereas almost one third of the sites are medium-sized (1001-5000 ha) (Fig. A.3).

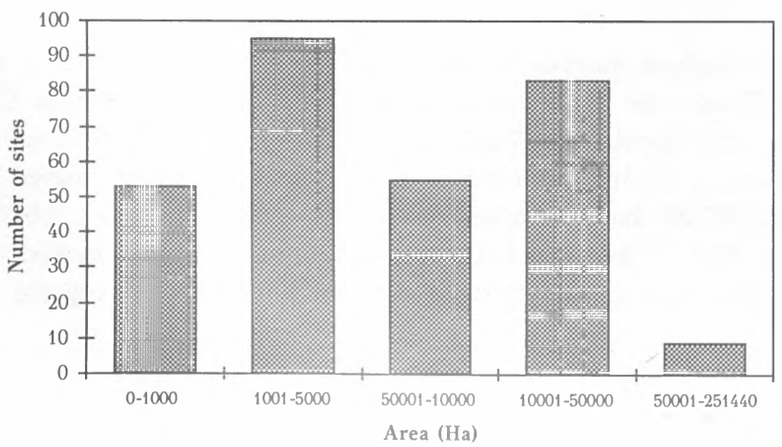


Fig. A.3. Number of sites in different size classes

It must be noted that site boundaries do not coincide with isolated habitat types and this is mainly the reason for the enlargement of site surfaces. Isolated habitat types were therefore grouped together and formed larger sites. In addition, although the inclusion of isolated (and often uninhabited) villages within site boundaries, mainly in remote mountainous areas, was questioned several times, it was decided that they consist an inseparable part of the landscape and that they should be part of the sites.

Regarding the altitudinal range of sites, not many conclusions can be drawn due to the fact that within one site there may be a significant difference between its maximum and minimum altitude. It can be said though, that generally the majority of sites are mountainous (Fig. A.4) which reflects the mountainous character of the country. On the other hand, almost one third of the sites have a maximum altitude of 300 m, mainly consisting of valleys, coasts, marine areas, etc.

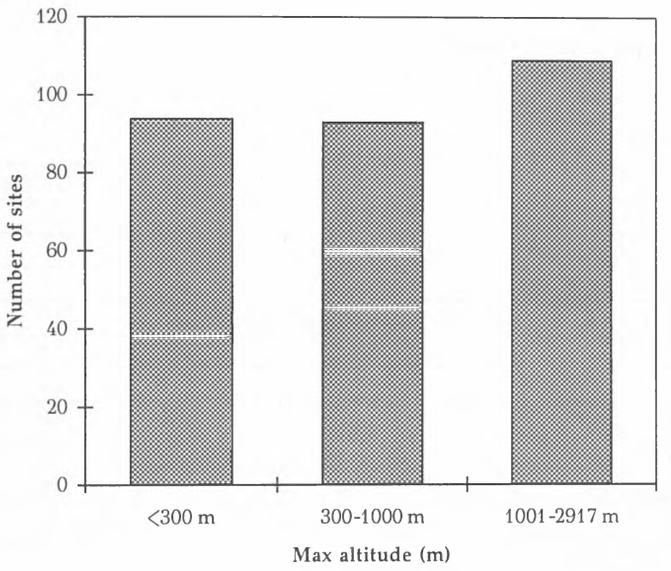


Fig. A.4. Number of sites in different altitude classes

Designation types at regional, national and international level

Most of the investigated sites have been identified as important to nature conservation by the Greek Authorities and accordingly statutorily protected. However, a number of sites are insufficiently known and therefore unprotected at national, regional and international level. In addition, although certain sites have been designated as protected areas, management measures are not properly implemented. National Parks comprise the main category of nationally protected areas which are declared and managed in the context of Forestry legislation. They usually comprise an area of absolute protection, the core, and a protected peripheral zone. Within the core of National Parks several activities such as grazing, logging, hunting, uprooting of plants, collection of flowers and lighting of fire are strictly forbidden. In the peripheral zones only certain traditional activities are permitted. Another category refers to Monuments of Nature, which include isolated trees or tree stands with special botanical, ecological, aesthetic or historical and cultural value. A third category contains the Aesthetic Forests, that is, sites with special aesthetic and ecological interest which, apart from nature conservation, are used for recreation. In addition, a Marine Park has recently been declared in Greece, in the North Aegean (Voreies Sporades) which is a refuge of the last population of the monk seal (*Monachus monachus*) in the Mediterranean. The declaration of a second Marine Park is underway in the

Ionian Sea, in the island of Zakynthos which is an important breeding and nesting area of the sea turtle *Caretta caretta*. Finally, the legislation on hunting has led to the designation of areas as Game breeding stations, Game refuges and Controlled hunting areas. The above areas are managed by peripheral Services of the Ministry of Agriculture, i.e., the local Forestry Departments. In the context of the present project, statutory protection and international designation were taken into consideration, so that almost all designated areas were included in the sites under investigation. As shown in Table A.5, the propoosed sites are partly or fully designated as follows: 16 sites as Core strict nature reserves in National Parks (GR01), 14 sites as Natural monuments and landmarks (GR03), 12 Aesthetic forests (GR04), 6 Peripheral zones of national parks (GR12), 3 Game breeding stations (GR21), 119 Game refuges (GR22), 9 Controlled hunting areas (GR23) and 1 Marine Park - multiple use management zone (GR26).

TABLE A.5. Sites protected at national and regional level

Core strict nature reserve in National Park (GR01)

SITE CODE	SITE NAME	% COVER
GR1250001	OROS OLYMPOS	26
GR1250005	ETHNIKOS DRYMOS OLYMPOU	100
GR1310002	ETHNIKOS DRYMOS PINDOU	100
GR1310003	ETHNIKOS DRYMOS PINDOU (VALIA KALDA) (EVRYTERI PERIOCHI)	49
GR1340001	ETHNIKOS DRYMOS PRESPON	25
GR1340002	LIMNI MIKRI PRESPA	100
GR2130001	ETHNIKOS DRYMOS VIKOU-AOOU	27
GR2220002	ETHNIKOS DRYMOS AINOU	100
GR2410002	ETHNIKOS DRYMOS PARNASSOU	100
GR2440004	ETHNIKOS DRYMOS OITIS	43
GR2450005	NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS	20
GR3000001	OROS PARNITHA	35
GR3000005	SOUNIO - NISIDA PATROKLOU	15
GR3000009	ETHNIKOS DRYMOS PARNITHAS	100
GR4340008	LEFKA ORI	9
GR4340014	ETHNIKOS DRYMOS SAMARIAS	100

Natural monuments and landmarks (GR 03)

SITECODE	SITE NAME	% COVER
GR1120003	OROS CHAIDOU-KOULA & GYRO KORYFES	1
GR1140001	DASOS FRAKTOU	55
GR1140007	PARTHENO DASOS KENTRIKIS RODOPIS	100
GR1230002	YDROCHARES DASOS MOURION	3
GR1240001	KORYFES OROUS VORAS	2
GR1260007	ORI VRONTOUS-LAILIAS	38
GR1320002	KORYFES OROUS GRAMMOS	1
GR2310001	DELTA ACHELOOU, LIMNOTHALASSA MESOLONGIOU-AITOLIKOU KAI EKVOLES EVINOU	0
GR2420004	MEGALO KAI MIKRO LIVARI - DELTA XIRIA - YDROCHARES DASOS AG. NIKOLAOU	0
GR2520006	OROS PARNONAS (KAI PERIOCHI MALEVIS)	0
GR2550003	NISOI SAPIENTZA KAI SCHIZA, AKROTIRIO AKRITAS	0

Natural monuments and landmarks (GR 03) (cont.)

SITECODE	SITE NAME	% COVER
GR4110003	LESVOS: DYTIKI CHERSONISOS - APOLITHOMENO DASOS	75
GR4210005	RODOS: AKRAMYTIS, ARMENISTIS, ATTAVYROS	1
GR4330005	IDI OROS	0

Aesthetic Forest (GR04)

SITECODE	SITE NAME	% COVER
GR1120004	STENA NESTOU	100
GR1420001	KATO OLYMPOS	1
GR1420002	DELTA PINEIOU-TEMPI	24
GR1420003	AISTHITIKO DASOS OSSAS	100
GR1420005	AISTHITIKO DASOS KOILADAS TEMPON	100
GR1430002	ELOS SOURPIS - KOURI ALMYROU	20
GR1430003	SKIATHOS: KOUKOUNARIES	50
GR2320004	AISTHITIKO DASOS KALAVRYTON	100
GR2420002	DIRFYS: DASOS STENIS - DELFI	50
GR2450005	NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS	1
GR3000006	YMITTOS - AISTHITIKO DASOS KAISARIANIS - LIMNI VOULIAGMENIS	5
GR4320006	VOREIOANATOLIKO AKRO KRITIS: DIONISEDES, ELASA KAI CHERSONISOS SIDERO (AKRA MAVROVOUNI-VAI-AKRA PLAKOS)	0
GR4320009	AISTHITIKO DASOS VAI	100

Peripheral zone of National Park (GR12)

SITECODE	SITE NAME	% COVER
GR1310003	ETHNIKOS DRYMOS PINDOU (VALIA KALDA) (EVRYTERI PERIOCHI)	51
GR1340001	ETHNIKOS DRYMOS PRESPON	75
GR2130001	ETHNIKOS DRYMOS VIKOU-AOOU	73
GR2440003	FARANGI GORGOPOTAMOU	35
GR2440004	ETHNIKOS DRYMOS OITIS	57
GR3000005	SOUNIO - NISIDA PATROKLOU	53

Game breeding station (GR21)

SITECODE	SITE NAME	% COVER
GR1110003	TREIS VRISES	3
GR1150010	DELTA NESTOU & LIMNOTHALASSES KERAMOTIS	0
GR1250001	OROS VERMIO	5
GR2320008	OROS ERYMANTHOS	1
GR3000001	OROS PARNITHA	10
GR4220007	NISOS ANTIMILOS	100

Game refuge (GR22)

SITECODE	SITE NAME	% COVER
GR1110001	DELTA EVROU	38
GR1110003	TREIS VRISES	58
GR1120001	LIMNI VISTONIDA KAI LIMNOTHALASSA PORTO LAGOS	17
GR1120003	OROS CHAIDOU-KOULA & GYRO KORYFES	6
GR1120004	STENA NESTOU	50
GR1130001	LIMNI MITRIKOU	36

Game refuge (GR22) (cont.)

SITECODE	SITE NAME	% COVER
GR1130006	POTAMOS-KOILADA FILIOURI	1
GR1130007	KOILADA KOMSATOU	2
GR1130009	LIMNES & LIMNOTHALASSES TIS THRAKIS	21
GR1140001	DASOS FRAKTOU	100
GR1140007	PARTHENO DASOS KENTRIKIS RODOPIS	100
GR1150001	DELTA NESTOU	64
GR1150003	OROS YPSARI THASOU	20
GR1150005	KORYFES OROUS PANGAIO	42
GR1150010	DELTA NESTOU & LIMNOTHALASSES KERAMOTIS	46
GR1210001	OROS VERMIO	43
GR1220001	LIMNES VOLVI KAI LAGKADA	10
GR1220002	DELTA AXIOU-EKVOLES LOUDIA-DELTA ALIAKMONA	28
GR1220004	LIMNOTHALASSA EPANOMIS	99
GR1240001	KORYFES OROUS VORAS	28
GR1240002	ORI TZENA	18
GR1240003	OROS PAIKO	13
GR1250001	OROS OLYMPOS	8
GR1250002	PIERIA ORI	20
GR1250003	OROS TITAROS	100
GR1260001	LIMNI KERKINI-KROUSIA-KORYFES OROUS BELES	1
GR1260002	EKVOLES POTAMOU STRYMONA	13
GR1260003	AI GIANNIS	60
GR1260004	KORYFES OROUS MENOIKIO-OROS KOUSKOURAS	10
GR1260006	OROS KERDYLLIA	34
GR1270001	OROS CHOLOMONTAS	6
GR1270005	OROS STRATONIKON	64
GR1310002	ETHNIKOS DRYMOS PINDOU	6
GR1310003	ETHNIKOS DRYMOS PINDOU (VALIA KALDA) (EVRYTERI PERIOCHI)	21
GR1320001	LIMNI KASTORIAS	89
GR1320002	KORYFES OROUS GRAMMOS	13
GR1330001	OROS VOURINO (MESIANO NERO)	17
GR1330002	KORYFES OROUS SINIATSIKO	22
GR1330004	OROS PORTA	8
GR1340001	ETHNIKOS DRYMOS PRESPON	18
GR1340004	LIMNES VEGORITIDA-PETRON	8
GR1340005	LIMNES CHEIMADITIDA-ZAZARI	49
GR1340006	OROS VERNON-KORYFI VITSI	15
GR1420001	KATO OLYMPOS	6
GR1420004	KARLA - MAVROVOUNI - KEFALOVRYSO VELESTINOU	16
GR1430001	OROS PILIO	20
GR1430004	ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS	1
GR1440001	ASPROPOTAMOS	29
GR1440003	ANTICHASIA ORI - METEORA	7
GR2110002	ORI ATHAMANON (TZOUMERKA)	11
GR2110003	KOILADA ACHELOOU	27
GR2120001	EKVOLES (DELTA) KALAMA	21
GR2130001	ETHNIKOS DRYMOS VIKOU-AOOU	9
GR2130002	KORYFES OROUS SMOLIKAS	18
GR2130003	ORAIOKASTRO, LIMNI DELVINAKIOU, DASOS MEROPIS KAI KOILADA GORMOU.	5
GR2130007	OROS LAKMOS (PERISTERI)	13

Game refuge (GR22) (cont.)

SITECODE	SITE NAME	% COVER
GR2130008	OROS MITSIKELI	10
GR2230002	LIMNOTHALASSA KORISSION (KERKYRA)	5
GR2240002	PERIOCHI CHORTATON (LEFKADA)	90
GR2310001	DELTA ACHELOOU, LIMNOTHALASSA MESOLONGIOU-AITOLIKOU KAI EKVOLES EVINOU	1
GR2310004	OROS PANAITOLIKO	10
GR2310005	OROS VARASOVA	70
GR2310006	LIMNES VOULKARIA KAI SALTINI	14
GR2310010	OROS ARAKYNTHOS KAI STENA KLEISOURAS	6
GR2320002	OROS CHELMOS KAI YDATA STYGOS	3
GR2320003	FARANGI VOURAIKOU	27
GR2320006	ALYKI AIGIOU	100
GR2320007	OROS PANACHAIKO	20
GR2320008	OROS ERYMANTHOS	5
GR2330005	THINES KAI PARALIAKO DASOS ZACHAROS, LIMNI KAIAFA	9
GR2410001	LIMNES YLIKI & PARALIMNI - SYSTIMA VOIOTIKOU KIFISSOU	10
GR2410002	ETHNIKOS DRYMOS PARNASSOU	94
GR2420003	OROS KANTILI - KOILADA PROKOPIOU - DELTA KIREA	8
GR2420005	TELETHRIO - LICHADA - GIALTRA	12
GR2430001	OROS TYMFRISTOS (VELOUCHI)	50
GR2440002	KOILADA KAI EKVOLES SPERCHEIOU - MALIAKOS KOLPOS	8
GR2450001	ORI VARDOUSIA	9
GR2450002	OROS GKIONA	33
GR2450003	POTAMOS MORNOS KAI TECHNITI LIMNI MORNOU	6
GR2450005	NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS	58
GR2510001	OROS ARACHNAIO	5
GR2520001	OROS MAINALO	2
GR2520003	PERIOCHI PARALIOU ASTROUS KAI LIMNOTHALASSAS MOUSTOU	8
GR2520006	OROS PARNONAS (KAI PERIOCHI MALEVIS)	3
GR2530001	KORYFES OROUS KYLLINI (ZIREIA) KAI CHARADRA FLAMPOURITSA	3
GR2530002	LIMNI STYMFALIA	7
GR2530004	OROS OLIGYRTOS	9
GR2530005	ORI GERANIA	19
GR2540001	ORI GIDOVOUNI, CHIONOVOUNI, GAIDOUROVOUNI, KORAKIA, KALOGEROVOUNI, KOULOCHERA KAI PERIOCHI MONEMVASIAS	13
GR2540002	PERIOCHI NEAPOLIS (VOION) KAI NISOS ELAFONISOS	5
GR2550006	OROS TAYGETOS	3
GR3000006	YMITTOS - AISTHITIKO DASOS KAISARIANIS - LIMNI VOULIAGMENIS	25
GR3000007	KYTHIRA: KARAVAS EOS MYLOPOTAMO - PALAIOPOLI - AVLEMONAS	15
GR4110001	LIMNOS: CHORTAROLIMNI - LIMNI ALYKI	5
GR4110003	LESVOS: DYTIKI CHERSONISOS - APOLITHOMENO DASOS	20
GR4110004	LESVOS: KOLPOS KALLONIS	1
GR4120002	SAMOS: OROS AMPELOS (KARVOUNIS)	27
GR4130001	VOREIA CHIOS KAI NISOI OINOUSES	8
GR4210002	KENTRIKI KARPATHOS: KALILIMNI - LASTHOS - KYRA PANAGIA	6
GR4210003	VOREIA KARPATHOS KAI SARIA	21
GR4210007	NISYROS KAI STRONGYLI	17
GR4210008	KOS: AKROTIRIO LOUROS - LIMNI PSALIDI - OROS DIKAIOS - ALYKI	20
GR4220004	FOLEGANDROS ANATOLIKI MECHRI DYTIKI SIKINO	10
GR4220008	SIFNOS: PROFITIS ILIAS MECHRI DYTIKES AKTES	9
GR4220009	NOTIA SERIFOS	10

Game refuge (GR22) (cont.)

GR4220011	ANATOLIKI KEA	24
GR4220014	KENTRIKI KAI NOTIA NAXOS: ZEFS KAI VIGLA EOS MAVROVOUNI	2
GR4310001	ALMYROU FARANGI KAI YGROTOPOS	20
GR4310006	DIKTI: OMALOS VIANNOU (SIMI-OMALOS)	12
GR4320001	MILATOS (MECHRI AKROTORIO AGIOU IOANNI)	1
GR4320002	DIKTI: OROPEDIO LASITHIOU, KATHARO, SELENA, KRASI, SELEKANOS	3
GR4320005	OROS THRYPTIS KAI GYRO PERIOCHI	10
GR4320006	VOREIOANATOLIKO AKRO KRITIS: DIONYSADES, ELASA KAI CHERSONISOS SIDERO (AKRA MAVROVOUNI - VAI - AKRA PLAKOS)	14
GR4320007	NOTIOANATOLIKO AKRO KRITIS KAI NISIDES KAVALLOI	9
GR4330001	PETRE FARANGI KAI PETRES EOS PARALIA ZOURIDA	29
GR4330004	PRASIANO FARANGI - PATSOS - SFAKORYAKO REMA - PARALIA RETHYMNOU KAI EKVOLI GEROPOTAMOU	4
GR4330005	IDI OROS	3
GR4340002	NISOS ELAFONISOS - APENANTI PARALIA (APO CHRYSOSKALITISSA MECHRI AKROTIRIO KRIOS)	48
GR4340003	CHERSONISOS RODOPOU - PARALIA MALEME	28
GR4340008	LEFKA ORI	17
GR4340009	VOREIO AKROTIRIO: AGIA TRIAS - MONI TSAGAROLON - GOUVERNETOU - KATHOLIKO	50
GR4340014	ETHNIKOS DRYMOS SAMARIAS	94

Controlled hunting area (GR23)

SITECODE	SITE NAME	% COVER
GR1260007	ORI VRONTOUS-LAILIAS	62
GR1420003	AISTHITIKO DASOS OSSAS	80
GR1430004	ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS	2
GR1440002	KERKETIO OROS (KOZIAKAS)	85
GR1440003	ANTICHASIA ORI - METEORA	1
GR2440001	YGROTOPOS KAI NISIA TOU KOLPOU ATALANTIS	13
GR2550003	NISOI SAPIENTZA KAI SCHIZA, AKROTIRIO AKRITAS	9
GR4310003	NISOS DIA	100

Marine Park - multiple use management zone (GR26)

SITECODE	SITE NAME	% COVER
GR1430004	ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS	88

Regarding the designation of sites in international level, it should be noted that all sites designated under the Ramsar and Barcelona Conventions, or characterised as Biogenetic Reserve, Biosphere Reserve and World Heritage Site, and having been awarded the European Diploma, have been considered for their great ecological value and therefore included within site boundaries during the site selection process (Table A.6). In addition, almost all sites characterised as Important Bird Areas have been considered for their great ecological value and ornithological importance and accordingly included in the list of investigated sites.

TABLE A.6. Sites related to intenationally designated areas.

BARCELONA CONVENTION

SITECODE	NAME OF DESIGNATED AREA	% COVER
GR1430003	AISTHITIKO DASOS NISOU SKIATHOU	50
GR1430004	THALASSIO PARKO VOREION SPORADON	88
GR2110001	YGROTOPOS AMVRAKIKOU KOLPOU	49
GR2110004	YGROTOPOS AMVRAKIKOU KOLPOU	100
GR3000005	ETHNIKOS DRYMOS SOUNIOU	68
GR4110003	APOLITHOMENO DASOS SIGRI LESVOU	75
GR4320006	AISTHITIKO DASOS VAI	0
GR4320009	AISTHITIKO DASOS VAI	100
GR4340008	ETHNIKOS DRYMOS SAMARIAS	9
GR4340014	ETHNIKOS DRYMOS SAMARIAS	100

EUROPEAN DIPLOMA

SITECODE	NAME OF DESIGNATED AREA	% COVER
GR4340008	FARANGI SAMARIAS	9
GR4340014	FARANGI SAMARIAS	100

BIOSPHERE RESERVE

SITECODE	NAME OF DESIGNATED AREA	% COVER
GR1250001	ETHNIKOS DRYMOS OLYMPOU	26
GR1250005	ETHNIKOS DRYMOS OLYMPOU	100
GR4340008	FARANGI SAMARIAS	9
GR4340014	FARANGI SAMARIAS	100

BIOGENETIC RESERVE

SITECODE	NAME OF DESIGNATED AREA	% COVER
GR1120003	FYSIKO MNIMEIO DASOUS OXIAS HAIDOU-KOULA	1
GR1140001	PARTHENO DASOS KENTRIKIS RODOPIS	55
GR1140007	PARTHENO DASOS KENTRIKIS RODOPIS	100
GR1240001	FYSIKO MNIMEIO MIKTOU DASOUS ALMOPIAS ARIDAIAS	1
GR1250001	ETHNIKOS DRYMOS OLYMPOU	26
GR1250005	ETHNIKOS DRYMOS OLYMPOU	100
GR1310002	ETHNIKOS DRYMOS PINDOU (PYRINAS)	100
GR1310003	ETHNIKOS DRYMOS PINDOU (PYRINAS)	49
GR1320002	FYSIKO MNIMEIO MIKTOU DASOUS GRAMMOU	1
GR1340001	ETHNIKOS DRYMOS PRESPON (DASOS KEDRON)	1
GR1430002	AISTHITIKO DASOS KOURI - ALMYROU	20
GR2210002	KOLPOS LAGANA	49
GR2220002	ETHNIKOS DRYMOS AINOU (PYRINAS)	100
GR2310001	FYSIKO MNIMIO DASOUS LESINIOU	0
GR2440004	ETHNIKOS DRYMOS OITIS	43
GR2550003	FYSIKO MNIMEIO DASOUS AEIFYLLON PLATANON NISOU SAPIENTZAS	0
GR4210005	FYSIKO MNIMEIO DASOUS KYPARISSIOU EMPONA RODOU	1
GR4340008	ETHNIKOS DRYMOS SAMARIAS	9
GR4340014	ETHNIKOS DRYMOS SAMARIAS	100

WORLD HERITAGE SITE

SITECODE	NAME OF DESIGNATED AREA
GR1270003	OROS ATHOS
GR1440003	METEORA

IMPORTANT BIRD AREAS

SITECODE	NAME OF DESIGNATED AREA
GR1110001	DELTA EVROU
GR1110002	VOUNA EVROU
GR1110005	VOUNA EVROU
GR1120002	PORTO LAGOS, LIMNI VISTONIDA KAI PARAKTIES LIMNOTHALASSES
GR1120004	STENA NESTOU
GR1130001	LIMNI ISMARIDA I MITRIKOU
GR1130002	LIMNI ISMARIDA I MITRIKOU
GR1130003	LIMNI ISMARIDA I MITRIKOU
GR1130004	LIMNI ISMARIDA I MITRIKOU
GR1130005	LIMNI ISMARIDA I MITRIKOU
GR1130006	POTAMOS-KOILADA FILIOURI
GR1130007	KOILADA KOMSATOU
GR1130009	LIMNI ISMARIDA I MITRIKOU
GR1130009	PORTO LAGOS, LIMNI VISTONIDA KAI PARAKTIES LIMNOTHALASSES
GR1140001	KENTRIKI RODOPI KAI KOILADA NESTOU
GR1140007	KENTRIKI RODOPI KAI KOILADA NESTOU
GR1150001	DELTA NESTOU KAI PARAKTIES LIMNOTHALASSES
GR1150002	DELTA NESTOU KAI PARAKTIES LIMNOTHALASSES
GR1150004	OROS LIMNIA
GR1150005	OROS PANGAIO
GR1150010	DELTA NESTOU KAI PARAKTIES LIMNOTHALASSES
GR1210002	STENA ALIAKMONA
GR1220001	LIMNI VOLVI KAI LIMNI KORONEIA
GR1220002	DELTA AXIOU, LOUDIA, ALIAKMONA
GR1220003	STENA REDINAS
GR1220004	LIMNOTHALASSA EPANOMIS
GR1220005	LIMNOTHALASSA ALYKIS ANGELOCHORIOU I MEGALOU EMVOLOU
GR1220007	POTAMOS AXIOS
GR1240001	OROS VORAS (KAIMAKTSALAN KAI PINOVO)
GR1240002	OROS TZENA
GR1240004	LIMNI AGRA
GR1240005	STENA APSALOU KAI POTAMOS MOGLENITSAS
GR1250001	OROS OLYMPOS
GR1250004	ALYKI KITROUS
GR1250005	OROS OLYMPOS
GR1260001	LIMNI KERKINI
GR1260001	OROS BELES
GR1260001	KROUSIA ORI I MAVROVOUNI
GR1260002	EKVOLES STRYMONA
GR1260004	OROS KOUSKOURAS
GR1260008	LIMNI KERKINI
GR1270001	OROS CHOLOMONTAS
GR1270002	OROS ITAMOS
GR1270003	OROS ATHOS
GR1270004	ELOS AGIOU MAMA
GR1310002	VALIA KALDA I ETHNIKOS DRYMOS PINDOU
GR1310003	VALIA KALDA I ETHNIKOS DRYMOS PINDOU
GR1320001	LIMNI KASTORIAS
GR1320002	OROS GRAMMOS
GR1330001	OROS VOURINOS
GR1340001	LIMNI MIKRI PRESPA KAI LIMNI MEGALI PRESPA
GR1340002	LIMNI MIKRI PRESPA KAI LIMNI MEGALI PRESPA

IMPORTANT BIRD AREAS (cont.)

SITECODE	NAME OF DESIGNATED AREA
GR1340004	LIMNI VEGORITIDA KAI LIMNI PETRON
GR1340005	LIMNI CHEIMADITIDA KAI LIMNI ZAZARI
GR1420001	KATO OLYMPOS, TEMPI, OSSA, DELTA PINEIOU
GR1420002	KATO OLYMPOS, TEMPI, OSSA, DELTA PINEIOU
GR1420003	KATO OLYMPOS, TEMPI, OSSA, DELTA PINEIOU
GR1420004	OROS MAVROVOUNI
GR1420005	KATO OLYMPOS, TEMPI, OSSA, DELTA PINEIOU
GR1430001	OROS PILIO
GR1430002	ORMOS SOURPIS
GR1430004	NISOI KYRA PANAGIA, GIOURA, PIPERI, SKANTZOURA (V. SPORADES)
GR1440002	OROS KERKITIO I KOZIAKAS
GR1440003	ANTICHASIA ORI KAI METEORA
GR1440004	STENA KALAMAKIOU
GR2110001	AMVRAKIKOS KOLPOS
GR2110002	ORI ATHAMANIKA
GR2110003	KOILADA ACHELOOU
GR2110004	AMVRAKIKOS KOLPOS
GR2120001	DELTA KALAMA
GR2120003	LIMNI LIMNOPOULA
GR2120004	STENA KALAMA
GR2130001	OROS TYMFI I GKAMILA KAI OROS SMOLIKAS
GR2130002	OROS TYMFI I GKAMILA KAI OROS SMOLIKAS
GR2130003	ORAIOKASTRO, LIMNI DELVINAKIOU, DASOS MEROPIS KAI KOILADA GORMOU
GR2130004	KENTRIKI PERIOCHI ZAGORIOU
GR2140001	EKVOLI KAI STENA POTAMOU ACHERONTOS
GR2140002	VOUNA ZALONGOU
GR2210003	NISOI STROFADES
GR2220001	KALON OROS
GR2310001	LIMNOTHALASSES MESOLONGIOU KAI AITOLIKOU, DELTA ACHELOOU KAI EVINOU
GR2310002	LIMNOTHALASSES MESOLONGIOU KAI AITOLIKOU, DELTA ACHELOOU KAI EVINOU
GR2310003	ORI AKARNANIKA
GR2320001	LIMNOTHALASSA KALOGRIAS, DASOS STROFILIAS KAI ELI LAMIAS
GR2320003	FARANGI VOURAIKOU KAI KALAVRYTA
GR2320004	FARANGI VOURAIKOU KAI KALAVRYTA
GR2320005	ORI MARMPAS, KLOKOS, FARANGI SELINOUNTA
GR2320006	LIMNOTHALASSA ALYKIS AIGIOU
GR2330002	OROS FOLOI
GR2330006	LIMNOTHALASSA KOTYCHI
GR2410002	NOTIO KAI ANATOLIKO TMIMA TOU OROUS PARNASSOS
GR2420001	OROS OCHI KAI GYRO PERIOCHI
GR2420002	OROS DIRFY, XIROVOUNI, MAVROVOUNI, ALOKTERI, ORTARI KAI PERIOCHI KYMIS
GR2420003	OROS KANTILI
GR2420004	LIMNOTHALASSA LIVARIOU I MIKRO KAI MEGALO LIVARI
GR2440002	DELTA SPERCHEIOU
GR2440004	OROS OITI
GR2450001	ORI VARDOUSIA
GR2450002	OROS GIONA, CHARADRA REKA, LAZOREMA KAI VATHIA LAKKA
GR2450005	NOTIO KAI ANATOLIKO TMIMA TOU OROUS PARNASSOS
GR2520002	LIMNI TAKA

IMPORTANT BIRD AREAS (cont.)

SITECODE	NAME OF DESIGNATED AREA
GR2530002	LIMNI STYMFALIA
GR2540001	ORI GIDOVOUNI, CHIONOVOUNI, GAIDOUROVOUNI, KORAKIA,
	KALOGEROVOUNI, KOULOCHERA KAI PERIOCHI MONEMBASIAS
GR2540003	DELTA EVROTA
GR2540004	NOTIA MANI, OROS SAGIAS KAI AKROTIRIO TAINARO
GR2550004	LIMNOTHALASSA DIVARI PYLOU I GIALOVA
GR2550006	KENTRIKO OROS TAYGETOS
GR3000001	OROS PARNITHA
GR3000009	OROS PARNITHA
GR4110001	LIMNI CHORTARO KAI LIMNI ALYKI
GR4110004	KOLPOS KALLONIS
GR4120003	OROS KERKIS
GR4120004	NISOI FOURNOI
GR4210001	NISOS KASOS
GR4210003	NISOS SARIA
GR4210008	OROS DIKAIOS, AKROTIRIO LOUROS KAI LIMNI PSALIDI
GR4220014	ORI DIAS, MAVROVOUNI, KORONOS
GR4220018	VOREIA SYROS
GR4310002	OROS GIOUCHTAS
GR4310003	NISOS DIA
GR4310005	OROS KOFINAS
GR4310006	OROS DIKTI
GR4320002	OROS DIKTI
GR4320005	ORI THRYPTIS KAI ORNO
GR4320006	NISOI DIONYSADES
GR4330002	OROS KEDROS KAI KOURTALIOTIKO FARANGI
GR4330003	OROS KEDROS KAI KOURTALIOTIKO FARANGI
GR4330004	FARANGI PRASSION
GR4330005	OROS IDI
GR4340003	CHERSONISOS RODOPOU
GR4340004	OROS KOUTROULIS
GR4340008	LEFKA ORI
GR4340010	LIMNI KOURNA, DELTA ALMYROU KAI PARALIA GEORGIOUPOLIS
GR4340014	LEFKA ORI

RAMSAR CONVENTION

SITECODE	NAME OF DESIGNATED AREA
GR1110001	DELTA EVROU
GR1120001	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1120002	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130001	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130002	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130003	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130004	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130005	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130006	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130007	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1130009	LIMNI VISTONIDA, LIMNOTHALASSA PORTO LAGOS KAI LIMNI MITRIKOU
GR1150001	DELTA NESTOU KAI LIMNOTHALASSA GKOUBOURNOU
GR1150002	DELTA NESTOU KAI LIMNOTHALASSA GKOUBOURNOU
GR1150010	DELTA NESTOU KAI LIMNOTHALASSA GKOUBOURNOU

RAMSAR CONVENTION (cont.)

SITECODE	NAME OF DESIGNATED AREA
GR1220001	LIMNES VOLVI KAI LAGADA
GR1220002	DELTA AXIOU-LOUDIA-ALIAKMONA KAI ALYKI KITROUS
GR1220003	LIMNES VOLVI KAI LAGADA
GR1220007	DELTA ALIAKMONA-LOUDIA-AXIOU-ALYKI KITROUS
GR1250004	DELTA ALIAKMONA-LOUDIA-AXIOU-ALYKI KITROUS
GR1260001	LIMNI KERKINI
GR1260008	LIMNI KERKINI
GR1340001	LIMNES MIKRI PRESPA KAI MEGALI PRESPA
GR1340002	LIMNES MIKRI PRESPA KAI MEGALI PRESPA
GR2110001	AMVRAKIKOS KOLPOS
GR2110004	AMVRAKIKOS KOLPOS
GR2220003	LIMNOTHALASSES MESSOLONGIOU
GR2310001	LIMNOTHALASSES MESOLOGIOU
GR2310002	LIMNOTHALASSES MESOLOGIOU
GR2310006	AMVRAKIKOS KOLPOS
GR2320001	LIMNOTHALASSA KOTYXI
GR2330006	LIMNOTHALASSA KOTYCHI

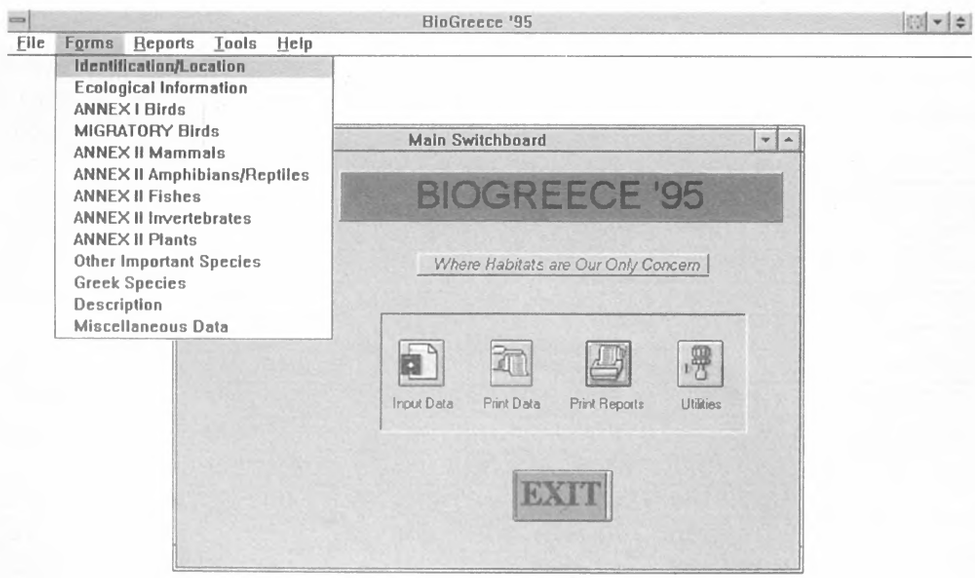
A.4. DATABASE DEVELOPMENT

by Nickolas Tsantas

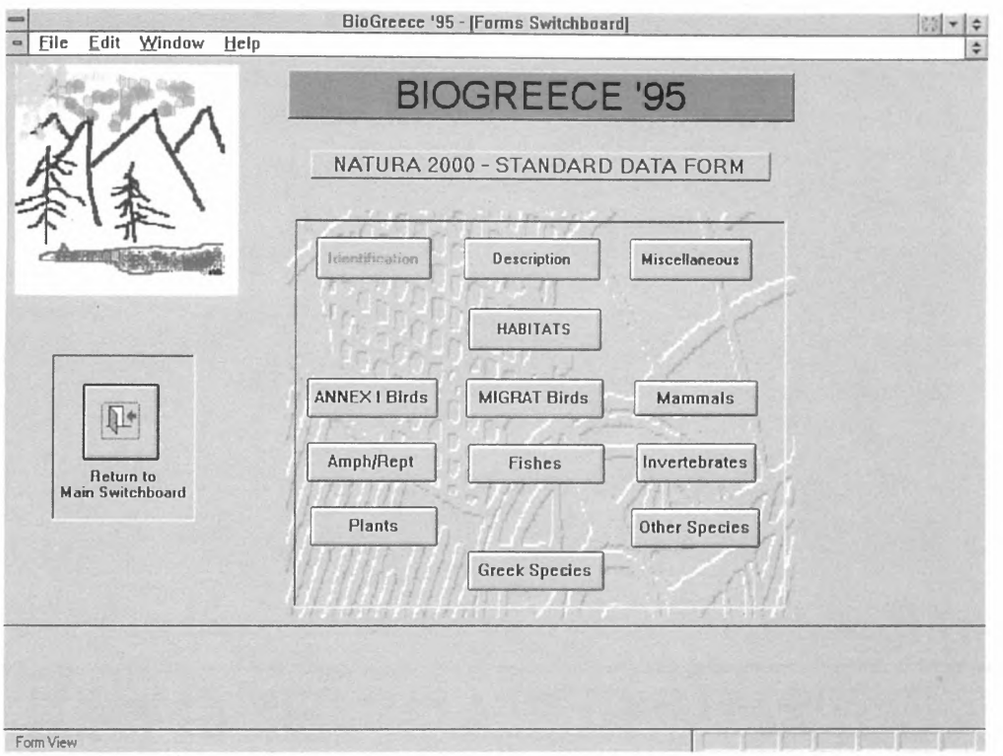
With the initiation of the project in July 1994, a software program in DOS environment was distributed to the Member States by the European Commission for storage and editing of the data. As certain inadequacies were identified in the database, with the lack of printing facilities being one of the most important, an urgent need was identified for the development of an updated version. Thus, the present version named "BIOGREECE '95" was built to satisfy all the needs that arose in time. More specifically, this version was created in Access environment, under Windows, and it provides for reverse compatibility with the previous DOS-program. It fully reproduces the format of the Standard Data Forms, while the queries produced, enable the evaluation of sites eligible to be included in the Natura 2000 Network, according to the criteria laid down in Annex III to Directive 92/43/EEC. In addition, apart from the SDF format, a separate field named "Greek Important Species" was developed to incorporate all important plant and animal species (mainly endemics and important for other reasons for Greece) not being able to be inserted in the field "Other Important Species". Thus, all available information recorded for the proposed sites was further elaborated and therefore their evaluation incorporated all ecological aspects.

The structure and operation of the Database (Setup, Running the program, Data input, Printing data, Data processing) is given in the manual entitled "Biogreece '95, NATURA 2000 Network Database, Site Data Entry Processing and Editing for Pcs using MS Access V2.0 software" (Tsantas N. 1995).

The main features of the programme are given in the following window :



The options for the data input are summarized in the following window:



The Data processing includes the following sections:

Location Reports

Site General Information, Site Area (ha), Site Altitude (m), Site Length (km), NUTS Levels

Ecological Reports

Habitats, Annex I Birds, Migratory Birds, Mammals, Amphibians/Reptiles, Fishes, Invertebrates, Plants, Other Important Species, Other Important Greek Species

Miscellaneous Reports

Habitat Classes, Designation Categories, Designation Distribution, Designation Types, Designation Cover, National Designation Types, International Designation Types, NATURA/CORINE Relationship, CORINE/NATURA Relationship, Find an Impact/Activity, Impacts/Activities Cover, Impacts/Activities Distribution

The field Check and Evaluation of Data includes the follow:

Checking Data, Find Duplicates, Check Habitat's Cover, Check Habitat's Classes, Site's Evaluation I, Site's Evaluation II, Site's Rank (Sites Score), Site's Habitat Rank (Site's Score for Habitats)

The Database has also several Utilities (Import Sites, Send Sites, Delete Files, Maintenance, Swap Sitecodes, Change Sitecode).

PART B

SUMMARIZED DATA OF THE PROPOSED SITES

EXPLANATORY NOTES

The datasheets that follow in the next pages include summarised data of the Standard Data Forms for each proposed site (see Appendix 1).

Site code: The unique site code comprises 9 characters and consists of three components: i) The first two characters are the country code ii) The following three characters correspond to the three first levels of the Nomenclature of Territorial Units for Statistics (NUTS) (see Appendix 2) iii) The last four characters show the enumeration of each site belonging to the third level of NUTS.

Site type: The character code (from A to K) corresponds to possible relations between proposed eligible Sites of Community Importance (SCI) and classified Special Protection Areas (SPA):

A: Designated SPA not related to other NATURA 2000 site.

B: Eligible SCI not related to other NATURA 2000 site.

C: Area of eligible SCI is same as designated SPA.

D: SPA touching (but not overlapping) with other NATURA 2000 site wich may be an eligible SCI or a SPA in a different administrative region.

E: Eligible SCI touching with other NATURA 2000 site wich may be a SPA or an eligible SCI in a different administrative region.

F: SPA containing an eligible SCI.

G: Eligible SCI entirely within designated SPA.

H: Designated SPA entirely within eligible SCI.

I: Eligible SCI containing designated SPA.

J: SPA partly overlapping with an eligible SCI.

K: eligible SCI partly overlapping with designated SPA.

Other important species: The motivation of each listing species is indicated by the following categories:

A: National Red Data list

B: Endemics

C: International Conventions

D: Other reasons

Impact/Activities: The code from 100 to 990 correspond to the category of the impacts and activities influencing the conservation status of the site (see Appendix 3).

IN: Impacts and activities within the site.

AR: Outside impacts and activities which may affect the integrity of the site.

Site Name: DELTA EVROU



Sitecode: GR1110001 **Type**: D

Longitude: 26° 00′ **Latitude**: 40° 52′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Evros

Altitude (m): 1 **Area (ha)**: 9267 **Length**: -

Description: Of great importance for birds occurring in the delta are the reed bed formations dominated by *Phragmites australis, Scirpus maritimus, Typha angustifolia, T. latifolia, Schoenoplectus lacustris* etc., fringing lagoons and freshwater canals and stagnant or slowly flowing waters of fluctuating depths. Important for the wetland is, also, the aquatic vegetation in shallow freshwater ponds and canals, dominated by rooted aquatic plants with floating leaves or submerged with often emerging flower spikes (*Nymphaea alba, Trapa natans, Ranunculus fluitans, Potamogeton crispus, P. pectinatus, Myriophyllum spicatum, Ceratophyllum* sp. etc.).

Habitat types: Sandbanks which are slightly covered by seawater all the time, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the sholerine with Ammophila arenaria (white dunes), Salt steppes (Limonietalia), Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Alosa fallax, Aspius aspius, Rhodeus sericeus amarus, Cobitis taenia, Aphanius fasciatus, Lycaena dispar.*

Other important species: — Flora: 6D
— Fauna: 6A, 21C, 3D

Impacts/Activities:
— Positive: 130 (IN)
— Neutral: 200, 210, 220 (IN)
— Negative: 100, 110, 120, 140, 230, 802, 810, 830 (IN) /100, 110, 120, 230, 400, 411, 502, 503, 505, 701 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: Ramsar Convention site, IBA.

Significance: Although much disturbed and reduced in significance for birds, in recent years, Delta Evrou remains one of the most important wetlands in Greece and Europe. It holds a diversity of habitats in a relatively small area, several of them being of great importance for the Mediterranean region. It still supports a diverse avifauna. It serves not only as a wintering or intermediate station for migratory birds but also as a breeding site for rare and endangered bird species. Delta Evrou also hosts a large number of other important fauna and flora species.

Site Name: DASOS DADIAS - SOUFLI



Sitecode: GR1110002 **Type**: H

Longitude: 26º 12′ 10″ **Latitude**: 41º 05′ 20″

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Evros

Altitude (m): 216 **Area (ha)**: 7290 **Length**: -

Description: The protected area for birds of prey of Dadia forest consists of a small nucleous (922 ha) and of larger one (6368 ha). The rocks of the larger nucleous are volcanic and 95% of the rocks of the smaller one are metamorphic and basic siliceous. The diverse relief with the presence of a large number of small and big streams, the rocky formations, the small and large forest gaps, the natural fences of various forest species, and the farms of traditional cultivations, compile a very interesting forest landscape. The forest consists of pure and mixed *Quercus* spp. as well as other broad-leaved species.

Habitat types: *Juniperus oxycedrus* arborescent mattoral, Sub-continental steppic grasslands, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Caves not open to the public, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus frainetto* woods, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Lutra lutra, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Barbus plebejus, Cobitis taenia, Euphydryas aurinia.*

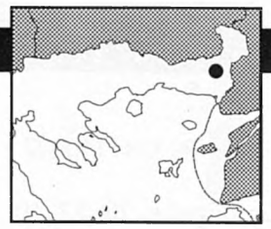
Other important species: — Flora: 6C, 6D
— Fauna: 12A, 38C, 2D

Impacts/Activities:
— Positive: 140 (IN)
— Neutral: 190, 850 (IN) /150, 161 (AR)
— Negative: 241, 242, 243, 622, 730, 790, 948, 971, 972 (IN) 110, 141, 162, 164, 230, 240, 300, 502, 730, 850 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA.

Significance: The site has a significant ecological value due to the presence of a great number of birds of prey; many of them are rare in Europe. The area is an important biotope for many reptiles and birds as a result of its location; it is a cross road for migrating birds as well as an ideal nesting point. Besides the two nuclei being declared as protected since 1980, according to a new study, a peripheral zone is suggested to be established determined by the limits of the forest complex of Dadia-Lefkimi-Souphli. The total forest complex Dadia-Lefkimi-Souphli is described in the Natura 2000 Standard Data Forms as an independent site under the name: «Vouna Evrou». It is suggested that in this peripheral zone, certain human activities should be prohibited or restricted in time and space.

Site Name: TREIS VRISES



Sitecode: GR1110003 **Type**: E

Longitude: 26° 01′ **Latitude**: 41° 08′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Evros

Altitude (m): 650 **Area (ha)**: 10300 **Length**: -

Description: The site belongs to the wet bioclimatic layer with cold or very cold winters. It is characterised by the presence of metamorphic and sentimentary deposit rocks. Natural forests of the site are consisted of mixed and pure stands of *Fagus* and *Quercus* species. The dominant species of the oak forest is *Quercus dalechampii* which has its best natural range over the height of 300 m. At the eastern part of the site, and in the lower levels, the dominant species are *Q. frainetto* mixed with *Q. cerris* and *Q. pubescens*. Small stands of *Populus tremula, Ilex aquifolium, Acer* sp., *Fraxinus* sp. etc, are found inside the beech forest. After 1960, many abandoned areas have been artificially planted with *Pinus nigra* and *P. radiata*. An area of 400 ha is used as a game refuge without proper management.

Habitat types: *Juniperus oxycedrus* arborescent mattoral, Sub-continental steppic grasslands, Acidophilous (Luzulo-Fagetum) beech forests, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus frainetto* woods, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Lutra lutra, Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Elaphe quatuorlineata, Emys orbicularis, Mauremys caspica, Elaphe situla*.

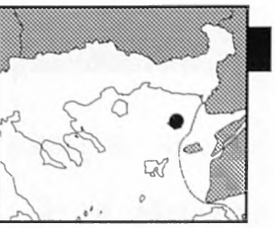
Other important species: — Flora: -
— Fauna: 9A, 38C

Impacts/Activities: — Positive: 170 (IN) /170 (AR)
— Neutral: 160, 620 (IN) /160 (AR)
— Negative: 140, 162, 230, 242, 250, 948 (IN) / 161, 230, 948 (AR)

Protection Status: — National and Regional level: Game breeding station, Game refuge
— International level: -

Significance: Mixed forest of *Fagus* and *Quercus* species with rich flora and fauna characterize the site which has the most appreciable forest production in Evros region. Traditional agroforestry landscape is also of great interest.

Site Name: FENGARI SAMOTHRAKIS



Sitecode: GR1110004 **Type**: B

Longitude: 25° 30′ **Latitude**: 40° 28′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Evros

Altitude (m): 1100 **Area (ha)**: 9550 **Length**: -

Description: The extensive oak forests of *Quercion frainetto* have been degraded because of intensive overgrazing and wildfires. Large part of these forests is covered today by sclerophyllus scrub (evergreen broad leaves of the Eu-mediterranean vegetation zone) and grasslands. Above the timber line the vegetation consists of endemic and rare species. Three main streams on the northern slopes of the site form waterfalls and ponds. The dominant species of the riparian vegetation is oriental plane. From a geological point of view the region belongs to the Mass of Rodope. The climate is Mediterranean.

Habitat types: Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, *Juniperus excelsa* and *J. foetidissima* arborescent matorrals, Stepped and garland grasslands, Oro-Mediterranean stripped grasslands, Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in continental Europe), *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Myotis blythi, Capra aegagrus, Testudo graeca, Mauremys caspica, Elaphe quatuorlineata, Callimorpha quadripunctata.*

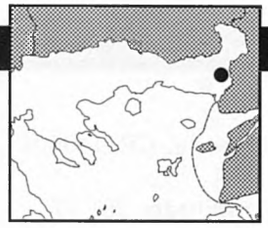
Other important species:
— Flora: 14B, 10D
— Fauna: 2A, 3B, 22C

Impacts/Activities:
— Positive: -
— Neutral: 501, 608, 622 (IN) / 100, 210, 220, 400, 430, 502, 511, 608, 690 (AR)
— Negative: 140, 180, 230, 243, 701, 948 (IN) / 140, 701 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The site is of great interest because of its endemic and rare flora and high scenic beauty value (a lot of streams, waterfalls and ponds). Native wildlife can make a perceptible component of the forest scene. Favourable habitats mainly for birds at road side parks, in pic-nic sites and for larger species in glades are also encountered. An extensive forest of *Platanus orientalis* present in the island, adds to the landscape beauty and to the ecological significance of the site.

Site Name: VOUNA EVROU



Sitecode: GR1110005 **Type**: I

Longitude: 26° 11′ **Latitude**: 41° 07′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Evros

Altitude (m): 210 **Area (ha)**: 42170 **Length**: -

Description: The site is part of South-East edge of Rodopi. It is a submountainous hilly area with intense and diverse landscapes. A great part of River Evros watershed crosses the area. The site consists of volcanic bedrocks and alluvial deposits. It belongs to the sub-mediterranean vegetation zone and is characterized by thermophile sub-continental oaks. The vegetation is composed by mixed stands of *Pinus brutia*, *P. nigra*, oaks and other broad-leaved species of the mediterranean and submediterranean flora. All these forest ecosystems have been degraded in certain degree by human activities.

Habitat types: Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, Sub-continental steppic grasslands, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Caves not open to the public, Residual alluvial forests (Alnion glutinoso-incanae), Mixed oak-elm-ash forests of great rivers, *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Rhinolophus euryale, Myotis emarginatus, Lutra lutra, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Rhodeus sericeus amarus, Barbus plebejus, Cobitis taenia, Lycaena dispar, Euphydryas aurinia.*

Other important species:
— Flora: -
— Fauna: 14A, 38C, 2D

Impacts/Activities:
— Positive: -
— Neutral: 150, 162 (IN), / 160 (AR)
— Negative: 110, 141, 163, 164, 230, 241, 242, 243, 300, 730 (IN) / 240, 400, 410, 502, 730, 850, 948 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The site has a significant ecological value because of a great number of bird species, many of which are rare in Europe. The area is an important biotope for many reptiles and birds as a result of site location; is a cross road of bird migration and bird nesting. The site consists of 1) protected area for birds of prey (7290 ha), 2) forest management area (silviculture, exploitation) (19291 ha), 3) pasture areas of forest land, graslands and agricultural areas (15589 ha).

Site Name: APALOS



Sitecode: GR1110006 **Type**: E

Longitude: 25° 58′ **Latitude**: 40° 50′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Evros

Altitude (m): -4 **Area (ha)**: 1245 **Length**: -

Description: This site is located between Alexandroupolis and the Evros delta. The site covers a wide area of shallow waters with sand dunes and salt marshes. The vegetation comprises species of brackish waters close to the coast and *Posidonia* beds offshore. Depth is around 7-8 m.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds

Plant species: -

Animal species: -

Other important species: — Flora: 1D
— Fauna: -

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 200, 213, 520, 910 (IN) / 213, 421 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The beds of *Posidonia* form separate groups with relatively high density. *Posidonia* beds represent a typical association of the mediterranean coastal ecosystems sensitive to pollution. The characteristic brackish vegetation of the marine area has a representative species *Cymodocea nodosa*, another marine phanerogam.

Site Name: LIMNI VISTONIDA KAI LIMNOTHALASSA PORTO LAGOS



Sitecode: GR1120001 **Type**: G

Longitude: 25° 11′ **Latitude**: 41° 03′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Xanthi

Altitude (m): 2 **Area (ha)**: 8987 **Length**: -

Description: Limni Vistonida is a coastal lake. It contains brackish water which mixes with freshwater inflow from the two rivers (Konsyfos, Komsatos), while, the southern part of the lake is slightly saline. The Porto-Lagos lagoon has mostly saline water and a reforestation of *Pinus maritima* is found there. Limni Vistonida is fringed with *Phragmites* sp., and the surrounding area also includes zones of *Tamarix* scrub, salt marshes, riverine forest, freshwater pools and wet meadows. The rivers entering the lake have riverine forest and sandflats in their estuaries. The housing activities that have been developed between Porto-Lagos and Vistonida should be controlled by special measures that, however, have not yet been established.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), *Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Lutra lutra, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Alosa fallax, Rhodeus sericeus amarus, Chalcalburnus chalcoides, Cobitis taenia, Aphanius fasciatus, Lucanus cervus.*

Other important species: — Flora: 4D
— Fauna: 8A, 1B, 25C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 140, 180, 300 (AR)
— Negative: 140, 180, 210, 230, 400, 412, 421, 502, 504, 507, 690, 710, 952 (IN) 100, 110, 120, 130, 230, 410, 421, 422, 700 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: Ramsar Convention site, IBA

Significance: It is a significant wetland because of the habitat, flora and fauna diversity. The bird life is first of all abundant at all seasons. There is one heronry in a pine reforestation in Porto Lagos and another one with *Nycticorax* species in the reeds. The adjacent hills host important and also diverse populations of birds of prey feeding around the marshes. Since 1983, in the salt water of Porto Lagos lagoons, an increasing population (more than 2000) of flamingos (*Phoenicopter ruber*) has been observed. Dalmatian pelican also winters there. It is very important migration and wintering area for many species of waterfowl and the proximity of many lakes offers better protection and refuge from hunting. In the ichthyofauna of the lake belonged also the endemic subspecies *Alosa alosa vistonica*, which according to observations of July 1995 would be considered as extinct.

Site Name: LIMNOTHALASSES LAFRI & LAFROUDA



Sitecode: GR1120002 **Type**: E

Longitude: 25° 03′ **Latitude**: 41° 00′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Xanthi

Altitude (m): 30 **Area (ha)**: 3548 **Length**: -

Description: Lafri-Lafrouda are two coastal lagoons, located between Porto Lagos and Avrida, southwest of Vistonis lake. They are shallow, close to each other, fringed with *Phragmites* sp., with salt marshes and islands. Nowadays, they are characterized by coastal heathland, sandy beaches, mudflats and few dunes. There are also some fields and brushwood on the hillsides. Lafri-Lafrouda border the salinas of Porto Lagos (in front of the salinas of Nea Kessani). Their surroundings by tertiary hills covered with mediterranean macchia considerably raises the biotope diversity.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), Fixed dunes with herbaceous vegetation (grey dunes), *Quercus frainetto* woods.

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo graeca, Elaphe quatuorlineata, Elaphe situla, Aphanius fasciatus.*

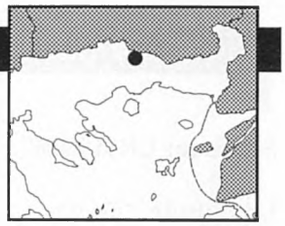
Other important species:
— Flora: 1D
— Fauna: 3A, 3C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 210, 340 (IN)
— Negative: 100, 110, 120, 140, 230, 500 (IN) / 100, 110, 120, 130, 140, 180, 230, 500, 700 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA.

Significance: The area has a considerable importance for wintering and migrating ducks and waders, while great diversity and rare species are notable. In the present site, *Pancratium maritimum* is growing wild; this plant species is seriously endangered by the human activities on the coast.

Site Name: OROS CHAIDOU-KOULA & GYRO KORYFES



Sitecode: GR1120003 **Type**: B

Longitude: 24° 48′ **Latitude**: 41° 20′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Xanthi

Altitude (m): 1400 **Area (ha)**: 3209 **Length**: -

Description: The site consists of acid metamorphic igneous rocks. The major part of these are volcanic rocks of the eocene-oligocence. In a small southern part we find acid rocks (granites of the paleozoic). This area is covered by old beech forests. There is a sparse appearance of *Pinus peuce*, scattered old trees and small young stands and groups-natural regenaration plots. The small Natural Monument (1.8 ha) of pure stands of beech occurs at the NW part of the site. There are also open areas and grasslands as well as mountain cliffs and screes (10 ha) on the Gyftokastro top. (Hellas-Bulgaria borderline).

Habitat types: Intermittently flowing Mediterranean rivers, Stepped and garland grasslands, Sub-continental steppic grasslands, Vegetated silicolous inland cliffs with chasmophytic vegetation, Acidiphilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Residual alluvial forests (Alnion glutinoso-incanae), Hellenic beech forests with Abies borisii-regis, *Quercus frainetto* woods, Acidophilous forests (Vaccinio- Piceetea), Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Myotis blythi, Myotis emarginatus, Myotis myotis, Ursus arctos, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Elaphe quatuorlineata.*

Other important species: — Flora: 6D
— Fauna: 5A, 10C, 4D

Impacts/Activities:
— Positive: 971 (IN)
— Neutral: 629 (IN) / 140, 160, 400, 430, 629 (AR)
— Negative: 140, 230 (IN) / 230, 501 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge.
— International level: Council of Europe Biogenetic Reserve.

Significance: Area of high interest on account of the endemic plant species and other plants with restricted distribution. There are also rare species of birds and insects. The central part of the site is a bear-habitat (bears use this place in winter for nesting and reproduction). Forest Service has never used this site as a "forest management area", because of its beauty and virginity. They suggest to "manage" this area as a Natural Monument (an expansion of the already Natural Monument of 1.8 ha). The Greek Ministry of Agriculture proclaimed in 1979, 1.8 ha of the site as "Natural Monument" (No. of Proclamation 200995/7950/79). The Forest Administration Office of Xanthi proposed in 1994 to the Ministry of Agriculture the expansion of the "Natural Monument" to 3.209,3 ha. (No. of proposition D 2859/28-1-1994).

Site Name: AISTHITIKO DASOS NESTOU



Sitecode: GR1120004 **Type**: C

Longitude: 24° 42′ **Latitude**: 41° 07′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Xanthi

Altitude (m): 200 **Area (ha)**: 2380 **Length**: -

Description: The site consists mainly of metamorphic rocks, marbles (thought to be former reef limestones) and in river-bed, of sedimentary rocks, alluvial deposits (recent fluviatile deposits). In the area the large gorge of Nestos river with steep rocky slopes, is found. Also, there are well formed riparian forest stands or groups of *Salix alba, S. fragilis, S. ampexicaulis, S. elaeagnos, Populus alba, P. nigra* and sparse appearances (individually) of *Platanus orientalis* and *Alnus glutinosa*. From a geological point of view, the region belongs to the Mass of Rodope. The climate is an intermediate climate type betwenn that of the Mediterranean and the continental.

Habitat types: Intermittently flowing Mediterranean rivers, Mediterranean arborescent matorral: Juniper formations, Thermophilous ash (*Fraxinus angustifolia*) woods, *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Rhodeus sericeus amarus, Barbus plebejus, Cobitis taenia, Lycaena dispar.*

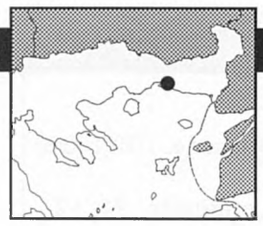
Other important species:
— Flora: 1B, 7D
— Fauna: 6A, 4B, 16C, 4D

Impacts/Activities:
— Positive: -
— Neutral: 220, 501, 503, 508 (IN) / 100, 160, 401, 430 (AR)
— Negative: 100, 140, 180, 243, 622, 948 (IN) / 140, 180, 230, 243, 301, 852, 853, 948 (AR)

Protection Status:
— National and Regional level: Aesthetic Forest, Game refuge.
— International level: IBA

Significance: The region of Nestos valley is characterized by the very rich flora (about 500 taxa). The gorge is a refuge for rare birds of prey and for mammals such as the otter. It is the only known nesting site of Ruddy shelduck. It is protected as an Aesthetic Forest since 11/7/1977.

Site Name: LIMNI MITRIKOU



Sitecode: GR1130001 **Type**: G

Longitude: 25° 19′ **Latitude**: 40° 59′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 3 **Area (ha)**: 2175 **Length**: -

Description: It is a natural freshwater shallow lake located 3 km far from the Thracian coast, not drained yet. It is bordering to the west with the main road and crop cultivations and to the east with a dyke and a canal. In the south there is a salt marsh and the floodplain with smaller lakes and old river beds. Bosbos river is flowing into lake Mitrikou from the north while Filiouris through the eastern part of the lake flows to the sea. Mitrikou lake is surrounded by rich reed beds and floating vegetation (*Trapa natans*, etc.) providing nesting sites for *Chlidonias hybridus*.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), Sandbanks which are slightly covered by sea water all the time, Estuaries, Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Salix alba* and *Populus alba* galleries, estuaries.

Plant species: -

Animal species: *Rhodeus sericeus amarus, Chalcalburnus chalcoides, Cobitis taenia, Aphanius fasciatus*.

Other important species: — Flora: 5D
— Fauna: 1C

Impacts/Activities: — Positive: -
— Neutral: 830, 952 (IN) / 180, 300, 421, 510, 690, 830 (AR)
— Negative: 100, 140, 210, 230 (IN) / 100, 140, 230, 500, 700 (AR)

Protection Status: — National and Regional level: Game refuge.
— International level: Ramsar Convention site, IBA.

Significance: It is a biotope of great importance because of the diversity of habitats, of animal and plant communities as well as because of the high number of bird and flora species. Many of these species are rare and endemic. In the area, there are the last colonies in Greece of spoonbill (*Platalea leucorhodia*) and glossy ibis (*Plegadis falcinellus*) with perhaps *Egretta alba, Ardea purpurea* and *Ixobrychus minutus*. Moreover, few pairs of *Ardea cinerea* occur there. The site is important for wildfowl and waders breeding and equally important as migration and wintering area for ducks, geese, terns and gulls. Lake Mitrikou is one of the biotopes where the endemic fish subspecies *Chalcalburnus chalcoides macedonicus* occurs. At this site the fish are still present but obviously in decline, resulting in a low population density due to a requirement for flowing water needed for reproduction (observations, July 1995). Therefore, this subspecies could be considered as vulnerable, even endangered. (observations, July 1995).

Site Name: LIMNOTHALASSA XIROLIMNI



Sitecode: GR1130002 **Type**: G

Longitude: 25° 09′ **Latitude**: 40° 58′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 0 **Area (ha)**: 425 **Length**: -

Description: It is a coastal lagoon separeted from the sea by a sandy beach, situated at the eastern edge of the town Fanari, western of Arogi village. The lagoon consists of main habitat types of saltmarshes and few reed beds. In the south west of the lagoon there is a camping site as well as a hotel and in the south there is a military station. Between the lagoon and the sea-shore, at a distance of 500-800 m, there is a reforestation area of several species (*Populus alba, Acer negudo* etc.) and also playing-fields (basketball, tennis, volley etc.). A hunting kiosk is located at the northern bank of the lagoon and a fisher-station at the south-east part.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), Fixed dunes with herbaceous vegetation (grey dunes).

Plant species: -

Animal species: *Aphanius fasciatus.*

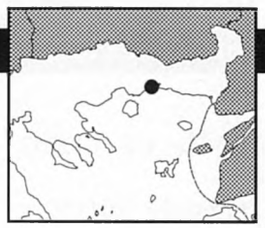
Other important species: — Flora: 1D
— Fauna: 1C

Impacts/Activities:
— Positive: -
— Neutral: 210, 510 (IN)
— Negative: 140, 230, 400, 422, 500, 502, 608, 690, 700, 710 (IN) 100, 110, 120, 140, 180, 230, 400, 500, 510, 608, 690, 700 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA

Significance: It is one of the most important wetlands for birds in Greece and in Europe too. There is significant a number of wintering geese that fluctuates according to weather conditions and hunting disturbance. The lagoon along with its surrounding grasslands functions as feeding ground for numerous small migrating birds (Passeriformes). In the present site, *Pancratium maritimum* is growing wild; this plant species is seriously endangered by the human activities on the coast.

Site Name: LIMNOTHALASSA KARATZA



Sitecode: GR1130003 **Type**: G

Longitude: 25° 11′ **Latitude**: 40° 57′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 0 **Area (ha)**: 562 **Length**: -

Description: It is a small lagoon with salt marshes and a narrow coastal sandy beach. It is bordered by bare, partly cultivated hills with small islands and mudflats. In the south-east part of the lagoon there are a fisher-station and a camping next to the station. In the west of the lake there is village Arogi which is surrounded by quickly developing illegal constructions. Alluvial lowland plain and tertiary hills with silty, clay and sandy soils dominate here.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), Fixed dunes with herbaceous vegetation (grey dunes).

Plant species: -

Animal species: *Aphanius fasciatus*.

Other important species: — Flora: 1D
— Fauna: 1C

Impacts/Activities:
— Positive: -
— Neutral: 210, 830 (IN)
— Negative: 140, 230, 400, 500, 690, 700 (IN) / 100, 110, 120, 140, 180, 230, 400, 421, 500, 608, 690 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA

Significance: It is one of the most important areas for bird in Greece with breeding, migrating and wintering species. It is protected by Ramsar Convention. It is also declared as IUCN directory site. In the present site, *Pancratium maritimum* is growing wild; this plant species is seriously endangered by the human activities on the coast.

Site Name: LIMNOTHALASSA ALYKI (MESI)



Sitecode: GR1130004 **Type**: G

Longitude: 25° 13′ **Latitude**: 40° 58′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 0 **Area (ha)**: 975 **Length**: -

Description: It is shallow coastal lagoon, located between the lagoons of Ptelea and Karatza, surrounded by large salt marshes and coastal sand dunes where no reeds or freshwater marshes exist. In the northern part of Alyki exist salt works and cultivation extends up to the wetland. There is also a small intermittent stream, which has been diverted from the north western to the eastern side of the lagoon, where it flows into the sea. A fishery station is situated near the sea, while at the south-west part of the lagoon there is a small housing development.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Fixed dunes with herbaceous vegetation (grey dunes), Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Aphanius fasciatus*.

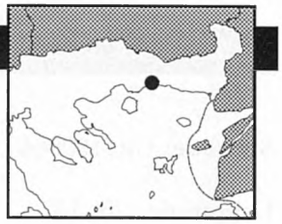
Other important species: — Flora: -
— Fauna: 1C

Impacts/Activities:
— Positive:
— Neutral: 210, 500, 830 (IN) / 830 (AR)
— Negative: 140, 230, 340, 400, 690, 700 (IN) / 100, 110, 120, 140, 180, 230, 400, 421, 500, 608, 690 (AR)

Protection Status:
— National and Regional level:
— International level: Ramsar Convention site, IBA.

Significance: Formerly, it was much richer habitat, concerning bird breeding. The salt works of Alyki (Mesi) have also included important bird habitats.

Site Name: LIMNOTHALASSA PTELEA



Sitecode: GR1130005 **Type**: G

Longitude: 25° 16′ **Latitude**: 40° 57′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 0 **Area (ha)**: 1250 **Length**: -

Description: There are two saltwater and shallow coastal lakes with muddy shores, sandy landstrips, beaches at the seaside and salt marshes. There is a connection between them and they are separated by a dyke. In the north east they are surrounded by irrigated arable land. In the south there are rocky shores (in the sea). Between Ptelea and Alyki lakes there is reforestation of *Pinus maritima* as well as uncultivated lands. Sedimentary deposits of Tertiary and Quaternary and contemporary alluvial deposits are the main geological substrates of the site.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Fixed dunes with herbaceous vegetation (grey dunes), Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes).

Plant species: -

Animal species: *Aphanius fasciatus*.

Other important species:
— Flora: 1D
— Fauna: 1C

Impacts/Activities:
— Positive:
— Neutral: 210 (IN)
— Negative: 140, 230, 500, 690, 700 (IN) / 100, 110, 120, 140, 180, 230, 500 (AR)

Protection Status:
— National and Regional level:
— International level: Ramsar Convention site, IBA

Significance: It is part of Ramsar Convention site. The lagoons also support a large number of fish, amphibians, reptiles and mammals. In this site, *Pancratium maritimum* is growing wild; this plant species is seriously endangered by human activities on the coast.

Site Name: POTAMOS - KOILADA FILIOURI



Sitecode: GR1130006 **Type**: K

Longitude: 25° 23′ **Latitude**: 41° 00′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 100 **Area (ha)**: 1950 **Length**: -

Description: The area, which is adjacent to Vouna Evrou, is a steep-sided valley, with rock facies and descends from Demir Tsal (Sarka) hills. It consists of oak forests and pastures. The other name of the Filiuri river is Lissos river. The river is very long, with a lot of tributaries flowing into the river body . It is now threatened by an irrational reforestation of pines in open oak forest and by road construction. Nevertheless, abundant relics of riparian forest exist along the river as well as scattered inside the different agricultural cultivations.

Habitat types: Mediterranean salt meadows (Juncetalia maritimi), Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Lutra lutra, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Elaphe quatuorlineata, Emys orbicularis, Mauremys caspica, Rhodeus sericeus amarus, Barbus plebejus, Chalcalburnus chalcoides, Cobitis taenia.*

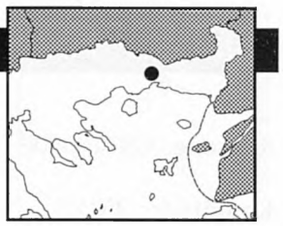
Other important species: — Flora: -
— Fauna: 2A, 12C

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 110, 120, 140, 230, 300, 422, 500, 502, 503, 700, 710 (IN) 100, 110, 120, 140, 180, 230, 400, 410, 421, 422, 502, 700 (AR)

Protection Status:
— National and Regional level: Game reguge
— International level: Ramsar Convention site, IBA

Significance: The site is rich in birds of prey including *Neophron percnopterus, Gyps fulvus, Circactus gallicus, Aquila pomarina, A. chrysaetos* and *Hieraaetus pennatus*. Moreover it is one of the most important feeding areas for vultures. Additional breeding species include *Ciconia nigra, Dendrocopos medius* and *Hippolais olivetorum*. The river provides with freshwater the close to-the-sea wetlands.

Site Name: KOILADA KOMSATOU



Sitecode: GR1130007 **Type**: K

Longitude: 25° 07′ **Latitude**: 41° 10′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 200 **Area (ha)**: 9500 **Length**: -

Description: Komsatos river provides Vistonida lake with a great freshwater supply, which comes up to 300 l/sec. A great quantity of sand gravel and silt (240,000 m³/year) is extracted every year. At the outlet of Komsatos river there are overgrazed and degraded riparian soft wood forests and an extensive cultivation of *Populus* sp. There are also hills (Kara Oglan) with grazed oak forest and steep valleys (especially the Komsatos river valley). Forest structure owes much to a history of grazing but there are also areas of dense ravine forest.

Habitat types: Mediterranean salt meadows (Juncetalia maritimi), Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo graeca, Elaphe quatuorlineata, Alosa fallax, Rhodeus sericeus amarus, Barbus plebejus, Chalcalburnus chalcoides, Cobitis taenia.*

Other important species: — Flora: -
— Fauna: 3A, 9C, 2D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 110, 120, 130, 140, 230, 300, 500, 502, 503, 507, 870 (IN) 100, 110, 120, 130, 140, 230, 421, 500, 502, 900 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: Ramsar Convention site, IBA

Significance: It is important for birds of pey in Greece; species diversity is enriched by proximity to lake Vistonis and adjacent wetlands. Traditional land uses contribute to the value of the area. The wetland under consideration either seems as one ecological unit along with lake Vistonis or by itself still has a great ecological value for Greece. Remarkable is its great diversity of biotopes and wildlife species, as well as the important bird populations still existing. Several bird species have their national strong holds here and even some breed in their total Greek and European population in these wetlands.

Site Name: MARONEIA-SPILAION



Sitecode: GR1130008 **Type**: B

Longitude: 25° 35′ **Latitude**: 40° 56′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 200 **Area (ha)**: **Length**: 0.23km

Description: Polychromatic stalactites and stalagmites are in abundance. Two small lakes are also found. Many archaeological findings from Neolithic Age and Byzantine era have been discovered.

Habitat types: Caves not open to the public.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Miniopterus schreibersii, Myotis myotis.*

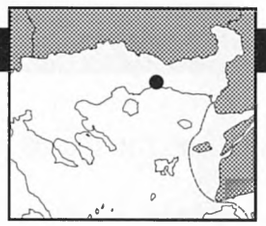
Other important species: — Flora:
— Fauna: 2B

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: -

Protection Status: — National and Regional level:
— International level:

Significance: It is a significant shelter for bats because of the suitable inner environment, the conditions of the cave and the existence of running water close to the cave.

Site Name: LIMNES & LIMNOTHALASSES TIS THRAKIS



Sitecode: GR1130009 **Type**: J

Longitude: 25° 11′ **Latitude**: 41° 03′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Rodopi

Altitude (m): 25 **Area (ha)**: 24556 **Length**: -

Description: The site includes a series of coastal lakes. The largest one, lake Vistonida, is half brackish-half freshwater having a freshwater inflow from the rivers Konsyfos and Komsatos. On the other side, the lagoons Mitrikou, Valtos, Elos, Ptelea, Alyki, Karatza, Xirolimni, Lafri-Lafrouda and Porto-lagos are saline. Lakes Messi and Lafri-Lafrouda have salterns (Nea Kessani). There are different biotopes: large reedbeds all around, *Tamarix* scrubs (the greatest in Greece), salt marshes, dunes, bordering macchia hills and also agricultural cultivation extending close to the wetland biotopes plain. Moreover, tertiary hills surround the area. To the north, the tertiary Rodopi mountains are raised. There is also an alluvial Delta.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes with herbaceous vegetation (grey dunes), Natural euthrophic lakes with Magnopotamion or Hydirocharition type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Shifting dunes along the shoreline with *Ammophila arenaria*.

Plant species: -

Animal species: *Lutra lutra, Triturus cristatus, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Alosa fallax, Rhodeus sericeus amarus, Chalcalburnus chalcoides, Cobitis taenia, Aphanius fasciatus, Lucanus cervus.*

Other important species: — Flora: 7D
— Fauna: 7A, 1B, 24C

Impacts/Activities: — Positive:
— Neutral: 210, 507, 952 (IN) / 300, 830 (AR)
— Negative: 100, 140, 180, 230, 400, 421, 502, 504, 690 (IN) 100, 130, 140, 180, 230, 410, 421, 422, 500, 700 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: Ramsar Convention site, IBA

Significance: The ten wetlands under consideration either seem as one ecological unit and a great wetland complex, or considered each one separately still have a great ecological value for Greece and Europe. Remarkable is their diversity in biotopes and wildlife species, as well as the important bird populations existing here. Several bird species have their national strong holds here. The site is classified as a Ramsar site.

Site Name: DASOS FRAKTOU



Sitecode: GR1140001 **Type**: I

Longitude: 24° 30′ **Latitude**: 41° 32′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Drama

Altitude (m): 1600 **Area (ha)**: 1072 **Length**: -

Description: The climate type is mediterranean to middle-european. The forests of the area consist mainly of mixed stands of beech, spruce, scots pine and fir. There are small stands of *Populus tremula* and *Betula verucosa*, especially on the steep slopes (extreme site conditions). The final climax consists of mixed stands of *Fagus* sp.-*Picea abies-Abies borisii-regis*. Maximum tree age is 500 years, diameter 1.20 m and height 59 m for conifers and 45 m for *Fagus* sp. The steep slopes and the small streams form low watefalls.

Habitat types: Stepped and garland grasslands, Northern greek calcareous cliffs, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Acidophilous forests (Vaccinio-Piceetea).

Plant species: -

Animal species: *Ursus arctos, Rupicapra rupicapra balcanica, Triturus cristatus, Bombina variegata, Elaphe quatuorlineata, Salmo macrostigma, Barbus plebejus, Lucanus cervus.*

Other important species: — Flora: 1B, 14D
— Fauna: 5A, 1B, 10C, 6D

Impacts/Activities:
— Positive: -
— Neutral: 971 (IN) / 140, 620 (AR)
— Negative: 622, 690, 940 (IN) / 160, 230, 243, 509 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge
— International level: Council of Europe Biogenetic Reserve, IBA

Significance: The most important ecological value of the site is the fact that it is an undisturbed ecosystem. It is a natural ecosystem of great ecological importance and it can be used as a model (pattern) for studying the dynamic evolution of other natural forest ecosystems. The site has a number of rare plant species (of the herbaceous vegetation) for Greece and Europe and is also characterized by a rich fauna in terms of numbers and species. The total site occupies, today, 1072 ha of which 589 ha are under protection as SPA, 269 ha are protected after the decision of the Greek Ministry of Agriculture and finally, 214 ha are protected by the Forest District Office of Drama.

Site Name: RODOPI (SIMYDA)



Sitecode: GR1140002 **Type**: B

Longitude: 24° 07′ **Latitude**: 41° 29′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Drama

Altitude (m): 1137 **Area (ha)**: 7233 **Length**: -

Description: The geological substratum consists of acid igneous rocks (granites, granodionites, monzanites). It is a mountainous site covered by acidophilous forests consisting of *Betula verucosa, Pinus sylvestris* and *Picea abies*. Birch and Scots pine are the dominant species. Other tree species are *Fagus* sp., *Quercus* sp., *Alnus glutinosa, Corulus avellana* and *Populus sp.* All these species form pure and mixed stands and, as result, a number of 24 different stand types occur in this site, depending on the site quality and competition among the tree species.

Habitat types: Stepped and garland grasslands, Silicicolous sub-types, Acidophilous (Luzulo-Fagetum) beech forests, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus frainetto* woods, Acidophilous forests (Vaccinio-Piceetea).

Plant species: -

Animal species: *Ursus arctos, Rupicarpa rupicarpa balcanica, Triturus cristatus, Bombina variegata, Testudo graeca, Elaphe quatuorlineata, Vipera ursinii, Salmo macrostigma, Barbus plebejus, Lycaena dispar.*

Other important species: — Flora: 3B, 11D
— Fauna: 7A, 1B, 10C, 17D

Impacts/Activities:
— Positive: 160 (IN) / 160 (AR)
— Neutral: 250, 629, 971 (IN) / 250, 629, 971 (AR)
— Negative: 140, 230, 948 (IN) / 140, 230 (AR)

Protection Status: — National and Regional level:
— International level: -

Significance: In the area, there is the unique birch forest (*Betula verucosa*) in Greece. Western greek Rodopi is the southern limit of horizontal distribution of *Picea abies* while, Northern Greece is the southern limit of horizontal distribution of *Pinus sylvestris* and *Betula verucosa* in Europe.

Site Name: PERIOCHI ELATIA



Sitecode: GR1140003 **Type**: B

Longitude: 24° 17′ **Latitude**: 41° 31

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Drama

Altitude (m): 1300 **Area (ha)**: 6982 **Length**: -

Description: The site belongs to the overmoist bioclimatic layer with cold winters. It is characterised by the presence of acid siliceous and metamorphic rocks. The relief is of great diversity with mild and steep slopes. It represents one of the most mountainous parts of the Nestos river watershed and is characterised by many small and big streams with continuous flow, all year round. The forests of the area reflect the intensive forest practices. The forests consist of mixed and pure stands of *Picea abies, Pinus sylvestris, Fagus moesiaca* and other broad-leaved species. The east part of the area consists of more thermophilous vegetation types with stands of *Quercus dalechampii, Q. frainetto* and *Pinus nigra.*

Habitat types: Intermittently flowing Mediterranean rivers, Stepped and garland grasslands, Subcontinental steppic grasslands, Active raised bogs, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus frainetto* woods, Acidophilous forests (Vaccinio-Piceetea), Appenine *Abies alba* and *Picea excelsa* forests, Pallas's pine forests.

Plant species: *Buxbaumia viridis.*

Animal species: *Myotis bechsteinii, Ursus arctos, Triturus cristatus, Bombina variegata, Testudo hermanni, Salmo macrostigma, Barbus plebejus.*

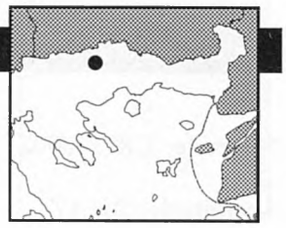
Other important species:
— Flora: 3B, 21D
— Fauna: 10A, 2B, 8C, 4D

Impacts/Activities:
— Positive: -
— Neutral: 160, 162, 230, 620, 948 (IN) / 160, 409, 850 (AR)
— Negative: 250, 501, 949, 962 (IN)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The area is characterised by its rare flora and fauna. It represents the southest limit of the distribution of *Picea abies* and *Pinus sylvestris.* The "moor" areas found in the region are of great importance. The forests of Elatia are of the most important in Greece on a timber production point of view.

Site Name: KORYFES OROUS FALAKRO



Sitecode: GR1140004 **Type**: B

Longitude: 24° 05′ **Latitude**: 41° 17′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Drama

Altitude (m): 1600 **Area (ha)**: 10560 **Length**: -

Description: The site consists mainly of crystalline-schist bedrock with igneous rocks (granites). This bedrock consists of metamorphic (crystalline) limestones of the marble series. The soil texture is sand-clay with adequate depth and fertility. In contrast, in the shrublands derived from degraded forests, the soil is poor. On the rocky limestone areas the forest cover is sparse and soil occurs only in crevices.

Habitat types: Alpine and subalpine heaths, *Juniperus oxycedrus* arborescent matorral, Stepped and garland grasslands, Sub-continental steppic grasslands, Northern greek calcareous cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Pallas's pine forests.

Plant species: -

Animal species: *Ursus arctos, Lutra lutra, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Euphydryas aurinia.*

Other important species: — Flora: 2B, 1C, 73D
— Fauna: 3A, 10B, 7C, 8D

Impacts/Activities: — Positive: -
— Neutral: 160, 602 (IN) / 160, 230 (AR)
— Negative: 140, 180, 230, 250, 900 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: In this mountain many rare plants for Greece with restricted distribution are found. The rare plant communities on the cliffs of the peaks of Mount Falakro and on the whole area are of great importance. They also form a wide multi-colour picture during May and June. Finally, there are rich forests of coniferous and broad-leaved species at the lower altitudes.

Site Name: KEFALARI



Sitecode: GR1140005 **Type**: B

Longitude: 24° 16′ **Latitude**:: 41° 05′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Drama

Altitude (m): 100 **Area (ha)**: 500 **Length**: -

Description: The site is located in the area around the villages Ano-Kato Kefalarion. Most of the area is covered by agricultural crops along the river course, very close to the banks. The site of Kefalari is fed by Voiranis river and supports rich marshland vegetation. It is fringed by extensive reed beds of *Phragmites australis* and *Arundo donax*. Its natural freshwater springs are largely overgrown with emergent vegetation and bordered to the north by cliffs. The site is surrounded by groves, hedges and small pastures.

Habitat types: Mediterranean salt meadows (Juncetalia maritimi), Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Eudontomyzon hellenicus, Barbus plebejus, Cobitis taenia.*

Other important species: — Flora: -
— Fauna: 2A, 1B

Impacts/Activities:
— Positive: -
— Neutral: 210 (IN)
— Negative: 100, 110, 120, 130, 140, 230, 400, 410, 421, 422, 500 (IN)
100, 110, 120, 130, 140, 230, 410, 422, 500, 700, 710, 830 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The site of Kefalari must be considered as an important area for both breeding and wintering of bird populations, and equally important for rare and threatened fish species (*Eudontomyzon hellenicus*). It is also valuable as a migratory route and a recovery station. Despite the fact that its presence has not been confirmed (July 1995), it is beleieved that there are ammocoetes, since many proper spawning grounds has been located in a good conservation status.

Site Name: MYLOPOTAMOS



Sitecode: GR1140006 **Type**: B

Longitude: 24° 04′ **Latitude**: 41° 09′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Drama

Altitude (m): 30 **Area (ha)**: 250 **Length**: -

Description: The wetland has been considerably modified by an extensive land reclamation scheme for agriculture. The flow of the stream has decreased due to dam construction and has been diverted to irrigation systems with canals. The caracteristic species are *Arundo donax, Celtis australis* and riverine bushes along the stream. The stream is also embanked by retaining dykes and there is a significant extraction of water from the surrounding villages. A considerable industrial zone of Drama city is established near the wetland.

Habitat types: Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Eudontomyzon* spp, *Barbus plebejus, Cobitis taenia.*

Other important species: — Flora: -
— Fauna: 1A, 1B

Impacts/Activities:
— Positive: -
— Neutral: 140, 230, 502 (AR)
— Negative: 100, 110, 120, 230, 400, 421, 500, 810 (IN) / 100, 110, 120, 130, 410, 422 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: From the ichthyological point of view, the wetland includes endemic fish species (*Eudontomyzon hellenicus*) and other fish populations. The wetland has been absolutely changed by excessive amount of waste materials which are disposed of into the river. These materials should be controlled and treated in order to avoid pollution problems. In spite of the ecosystems degradation, the presence of the fish *Eudontomyzon hellenicus* in the area was confirmed (July 1995).

Site Name: PARTHENO DASOS KENTRIKIS RODOPIS



Sitecode: GR1140007 **Type**: H

Longitude: 24° 30′ **Latitude**: 41° 32′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Drama

Altitude (m): 1560 **Area (ha)**: 589 **Length**: -

Description: The climate type is the mediterranean to middle-european. The forests of the area mainly consist of mixed stands of beech, spruce, scots pine and fir. There are pure small stands of *Populus tremula* and *Betula pendula* especially on steep slopes (extreme site conditions). The final climax is mixed stands of *Fagus* sp., *Picea abies, Abies borisii-regis*. Maximum tree age is 500 years, diameter is 1,20 m and height is 59 m for conifers and 45 m for beech. The steep slopes and the small streams form low waterfalls.

Habitat types: Stepped and garland grasslands, Northern greek calcareous cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Acidophilous forests (Vaccinio-Piceetea), vegetated silicolous inland diffs with chasmophytic vegetation.

Plant species: -

Animal species: *Ursus arctos, Rupicapra rupicapra balcanica, Triturus cristatus, Bombina variegata, Elaphe quatuorlineata, Salmo macrostigma, Barbus plebejus, Lucanus cervus.*

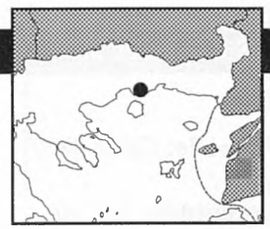
Other important species: — Flora: 1B, 14D
— Fauna: 5A, 2B, 10C, 6D

Impacts/Activities:
— Positive: -
— Neutral: 971 (IN) / 140, 243, 620 (AR)
— Negative: 622, 690, 940 (IN) / 160, 230, 509 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge
— International level: IBA, Council of Europe Biogenetic Reserve.

Significance: The most important ecological value of the site is the undisturbed forest ecosystem. This ecosystem is a natural reserve of great ecological importance and can be used as a model (pattern) for studying the dynamic evolution of other natural forest ecosystems. The site has a number of rare plant species (of the herbaceous vegetation) for Greece and Europe and is also characterized by a rich fauna in terms both of species numbers and populations.

Site Name: DELTA NESTOU



Sitecode: GR1150001 **Type**: G

Longitude: 25° 05′ **Latitude**: 40° 50′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): 5 **Area (ha)**: 12100 **Length**: -

Description: This designation site is a large Delta and consists almost entirely of agricultural land with few freshwater lagoons separated from the sea by narrow sandy strips. Only a relict area of the previously extended riparian forest (Kotza Orman woods) remains along the rivercourse near the mouth and the poplar plantation. Another important habitat type except the above, is that of the reeds along the river beds and especially those along the canals. There is also a rocky, off shore inlet (island of Thassopoula). In the area of Chrysoupolis there are freshwater lakes with reedbeds and water lilies. In the northern part of the river on the steep cliffs, rich vegetation and diverse fauna are found. Most of the area of Nestos river is embanked by retaining dykes so that to be separated from the cultivated land.

Habitat types: Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), Fixed dunes with herbaceous vegetation (grey dunes), *Salix alba* and *Populus alba* galleries, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Residual alluvial forests (Alnion glutinoso-incanae), Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Alosa fallax, Rhodeus sericeus amarus, Barbus plebejus, Cobitis taenia, Aphanius fasciatus, Ophiogomphus cecilia, Lycaena dispar.*

Other important species: — Flora: 2D
— Fauna: 6A, 1B, 27C, 3D

Impacts/Activities:
— Positive: 160 (IN)
— Neutral: 162 (IN)
— Negative: 130, 140, 180, 210, 230, 400, 421, 608, 690, 810 (IN) 100, 110, 120, 130, 140, 180, 230, 300, 410, 421, 422, 501 (AR)

Protection Status:
— National and Regional level: Game refuge,
— International level: Ramsar Convention site, IBA.

Significance: It is one of the most important wetlands in Greece because of the large area that it occupies and because of its rich habitat-types. Nowadays, it still is a valuable part of a wetland chain included between Axios river and Delta of Evros in Northern Greece. Ornithologically is still also an important breeding area, although its importance has declined due to the lack of protection. From ichthyological point of view, the wider part of the river mouth especially, is important spawning and nursery ground for several commercial species.

Site Name: LIMNOTHALASSES KERAMOTIS



Sitecode: GR1150002 **Type**: G

Longitude: 24° 47′ **Latitude**: 40° 53′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): 1 **Area (ha)**: 4300 **Length**: -

Description: Keramoti lagoons are a complex of coastal saltwater lagoons, situated at the western extreme of Nestos Delta in the west of Keramoti town. It includes the following lagoons: Basoba, Eratino, Agiasma (Koumbournou) and Keramoti. Agiasma is the largest one. The most important habitat types are large coastal dunes, saltmarshes, reed beds and especially beds of marine vegetation-communities of vascular plants (*Zostera, Posidonia* etc.). Fish-stations exist in each lagoon and to their proximity there are a new airport and a U.S. military radio station.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Fixed dunes with herbaceous vegetation (grey dunes), Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes).

Plant species: -

Animal species: *Aphanius fasciatus*.

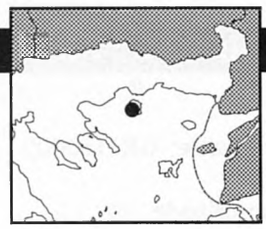
Other important species:
— Flora: 1D
— Fauna: 1C

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 110, 120, 140, 210, 230, 300, 400, 421, 690, 700, 830 (IN) 100, 110, 120, 140, 180, 230, 410, 422, 500, 505, 700, 710, 830 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA.

Significance: The site is important from ornithological and ichthyological point of view.

Site Name: OROS YPSARI THASOU



Sitecode: GR1150003 **Type**: E

Longitude: 24° 40′ **Latitude**: 40° 40′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): 500 **Area (ha)**: 25000 **Length**: -

Description: The site is part of Thasos island. This is a sub-mountainous hilly area with intense relief and different landscapes. The climate is Mediterranean. The site belongs to the Mediterranean vegetation zone and is characterised by thermophilous broad-leaved evergreen shrubs. Forests consist mainly of pure stands of *Pinus brutia* and *P. nigra*. There were some stands of *Abies borisii-regis* but they were burnt by the wild fires of past years. This island is very important because of the rare species it hosts. The vegetation of island reflects the two different mechanisms that allowed plants to persist through a disturbance on a site (e.g. wildfire, grazing etc.). The first of these relates to species that have the ability to sprout after fire (mainly the Mediterranean shrubs: *Arbutus* sp., *Erica* sp., *Pistacia* sp., *Quercus* sp., *Phillyrea latifolia, Olea europea* etc.) and the second of these relates to species that protect their seeds during the fire (in the cone like *Pinus brutia* or in the soil like *Cistus* sp.). In the lowland, *Pinus brutia* is the most characteristic tree. At higher elevations this species gives way to *Pinus nigra* ssp. *pallasiana*. The region's hardwoods are limited to the small rivers, swamps and streams and they consist of *Platanus orientalis* stands.

Habitat types: *Juniperus excelsa* and *J. foetidissima* arborescent matorrals, Oriental plane woods (Platanion orientalis), Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines icluding *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Rhinolophus blasii, Myotis capaccinii, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Callimorpha quadripunctata.*

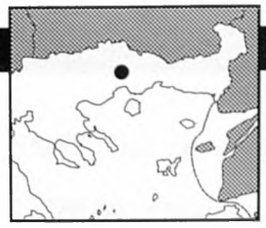
Other important species: — Flora: 12B, 3C, 24D
— Fauna: 10B, 16C, 3D

Impacts/Activities: — Positive: 160, 162 (IN)
— Neutral: 100, 110 (IN) / 100, 320, 690 (AR)
— Negative: 140, 180, 301, 400, 510, 530, 948 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: This site is one of the few mountains on Aegean islands where there are coniferous forests (*Pinus brutia, P. nigra*). A lot of people derive pleasure and relaxation from driving through the forested areas very close to the seaside.

Site Name: VOUNA LIMNIA



Sitecode: GR1150004 **Type**: B

Longitude: 24° 29′ **Latitude**: 41° 09′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): 850 **Area (ha)**: 26500 **Length**: -

Description: There are a lot of villages around the site and several pastures. This site consists of forested hills with open forests and maquis. From a geological point of view, Vouna Limnia belong to the Rodopi crystalline massif. The bioclimate is Sub-Mediterranean and continental.

Habitat types: Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Chestnut woods, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Triturus cristatus, Bombina variegata.*

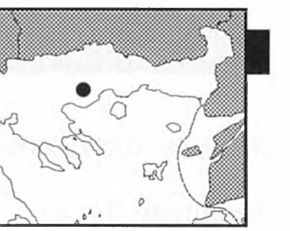
Other important species:
— Flora: 2D
— Fauna: 1A

Impacts/Activities:
— Positive: -
— Neutral: 130 (AR)
— Negative: 110, 120, 130, 140, 230, 900 (IN) / 100, 120, 140, 230 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: Vouna Limnia is a region with low importance. The density of the villages and the pressure of human activities resulted in the degradation of the vegetation. In the present site, two Balkan endemic plant taxa (*Cerastium decalvans, Onobrychis alba* ssp. *calcarea*) are growing wild.

Site Name: KORYFES OROUS PANGAIO



Sitecode: GR1150005 **Type**: B

Longitude: 24° 05′ **Latitude**: 40° 55′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): 1500 **Area (ha)**: 10000 **Length**: -

Description: The site has a Mediterranean - middle European climate. Forests mainly consist of mixed stands of *Fagus* sp., *Abies borisii-regis*, *Quercus* sp. and *Castanea sativa*. There are also stands of *Betula pendula* (Pangaio is the southern limit of this species in Balkan Peninsula).

Habitat types: *Juniperus communis* formations on calcareous heaths or grasslands, Stepped and garland grasslands, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Chestnut woods, Hellenic beech forests with *Abies borisii-regis*, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Acidophilous forests (Vaccinio-Piceetea), vegetated silicolous inland cliffs with chasmophytic vegetation.

Plant species: -

Animal species: *Lutra lutra, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca.*

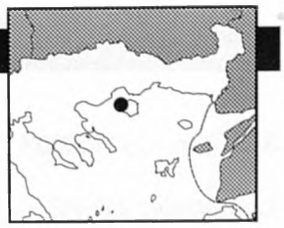
Other important species: — Flora: 12B, 2C, 87D
— Fauna: 2A, 4B, 4C, 3D

Impacts/Activities: — Positive: -
— Neutral: 100 (IN) / 100, 320 (AR)
— Negative: 140, 180, 230, 400, 403, 510, 530, 948 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: It is a large mountainous area with extensive beech and chestnut forests and pastures at higher altitudes. On the cliffs of the mountain there are rare endemic plants or plants with restricted distribution in the Balkan peninsula.

Site Name: AKROTIRIO PRINOU-PACHI



Sitecode: GR1150006 **Type**: E

Longitude: 24° 36′ **Latitude**: 40° 47′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): -5 **Area (ha)**: 1350 **Length**: -

Description: The biotope is located on the NW part of Thassos island. The rocky (reefs) and sandy substrate is rich in algal species and marine phanerogames, respectively. Among the algal species the most important are: *Cystoseira spinosa, C. barbata, C. crinita*, the Chlorophylaceae *Enteromorpha intestinalis, Dasyladus vermicularis* and few filamentous Rhodophyceae. On the sandy substrate *Posidonia* (2-10 m) and *Cymodocea* (1-2 m) beds cover a great part of the seabed.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

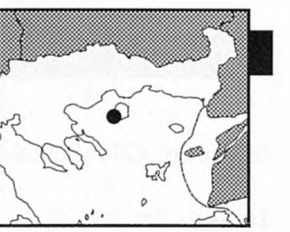
Other important species: — Flora: 2D
— Fauna: -

Impacts/Activities: — Positive: -
— Neutral: 401 (AR)
— Negative: 504 (IN) / 320, 490, 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The biotope is of great importance. It is subject to serious degradation due to oil extraction, the activities of an olive oil factory and the dense circulation of commercial ships and passenger liners.

Site Name: LIMENARIA- AKROTIRIO KEPHALAS



Sitecode: GR1150007 **Type**: B

Longitude: 24° 31′ **Latitude**: 40° 38′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): -15 **Area (ha)**: 191 **Length**: -

Description: The area is located in the SW part of Thassos island. The coast is rocky and steep. The bauxite composition is typical of the substrate. On the rocky substrate, the species of *Cystoseira* form a relatively wide zone (typical vegetation zone of Mediterranean) from 5.5 m to 6 m depth. *Posidonia* beds grow to a considerable depth (30 m).

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

Other important species: — Flora: 2D
— Fauna: 1D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 520 (IN) / 390 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: *Posidonia* beds of the vicinity grow down to great depth so they are influenced considerably by the extraction of bauxite. As a result, *Posidonia* beds exhibit a good structure and relatively high population density. On the contrary, *Cystoseira* zones are more exposed to the above activities. Hence the diversity of its communities reduces considerably.

Site Name: ORMOS POTAMIAS



Sitecode: GR1150008 **Type**: E

Longitude: 24° 47′ **Latitude**: 40° 43′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): -12.5 **Area (ha)**: 289 **Length**: -

Description: The area is located in the East part of Thassos island. It is a sheltered coast with stony and rocky cliffs and stacks on the south coast, very rich algal flora on the cliffs and in the infralittoral region. The *Cymodocea* beds extend to 1-2 m depth while the *Posidonietum oceanicae* association to 5-25 m depth.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

Other important species: — Flora: 6D
— Fauna: -

Impacts/Activities:
— Positive: 950 (IN)
— Neutral: -
— Negative: 220 (IN) / 690 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The area is characterized by its rich flora and vegetation. The beds of *Posidonia* are in very good condition and cover a substantial part of the sea bed in the bay. Additionally, the area is free of major point pollution source and presents a typical biotope with a great species diversity.

Site Name: KOLPOS PALAIOU-ORMOS ELEFTHERON



Sitecode: GR1150009 **Type**: B

Longitude: 24° 20′ **Latitude**: 40° 51′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): -15 **Area (ha)**: 1220 **Length**: -

Description: The area includes Paleon bay, Heraklitsa cove and Eleftheron bay all parts of the Gulf of Kavala. Ormos Eleftheron: A sheltered sandy coast with shallow water. A zone with calcareous Rhodophyceae, rich algal flora on small stones, presence of *Zostera noltii* and expanded *Posidonia* beds down to 30 m depth. N. Heraklitsa: A sheltered coast with small islet in front. Sand and few stones consist the substrate. Presence of great number of Chlorophyceae species. *Posidonia* beds which expand from 5 to 25 m depth. Paleon: A sheltered cove with a beach of sand and loose rocks. Shallow water with rather rich flora. Presence of great number species of Phaeophyceae and Chlorophyceae. *Posidonia* beds which expand from 5 to 15 m depth.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

Other important species: — Flora: 6D
— Fauna: 9D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 520, 690 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The bays of Paleon and Heraklitsa are characterized by rich marine flora and vegetation. In these marine areas *Cystoseira* and Phaeophyceae communities play an important role. Limited changes in community structure and composition during the last few years may be due to anthropogenic activities (building, tourism). *Posidonia* beds have shown a tendency to move in greater depth, mainly in Eleftheron bay. The presence of *Paracentotus lividus* is characteristic in the area. Its coexistence with *Cystoseira* and *Posidonia* is typical for unpolluted areas. In Eleftheron bay, limited species diversity was observed. Eight species of gastropods living in the *Posidonia* leaves and 3 species in the algal associations, were recorded. In the area "fruits" of *Posidonia* were found, indicating the great vitality of the meadows.

Site Name: DELTA NESTOU & LIMNOTHALASSES KERAMOTIS



Sitecode: GR1150010 **Type**: F

Longitude: 24° 48′ **Latitude**: 40° 58′

Administrative Region: Anatoliki Makedonia, Thraki **Prefecture**: Kavala

Altitude (m): 5 **Area (ha)**: 21857 **Length**: -

Description: The site consists of Nestos Delta and Keramoti lagoons. The nearest to the wetland towns and villages are Keramoti and Chrysoupolis while Kavala is situated 25 km and Xanthi 16km away from the wetland. River banks are sandy with extended softwood and riparian forests. Moreover, a mosaic of biotopes at the mouth of the river, composed by reedbeds, Tamarix scrubs, inland as well as large coastal dunes is found. There are several greater lagoons with salt marshes around, where in the area of Chrysoupolis there are freshwater lakes with reedbeds and water lilies. There, a rocky off shore islet (island of Thassopoula) is also found. At the adjacent gorge of Nestos, rich vegetation grows on the steep cliffs and diverse fauna is provided with shelter.

Habitat types: *Posidonia* beds, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Fixed dunes with herbaceous vegetation (grey dunes), Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), *Salix alba* and *Populus alba* galleries, Residual alluvial forests (Alnion glutinoso-incanae), Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Alosa fallax, Rhodeus sericeus amarus, Barbus plebejus, Cobitis taenia, Aphanius fasciatus, Ophiogomphus cecilia, Lycaena dispar.*

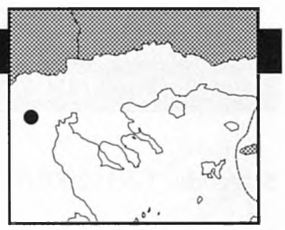
Other important species: — Flora: 3D
— Fauna: 6A, 1B, 27C, 3D

Impacts/Activities:
— Positive: -
— Neutral: 210 (IN)
— Negative: 100, 110, 120, 130, 140, 230, 300, 400, 421, 690, 830 (IN)
100, 110, 120, 130, 140, 230, 410, 422, 500, 505, 700, 710 (AR)

Protection Status:
— National and Regional level: Game breeding station, Game refuge
— International level: Ramsar Convention site, IBA.

Significance: The wetland is important from ornithological point of view because of the large area it occupies and because of the plethora of habitat types. Moreover, it is a valuable part of a wetland chain included between Axios river and Delta Evrou in northern Greece. The riparian forest and the coastal area are important for breeding, the lagoons for migrating and the river for the wintering of many species as ducks, herons, cormorants, pygmies, raptors, geese, flamingos, waterfowl and others.

Site Name: OROS VERMIO



Sitecode: GR1210001 **Type**: B

Longitude: 22° 05′ **Latitude**: 40° 35′

Administrative Region: Kentriki Makedonia **Prefecture**: Imathia

Altitude (m): 1300 **Area (ha)**: 22068 **Length**: -

Description: The major part of the site is covered with forests of broad-leaved and coniferous trees. *Pinus nigra* ssp. *pallasiana* and *Fagus* sp. are the dominant species. Above the timber line the vegetation is covered with subalpine grasslands. On the lower parts there are dry grasslands and scrubs.

Habitat types: Stable Buxus sempervirens formations on calcareous rock slopes (Berberidion p.), Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in continental Europe), Alcaline fens, Northern greek calcareous cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Pallas's pine forests, Acidophilous forests (Vaccinio-Piceetea), *Taxus baccata* woods, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*, Neutrophilous (Asperulo-Fagetum) beech forests, Beech forest with *Ilex* and *Taxus*, rich in epiphytes (Ilici-Fagion).

Plant species: -

Animal species: *Myotis blythi, Miniopterus schreibersii, Myotis capaccinii, Myotis emarginatus, Myotis myotis, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Elaphe quatuorlineata, Barbus meridionalis, Rosalia alpina, Morimus funereus.*

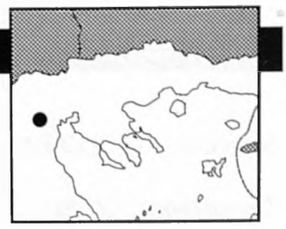
Other important species: — Flora: 12B, 1C, 96D
— Fauna: 2A, 10B, 6C, 8D

Impacts/Activities: — Positive: 160 (IN)
— Neutral: 100, 626 (IN) /100, 400, 502 (AR)
— Negative: 140, 230, 243, 948, 949, 973 (IN)

Protection Status: — National and Regional level: Game breeding station, Game refuge.
— International level:

Significance: It is an important site because of the variety of vegetation and flora and the composition of forest stands.

Site Name: STENA ALIAKMONA



Sitecode: GR1210002 **Type**: B

Longitude: 22° 14′ **Latitude**: 40° 25′

Administrative Region: Kentriki Makedonia **Prefecture**: Imathia

Altitude (m): 300 **Area (ha)**: 3610 **Length**: -

Description: It is a gorge of the Aliakmonas river with cliffs. Following the construction of a dam and the amplification of the river banks lake Polyphyton was created.

Habitat types: Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Triturus cristatus, Bombina variegata, Rhodeus sericeus amarus, Barbus meridionalis.*

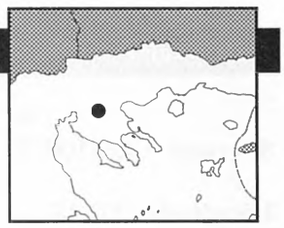
Other important species:
— Flora: 1B
— Fauna: 5A, 7C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 171 (IN)
— Negative: 100, 110, 120, 230, 301 (IN) / 100, 110, 120, 130, 171, 230 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: It is an important area for birds of prey providing feeding, nesting and refuge habitats. It also provides wintering habitats for migratory bird species and consists a migratory flyway.

Site Name: LIMNES VOLVI KAI LAGKADA



Sitecode: GR1220001 **Type**: J

Longitude: 23° 20′ **Latitude**: 40° 41′

Administrative Region: Kentriki Makedonia **Prefecture**: Thessaloniki

Altitude (m): 119 **Area (ha)**: 16388 **Length**: -

Description: The two lakes of the site are connected to each other by a canal. The related to the canal malfunctions, the rivulet embankments and the drainage works resulting from extensive cultivations gradually drain Koroneia (Lagkada) lake off into Volvi lake. The latter is also connected to the sea by the Richeios river. The two lakes are characterized by various land uses, eutrophication and urbanisation with lake Koroneia being more threatened. This lake is also particularly rich in bird species populations. Locally, extensive reed beds of *Scirpus maritimus* and *Phragmites australis* occur around the lakes and along the rivulet banks. Small linear and mosaic type wooded areas (groves, hedges, tree lines) are found within the site. Between the two lakes two very old plane trees (*Platanus orientalis*) are found with important bird colonies.

Habitat types: Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation, Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Residual alluvial forests (Alnion glutinoso-incanae), *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Myotis blythi, Myotis bechsteinii, Lutra lutra, Testudo graeca, Alosa alosa, Aspius aspius, Rhodeus sericeus amarus, Barbus plebejus, Chalcalburnus chalcoides, Cobitis taenia, Unio crassus, Lindenia tetraphylla, Lycaena dispar.*

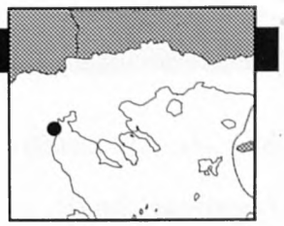
Other important species: — Flora: 2D
— Fauna: 5A, 1B, 9C, 1D

Impacts/Activities:
— Positive: 162 (AR)
— Neutral: -
— Negative: 100, 120, 130, 180, 210, 230, 421, 422, 802, 803, 853, 952 (IN) 100, 110, 140, 170, 403, 502, 703, 710, 720, 800, 900 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: Ramsar Convention site, IBA

Significance: A habitat of unique priority (91EO) occurs close to lake Volvi. Numerous threatened, endemic and/or rare flora and fauna species are found within the site, while many feeding, nesting, breeding, wintering and refuge habitats for bird species are located in, along and close to the water deposits. The fish fauna of the ecosystem includes two endemic taxa, *Alosa macedonica* and *Chalcalburnus chalcoides macedonicus*. The last one could be classified as vulnerable. There is also a very rare fish species: *Aspius aspius*.

Site Name: DELTA AXIOU-LOUDIA-ALIAKMONA



Sitecode: GR1220002 **Type**: J

Longitude: 22° 43′ **Latitude**: 40° 30′

Administrative Region: Kentriki Makedonia **Prefecture**: Thessaloniki

Altitude (m): 2 **Area (ha)**: 11808 **Length**: -

Description: Very important for the wetland, and especially for the avifauna, are the reed beds with *Phragmites australis, Bolboschoenus maritimus* and *Typha latifolia*. They are occupying stagnant or slowly flowing waters of fluctuating depths and fringe the lagoons and artificial ditches. Reed beds also grow along the banks of the Loudias river. In canals, rice fields and fresh water bodies of natural origin or man-made a particularly important for the wetland rooted, submerged aquatic vegetation (*Potamogeton* spp., *Myriophyllum spicatum, Ceratophyllum* spp. etc.) is growing. Rich communities of mussel beds colonize seawaters of depth 1-10 m.

Habitat types: Sandbanks which are slightly covered by sea water all the time, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Large shallow inlets and bays, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), *Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Emys orbicularis, Aphanius fasciatus, Lycaena dispar.*

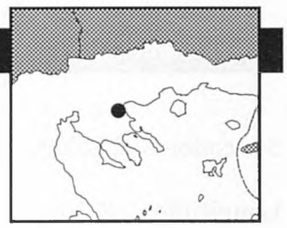
Other important species: — Flora: 2D
— Fauna: 2A, 4C

Impacts/Activities:
— Positive: 130 (IN) / 130 (AR)
— Neutral: 200, 210 (IN) / 170 (AR)
— Negative: 100, 110, 120, 140, 230, 421, 604, 700, 810 (IN) 100, 110, 120, 400, 410, 421, 422, 502, 700, 810 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: Ramsar Convention site, IBA

Significance: The habitat diversity is one of the main characteristics of the delta formed by the rivers Axios, Loudias and Aliakmonas. Though of reduced significance now, it still supports diverse bird populations including endangered and rare species. It is an important wintering and resting station for migratory birds. It is also a breeding site for a significant number of bird species. Rice fields occurring in the delta are used as feeding ground by birds. Parts of the delta and the rivers, as well as sea water of depth less than 6m serve as spawning ground for fish populations of Thermaikos gulf and the N. Aegean Sea. The abundance of nutrients and the small water depths favour shell aquacultures.

Site Name: STENA RENTINAS



Sitecode: GR1220003 **Type**: K

Longitude: 23° 40′ **Latitude**: 40° 40′

Administrative Region: Kentriki Makedonia **Prefecture**: Thessaloniki

Altitude (m): 100 **Area (ha)**: 2878 **Length**: -

Description: The site lies along the borderline of two different climatic zones of Greece. The one to the south, is characterized by mediterranean climate, while the other indicates the invasion of the continental climate to the northern part of Greece. The site is a gorge with some precipes and rocks, surrounded by dense and high maquis of extraordinery composition of evergreen wood species. High plane trees are growing wild along the Richeios river. A water dam is located on the upper part of the Richeios river, whose malfunctioning affects fish population and their free circulation from the lake to the sea and backwards.

Habitat types: Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex,* Mediterranean tall-herb and rush meadows (Molinio Holoschoenion), Chestnut woods, *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Miniopterus schreibersii, Myotis bechsteinii, Lutra lutra, Triturus cristatus, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Rhodeus sericeus amarus, Barbus plebejus, Cobitis taenia.*

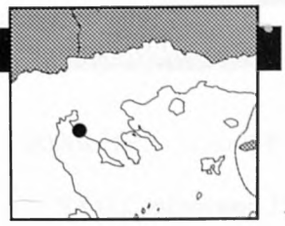
Other important species: — Flora: 1D
— Fauna: 9A, 1B, 3C, 1D.

Impacts/Activities:
— Positive: 163 (AR)
— Neutral: 200 (IN) / 401 (AR)
— Negative: 100, 120, 230, 301, 502, 701, 710, 730, 803, 853, 948 (IN) 100, 110, 120, 130, 210, 230, 502, 730, 853 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA

Significance: There are numerous feeding, nesting, breeding, wintering and refuge habitats for many bird species. The site is an important migratory flyway.

Site Name: LIMNOTHALASSA EPANOMIS



Sitecode: GR1220004 **Type**: B

Longitude: 22° 54′ **Latitude**: 40° 23′

Administrative Region: Kentriki Macedonia **Prefecture**: Thessaloniki

Altitude (m): 2 **Area (ha)**: 900 **Length**: -

Description: A sand-covered shore, created by the wind and strong wave action, with a small lagoon. A sandy heathland of limited extension with *Artemisia campestris, Spartium junceum, Holoschoenus vulgaris* is included within the well developed dune system of the site. Reed bed formations occupy artificial ditches and canals, as well as places where saline water is accumulated.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Thermo-Mediterranean riparian galleries (Nerio-Tamaricatae).

Plant species: -

Animal species: *Aphanius fasciatus.*

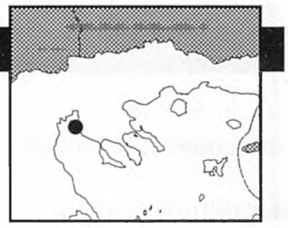
Other important species: — Flora: 2D
— Fauna: 1A, 1D, 1C

Impacts/Activities:
— Positive: -
— Neutral: 100, 200, 211, 221 (IN) / 210 (AR)
— Negative: 140, 230, 424, 605, 608, 690, 720, 810 (IN) / 100, 110, 120, 402, 421, 502, 608, 690, 730 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The wetland is considered to be an important breeding, feeding and wintering ground for a large number of bird species. It is also important for other animal species (amphibians, reptiles, mammals). In the site *Pancratium maritimum* is growing wild; this plant species is seriously endangered by the human activities on the coast.

Site Name: LIMNOTHALASSA ANGELOCHORIOU



Sitecode: GR1220005 **Type**: B

Longitude: 22° 49′ **Latitude**: 40° 29′

Administrative Region: Kentriki Makedonia **Prefecture**: Thessaloniki

Altitude (m): 1 **Area (ha)**: 800 **Length**: -

Description: A narrow sandy beach cuts off the saline lagoon and the associated salt marshes from the sea except for a central connecting artificial ditch. On the northern part of the lagoon there are saltworks. The ditch surrounding the saltworks is occupied by reed beds with *Phragmites australis*. Small clusters of *Spartium junceum, Holoschoenus vulgaris* or *Asphodelus aestivus* are incorporated within the dune system.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes).

Plant species: -

Animal species: *Aphanius fasciatus*.

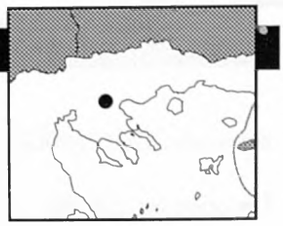
Other important species: — Flora: -
— Fauna: 1C

Impacts/Activities:
— Positive: -
— Neutral: 200, 211 (IN) / 200, 210 (AR)
— Negative: 100, 140, 230, 340, 409, 420, 501, 690, 710, 954 (IN) 110, 403, 420, 502, 504, 690, 701, 710, 890 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: Important as a breeding, feeding and resting area for a large number of bird species, including protected, as well as endangered ones. It is also important for its herpetofauna, since it supports a rich population of *Testudo hermanni*.

Site Name: PROIN LIMNI LANTZA



Sitecode: GR1220006 **Type**: B

Longitude: 23°31′ **Latitude**: 40°46′

Administrative Region: Kentriki Makedonia **Prefecture**: Thessaloniki

Altitude (m): 345 **Area (ha)**: 2875 **Length**: -

Description: A former lake with important vegetation, which was drained in 1950. Today, at an altitude of about 340 m, there are saline soils (NaCl) covered with halophytic vegetation with a structure differentiated from that of a coastal one. Moreover, scattered reed bed formations occupy canals filled with rain-water.

Habitat types: Mediterranean salt meadows (Juncetalia maritimi), Sub-continental steppic grasslands.

Plant species: -

Animal species: *Barbus plebejus*.

Other important species: — Flora: -
— Fauna: -

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 110, 140, 230, 810, 850 (IN) / 100, 110, 140, 230 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: As an inland area with saline soils supporting interesting halophytic vegetation, it is unique in Greece. Prehistoric implements, ceramics and fossilified bones of vertebrates have been found, as well as fossils of marine Elasmobranchs.

Site Name: POTAMOS AXIOS



Sitecode: GR1220007 **Type**: K

Longitude: 22° 39′ **Latitude**: 40° 47′

Administrative Region: Kentriki Makedonia **Prefecture**: Thessaloniki

Altitude (m): 3 **Area (ha)**: 7700 **Length**: -

Description: Axios river is among the largest in Balkan peninsula embanked with retaining dykes along its whole length. Strips and islands of riverine forests are interspersed with reed beds.

Habitat types: Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba, Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion).

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Triturus cristatus, Testudo graeca, Emys orbicularis, Mauremys caspica, Gobio albipinnatus, Rhodeus sericeus amarus, Barbus meridionalis, Sabanjewia aurata, Cobitis taenia, Zingel streber, Cerambyx cerdo, Morimus funereus.*

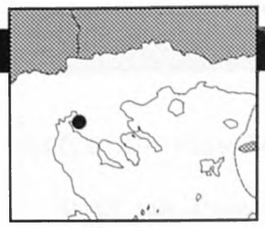
Other important species: — Flora: -
— Fauna: 8A, 3B, 6C

Impacts/Activities:
— Positive: 162 (IN) / 130 (AR)
— Neutral: 120, 130, 507, 941 (IN) / 120, 502, 503, 507 (AR)
— Negative: 100, 110, 140, 230, 300, 430, 502 (IN) / 100, 110, 400, 411, 604, 701 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA

Significance: Riverine forests and to some extent poplar plantations are very important as a breeding, feeding and resting ground for birds. The fish fauna of this river ecosystem includes some interesting endemic taxa.

Site Name: AGIA TRIADA



Sitecode: GR1220008 **Type**: B

Longitude: 22° 50′ **Latitude**: 40° 30′

Administrative Region: Kentriki Makedonia **Prefecture**: Thessaloniki

Altitude (m): -5 **Area (ha)**: 116 **Length**: -

Description: The marine area is situated at the NE side of the Gulf of Thessaloniki and in depths ranging from 2 to 10 m. The substrate is made up of sand and shingles with small-sized rocks appearing in certain places. Three types of vegetation are present in the area: the photophilus communities of hard substrate with *Cystoseira barbata, Padina pavonica* and *Hypnnea musciformis* as a dominant species, *Cymodocea nodosa* meadows at 1 m depth and the Posidonietum oceanicum association at a depth of 2-10 m.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

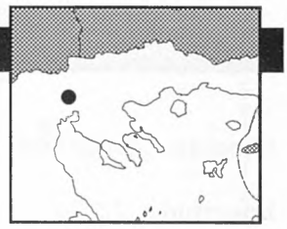
Other important species: — Flora: 5D
— Fauna: 1D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 220, 221, 952 (IN) / 302, 690, 790 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: In this area is located the last existing *Posidonia* bed in Thermaikos Gulf, whose preservation and protection becomes of extreme importance. The marine phanerogam *Posidonia oceanica*, sensitive to pollution, and the meadows it forms, play a significant role in the marine ecosystem: primary production, ground of egg-laying and shelter for animal organisms. Twenty one (21) species of gastropods are hosted in the *Posidonia* leaves. The area presents a relatively high species diversity and low degree of eutrophication in comparison with other areas of the Gulf.

Site Name: LIMNI PIKROLIMNI



Sitecode: GR1230001 **Type**: B

Longitude: 22°49′ **Latitude**: 40° 50′

Administrative Region: Kentriki Makedonia **Prefecture**: Kilkis

Altitude (m): 50 **Area (ha)**: 1087 **Length**: -

Description: An inland saline lake with no floating or submerged vegetation other than algae. The salinity of waters is due to the presence of volcano sedimentary rocks in the area and to intense evaporation taking place during Neogene period. An important halophytic vegetation, dominated by *Puccinelia convoluta* and classified according to the characteristic species (*Crypsis aculeata, Suaeda maritima, Camphorosma annua, Platago coronopus, Limonium gmelinii, Spergularia nicaeensis, Elymus elongatus*) to various associations, occurs in the immediate vicinity of the lake. Also, scattered reed bed formations with *Phragmites australis* occur at the margins of the lake.

Habitat types: Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Mediterranean salt meadows (Juncetalia maritimi), Mediterranean temporary ponds.

Plant species: -

Animal species: -

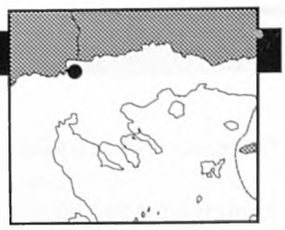
Other important species: — Flora: -
— Fauna: -

Impacts/Activities: — Positive: -
— Neutral: 690 (IN) / 100 (AR)
— Negative: 100, 110, 120, 140, 180, 230 (IN) / 110, 120 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: As an inland saline lake, Pikrolimni is unique in Greece. It supports an interesting halophytic vegetation with a structure remarkably differentiated from that of coastal one, probably due to the fact that salinity of lake water (NaCl, Na_2CO_3, Na_2SO_4) differs from that of marine water.

Site Name: YDROCHARES DASOS MOURION



Sitecode: GR1230002 **Type**: B

Longitude: 22° 45′ **Latitude**: 41° 13′

Administrative Region: Kentriki Makedonia **Prefecture**: Kilkis

Altitude (m): 149 **Area (ha)**: 530 **Length**: -

Description: More than half of the lake Doirani (about 10 m deep), belongs to the former Yugoslavia territory. A remarkable, rare, alluvial forest is merging into pasture and agricultural land.

Habitat types: Mixed oak-elm-ash forests of great rivers, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Triturus cristatus, Emys orbicularis, Barbus plebejus, Sabanjewia aurata, Cobitis taenia, Lycaena dispar.*

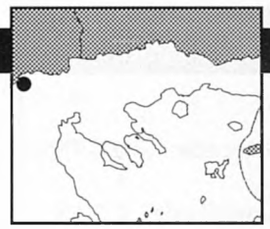
Other important species:
— Flora: 1D
— Fauna: 4A, 1B, 7C, 5D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 110, 120, 130, 502, 710, 720, 790 (IN) / 100, 120, 130, 502, 503 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks
— International level:

Significance: The remarkable alluvial, mixed forest of Mouries is the remnant of a bigger old forest. The site is an important bird migratory flyway.

Site Name: KORYFES OROUS VORAS



Sitecode: GR1240001 **Type**: E

Longitude: 21° 55′ **Latitude**: 40° 58′

Administrative Region: Kentriki Makedonia **Prefecture**: Pella

Altitude (m): 1600 **Area (ha)**: 38917 **Length**: -

Description: Mt. Voras is the third highest mountain in Greece. However, the landscape is dominated by gentle slopes, with the exception of the rugged gorges in the Loutraki area. It is characterized by a great variability of geological substrates comprised of gneiss, schist, limestone, ophioliths, extending their presence from west to east. It is fairly large and includes mountainous and densely forested areas which, together with the neighbouring sites, Tzena-Pinovo and Paiko, form a continuous mountain range around the plain of Aridea. The site holds a significant timber production, especially in beech wood, but also, according to official numbers, during the past years there has been a slight increase in nomadic stock raising. One remarkable feature of the site is the presence of several ruined as well as abandoned cultivations of aged chestnut woods, cherry-trees, apple-trees and cereals which are scattered in the forest and today form a beautiful landscape and an important habitat for wildlife. *Quercus trojana* is found mainly on the west part of the site and on the west slopes in the Florina prefecture where it forms more extensive woods.

Habitat types: *Juniperus communis* formations on calcareous heaths or grasslands, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in continental Europe), Active raised bogs, Alkaline fens, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Caves not open to the public, Acidophilous (Luzulo-Fagetum) beech forests, Beech forests with *Ilex* and *Taxus*, rich in epiphytes (Ilici-Fagion), Neutrophilous (Asperulo-Fagetum) beech forests, Subalpine beech woods with *Acer* and *Rumex arifolius*, Calcareous beech forests (Cephalanthero-Fagion), Residual alluvial forests (Alnion glutinoso-incanae), Mixed oak-elm-ash forests of great rivers, *Quercus trojana* woods (Italy and Greece), Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Acidophilous forests (Vaccinio-Piceetea), Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Citellus citellus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Elaphe quatuorlineata, Elaphe situla, Salmo macrostigma, Barbus meridionalis.*

Other important species:
— Flora: 1A, 12B, 5C, 132D
— Fauna: 2A, 4C, 3D

Impacts/Activities:
— Positive: 101 (AR)
— Neutral: 140, 150, 626, 690 (IN) / 130, 403, 430, 810 (AR)
— Negative: 160, 166, 230, 243, 331, 502, 602 (IN) / 110, 120, 151, 180, 424, 701 (AR)

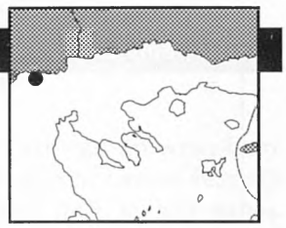
Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge
— International level: Council of Europe Biogenetic Reserve, IBA

Significance: It is an extensive area of forests, deep valleys and pastures characterized by a great variety of unfragmented habitats. The area is undisturbed by human habitation and only recently a

Site Name: KORYFES OROUS VORAS (cont.)

road network has been constructed. The area has relicts of a *Pinus peuce* forest as well as areas with *Quercus trojana* woods, two habitats with very limited distribution in Greece. A unique feature is the active bog of Kali Pediada which is the largest of its kind in Greece and hosts a variety of rare plants as well as a number of birds of prey which use the bog as a feeding ground. The beech forests of Blatsa and Black Forest are very old, with a structure and development close to climax with a great number of decaying, dying and dead trees. All the above mentioned features contribute to the great ornithological importance of the area for vultures, eagles, falcons, hazelhens, woodpeckers and a multitude of passerines. The existence of 14 caves which are of great importance to paleoecological research as well as to bat populations is also worth noting. In some of the flowing waters of this site considerable populations of wild trout, *Salmo macrostigma* exist.

Site Name: ORI TZENA



Sitecode: GR1240002 **Type**: E

Longitude: 22° 12′ **Latitude**: 41° 06′

Administrative Region: Kentriki Makedonia **Prefecture**: Pella

Altitude (m): 1100 **Area (ha)**: 12740 **Length**: -

Description: Mt. Tzena belongs to the Axios zone and mainly consists of schist and limestone in contrast with the adjacent Voras Mt. which is mainly ophiolitic. Along with Pinovo it forms a mountain range with steep slopes and characteristic bare rock faces. More than 50% of the site is forest land and about 13% is grazing land. Accordingly, the main land use is forest exploitation and secondary stock raising.

Habitat types: Alpine and subalpine heaths, *Juniperus communis* formations on calcareous heaths or grasslands, Karstic calcareous grasslands (Alysso-Sedion albi), Stepped and garland grasslands, Eutrophic tall herbs, Balkan screes, Northern greek calcareous cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Beech forests with *Ilex* and *Taxus* rich in epiphytes (Ilici-Fagion), Neutrophilous (Asperulo-Fagetum) beech forests, Calcareous beech forests (Cephalanthero-Fagion), Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Acidophilous forests (Vaccinio-Piceetea).

Plant species: -

Animal species: *Rupicapra rupicapra balcanica, Triturus cristatus, Bombina variegata, Testudo hermanni, Elaphe quatuorlineata, Barbus meridionalis.*

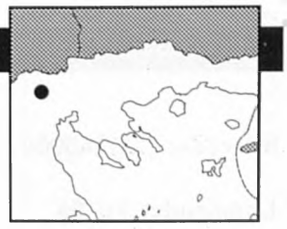
Other important species: — Flora: 1B, 55D
— Fauna: 3A, 5C, 2D

Impacts/Activities: — Positive: 140 (IN) / 100 (AR)
— Neutral: 160, 624, 900 (IN)
— Negative: 166, 243 (IN) / 151, 430 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: The alpine rock faces of Pinovo are very important for the chamois (a small population, the only one in the mountain range of Tzena, Pinovo and Voras) and raptors such as the golden eagle, vultures and peregrine falcons. In the lowlands there are well structured high oak forests which form important feeding and nesting places for several species of woodpeckers. Inaccessible beech forests just below the treeline are also important for wildlife. The area has been, generally, well conserved because it is situated near the borders and as a result of its military importance most activities were until recently limited.

Site Name: OROS PAIKO



Sitecode: GR1240003 **Type**: E

Longitude: 22° 18′ **Latitude**: 41° 01′

Administrative Region: Kentriki Makedonia **Prefecture**: Pella

Altitude (m): 800 **Area (ha)**: 35545 **Length**: -

Description: Mt. Paiko is considered to be an extension of the Voras mountain range. In fact, geologically, it belongs to the same massif as Tzena and Pinovo. It mainly consists of limestone and ophiolites. Its SE part is predominantly sedimentary rocks and is characterized by a multitude of medium height peaks ranging from 1219 to 1650 m. The forests of Paiko have been heavily exploited in the past by the inhabitants of nearby villages (coppice mainly). The intensive grazing has also resulted in degradation of the natural environment which only recently (during the last few decades) has started to show signs of recovery. Paiko has rich flowing waters as well as internal draining waters especially in the subalpine meadows where streams flow internally and come out as springs at the foothills of the mountain.

Habitat types: *Juniperus communis* formations on calcareous heaths or grasslands, Karstic calcareous grasslands (Alysso-Sedion albi), Stepped and garland grasslands, Sub-continental steppic grasslands, Alkaline fens, Northern greek calcareous cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Calcareous beech forests (Cephalanthero-Fagion), Residual alluvial forests (Alnion glutinoso-incanae), Chestnut woods, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Acidophilous forests (Vaccinio-Piceeta), Pallas's pine forests, *Taxus baccata* woods.

Plant species: -

Animal species: *Triturus cristatus, Bombina variegata, Testudo hermanni, Barbus meridionalis, Sabanjewia aurata, Lycaena dispar, Callimorpha quadripunctata.*

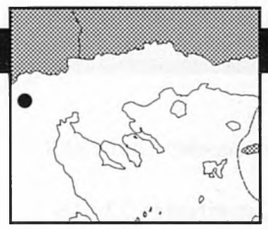
Other important species: — Flora: 1B, 8D
— Fauna: 4A, 1B, 4C, 2D

Impacts/Activities: — Positive: 162 (IN) 140 (AR)
— Neutral 140, 220, 690 (IN)
— Negative: 160, 164, 230, 243, 900 (IN) / 160, 402 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The agricultural activities on Paiko Mt. were applied in the past and as a result today, a great variety of habitats exists. The afforestation of many abandoned pastures and of small pieces of formerly agricultural land is now creating a rich vegetation mosaic. Thus, the diversity of habitats that are created is one of the most valuable features of the area. The diversity of the vegetation structure and the vicinity of Paiko with Tzena Mt. and the Axios river valley create a suitable habitat for the roedeer and hare as well as for several raptors. Additionally, the gentle slopes of the subalpine meadows and small upland wetlands form an interesting landscape.

Site Name: LIMNI AGRA



Sitecode: GR1240004 **Type**: B

Longitude: 21° 54′ **Latitude**: 40° 47′

Administrative Region: Kentriki Makedonia **Prefecture**: Pella

Altitude (m): 500 **Area (ha)**: 1480 **Length**: -

Description: It is an artificial lake (reservoir), largely overgrown with emergent vegetation, locally extensive reedbeds along the shores and within the water of the lake (dominant vegetation of *Phragmites australis* in 40% of the whole site). Lake Agras is water dependent on Vegoritida lake and the Voras river. Consequently, it is strongly affected by their pollution and eutrophication. The water of the lake is used by the hydroelectric station of Public Power Corporation (DEH) as an energy resource for the nearby villages.

Habitat types: Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Intermittently flowing Mediterranean rivers, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Elaphe quaruorlineata, Barbus meridionalis, Lycaena dispar.*

Other important species:
— Flora: -
— Fauna: 3A, 2B, 1C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 100 (AR)
— Negative: 100, 110, 120, 130, 140, 171, 421, 503, 507, 710, 952 (IN) / 100, 422, 502, 503, 710 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: There are many feeding, nesting, breeding, wintering and refuge habitats for bird species. Specifically, there are important breeding habitats for one of the four colonies in Greece of *Chlidonias hybridus* and probably *Chlidonias niger* (very rare breeder in Greece). It is equally important for migratory waterbirds and birds of prey and because of the few known breeding sites of *Netta rufina*.

Site Name: STENA APSALOU - MOGLENITSAS



Sitecode: GR1240005 **Type**: B

Longitude: 22° 10′ **Latitude**: 40° 50′

Administrative Region: Kentriki Makedonia **Prefecture**: Pella

Altitude (m): 200 **Area (ha)**: 6048 **Length**: -

Description: It consists of a small and a large gorge and a pasture land with *Paliurus* scrub and *Platanus orientalis* trees. The Moglenitsa river has a lot of water all year round.

Habitat types: Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Barbus meridionalis, Sabanjewia aurata, Cobitis taenia.*

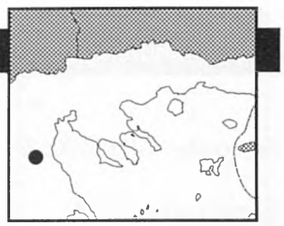
Other important species: — Flora: -
— Fauna: 3A

Impacts/Activities: — Positive: -
— Neutral: 140 (IN)
— Negative: 100, 110, 120, 502, 710 (IN) / 100, 110, 120, 502 (AR)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: It is a flyway for migratory birds. As it is providng nesting habitats it is important for birds of prey.

Site Name: OROS OLYMPOS



Sitecode: GR1250001 **Type**: I

Longitude: 22° 25′ **Latitude**: 40° 08′

Administrative Region: Kentriki Makedonia **Prefecture**: Pieria

Altitude (m): 1600 **Area (ha)**: 17420 **Length**: -

Description: Mount Olympos consists mainly of dolomitic limestone and marbles of the upper triassic (eastern slopes, 200-2000 m), paleocene or of the cretaceous (western and southern slopes, 1200-2000 m) and jurassic (Mytikas complex, 2000-2917 m). Gneiss occurs on the western slopes in a zone from 700 m up to 1100 m and eocenic flysch on the north-western slopes (Petra, 600-1200 m). The limestone dominance significantly affects the climate and the appearance of the vegetation. Basic characteristics of Mount Olympos, being a limestone mountain, are the deep valleys and steep gradient slopes, (Enippeas valley). The highest summit, Mytikas (2917 m), with the neighbouring peaks Stefani, Scala, Scolio form the impressive ridge of Olympos. Limestone makes the climate drier, as it increases temperature and absorbs precipitation. There are few old trees of *Taxus baccata*, next to St. Dionisiou monastery, with a height of 15 m and a diameter of 100 cm.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Matorral with *Laurus nobilis*, Alpine calcareous grasslands, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Alkaline fens, Balkan screes, Central greek montane cliffs, Beech forests with *Ilex* and *Taxus* rich in epiphytes (Ilici-Fagion), Neutrophilous (Asperulo-Fegetum) beech forests, Calcareous beech forests (Cephalanthero-Fagion), Tilio-Acerion ravine forests, Hellenic beech forests with *Abies borisii-regis*, *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Myotis emarginatus, Lutra lutra, Rupicapra rupicapra balcanica, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo marginata, Testudo graeca, Elaphe quatuorlineata, Elaphe situla.*

Other important species:
— Flora: 56B, 5C, 126D
— Fauna: 11A, 12B, 27C, 8D

Impacts/Activities:
— Positive: -
— Neutral: 100, 190, 624 (IN) 100, 160, 190, 502, 690 (AR)
— Negative: 140, 160, 180, 230, 250, 501, 622, 690, 730, 900, 942, 943, 948, 973 (IN) 140, 230, 401, 419 (AR)

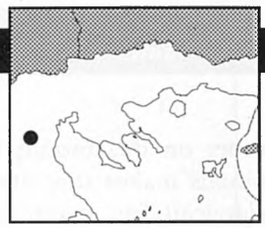
Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Game refuge
— International level: Council of Europe Biogenetic Reserve, UNESCO Biosphere Reserve, IBA

Significance: Mount Olympos is a historical monument (dwelling place of the 12 Gods of Greek mythology). The variety of microclimates is responsible for the inversion of vegetation zones and the anarchy of the vegetation zones distribution. The highest tree-line (timber line) in Europe

Site Name: OROS OLYMPOS (cont.)

occurs on this mountain (*Pinus heldreichii* at 2500 m). The great concentration of rare plants and animals makes this site a real natural paradise for the conservation of rare fauna and flora (*Jankaea heldreichii* for example) of Greece and Europe. The core zone of the 4000 ha National Park established in 1938 is at the top. There is a Master Plan (Special Management Plan, 1988) by the Forest District Office of Katerini that suggests the expansion of the core area to 7150 ha and core+buffer zone = 17420 ha. By decision of the Bureau of the International Coordinating Council of the Programme on Man and Biosphere, (MAB, UNESCO) Mount Olympos National Park is recognized as a part of the international network of Biosphere Reserves (15/12/1981).

Site Name: PIERIA ORI



Sitecode: GR1250002 **Type**: E

Longitude: 22° 12′ **Latitude**: 40° 15′

Administrative Region: Kentriki Makedonia **Prefecture**: Pieria

Altitude (m): 1200 **Area (ha)**: 17936 **Length**: -

Description: The geological substratum consists of metamorphic rocks (augen, gneiss, schist), acid igneous rocks (granites) as well as basic and ultrabasic rocks (ophiolites ruglueral). The major part of the site is covered with broad leaved and coniferous forests. The dominant species are *Fagus sylvatica, Quercus frainetto, Pinus nigra* ssp. *pallasiana* and *Pinus sylvestris*. Forests are interrupted by large gaps covered with shrubs and dry grasslands, while above the timberline there are subalpine grasslands.

Habitat types: *Juniperus oxycedrus* arborescent matorral, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich Nardus grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Acidophilous (Luzulo-Fagetum) beech forests, Beech forests with *Ilex* and *Taxus* rich in epiphytes (Ilici-Fagion), Neutrophilous (Asperulo-Fagetum) beech forests, Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Acidophilous forests (Vaccinio-Piceetea), Pallas's pine forests.

Plant species: -

Animal species: *Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Rhodeus sericeus amarus, Barbus meridionalis, Sabanjewia aurata.*

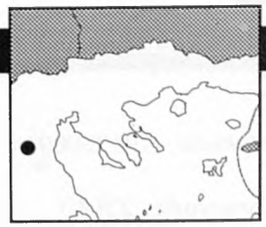
Other important species: — Flora: 7B, 46D
— Fauna: 4A, 3B, 7C, 2D

Impacts/Activities:
— Positive: -
— Neutral: 100, 501 (IN) 100, 140, 502, 503 (AR)
— Negative: 140, 243, 900, 942, 943, 948, 949, 971 (IN) / 400 (AR)

Protection Status:
— National and International level: Game refuge
— International level: -

Significance: The interest of the site lies mainly in the rare flora and fine quality black pine forests. It is also a unique locality in Greece for *Alchemilla mollis*.

Site Name: OROS TITAROS



Sitecode: GR1250003 **Type**: E

Longitude: 22° 11′ **Latitude**: 40° 10′

Administrative Region: Kentriki Makedonia **Prefecture**: Pieria

Altitude (m): 1300 **Area (ha)**: 5631 **Length**: -

Description: The geological substratum consists of metamorphic rocks (augen, gneiss, schist, amphibolites). The major part is covered with degraded beech forests. There are artificial stands of black pine in poor sites and in abandoned agricultural lands. Grasslands (dry and subalpine) occur on the western part of the site.

Habitat types: Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, *Quercus frainetto* woods, Pallas's pine forests.

Plant species: -

Animal species: *Triturus cristatus, Bombina variegata.*

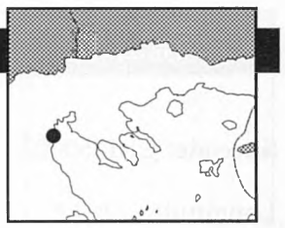
Other important species:
— Flora: 1D
— Fauna: 1A

Impacts/Activities:
— Positive: -
— Neutral: 100 (IN) / 100, 400 (AR)
— Negative: 140, 290 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The only important feature of this site is a small part of the beech forest (Asperulo-Fagetum) and the subalpine grasslands.

Site Name: ALYKI KITROUS



Sitecode: GR1250004 **Type**: G

Longitude: 22° 40′ **Latitude**: 40° 22′

Administrative Region: Kentriki Makedonia **Prefecture**: Pieria

Altitude (m): 1 **Area (ha)**: 1500 **Length**: -

Description: A small but significant wetland with extensive salt marshes and a small shallow lagoon with a well developed dune system on the east side. A sandy heathland with *Artemisia campestris* and/or *Spartium junceum* is incorporated within the dune system. Reed bed formations, often dominated by one species (*Scirpus maritimus, Phragmites australis, Typha latifolia*), occupy artificial ditches and canals.

Habitat types: Sandbanks which are slightly covered by sea water all the time, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Dune-slack reedbeds and sedgebeds, *Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Citellus citellus, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Aphanius fasciatus.*

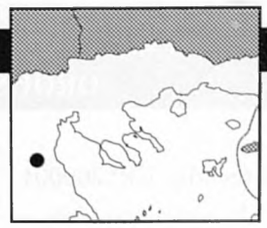
Other important species: — Flora: 1D
— Fauna: 20C

Impacts/Activities:
— Positive: -
— Neutral: 120, 853 (IN) / 120, 503 (AR)
— Negative: 100, 110, 140, 230, 340, 403, 440, 690, 790, 853 (IN) /100, 110, 210, 403, 504, 690, 790 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA

Significance: Alyki Kitrous is considered to be a very important area for birds. A large number of protected and strictly protected species use the site (including the salt works) for breeding, feeding and resting. The largest population in Greece of *Larus melanocephalus* nests in small islets in the lagoon. Alyki Kitrous also supports a rare herpetofauna. A rich population of *Testudo hermanii* thrives here. In the present site, *Pancratium maritimum* is growing wild; this plant species is seriously endangered by the human activities on the coast.

Site Name: ETHNIKOS DRYMOS OLYMPOU



Sitecode: GR1250005 **Type**: H

Longitude: 22° 24′ **Latitude**: 40° 04′

Administrative Region: Kentriki Makedonia **Prefecture**: Pieria

Altitude (m): 2000 **Area (ha)**: 4450 **Length**: -

Description: The limestone dominance significantly affects the climate and the appearance of vegetation. The basic features are deep valleys and steep gradient slopes (Enippeas valley) due to limestone substrate. Limestone makes the climate drier as it increases temperature and absorbs precipitation. The dominant forest species is *Pinus leucodermis* which forms mainly pure stands. Alpine grasslands cover the area above the timber line (2500 m). There are many endemic plant species including *Jankaea heldreichii*.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Matorral with *Laurus nobilis*, Alpine calcareous grasslands, Stepped and garland grasslands, Sub-continenetal steppic grasslands, Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas in continental Europe), Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Alkaline fens, Balkan screes, Central greek montane cliffs, Beech forests with *Ilex* and *Taxus* rich in epiphytes (Ilici-Fagion), Calcareous beech forest (Cephalanthero-Fagion), *Quercus frainetto* woods, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Myotis emarginatus, Lutra lutra, Rupicapra rupicapra balcanica, Triturus cristatus, Bombina variegata, Testudo marginata, Testudo graeca, Elaphe quatuorlineata, Elaphe situla.*

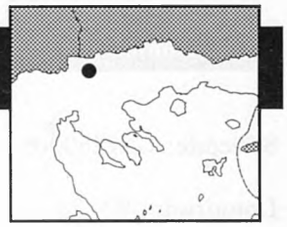
Other important species:
— Flora: 56B, 5C, 126D
— Fauna: 11A, 33C, 4D

Impacts/Activities:
— Positive: -
— Neutral: 624 (IN) / 100, 160, 502, 690 (AR)
— Negative: 230, 250, 501, 622, 690, 900, 942, 943, 948, 973 (IN) / 140, 190, 230 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park
— International level: UNESCO Biosphere Reserve, Council of Europe Biogenetic Reserve, IBA

Significance: Mount Olympos is a historical monument (dwelling place of the twelve Gods of Greek mythology). The variety of microclimates is responsible for the inversion of vegetation zones. *Pinus leucodermis* forms the highest timber line (tree-line) in Europe (2500 m). The great concentration of rare plants and animals makes this site a real paradise for the conservation of rare fauna and flora of Greece and Europe. The site is the core area of the National Park established in 1938. A special Management Plan (1988) suggests the expansion of the core area to 7150 ha. By the decision of the Bureau of the International Coordinating Council of the Programme on Man and Biosphere, (MAB, UNESCO) Mount Olympos is recognized as a part of the international network of Biosphere Reserves (15/12/1981).

Site Name: LIMNI KERKINI - KROUSIA - KORYFES OROUS BELES



Sitecode: GR1260001 **Type**: I

Longitude: 23° 05′ **Latitude**: 41° 15′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 200 **Area (ha)**: 72000 **Length**: -

Description: Kerkini is a large, artificial freshwater lake fed by the Strymon river and is used for irrigation and flood control. It is surrounded by well forested mountains (Beles, Krousia). Kerkini lake supports a very interesting aquatic vegetation including formations of rooted plants with floating leaves (*Trapa natans, Nymphaea alba, Nymphoides peltata, Potamogeton gramineus*) or rooted submerged, rooted species (*Ceratophyllum demersum, Myriophyllum spicatum, Ranunculus fluitans* etc.). Reed bed formations dominated by *Phragmites australis, Typha angustifolia, Scirpus lacustris* etc., fringe the lake and the canals. Several trees of *Tamarix* spp. isolated or in small groups grow sporadically around the lake.

Habitat types: Natural euthropic lakes with Magnopotamion or Hydrocharition-type vegetation, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Eastern (Galio-Carpinetum) oak-hornbeam forests, Residual alluvial forests (Alnion glutinoso-incanae), Mixed oak-elm-ash forests of great rivers, Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Salmo macrostigma, Aspius aspius, Rhodeus sericeus amarus, Barbus plebejus, Cobitis taenia, Lucanus cervus, Morimus funereus.*

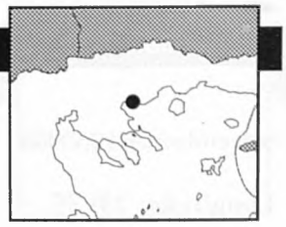
Other important species: — Flora: 2B, 3C, 44D
— Fauna: 9A, 1B, 24C, 4D

Impacts/Activities: — Positive: 130 (IN) 130 (AR)
— Neutral: 162, 220, 400, 503 (IN) / 166 (AR)
— Negative: 100, 110, 120, 140, 164, 210, 230, 853, 952 (IN) / 100, 110, 120, 140, 164, 230, 300 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: Ramsar Convention site, IBA

Significance: It is an area with wetland and mountain ecosystems of great national and international importance. It supports rich bird populations in terms of both numbers and diversity, including rare and endangered species. The wetland is very important as a feeding ground for birds of prey nesting in the nearby forests, as a wintering and intermediate station for migratory birds, as well as a breeding area for a large number of birds. The increased biological productivity, the existence of rare plant species (*Marsilea quadrifolia, Utricularia vulgaris* et.) and also rare and diverse fauna (fish, mammals, amphibians, reptiles) increase even more the ecological value of the site.

Site Name: EKVOLES POTAMOU STRYMONA



Sitecode: GR1260002 **Type**: B

Longitude: 23° 50′ **Latitude**: 40° 48′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 1 **Area (ha)**: 1300 **Length**: -

Description: The site comprises coastal saltwater lagoons and marshlands formed around the mouth of the Strymon river. The Delta region contains a variety of habitat types: offshore sand, islands and dunes, halophytic marshlands, *Tamarix* shrub, grassland of freshwater marshes and reed marshes along the river. There are not any dykes to separate the wetland from the reclaimed agricultural land, on which the principal crops are wheat, vines and olives. There are villages and towns near the wetland.

Habitat types: Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Fixed dunes with herbaceous vegetation (grey dunes), Natural euthropic lakes with Magnopotamion or Hydrocharition-type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Thermo-mediterranean riparian galleries (Nerio-Tamaricetae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Testudo hermanni, Testudo graeca, Emys orbicularis, Alosa fallax, Aspius aspius, Barbus plebejus, Cobitis taenia, Aphanius fasciatus, Ophiogomphus cecilia.*

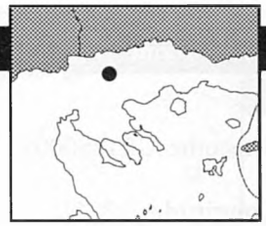
Other important species: — Flora: 2D
— Fauna: 3A, 1B, 9C, 2D

Impacts/Activities:
— Positive: -
— Neutral: 140, 180 (AR)
— Negative: 100, 110, 120, 140, 180, 230, 300, 500, 502, 507, 710, 840 (IN) 100, 110, 120, 230, 500, 502, 608, 690, 710 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The estuary of the river Strymon is considered to be an important area for breeding and wintering of large bird populations (waders and gulls) as well as for a very rich number of fish. It is also an important area for rare and threatened waterfowls, a principal migratory route and a recovery station. The Delta ecosystems are still intact. Breeding species include *Ciconia ciconia, Circus aeruginosus, Himantopus himantopus* (4-10 pairs), *Burhinus oedicnemus* etc. It is important as a passage for migrants, particularly waders and gulls. In the visitors group *Phoenicopterus ruber* has been included, while *Egretta alba, Haliaeetus albicilla* and *Circus cyaneus* would be considered as winter visitors.

Site Name: AI GIANNIS



Sitecode: GR1260003 **Type**: B

Longitude: 23° 35′ **Latitude**: 41° 05′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 100 **Area (ha)**: 510 **Length**: -

Description: The site consists of two strip-streams which are connected to each other in front of freshwater springs, where the center of Ai Giannis is located. The streams are fringed with some areas of reed beds (*Phragmites australis* and *Arundo donax*) and a partly forested area of *Populus* sp., *Platanus orientalis*. Musci and pteridophytes species are also present. On the northern part of the site and on the surrounding hills there is a reforestation of *Pinus* sp. The presence of many quarries is also characteristic. In the vicinity of the site there are numerous buildings.

Habitat types: Natural euthropic lakes with Magnopotamion or Hydrocharition-type vegetation, Caves not open to the public, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Eudontomyzon* spp., *Barbus plebejus*.

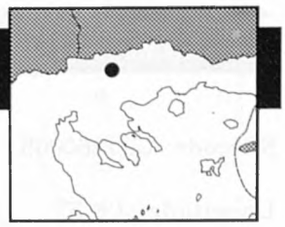
Other important species: — Flora: -
— Fauna: 2A, 1B

Impacts/Activities: — Positive: -
— Neutral: 140, 230 (AR)
— Negative: 100, 110, 120, 400, 410, 421, 422, 500, 502, 690, 700, 710 (IN) 100, 110, 120, 400, 410, 421, 422, 502, 700, 710 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The site is important for the endemic fish *Eudontomyzon hellenicus* found in the river and because of the cave located in the mountainous area near the sites. The cave should be reclaimed and included in the site. The very rare endemic species *Eudontomyzon hellenicus* and the goby *Proterorhinus marmoratus* could be considered as strongly endangered by the pollution of the stream.

Site Name: KORYFES OROUS MENOIKIO - OROS KOUSKOURAS



Sitecode: GR1260004 **Type**: B

Longitude: 23° 50′ **Latitude**: 41° 14′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 1500 **Area (ha)**: 22800 **Length**: -

Description: Mount Menoikio lies in a NW-SE direction. From a geological point of view, Menoikio belongs to the Rodopi crystalline massif. According to the Emberger climatic diagram the lower altitudes of the mountain belong to the humid or subhumid zones with cold or mild winters. The soil is sandy and is derived from metamorphic rocks (mainly limestone and gneiss). As one moves inland, away from the foot of the mountain, most Mediterranean species disappear and the hellenic beech forests with *Abies borisii regis, Quercus frainetto* and the chestnut stands become more common.

Habitat types: Endemic oro-mediterranean heaths with gorse, *Juniperus communis* formations on calcareous heaths or grasslands, *Juniperus oxydercus* arborescent matorral, Stepped and garland grasslands, Oro-Mediterranean stripped grasslands, Sub-continental steppic grasslands, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Residual alluvial forests (Alnion glutinoso-incanae), Mixed oak-elm-ash forests of great rivers, Chestnut woods, Helenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: -

Animal species: *Rhinolophus mehelyi, Myotis blythi, Miniopterus schreibersii, Myotis myotis, Ursus arctos, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Lycaena dispar.*

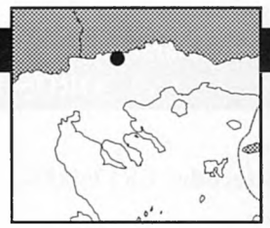
Other important species: — Flora: 5B, 2C, 65D
— Fauna: 2A, 1B, 7C, 3D

Impacts/Activities: — Positive: 162 (IN)
— Neutral: 100, 400, 403 (IN) / 100, 120, 130, 140, 400, 430 (AR)
— Negative: 140, 164, 230, 511 (IN) / 110 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: It is a mountain with rich forests of deciduous and coniferous trees. It has grasslands with rich flora. There are many rare species and species with restricted distribution in the Balkan peninsula. There is a monastery on mountain Kouskouras (Timios Prodromos). Although most forests are public they are harvested by private associations under arrangements with the Greek Forest Service. A lot of people work in logging and wood using industries, so the local unemployment decreases remarkably.

Site Name: KORYFES OROUS ORVILOS



Sitecode: GR1260005 **Type**: B

Longitude: 23° 37′ **Latitude**: 41° 23′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 1700 **Area (ha)**: 5000 **Length**: -

Description: Mount Orvilos is located in N. Greece. It is connected, through Mt. Vrondous (to the South) with mountains of NE Greece. From a geological point of view, Orvilos belongs to the Rodopi crystalline massif. The climate is the same as in the inland areas of N. Greece. It is an intermediate climate type which lies between the Medditerranean and the Continentental type. The high altitudes (above 1400 m) belong to the very humid zone, with erosion in winter, while the lower altitudes belong to the humid or subhumid zones with cold of mild winters.

Habitat types: *Juniperus oxycedrus* arborescent matorral, *Juniperus communis* arborescent matorral, Stepped and garland grasslands, Sub-continental steppic grasslands, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Hellenic beech forests with *Abies borisii-regis*, Acidophilous forests (Vaccinio-Piceetea), Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus leucodermis*.

Plant species: *Cypripedium calceolus*.

Animal species: *Bombina variegata, Lycaena dispar*.

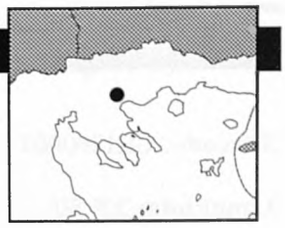
Other important species: — Flora: 4B, 4C, 75D
— Fauna: 2A, 1B, 3C, 2D

Impacts/Activities: — Positive: 160, 161, 162, 730 (IN)
— Neutral: 100, 400, 430, 500 (AR)
— Negative: 140, 230 (IN)

Protection Status: — National and regional level: -
— International level: -

Significance: It is an area with high peaks and extended alpine and subalpine grasslands with rich grass vegetation. There are also forests with coniferous (*Abies borisii-regis, Pinus leucodermis, Pinus sylvestris*) and deciduous trees (*Fagus* sp., *Quercus* sp., *Fraxinus angustifolius, Ostrya carpinifolia*).

Site Name: OROS KERDYLIA



Sitecode: GR1260006 **Type**: B

Longitude: 23° 40′ **Latitude**: 40° 48′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 750 **Area (ha)**: 8800 **Length**: -

Description: Hills with deciduous forests (mainly *Quercus* sp. and *Fagus* sp.). In the middle of the area there are ravines with old chestnut forests. At lower altitudes around the region there are a lot of villages. The climate is transitive from mediterranean to continental. Geologically the region belongs to the mass of Rodope. The south part suffers from tourism (there are many summer houses, hotels, campings etc).

Habitat types: Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Chestnut woods, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Bombina variegata, Testudo hermanni, Testudo graeca.*

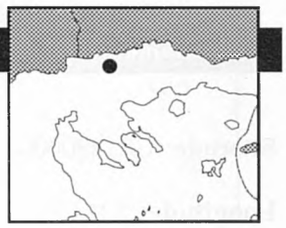
Other important species: — Flora: 3C, 6D
— Fauna: 2A, 7C, 1D

Impacts/Activities:
— Positive: 160 (IN)
— Neutral: 100, 607, 621 (AR)
— Negative: 140, 230, 403, 501, 510, 690, 948 (IN) / 400, 401, 600, 948 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: A low quality region, because of the density of the villages that enclose the mountain. The forests are much degraded in terms of quality and quantity. There are not any coniferous forests.

Site Name: ORI VRONTOUS - LAILIAS



Sitecode: GR1260007 **Type**: B

Longitude: 23° 50′ **Latitude**: 41° 16′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 1000 **Area (ha)**: 11500 **Length**: -

Description: The harwood forests dominate in most of the part of the area. Two important species characterize the forest of Mt. Vrontou and Lailias (*Quercus frainetto* and *Fagus* sp.). There are also *Pinus nigra* ssp. *pallasiana* forests. *Pinus sylvestris* is a less significant pine in a few stands. From a geological point of view the mountain belongs to the Mass of Rodope. The climate is an intermediate type which lies between the Mediterranean and the Continental type. The high altitudes belong to the humid zone, while the lower areas belong to the dry zone.

Habitat types: *Juniperus oxycedrus* arborescent matorral, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus frainetto* woods, Pallas's pine forests.

Plant species: -

Animal species: *Rhinolophus mehelyi, Myotis capaccinii, Ursus arctos, Lutra lutra, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Lycaena dispar.*

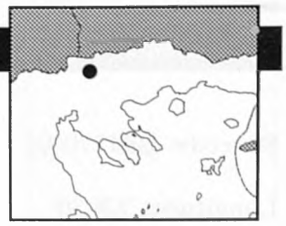
Other important species: — Flora: 1B, 39D
— Fauna: 2A, 8C, 3D

Impacts/Activities:
— Positive: 530 (IN)
— Neutral: 100, 501, 602 (IN) / 100 (AR)
— Negative: 140, 180, 230, 400, 403, 510, 600 (IN) / 400 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Controlled hunting area
— International level: -

Significance: Area with rich forest of deciduous trees (especially beech forests) and coniferous trees (*Pinus nigra*). It has many rare species (as *Triturus cristatus*) and species with restricted distribution in the Balkan peninsula. The forest resources of Lailias provide a variety of recreational activities; hunting, picnicking and camping, walking, hiking and mountain climbing, driving vehicles in forest settling, winter sports and skiing, photography, painting and nature study. Although most forests are public, they are harvested by private associations after arranements with the Greek Forest Service. A lot of poor people work in logging and wood using industries, so the local unemployment decreases remarkably.

Site Name: TECHNITI LIMNI KERKINI



Sitecode: GR1260008 **Type**: H

Longitude: 23° 09′ **Latitude**: 41° 12′

Administrative Region: Kentriki Makedonia **Prefecture**: Serres

Altitude (m): 33 **Area (ha)**: 10996 **Length**: -

Description: Kerkini is a large artificial freshwater lake fed by the Strymon river and is used for irrigation and flood control. It is surrounded by well forested mountains (Beles, Kroussia). Kerkini lake supports a very interesting aquatic vegetation including formations of rooted plants with floating leaves (*Trapa natans, Nymphaea alba, Nymphoides peltata, Potamogeton gramineus*) or rooted submerged species (*Ranunculus fluitans, Ceratophyllum demersum, Myriophyllum spicatum* etc). Reed bed formations dominated by *Phragmites australis, Typha angustifolia, Scirpus lacustris* etc. fringe the lake and the canals. Several trees of *Tamarix* spp. isolated or in small groups grow sporadically around the lake.

Habitat types: Natural euthropic lakes with Magnopotamion or Hydrocharition-type vegetation, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba, Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Lutra lutra, Triturus cristatus, Bombina variegata, Emys orbicularis, Mauremys caspica, Aspius aspius, Rhodeus sericeus amarus, Barbus plebejus, Cobitis taenia, Lucanus cervus.*

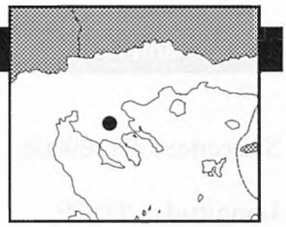
Other important species:
— Flora: 1C, 3D
— Fauna: 5A, 1B, 14C, 4D

Impacts/Activities:
— Positive: 130 (IN) / 130 (AR)
— Neutral: 162, 220 (IN) / 400 (AR)
— Negative: 210, 230, 853, 952 (IN) / 100, 110, 120, 140, 230, 300, 503 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA

Significance: A wetland of great national and international importance. It supports rich bird populations in terms of both numbers and diversity, including rare and endangered species. The wetland is very important as a feeding ground for birds of prey nesting in the nearby forests, as a wintering and intermediate station for migratory birds, as well as a breeding area for a large number of birds. The increased biological productivity, and the existence of rare species (*Marsilea quadrifolia, Utricularia vulgaris* etc.) and rare and diverse fauna within the site and in the forest ecosystems surrounding it, increase even more the ecological value of the area. In the running waters of the area around the village Agistro, there is a population of wild trout *Salmo macrostigma* which is endangered by the neighbouring cultures of the species *Oncorhynchus mykiss*.

Site Name: OROS CHOLOMONTAS



Sitecode: GR1270001 **Type**: B

Longitude: 23° 30′ **Latitude**: 40° 27′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): 600 **Area (ha)**: 5500 **Length**: -

Description: In this region is the forest of Aristotelian University of Thessaloniki (Department of Forestry and Natural Environment). Cholomontas Mt. consists of forested hills with open forest structure and maquis. There are not any rivers or lakes. From a geological point of view Cholomontas belongs to the Serbo-Macedonian mass and Peri-Rodope zone. The climate is the same as in the inland areas of N. Greece. It is an intermediate climate type which lies between the Mediterranean and the Continental type. The high altitudes (above 900 m) belong to the very humid zone, while the lower altitudes belong to the dry zone with mild winters. The biotope of *Fagion hellenicum* does not contain *Abies borisii-regis*. One common hardwood type in NE Chalkidiki is a mixture of beech with oak and rarely with chestnut. These species because of their durability and strength are used for many items, ranging from boxes and coffins to materials for building construction. However, their main use is for the mines of this region. Much more of a dozen of different hardwoods are found here and include *Carpinus duinensis, Ostrya carpinifolia, Tilia tomentosa, Acer campestre, Acer pseudoplatanus, Rhus coriaria* etc.

Habitat types: *Juniperus oxycedrus* arborescent matorral, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Chestnut woods, Hellenic beech forests with *Abies borisii-regis*, *Quercus frainetto* woods, *Taxus baccata* woods.

Plant species: -

Animal species: *Rhinolophus blasii, Bombina variegata, Testudo hermanni, Testudo graeca, Elaphe quatuorlineata, Elaphe situla.*

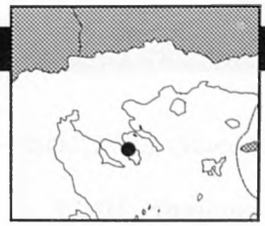
Other important species: — Flora: 1B, 8C, 24D
— Fauna: 4A, 8C, 7D

Impacts/Activities:
— Positive: 160, 161 (IN) / 160 (AR)
— Neutral: 100, 110, 120 (AR)
— Negative: 100, 110, 120, 140, 164, 230, 300, 331, 400, 410 (IN) / 140, 330, 331, 400 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: Cholomontas is a very important low mountain, near the city of Thessaloniki. Thus, a lot of people visit the region for recreation. Native wildlife can become a perceptible component of the forest scene by creating favourable habitats for birds and other small animals in roadside parks, rest areas and picnic sites. For larger species habitats should be created in glades, marshes or forest openings visible from the road.

Site Name: OROS ITAMOS - SITHONIA



Sitecode: GR1270002 **Type**: E

Longitude: 23º 50′ **Latitude**: 40º 09′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): 400 **Area (ha)**: 20000 **Length**: -

Description: The site is situated in the north-east part of the Sithonia peninsula. The littoral zone is covered with calcareous and schistolithic plates. Beaches are not exposed to winds and particular flora develops there. The sea bed declines smoothly and the *Posidonia* beds reach down to 15 m and cover a quite large area. On the rocky sea bed zones, *Cystoseira* (*C. crinita, C. discors*) grows and sciophilus species dominate. In the 1- 2m depth, where the substrate is sandy and muddy, populations of *Cymodocea nodosa* exist. Four important pines characterise the forest of the Sithonia peninsula. *Pinus halepensis* and *Pinus nigra* ssp. *pallasiana* are the most common. There are also two less significant pines: *Pinus pinea* and *Pinus maritima*. The hardwoods are very scarce. A forest of *Platanus orientalis, Alnus glutinosa, Salix* sp. and *Populus* sp. is primary located along the river systems. Smaller isolated units are found along swamps and streams throughout the mountainous area. At somewhat higher elevations, in the black pine belt, a few trees of *Taxus baccata* appear. The oldest of them has a diameter of 1.2 m. This tree is perhaps 2000 years old.

Habitat types: *Posidonia* beds, Lagoons, Reefs, Aegean phrygana (*Sarcopoterium spinosum*), *Quercus ilex* forests, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Monachus monachus, Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Barbus plebejus, Lucanus cervus.*

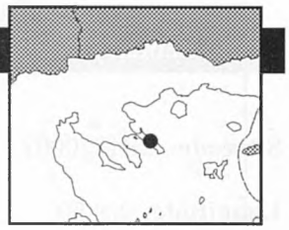
Other important species: — Flora: 5B, 1C, 5D
— Fauna: 4A, 15C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 100, 120, 130, 180, 421, 501 (IN) / 100, 120, 130, 520 (AR)
— Negative: 140, 220, 403, 511, 520, 948 (IN) / 140, 180, 608, 621 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: This site combines sea and mountain. The mountain is covered with coniferous forests, and possesses impressive landscape features including steep slopes, rock formations, streams and unique species of flora and fauna. It is an important feeding area for birds of prey. The bay of Vourvourou is one of the most rich areas of the site. *Cystoseira* communities form zones at the sublittoral zone (typical vegetation-zonation of Mediterranean). Skiophilous species of Rhodophyceae dominate in the area. *Posidonia* beds do not reveal particular degradation and present a high density population forming an important complex with rich flora and fauna. The species *Barbus plebejus* is isolated in this area so it is genetically interesting. The gum that flows when wounding a pine is used in naval stores production to make rosin and turpentine. Formerly the raw gum was burned to make the pitch and tar used in shipbuilding (and thus it is called naval stored). Today the principal product is turpentine. The rock formations on the south and west part of the peninsula are perceptible components of the forest scene by creating favourable habitats for birds and other small animals in roadside parks, rest areas and picnic sites and for larger species in glades, marshes or forest openings visible from the road.

Site Name: CHERSONISOS ATHOS



Sitecode: GR1270003 **Type**: B

Longitude: 24° 13′ **Latitude**: 40° 16′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): 800 **Area (ha)**: 22000 **Length**: -

Description: The Athos peninsula is located in the south part of Chalkidiki. Because of the monasteries in this area, the number of visitors has been controlled since the 9th century. The peninsula is a large forested area. It consists mostly of deciduous (mainly *Castanea sativa, Quercus* sp., *Fagus* sp.), as well as some coniferous (*Pinus halepensis, P. nigra* and *Abies borissii-regis*) mixed forests, maquis brushwood and alluvial forests along streams. The top of the mountain is with many bare and rocky ridges and peaks. The durability of chestnut has made it a favourite wood species for over a million years. Maquis is a community that extends its dominance over a wide area on the northern part of the peninsula and holds a diversity of habitats with a proportionately diverse competition. It includes at least a dozen of evergreen sclerophylous shrubs with varying degrees of dominance and importance, which may occur in many combinations but which invariably form low, dense thicklets. The most important and constant species are *Erica manipuliflora* and *Quercus coccifera*. The other species of Ericacae are somewhat less characteristic. The forest types are a biotic response to climate, soil and human activity.

Habitat types: Mediterranean arborescent matorral: *Juniperus* formations, Matorral with *Laurus nobilis*, Laurel thickets, Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Stepped and garland grasslands, Balkan screes, Beech forests with *Ilex* and *Taxus* rich in epiphytes (Ilici-Fagion), Residual alluvial forests (Alnion glutinoso-incanae), Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Cretan *Quercus brachyphylla* forests, *Quercus ilex* forests, *Quercus macrolepis* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Silene orphanidis, Centaurea peucedanifolia.*

Animal species: *Monachus monachus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo graeca, Barbus plebejus.*

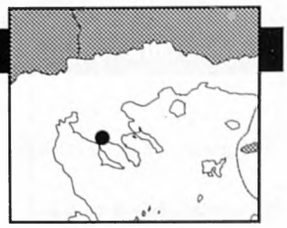
Other important species: — Flora: 44B, 6C, 56D
— Fauna: 2A, 2B, 5C, 1D

Impacts/Activities: — Positive: -
— Neutral: 100 (IN) / 162 (AR)
— Negative: 160, 403, 948 (IN)

Protection Status: — National and Regional level: -
— International level: UNESCO World Heritage site, IBA

Significance: The ultimate overall goal of the renewable resource management is the effective exploitation of the products and forest uses for the maximisation of the local social welfare. This means that the environmental values depend much more explicitly upon the policies and plans of the forests owners (monasteries of Holy Mountain). The species *Barbus plebejus* is isolated in this area, so it is geneticaly interesting.

Site Name: LIMNOTHALASSA AGIOU MAMA



Sitecode: GR1270004 **Type**: B

Longitude: 23° 20′ **Latitude**: 40° 13′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): 2 **Area (ha)**: 1000 **Length**: -

Description: A small but important wetland with a brackish coastal lagoon, a well developed dune system, halophile vegetation and sandy heathland. *Corydothymus capitatus* dominated formations, mostly characteristic of south Greece and the islands, form an important habitat, incorporated in the dune system. Moreover, clusters of *Spartium junceum, Holoschoenus vulgaris* or *Tamarix* spp. are scattered in the area. Reed beds with *Phragmites australis*, of limited extent, cover parts of the saline soils often with a stratum of halophilus species. *Chara* and *Zannichelia* beds develop at the bottom of the lagoon.

Habitat types: Sandbanks which are slightly covered by sea water all the time, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fruticosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Aegean phrygana (*Sarcopoterium spinosum*).

Plant species: -

Animal species: *Testudo graeca, Emys orbicularis, Aphanius fasciatus.*

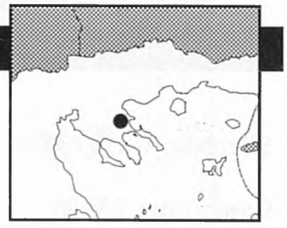
Other important species: — Flora: 1D
— Fauna: 1A, 1C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 110, 120, 502, 504 (AR)
— Negative: 140, 230, 300, 302, 409, 421, 423, 590, 623, 690, 790, 870 (IN) 100, 402, 490, 690, 710, 890 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The wetland is used as a breeding, feeding and wintering area by a large number of birds. It is also important for other fauna species (mammals, reptiles, amphibians).

Site Name: OROS STRATONIKON



Sitecode: GR1270005 **Type**: B

Longitude: 23° 47′ **Latitude**: 40° 33′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): 400 **Area (ha)**: 9100 **Length**: -

Description: Mountain Stratonikon is a forested branch of Cholomon mountain. In this area a lot of vegetation types appear. The dense forests consist of *Castanea sativa, Quercus frainetto* and *Fagus* sp. There are also mediterranean maquis (in the lower level) and many cliffs, especially on the coast. This area does not include villages or agricultural exploitations.

Habitat types: Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*), Acidophilous (Luzulo-Fagetum) beech forests, Beech forests with *Ilex* and *Taxus* rich in epiphytes (Illici-Fagion), Neutrophilous (Asperulo-Fagetum) beech forests, Chestnut woods, *Quercus frainetto* woods, *Quercus ilex* forests.

Plant species: -

Animal species: *Bombina variegata, Testudo hermanni, Testudo graeca, Emys orbicularis, Elaphe situla, Barbus plebejus, Lucanus cervus.*

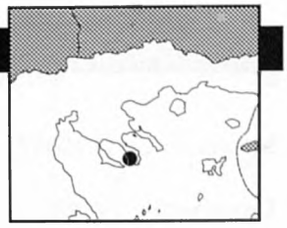
Other important species: — Flora: -
— Fauna: 3A, 4C, 1D

Impacts/Activities: — Positive: 160, 166, 530 (IN) / 530 (AR)
— Neutral: 510, 600 (IN) / 100, 400, 440, 520, 608, 621 (AR)
— Negative: 140, 230, 330 (IN) / 180, 230, 330, 331 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: It is an important area because of its dense forests. These forests are very suitable for the breeding of birds of prey. The absence of villages and agriculture inside the site is complete. The principal, commercial wood products of Stratonikon Mt., are derived from beech, oaks and chestnuts.

Site Name: ORMOS TORONIS



Sitecode: GR1270006 **Type**: B

Longitude: 23° 50′ **Latitude**: 40° 00′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): -10 **Area (ha)**: 588 **Length**: -

Description: The area is located in the SW part of the Sithonia peninsula, includes the Pountia isle and continues nortwest. The substrate in the bay is sandy while it turns to being rocky in the outer area. There, three different types of vegetation dominate. In the inner NW part of the bay, *Posidonia* beds expand down to 15 m. Eastwards, where the substrate is sandy and/or muddy, populations of the marine phanerogame *Cymodocea nodosa* grow down to 3 m. The rocky substrate is dominated by *Cystoseira* species.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs.

Plant species: -

Animal species: -

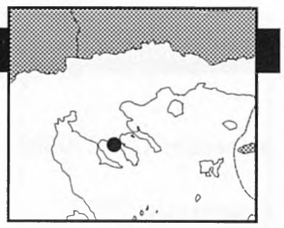
Other important species: — Flora: 3D
— Fauna: 4D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 210, 690 (IN) / 210 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: *Posidonia* beds grow in shallow waters having populations of high density inside the Toroni bay and of smaller density outside the bay. *Cystoseira* communities (*Cystoseiretum crinitae*) show relatively low species diversity. Human activities are very limited. Meadows of phanerogams play an importnat role in the littoral ecosystem (primary production, food supply for fishes, shelter for fish hatching). Ten spesies of gastropods live on *Posidonia* leaves and in *Cystoseireum* communities.

Site Name: AKROTIRIO ELIA - AKROTIRIO KASTRO



Sitecode: GR1270007 **Type**: E

Longitude: 23° 43′ **Latitude**: 40° 10′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): -15 **Area (ha)**: 165 **Length**: -

Description: The area is located NW of the Sithonia peninsula and its maximum depth is around 30 m. The sea bed is quite steep, so this site does not expand towards the open sea. The substrate is rocky or covered with pebbles and there are some scattered sandy patches. The biotope exhibits a large species diversity. On the hard substrate the *Cystoseira* communities and Rhodophyceae and Phaeophyceae species dominate. Chlorophylaceae are represented by *Acetabularia acetabulum* and *Halimeda tuna*. Beds of *Posidonia* expand from 5 down to 30 m.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

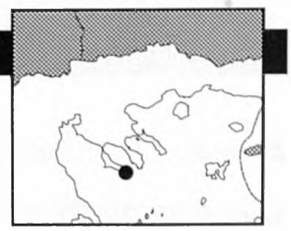
Other important species: — Flora: 6D
— Fauna: 2D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 690 (IN) / 403 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The area represents one of the richest marine biotopes of the N. Aegean and for a long time it was used by several studies as a reference of a non-polluted with rich flora and vegetation site. A thriving abundance of species characterizes the biodiversity of this marine biotope. The marine habitats (the excellent *Posidonia* beds and reefs) and the lack of pollution have resulted in this high diversity of marine species, a fact that gives the site a significant value. *Posidonia* beds show a large population even in deep waters without any sign of degradation. *Posidonia* leaves are of great importance for they provide shelter for a great variety of both plant and animal organisms. In general, this biotope has an approximate number of 60 algal species.

Site Name: PALIOURI



Sitecode: GR1270008 **Type**: B

Longitude: 23° 40′ **Latitude**: 39° 58′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): - 15 **Area (ha)**: 193 **Length**: -

Description: The site is located in the SE part of the Kassandra peninsula. The coast is exposed to intensive wave action and the sea bed exhibits high inclination. *Posidonia* beds expand along the coastline (depth: 1.5-30 m). The substrate comprises gravel and small portion of granite rock. In the bay and the shallow waters a limited population of *Cymodocea nodosa* exists (0.5-1 m depth). On the hard substrate Rhodophyceae dominate whereas the presence of Chlorophyceae species is very small.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

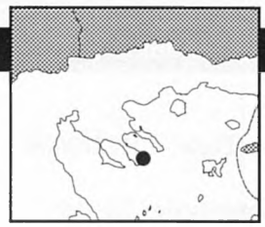
Other important species: — Flora: 5D
— Fauna: 1D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 220, 520, 870 (IN) / 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The area is of great importance as *Posidonia* beds are very well developed. The marine phanerogam *Posidonia oceanica* is a very good bioindicator of the ecological conditions of a marine environment. However, the species is threatened with extinction in the Mediterranean Sea and especially in the most polluted areas (WCMC 1993).

Site Name: PLATANITSI - SYKIA



Sitecode: GR1270009 **Type**: B

Longitude: 24° 00′ **Latitude**: 40° 00′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): -20 **Area (ha)**: 800 **Length**: -

Description: The area is located in the SE part of the Sithonia peninsula and includes Platanitsi coasts, Sarti bay and Sykia bay, with steep coasts. *Posidonia* beds of both types grow up in the area, namely in the shallow waters (2-15 m) and the deeper waters down to 40 m. Sarti bay holds a rich flora and vegetation of photophilous and skiophilous macroalgae. Calcareous Rhodophyceae and *Cystoseira* species form extensive zones in the sublittoral. The biotopes are exposed to intensive wave action.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

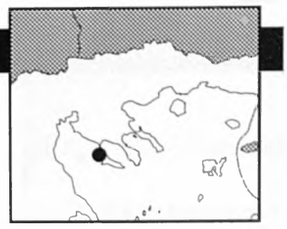
Other important species: — Flora: 2D
— Fauna: 3D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 220, 690 (IN) / 403 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The flora and plant communities of the area are of a particular interest due to the high species diversity. Following previous studies about the area, more than 50 macroalgal species have been reported and some of them for the first time in the marine flora of the Aegean Sea. *Posidonia* beds exhibit high densities and show a remarkable viability resulting in a great number of hosted organisms (plants and animals). Four gastropods are reported to live on *Posidonia* meadows among which the species *Paradoris indecora* is referred for the first time in the Aegean Sea.

Site Name: AKROTIRIO PYRGOS - ORMOS KYPSAS



Sitecode: GR1270010 **Type**: B

Longitude: 23° 20′ **Latitude**: 40° 04′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): -7, 5 **Area (ha)**: 318 **Length**: -

Description: The site is located in the NW part of the Kassandra peninsula. The sea bed is slightly inclined and covered with planes gravel and shistolithic rocks. On the relatively soft substrate and at the depth of 0.5-1 m scattered *Cymodocea nodosa* populations exist. On the hard substrate a relatively rich flora grows with *Cystoseira* and other Phaeophyceae dominanting. Beds of *Posidonia* expand from 2 to 15 m depth.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

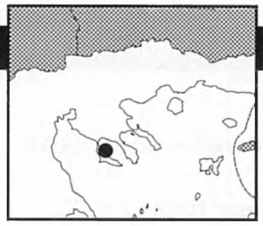
Other important species: — Flora: 4D
— Fauna: 1D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 220 (IN) / 401, 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The beds of *Posidonia* consist the most important coastal ecosystem of the soft substrate. In this area they exhibit a high population density and cover a relatively big area. In the shallow waters *Cymodocea nodosa* populations grow. They are more tolerant than *Posidonia oceanica* and they replace *Posidonia* in polluted areas. In general, the Mediterranean Sea shows a tendency to degradation on account of pollution. In the *Cystoseira* communities (*Cystoseiretum crinitae*), which grow on hard substrates, a great diversity of species is observed. Four species of gastropods were refered to live in *Cystoseira thalli* and one in *Posidonia* meadows.

Site Name: AFYTOS



Sitecode: GR1270011 **Type**: B

Longitude: 23° 27′ **Latitude**: 40° 06′

Administrative Region: Kentriki Makedonia **Prefecture**: Chalkidiki

Altitude (m): - 14 **Area (ha)**: 194 **Length**: -

Description: The area is located in the NE part of the Kassandra peninsula. The site includes a large plateau with submarine meadows (*Posidonia oceanica* beds) and areas with reefs (*Cystoseira* communities). It is a long sandy and rocky sheltered coast, with a small inclination. The rocky substrate is characterized by the *Cystoseira* zonation. At the depth of 0.5 m the populations of *Cymodocea nodosa* grow. *Posidonia* beds expand from 1.5 to 28 m.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

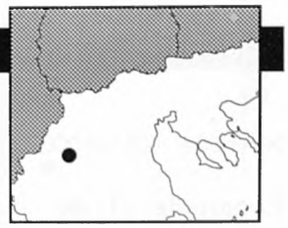
Other important species: — Flora: 5D
— Fauna: 2D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 220 (IN) / 401, 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The area is characterized by the rich algal flora. The *Cystoseira* species form the characteristic Mediterranean communities, which play an important role in the coastal ecosystems. The Rhodophyceae *Laurencia obtusa* is well represented in the biotope. *Posidonia* beds are of a great density and a great number of gastropods, epiphytes and other organisms are hosted in the foliage. The decrease of the upper limits of the bed in the shallow waters is due to the human activities (fishery, built-up, tourism).

Site Name: VASILITSA



Sitecode: GR1310001 **Type**: E

Longitude: 21° 07′ **Latitude**: 40° 04′

Administrative Region: Dytiki Makedonia **Prefecture**: Grevena

Altitude (m): 1100 **Area (ha)**: 8164 **Length**: -

Description: A rugged area densely forested and sparsely populated. The rock consists exclusively of serpentine.

Habitat types: Alpine calcareous grasslands, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Alkaline fens, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Hellenic beech forests with *Abies borisii-regis*, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Ursus arctos, Triturus cristatus, Bombina variegata, Salmo macrostigma, Barbus meridionalis, Cobitis taenia.*

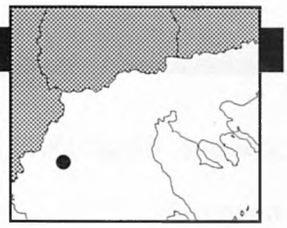
Other important species: — Flora: 12B, 1C, 34D
— Fauna: 5A, 1B, 2C

Impacts/Activities: — Positive: 140 (IN)
— Neutral: -
— Negative: 160, 166, 180, 626 (IN) / 160 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: *Pachychilon pictus* is a common species with big populations in the neighbouring countries (Albania, FYROM). In Greece, the Aoos river is the southern limit of its presence, and thus, it is considered as a rare species for our country and for the European Union. The area has not been studied up to now. However, it is important as a natural refuge for rare mammals (bear, otter, chamois) and together with the important neighbouring sites, Mt. Smolikas and Pindos National Park, it forms an extensive and continuous undisturbed zone. The subalpine meadows are important hunting grounds for birds of prey. In some of the flowing waters of the site considerable populations of wild trout *Salmo macrostigma* exist.

Site Name: ETHNIKOS DRYMOS PINDOU



Sitecode: GR1310002 **Type**: H

Longitude: 21° 08′ **Latitude**: 39° 54′

Administrative Region: Dytiki Makedonia **Prefecture**: Grevena

Altitude (m): 1590 **Area (ha)**: 3360 **Length**: -

Description: Ethnikos Drymos Pindou (Pindos National Park) is a representative part of the Pindos mountain range and one of the greatest and most significant parks in Greece, situated on an isolated mountainous area of SW Macedonia on the northeastern part of the Pindos mountain range. It was established in 1966 and it is characterized by dense forests of *Pinus nigra* and *Fagus sylvatica*, rocky ridges, high peaks (c. 2000 m), permanent fast-flowing streams, many springs and mountain lakes. The area of the site includes the core zone of the park, which covers the greatest part of the Valia Kalda valley, and the slopes of the surrounding peaks. Two small mountain streams, the Salatoura and Zesto Rema, begin from the valley joining a larger stream called the Arkoudorema, which is a tributary of the River Aoos. Furthermore, three small mountain lakes exist in the area. The *Pinus nigra* forest is the dominant vegetation type in the area, beginning from the Arkoudorema at 1300 m and reaching up to 1700 m. The *Fagus sylvatica* forest covers the northern slopes up to 1800 m. The presence of *Pinus heldreichii*, growing from 1500 m up to the peaks, usually present in individuals, is very remarkable. The dry places and the lower parts of the valley are characterized by the domination of *Buxus sempervirens*. Among the trees of *Pinus nigra* and *Fagus sylvatica* some individuals of *Abies borisii-regis* are scattered.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Central greek montane cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Hellenic beech forests with *Abies borisii-regis*, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Myotis blythi, Ursus arctos, Lutra lutra, Lynx lynx, Rupicapra rupicapra balcanica, Bombina variegata, Testudo hermanni, Elaphe situla, Vipera ursinii, Salmo macrostigma.*

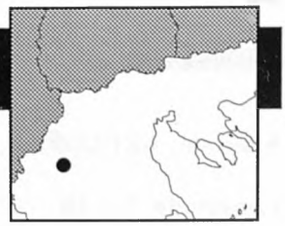
Other important species: — Flora: 24B, 1C, 53D
— Fauna: 6A, 1B, 19C, 2D

Impacts/Activities:
— Positive: -
— Neutral -
— Negative: 140, 160, 171, 220, 230, 507, 870 (IN)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Game refuge
— International level: Council of Europe Biogenetic Reserve, IBA

Significance: The area is a refuge for many plant and animal species. The most important places for the gathering of rare plants are the northern slopes of the peaks of Aftia, Flega and Kapetan Kleidi. All the above places are very steep and difficult to be reached and grazed by animals. Therefore, the natural regeneration of the forest in the area is progressing normally and many rare plants are conserved. The serpentine soil, which dominates in the area of Pindos National Park, favours the growth of rare Pindos endemic plant species such as *Bornmuellera baldacii* ssp. *rechingeri, B. tymphaea, Silene pindicola* and *Centaurea vlachorum.*

Site Name: ETHNIKOS DRYMOS PINDOU (VALIA KALDA) (EVRYTERI PERIOCHI)



Sitecode: GR1310003 **Type**: I

Longitude: 21° 08′ **Latitude**: 39° 54′

Administrative Region: Dytiki Makedonia **Prefecture**: Grevena

Altitude (m): 1590 **Area (ha)**: 6780 **Length**: -

Description: Ethnikos Drymos Pindou (Pindos National Park) is a representative part of the Pindos mountain range and one of the greatest and most significant parks in Greece, situated on a isolated mountainous area of SW Macedonia on the northeastern part of the Pindos mountain range. It is characterized by dense forests of *Pinus nigra* and *Fagus sylvatica*, rocky ridges, high peaks (c. 2000 m), permanent rapid streams, many springs and mountain lakes. The core zone includes the greatest part of the Valia Kalda valley and the slopes of the surrounding peaks. These peaks form a horseshoe round Valia Kalda leaving an opening westwards. Several small mountain streams, from the southern slopes of the valley, flow in the Arkoudorema which is a tributary of the River Aoos. Furthermore, three small mountain lakes exist in the area. The first one, named Lakkos, is situated at an altitude of 1750 m, on the west of the pass Diaselo Stavros. The other two are situated on the north of the Flega peak at an altitude of about 1930 m. The *Pinus nigra* forest is the dominant vegetation type in the area, beginning from the Arkoudorema at 1300 m and reaching up to 1700 m. The *Fagus sylvatica* forest covers the northern slopes up to 1800 m. The presence of *Pinus heldreichii*, growing from 1500 m to the peaks, usually present as solitary individuals, is very remarkable. The dry place and the lower parts of the valley are characterized by the domination of *Buxus sempervirens*.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Central greek montane cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Hellenic beech forests with *Abies borisii-regis*, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines including *Pinus mugo* and *Pinus leucodermis*.

Plant species: -

Animal species: *Myotis blythi, Ursus arctos, Lutra lutra, Lynx lynx, Rupicapra rupicapra balcanica, Bombina variegata, Testudo hermanni, Elaphe situla, Vipera ursinii, Salmo macrostigma*.

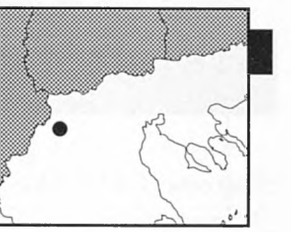
Other important species: — Flora: 28B, 1C, 61D
— Fauna: 6A, 19C, 1D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 160, 171, 220, 230, 507, 870 (IN)

Protection Status: — National and Regional level: Core strict nature reserve in National Park, Peripheral zone of National Park, Game refuge
— International level: Council of Europe Biogenetic, IBA

Significance: The area is a refuge for many plant and animal species. The most important places for rare plants are the northern slopes of the peaks of Aftia, Flega and Kapetan Kleidi. Equally important are the western slopes of the peak Kakoplevri and especially the locality "Koufala" which is out of the core. All the above places are very steep and difficult to be reached and grazed by animals. Therefore in the area the natural regeneration of the forest is progressing normally and many rare plants are conserved. The dominant serpentine soils favour the growing of rare Pindos endemic plant taxa.

Site Name: LIMNI KASTORIAS



Sitecode: GR1320001 **Type**: B

Longitude: 21° 18′ **Latitude**: 40° 30′

Administrative Region: Dytiki Makedonia **Prefecture**: Kastoria

Altitude (m): 625 **Area (ha)**: 4700 **Length**: -

Description: A freshwater lake surrounded by partly forested mountains with the town of Kastoria built on its shore. Rooted aquatic plants, submerged or with floating leaves (*Potamogeton* spp., *Vallisneria spiralis, Najas marina, Myriophyllum spicatum, Trapa natans, Polygonum amphibium* etc.) form important habitats. Moreover, reed beds dominated by *Phragmites australis* fringe the lake.

Habitat types: Natural euthropic lakes with Magnopotamion or Hydrocharition-type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), *Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Miniopterus schreibersii, Lutra lutra, Rupicapra rupicapra balcanica, Citellus citellus, Testudo hermanni, Testudo graeca, Emys orbicularis, Elaphe quatuorlineata, Unio crassus, Euphydryas aurinia.*

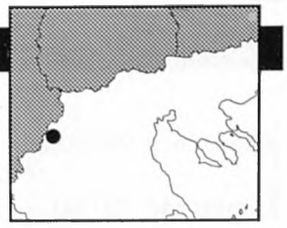
Other important species: — Flora: 3D
— Fauna: 1A, 1B, 7C, 1D

Impacts/Activities:
— Positive: 162 (IN)
— Neutral: -
— Negative: 100, 110, 120, 210, 220, 400, 502, 621, 701, 910, 952 (IN)
100, 110, 120, 230, 301, 400, 502 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: A wetland of great importance for birds as a breeding, feeding and wintering place. It supports a diverse avifauna including rare and threatened species. It is also important for birds of prey.

Site Name: KORYFES OROUS GRAMMOS



Sitecode: GR1320002 **Type**: B

Longitude: 20° 50′ **Latitude**: 40° 21′

Administrative Region: Dytiki Makedonia **Prefecture**: Kastoria

Altitude (m): 1000 **Area (ha)**: 35000 **Length**: -

Description: It is a mountainous area along the Greek-Albanian borders with extensive grasslands, above the treeline, which are heavily grazed. Several abandoned villages existing there, which enrich the area with fruit bearing trees, providing a valuable habitat for the bear.

Habitat types: Alpine rivers and the herbaceous vegetation along their banks, Alpine and subalpine heaths, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich Nardus grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Alkaline fens, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Subalpine beech woods with Acer and *Rumex arifolius*, Residual alluvial forests (Alnion glutinoso-incanae), *Quercus trojana* woods (Italy and Greece), Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: *Solenanthus albanicus, Carex acuta.*

Animal species: *Ursus arctos, Rupicapra rupicapra balcanica, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Salmo macrostigma, Barbus meridionalis.*

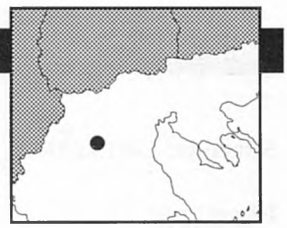
Other important species:
— Flora: 19B, 9C, 115D
— Fauna: 11A, 7C, 8D

Impacts/Activities:
— Positive: 140 (IN)
— Neutral: 730 (IN) / 160 (AR)
— Negative: 160, 166, 190, 243, 502, 740 (IN)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge
— International level: Council of Europe Biogenetic, IBA.

Significance: It is a quite undisturbed and undeveloped region with extensive forests and alpine grasslands. It is also an important site for threatened species such as bear, chamois, *Triturus alpestris* and birds of prey. Although the area is of great botanical importance there are only few relative studies. *Pachychilon pictus* is a common species with big populations in the neighbouring countries (Albania, FYROM). In Greece, the Aoos river is the southern limit of its presence, and thus, this species is considered as rare not only for our country but also for the European Union. In some of the flowing waters of this site considerable populations of wild trout *Salmo macrostigma* exist.

Site Name: OROS VOURINO (MESIANO NERO)



Sitecode: GR1330001 **Type**: B

Longitude: 21° 40′ **Latitude**: 40° 11′

Administrative Region: Dytiki Makedonia **Prefecture**: Kozani

Altitude (m): 800 **Area (ha)**: 8340 **Length**: -

Description: Mount Vourinos consists of two dinstinct geological substrates: calcareous and serpentine. The calcareous substrate exists on the whole NE slope and part of the NW slope, whereas the serpentine substrate is found on the SW slope occupying a much smaller area. The mountain has two parallel ridges, directed NW-SE, formed by several peaks. Between them lies the Valley of Mesiano Nero (400 ha) which is the key feature for nature conservation in the site. In the valley of Messiano Nero human activities such as grazing, forestry as well as hunting, have been kept sustained for several decades. Access to the area is quite difficult due to the bad condition of the only road that exists.

Habitat types: Endemic oro-Mediterranean heaths with gorse, stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Mediterranean arborescent matorral: *Juniperus* formations, Karstic calcareous bgrasslands (Alysso-Sedion albi), Alpine calcareous grasslands, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, *Quercus trojana* woods (Italy and Greece), Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Pallas's pine forests, *Taxus baccata* woods.

Plant species: -

Animal species: *Ursus arctos, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni.*

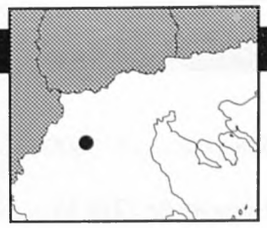
Other important species: — Flora: 19B, 1C, 74D
— Fauna: 2A, 1B, 9C

Impacts/Activities: — Positive: 160, 624 (IN)
— Neutral: 600 (IN) / 100, 130 (AR)
— Negative: 140, 230 (IN) / 140, 400, 410 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: Although the mountain is not of great height it has a rich flora of considerable taxonomic and phytogeographical interest, due to the distinct geological substrates Mt. Vourinos has 8 endemic species and subspecies of plants. Messiano Nero Valley, being protected from human activities during the last three decades, concentrates the botanical, zoological, ecological and landscape importance of the site.

Site Name: KORYFES OROUS SINIATSIKO



Sitecode: GR1330002 **Type**: B

Longitude: 21° 33′ **Latitude**: 40° 26′

Administrative Region: Dytiki Makedonia **Prefecture**: Kozani

Altitude (m): 1200 **Area (ha)**: 7930 **Length**: -

Description: Siniatsiko is a stony mountain, consisting mainly of limestone and schist. Around the village of Vlasti the soil consists of serpentine. As a result of overgrazing in the past, today the forests cover only a small percentage of the whole mountain mainly to the north, while the rest is covered with rocky grasslands.

Habitat types: Stepped and garland grasslands, Balkan screes, Eu-mediterranean greek calcareous cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests, Calcareous beech forests (Cephalanthero-Fagion), *Quercus trojana* woods (Italy and Greece), *Quercus frainetto* woods.

Plant species: -

Animal species: *Ursus arctos, Rupicapra rupicapra balcanica, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni.*

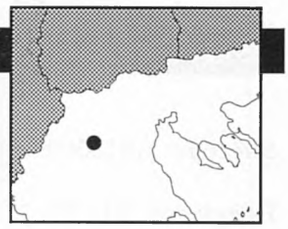
Other important species: — Flora: 9B, 48D
— Fauna: 2A, 6C, 6D

Impacts/Activities: — Positive: 140 (IN) / 140 (AR)
— Neutral:
— Negative: 160 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: It is an important raptor habitat (also because of stock farming) and a region of great botanical interest.

Site Name: ARKEUTHI KOZANIS - PTOLEMAIDAS



Sitecode: GR1330003 **Type**: B

Longitude: 21° 45′ **Latitude**: 40° 35′

Administrative Region: Dytiki Makedonia **Prefecture**: Kozani

Altitude (m): 800 **Area (ha)**: 4000 **Length**: -

Description: The type of climate is continental with very cold winters. The area is covered with *Juniperous* formations, because the soil consists of lacustrine and continental deposits (clays, loan, sand, etc).

Habitat types: *Juniperus communis* formations on calcareous heaths or grasslands, *Juniperus excelsa* and *J. foetidissima* arborescent matorral, *Juniperus communis* arborescent matorral.

Plant species: -

Animal species: -

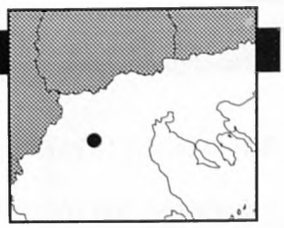
Other important species: — Flora: -
— Fauna: -

Impacts/Activities:
— Positive: 160 (IN)
— Neutral: 160 (AR)
— Negative: 100, 140, 230, 510, 511 (IN) / 100, 140, 230, 330, 411, 423, 510, 511 (AR)

Protection Status:
— National and regional level: -
— International level: -

Significance: The *Juniperus* formations are the most important ecological value of the site. This habitat is a natural reserve of a great ecological and silvicultural importance.

Site Name: OROS PORTA



Sitecode: GR1330004 **Type**: B

Longitude: 21° 57′ **Latitude**: 40° 05′

Administrative Region: Dytiki Makedonia **Prefecture**: Kozani

Altitude (m): 650 **Area (ha)**: 3600 **Length**: -

Description: This area is a valley between two low mountains. The valley is the result of the limestone appearance. Limestone makes the climate drier as it increases temperature and absorbs precipitation.

Habitat types: Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Calcareous beech forests (Cephalanthero-Fagion), *Quercus frainetto* woods.

Plant species: -

Animal species: *Triturus cristatus, Bombina variegata.*

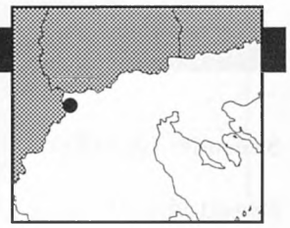
Other important species: — Flora: -
— Fauna: 1A

Impacts/Activities:
— Positive: 160 (IN)
— Neutral: -
— Negative: 100, 140, 230, 500, 511, 810, 900 (IN) / 100, 140, 180, 400, 410 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: Oros Porta is an area of low quality and importance. Human activities and overgrazing have caused the disappearance of most of the vegetation.

Site Name: ETHNIKOS DRYMOS PRESPON



Sitecode: GR1340001 **Type**: F

Longitude: 21° 05′ **Latitude**: 40° 46′

Administrative Region: Dytiki Makedonia **Prefecture**: Florina

Altitude (m): 1000 **Area (ha)**: 19470 **Length**: -

Description: Ethnikos Drymos Prespon includes lake Mikri Prespa and part of lake Megali Prespa which are separated by a sandy bar of alluvial deposits and are surrounded by high mountains. Extensive reed beds of *Phragmites australis, Typha angustifolia, Scirpus lacustris, Carex* spp. occupy the margins of the lakes. There are, also, characteristic formations of rooted aquatic plants with large floating leaves, often with a stratum of submerged species (*Ceratophyllum, Myriophyllum, Potamogeton*).

Habitat types: Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Alpine rivers and their ligneous vegetation with *Salix elaegnos*, Intermittently flowing Mediterranean rivers, Alpine and subalpine heaths, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.), Mediterranean arborescent matorral: Juniper formations, Eutrophic tall herbs, Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Alkaline fens, Subalpine beech woods with *Acer* and *Rumex arifolius*, Calcareous beech forests (Cephalanthero-Fagion), *Quercus trojana* woods (Italy and Greece), *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Grecian juniper woods, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Ursus arctos, Lutra lutra, Rupicapra rupicapra balcanica, Bombina variegata, Testudo hermanni, Emys orbicularis, Elaphe quatuorlineata, Elaphe situla, Salmo macrostigma, Phoxinellus* spp., *Rutilus rubilio, Barbus plebejus, Cobitis taenia, Lycaena dispar, Lucanus cervus, Morimus funereus.*

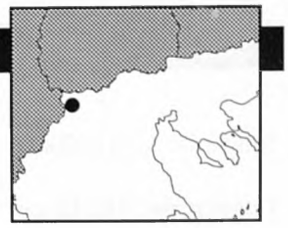
Other important species: — Flora: 4B, 35D
— Fauna: 9A, 4B, 35C, 3D

Impacts/Activities:
— Positive: 140, 606, 852, 853 (IN)
— Neutral: 130, 210, 952 (IN) / 602 (AR)
— Negative: 100, 120, 160, 607, 900 (IN) / 160, 230, 948 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Peripheral zone of National Park, Game refuge
— International level: Ramsar Convention site, Counsil of Europe Biogenetic, IBA

Significance: As a result of the wide variety of biotopes and topography, the site has a very rich flora and fauna as well as a diversity of habitats. The lakes are important for the breeding of waterfowl and waders. In total, over 200 bird species have been observed at the lakes and the surrounding forests. The colonies of *Pelecanus crispus* and *P. onocrotalus* are particularly important. The area is rich in historic and religious monuments. The fish fauna of these lakes is significant because of the high degree of endemism, in the level of subspecies, 80% of fish taxa are endemic.

Site Name: LIMNI MIKRI PRESPA



Sitecode: GR1340002 **Type**: G

Longitude: 21° 05′ **Latitude**: 40° 46′

Administrative Region: Dytiki Makedonia **Prefecture**: Florina

Altitude (m): 856 **Area (ha)**: 4900 **Length**: -

Description: Lake Mikri Prespa is separated from lake Megali Prespa by a sandy bar of alluvial deposits. Extensive reed beds of *Phragmites australis, Typha angustifolia, Scirpus lacustris, Carex* spp., occupy the margins of the lake. There are, also, characteristic formations of rooted aquatic plants with large floating leaves often with a stratum of submerged species (*Ceratophyllum, Myriophyllum, Potamogeton*).

Habitat types: Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Calcareous fens with *Cladium mariscus* and *Carex davalliana, Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Lutra lutra, Bombina variegata, Testudo hermanni, Emys orbicularis, Phoxinellus* spp., *Rutilus rubilio, Barbus plebejus, Cobitis taenia, Lycaena dispar, Lucanus cervus, Morimus funereus.*

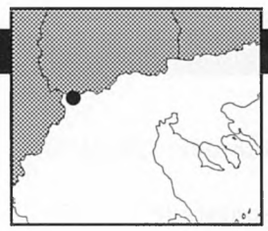
Other important species:
— Flora: 2D
— Fauna: 2B, 12C, 5D

Impacts/Activities:
— Positive: 853 (IN) / 852 (AR)
— Neutral: 210, 606 (IN) / 130, 140, 160, 210, 243 (AR)
— Negative: 100, 140 (IN) / 100, 120, 430, 502, 607 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park.
— International level: Ramsar Convention site, IBA

Significance: Lake Mikri Prespa is a breeding place of particular importance for Greece as well as the E.U. because of the colonies of *Pelecanus crispus* and *Pelecanus onocrotalus* existing there. The colony of *Pelecanus crispus* is the largest in the world, whereas the colony of *Pelecanus onocrotalus* is the largest in the E.U. countries. But the lake is also important as a breeding place for other rare species such as herons and cormorants. Moreover, one of the rarest mammals in Europe, which is the only one of its kind, the otter, is found here.

Site Name: ORI VARNOUNTA



Sitecode: GR1340003 **Type**: E

Longitude: 21° 12′ **Latitude**: 40° 52′

Administrative Region: Dytiki Makedonia **Prefecture**: Florina

Altitude (m): 1700 **Area (ha)**: 6126 **Length**: -

Description: The site consists of the Agios Germanos river basin which is situated on granitic substrate, as part of the Pelagonic geological zone. The sediments that are carried from the river have created a narrow alluvial zone along the riverbanks, that divides the two lakes. The lowland meadows are the result of intense clearcutting and terrace cultivation of rye and other cereals. Around the village of Ag. Germanos there are many conserved hedgerows and walnut groves.

Habitat types: Alpine and subalpine heaths, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Alkaline fens, Vegetated silicicolous inland cliffs with chasmaphytic vegetation, Acidophilous (Luzulo-Fagetum) beech forests, Subalpine beech woods with *Acer* and *Rumex arifolius*, Residual alluvial forests (Alnion glutinoso-incanae), Hellenic beech forests with *Abies borisii-regis, Salix alba* and *Populus alba* galleries, Acidophilous forests (Vaccinio-Piceetea).

Plant species: -

Animal species: *Ursus arctos, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Salmo macrostigma, Barbus plebejus, Euphydryas aurinia.*

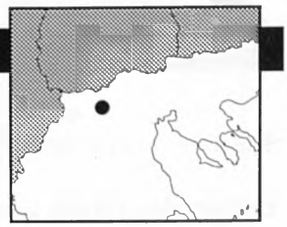
Other important species: — Flora: 6B, 1C, 76D
— Fauna: 2A, 7C, 15D

Impacts/Activities: — Positive: 140 (IN) / 403, 610, 910 (AR)
— Neutral: 942 (IN) / 602 (AR)
— Negative: 160, 166, 243, 701, 900 (IN) / 130, 164 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The silicious substrate as well as the continental climate of the area have created exceptional conditions for the development of a rich and rare flora. The stream by itself, which is of permanent flow, has been the main contributor to the topography of the area. One riparian forest of poplars, willows and alders is the largest such remnant in the area. Although the basin is quite small it is still important for raptors, passerines, mammals (bear, wolf, roedeer) and reptiles. The stream also holds an important population of the local endemic trout. Furthermore, the area is of high traditional heritage value preserving traditional houses and watermills, as well as the old practice of nomadic sheep raising.

Site Name: LIMNES VEGORITIDA - PETRON



Sitecode: GR1340004 **Type**: B

Longitude: 21° 45′ **Latitude**: 40° 45′

Administrative Region: Dytiki Makedonia **Prefecture**: Florina

Altitude (m): 640 **Area (ha)**: 12077 **Length**: -

Description: The site includes two calcareous lakes among bare mountains. Important for the birds of the wetland are the reed beds dominated by *Phragmites australis*, which are more extensive in Petron lake. Moreover, rooted submerged and floating vegetation (*Potamogeton* spp., *Vallisneria spiralis, Najas marina, Myriophyllum spicatum, Polygonum amphibium* etc.) occupy the shallow waters. There is an area of archaeological interest near Petron lake.

Habitat types: Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Sub-continental steppic grasslands, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Calcareous fens with *Cladium mariscus* and *Carex davalliana, Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Barbus meridionalis.*

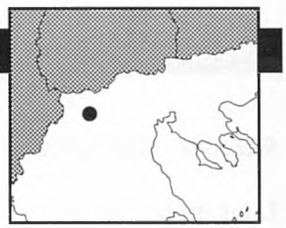
Other important species:
— Flora: -
— Fauna: 2A, 1B, 2C, 6D

Impacts/Activities:
— Positive: -
— Neutral: 200, 503 (IN) / 100, 502 (AR)
— Negative: 100, 110, 120, 140, 210, 230, 608, 853, 952 (IN) /110, 120, 230, 390, 410, 702, 801, 900 (AR)

Protection Status:
— National and regional level: Game refuge
— International level: IBA

Significance: Though of reduced significance in recent years, it is still important as a breeding, feeding and resting ground for birds. It is also important for birds of prey.

Site Name: LIMNES CHEIMADITIDA - ZAZARI



Sitecode: GR1340005 **Type**: B

Longitude: 21° 33′ **Latitude**: 40° 37′

Administrative Region: Dytiki Makedonia **Prefecture**: Florina

Altitude (m): 850 **Area (ha)**: 3947 **Length**: -

Description: Important for the birds of the wetland are the reed beds, usually dominated by *Phragmites australis*, which are significantly more extensive in lake Cheimaditis than Zazari. Moreover, rooted submerged and floating vegetation (*Potamogeton* spp., *Ceratophyllum* sp., *Myriophyllum spicatum, Zannichelia palustris, Vallisneria* sp., *Nymphaea alba* etc.) occupy the shallow waters.

Habitat types: Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Mediterranean tall-herb and rush meadows (Molinio-Holschoenion), Mixed oak-elm-ash forests of great rivers, *Quercus frainetto* woods.

Plant species: -

Animal species: *Lutra lutra, Citellus citellus, Triturus cristatus, Testudo hermanni, Emys orbicularis, Mauremys caspica, Barbus meridionalis.*

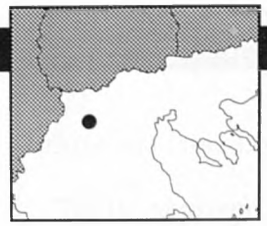
Other important species: — Flora: -
— Fauna: 2A, 1B, 5C

Impacts/Activities:
— Positive: 162 (AR)
— Neutral: 210, 853 (IN) / 162 (AR)
— Negative: 100, 110, 120, 140, 171, 180, 230, 421, 810, 952 (IN) /110, 120, 230, 390, 423, 702, 810 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: A wetland supporting a diverse avifauna and serves as a nesting, feeding and resting ground for a significant number of birds. It is also, very important for birds of prey. Rich herpetofauna is also found in the site.

Site Name: OROS VERNON - KORYFI VITSI



Sitecode: GR1340006 **Type**: B

Longitude: 21° 26′ **Latitude**: 40° 40′

Administrative Region: Dytiki Makedonia **Prefecture**: Florina

Altitude (m): 1500 **Area (ha)**: 8194 **Length**: -

Description: Within the site there are several villages and pastures. These create a suitable habitat and provide fruit as food for the bear. The area has been used by military forces since World War II and, today, the highest peak is occupied by a large military radar station. The climate is of the continental type, with very cold winters.

Habitat types: Stepped and garland grasslands, Sub-continental steppic grasslands, Alkaline fens, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Asperulo-Fagetum) beech forests.

Plant species: -

Animal species: *Myotis bechsteinii, Ursus arctos, Rupicapra rupicapra balcanica, Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Elaphe situla, Salmo macrostigma, Barbus meridionalis, Euphydryas aurinia.*

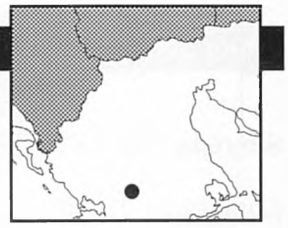
Other important species: — Flora: 2B, 5C, 34D
— Fauna: 6A, 10C, 7D

Impacts/Activities:
— Positive: 160, 161, 501 (IN) / 610 (AR)
— Neutral: 140, 622, 730 (IN) / 160, 402, 690 (AR)
— Negative: 166, 243 (IN) / 101, 151, 164, 419 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The importance of the site stems from the small bear population that permanently lives here. As it is a military area, with little activity on the subalpine grasslands, it preserves the vegetation and wildlife. The beech forest is also important as a pollution absorbant in relation to the highly polluted and degraded natural environment of the Amyndeo plain. In some of the flowing waters of this site considerable populations of wild trout *Salmo macrostigma* exist.

Site Name: PERIOCHI LIMNIS TAVROPOU



Sitecode: GR1410001 **Type**: B

Longitude: 21° 47′ **Latitude**: 39° 20′

Administrative Region: Thessalia **Prefecture**: Karditsa

Altitude (m): 1400 **Area (ha)**: 569 **Length**: -

Description: The site, including the artificial lake of Tavropos, is located on the mountainous area of Agrafa (S. Pindos) on the outskirts of Belocomitis village. The inclines range from moderate (20%) to steep (80%). The parent material of the substrate consists of sandy flinch and limestone. The climatic conditions are highly favourable for tree growth. The most extensive tree stands consist of pure *Abies borisii-regis* forests. Other important tree species are: *Quercus frainetto, Pinus pallasiana* ssp. *nigra*, and *Castanea sativa*. Some woody plant species, such as *Acer campestre, A. pseudoplatanus, Platanus orientalis, Salix incana, S. alba, Juniperus foetidissima, J. oxycedrus, Quercus pubescens, Q. cerris, Q. coniferta, Q. dalechampii, Ostrya caprinifolia, Caprinus betulus*, etc., often emerge in small groups or as scattered trees and shrubs among the stands of the dominant fir and oak species. The above mentioned species form various vegetation patches within the site.

Habitat types: Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Intermittently flowing Mediterranean rivers, Stepped and garland grasslands, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: -

Animal species: *Ursus arctos, Bombina variegata, Testudo hermanni, Phoxinellus* spp., *Barbus capito, Lucanus cervus, Cerambyx cerdo.*

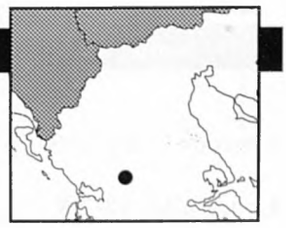
Other important species:
— Flora: 1B, 4D
— Fauna: 3A, 5C, 1D

Impacts/Activities:
— Positive: 852, 853 (IN) / 852, 853 (AR)
— Neutral: 166, 220, 501 (IN) / 166, 220, 403, 501, 511 (AR)
— Negative: 100, 140, 163, 170, 230, 243, 900, 949 (IN) / 100, 140, 170, 230, 243, 900, 949 (AR)

Protection Status:
— National and Regional level:
— International level: -

Significance: The most notable feature of the site is its biodiversity. The mosaic of habitats supports an extremely rich fauna in terms of quality and quantity. Many significant invertebrate and vertebrate species, inhabiting the area covered by the site, have been recorded.

Site Name: AGRAFA



Sitecode: GR1410002 **Type**: B

Longitude: 21° 36′ **Latitude**: 39° 15′

Administrative Region: Thessalia **Prefecture**: Karditsa

Altitude (m): 1500 **Area (ha)**: 10147 **Length**: -

Description: The site of Agrafa is situated on the south mountain range of Greece, in Southern Pindos. The spine of the site is formed by two steep sided mountain summits, Voutsikaki and Avgo, reaching up to 2154 and 2163 m, respectively. The northern half of the site belongs to the prefecture of Karditsa and the southern to the prefecture of Evrytania. The mountain range of Pindos consists mainly of flyschs and plaques of limestone. Most of the habitat types, such as the evergreen oak matorral that cover the steep slopes and the broad-leaved deciduous woodlands within the site, are typical of the central greek mountainous area. In Agrafa, the dominant coniferous species forming pure forests is *Abies borisii-regis*, which is very well adapted to the cold climate conditions. There are two villages within the site, Trovato and Kardasaras. The main human activities are forestry, farming and stock-breeding. Only few plateaux, near the small village, are used for cultivation, mainly of chestnuts or cherry trees.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Stepped and garland grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Species-rich *Nardus* grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Alkaline fens, Central greek montane cliffs, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods.

Plant species: -

Animal species: *Ursus arctos, Rupicapra rupicapra balcanica, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo marginata, Emys orbicularis.*

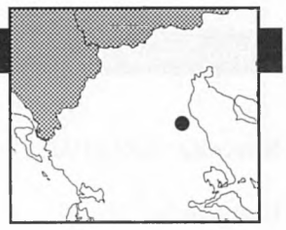
Other important species:
— Flora: 26B, 37D
— Fauna: 3A, 1B, 11C, 3D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 170, 230, 240, 242, 243, 502 (IN)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The character of the site is typical of the mountainous zone of Greece with representative habitats and species of the subalpine and alpine zone. A main element of its significance is the plentitude of balkan endemic, Greek endemic and local endemic plants. This high degree of endemism derives from the geomorphology of the site and the relative isolation and height (often above the tree-line), which lead to an interesting and often unique mountain flora. The alpine and subalpine zones are important for rare species and their protection is necessary for the conservation of the valuable mountain flora. Remarkable components of the mountainous landscape are the plateaux and the dry calcareous rocks and screes; the latter are typical habitats of endemic chasmophytes. Moreover, the presence of mammals, which are in need of protection such as wolves and bears or the birds of prey, gives to the particular site of Agrafa an additional value.

Site Name: KATO OLYMPOS



Sitecode: GR1420001 **Type**: E

Longitude: 22° 25′ **Latitude**: 39° 55′

Administrative Region: Thessalia **Prefecture**: Larisa

Altitude (m): 800 **Area (ha)**: 12300 **Length**: -

Description: Kato Olympos is between Mount Olympos and Mount Ossa. Habitats include pastures, extensive fir and beech forests, rugged ravines with old chestnut forests and forests of *Pinus nigra*. The climate lies between the mediterranean (low altitudes) and continental (high altitudes). From a geological point of view, Kato Olympos consists of serpentinit, gneiss, amphibiotic etc. On a mountainous area like Kato Olympos growth patterns will always be more heterogeneous than in territories with a simpler geographical structure. These differences are particularly manifested at different altitudes.

Habitat types: Mediterranean arborescent matorral: *Juniperus* formations, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Neutrophilous (Asperulo-Fagetum) beech forests, Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Q*uercus ilex* forests, Pallas's pine forests.

Plant species: -

Animal species: *Citellus citellus, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo marginata, Testudo graeca, Elaphe quatuorlineata, Elaphe situla, Barbus plebejus, Lucanus cervus, Osmoderma eremita, Rosalia alpina, Morimus funereus.*

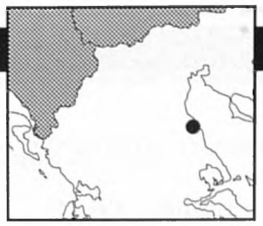
Other important species: — Flora: 2B, 15D
— Fauna: 1A, 8B, 14C, 3D

Impacts/Activities:
— Positive: 160 (IN)
— Neutral: 120, 130 (IN) / 120, 130 (AR)
— Negative: 100, 110, 140, 180, 230, 403, 503, 900 (IN) / 100, 110, 140, 180, 230, 400, 507, 600 (AR)

Protection Status:
— National and Regional level: Aesthetic Forest, Game refuge
— International level: IBA

Significance: The site comprises forests of great aesthetic and ecological value. The wide variety of biotopes and the topography have as a result a very rich flora and fauna as well as a diversity of habitats. The area has an alternating landscape with extensive closed forests, bare grazing land, mixture of pastures, groves and small fields in the plateaux.

Site Name: DELTA PINEIOU - TEMPI



Sitecode: GR1420002 **Type**: I

Longitude: 22° 41′ **Latitude**: 39° 55′

Administrative Region: Thessalia **Prefecture**: Larissa

Altitude (m): 5 **Area (ha)**: 9800 **Length**: -

Description: The designated site is a natural ecosystem which consists of the river Pineios, the valley of its delta, the coastal area, and the rocky sides along the river course, and the mountains Olympos and Ossa. The delta area extends from the national road of Athens-Thessaloniki to the road for the village Stomio. This site includes habitats, extensive pastures, wild and cultivated olive-tree groves, coastal and riverine forests, sandy heathland and dunes. From the geological point of view, delta Pineiou belongs to the pelagonian massif and it was found to consist of quaternary deposits, mainly clay, sand and conglomerates.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Estuaries, Mudflats and sandflats not covered by sea water at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Fixed dunes with herbaceous vegetation (grey dunes), Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Residual alluvial forests (Alnion glutinoso-incanae), *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Myotis blythi, Myotis capaccinii, Myotis emarginatus, Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Elaphe situla, Alosa fallax, Gobio uranoscopus, Rhodeus sericeus amarus, Barbus plebejus, Sabanjewia aurata, Cobitis taenia, Unio crassus.*

Other important species: — Flora: 1B, 1D
— Fauna: 9A, 1B, 21C, 1D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 110, 120, 130, 140, 180, 230, 400, 421, 500, 502, 690 (IN) 100, 110, 120, 230, 400, 410, 422, 500, 502, 608, 700, 710 (AR)

Protection Status:
— National and Regional level: Aesthetic Forest
— International level: IBA

Significance: The river is important for its unique, in Northern Greece, riverine forests. There are natural freshwater springs at the Tempi valley (Kefalari of Agia Paraskevi) and a significant Aesthetic Forest is situated at the valley and the rocky sides along the river course and the mountains Olympos and Ossa. There are also many waterfowl species in large colonies that use the marshlands, as well as raptors that nest in the site. From an ichthyological point of view, the wetland includes common fish species and populations. In addition, the fish fauna includes some interesting endemic taxa.The riverine forests should be protected and conserved. The unique relicts of oak forest as well as the significant understory of the riverine forests with the bulb species *Leucojum aestivum* should be conserved, too.

Site Name: AISTHITIKO DASOS OSSAS



Sitecode: GR1420003 **Type**: D

Longitude: 22° 41′ **Latitude**: 39° 48′

Administrative Region: Thessalia **Prefecture**: Larisa

Altitude (m): 700 **Area (ha)**: 16900 **Length**: -

Description: The site contains the forest complex of the north-eastern side of Ossa mountain; it starts from sea level and goes up to the highest summit, Profitis Ilias (1980m). The summit is bare rock and the existing vegetation belongs to the Astragalo-Daphnion alliance. At the lower altitudes the main vegetation type is the broad-leaved evergreen woodland. Here the majority of the relevant species that grow in Greece such as *Acer* sp., *Quercus* sp., *Corrylus* sp., *Arbutus* sp., *Erica* sp., *Fraxinus* sp., *Ulmus* sp. *Cornus* sp. etc. are found. At higher altitudes, the human impact is distinctive since the control and grafting of *Castanea sativa* have led to pure groups of the species, especially in the parts of the forest that belong to the local communities. The trees are used mainly for chestnut collection and less for their wood. Where the human impact is lighter, *Castanea* grows together with *Tilia* in a typical Tilio-Castanetum at 300-500 m. The next vegetation level, reaching up to 650m, is Quercetum-montanum with *Quercus* species, mainly *Q. conferta, Q. dalechampii* and *Q. pubescens*. Beech forests with hungarian oak are encountered over *Quercion ilicis* on the slopes that face the sea and over Ostryo-carpinion orientalis at the areas away from the sea. *Quercus* forests are also found at altitudes of 200-300m in the wet regions of Ossa. At higher altitudes (650 - 1600m) we find psychrophilous, hydrophilous vegetation. The dominant forest species is the beech; *Fagus moesiaca* together with *F. sylvatica* and *F. orientalis* at the higher and lower altitudes, respectively. On Ossa, as well as in the rest of East Thessaly, the limit of Fagion moesiacae is not the line of summer clouds formations (as it is Albania, for example); small formations of *Fagus* sp. are found in ravines even at altitudes as low as 280 m. The pure beech forest becomes mixed in the zone of 1000 - 1450m where beech is found together with fir (*Abies borisii-regis*). There is also *Abies borisii-regis* forest covering 13% of the site. The fir forest was in recess during the last years because of its exploitation, but recently it has started to reestablish itself. Above the tree line is the subalpine zone with a great variety of species. On Ossa, *Carpinus orientalis*, ravine forests of *Aesculus orientalis* and formations of *Pteridium aquilinun* and *Berberis cretica* are also found. At low percentages there are also some broadleaved species such as *Acer, Sorbus, Fraxinus* and riverside vegetation along the streams.

Habitat types: Intermittently flowing Mediterranean rivers, Stepped and garland grasslands, Sclerophylllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Central greek montane cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Eastern (Galio-Carpinetum) oak-hornbeam forests, Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Rupicarpa rupicarpa balcanica, Bombina variegata, Testudo hermanni, Testudo marginata, Elaphe situla, Rosalia alpina, Cerambyx cerdo, Morimus funereus.*

Other important species: — Flora: 8B, 23D
— Fauna: 3A, 11B, 16C, 8D

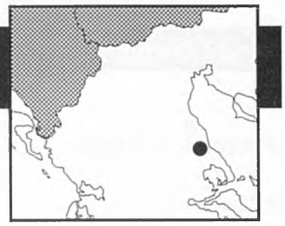
Impacts/Activities:
— Positive: -
— Neutral: 160, 230 (IN)
— Negative: 100, 140, 180, 190, 251, 690, 976 (IN)

Site Name: AISTHITIKO DASOS OSSAS (cont.)

Protection Status: — National and Regional level: Aesthetic Forest, Controlled hunting area
— International level: IBA

Significance: The Aesthetic Forest of Ossa is a real botanical garden. The favourable environment and climate conditions of the area, and namely the high percentage of rainfall, a result of eastern winds, have led to the remarkable forest complex of Ossa. The landscape and the geomorphology of the site are interesting since they locally create numerous special habitats that lead to high diversity in vegetation types, flora and fauna. The complex presents an exceptional variety of habitats and plant species. It has an alternating landscape with extensive closed forests of beech and fir on the eastern side and small fields on the plateau, while the summit is bare rock. The site has several endemic species of plants, such as *Silene multicaulis* spp. *genistifollia, Teucrium chamaedrys* ssp. *olympicum* (rare) and balkan endemic species such as *Lamium garganicum* ssp. *striatum*. The soil is very good for forestry. Its productivity is considered poor and unsuitable for agricultural or cattle-raising exploitation.

Site Name: KARLA-MAVROVOUNI-KEFALOVRYSO VELESTINOU



Sitecode: GR1420004 **Type**: E

Longitude: 22° 49′ **Latitude**: 39° 37′

Administrative Region: Thessalia **Prefecture**: Larisa

Altitude (m): 600 **Area (ha)**: 39520 **Length**: -

Description: The site includes Mavrovouni mountain, two water reservoirs at the area of the former Lake Karla and the spring Kefalovryso in Velestino. Mavrovouni (39.000 ha, max elevation 1.054m) extends between Ossa and Pilio mountains and is included in Larissa and Magnisia Prefectures. It mainly consists of schist and, in less extent, of limestone. The marine area covers 2% of the site, the terrestrial area 96% and the reservoirs 2%. Its NE side ends in steep cliffs in the Aegean Sea. At the higher zone it is mainly covered with oak forests (especially *Quercus conferta*) and at lower parts with beech and chestnut forests. Maquis cover the lower zone. On the eastern part of the mountain, vegetation is very dense dominated by holm oak (*Quercus ilex*). The rest of the maquis are dominated by kermes oak and wild olive and have been degraded as a result of intense grazing. This area is used as a pasture by high numbers of farm animals. Mavrovouni also includes ravines, rock formations, grasslands, phrygana and agricultural land. A significant number of streams run the mountain, most of which dry in summer. On the banks of the streams there are plane trees, alders, poplars and willows. The two water reservoirs, one near Stefanovikio (400 ha) and the other near Kalamaki (200 ha), were constructed in 1988 for irrigation purposes at the area of the former Lake Karla. Their water flows into the Pinios river through the Asmaki stream. However, industrial and agricultural wastes flow into the reservoirs. They are possibly eutrophic and a rapid increase of reedbeds inside them can be observed. Kefalovryso spring has suffered the effects of human activities. Its area has been reduced, it has lost its natural vegetation and possibly its native fishes, as well. Now it is used as a pond for the production of commercial (trout etc.) and exotic fishes.

Habitat types: Sandbanks which slightly covered by sea water all the time, *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Natural euthropic lakes with Magnopotamion or Hydrocharition-type vegetation, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion sp.), *Juniperus communis* formations on calcareous heaths or grasslands, Matorral with *Laurus nobilis*, Aegean phrygana (*Sarcopoterium spinosum*), Karstic calcareous grasslands (Alysso-Sedium albi), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Submerged or partly submerged sea caves, Beech forests with Ilex and Taxus, rich in epiphytes (Illici-Fagion), Neutrophilous (Asperulo-Fagetum) beech forests, Thermophilous ash (*Fraxinus angustifolia*) woods, Chestnut woods, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, *Quercus ilex* forests.

Plant species: -

Animal species: *Monachus monachus, Bombina variegata, Testudo hermanni, Testudo marginata, Emys orbicularis, Cobitis taenia.*

Other important species: — Flora: 1D
— Fauna: 8A, 3B, 17C, 1D

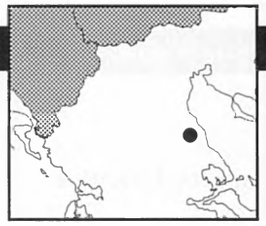
Site Name: KARLA- MAVROVOUNI- KEFALOVRYSO VELESTINOU (cont.)

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 101, 110, 120, 130, 140, 151, 162, 166, 230, 422, 506, 701, 810, 830, 900, 948, 964, 967 (IN) 101, 110, 120, 130, 180, 230, 506, 810, 830, 920 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The following elements indicate the ecological importance of the site:
1. It has a varied morphology, including a mountain, two water reservoirs-wetlands and a spring and a great variety of habitat types.
2. It shelters an interesting fauna of reptiles, amphibians, and mammals, most of which are protected at a national and international level and are of Community interest. There are also several species of fish.
3. The extended, well-conserved deciduous forests.
4. The rich variety of birds, especially raptors observed on Mavrovouni.
5. The reservoirs have partially replaced Lake Karla and a variety of wintering and migrating waterbirds and raptors use them. Many species have already been reestablished in the wetland.

Site Name: AISTHITIKO DASOS KOILADAS TEMPON



Sitecode: GR1420005 **Type**: H

Longitude: 22° 34′ **Latitude**: 39° 53′

Administrative Region: Thessalia **Prefecture**: Larisa

Altitude (m): 220 **Area (ha)**: 1762 **Length**: -

Description: It is an extensive valley of the river Pineios with high cliffs, wooded slopes, a riverine forest and maquis. The significant aesthetic forest with the natural freshwater springs of Agia Paraskevi, is situated between the mountains Olympos and Ossa. From a geological point of view this site consists of serpentine, gneiss, schists and carbonate rocks.

Habitat types: Eu-mediterranean greek calcareous cliffs, Residual alluvial forests (Alnion glutinoso-incanae), *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests.

Plant species: -

Animal species: *Myotis blythi, Myotis capaccinii, Myotis emarginatus, Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Elaphe situla, Gobio uranoscopus, Rhodeus sericeus amarus, Barbus plebejus, Sabanjewia aurata, Cobitis taenia.*

Other important species: — Flora: -
— Fauna: 7A, 21C

Impacts/Activities:
— Positive: -
— Neutral:
— Negative: 500, 502, 507, 690, 700, 710 (IN) / 100, 110, 120, 230, 400, 410, 422, 700 (AR)

Protection Status:
— National and Regional level: Aesthetic Forest
— International level: IBA

Significance: The site comprises forests with great aesthetic and ecological value. There is a large number of birds and populations of common fish species. In the present site one Greek endemic plant species occurs.

Site Name: OROS PILIO



Sitecode: GR1430001 **Type**: E

Longitude: 23° 02′ **Latitude**: 39° 27′

Administrative Region: Thessalia **Prefecture**: Magnisia

Altitude (m): 750 **Area (ha)**: 30487 **Length**: -

Description: Mount Pilion (1627m, Pourianos Stavros) is situated at eastern Thessaly. Its spine runs among Pagasitikos gulf in the south and the Aegean all along the north-east. The site is delimited by the contour of 400 to 500m in the south over the town of Volos and Pagasitikos Gulf, down to Platanorema stream, and by the contour of 500m further north, up to the borders with mount Mavrovouni; in the north-east, the mount falls to the Aegean. The marine area covers 6% of the site. The mountain has a sharp relief, also characterized by its bordering the Aegean Sea. The rocks of the greater part of the site (around 70%) are schists (phyllite and gneiss) with serpentines in the south east and there are also three calcareous areas (around 30% of the site). *Fagus moesiaca* forms a thick forest with excellent structure, the prevalent vegetation at higher altitudes along the centre of the mountain. There are also *Populus tremula* formations and *Salix caprea*. The coastline over the Aegean is indended, with cliffs and rocks and small sandy beaches formed at the bays, while partly submerged caves are formed at places. The human presence is evident all over the site, except from the central mountainous area, at high altitudes and from the steep, rocky Aegean coasts, but it is more intense at the southern part which is more accessible. There are picturesque villages, cultivations and a road network. Extended cultivated areas exist at the southern slopes mainly over Pagasitikos and, smaller ones, at the central part of the site mainly on the slopes over the sea. Most characreristic are the orchards, mainly with apple trees (that constitute a main source of income), but also with walnut, almond, cherry, peach and pear trees. There are also vineyards and olive orchards. Land use is mainly done in traditional ways, even when more intensive and assisted by modern means, due to the rugged relief of most of the site.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Intermittently flowing Mediterranean rivers, *Juniperus communis* formations on calcareous heaths or grasslands, Laurel thickets, Low formations of euphorbia close to cliffs, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Submerged or partly submerged sea caves, Acidophilous (Luzulo-Fagetum) beech forests, Chestnut woods, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests.

Plant species: -

Animal species: *Monachus monachus, Testudo hermanni, Testudo marginata, Emys orbicularis, Elaphe situla, Lucanus cervus.*

Other important species: — Flora: 18B, 18D
— Fauna: 2A, 10B, 13C, 13D

Impacts/Activities:
— Positive:
— Neutral: 140, 220, 230, 241, 403, 430, 501, 608 (IN)
— Negative: 100, 101, 110, 120, 160, 162, 166, 180, 210, 243, 290, 330, 421, 530, 602, 701, 703 (IN) 210, 230, 530, 600, 966 (AR)

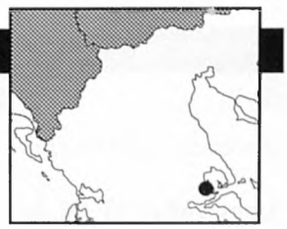
Protection Status: — National and Regional level: Game refuge

Site Name: OROS PILIO (cont.)

— International level: IBA

Significance: Ecological, economic, historical, cultural and aesthetic parameters constitute the quality and importance of Mount Pilion. Its ecological value lies on the variety of well structured and well conserved biotopes which support species-rich communities. Its is a site that combines heavy afforestation -deciduous and wet forests- and well developed Mediterranean maquis with the coastal and marine habitats of the Aegean. The area sustains a flora rich in common species (a fact acknowledged since antiquity, particularly regarding herbs) and also includes rare and endemic species. The fauna ia also interesting. The invertebrate fauna is rich in rare and endemic species such as *Lucanus cervus* and *Cordulegaster heros*. In addition, the area hosts a number of rare and protected amphibians and reptiles. Finally, it should be noted that the caves of the Aegean coasts of Pilion shelter a significant population of the monk seal. The economic value of the site lies on two wealth producing resourses: cultivation, including mainly olives and apples but also other Rosaceae and flowers, and tourism. These two activities support the villages and local communities of the area, providing an attraction to young people. Mount Pilion and the surrounding area have been continuously inhabited since ancient years and have a long history and culture, its traces found in greek mythology. The picturesque villages maintain the local traditional architecture, being in harmony with the environment. This fact and the combination of the thriving green mountainous landscape with the blue Aegean seashores consitute the rare aesthetic value of the site. In conclusion, Pilion is a place which maintains a well conserved natural environment and at the same time supports a significant number of inhabitants; its is a most appropriate candidate for the application of the sustainable development ideal.

Site Name: ELOS SOURPIS - KOURI ALMYROU



Sitecode: GR1430002 **Type**: B

Longitute: 22° 50′ **Latitude**: 39° 10′

Administrative Region: Thessalia **Prefecture**: Magnisia

Altitude (m): 1 **Area (ha)**: 500 **Length**: -

Description: The site comprises two parts: a coastal wetland between Platanos and Sourpi villages and a plain mixed oak forest near Almiros town, Magnissia Prefecture. It consists of a marsh area (Elos Sourpis, 28 ha), a marine zone (75 ha) and a remnant plain forest of oaks (Kouri, 100 ha). The marine area covers 15% of the site, and the terrestrial area covers 85% (land 79%, marsh 6%). The marshland is dominated by reedbeds with *Phragmites australis* and *Tamarix* sp. formations. A spring, close to the site border and a stream with intermittent flow crossing the area supply the marsh with freshwater. Seawater flows into the marsh making the water of the wetland brackish to saline. Part of the area is covered by arable land, orchards and degraded wetland vegetation used as rangeland. Industrial activities are also present. The plain forest is covered by three oak species, *Quercus macrolepis, Q. pubescens* and *Q. pedunculiflora*. A small part of the forest is used as recreational area.

Habitat types: Mudflats and sandflats not covered by seawater at low tide, Large shallow inlets and bays, Annual vegetation of drift lines, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fruticosae), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Bombina variegata, Testudo hermanni, Testudo marginata, Elaphe situla, Barbus plebejus.*

Other important species: — Flora: -
— Fauna: 17C

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 101, 110, 120, 140, 151, 230, 411, 422, 504, 530, 690, 701, 811, 830, 976 (IN) 101, 110, 120, 140, 151, 180, 230, 331, 410, 422, 440, 504, 701, 710, 811, 830 (AR)

Protection Status:
— National and Regional level: Aesthetic Forest
— International level: Council of Europe Biogenetic Reserve, IBA.

Significance:
The following elements indicate the ecological quality and importance of the site: (1) It is one of the few wetlands of eastern continental Greece. Notably, *Barbus cyclolepis cholorematicus* is a fish endemic to Holorema stream, flowing near the site border. (2) It is an important site for migrating and wintering birds, especially for the mute swan, the spoonbill, the ibis, the bittern and the herons (3) The presence of the rare plain forest of oaks (Aesthetic Forest) at Kouri.

Site Name: SKIATHOS: KOUKOUNARIES



Sitecode: GR1430003 **Type**: B

Longitude: 23° 24′ **Latitude**: 39° 9′

Administrative Region: Thessalia **Prefecture**: Magnisia

Altitude (m): 1 **Area (ha)**: 32 **Length**: -

Description: Skiathos is the westernmost island of the group of Northern Sporades. The whole island is protected as an aesthetic forest since 1977. The site of Koukounaries is located in the southern part of Skiathos and includes mainly a mixed forest of 14.5 ha with *Pinus halepensis, P. pinea* and an understorey of sclerophyllous shrubs which extends up to the coastline, the lake Strofilia with a surface of 9.5 ha to its north, and a marine zone which covers half of the site's area. The site is delimited on the north, east and west by a road while in the sea it reaches up to depth curve of 20 m. Strofilia communicates with the sea through a natural, narrow and often drained canal situated on the east side of the forest. The overall area is almost at the same level as the sea, with a maximum altitude of 1.50 m. The soil of the site is sandy, derived from gneusius while hydromorphic, half-hydromorphic and bog soils of small depth are observed in Strofilia. The pine forest has developed through a secondary succession process having replaced a vegetation dominated by *Quercus ilex*.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Lagons, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with Ammophila arenaria (white dunes), Malcolmietalia dune grasslands, Dune sclerophyllous scrubs (Cisto-Lavenduletalia), Wooded dunes with *Pinus pinea* and/or *Pinus pinaster*, Mediterranean temporary ponds, *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Elaphe quatuorlineata.*

Other important species: — Flora: 2C, 3D.
— Fauna: 1B, 4C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 165, 230, 250, 421, 424, 501, 520, 530, 600, 601, 608, 621, 710, 720, 803, 830, 890, 948, 974(IN) / 403, 502 (AR)

Protection Status:
— National and Regional level: Aesthetic Forest.
— International level: Barcelona Convention site.

Significance: No building activities or interventions are allowed in the area apart from the already existing golf terrain, the performance of some scientific research studies and the probable construction of small tourist units which will be in limited numbers, in accordance to the environment and outside the forest boundaries. In addition, Skiathos island is protected by the Barcelona Convention. The rich understorey of broadleaved evergreens, the accumulation of dried material (litter), the lack of light, together with human activities - e.g. burning of garbage, trampling - impair the water conditions for the growth of *Pinus pinea* and make its natural regeneration almost impossible. It must be noted that in Greece *Pinus pinea* has considerable populations only in Strofylia of Peloponnisos and Kaiafa, whereas isolated populations of small numbers exist in six scattered locations - Skiathos included.

Site Name: ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS



Sitecode: GR1430004 **Type**: B

Longitude: 24° 04′ **Latitude**: 39° 35′

Administrative Region: Thessalia **Prefecture**: Magnisia

Altitude (m): 285 **Area (ha)**: 251440 **Length**: -

Description: Northern Sporades are a group of islands situated in the NW Aegean, on the north of Evvoia island and on the east of Pilion peninsula. The site includes the SE part of Skopelos and the island of Alonnisos, the only inhabited parts of the site and a number of smaller islands and islets, which are uninhabited, with the exception of the few guards and the occasional cattle-breeders. The largest part of the site (94 %) is covered by marine habitats, not included in the Annex I habitat types. Geologically, all the islands are dominated by limestone with the exception of Psathoura, which has a clearly volcanic origin. Near Psathoura there are the remnants of an old volcano. Steep valleys and seasonal torrents are formed on Skopelos. The vegetation consists mainly of Aleppo pine forets, *Quercus coccifera* maquis, a small forest of *Quercus ilex*, an Oleo-Ceratonion community, and orchards and olive trees. The vegetation of Allonisos consists mainly of dense maquis with *Quercus coccifera, Q. ilex, Arbutus unedo, Juniperus phoenicea*, Aleppo pine forests, and phrygana (*Sarcopoterium spinosum*). The pine forests at Skopelos and Alonissos replaced the once dominant oak forests because the pines were supported due to their use in ship-building.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Embryonic shifting dunes, Mediterranean temporary ponds, *Juniperus phoenicea* arborescent matorral, Low formations of euphorbia close to cliffs, Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe grasses and annuals (Thero-Brachypodietea), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Aegean calcareous cliffs, Caves not open to the public, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus euryale, Tursiops truncatus, Monachus monachus, Capra aegagrus, Testudo marginata, Testudo graeca, Caretta caretta, Elaphe quatuorlineata, Elaphe situla.*

Other important species:
— Flora: 28B, 1C, 11D
— Fauna: 3A, 10B, 19C, 36D

Impacts/Activities:
— Positive: 165, 607 (IN)
— Neutral: 100, 170, 210, 211, 401, 403, 501, 502, 504, 506, 511, 622, 961, 965 (IN)
— Negative: 110, 120, 140, 212, 230, 421, 520, 608, 621, 623, 690, 710, 730, 946, 966 (IN) / 790 (AR)

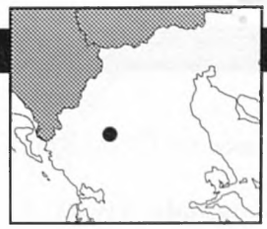
Protection Status:
— National and Regional level: Marine Park-multiple use management zone, Controlled hunting area, Game refuge.
— International level: Barcelona Convention site, IBA

Significance: The part of the Northern Sporades included in the site, which covers the National Marine Park, represents a unique in the Mediterranean complex of terrestrial and marine habitats.

Site Name: ETHNIKO THALASSIO PARKO ALONNISOU - VOREION SPORADON, ANATOLIKI SKOPELOS (cont.)

It contains a variety of vegetation types -especially marine priority habitat types of excellent representativity- and of flora and fauna species, among which many are endemic, rare, or protected, and some are at their southern- or northern-most limits of distribution. The island of Piperi is protected by the Barcelona Convention. Besides the scientific and educational interest of both the marine and the terrestrial area, the site also presents a great archaeological interest with relicts covering the prehistorical, the classical, and the byzantine ages (cave findings, shipwrecks, old monasteries, and churches). The numerous caves with beaches formed at the sea cliffs of the islands consitute ideal shelters for the Monk seal population, which is estimated to be the most important in the Mediterranean. Piperi, the most important breeding area for the Monk seal, is the core area of the National Marine Park of Sporades. An isolated population of *Capra aegagrus* ssp. *dorcas* lives exclusively on Gioura. Also, the herpetofauna of all the islands is very important, including rare and protected species. The avifauna is very rich, containing a large number of migratory and breeding birds. The invertebrate fauna is also important, including a lot of endemic species of Isopoda, especially in the cave of Cyclops (Gioura). A thriving abundance of species characterize the biodiversity in the marine biotopes. The variety of marine habitats (such as the excellent *Posidonia* beds, reefs etc) and the lack of pollution have contributed to this high diversity of the marine species, a fact that gives the site systematic and zoogeographical value. A hundred and seventy fish species, 70 amphipoda, 40 species of Porifera have been recorded in the site. The rich chasmophytic vegetation, which includes a lot of endemic species, is of great phytogeographical and ecological interest. There are plant species occurring in the South Aegean, for which Gioura is their northernmost distribution limit.

Site Name: ASPROPOTAMOS



Sitecode: GR1440001 **Type**: E

Longitute: 21° 16′ **Latitude**: 39° 39′

Administrative Region: Thessalia **Prefecture**: Trikala

Altitude (m): 1502 **Area (ha)**: 22853 **Length**: -

Description: The site consists of forest complexes, rivers with riparian vegetation and sub-alpine meadows. It includes the most important sources of Acheloos river, one of the longest rivers in Greece. Aspropotamos is formed by two rivers that converge to a main stream (forming Y), which finally, out of the site, flows into Acheloos. The dominant tree species are *Abies borissi-regis* and *Quercus cerris*. There are pure forests of *Abies borisii-regis* and mixed forests with *Fagus* sp. are formed where the fir and beech forests meet. *Quercus cerris*, also forms pure forests. There are also reforestations with *Pinus nigra* ssp. *pallasiana*. The geomorphology of the site is characterized by a great variety of inclines and aspects. Other habitat types in the site are the flat sedge fens with *Blysmus compressus* the calcareous cliffs of Pindus, with the alliance *Gallion degenii*, association Achillea clavenae and Minuartia stellata var. epirota and the calcareous screes of central Pindos with *Geranium aristatum*.

Habitat types: Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Stepped and garland grasslands, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Alkaline fens, Balkan screes, Central greek montane cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Hellenic beech forests with *Abies borisii-regis*, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: -

Animal species: *Ursus arctos, Lutra lutra, Rupicapra rupicapra balcanica, Bombina variegata, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe situla.*

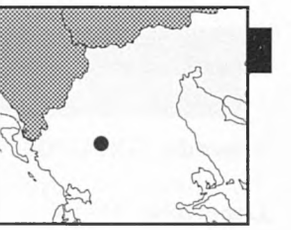
Other important species:
— Flora: 15B, 1C, 35D
— Fauna: 3A, 12C, 6D

Impacts/Activities:
— Positive: 160, 163, 164, 166 (IN) / 160 (AR)
— Neutral: 100, 401 (AR)
— Negative: 100, 140, 170, 230, 502, 608, 622, 720 (IN) / 130, 140, 170, 230, 243, 490, 502, 608, 690 (AR)

Protection Status:
— National and Regional level: Game refuge, Controlled hunting area
— International level: -

Significance: The area is of great importance because it comprises a large variety of habitats of a very good quality. The conservation status of the habitats present and thus their potential for conservation are notable since both the forest and the rivers are generally undisturbed by human activities and effectively protected. The fir, beech and oak forests maintain their structure and function at an excellent status. The site's importance for biodiversity is proved by the presence of many animal and plant species which are endemic or protected by international conventions and by the Greek Law. Finally, one more element of the site's importance is its high aesthetic value.

Site Name: KERKETIO OROS (KOZIAKAS)



Sitecode: GR1440002 **Type**: B

Longitude: 21° 32′ **Latitude**: 39° 35′

Administrative Region: Thessalia **Prefecture**: Trikala

Altitude (m): 1000 **Area (ha)**: 45000 **Length**: -

Description: Kerketion Oros (Koziakas) is a mountain at the west edge of central Pindos range, with bare and rocky ridges and peaks but also with fir forests and open structure ravine forests. The vegetation of the area includes phrygana, dry calcareous grasslands, dry siliceous grasslands, native coniferus woodlands, screes, exposed bedrocks, and inland cliffs. The dominant type of vegetation (42%) is the King's Boris fir forests (*Abies borisii-regis*). *Abies borisii regis* forms pure, fairly well structured forests and is only mixed with beech at small patches (total 1%). There are also *Quercus frainetto* dominated forests with the presence of *Q. pubescens, Q. ceciliflora* and *Q. cerris*. Across the continuous flow small local rivers there are *Platanus orientalis* forests with *Alnus glutinosa, Salix caprea, Salix alba, Salix incana* and *Salix sp.* The subalpine grasslands are characterized by the Junipero-Daphnion zone. There are also grazed areas. Finally, the site includes the University Forest of Pertouli, used for educational reasons and maintaining a very good conservation status.

Habitat types: Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Pioneer vegetation of rock surfaces, Hellenic beech forests with *Abies borisii-regis*, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Ursus arctos, Rupicarpa rupicarpa balcanica, Testudo hermanni, Testudo marginata, Testudo graeca, Elaphe situla.*

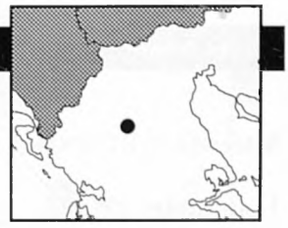
Other important species: — Flora: 10B, 11D.
— Fauna: 4A, 1B, 16C, 8D.

Impacts/Activities:
— Positive: 160, 163, 166 (IN)
— Neutral: -
— Negative: 100, 140, 170, 401, 402, 501, 502, 608, 609, 690 (IN) 100, 140, 170, 401, 402, 501, 502, 608, 609, 690 (AR)

Protection Status:
— National and Regional level: Game breeding station, Controlled hunting area.
— International level: IBA.

Significance: Mount Kerketion is an area with significant diversity, supporting well conserved natural habitats, most importantly the fir and oak forests and also the rocky habitats, and hosting endemic and threatened or rare species of the flora and fauna, notably birds and mammals. The mountain has been characterized as an Important Bird Area (IBA) for large birds of prey and has large populations of raptors, especially of vultures. The significant populations of mammals found in the area are in part due to the site's management as a game reserve and controlled hunting area: the animals are fed and protected from natural and human (hunters) threats. In addition, three game species have been imported and are bred in the area: a deer species, *Dama dama*, a pheasant (*Phasianus colchicus*), and a partridge. The ecological quality and balance of the site as fashioned by the management of the site are fragile and require a continual maintainance by the Forestry Department.

Site Name: ANTICHASIA ORI - METEORA



Sitecode: GR1440003 **Type**: B

Longitude: 21° 35′ **Latitude**: 39° 45′

Administrative Region: Thessalia **Prefecture**: Trikala

Altitude (m): 500 **Area (ha)**: 56136 **Length**: -

Description: The site includes the mountain complex Antichasia and the area of Kalambaka in the south and contains forested hills and a river valley, formed by the rivers Lithaios and Mourgkas. The parent material of the rocks mainly consists of limestones and flyschs. The area is characterized by a mosaic; the forests and arborescent matorrals and shrubs are situated in forest plots of about 200 to 3000 ha, each under a different ownership status.
Regarding the vegetation, there are dry siliceous grasslands, broadleaved deciduous woodlands and alluvial and very wet riparian forests with *Platanus orientalis, Salix alba* and *Alnus glutinosa*, and brush. The dominant tree species in the deciduous forest is *Quercus frainetto*, mixing occasionaly with *Q. cerris* or with *Q. pubescens* and *Q. cessiliflora* also occurs. It must be noted that in a large part of the site that used to be covered by oak forests in the past, the vegetation is now degraded and the area is covered by herbaceous vegetation, while at places the parent rock material is revealed. For a more detailed determination of the habitat types present on the site, further investigation is necessary.
Kalambaka is the spectacular formation of the steep, bare rocks of Meteora.

Habitat types: Intermittently flowing Mediterranean rivers, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Vegetated calcareous inland cliffs with chasmophytic vegetation, Eu-mediterranean greek calcareous cliffs, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: *Centaurea kalambakensis, Centaurea lactiflora.*

Animal species: *Lutra lutra, Rupicarpa rupicarpa balcanica, Testudo hermanni, Testudo marginata, Testudo graeca, Elaphe situla.*

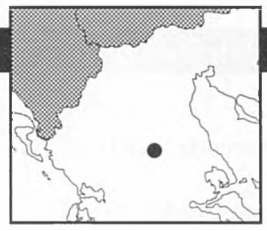
Other important species: — Flora: 2B, 1D.
— Fauna: 4A, 1B, 18C, 4D.

Impacts/Activities:
— Positive: 160 (IN)
— Neutral: 100, 170 (IN) / 100 (AR)
— Negative: 140, 230, 402, 440, 502, 606, 608, 690 (IN) 140, 170, 230, 401, 402, 440, 502, 606, 608, 690 (AR)

Protection Status:
— National and Regional level: -
— International level: UNESCO World Heritage site

Significance: The site is characterized of the presence of a variety of fairly well conserved arborescent and woody habitats. An exceptional feature of the area is its biodiversity; it is of great botanical and zoological value due to the presence of a large number of endemic and threatened species, legally protected at national and international level. More specifically, the area has been characterized an Important Bird Area (IBA). In addition to the largest population of the species *Neophron percnopteus* in Greece, large populations of birds of prey also have been observed.

Site Name: STENA KALAMAKIOU



Sitecode: GR1440004 **Type**: B

Longitude: 22° 15′ **Latitude**: 39° 39′

Administrative Region: Thessalia **Prefecture**: Trikala

Altitude (m): 300 **Area (ha)**: 1500 **Length**: -

Description: Stena Kalamakiou is a gorge traversed by Pinios river in the region of Trikala, with a gallery of riparian woodland among bare hills. The site is interesting with regard to the landscape and geomorphology. The vegetation is typical for this kind of areas. It is characterized by plant species such as *Salix alba, Alnus glutinosa, Ulmus campestris, Populus alba* (and various hybrids of *Populus*), *Vitex agnus castus, Tamarix* sp., *Rubus* sp. There are also isolated trees of *Platanus orientalis* and *Fraxinus angustifolia*. The surrounding area is mainly used as pastureland. A small part of the site, the area surrounding the hills, is cultivated.

Habitat types: Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Thermophilous ash (*Fraxinus angustifolia*) woods, Residual alluvial forests (Alnion glutinoso-incanae), *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Lutra lutra, Elaphe quatuorlineata, Acipenser sturio, Gobio uranoscopus, Rhodeus sericeus amarus, Barbus capito, Sabanjewia aurata.*

Other important species:
— Flora: -
— Fauna: 10A, 1B, 12C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 130, 151, 167, 220, 300, 701, 800 (IN) / 110, 120, 130, 701 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA.

Significance: Stena Kalamakiou, a gorge of Pinios river mainly surrounded by bare hills, a land is not used for agriculture but for stock farming. Although having no special characteristics, the gorge is a valuable riverine ecosystem ; it is situated in the heart of the Thessalic plain, a problematic region highly influenced by human activities. Therefore it is of special importance for the wild fauna and flora of the area, one of the last resorts in the region and needs protection.
The site is also important because of the presence of rare species of birds and fishes. Specifically, the riverine cliffs around the gorge are important for rare birds of prey. The area is considered an Important Bird Area. It has also a high endemism regarding fish: 5 endemic subspecies, 4 species endemic to Greece and 2 species endemic to Greece and S. Yugoslavia. The endemic fish species of Pinios river are generally vulnerable and locally threatened; however in the site the danger of pollution is comparatively reduced.

Site Name: AMVRAKIKOS KOLPOS, DELTA LOUROU KAI ARACHTHOU (EVRYTERI PERIOCHI)



Sitecode: GR2110001 **Type**: I

Longitude: 21° 00′ **Latitude**: 39° 00′

Administrative Region: Ipeiros **Prefecture**: Arta

Altitude (m): 165 **Area (ha)**: 50637 **Length**: -

Description: The site includes a complex ecosystem consisting of the deltas of Louros and Arachthos rivers, a lagoon system composed of three major lagoons (Rodia, Tsoukalio, Logarou) and some smaller ones, as well as a sea zone just south of them. The whole delta covers an area about 450 km². The total area of the lagoons is approximately 64 km². Variable habitats characterize the site. Dense and extensive reed communities (Phragmitetum) cover a large area 10% of terrestrial part of the site and can be differentiated in a major area along the Louros and in many small areas in the eastern sector. Close to the reed-beds, stands of *Scirpetum maritimi* as well as patches of *Nymphaea alba* and *Iris pseudacorus* occur. The remaining stand of gallery woodlands in the Louros-Arachthos delta cover only an area of 2.5 km². The maquis vegetation covers 21 km² with main distribution on the surrounding hills. The single true evergreen woodland is found in the peninsula of Koronisia, while the last remaining stands of deciduous woodland are found on the northeast of the Mavrovouni hill and according to their species composition belong to the Coccifero-Carpinetum community.

Habitat types: Estuaries, Mudflats and sandflats not covered by sea water at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria*, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Tursiops truncatus, Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Caretta caretta, Elaphe quatuorlineata, Elaphe situla, Eudontomyzon* spp., *Phoxinellus* spp., *Rutilus rubilio, Barbus meridionalis, Barbus capito, Cobitis taenia, Valencia hispanica, Pomatoschistus canestrini, Lycaena dispar.*

Other important species:
— Flora: 1B, 1C, 7D
— Fauna: 4A, 8B, 30C, 7D

Impacts/Activities:
— Positive: -
— Neutral: 200 (IN) / 690 (AR)
— Negative: 100, 130, 140, 230, 302, 400, 410, 411, 421, 422, 502 (IN) / 701, 790, 890, 900, 952 (AR)

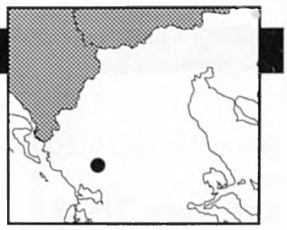
Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, Barcelona Convention site, IBA

Significance: It is one of the best conserved ecosystems with high ecological value at both national and international level. We can find at least all elements of a typical natural Mediterranean delta.

Site Name: AMVRAKIKOS KOLPOS, DELTA LOUROU KAI ARACHTHOU (EVRYTERI PERIOCHI) (cont.)

The habitat types that are in a very good ecological condition and cover large areas are the wet meadows of *Juncus* and the halophytic communities of the class Arthrocnemetalia. The halophilous vegetation covers an area of 43km² and apart from Acheloos delta and the delta complex near Thessaloniki, this is the largest delta complex throughout Greece. The Tsoukalio lagoon is one of the largest of its kind not only in Greece but in the entire Mediterranean region. The major reed-bed area on the Louros can be considered as one of the largest coherent reed-beds in Greece, and the deciduous woodland on the Mavrovouni hill represents a system comparatively rare in Greece.

Site Name: ORI ATHAMANON (TZOUMERKA)



Sitecode: GR2110002 **Type**: B

Longitude: 21° 09′ **Latitude**: 39° 26′

Administrative Region: Ipeiros **Prefecture**: Arta

Altitude (m): 1698 **Area (ha)**: 21873 **Length**: -

Description: The examined area mainly lies in the northeastern part of the Prefecture of Arta and is the natural boundary between Ipeiros and Thessalia regions. It is one of the longest and most remote part of the southern Pindos mountain range. From a geological point of view, Athamanon mountains belong to the Olonos-Pindos zone and their main substrate is limestone with sporadic appearance of flysch. They consist of a continuous ridge with a NW-SE direction, and the highest peak is that of Katafidi at 2393m altitude. The mountain slopes are crossed by many springs and small streams. The main stream is known as "Rema tis Kranias" and under the name of Melissourgiotikos, flows into the river Kallaritikos which is one of the Arachthos river tributaries. Two attractive waterfalls are present in the area, one near Katarraktis village and the other near the village of Theodoriana. Two grassy plateaux, are also on the eastern side of Mt. Tzoumerka, named Epano Kostelata and Kato Kostelata, are used by the locals as pastures. In the past Ori Athamanon mountains were densely forested, however, in recent years they have suffered from irrational deforestation due to excessive woodcutting, tree-falling and grazing. For this reason extensive bare places occur in the area. Despite this, we can still find well-forested slopes with coniferous forests (where *Taxus baccata* exists in small stands or as isolated trees) and broad-leaved deciduous forests.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Sclerophyllous grazed forests (dehesas) with *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Central greek montane cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Hellenic beech forests with *Abies borisii-regis*, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests, Pallas's pine forests, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: *Solenanthus albanicus*.

Animal species: *Bombina variegata*, *Vipera ursinii*.

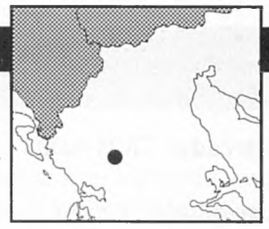
Other important species: — Flora: 29B, 1C, 86D
— Fauna: 2A, 14B, 13C, 3D

Impacts/Activities: — Positive: -
— Neutral: 403 (IN)
— Negative: 100, 140, 160, 171, 230 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: The remote area of the Tzoumerka mountains has a very rich and interesting flora which comprises rare and characteristic species of the mountain and alpine vegetation zones. The species *Solenanthus albanicus* occurring in the area is mentioned in Annex II of the 92/43/EEC Directive and in the Bern Convention and is very rare in Greece possibly because it grows in intensely grazed areas. A significant number of endemic taxa are present in the area, some of which are local endemic and others are considered threatened.

Site Name: KOILADA ACHELOOU



Sitecode: GR2110003 **Type**: B

Longitude: 21° 23′ **Latitude**: 39° 18′

Administrative Region: Ipeiros **Prefecture**: Arta

Altitude (m): 725 **Area (ha)**: 8467 **Length**: -

Description: The area is a steep, partly forested ravine and includes the part of the river which defines the borders between Arta and Trikala prefecture and those between Arta and Karditsa. The site comprises a large part of the Acheloos river valley in the Southern Pindos. Along the river deciduous forests of *Salix alba, Populus nigra, Alnus glutinosa* and *Fraxinus angustifolia* occur. Maquis and phrygana vegetation surrounds the riparian forest. An hydroelectric dam is under construction, near the village Sykia. A substantial part of the site is covered with mixed oak forest (dominated by *Quercus frainetto*); however the oak forest is locally degraded. A small part of the site is covered by *Abies cephalonica* (the endemic Greek fir) forest. Acheloos valley, characterized by *Quercion cerris* and Fagetalia, could be considered part of the sub-continental and continental biogeographic region.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Hellenic beach forests with *Abies borisii-regis, Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests.

Plant species: -

Animal species: *Lutra lutra, Bombina variegata, Testudo hermanni, Testudo graeca, Mauremys caspica, Elaphe quatuorlineata, Salmo macrostigma, Rutilus alburnoides, Phoxinellus* spp., *Rutilus rubilio, Barbus meridionalis, Barbus capito, Cobitis trichonica, Silurus aristotelis.*

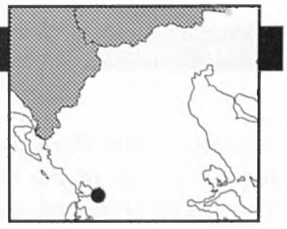
Other important species: — Flora: 2D
— Fauna: 2A, 2B, 20C, 3D

Impacts/Activities:
— Positive: 160 (AR)
— Neutral: 100, 403, 409, 501, 507 (IN) / 100, 401 (AR)
— Negative: 140, 170, 230, 241, 243, 250, 502, 530, 608, 622, 701, 720, 850, 870, 890, 900, 943, 948 (IN) 170, 230, 243, 502, 608, 690, 890 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The riparian forest as well as the rest vegetation along the banks and the valley of the river in general, are very important for the following reasons: a) The protection on the soil from erosion and sliding; b) the formation of significant habitats for the animals of the area; c) the decrease of pollution of the river; d) the retention of materials downstream by the river. A great variety of habitats (forests, riparian communities, maquis), at a very good conservation status exist within the area. This fact, added to the geomorphology and inaccessibility of the area explains the enriched fauna of the site, especially the avifauna. In addition, besides its ecological importance, Acheloos river is important and valuable for the following reasons: 1) the aesthetic value of the natural environment 2) the great environmental education potential it offers 3) its importance for scientific research 4) its suitability for recreation activities. Moreover this site is of immense importance due to the presence of many threatened and protected animal species to which it provides one of the few remaining shelters.

Site Name: AMVRAKIKOS KOLPOS



Sitecode: GR2110004 **Type**: H

Longitude: 20° 55′ **Latitude**: 39° 06′

Administrative Region: Ipeiros **Prefecture**: Arta

Altitude (m): 280 **Area (ha)**: 25000 **Length**: -

Description: The site consist of the delta areas of Louros and Arachthos rivers, a lagoon system composed of three major lagoons (Rodia, Tsoukalio, Logarou) and some smaller ones as well as a sea zone just south of them. The whole delta covers an area about 450 km². The total area of the lagoons is approximately 64 km². Variable habitats characterize the studied area. Dense and extensive reed communities (Phragmitetum) cover a large area 10% of terrestrial part of the site and can be differentiated in a major area along the Louros and in many small areas in the eastern sector. Close to the reed-beds, stands of *Scirpetum maritimi* as well as patches of *Nymphaea alb*a and *Iris pseudacorus* occur. The maquis vegetation covers 21 km² with main distribution on the surrounding hills. The single true evergreen woodlands is found in the peninsula of Koronista, while the last remaining stands of deciduous woodland are found on the northeast of the Mavrovouni hill and according to their species composition belong to the Coccifero-Carpinetum community.

Habitat types: Estuaries, Mudflats and sandflats not covered by sea water at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria*, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus ilex* forests.

Plant species: -

Animal species: *Lutra lutra, Monachus monachus, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Caretta caretta, Elaphe quatuorlineata, Elaphe situla, Phoxinellus* spp., *Rutilus rubilio, Barbus meridionalis, Barbus capito, Cobitis taenia, Valencia hispanica, Pomatoschistus canestrini, Lycaena dispar.*

Other important species: — Flora: 1B, 1C, 7D
— Fauna: 3A, 7B, 29C, 5D

Impacts/Activities:
— Positive: -
— Neutral: 701 (IN)
— Negative: 100, 140, 200, 690, 790, 890, 952 (IN), 100, 130, 140, 230, 302, 400, 410, 411, 421, 422, 502 (AR)

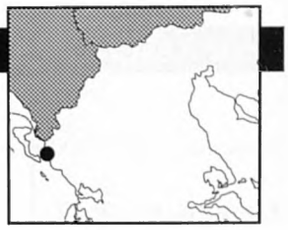
Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, Barcelona Convention site, IBA

Significance: It is one of the best conserved, with high ecological value ecosystems both in national and international level; in it we can find at least all elements of a typical natural mediterranean delta. The habitat types that are in a very good conservation status and cover large areas are the wet meadows of *Juncus* and the halophytic communities of the class Arthrocnemetalia. The halophilous vegetation covers an area of 43 km² and apart from Acheloos delta and the delta

Site Name: AMVRAKIKOS KOLPOS (cont.)

complex near Thessaloniki, this is the largest delta complex throughout Greece. The Tsoukalio lagoon is one of the largest of its kind not only in Greece but in the entire Mediterranean region. The major reed-bed area on the Louros can be considered as one of the largest coherent reed-beds in Greece, and the deciduous woodland on the Mavrovouni hill represents a system comparatively rare in Greece.

Site Name: EKVOLES (DELTA) KALAMA



Sitecode: GR2120001 **Type**: B

Longitude: 20° 11′ **Latitude**: 39° 32′

Administrative Region: Ipeiros **Prefecture**: Thesprotia

Altitude (m): 255 **Area (ha)**: 8481 **Length**: -

Description: The aquatic vegetation is composed of the plant communities assigned to the classes Lemnetea minoris, Ceratophylletea demersi and Potamogetonetea pectinati. The reed thickets present high diversity and occupy a surface area of 1.2 ha. They belong to the class Phragmitetea and are composed of the associations Phragmitetum australis and Scirpo-Phragmitetum. The zonal development of halophytic communities and wet meadows with *Juncus* sp. is very characteristic in some areas of the Kalamas Delta.

Habitat types: Estuaries, Lagoons, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Phoxinellus* spp., *Barbus meridionalis, Barbus capito, Aphanius fasciatus, Valencia hispanica, Salmo macrostigma.*

Other important species:
— Flora: 2B, 3D
— Fauna: 1A, 1B, 29C, 6D

Impacts/Activities:
— Positive: -
— Neutral: 200, 401 (IN)
— Negative: 100, 120, 130, 140, 170, 180, 230, 701, 703, 952 (IN) / 140, 170, 230, 701, 900 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The riparian forest stands have an important ecological role together with the high historical and aesthetic value. The surrounding hills play a special ecological role in the structure and function of the Kalamas wetland while the thickets of reed and tamarisk and the halophytic plant communities have special ecological characteristics. This whole area, including the lagoons, should be incorporated into a national management plan which must take into consideration the general management planning of the wider area of the delta.

Site Name: ELOS KALODIKI



Sitecode: GR2120002 **Type**: B

Longitude: 20° 27′ **Latitude**: 39° 18′

Administrative Region: Ipeiros **Prefecture**: Thesprotia

Altitude (m): 158 **Area (ha)**: 845 **Length**: -

Description: The *Ranunculus trichophyllus* plant association covers extensive areas which maintain water early in spring. The climax plant association of Nymphaetum albae is characterized by the dominance of *Nymphaea albae* and is accompanied by other less frequent plant species. Both of these associations belong to the class Potamogenetea pectinati. The Phragmitetum australis, Caricetum pseudocyperi, Cladietum marisci, and Scirpetum lacustris associations belong to the class Phragmitetea which covers the majority of this wetland. The zone surrounding the wetland is also quite characteristic; *Vitex agnus castus* occurs in this zone.

Habitat types: Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Calcareous fens with *Cladium mariscus* and *Carex davalliana, Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Elaphe quatuorlineata.*

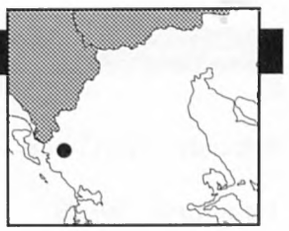
Other important species: — Flora: 3B, 2D
— Fauna: 2A, 19C, 5D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 120, 140, 170, 180, 230 (IN) / 140, 180, 230, 900 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The halophytic plant associations appear to be quite variable. In these associations plants of great scientific interest and aesthetic value have been observed. The Kalodiki fen is an area of great importance in comparison with the other wetlands of W. Greece, and constitutes a unique peatland formation. The restoration of the wetland by stopping all human activities in the area is considered to be absolutely necessary.

Site Name: LIMNI LIMNOPOULA PARAMYTHIAS



Sitecode: GR2120003 **Type**: B

Longitude: 20° 27′ **Latitude**: 39° 29′

Administrative Region: Ipeiros **Prefecture**: Thesprotia

Altitude (m): 506 **Area (ha)**: 867 **Length**: -

Description: Lake Limnopoula (Limni Limnopoula) or Limnoula, is a temporary (winter) freshwater lake situated 0.7 km southwest of Krystallopigi and Kefalovryso villages near Paramythia town, Ipeiros, and covers an area of 133ha. In 1988, a drainage ditch was constructed in one part of the lake but the drainage process is not yet complete and the lake is flooded with water in winter, reaching a maximum depth of 10 m. Furthermore, the lake is naturally drained by three swallow-holes located in the southern side of the lake. During the summer, wet meadows fed by springs develop and about half of the exposed lake-bed is cultivated and half grazed. An important part of the lake is covered with hydrophilous vegetation with *Phragmites communis* and *Scirpus bolboschoenus*. The initial hydrophilous communities have been intensely degraded because of grazing and they are now no longer pure. The rapid change of the ecosystem from lake to land has, as a consequence, the entrance of terrestrial plant species. Some characteristic hydrophilous species occur in the area such as: *Alisma plantago-aquatica, Sparganium erectum, Typha latifolia, Cyperus longus, Butomus umbellatus* (scattered or along a drainage channel), *Polygonum hydropiper, Oenanthe fistulosa, Eleocharus palustrus, Salix cinerea,* etc. At the southern side of the lake, *Vitex agnus-castus* forms a peripheral zone of well-developed thickets. On the same side, near the swallow holes, we can find dried *Chara* sp. The hills to the west and south of the lake are densely covered with characteristic species of the Quercion ilicis alliance and especially of the Androchno-Quercetum ilicis suballiance mixed with sclerophyllous vegetation. *Juniperus oxycedrus* forms stands in the limit of this suballiance.

Habitat types: Mediterranean temporary ponds, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, *Quercus ilex* forests.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Phoxinellus* spp.

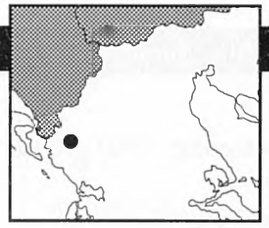
Other important species: — Flora: -
— Fauna: 1A, 16C, 2D

Impacts/Activities: — Positive: -
— Neutral: 403 (IN)
— Negative: 100, 140, 171, 230 (IN)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: The very important ecosystem of Limni Limnopoula constitutes a characteristic wetland which provides water to the surrounding area and wet meadows for grazing during the summer. Its hydrophilous vegetation offers characteristic habitats for a remarkable fauna. The Andrachno-Quercetum ilicis association is in a very good ecological condition. The presence in it of *Fraxinus angustifolia* is important since the populations of this species are reduced and need protection. The zoological importance of this lake is focused on the occurrence of Greek endemic fish taxa and dense populations of amphibians and terrapins. A remarkable avifauna is also present.

Site Name: STENA KALAMA



Sitecode: GR2120004 **Type**: B

Longitude: 20° 28′ **Latitude**: 39° 37′

Administrative Region: Ipeiros **Prefecture**: Thesprotia

Altitude (m): 455 **Area (ha)**: 1867 **Length**: -

Description: The site comprises the magnificent gorge of the Kalamas River, the slopes of which are densely covered with mixed broad-leaved deciduous and sclerophylous vegetation with *Carpinus orientalis, Fraxinus ornus, Ulmus campestris, Celtis australis, Colutea arborescens, Ceratonia siliqua, Pistatus lentiscus, Cotinus cogygria, Quercus pubescens, Q. frainetto, Q. ilex, Q. coccifera, Acer monspessulanum, Phillyrea latifolia, Hedera helix, Clematis flammula, Cornus mas*, etc. The presence of *Olea europaea* and *Pistacia lentiscus* is noticeable along with the appearance of other characteristic species of the Thermo-Mediterranean vegetation belt in the deciduous zone of the Meso-Mediterranean vegetation belt. The riparian forest with *Platanus orientalis, Salix alba, S. cinerea* and *Alnus glutinosa* occupies a zone of 10-30m width. Stands of *Scirpus holoschoenus* and *Carex* sp. grow along the river near the water.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Salmo macrostigma, Phoxinellus* spp., *Barbus meridionalis, Barbus capito.*

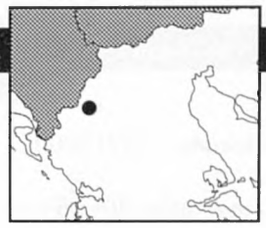
Other important species: — Flora: 1B, 1D
— Fauna: 1A, 8C, 1D

Impacts/Activities: — Positive: -
— Neutral: 140 (IN)
— Negative: 100, 230 (IN)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: The vegetation of the slopes of the Kalamas gorge is in very good conservation status. The deciduous woodland comprises various tree species and the composition of the maquis vegetation is representative of the habitat types which occur at these altitudes. Our knowledge of the herbal flora of the area is insufficient and a detailed study could provide very interesting information. An interesting vertebrate fauna occurs in the Kalamas gorge.

Site Name: ETHNIKOS DRYMOS VIKOU-AOOU



Sitecode: GR2130001 **Type**: C

Longitude: 20° 49′ **Latitude**: 40° 00′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 1488 **Area (ha)**: 12600 **Length**: -

Description: The site lies north of the town of Ioannina, in the region of Zagori. It was established as a National Park in 1973. The core zone comprises the Vikos gorge which is about 10 km long. It lies between the villages Monodendri and Koukouli and ends near the village of Vikos. At the bottom of the gorge runs a torrent that, near the exit, becomes a permanent river (Voidomatis). The peripheral zone includes the Aoos ravine, the area of the villages of Mikro Papingo and Megalo Papingo, as well as a narrow zone around the Vikos gorge. The ravine of Aoos lies between the mountains Trapezitsa and Gkamila. In the area, there is also an interesting small valley called "Laka tou Tsoumani" and, higher up, a small permanent mountain lake called "Drakolimni". There are riparian forests of *Salix, Alnus, Populus* and *Platanus*, sclerophylous schrubs and woods of either deciduous and coniferous trees of mixed woods. The variability of deciduous trees in the mixed woodland zone is surprising. *Ostrya carpinifolia, Fraxinus excelsior, Carpinus betulus, Carpinus orientalis, Juglans regia, Tilia tomentosa*, several *Acer* species (*A. campestris, A. pseudoplatanus* etc.) and many other trees cover considerable areas. Formations of *Aesculus hippocastanum, Juglans* and *Faxinus excelsior* occur in the ravines and in abrupt slopes of the beech zone.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion sp.), *Juniperus oxycedrus* arborescent matorral, *Juniperus communis* formations on calcareous heaths or grasslands, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Central greek montane cliffs, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests, Pallas's pine forests, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Myotis blythi, Ursus arctos, Lutra lutra, Lynx lynx, Rupicapra rupicapra balcanica, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo marginata, Elaphe quatuorlineata, Elaphe situla, Vipera ursinii, Salmo macrostigma, Rutilus rubilio, Barbus meridionalis.*

Other important species: — Flora: 25B, 1C, 96D
— Fauna: 7A, 12B, 32C, 9D

Impacts/Activities:
— Positive: -
— Neutral: 403, 690 (IN)
— Negative: 100, 140, 160, 171, 220, 230, 501 (IN)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Peripheral zone of National Park, Game refuge
— International level: IBA

Significance: This region is one of the most important ecosystems because of its rare flora and fauna. The geographical isolation of the area, the relatively small human influence and the great variation of biotopes and microclimatic conditions favour the growth of different plant species. So, the area is a place where many rare plants are gathered and conserved; some of them are considered threatened taxa.

Site Name: KORYFES OROUS SMOLIKAS



Sitecode: GR2130002 **Type**: E

Longitude: 20° 55′ **Latitude**: 40° 06′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 1200 **Area (ha)**: 22000 **Length**: -

Description: It is the second highest mountain in Greece, with high peaks and extensive grasslands and pastures at the subalpine altitudes. At lower altitudes (1800-2100m) the rock is serpentine.

Habitat types: Alpine rivers and the herbaceous vegetation along their banks, Alpine and subalpine heaths, Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion sp.), *Juniperus communis* formations on calcareous heaths or grasslands, Stepped and garland grasslands, Sub-continental steppic grasslands, Species-rich *Nardus* grasslands on siliceous substrates in mountain areas (and submountain areas in continental Europe), Alkaline fens, Balkan screes, Acidophilous (Luzulo-Fagetum) beech forests, Neutrophilous (Aperulo-Fagetum) beech forests, Eastern (Galio-Carpinetum) oak-hornbeam forests, *Quercus trojana* woods (Italy and Greece), Chestnut woods, Hellenic beech forests with *Abies borisii-regis*, *Quercus frainetto* woods, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines, *Taxus baccata* woods.

Plant species: *Botrychium simplex*.

Animal species: *Ursus arctos, Rupicapra rupicapra balcanica, Triturus cristatus, Bombina variegata, Salmo macrostigma, Barbus meridionalis*.

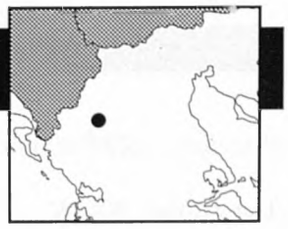
Other important species: — Flora: 34B, 1C, 134D
— Fauna: 6A, 1B, 3C, 7D

Impacts/Activities: — Positive: 140, 624 (IN)
— Neutral: 220 (IN)
— Negative: 160, 166, 180, 243, 900 (IN) / 160, 230, 400 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: It is a very rich and highly diverse in forest habitats area, very important for some of the rarest mammals of Europe such as the bear and otter. It is also the only locality in Europe for the rare asiatic species *Veronica bornmuelleri*. It is worth mentioning that the Aoos river is the southern limit of *Pachychilon pictus* presence. Thus, it is considered rare for our country and for the European Union, while it is a common species with big populations in the neighbouring countries (Albania, FYROM). In some of the flowing waters of this site considerable populations of wild trout, *Salmo macrostigma* exist. As for the fauna, the quality of the site is indicated by the occurrence of the invertebrates *Kirinia climene, Pseudiochazara cingovskii, Pseudochazara graeca coutsisi, Thecia betulae, Agrodiaetus damon, Apatura iris* and *Pseudochazara graeca coutsisi*.

Site Name: ORAIOKASTRO, LIMNI DELVINAKIOU, DASOS MEROPIS KAI KOILADA GORMOU



Sitecode: GR2130003 **Type**: B

Longitude: 20° 28′ **Latitude**: 39° 58′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 1300 **Area (ha)**: 21917 **Length**: -

Description: This site is situated in the northern part of Ioannina Prefecture. It comprises a hilly area (including the villages of Meropi, Oraiokastro, Delvinaki), covered with Oak forest, small ravines, springs and streams, a part of the mountainous region Dousko (southwestern slopes), a small freshwater lake Tzaravina and the Gormos river; Gormos rises in Dousko and flows through the area from Oraiokastro to Parakalamos villages. In the area of Delvinaki, the forest is composed of *Quecus franetto, Q. cerris, Q. pubescens* and *Q. macedonica* and some characteristic species of the Ostryo-Carpinion association, such as *Carpinus orientalis, Ostrya carpinifolia, Fraxinus ornus* and *Acer* sp. *Juniperus communis* ssp. *alpina* forms shrubs in the area of Dousko mountain.

Habitat types: Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Central greek montane cliffs, Acidophilous (Luzulo-Fagetum) beech forests, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: *Solenanthus albanicus.*

Animal species: *Testudo hermanni, Elaphe quatuorlineata, Elaphe situla.*

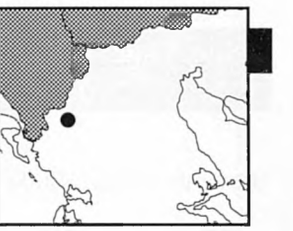
Other important species: — Flora: 6B, 36D
— Fauna: 11C, 2D

Impacts/Activities:
— Positive: -
— Neutral: 200 (IN)
— Negative: 100, 140, 160, 171, 230, 403, 701 (IN) / 790 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: Many important plant species occur in the area. Noticeable is *Solenanthus albanicus* listed in Annex II of the Directive 92/43/EEC, in the Bern Convention and in the WCMC Plants Database under the category "Rare". It grows in places which are intensely grazed and is characterized as in danger of extinction.

Site Name: KENTRIKO TMIMA ZAGORIOU



Sitecode: GR2130004 **Type**: E

Longitude: 20° 54′ **Latitude**: 39° 52′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 1265 **Area (ha)**: 33570 **Length**: -

Description: The area of Zagori consists of 46 villages (Zagoria or Zagorochoria) scattered on the mountain to the north-east of the town of Ioannina. The area can be divided into western, central, and eastern Zagori. The central Zagori area (Kentriko Tmima Zagoriou) includes *Quercus*-forested hills, streams, pastures and traditional village and bridges. Extensive broad-leaved forests cover this area. The predominant species is *Quercus frainetto* growing in unmixed stands or mixed stands with either other oak species (*Q. cerris, Q. pubescens*, etc.) or *Carpinus orientalis, Ostrya carpinifolia, Fraxinus ornus, Castanea sativa, Acer* sp. species, etc. Partially forested or degraded areas covered with *Q. coccifera*, or even bare ground in the forest area. *Juniperus communis* participates in the dry calcareous grassland formations. In the upper altitudes, *Abies borisii-regis* forms unmixed stands of mixed stands together with *Pinus nigra, Quercus sp.* and *Fagus sylvatica*. The *Abies* formation is expanding rapidly at the expense of the other ones, especially that of the *Pinus nigra* which tends to replace. The Aoos river tributary Voidomatis, flows through the central Zagori area and its banks are covered with extensive riparian forests with *Salix, Alnus* and *Populus* species, as well as with some individual trees of *Platanus* sp. Some scattered individuals of *Taxus baccata* grow in wet localities of the communal forest of Tsepelovo village whereas in the public forest of Manassi village plants of *Pinus sylvestris* occur.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Chestnut woods, Hellenic beech forests with *Abies borisii-regis, Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, *Quercus ilex* forests, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Ursus arctos, Lutra lutra, Bombina variegata, Testudo hermanni, Testudo marginata, Elaphe quatuorlineata, Elaphe situla.*

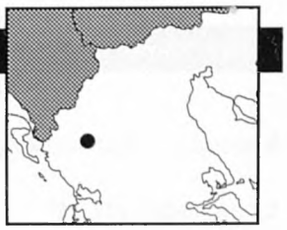
Other important species: — Flora: 2B, 7D
— Fauna: 5B, 7C, 5D

Impacts/Activities: — Positive: 163 (IN)
— Neutral: 100, 403, 690 (IN)
— Negative: 140, 160, 171, 230, 948 (IN)

Protection Status: — National and Regional level:
— International level: IBA

Significance: Like the neighbouring region of the Vikos-Aoos National Park, Central Zagori area is very important for both its flora and fauna as well as its magnificent landscape with traditional small villages together with old bridges, churches and monasteries. This area, as well as the whole Zagori region, is considered as one of the most attractive places for visitors in Greece. Within its extensive forests we can find every kind of Greek tree species. Our knowledge of the herbal flora of the area is insufficient and detailed study could give very interesting information.

Site Name: LIMNI IOANNINON



Sitecode: GR2130005 **Type**: B

Longitude: 20° 53′ **Latitude**: 39° 40′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 585 **Area (ha)**: 2707 **Length**: -

Description: The Lake of Ioannina (Limni Ioanninon) or "Pamvotida" is situated between the town of Ioannina and Mt. Mitsikeli. It occupies the basin formed in the Ioannina plateau, at 480m altitude. The substrate of the basin is, for the most part, calcareous with siliceous components. The Lake covers an area of 1920 ha and has a maximum depth of 11 km. It has been formed from the collection of the water of the basin which has no superficial outlet, and is fed by the springs of Mt. Mitsikeli. The excess water is channelled through swallow holes in the Kalamas river. In the northeastern part of Ioannina Lake, a small island named Nisos Ioanninon is situated with a small village on it. This village, with approximately 480 inhabitants, is a fishermen settlement who jointly exploit the lake. The lake shores and the island coasts are covered with dense extensive reed communities, in the periphery of which remnants of *Salix alba* and *Salix cinerea*, as well as *Ulmus minor* are dispersed. The reed zone is either pure Phragmitetum with *Phragmites communis*, or is transformed to Scirpeto-Phragmitetum. Especially on the northeastern shores, where the Kryoneri (or Drabatova) spring flows, the Scirpeto-Phragmitetum association forms a zone of about 100m width composed nearly exclusively from *Phragmites communis* and where *Scirpus lacustris* exists only in some small populations. Also, around the lake the aquatic association of Myriophylleto-Nupharetum and Potamogetonetum are developed. In the lake, beautiful associations of *Nymphaea albae* are formed while *Iris pseudacorus* forms patches near the reed communities. On the island coasts, *Typha domingensis* and *Sparganium erectum* occur. The hill of the island has been reforested with *Pinus nigra*. In the bare area, between the lake and the road to Metsovo, scattered plants of *Phlomis fruticosa* and *Juniperus foetidissima* are present.

Habitat types: Natural euthropic lakes with Magnopotamion or Hydrocharition-type vegetation, *Juniperus oxycedrus* arborescent matorral, *Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: *Testudo hermanni, Emys orbicularis, Elaphe quatuorlineata, Elaphe situla, Phoxinellus* spp., *Rutilus rubilio, Barbus capito, Euphydras aurinia.*

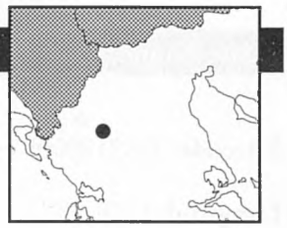
Other important species:
— Flora: 2D
— Fauna: 3A, 9B, 18C, 14D

Impacts/Activities:
— Positive: 163 (IN)
— Neutral: 621, 690 (IN)
— Negative: 130, 210, 220, 230, 421, 422, 701, 790, 860, 952 (IN) / 100, 110, 120, 167, 301, 401, 870 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The Lake of Ioannina is an integral part of life of Ioannina town. Every economic, social, cultural and other activity, as well as the history of the town, are connected with the lake. About forty families of fishermen live exclusively from fishing, which covers the greater part of the demand for fish in the area. The lake constitutes a very important ecosystem and its riparian vegetation zone is very significant for birds and nesting waterfowl. Furthermore, the lake contributes to tourist activities development and is ideal place for leisure, for the organization of rowing races, etc.

Site Name: PERIOCHI METSOVOU (ANILIO-KATARA)



Sitecode: GR2130006 **Type**: B

Longitude: 21° 11′ **Latitude**: 39° 47′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 1360 **Area (ha)**: 7395 **Length**: -

Description: The main geomorphological characteristic of the site is that it is the natural border between the N. and S. Pindos mountain ranges and also the main pass from Ipeiros to Thessalia. Apart from the areas of Metsovo and Anilio, the site includes two summits, Voulgaris (1821 m) and Thanasakis (1820 m) of Mt. Zygos (north-east of Metsovo), and part of the drainage basin of the Aoos River (at an average of 1300 m). We must note that although Voulgaris and Thanasakis have been treated by many researchers as different mountains (the former as Aspra Litharia and the latter as part of Mt. Zygos), they actually both belong to the Zygos mountain range. The ravine lines of Anilio and Malakasi seem to delimit the borders between S. and N. Pindos. The early botanists and also the local residents support this last case. Geologically, the site consists mainly of flysch and also of serpentines (peridotites) and there are many freshwater springs in the area. A dump has been constructed by the Public Power Corporation at the NW limits of the site, using the water flow of Aoos springs at the northwestern limits of the site, probably changing some of the site's characteristics. In order to face the problems caused by the snowfall during winter along the road of the Katara Pass, a tunnel is under construction below Mt. Zygos from the ravine north-east of Anilio to the ravine west of Malakasi. A third human impact in the area is the Ski Centre above Metsovo. It is not very big and mainly covers the needs of Ipeiros for winter sports.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Balkan screes, Acidophilous (Luzulo-Fagetum) beech forests, Hellenic beech forests with *Abies borisii-regis*, *Quercus frainetto* woods, Pallas's pine forests.

Plant species: -

Animal species: *Ursus arctos, Bombina variegata, Testudo hermanni.*

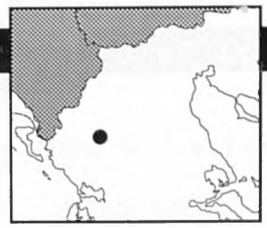
Other important species: — Flora: 25B, 1C, 57D
— Fauna: 2A, 8B, 10C, 14D

Impacts/Activities: — Positive: -
— Neutral: 164, 508, 511, 602, 608 (IN)
— Negative: 100, 140, 170, 180, 190, 230, 250, 502 (IN) / 860 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The region of Metsovo-Anilio-Katara Pass-Aoos springs shows floristic and phytogeographical connections to both south and north Pindos. The plant taxa are more or less endemic to the wider area of the Pindos mountain range, S. Albania included. Only a few of them have been listed in the Presidential Decree 67/1981 but they should all be considered as "Rare" and deserve the appropriate protection as they are definite phytogenetic and phytogeographical elements of the Hellenic flora.

Site Name: OROS LAKMOS (PERISTERI)



Sitecode: GR2130007 **Type**: E

Longitude: 21° 07′ **Latitude**: 39° 41′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 1700 **Area (ha)**: 20020 **Length**: -

Description: Lakmos is a large mountain situated south of Metsovo village at the boundaries of the Ioannina and Trikala prefectures, belonging to S. Pindos mountain range. Its highest peak is Peristeri with an altitude of 2295 m. The main rock in the area's substrate is limestone, in some places mixed with flysch. Lakmos is a bare mountain, characterized by alpine and subalpine pastures, rocky and stony slopes, cliffs, mountain streams and springs. Acheloos River as well as the Arachthos river tributaries Kallaritikos and Metsovitikos rise in the area. The mountain shows strong erosion because of intense deforestation. The forest zone is very restricted and occurs mainly in the form of stands, as in the case of *Abies borisii-regis* which forms extensive stands in the north-northeastern part of the mountain. On the eastern slopes, at lower altitudes the *Abies borisii-regis* forest is mixed scattered individuals of oak and other deciduous trees and is also interrupted by pastures. Limited reforestation with *Pinus nigra* has been made on the western and northern slopes at 600-800 m altitude. Lakmos area is also known for its traditional extensive sheep raising.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Balkan screes, Central greek montane cliffs, Hellenic beech forests with *Abies borisii-regis*, *Quercus frainetto* woods, Pallas's pine forests, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Ursus arctos, Bombina variegata, Vipera ursinii.*

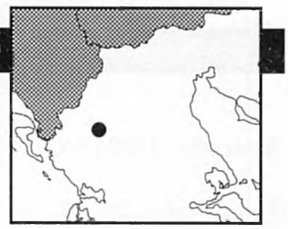
Other important species: — Flora: 28B, 1C, 93D
— Fauna: 1A, 4B, 12C, 2D

Impacts/Activities: — Positive: 163 (IN)
— Neutral: 403 (IN)
— Negative: 140, 160, 171, 230, 501, (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The area is important due to its characteristic vegetation communities above the timber line in which many Greek endemics as well as rare and threatened plant taxa exist. Also very significant is the presence of many Balkan endemic taxa.

Site Name: OROS MITSIKELI



Sitecode: GR2130008 **Type**: E

Longitute: 20° 54′ **Latitude**: 39° 43′

Administrative Region: Ipeiros **Prefecture**: Ioannina

Altitude (m): 1340 **Area (ha)**: 8520 **Length**: -

Description: Mitsikeli (Oros Mitsikeli) is a long and narrow mountain situated in the central part of the Ioannina Prefecture. It begins south of Mt. Timfi and extends northwestwards to southeastwards to Mt. Driskos, dominating the Ioannina Lake. Its highest peak has an altitude of 1810 m. Many springs flow from Mitsikeli and feed the Ioannina Lake. The western part of the mountain, as opposed to the eastern part, is bare and remnants of fires are evident in several places. In the higher altitudes *Abies borisii-regis* occurs, either forming sparse stands or mixed with *Quercus pubescens*. Stands of *Quercus pubescens* appear above the maquis zone or in some places are mixed with *Quercus coccifera* and *Juniperus oxycedrus*. Formations with dwarf thickets of *J. oxycedrus, Q. Coccifera* and *Phlomis fruticosa* occur in the lower altitudes. On the southwestern side of Mitsikeli, limited reforestation was made to protect the Ioannina lake from sedimentation. Thus, a reforestated zone of *Pinus nigra*, about 500 m long, occurs in the area of Amfithea, and mixed reforested areas with *P. nigra* and *Cupressus sempervirens* can be seen in the village of Ligiades. At the eastern side of Mitsikeli extensive formations dominated by characteristic species of Ostryo-Carpinion and Quercion frainetto, such as *Ostrya carpinifolia, Carpinus orientalis, Fraxinus ornus, Quercus pubescens, Corylus* sp., *Acer* sp. etc., occur. In the higher altitudes stands of *Abies borisii-regis* appear.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Hellenic beech forests with *Abies borisii-regis*, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Ursus arctos, Euphydryas aurinia.*

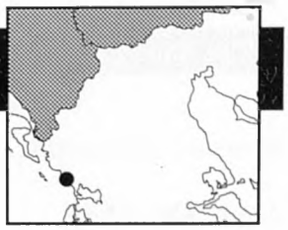
Other important species: — Flora: 8B, 33D
— Fauna: 3B, 11C, 7D

Impacts/Activities: — Positive: 163 (IN)
— Neutral: -
— Negative: 140, 230, 301, 948 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: Although Mitsikeli is in general a bare mountain due to past human activities, important plant species occur here.

Site Name: EKVOLES ACHERONTA KAI STENA ACHERONTA



Sitecode: GR2140001 **Type**: E

Longitude: 20° 30′ **Latitude**: 39° 15′

Administrative Region: Ipeiros **Prefecture**: Preveza

Altitude (m): 157 **Area (ha)**: 4935 **Length**: -

Description: The Acheron delta belongs to the lobate morphodynamic delta type and from a rheomorphological point of view it is considered to be a tectonic basin filled in with extensive layer of alluvial deposits carried by the river Acheron. Acheron delta is an heterogenous wetland with small-scale spatial variation, that constitutes a particularly suitable habitat for many vertebrate species (especially for birds, amphibians and mammals) as they often need more than one structural vegetation type for their various life functions. The area Stena of the Acherontas River is located at higher altitudes in realtion to the coastal wetland of Acheron delta, and consists of calcareous rocks where macchie vegetation with the dominant species of *Quercus coccifera, Phillyrea latifolia*, etc., is predominant. The arborescent and scrub vegetation participate in higher and lower cover percentages, respectively. The chasmophytic vegetation, grows on calcareous rocks of high inclinations in the gorge, thus giving special ecological value to the studied site. The well-structured riparian vegetation is composed of the following dominant species: *Platanus orientalis, Salix alba, Alnus glutinosa*, etc. Within the abandoned fields, a dynamic stage of reestablished vegetation is observed.

Habitat types: Estuaries, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), *Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Caretta caretta, Elaphe quatuorlineata, Phoxinellus* spp., *Barbus meridionalis, Cobitis taenia, Aphanius fasciatus, Valencia hispanica.*

Other important species:
— Flora: 1A, 1B, 8D
— Fauna: 2A, 1B, 19C, 5D

Impacts/Activities:
— Positive: -
— Neutral: 200 (IN)
— Negative: 100, 120, 130, 140, 170, 180, 230, 301, 400, 701, 703, 890 (IN) / 140, 180, 230, 900, 952 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: This coastal wetland constitutes an important link in the wetlands chain of Western Greece. The natural habitats have greatly been restricted or downgraaaaded as concerns their structure and function. It should be managed properly in a wise and integrated manner, so that restoration of the existing habitats to be achieved and protection fron further degradation. Stena of Acherontas is an important habitat for Balkan endemics, participating in the diversity of the various habitat types and vegetation dynamics.

Site Name: ORI ZALONGOU



Sitecode: GR2140002 **Type**: B

Longitute: 20° 40′ **Latitude**: 39° 08′

Administrative Region: Ipeiros **Prefecture**: Preveza

Altitude (m): 462 **Area (ha)**: 2333 **Length**: -

Description: Small bare mountain, a part of which is a national monument in memory of the women of the area who died falling from the cliffs, instead of being arrested by Turkish soldiers during the Turkish occupation of Greece. A tomb was built in this place in rememberance of this event. The area comprises a limited forest zone, cliffs and cultivated land, and is intensively grazed. The region under the tomb has been reforestated with *Pinus brutia*. There, scattered individuals of *Quercus pubescens* and *Cupressus sempervirens* grow. On the way to the tomb scattered *Quercus macrolepis* trees occur. There is evidence of overgrazing and fire throughout the whole area of the mountain.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Central greek montane cliffs, *Quercus frainetto* woods, *Quercus ilex* forests.

Plant species: -

Animal species: -

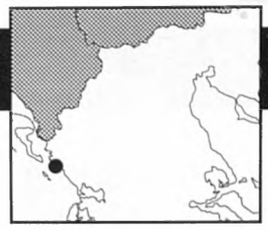
Other important species: — Flora: 1B, 1D
— Fauna: 1B, 1C, 1D:

Impacts/Activities: — Positive: 163 (IN)
— Neutral: 403, 690 (IN)
— Negative: 100, 140, 160, 171, 230, 948 (IN)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: There is an almost total lack of data concerning the herbal flora of this site.

Site Name: PARAKTIA THALASSIA ZONI APO PARGA EOS AKROTIRIO AGIOS THOMAS (PREVEZA)



Sitecode: GR2140003 **Type**: E

Longitute: 20° 20′ **Latitude**: 39° 10′

Administrative Region: Ipeiros **Prefecture**: Preveza

Altitude (m): -12 **Area (ha)**: 1460 **Length**: -

Description: The marine area is located on the west coast of Greece between the town of Parga and the cave of Agios Thomas in Preveza Prefecture. In Parga bay the substrate is half sandy with fine-grained sand, and half stony and rocky. In front of the bay there is a small rocky islet of approximately 3,000 sqm with precipitous coasts. On the eastern coast of the islets where the substrate is rocky, brown algae predominate especially the characteristic Cystoseiretum communities. The seagrass *Cymodocea nodosa* forms dense populations near the delta of Acherontas river. The *Posidonia* beds extend from 1.5 m down to 5 m within the Parga bay and, further on, grow in parallel with the coast line down to 25 m in depth.

Habitat types: *Posidonia* beds, Estuaries, Reefs.

Plant species: -

Animal species: *Tursiops truncatus.*

Other important species: — Flora: 6D
— Fauna: 1C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 210, 220, 520, 690 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The area is one of the richest localities on the coast of the Ionian Sea, especially the Parga bay. The Mediterranean endemic seagrass *Posidonia oceanica* grows on coarse or thick sand with vertical and horizontal rhizomes. Within the sediment, the rhizomes form a continuous network known as "mats" of *Posidonia* or *Posidonia* beds. The Posidonietum oceanicae association is one of the most important marine ecosystems in the Mediterranean Sea. The marine phanerogam *Cymodocea* forms a dense population near the delta of Acherontas river. The area is characterised by the rich macroalgal flora and vegetation. A total number of 117 species of marine algae were found. The brown alga *Cystoseira crinita* forms on the hard substrate the Cystoseiretum crinitae community. The canopy algae of *Cystoseira* form the greater part of the algal biomass in the upper sublittoral zone. The occurrence of the Bottle-nosed Dolphin, *Tursiops truncatus* is the most striking presence from the zoological point of view.

Site Name: PARAKTIA ZONI VOREIODYTIKIS ZAKYNTHOU



Sitecode: GR2210001 **Type**: B

Longitute: 20° 41′ **Latitude**: 37° 51′

Administrative Region: Ionia Nisia **Prefecture**: Zakynthos

Altitude (m): 215 **Area (ha)**: 2000 **Length**: -

Description: The coastal line is dominated by vertical seaside cliffs, descending abruptly into the sea, with a vegetation of shrubs and phrygana. The rest of the area consists of rocky hills partly occupied by *Pinus halepensis* forests, and partly degraded and covered by shrubs or phrygana. Cultivated areas also occur.

Habitat types: Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Myotis blythi, Monachus monachus, Testudo hermanni, Elaphe quatuorlineata, Elaphe situla.*

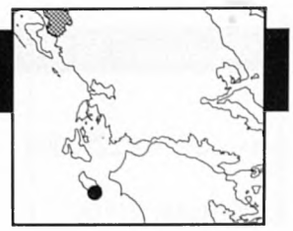
Other important species: — Flora: 7B, 3D
— Fauna: 27B, 10C, 4D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 150, 180, 230, 331, 501, 502, 623, 900, 920 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The seaside cliffs are floristically the most interesting part of the island of Zakynthos, hosting a number of rare and unique plant species.

Site Name: KOLPOS LAGANA ZAKYNTHOU KAI NISIDES MARATHONISI KAI PELOUZO



Sitecode: GR2210002 **Type**: B

Longitute: 20° 52′ **Latitude**: 37° 43′

Administrative Region: Ionia Nisia **Prefecture**: Zakynthos

Altitude (m): 3 **Area (ha)**: 5013 **Length**: -

Description: The site includes Laganas Bay and Marathonisi Isle on the south coast of Zakynthos Island. The substrate is sandy and waters are not very deep (10m max) thus accounting for the expansive *Posidonia* beds. The coastal zone of Laganas presents high biological significance because of the occurrence of highly important habitats like sandy beaches with psammophytic plant associations, rocky coasts, coastal lakes, river outlets, etc. In the beach of Marathonisi lowland sand-dunes exist which in some areas present extensions to the inland up to 50 m. Beyond the beach, dense Mediterranean vegetation occurs (macquis vegetation). The coastal zone of Laganas is extended for some kilometres inland and 10-15 kilometres in the sea. The area of this site is well known for two main reason: 1) the sandy beaches of the sites are considered the main egg-laying sites of the Sea Turtle (*Caretta caretta*) in Greece, and maybe the Mediterranean as a whole, and 2) the contradictions between the ecologists who suggest the protection of the area and a proportion of the local population which support tourist development of the area, by hotel building, etc. Similar to the Laganas Bay is the vegetation cover and the landscape of Marathonisi and Peluso which are situated within the Laganas Gulf.

Habitat types: *Posidonia* beds, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Tursiops truncatus, Monachus monachus, Testudo hermanni, Mauremys caspica, Caretta caretta, Elaphe situla.*

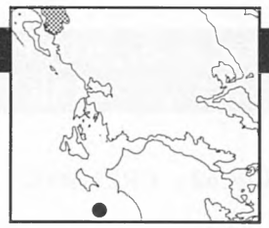
Other important species:
— Flora: 4B, 3D
— Fauna: 1A, 27B, 18C, 3D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 220, 520, 610, 621, 623, 690, 701, 710, 720 (IN) / 402 (AR)

Protection Status:
— National and Regional level: -
— International level: Counsil of Europe Biogenetic Reserve

Significance: There is no doubt that the sandy beaches of the Laganas area are among the most important oviposition sites of the species *Caretta caretta* in the whole Mediterranean area. Keeping in mind that nesting is a critical stage of the biological cycle of *Caretta caretta* related to the survival of the species, the biological importance of this site is obvious. It should be pointed out, however, that this biological importance is not restricted to the reasons mentioned above. Both the terrestrial and the marine part of the site are characterized by the presence of important habitats (sand-dunes, sandy beaches, rocky coasts, cliffs, *Posidonia* meadows, etc), and together all these form an ecosystem of high quality.

Site Name: NISOI STROFADES



Sitecode: GR2210003 **Type**: B

Longitute: 21° 00′ **Latitude**: 37° 15′

Administrative Region: Ionia Nisia **Prefecture**: Zakynthos

Altitude (m): 11 **Area (ha)**: 553 **Length**: -

Description: This site is demarcated by the isobath of 50 m and includes two small islands located 27 miles south of the southern coast of Zakynthos island and 28 miles western of the Peloponnisos coast (Katakolo region). Geological evidence suggests that the Strofades islands have an oceanic origin i.e. risen out from the sea, unlike the majority of the Greek islands and islets, which are considered to be chersogenous (remnants of the old Greek continent). This area is also interesting from a paleontological point of view, since fossil records of a Miocenic and or Pliocenic fauna have been found. This area also shows archaeological interest, since on the larger islet there is a very old monastery which was built up in the middle of the 13th century. Nowadays the islands are almost uninhabited but undoubtedly, during the past time when the monastic community was very active, the majority of the natural vegetation was destroyed in favour of the cultivation of cereals, vegetables, fruit-trees etc. Nowadays, natural vegetation characterized by giant trees of *Juniperus phoenicea, Quercus coccifera, Pistacia lentiscus* etc. are restricted in one part of the bigger island.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Juniperus phoenicea* arborescent matorral, Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*.

Plant species: -

Animal species: *Tursiops truncatus, Monachus monachus.*

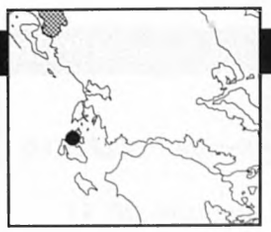
Other important species: — Flora: -
— Fauna: 5B, 4C

Impacts/Activities: — Positive: -
— Neutral: 140 (IN) / 210 (AR)
— Negative: 180, 230 (IN) / 220 (AR)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: Apart from the geological, paleontological and archaeological value, this site has also biological importance due to its botanical and zoological interests. Giant trees of *Juniperus phoenicea* occurring on the largest of the two islands seem to be of the few remnants of such a forest still surviving in the whole of Greece. This fact is also supported by the presence of tree-like forms of *Quercus coccifera* and *Q. ilex*. Keeping in mind the isolated position of these islands and that they are floristically unexplored, we realize that the biological value of this area has been rather underestimated.

Site Name: KALON OROS KEFALLONIAS



Sitecode: GR2220001 **Type**: B

Longitute: 20° 35′ **Latitude**: 38° 20′

Administrative Region: Ionia Nisia **Prefecture**: Kefallonia

Altitude (m): 505 **Area (ha)**: 2590 **Length**: -

Description: From a geological point of view, limestones and dolomites constitute the bedrock of Mt. Kalon Oros. The slopes of south and southwest exposure have steep gradients whilst all other slopes are characterized by gentle gradients. The vegetation cover presents a low diversity since it is mainly composed of macchia with the dominant species of *Quercus coccifera, Pistacia lentiscus* and *Arbutus unedo*. Macchia vegetation is very dense on eastern and northern exposed slopes, while on the south and southwestern slopes it is very sparse covering 35% of the total surface. In higher altitudes up to the peak, rocky grasslands with sparse individuals of *Quercus coccifera* occur on the west exposed slopes. This vegetation type represents 52% of the total surface. These areas were cultivated in the past (olive trees, vineyards) but are now abandoned.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*.

Plant species: -

Animal species: *Testudo hermanni, Elaphe situla*.

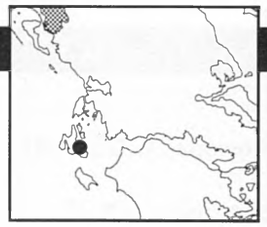
Other important species: — Flora: 2B
— Fauna: 46B, 8C, 4D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 180, 230, 900 (IN)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: This site is considered as an EU Important Bird Area mainly because of the occurrence of a Griffon Vulture (*Gyps fulvus*) colony. The other vertebrate fauna is also remarkable.

Site Name: ETHNIKOS DRYMOS AINOU



Sitecode: GR2220002 **Type**: C

Longitute: 20° 41′ **Latitude**: 38° 09′

Administrative Region: Ionia Nisia **Prefecture**: Kefallonia

Altitude (m): 1464 **Area (ha)**: 2862 **Length**: -

Description: Kefalonia is the biggest island in the Ionian region and Mt. Ainos is the highest Ionian mountain with an altitude exceeding 1600 m. It is a well known mountain, not only due to its altitude but also due to the presence of the famous *Abies cephalonica* forest which is the main element of the vegetation cover in the highest altitude of this mountain. *Abies cephalonica* is a Greek endemic species and Mt. Ainos is its "locus classicus". The area of this site consists of three main habitats as follows: a) The Greek fir forest, very often at moderate altitudes mixed with species of macchie vegetation; b) the rocky slopes which are characterized by looser vegetation but with only a few very important species, and c) the rocky summit and unforested area which hosts most of the endemic species of the Kefalonian and Ionian flora. The site has been characterized as a National Park, and requires specific and effective protection and management measurements to be taken.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs.

Plant species: -

Animal species: *Testudo hermanni, Elaphe situla.*

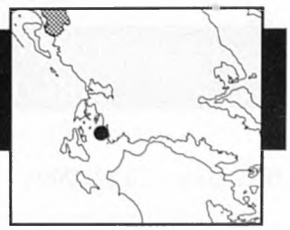
Other important species:
— Flora: 26B, 7D
— Fauna: 2A, 51B, 13C, 5D

Impacts/Activities:
— Positive: -
— Neutral: 190, 622 (IN)
— Negative: 180, 230, 502, 590 (IN) / 140, 180, 230, 502 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park
— International level: Council of Europe Biogenetic Reserve

Significance: As an ecosystem and as natural inheritance, the *Abies cephalonica* forest of this site is considered very important because it is the only forest of this type in the entire Ionian area. Also, this forest is geographically isolated from similar forests of continental Greece, where *Abies cephalonica* hybridizes with the Balkan *Abies borisii-regis*, and is important as a genetic resource. It shoud also be pointed out that the site is also an important one from a biogeographical point of view since the majority of the Ionian endemics can be found at the highest altitudes of Mt. Ainos. Also, the distribution pattern of several plants occurring in this site suggest phytogeographical links between the Greek and Italian peninsulas.

Site Name: ESOTERIKO ARCHIPELAGOS IONIOU (THALASSIA PERIOCHI MEGANISIOU, KALAMOU, KASTOU, ARKOUDIOU, ATOKOU KAI NISOI ECHINADES)



Sitecode: GR2220003 **Type**: B

Longitute: 20° 56′ **Latitude**: 38° 30′

Administrative Region: Ionia Nisia **Prefecture**: Kefallonia

Altitude (m): 0 **Area (ha)**: 111144 **Length**: -

Description: Three main Ionian islands, Lefkada, Ithaki and Kefalonia and the continental Greece (Sterea Ellada) delimit geographically from West, North and East an important archipelago of 36 mostly uninhabited islets and small islands. Meganisi, Kalamos, Kastos and Scorpios, i.e. the three biggest islands and a small private one, are the only inhabited approximately 1500 persons in total. The geomorphology of these islands coasts create various habitats for the marine and also terrestrial flora and fauna. In the sheltered waters of the archipelago, important marine predator species on the top of the food chain are resident or common, indicating the biological richness of the area. The site boundaries are determined by the Doukato cape of Lefkada island (88° 33′ 90″ N - 20° 32′ 50″ E), the marine geographical points 38° 32′ 00″ N - 20° 43′ 25″ E, 38° 28′ 00″ N - 20° 48′ 25″ E, 38° 16′ 75″ N - 21° 06′ 00″ E, the continental coast point 38° 18′ 00″ N - 21° 09′ 50″ E, the continental coast, the south entrance of Lefkada channel and the cost of Lefkada. The site also includes the land of Echinades islands and a 50m wide coast land of all the other islands. The land of Echinades island geologically belongs to the Upper Triassic-Lower and Middle hias zone wich is characterized by Pantocrator limestones.

Habitat types: *Posidonia* beds, Estuaries, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Submerged or partly submerged sea caves, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus euryale, Rhinolophus blasii, Myotis blythi, Myotis capaccinii, Tursiops truncatus, Monachus monachus, Testudo hermanni, Elaphe quatuorlineata.*

Other important species: — Flora: 2B, 1D
— Fauna: 1A, 6B, 5C, 2D

Impacts/Activities: — Positive: -
— Neutral: 210, 211, 221, 621 (IN)
— Negative: 212, 213, 220, 230, 242, 290, 620, 690 (IN) / 520 (AR)

Protection Status: — National and Regional level: -
— International level: Ramsar Convention site

Significance: The faunistic importance of this site is evident. The marine environment of the site offers refuge to many important top predator species indicating the biological richness of the area. Monk seals (*Monachus monachus*), Bottle-nosed dolphins (*Tunsiops truncatus*), Common dolphins (*Delphinus delphis*) and various shark species are resident or common elements of the local marine fauna. The coasts submerged or partly submerged sea caves are an ideal habitat for monk seals. That's the reason why they constitute one of the most important spots of the national territory (and the Mediterranean in general) for the most threatened with extinction mammal in Europe (*Monachus monachus*). Two other extremely important marine species, the coastal small cetaceans *Tunsiops truncatus* (an Annex II Directive 92/43/EEC species) and *Delphinus delphis* are sympatric in the site's sea area.

Site Name: PARAKTIA THALASSIA ZONI APO ARGOSTOLI EOS VLACHATA (KEFALONIA)



Sitecode: GR2220004 **Type**: B

Longitute: 20° 34′ **Latitude**: 38° 06′

Administrative Region: Ionia Nisia **Prefecture**: Kefellinia

Altitude (m): -2 **Area (ha)**: 1050 **Length**: -

Description: The proposed site covers the marine area from the entrance of Argostoli Gulf and expands towards the village of Lourdata, following the coastline. The sea bed has a smooth inclination and the substrate is sandy with a small amount of limestone rock. On the limestone rocks distinctive zones of *Cytoseira crinita* and calcareous Rhodophyceae dominate. Additionally, large amounts of the Rhodophyceae *Laurencia papillosa* and the Chlorophyceae *Dasycladus vermicularis* cover a substantial portion of the hard substrate.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: *Tursiops truncatus, Monachus monachus.*

Other important species: — Flora: 3D
— Fauna: 1C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 520 (IN) / 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: *Posidonia oceanica* forms extensive meadows below 2 m depth. The meadows are very well developed with high population density and large individuals. Great quantities of *Posidonia oceanica* are washed ashore, constituting an appropriate substrate for the growth of halophytes on the shore and of algae in the sea.

Site Name: LIMNOTHALASSA ANTINIOTI (KERKYRA)



Sitecode: GR2230001 **Type**: B

Longitute: 19° 52′ **Latitude**: 39° 49′

Administrative Region: Ionia Nisia **Prefecture**: Kerkyra

Altitude (m): 16 **Area (ha)**: 200 **Length**: -

Description: This wetland, situated on the northern coast of the island of Kerkyra (Corfu), is important for the threatened species *Lutra lutra* as well as for the ecological balance in the area. In addition, the site is characterized by a variety of habitats, and human activities have not yet exerted much influence upon it. This is of great importance for an island like Kerkyra which shows great tourist development and great pressure due to building construction.

Habitat types: Lagoons, Large shallow inlets and bays, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Dune juniper thickets (*Juniperus* spp.), Aegean phrygana (*Sarcopoterium spinosum*), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Mediterranean pine forests.

Plant species: -

Animal species: *Lutra lutra, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Aphanius fasciatus, Valencia hispanica, Callimorpha quadripunctata.*

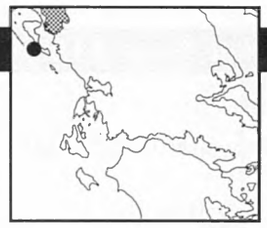
Other important species: — Flora: 1C, 1D
— Fauna: 1A, 42B, 12C, 11D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 180, 421, 422 (IN) / 100 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The wetland and the nearby habitats are kept in rather good condition. The reed thickets cover an extended area. The protection and sustainable management of the site can contribute not only to the preservation of wildlife but also to the economic development of the area (fishing, leisure activities, ecotourism). The greater the delays in establishing status of legal frame, the more the threats to the environment will increase.

Site Name: LIMNOTHALASSA KORISSION (KERKYRA)



Sitecode: GR2230002 **Type**: B

Longitude: 19° 55′ **Latitude**: 39° 27′

Administrative Region: Ionia Nisia **Prefecture**: Kerkyra

Altitude (m): 248 **Area (ha)**: 2350 **Length**: -

Description: This area lying on the SW coast of the island of Kerkyra (Corfu), is of great importance not only as a wetland but also because of the biological and aesthetic value of the sandy beaches close to the lagoon. At the southern sandy beach, the presence on the island of the unique *Juniperus* stands and the petrified sand-dunes create an area of great aesthetic value. The site consists of: The Korission Lake (the largest lake in Kerkyra), and the surrounding lake and seashores which are characterized by varied and important Mediterranean vegetation types. Among them are: 1) The Cruceanelletum maritimae which is the eastern limit of its distribution range in the area. The area is also the single locality in Greece where *Crucianella maritima* has been reported, and 2) The *Juniperus phoenicea* stands growing on the southern sandy beaches of the area seem to be the unique remnants of such a forest in the islands of Corfu. The most important part of the site is that separating the sea from Korission Lake (between Garziki Point and the beginning of Agios Georgios beach). This is a complex, interesting and almost unaltered ecosystem, one of the few remaining natural ecosystems in Corfu has not been greatly changed by tourist development.

Habitat types: Mudflats and sandflats not covered by seawater at low tide, Lagoons, *Salicornia* and other annual colonizing mud and sand, Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Dune juniper thichets (*Juniperus* spp.), Aegean phrygana (*Sarcopoterium spinosum*).

Plant species: -

Animal species: *Testudo hermanni, Emys orbicularis, Mauremys caspica, Aphanius fasciatus, Valencia hispanica, Callimorpha quadripunctata.*

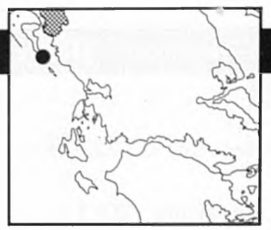
Other important species: — Flora: -
— Fauna: 2A, 42B, 20C, 11D.

Impacts/Activities: — Positive: -
— Neutral: 302, 690 (IN)
— Negative: 140, 200, 211, 230, 401, 421, 710, 790 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: The area of Lake Korission is a complex and more or less still well-conserved ecosystem of high biological, aesthetic and, as a consequence, economic value, unusual for an island such as Kerkyra which has been so greatly altered by tourist development. As for the main wetland in the island of Kerkyra, Korission Lake is an important site for wildlife protection in the area, and especially for bird migration and breeding, for the survival of the protected species *Lutra lutra* and the conservation of the natural vegetation types existing in the area. A status of a protective legal frame is necessary for this site. Strict law abiding to the existing legal frame is also required. On the other hand, the site needs further studying for the development of sustainable management plan.

Site Name: ALYKI LEFKIMIS (KERKYRA)



Sitecode: GR2230003 **Type**: B

Longitute: 20° 04′ **Latitude**: 39° 27′

Administrative Region: Ionia Nisia **Prefecture**: Kerkyra

Altitude (m): 1 **Area (ha)**: 217 **Length**: -

Description: Until few years ago, the wetland had been used as a salt-works operation, but in 1988 this activity was abandoned. Since then, in relation to the growth of tourism in the island, a lot of changes have taken place in this site. Although the existing information regarding the flora and vegetation of the area is restricted to that of sedimentary coast, it is evident that a very rich flora and many coastal vegetation types exist, characterized by the dominance of different halophytic species, like *Arthrocnemum glaucum, A. fruticosum, Halocnemum strobilaceum, Schoenus nigricans, Juncus subulatus, Salicornia europaea, Cakile maritima, Salsola kali*, etc. It is to be pointed out, however, that the sedimentary coasts constitute only a small proportion of the whole wetland and as a consequence, existing biodiversity in the area is not restricted to the vegetation types mentioned above. The lagoon(s), the wet and salt meadows (east of the main lagoon), the small rivers and the neighbouring hills with their characteristic vegetation (*Arbutus* sp., *Erica* sp., *Quercus coccifera, Pistacia lentiscus* etc.) also seem to play an important role in the structure and function of the ecosystem as a whole.

Habitat types: *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fruticosae), Embryonic shifting dunes.

Plant species: -

Animal species: *Elaphe quatuorlineata, Callimorpha quadripunctata.*

Other important species: — Flora: 1B, 3D
— Fauna: 42B, 11C, 11D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 141, 180, 230, 608, 623, 701, 790, 920 (IN) / 110, 120, 401 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: Taking into consideration that: a. This area is one of the few wetlands still existing in the island of Kerkyra; b. The sand dune and salt marsh vegetation types are well developed and conserved; c. Tourism and related activities have taken over almost the majority of the sandy beaches on the island, it is evident that this area should be protected and managed according to the principles of sustainable development (ecotourism, traditional agriculture and stock raising, etc.). Lastly, it should be stressed that such areas seem to be significant as "refuges" not only for birds and other animal species, but also plant species (e.g. Orchidaceae). It is believed that several plant species of the ground flora of big olive plantations existing on the island have only survived in such open habitats. This is because weedkillers are widely used in order to facilitate collection of the fallen olives. Relatively few data are available on the vertebrate taxa (other than birds) existing at this site.

Site Name: NISOI PAXOI KAI ANTIPAXOI



Sitecode: GR2230004 **Type**: B

Longitude: 20° 11′ **Latitude**: 39° 11′

Administrative Region: Ionia Nisia **Prefecture**: Kerkyra

Altitude (m): 115 **Area (ha)**: 5745 **Length**: -

Description: The site consists of a group of calcareous islands and islets which are characterized by rocky and eroded coasts, as well as of the surrounding sea area confined by the isobath of 50 m. The biggest islands of this group, Paxoi and Antipaxoi also show an interesting topography. Paxoi is the only island of this group which is permanently inhabited (ca. 2800 habitants). The flora of the area consists of about 450 taxa. The majority of them, c. 65%, are typical mediterranean elements but 2 species, namely *Centaurea paxorum* and *Limonium antipaxorum*, are local endemics. The main natural vegetation types which dominate in the site seem to be evergreen shrubs or tree-like shrubs belonging to either Oleo-Ceratonion (*Ceratonia siliqua, Olea europaea, Pistacia lentiscus, Calycotome villosa, Quercus coccifera* etc.) or Quercion ilicis (*Phyllirea latifolia, Rhamnus alaternus, Pistacia terebinthus, Arbutus adrachne* etc.). Clusters of Mediterranean conifers (*Juniperus phoenicea, Pinus halepensis* and *Cupressus sempervirens*) are not uncommon within both the above mentioned vegetation types. *Juniperus phoenicea* and *Pinus halepensis* seem to be localized in the northwestern and southeastern part (islet Mogonisi) of Paxoi island respectively. In the rocky coasts, the littoral and/or sublittoral vegetation zone is characterized by the presence of several plant species adapted to the corresponding conditions viz. *Crithmum maritimum, Silene sedoides, Reichardia picroides, Daucus carota, Brassica cretica, Limonium antipaxorum, Centaurea antipaxorum* etc. In the central part of Paxoi island, the degradation of the Oleo-Ceratonion and Quercion ilicis, due to the human activities of deforestation (fires, olive groves, vineyards, etc.), is obvious and the secondary vegetation type of phrygana (Coridothymion) is observed.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Juniperus phoenicea* arborescent matorral, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, *Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Tursiops truncatus, Monachus monachus.*

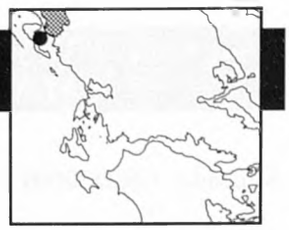
Other important species: — Flora: 3B, 3D.
— Fauna: 1A, 7B, 6C.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 180, 230 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance:Maquis and phrygana occurring in the area are considered as representative types of the Mediterranean vegetation.

Site Name: PARAKTIA THALASSIA ZONI APO KANONI EOS MESONGI (KERKYRA)



Sitecode: GR2230005 **Type**: B

Longitute: 19° 55′ **Latitude**: 39° 33′

Administrative Region: Ionia Nisia **Prefecture**: Kerkyra

Altitude (m): -1 **Area (ha)**: 553 **Length**: -

Description: The area is located in the east part of Kerkyra island including the coastal sea area between Kanoni and Mesoggi villages. In the area of Kanoni the water is shallow, and little exposed with smooth rocks at a depth of 0.5 m, and a few fairly secluded pools. The rocks are psammitic. Among the upper rocks the marine phanerogam *Cymodocea nodosa* grows on sandy substrate. The beds of *Posidonia oceanica* expand at depths below 1.5 m southwards to Mesoggi. In this area the sea bottom is stony and sandy with stones and rocks of all sizes. The Phaeophyceae predominate while the dominance of the Cystoseiretum crinitae community.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: *Tursiops truncatus.*

Other important species: — Flora: 3D
— Fauna: 1C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 520 (IN) / 401, 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The presence of the marine phanerogam *Posidonia oceanica* in the form of its meadows is of great ecological importance. The beds of *Posidonia* constitute the most important coastal ecosystem in the Mediterranean Sea as it contributes considerably to primary production serve as suitable place for laying eggs fishes and supplies a perfect habitat for many animal and plant species. The beds grow denser towards Mesoggi. This marine area is characterized by a great diversity in flora and vegetation.

Site Name: PARAKTIA THALASSIA ZONI APO PALAIOKASTRITSA EOS GLYFADA (KERKYRA)



Sitecode: GR2230006 **Type**: B

Longitute: 19° 45′ **Latitude**: 39° 37′

Administrative Region: Ionia Nisia **Prefecture**: Kerkyra

Altitude (m): 0 **Area (ha)**: 510 **Length**: -

Description: The site is located in the west part of Kerkyra island between Palaiokastritsa and Glyfada. The area is exposed from intensive wave action and currents, except the natural port of Palaiokastritsa. Some parts of the coast are of sandy-pebbly composition (Palaiokastritsa) or thick-grained sand and rocks (Glyfada). On the sandy-pebbly and the rocky substrate, a rich macroalgal flora grows. On the sandy substrate *Posidonia* beds expand at 20 m depth.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: -

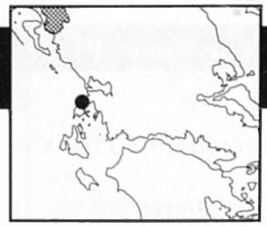
Other important species: — Flora: 5D
— Fauna: 1C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 520 (IN) / 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: *Posidonia oceanica*, a sensitive to pollution marine phanerogam, forms dense beds with well-developed plants. This fact points out the unpolluted state of this area (mainly towards Glyfada). Both flora and vegetation are variable and rich with the distinctive communities of *Cystoseira*. Of the vertebrates living in this site, the fish *Syngnathus abaster* is mentioned by the Bern Convention.

Site Name: LIMNOTHALASSES STENON LEFKADAS (PALIONIS-AVLIMON) KAI ALYKES LEFKADAS



Sitecode: GR2240001 **Type**: B

Longitude: 20° 42′ **Latitude**: 38° 50′

Administrative Region: Ionia Nisia **Prefecture**: Lefkada

Altitude (m): 0 **Area (ha)**: 2120 **Length**: -

Description: Although this area is treated as a separate site, in a wide sense, it could be considered as a part of an extensive wetland, together with the neighbouring sites of Amvrakikos Gulf and the lake of Voulkaria. Among the main characteristics of the site which obviously must be taken into consideration, in order to formulate appropriate management plans, the following should be mentioned: 1) its proximity to the city of Lefkada (15.000 inhabitants and several thousands more during the summer); 2) its proximity to one of the three main and more fertile regions of the island; 3) the extensive and shellfish aquaculture which takes place within the site.

Habitat types: Lagons, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Salt steppes (Limonietalia), Embryonic shifting dunes, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*.

Plant species: -

Animal species: *Elaphe quatuorlineata, Aphanius fasciatus*.

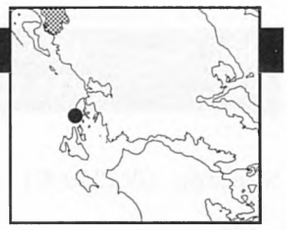
Other important species: — Flora: 2B.
— Fauna: 41B, 8C, 2D.

Impacts/Activities:
— Positive: -
— Neutral: 200, 220 (IN)
— Negative: 230, 504, 608, 623, 701 (IN)

Protection Status:
— National and Regional level: -
— International level: -

Significance: This site is one of the most significant wetlands of the Ionian islands and important not only for the conservation of wildlife but also for the economy of the area (approximately 15% of the population of the islands live on fishing, farming and related activities). The variety of habitats, together with the existence of a rich flora representative of both sand-dunes, salt-marshes and sand meadows and the existence of the local endemic plant taxon, *Arenaria leucadia*, are elements which support the ecological and scientific value of the site. In addition to these, we should keep in mind the role of the wetlands in relation to the conservation of the local fauna and bird migration. It should also be emphasized the proximity of this site to another important wetland (Amvrakikos Gulf) and that these two sites should be considered probably as part of the same unique ecosystem.

Site Name: PERIOCHI CHORTATON (LEFKADA)



Sitecode: GR2240002 **Type**: B

Longitude: 20° 36′ **Latitude**: 38° 43′

Administrative Region: Ionia Nisia **Prefecture**: Lefkada

Altitude (m): 883 **Area (ha)**: 1255 **Length**: -

Description: The site consists of the central and mountainous part of the island of Lefkada (600-1140m). It is located south-east of the villages of Exanthia and Chortata and includes the three main summits and the slopes of Elati mountain. Geologically the area is more or less uniform and is characterized by a dominant limestone substrate which also contributes to the development of an interesting geomorphology (valleys, rocky slopes, cliffs, dolines, etc.). Table-lands of different sizes are also very common in that area and until a few years ago, vineyards, producing the famous traditional red wine, were the predominant agricultural activity of the area. In spite of the fact that the highest mountain of Lefkada island is called Elati (i.e. fir tree in Greek) neither *Abies* forest nor single *Abies* trees have been observed there. The dominant vegetation type in this area is phrygana which however could be characterized as degraded maquis. This situation seem to be the result of both human activities (agriculture, grazing, fires, etc.) and ecological factors (karstic limestones).

Habitat types: Eu-mediterranean greek calcareous cliffs.

Plant species: -

Animal species:. -

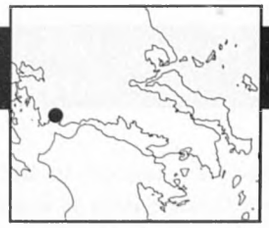
Other important species: — Flora: 4B, 2D.
— Fauna: 41B, 5C, 2D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 180, 230, 330, 502 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: The significance of this site is based on the presence of some floristically and biogeographically important elements. Among them are several Ionian or Greek endemic taxa already listed but also two species of the attractive and biogeographically important genus *Paeonia*, which is rare in Greece namely: *Paeonia mascula* ssp. *russi* and *P. peregrina*. The area of our site is the northwestern end of the distribution range of *P. mascula* ssp. *russi* and the southern corresponding one for *P. peregrina*. It is worthnoting that Lefkada is the only site in Greece where the distribution ranges of two *Paeonia* species overlap. Consequently this site should be considered as "living" and remarkable evidence, possibly suggesting that Central Greece was an area where different phytogeographical elements met each other. Distribution patterns like these are very important as they help us to understand the richness and diversity of the Greek flora.

Site Name: DELTA ACHELOOU, LIMNOTHALASSA MESOLONGIOU - AITOLIKOU KAI EKVOLES EVINOU



Sitecode: GR2310001 **Type**: F

Longitude: 21° 15′ **Latitude**: 38° 20′

Administrative Region: Sterea Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 217 **Area (ha)**: 33687 **Length**: -

Description: The examined site is a complex ecosystem that is located in western Sterea Ellada. It is one of the most significant wetlands in Greece. In this area a very large lagoon, the Mesolongi lagoon (11.200 ha) predominates in the central part of the wetland system. There are also a number of other smaller lagoons to the north (Aitoliko lagoon, 1400 ha), east (Kleisova, 3000 ha), and the west (Gourounopoules, Paliopotamos, 800 ha). The lagoons of Mesolongi lie behind a fragmented sandy coastal ridge which is located between the mouth of the river Evinos to the east and the Koutsilaris hill to the west; they are connected with the Patraikos Gulf (which forms part of the Ionian Sea) by a large opening. In the eastern part of the Mesolongi plain is the delta of the river Evinos. In the extreme west of the site, the delta of the river Acheloos occurs. Most of the plain is formed from the sediments deposited by these two rivers. Evinos has deposited sediments that cover the whole area from Mesolongi eastwards, while sediments from the river Acheloos cover the area from Mesolongi to the west. In the western part of the site, the sediments of the river Acheloos surround several rocks and hills, of which the Koutsilaris (433 m) is the highest. In the same part several former beds of the river Acheloos can be distinguished. In some places within the area of the lagoons near Ag. Triada, Ag. Taxiarchis and Megalo Vouno, former sand-dune ridges may be observed. The Mesolongi lagoon system was formed in the Holocene. The basin of the lagoon is divided into the Aitoliko and Mesolongi lagoons, which are connected to each other by a narrow channel. From a geological point of view, the area belongs to the Ionian and Gavrovo zones and is composed mainly of sedimentary rocks. A small area of the Gavrovo zone is composed mainly of Upper Cretaceous limestones, Eocenic limestones and flysch. A larger area belonging to the Ionian zone is composed of Triassic crystalines and evaporites, Jurassic limestones with ceratoliths, Cretaceous and Eocenic limestones and flysch. The soil of the area has originated from erosion of the above rocks. Nearby, the whole area consists of clay deposited in salt water; only along the river beds we find clay deposited in fresh water. Some parts of the lagoons are rather isolated. This results in large fluctuations of salinity during the course of the year. The salinity of the shallow waters south of Aitoliko and probably near the former monastery Ag. Taxiarchis, also fluctuates considerably. The high salinity in summer, caused by evaporation, is tempered by fresh water flowing into the lagoons from the surrounding fields and some small brooks. During the winter large amounts of fresh water drain into the lagoons. In winter, water from the Evinos and Acheloos rivers probably also flows into the lagoons on occasions. The lagoons studied are shallow. Their maximum depth is about 2 m but large areas have a depth of about 1 m. Only the Aitoliko lagoon has a maximum depth of 28 m. The principal human activity in the lagoons is fishing. For this purpose elaborate pile screens have been constructed in many creeks using the stems of *Arundo donax*. In some places large quantities of this material are washed ashore and become substrate for a special type of vegetation. The Mesolongi lagoons were formerly surrounded mostly by extensive salt marshes, large parts of which were drained for agricultural purposes, but still remain infertile and serve as a wildlife habitat. Despite land reclamation, salt marshes, sand-banks and mudflats still occur around the lagoons. Generally the area is characterized by variable habitats. The estuaries of the Evinos river extend from the east shore of the Kleisova lagoon to the foot of Mt. Varasova. The River Evinos springs from Mt. Vardousia and flows into the Patraikos Gulf. It has a length of 110 km and its drainage basin is 1070 km^2. It is noticeable that the riparian vegetation of river Evinos appears significantly different from the vegetation of river Acheloos. This happens because the Evinos river has not a constant and satisfactory flow during all the year. At the coastal zone extending from the east shore of the

Site Name: DELTA ACHELOOU, LIMNOTHALASSA MESOLONGIOU - AITOLIKOU KAI EKVOLES EVINOU (cont.)

Kleisova lagoon to the west of the mouth of the Evinos river (ca. 3 km in length and 0.5 km in width) the land is lower than sea level and is devoid of discharge, resulting in overflow due to rain water. In that place an extensive saltmarsh with a gradiated natural vegetation (Tamaricetum, Juncetum, Arthocnemetum, Salicornietum) is developed.

Habitat types: Estuaries, Mudflats and sandflats not covered by sea water at low tide, Lagoons, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Salt steppes (Limonietalia), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria, Juniperus phoenicea* arborescent matorral, Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe woth grasses and annuals (Thero-Brachypodietea), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Thermophilous ash (*Fraxinus angustifolia*) woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests.

Plant species: *Centaurea niederi.*

Animal species: *Rhinolophus euryale, Tursiops truncatus, Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Caretta caretta, Elaphe quatuorlineata, Rutilus alburnoides, Phoxinellus* spp., *Rutilus rubilio, Barbus meridionalis, Barbus capito, Cobitis trichonica, Silurus aristotelis, Aphanius fasciatus, Lycaena dispar.*

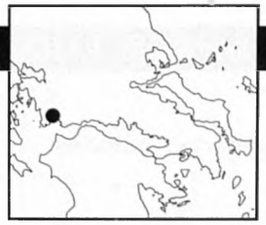
Other important species: — Flora: 12B, 13D
— Fauna: 4A, 3B, 28C, 4D

Impacts/Activities:
— Positive: -
— Neutral: 200, 210, (IN)
— Negative: 100, 120, 130, 140, 165, 230, 340, 502, 520, 690, 701, 801, 870, 890, 910 (IN)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge
— International level: Ramsar Convention site, Council of Europe Biogenetic Reserve, IBA

Significance: Although the examined site is a compact ecosystem that has been strongly influenced by human activities, it still has significant ecological value, for that reason it is included in the Ramsar Convention. The flora and fauna of the area is largely specialized due to the extensive presence and dominance of wet-element taxa. As mentioned above, despite land reclamation, extensive areas of salt marshes sandbanks and mudflats still exist. An important part of this site is the pure *Fraxinus* forest (the only one in Greece) that exists near the Lesini area. Relicts from such a riparian forest occur also on the eastern banks of the Evinos river. These areas have large ornithological and ecological value. The alluvium of the Evinos river are very significant and in very good condition. The estuary of this river consists of one of the most harmonized ecosystems we have encountered. The plant communities of this area are in excellent condition. The coastal zone between the Kleisova lagoon and the Evinos river is the largest unique and uniform part of natural saltmarsh in this site; it is also in a very good natural state. Of great ecological importance is also the ammophilous vegetation of this site which grows mainly on the islets of the lagoons. The vegetation of the site is composed of a lot of interesting endemic, rare or threatened plants. The fauna of this site is also very diverse.

Site Name: LIMNOTHALASSES MESOLONGIOU



Sitecode: GR2310002 **Type**: G

Longitude: 21° 26′ **Latitude**: 38° 20′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 1 **Area (ha)**: 14270 **Length**: -

Description: The examined site is situated in western Sterea Ellada and is one of the most significant wetlands in Greece. This site includes the Mesolongi lagoon (one of the largest in the Mediterranean area) and the marshes surrounding it, the islets of Louros, Tholi, Prokopanistos, Schoinias, Komma, Agios Sostis, Vasiladi and the shallow sea south of the lagoon from the islet of Louros to the seashore of Tourlida. Mesolongi lagoon covers an area of approximately 11.200 ha and has a depth between 0.2-1.5 m. It lies behind a fragmented sandy coastal ridge, which is located between the mouth of the River Evinos and the Koutsilaris hill and it is connnected with the Gulf of Patras by a large opening. The Mesolongi lagoon was formed in the Holocene and belongs to the Ionian and Gavrovo zones. The whole area consists of clay deposited in salt water, while the coastal ridge consists of sand. Some parts of the lagoon are rather isolated, and this results in large flucuations of salinity during the course of the year. High salinity in summer, caused by evaporation, is tempered by freshwater flowing into the lagoon from the surrounding fields and some small brooks. The principal human activity in the lagoon is fishing. For this purpose, elaborate pile screens have been constructed in many creeks using *Arundo donax* stems. In some places, large quantities of this material are washed ashore and there it becomes substrate for a special vegetation type. The main ammophilous associations occurring in these places are Agropyretum mediterraneum, Ammophiletum arenariae of the Class Ammophiletea and ammonitrophilous associations of Cakiletea maritimae. On the islet of Louros, a significant cluster of *Juniperus phoenicea* grows at the inner places behind the dunes. All this area is extremely valuable. Extensive, dense reed communities cover a substantial area, mainly along the western shore of the lagoon which is also the point where freshwater enters the lagoon. In these reed-beds *Phragmites australis* and *Typha latifolia* dominate. Close to the reed beds stands of Scirpetum maritimi occur. These communities can be observed mainly in the area of Poros. Substantial hedges of natural vegetation with *Phragmites australis, Tamarix* sp., and *Juncus* also grow between the small fields occurring near the coast. Despite land reclamation, extensive salt marshes, sandbanks, and mudflats still occur around the lagoon. There are extensive areas of salt marshes where the plant genus *Salicornia* is dominant, as well as extensive areas of shallow water with a rich submerged vegetation of *Ruppia, Enteromorpha* and *Zostera*. It is also worth mentioning that a long, wide coastal strip with sand-dunes occurs to the south-west of the area (mainly on the islet of Louros).

Habitat types: Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Salt steppes (Limonietalia), Embryonic shifting dunes, Shifting dunes along the sholerine with *Ammophila arenaria* (white dunes), Dune juniper thickets (*Juniperus* spp.), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Rhinolophus euryale, Tursiops truncatus, Emys orbicularis, Mauremys caspica, Caretta caretta, Aphanius fasciatus.*

Other important species: — Flora: 1B, 4D.
— Fauna: 3A, 1B, 8C, 2D.

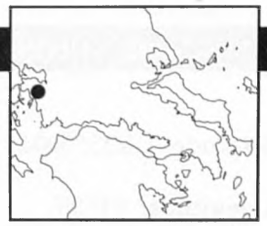
Site Name: LIMNOTHALASSA MESOLONGIOU (cont.)

Impacts/Activities:
— Positive: -
— Neutral:200, 210, 340 (IN)
— Negative: 140, 230, 520, 690, 701, 801, 870, 890, 910 (IN) / 100, 120, 140, 230 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA.

Significance: Although Mesolongi lagoon is a compact coastal ecosystem that has been strongly influenced by human activities it still has significant ecological value. The flora and fauna of this area are largely specialized due to the extensive presence and dominance of wet element taxa.

Site Name: ORI AKARNANIKA



Sitecode: GR2310003 **Type**: B

Longitude: 21° 00′ **Latitude**: 38° 45′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 819 **Area (ha)**: 32587 **Length**: -

Description: This site is a large complex with predominantly natural habitats. On its northern and eastern slopes it is partly forested with oaks at lower altitudes and *Abies cephalonica* (Cephalonian fir) and with pastures at higher altitudes. It includes bare and rocky areas, with large cliffs. Most of the site consists of limestones of the upper Triassic-lower-middle Lias periods. Near Mt. Mega, there are red clays and sandy material, screes and *Posidonia*n shales and also limestones of the upper Triassic-lower cretaceous, siliceous schists. The vegetation zones which appear at the summits of Pergama and Bumistos, of the Akarnanian mountains present the following vegetation types: The mediterranean zone Quercion ilicis, the sub-Mediterranean zone Ostryo-Carpinion orientalis, the continental zone Quercion frainetto, the middle-European zone Abietion cephalonicae and the alpine zone with its characteristic bushy and herbaceous vegetation. In the Ostryo-Carpinion orientalis zone, the Cocciferetum formation and the formation of Pseudomaccia *Quercus coccifera-Juniperus oxycedrus* ssp. *oxycedrus* appear. Finally, the zones Ostryo-Carpinion orientalis and Quercion frainetto, which characterize the mixed forests of southeastern Europe, are strongly degraded in the investigated area of the Akarnanian mountains.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, *Quercus frainetto* woods.

Plant species: -

Animal species: *Rhinolophus mehelyi, Myotis blythi, Myotis capaccinii, Testudo hermanni.*

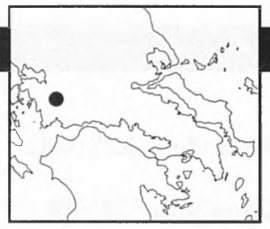
Other important species: — Flora: 12B, 7D.
— Fauna: 1B, 4C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 140, 230, 301, 403 (IN)

Protection Status:
— National and regional level: -
— International level: IBA.

Significance: This site is important because it has a remarkable diverse vegetation and hosts some rare, endemic plants. The isolated rocky areas which exist in this site are not affected by grazing. Hence, they act as refuges for some rare endemic plants. The flora of the area is relatively similar to the flora of the Ionian islands, and indicates the phytogeographical relationships between West continental Greece and the Ionian area.

Site Name: OROS PANAITOLIKO



Sitecode: GR2310004 **Type**: E

Longitude: 21° 35′ **Latitude**: 38° 42′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 1280 **Area (ha)**: 18597 **Length**: -

Description: From a geological point of view, the mountain range of Panaitoliko is composed of limestones and flyschs and its arch-shaped ridge constitutes the natural limits between the prefectures of Aitoloakarnania and Evrytania. The presence of minor west, south-west and southerly exposed peaks with gradually inclining slopes according to the altitude, gives the examined site a special mountainous multifarious relief (a dense hydrographic network, alternating high peaks and deep gorges, as well as the presence of many torrents). As a result, forest vegetation exists on slopes of all exposures. The dominant coniferous taxon of the mountainous forests covering extended areas between 700-1600m altitude is *Abies cephalonica*, whilst locally on north-exposed slopes *Abies borisii-regis* is observed with a low frequency of occurrence. Degraded scrubs with evergreen, sclerophyllous vegetation are distributed altitudinally from 600 to 800m, as a consequence of human activities. *Quercus ilex, Q. coccifera* and *Juniperus oxycedrus* are the dominant species, whilst in the structure of phryganic communities various species of the genera *Cistus, Rosa* and *Origanum*, etc. are abundant. The broadleaved deciduous forests are composed of *Quercus pubescens, Q. frainetto* and *Q. ithaburensis* ssp. *macrolepis* all occurring within the maquis vegetation or at transitional zones between the evergreen vegetation and the coniferous forests. Within the structure of the above, the timberline vegetation calcareous cliff communities and open, stepped rocky grasslands exist, giving a special aspect to the landscape. Scattered populations of *Juniperus foetidissima* occur close to the timberline.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, *Quercus frainetto* woods.

Plant species: -

Animal species: *Canis lupus, Bombina variegata.*

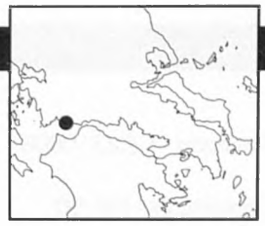
Other important species: — Flora: 18B, 2D.
— Fauna: 3B, 13C, 2D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 140, 167, 180, 230, 900, 910, 943 (IN) / 140, 167, 180, 230, 900, 943 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The presence of broad-leaved deciduous forests with *Quercus frainetto* and *Q. pubescens*, in combination with the great areas covered by coniferous forests with *Abies cephalonica* give special ecological importance to the mountainous ecosystems of Panaitoliko. The broad-leaved deciduous forests, although rather degraded, constitute a special ecological ingredient to this mountain, especially as they are continuously declining in Central and Southern Greece.

Site Name: OROS VARASOVA



Sitecode: GR2310005 **Type**: B

Longitude: 21° 36′ **Latitude**: 38° 21′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 457 **Area (ha)**: 1487 **Length**: -

Description: Mount Varasova is situated in the south-western part of Aitoloakarnania, east of the Evinos river estuaries. It consists of a limestone mass with an altitude of 914m (peak Sfyri). Characteristic is that in its southern, south-eastern and south-western parts extensive steep slopes with sparse chasmophytic vegetation occur. These slopes descend steeply to the coast, near the villages of Kato Vasiliki and Kryoneri. At the lower altitudes of its eastern, north-eastern and northern sides shruby vegetation is developed, mainly consisting of *Quercus coccifera, Q. ilex, Pistacia lentiscus, Olea europea, Arbutus unedo, Erica arborea, Juniperus phoenicea*, etc. This vegetation in some places is in a good state of preservation, while in others it has been degraded due to overgrazing or fires. The upper part of these areas is almost bare with sparse chasmophytic vegetation and in several places with sparse, wooded areas consisting mainly of *Quercus ilex, Olea europea* and *Juniperus phoenicea*. This biotope is common on the mountains of Sterea Ellada. The lower part of the western side of the mountain is covered by phrygana, while the upper part is characterized by steep slopes with sparse chasmophytic vegetation. At the foot of the southern part of the mountain, between the two vertical cliffs, a small marsh occurs during the winter. In this place species of *Juncus* predominate. On the slope above this marsh shruby vegetation is developed, which mainly consists of *Pistacia lentiscus*. Screes are observed in this area. At the eastern foot of the mountain olive groves occur, while at its western foot cultivated fields and grasslands are extensive.

Habitat types: *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Caves not open to the public.

Plant species: *Centaurea alba* ssp. *heldreichii*.

Animal species: *Rhinolophus ferrum-equinum, Testudo hermanni, Testudo marginata*.

Other important species: — Flora: 8B, 4D.
— Fauna: 9C, 1D.

Impacts/Activities: — Positive: -
— Neutral: 624 (IN)
— Negative: 140, 180, 230 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: The special interest of Mt. Varasova as a unique biotope is due to its steep almost vertical slopes occurring mainly on its southern, south-western and south-eastern sides. These slopes make access difficult or impossible, for the mountain and for that reason it remains a significant refuge for an important flora and fauna. The most important area of the mountain is concentrated on the bare, almost vertical cliffs. In these areas, many endemic or rare plants live.

Site Name: LIMNES VOULKARIA KAI SALTINI



Sitecode: GR2310006 **Type**: B

Longitude: 20° 50′ **Latitude**: 38° 52′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 10 **Area (ha)**: 3223 **Length**: -

Description: The freshwater lake Voulkaria is situated in the centre of the Sterna peninsula, at the north-western part of Aitoloakarnania prefecture and southwards of the entrance to the Amvrakikos Gulf. It covers an area of approximately 940 ha. This area shows strong water level fluctuations depending on the annual rainfall. Voulkaria is a shallow lake with maximum depth of 2.5 m. It is developed on a tectonic graben and is considered to be the result of combined action of: 1) tectonics, 2) karstification, and 3) sedimentation of clastic materials (gravel, sand, clay). Later some Neogene sediments of lacustrine or coastal origin were deposited in the area, and covered by alluvial deposits. The wider area of the lake consists mainly of Mesozoic limestones and dolomites, Neogenic sediments (marls, sandstones, conglomerates), as well as alluvial deposits. The greatest part of the plain surrounding the lake comprises mainly a series of streams and smaller water courses with varying deposits. Peat formation takes place in wetland areas where no agricultural activities are present. The lake has a large drainage basin, which to the west comprises the eastern part of Asprochorto hill and on the other sides a plain area with extensive agricultural fields. Voulkaria has vague marshy sides and is connected to the sea by an artificial ditch with a length of 1400 m. This ditch (named "Agios Nikolaos" or "Kleopatra") is at the western part of the lake and empties into Agios Nikolaos bay. During the winter, when the lake overflows, a flow of water from the lake to the sea is observed, while during the summer the opposite flow is encountered. This summer flow resulted in the increase of salinity of the lake, which strongly influenced agricultural activities within the surrounding area. This problem has already been confronted since 1964 by controlling the entrance of sea water by closing the ditch during the summer. Saltini (or Salini) is a very shallow salt or brackish, coastal lake, which covers an area of about 210 ha. It is situated in the northern part of the Sterna peninsula, to the south of Aktio airport. The area around it is flat and extended agricultural fields and grasslands occur there. East of the lake, under Stoupa hill, extensive fields with olive trees and grassland are observed. In several places, characteristic vegetation with *Juncus* is developed. The predominance here of *Aspodelus aestivus* shows that this area is overgrazed. A great part of the above-mentioned grasslands are more or less wastelands as a result of clearance and overgrazing. At the Ano Pounta, east and south-east of the lake, agricultural fields with olive trees, greenhouses and grasslands occur. On the lake sides a narrow reed zone with *Phragmites australis* is present. The arborescent riparian vegetation is represented by insignificant scattered clusters mainly with *Ulmus* and few *Salix* trees at the west and south-eastern parts of the lake. On the south side of the lake there is an artificial ditch, which links the lake with the Ionian Sea. This ditch supplies the lake with fishes from the sea. Saltini is a private lake, which its owner mainly uses for fishing.

Habitat types: Lagoons, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Calcareous fens with *Cladium mariscus* and *Carex davalliana*, *Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Lutra lutra, Elaphe quatuorlineata, Barbus capito.*

Site Name: LIMNES VOULKARIA KAI SALTINI (cont.)

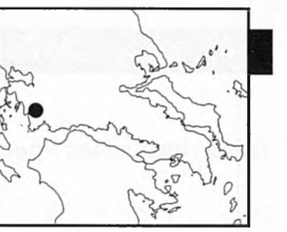
Other important species: — Flora: 4D
— Fauna: 1A, 1B, 7C

Impacts/Activities:
— Positive: -
— Neutral: 100, 130, 200, 210, 502, 507 (IN) / 130 (AR)
— Negative: 120, 140, 170, 230, 701, 710, 730, 920, 950 (IN), 120, 505 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: Ramsar Convention site

Significance: Voulkaria is a sizable lake, which is in very good condition and has beautiful scenery. The plant composition of this lake includes the significant species *Nymphaea alba*, which has very degraded populations in Greece and hence requires protection. Also interesting is the endangered aquatic species *Cladium mariscus* that occurs in the reed-bed zone. This site is a refuge for an interesting wild fauna. The otter, *Lutra lutra*, the four-lined snake, *Elaphe quatuorlineata* and the fish *Barbus capito* are the species recorded as occurring in this site and listed in Annex II of the Directive 92/43/EEC. Although very rare, the otter's presence in Lake Voulkaria (but not in Saltini) indicates that this wetland maintains a rather good environmental condition, since it is known that this animal is a good bioindicator. The position of lake Saltini to the west of Amvrakikos area, as well as its extensive, very shallow and muddy shores, make it a very important resting station for migratory birds. Both lakes are notable wetlands for many migratory birds and are placed among the E.U. Important Bird Areas. They are also considered as parts of the Amvrakikos Gulf wetland system, which is of international importance according to the Ramsar Convention. Moreover, this area is protected by the Barcelona Convention. Many threatened bird taxa are included in the very interesting local avifauna. These two lakes also offer irrigation to the surrounding area and are widely used for fishing. Both lakes are so far poorly studied and after further investigation data on their quality can be gained.

Site Name: LIMNI AMVRAKIA



Sitecode: GR2310007 **Type**: B

Longitude: 21° 11′ **Latitude**: 38° 45′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 120 **Area (ha)**: 2226 **Length**: -

Description: The freshwater lake Amvrakia (Limnaia, Limni Stanou or Valtos), is situated about 1000 m north-west of lake Ozeros. It is developed across the tectonic graben of Agrinio at the place of the fault. The lake covers an area of about 1420 ha, has a circumference of 31 km, maximum length of 13.8 km, maximum width of 3.8 km and a maximum depth of 40 m. The lake is supplied by water from its drainage basin which is about 112 km². It presents strong changes in the water level, that are attributed to the strong karstic character of the general area, as well as to high evaporation rates during the summer. The morphological characteristics reported in the bibliography has been dramatically changed during the last years, because of the drainage of the northern shallow part of the lake, due to drought and irrigation of the surrounding area.
A remarkable point is that, although Amvrakia is basically considered oligotrophic, the tracheophytes found there mostly occur in eutrophic or mesotrophic lakes.
From a thermal point of view Amvrakia is a warm, monomictic lake. According to the study of Overbeck et al., it belongs to the Sulphate type.

Habitat types: Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests with *Quercus suber* and/or *Quercus ilex*, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries.

Plant species: -

Animal species: *Rutilus alburnoides, Phoxinellus* spp., *Rutilus rubilio, Barbus capito, Cobitis trichonica, Silurus aristotelis.*

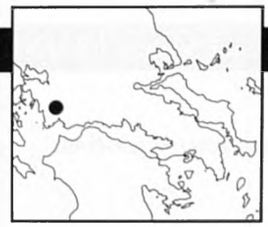
Other important species: — Flora: 1B, 7D
— Fauna: 1A, 2B, 1C

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 120, 130, 140, 170, 180, 200, 230, 400, 421, 502, 507, 701, 890, 920, 950 (IN)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The microfloristic composition of the lake Amvrakia seems unique. Fifty-six species of algae were recently recorded as occurring in Greece. Apart from cosmopolitan species that participate in the phytoplankton of the lake, some algae from North and Central Europe, America as well as tropical areas were found to exist. The western slopes of the lake are covered by dense natural vegetation (macquis) and presents a valuable ecosystem. The presence of the genus *Viola* at this site is an indication of a healthy and clean ecosystem. This area must be protected from fire and trampling.
The lake is also important from ornithological aspect. Indeed it seems to be used by migratory birds (ducks, gulls, terns, waders, etc). The occurrence of large threatened birds of prey is also significant.

Site Name: LIMNI OZEROS



Sitecode: GR2310008 **Type**: B

Longitute: 21° 13′ **Latitude**: 38° 39′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 110 **Area (ha)**: 1253 **Length**: -

Description: The freshwater lake of Ozeros (or Galitsa) is situated west of river Acheloos, almost at the same latitude as the town of Agrinio. It covers an area ranging between 10 and 11.1 km², has a circumference of 14 km, a maximum length of 5 km, maximum width of 2.6 km and a depth of 8-10 m. It is a karstic lake of tectonic origin and occurs across the tectonic graben of Agrinio. This lake has a large drainage basin (66.2 km²), the western part of which contains the east part of Lycovitsi hill, and the eastern part an area of extensive cultivation. The lake is supplied with water from torrents that occur mainly in the east-southeast part, as well as from the Acheloos river, when it overflows. It shows large changes in the water level, which are mainly attributed to underground drainage. Characteristic of the area is the presence of steep westerly and south-westerly slopes and the karstic formations such as dolines, limestone-breccia etc. All the other sides show a flat relief towards the lake. At the northwest sides of the lake there is a large amount of silt, while at the north and south coasts of the lake marles, sands, sandstones, pebbles and clays as well as alluvial soils are observed. The rest of the flat area towards Acheloos river is covered by sedimentary formations comprising clays and silts etc., transported by the flow of the Acheloos river. These formations have an average width of 80 m. Ozeros was basically considered oligotrophic, but the tracheophytes that have been found there mostly occur in eutrophic or mesotrophic lakes. From the thermal point of view Ozeros is a warm, monomictic lake, and belongs to the Carbonate type. The west side of the lake is rocky and shrubby vegetation has developed there. A great fire some years ago destroyed a large part of this vegetation and recovery is slow. In these places phrygana with the dominating plant species *Phlomis fruticosa* has developed. Only a narrow sandy zone occurs at the base of the rocky coast, where the species *Lippia nodiflora* grows. An almost continuous zone of hyperydates *Phragmites australis* and *Typha domingensis* occurs especially at the eastern side of the lake and *Scirpus littoralis* is interspersed in several places. In the median sublittoral zone, the species *Potamogeton nodosus* has a topical development, while in the lower sublittoral zone the species *Najas marina* predominates. The old riparian forest has been drastically reduced and only a few isolated clusters with *Populus* and *Salix* occur. The aquatic microorganisms, which are the dominant element of the primary flora and are indicators of the biological status of the lake, comprise many species of Cyanophyta, Chlorophyta, Euglenophyta, Bacillariophyta (Diatomae), Chrysophyta and Pyrrhophyta. Many of them have important phytogeographical distributions, while others are rare, or locally distributed. Some of the taxa are also endemic to Greece.

Habitat types: Mediterranean salt meadows (Juncetalia maritimi), Natural euthropic lakes with Magnopotamion or Hydrocharition type vegetation, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Lutra lutra, Elaphe quatuorlineata, Rutilus alburnoides, Phoxinellus* spp., *Rutilus rubilio, Cobitis trichonica, Silurus aristotelis.*

Other important species: — Flora: 3D
— Fauna: 3A, 2B, 7C

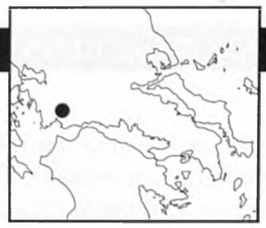
Site Name: LIMNI OZEROS (cont.)

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 120, 130, 170, 180, 200, 230, 701 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The lake maintains an interesting flora and fauna and is also very scenic. Extensive reed-beds, that offer refuge to wild fauna, are also developed at the lake's shore. Among the plant taxa of the site, the important species *Lippia nodiflora*, which has an interesting geographical distribution, as well as *Ranunculus baudotii* and *Valerianella locusta* occur. These are of great interest from a chorological point of view because they present a limited or scattered distribution within Greece. Also interesting are many of the aquatic microorganisms which are rare, sporadically distributed or Greek endemics. Nine vertebrate species (excluding birds) recorded as occurring in this site are included in Annex II of the Directive 92/43/ EEC. One of them is the otter *Lutra lutra*, which is a threatened species meriting the category "Vulnerable" in the Greek Red Data Book. It should be remembered that the presence of otters in a biotope is considered an indication of good ecological conditions existing there, because this species prefers "healthy" biotopes. Of the seven fish species included in Annex II, *Cobitis trichonica* and *Silurus aristotelis* are endemic to the lakes of Aitolia district. Like the other lakes of Aitoloakarnania, Ozeros is important for migratory birds. Also, some waterfowl use the lake as a breeding area and a number of birds of prey have also been recorded here. Besides all these, the lake is valuable for irrigation, fishing, recreation, as well as for scientific and educational purposes.

Site Name: LIMNES TRICHONIDA KAI LYSIMACHIA



Sitecode: GR2310009 **Type**: B

Longitude: 21° 28′ **Latitude**: 38° 34′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 159 **Area (ha)**: 14240 **Length**: -

Description: The freshwater lakes of Trichonida and Lysimachia are situated in the area of Aitoloakarnania, near the town of Agrinio, in western Central Greece. Lake Trichonida (or Vrachori) is the largest lake in Greece (apart from Megali Prespa, a small part of which belongs to Greece). From an ecological point of view, it is one of the most important natural lakes of Western Greece. It has a surface area of 9690 ha, a circumference of 51 km, maximum length of 20 km, maximum width of 6,5 km and a depth of up to 58 m. To the west of lake Trichonida, at a distance of 2800 m, Lysimachia lake (Agelokastro lake, Konopi or Hydria) is situated. This is connected with Trichonida lake and the Acheloos river by means of two artificial ditches, known as Alampei and Dimikos, respectively. Lysimachia lake has a surface area of 1300 ha, a circumference of 17 km, maximum length of 6.25 km, a maximum width of 2.85 km, and a depth of up to 9 m. Both the lakes have a tectonic origin and occur across the tectonic graben of Agrinio. Both also have positive water balance, because of the high input of water due to the streams and the sublacustrine inflow of karstic water. Lake Trichonida has a relatively small drainage basin and for that reason it conserves a relatively stable water level. Lake Lysimachia has a relatively large drainage basin and is influenced by the water coming from Ermitsas stream, as well as the water of lake Trichonida (through Alampei ditch). It exhibits strong seasonal fluctuations of its water level, which is due to the high evaporation rate during summer and drainage to the river Acheloos. During the winter it often overflows. From the thermal point of view Trichonida and Lysimachia are warm monomictic lakes with a temperature ranging from 15.5 to 26.4°C. Both of them belong to the Carbonate type. Although the two lakes are basically considered oligotrophic the vascular plants found there (*Myriophyllum spicatum, Potamogeton pectinatus, Ranunculus trichophyllus*, etc.) mostly occur in eutrophic or mesotrophic lakes. Lake Trichonida is surrounded by cultivated fields with *Nicotiana tabaccum, Citrus* sp. and olive trees. At the littoral zone of the lake herbs predominate while shrubs and trees occur only sporadically. At the upper infralittoral zone *Phragmites australis* and *Typha domingensis* dominate and there shape an almost continuous zone on the alluvial deposits mainly at the western part of the lake. *Iris pseudacorus* participates in low frequency of occurence in the structure of the plant communities of the upper infralittoral zone. This zone is interrupted, in some places only, by human activities. The middle infralittoral zone is locally covered by *Nymphaea alba* and *Potamogeton nodosus*, while at the lower infralittoral zone, species of the genera *Potamogeton*, *Myriophyllum* and *Chara* (Charophyta) predominate.

The plankton occurring in this site are of special importance, because they are the dominant element of the primary flora, and are valuable indicators of the biological state of the lakes. Phytoplankton consists of 99 species of algae and contains cosmopolitan species accompanied by some endemic taxa as well as some of tropical origin. In several places permanent or seasonal marshes occur. The natural shore-line vegetation particularly consists of herbs and shrubs and trees have scattered distributions. The species dominating near the shore line is *Phragmites australis*. It forms an extremely dense, almost continuous reed-fringe, mainly near the waters edge, as well as in the upper infralittoral zone and is interrupted in several places only, by human activities. The greatest characteristic cover is presented by the species *Paspalum paspaloides*. The submerged species *Vallisneria spiralis* predominates in the lower infralittoral zone, forming dense stands, while *Ceratophyllum demersum, Myriophyllum spicatum* and *Najas marina* present the lower cover.

Habitat types: Mediterranean salt meadows (Juncetalia maritimi), Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Calcareous fens with

Site Name: LIMNES TRICHONIDA KAI LYSIMACHIA (cont.)

Cladium mariscus and *Carex davalliana, Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Myotis emarginatus, Lutra lutra, Elaphe quatuorlineata, Rutilus alburnoides, Phoxinellus* spp., *Rutilus rubilio, Barbus capito, Cobitis trichonica, Silurus aristotelis, Pomatoschistus canestrini, Unio crassus.*

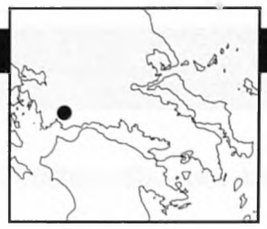
Other important species: — Flora: 1B, 14D
— Fauna: 3A, 5B, 11C, 1D

Impacts/Activities: — Positive: -
— Neutral: 130, 200 (IN)
— Negative: 100, 120, 170, 230, 400, 621, 690, 701, 870, 910, 920, 950 (IN) / 120, 130, (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: In spite of human activities, the lakes conserve a significant amount of their flora and fauna, as well as natural beauty and beautiful scenery. Around them extensive reed communities are developed, which offer valuable refuge to wild fauna. Moreover, the lakes ensure the water supply and irrigation of the surrounding area are ideal for fishing and recreation, also having scientific and educational interests. Many interesting plants comprise the flora of the site. The endangered aquatic species *Cladium mariscus* has been found at the south side of the lake Trichonida. This site is also an important resting area for migratory waterfowl, whereas its value as a breeding area has so far not been verified.

Site Name: OROS ARAKYNTHOS KAI STENA KLEISOURAS



Sitecode: GR2310010 **Type**: B

Longitude: 21° 26′ **Latitude**: 38° 28′

Administrative Region: Dytiki Ellada **Prefecture**: Aitoloakarnania

Altitude (m): 516 **Area (ha)**: 13327 **Length**: -

Description: The site consists of large cliffs on the southwestern flanks of a largerly forested mountain which borders the wetlands of Aitoliko-Mesolongi. It is an ecological connection of the wetland with the continental mountainous area. The topography of this site is unusual. There are precipitous rocks, gorges and slopes of high altitude which act as refuges for many birds, especially raptors. A plant species of a priority for the EEC Directive 92/43 is also housed, *Centaurea niederi* which is distributed in Greece only on Mt. Arakynthos and the rocky slopes of the surrounding hills of Mavra Vouna, at the forest of Strofilia and the marshes of Lamia in NW Peloponnisos. The presence of some remnant clusters of deciduous oaks with dominant species *Quercus ithaburensis* ssp. *macrolepis* should also be mentioned.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Centaurea niederi.*

Animal species: *Bombina variegata, Testudo hermanni.*

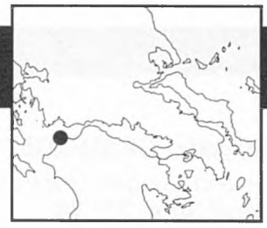
Other important species: — Flora: 1B
— Fauna: 3C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 230, 301 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: This site is important because it consists of large cliffs (at the southwestern flanks of a largely forested mountain) which border the wetlands of Aitoliko-Mesolonghi. These cliffs together with the wetland are ecologically connected and they could be considered as a whole. There is also a special avifauna occurring here along with *Centaurea niederi*, an important plant species with a very restricted distribution.
This site is classified among EU Important Bird Areas, mainly due to the occurrence of threatened and rare birds of prey together with other considerable bird taxa. Concerning birds of prey, the most important parts of the site are the southern and southwestern slopes of Mt. Arakynthos as well as the Kleisoura gorge, since these areas neighbour the extensive wetland system of Aitoliko, Mesolongi and the Evinos river estuary, which constitute hunting areas of high productivity for these birds. The aesthetic value of its impressive landscape is also very high and hence the site must be protected from any human activity (quarries, waste, disposal, industrial installations at the borders of the site, etc.) which could possibly negatively affect its peculiar morphology or its special habitats and taxa. This site could be promoted as an area of great aesthetic and ecological value.

Site Name: LIMNOTHALASSA KALOGRIAS, DASOS STROFILIAS KAI ELOS LAMIAS



Sitecode: GR2320001 **Type**: K

Longitude: 21° 22′ **Latitude**: 38° 10′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 125 **Area (ha)**: 7093 **Length**: -

Description: The site is located in NW Peloponnisos and occupies a coastal zone of about 22 km in length and with an average width of 1500 m. It is a compound coastal ecosystem, that includes the lagoons of Prokopos and Kalogria (or Pappas), the Lamia marshes, as well as the forest of Strofilia. Most of the area studied lies on sand-dune formations, while an area of about 1200 ha (c.16%), the hill Mavra Vouna, a small area near the place Kounoupeli and a small area to the east of the Kalogria lagoon are all composed of hard limestone. Behind the dunes nearly all the eastern part of the area is covered with clay deposits with depths of a few centimetres to more than 2 m. The soil of the seashore consists of unconnected single-grained medium and fine sized sand with a very small amount of silt. The material is rich in calcium. The soils in the *Pinus halepensis* forest have a sandy to loamy-sand texture with 4-16% of silt plus clay with a humus rich surface layer. Typical characteristics of these soils are their high pH (7.5-8.3) and their high content of free calcium and other carbonates (up to 40%). The soils of the *Pinus pinea* and *Quercus macrolepis* zone show two horizons. This site presents a large variety of biotopes and vegetation types such as: forests, sandy beaches and dunes, salt and freshwater wetlands and wet meadows, hydrophilous natural hedges and bushes, phrygana as well as nitrophilous vegetation. The forest consists mainly of *Pinus halepensis, P. pinea* and *Quercus macrolepis*. We observe a successional pattern of the main vegetation types starting with *Juniperus phoenicea* in the outer zone towards the sea, continuing with *Pinus halepensis* and *P. pinea* and terminates with *Quercus macrolepis* in the inner zone. Bushes with *Pistacia lentiscus, Myrtus communis, Quercus coccifera, Juniperus phoenicea, Erica manipuliflora* etc., occupy a significant area of the forest as well as the surrounding hills.

Habitat types: Mudflats and sandflats not covered by seawater at low tide, Lagoons, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Salicornia and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Salt steppes (Limonietalia), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria*, Mediterranean temporary ponds, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Centaurea niederi.*

Animal species: *Rhinolophus ferrum-equinum, Myotis blythi, Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Caretta caretta, Elaphe quatuorlineata, Elaphe situla, Aphanius fasciatus, Valencia hispanica.*

Other important species: — Flora:
— Fauna:

Impacts/Activities: — Positive: 163 (IN)
— Neutral: -

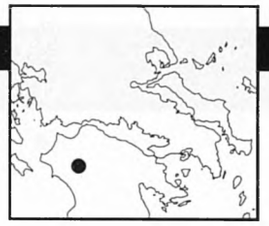
Site Name: LIMNOTHALASSA KALOGRIAS, DASOS STROFILIAS KAI ELOS LAMIAS (cont.)

— Negative: 100, 120, 140, 165, 167, 200, 230, 243, 300, 505, 610, 623, 701, 710, 720 (IN)

Protection Status: — National and Regional level: -
— International level: Ramsar Convention site, IBA

Significance: The forest ecosystem of Strofilia is of great ecological interest because it is the most extensive *Pinus pinea* forest in Greece and one of the biggest in Europe. The non-forest ecosystems such as sandy hills, fresh- and salt-water wetlands wet meadows and sandy beaches are also of significance. In spite of human activities a significant part of the sand-dunes is in good ecological condition. *Centaurea niederi* which is a plant listed in Annex II of the Council Directive 92/43/EEC and the Bern Convention, is a rare local Greek endemic, which grows on calcareous rocks in the Kalogria area (hill Mavra Vouna). In addition, the sandy beach, especially in the northern part of the site, has been reported as an egg laying area of the sea turtle *Caretta caretta*, which is a priority species of the Directive 92/43/EEC and "Endangered" according to the Greek Red Data Book. The examined area is a natural ecological laboratory for education and research for students, school pupils and academics.

Site Name: OROS CHELMOS KAI YDATA STYGOS



Sitecode: GR2320002 **Type**: E

Longitute: 22° 12′ **Latitude**: 37° 58′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 1391 **Area (ha)**: 17653 **Length**: -

Description: Mt. Chelmos is located in Northern Peloponnisos and is characterized by a variety of geological substrata and soil types (conglomerates, limestones of Olonos-Pindos zone, flysh). The main elements of its "wild" landscape include: well forested slopes of the Meso-and Surpa-Mediterranean vegetation zone with *Abies cephalonica* and *Pinus nigra* ssp. *pallasiana* forests, steep calcareous cliffs, the Mavrolimni lake (2050 m) of glacier origin (this is the only "alpine" lake of Peloponnisos) and the impressive Styx valley associated with a small, wet cave and a waterfall at its base. Erosion of limestone has mainly contributed to the formation of a strong relief with steep calcareous cliffs and screes. The closed, dense grasslands with *Trifolium parnasii* (Trifolion parnasii) and *Alopecurus garardi* of the Mountain-and Oro-Mediterranean vegetation zones participate in the formation of a vegetation complex clearly differentiated into four major vegetation types (open stepped grasslands, calcareous cliffs, calcareous screes and dense, closed grasslands). Forests of good structure characterized by a more diverse flora present on the eastern slopes of Mt. Chelmos compared with the northern slopes.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Eu-mediterranean greek calcareous cliffs, Caves not open to the public, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests, Pallas's pine forests.

Plant species: *Globularia stygia.*

Animal species: *Rhinolophus blasii, Lutra lutra, Salmo macrostigma, Barbus meridionalis.*

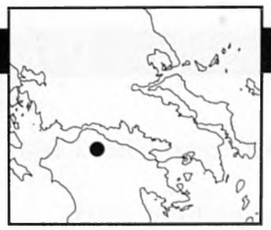
Other important species: — Flora: 93B, 1C, 75D
— Fauna: 2A, 28B, 23C, 19D

Impacts/Activities:
— Positive: 163 (IN)
— Neutral: 160 (IN)
— Negative: 100, 120, 140, 167, 180, 230, 240, 250, 720, 900 (IN) / 100, 120, 140, 180, 230 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The concentration of a high number of Greek and local endemics (127 and 14 species respectively), many of which belong to one of the IUCN Red Data Book categories, in addition to a species belonging to the priority species listed on Annex II of Council Directive 92/43/EEC, contributes to the promotion of the ecological value of this landscape which is also characterized by geomorphological features of special interest and importance.

Site Name: FARANGI VOURAIKOU



Sitecode: GR2320003 **Type**: B

Longitute: 22° 10′ **Latitude**: 38° 05′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 550 **Area (ha)**: 2167 **Length**: -

Description: Vouraikos gorge is situated in the northern part of Peloponnisos. The Vouraikos river, which has shaped this steep-sided, deep gorge flows from the mountains of Kalavryta. The gorge begins about 3 km south of the village of Kato Zachlorou and runs parallel to the river, which enters the sea close to the coastal city of Diakofto. A railway leading from Diakofto to Kalavryta runs through the gorge. Many streams enter the river, along its course, the main one being Avrigiolaka, which flows from the village of Mamousia. The gorge is very narrow in several places, while in others it is wider. The main rock substrate is conglomerate, but limestone also occurs in several places. Of great importance to the wild flora and fauna are the steep conglomerate slopes of the ravine. A forest with the endemic conifer species *Abies cephalonica* grows mainly on the higher eastern slopes of the gorge. Areas sparsely covered by *Abies cephalonica* also occur on the western slopes. At lower altitudes, shrubs of *Pistacia lentiscus, Juniperus oxycedrus, Phillyrea latifolia, Quercus coccifera* etc. as well as phrygana with the dominant species *Phlomis fruticosa*, can be found. Around the village agricultural fields with *Castanea sativa* can be observed. At the bottom of the gorge by the riverside, there are stands of *Platanus orientalis* mixed with a few trees of *Salix alba, S. fragilis* and *Ulmus minor*. The presence of the genus *Viola* is an indicator of healthy structure of this ecosystem. Arborescent vegetation is present with *Quercus ilex* dominating. On the vertical limestone or conglomerate cliffs of the gorge, the endemic species *Aurinia moreana, Asperula arcadiensis* and *Campanula rupestris* grow. An extensive *Pinus halepensis* forest occurs in the northern half of the gorge. In several places maquis with *Pistacia lentiscus, P. terrebinthus, Cercis siliquastrum, Arbutus unedo* and *A. adrachne*, etc. interposes.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Caves not open to the public, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo marginata, Elaphe situla, Barbus meridionalis, Eriogaster catax, Callimorpha quadripunctata.*

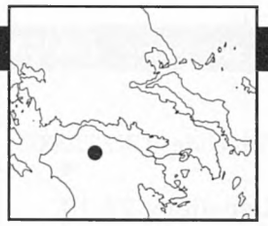
Other important species: — Flora: 17B, 2D
— Fauna: 2A, 8B, 24C, 11D

Impacts/Activities:
— Positive: -
— Neutral: 501, 507, 622, 624 (IN)
— Negative: 100, 120, 140, 180, 230, 490, 503, 508, 701, 900, 943 (IN)

Protection Status:
— National and Regional level: Game refuge.
— International level: IBA.

Significance: Vouraikos gorge is of great ecological interest because of the large diversity in the flora and fauna found here.

Site Name: AISTHITIKO DASOS KALAVRYTON



Sitecode: GR2320004 **Type**: C

Longitute: 22° 06′ **Latitude**: 38° 02′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 1153 **Area (ha)**: 1750 **Length**: -

Description: Macchia vegetation, *Abies cephalonica* forests, phrygana communities, grasslands and plantations with *Pinus nigra* ssp. *pallasiana* and *Robinia pseudoacacia* constitute the vegetation complex of the examined landscape. Great surfaces of previously cultivated land have been abandoned and progressive succession of vegetation communities has already been started (meadows and phrygana). This is a site where alternate topography is observed and the above mentioned vegetation types are intermixed and give a special character to this landscape.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Pallas's pine forests.

Plant species: -

Animal species: *Testudo hermanni, Elaphe quatuorlineata, Elaphe situla, Eriogaster catax.*

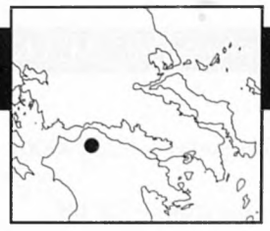
Other important species: — Flora: 2B, 1D
— Fauna: 25B, 11C, 12D

Impacts/Activities: — Positive: 163 (IN)
— Neutral: 100 (IN) / 100, 502 (AR)
— Negative: 140, 180, 230 (IN) / 140, 230 (AR)

Protection Status: — National and Regional level: Aesthetic Forest
— International level: IBA

Significance: The protective role of this site (including the forests), the aesthetic and tourist value, as well as its historical importance, contribute to the reasons for its conservation and preservation.

Site Name: ORI MARMPAS KAI KLOKOS, FARANGI SELINOUNTA



Sitecode: GR2320005 **Type**: B

Longitude: 22° 02′ **Latitude**: 38° 09′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 939 **Area (ha)**: 6113 **Length**: -

Description: The studied site is located in the northern part of Peloponnisos, south of the town of Aigio. It includes the mountains of Marmpas (Barmpas or Chionistra) and Klokos, the steep slopes of the gorge of the Selinountas river which flows between them, as well as the riverside ecosystem. Mt. Marmpas has an altitude of 1615 m and is the south-eastern section of Mt. Panachaiko. It is characterized by a variety of geological substrates such as alpine sediments, limestone, argilic shistolith and flysh, as well as deposits of argilic elements, conglomerates, pebbles, etc. The vegetation at its lower altitudes is influenced by human activities (mainly olive groves). On the eastern slope of the mountain, *Pinus halepensis* forest and maquis extend up to an altitude of about 800-900 m. In the higher altitudes of this side, a few scattered *Abies cephalonica* trees grow, while the upper part of the mountain is characterized by bare limestone rocks. Steep slopes occur at the lower eastern part of the mountain by the sides of the Selinountas river (Selinountas gorge). Mt. Klokos (or Fteri) is a small isolated mountain with a maximum altitude of 1779 m and several other peaks. It is characterized by the same geological susbstrates as Mt. Marmpas. On its lower northern part, agricultural land exists covered mainly by olive trees. North of the monastery of Agioi Taxiarches an extensive *Pinus halepensis* forest grows covering the majority of the northern and western part of the mountain up to an altitude of 800-900 m.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Caves not open to the public, *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Lutra lutra, Elaphe situla, Barbus meridionalis.*

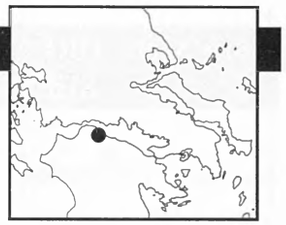
Other important species: — Flora: 7B, 1C, 2D
— Fauna: 1A, 3B, 10C, 1D

Impacts/Activities: — Positive: 166 (IN)
— Neutral: 507, 622, 624 (IN)
— Negative: 100, 120, 140, 180, 230, 502, 530, 701, 900, 943, 973 (IN)

Protection Status: — National and Regional level: -
— International level: IBA.

Significance: Although there has not been a complete floristic survey of the studied area, seven Greek endemic species have been recorded. Among these plants the most important are: 1) *Aurinia moreana* which grows on mountains of N. Peloponnisos, 2) *Crepis incana* and *Campanula topaliana* ssp. *cordifolia*, which are Peloponnesian endemics, and 3) *Asperula arcadiensis* which has a limited distribution area in Northern Peloponnisos and Sterea Ellada.
The site is an EU Important Bird Area since it maintains a considerable avifauna. The colony of the Griffon Vulture (*Gyps fulvus*) is the only one present in Peloponnisos.

Site Name: ALYKI AIGIOU



Sitecode: GR2320006 **Type**: B

Longitude: 22° 06′ **Latitude**: 38° 15′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 1 **Area (ha)**: 20 **Length**: -

Description: The site is a small triangular area at the cape Gyftissa near the town of Aigio, in the Gulf of Korinth. It comprises a small coastal lagoon, temporarily drying out in summer, which is surrounded by reeds and saltmarsh vegetation. Reed communities with *Phragmites australis* cover a significant area, mainly at the east and north part of the lagoon. Close to the reed belts, stands with *Scirpus maritimus* are observed mainly on its north and northwest side. At its southern part, a narrow zone with *Phragmites australis* is developed between the lagoon and the road that separates the site from the neighbouring cultivated area. At the margins of the road clusters of *Arundo donax, Eleagnus angustifolius* and *Tamarix* sp. are observed. A small degraded cluster of *Tamarix* also occurs at the southern part of the site. Salt marshes with *Juncus acutus, J. maritimus, Limonium vulgare, L. angustifolium, Arthrocnemum fruticosum, Inula crithmoides, Aster tripolium,* etc. are developed mainly at the north and east sides of the lagoon. In the eastern parts of the site, the small sandy beach (width of the sandy zone = 20 m) is colonized by the plant association Agropyretum mediterraneum. From the sea inland, the vegetation is successional and we have a mixture of ammophilous species with species of brackish water (wet meadows with *Juncus* sp.), a pure zone with *Juncus acutus, J. maritimus* and *J. heldreichianus* and an extensive reed belt. The aquatic vegetation with submerged and free-floating leaved species, covers a large area of the water of the site and is composed of *Myriophyllum spicatum* and *Ruppia cirhosa*.

Habitat types: Lagoons, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs, Salt steppes (Limonietalia), *Salix alba* and *Populus alba* galleries.

Plant species: -

Animal species: -

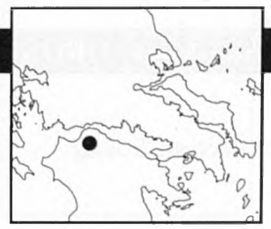
Other important species: — Flora: -
— Fauna: 1B, 9C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 230, 421, 502, 690, 701, 710, 920 (IN) / 100, 120, 402, 623

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: The site, in spite of its small size, constitutes a very important ecosystem, gathering all the main characteristics of a typical wetland. The reed belts and saltmarshes are in a good state and from an ornithological point of view they are very significant, because they offer refuge to migrating waders. The wetland of Alyki, although rather small, is of high ornithological importance, especially as a staging area for migratory birds. 209 taxa have been observed so far visiting the area during the winter and spring. Among them are ducks, pochards, coots, herons, ibises, waders and sometimes even swans and flamingos. Some of the species recorded are threatened in Greece. This species diversity, which is the highest among the Peloponnesian wetlands, combined with the facility of bird observation, make the Alyki salt-marsh a remarkable area for scientific, educational and recreational purposes.

Site Name: OROS PANACHAIKO



Sitecode: GR2320007 **Type**: B

Longitude: 21° 52′ **Latitude**: 38° 12′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 1363 **Area (ha)**: 12170 **Length**: -

Description: Mountain Panachaiko is located in the north-western part of Peloponnisos, east of the city of Patras. It is characterized by a multifarious relief, with several peaks, the highest of which is Voidias with an altitude of 1926 m. This mountain is north-south oriented and consists of a representative part of the Olonos-Pindos geotectonic zone. For this reason, the mass of Mt. Panachaiko is characterized by a variety of geological substrates and soil types such as alpine sediments of large width, limestone, argilic schistolith and flysh, which are strongly depressed. Even more depositions of the Pliocene-Quaternary age constisting mainly of argilic elements, conglomerates, pebbles, etc., characterize the area. The vegetation of several places in the lower altitudes is influenced by human activities (agricultural fields and pastures). The presence of maquis at the roadsides and the borders of the fields show the predominance of this type of vegetation in this area during previous years. At the places where the shruby vegetation is sparser, phrygana with species *Phlomis fruticosa, Coridothymus capitatus, Cistus salviifolius, Micromeria juliana, Sarcopoterium spinosum*, etc. grow, while in the reclaimed areas, phrygana occur with the dominant species being *Phlomis fruticosa*. The coniferous forests with the endemic species *Abies cephalonica* mainly grow on the larger part of lower eastern area of the site, as well as on the lower southern part. Smaller areas sparsely covered by *Abies cephalonica* also occur on the western slopes. The *Abies cephalonica* forest is characterized by good structure mainly at the south-eastern part of the site above the village of Krini and westwards of the peak of Barbas, where it is noteably dense while in the other places it is more sparse. The degradation of *Abies* forest is a consequence of intense erosion and grazing. Above the forest zone, spiny vegetation (*Astragalus angustifolius, A. depressus* etc.) dominates. In these zones erosion of limestone has mainly contributed to the formation of a strong relief with steep calcareous cliffs and screes. Dense grasslands of the Mountain- and Oro-Mediterranean vegetation zones participate in the formation of a vegetation complex clearly differentiated into four major vegetation types: open stepped grasslands, calcareous cliffs, calcareous screes and dense closed grasslands. The degraded vegetation accompanied by bare ground describes the main appearance of the landscape in the higher part of the mountain. This bare ground shelters a great amount of the endemic flora of Mt. Panachaiko and is floristically the most important area of this mountain.

Habitat types: Endemic oro-mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Testudo hermanni, Testudo marginata, Emys orbicularis, Elaphe quatuorlineata, Elaphe situla.*

Other important species: — Flora: 43B, 1C, 21D
— Fauna: 3A, 23B, 23C, 5D

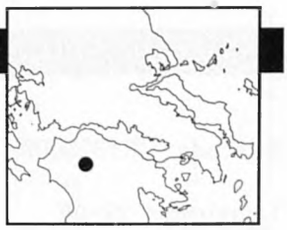
Impacts/Activities: — Positive: -
— Neutral: 624, 900 (IN) / 100 (AR)
— Negative: 100, 120, 140, 167, 180, 230, 502, 943 (IN)

Site Name: OROS PANACHAIKO (cont.)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: From a floristic point of view, the major importance of Mt. Panachaiko lies in the presence of many endemic plants. Although there has not been a complete floristic survey from this mountain, 43 endemic taxa have been recorded as occurring there. Seven of these are Peloponnesian endemics. Many of them also have a limited distribution in Peloponnisos, Ionian Islands and Stera Ellas. The occurrence of many important habitats, such as steep calcareous cliffs and screes, stepped garland, grasslands forest of the endemic *Abies cephalonica* etc., is characteristic of this mountain. The non-bird vertebrate fauna which has been recorded at this site is quite variable.

Site Name: OROS ERYMANTHOS



Sitecode: GR2320008 **Type**: B

Longitude: 21° 51′ **Latitude**: 37° 59′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 1610 **Area (ha)**: 19376 **Length**: -

Description: The mountain range of Erymanthos is the highest one of an extended mountainous area in NW Peloponnisos, consisting of several peaks and characterized by a multifarious relief with many springs, valleys, plateaus and gorges. From the springs of the Olonos summit, two small rivers are formed crossing the two biggest gorges of Mt. Erymanthos. These gorges are very impressive from an aesthetic point of view, as the landscape presents several spectacular waterfalls. The Erymanthos mountain range belongs to the Olonos-Pindos geotectonic zone and the geological substratum is composed of plate limestones with layers of ceratolith and flysch. The contact of the calcareous rocks with the waterproof schists is the main reason for the existence of many springs occurring at altitudes higher than 1500 m. The conifer forests with *Abies cephalonica* occurring on the largest part of the northern slopes of Mt. Erymanthos, are characterized by good structure and dense stands up to 1800-1900 m, whilst on the western slopes extended calcareous cliffs are present. The southern slopes are covered by *Abies cephalonica* and *Juniperus foetidissima* stands up to lower altitudes (1600-1700 m) and, as a consequence of intense erosion and grazing, the degradation stages of vegetation accompanied by bare rocky ground give the main appearance of the landscape.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Oriental plane woods (Platanion orientalis), Mediterranean pine forests with endemic Mesogean pines, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Testudo marginata, Callimorpha quadripunctata.*

Other important species: — Flora: 49B, 38D.
— Fauna: 1A, 15B, 14C, 6D.

Impacts/Activities:
— Positive: -
— Neutral: 400, 500 (AR)
— Negative: 100, 140, 180, 230, 501, 900, 954 (IN) / 100, 140 (AR)

Protection Status:
— National and Regional level: Game breeding station, Game refuge.
— International level: -

Significance: The importance of the mountain range of Erymanthos lies in the presence of many endemic plants. Although less than those on the other high mountains of Peloponnisos, well conserved coniferous forests with *Abies cephalonica* and *Juniperus foetidissima* at the mountainous altitudinal levels, as well as well preserved habitats of the Mountain- and Oro-Mediterranean zones (1600-2221 m) are present, along with open stepped garland grasslands, dense, closed chionophilous grasslands, calcareous cliffs and screes. The occurrence of eight Peloponnisian endemics on Mt. Erymanthos must be pointed out. Due to the fact that no species is known to be singly endemic to Mt. Erymanthos, we have to mention the lack of complete floristic and vegetation research from all Erymanthos.

Site Name: SPILAIO KASTRION



Sitecode: GR2320009 **Type**: E

Longitude: 22° 08′ **Latitude**: 37° 57′

Administrative Region: Dytiki Ellada **Prefecture**: Achaia

Altitude (m): 895 **Area (ha)**: 307 **Length**: -

Description: From a geological point of view, the area is mainly characterized by limestone. Flysch and alluvial formations also occur but to a lesser extent. The area is more or less even with small inclinations surrounded by the abrupt hill formations of Mt. Aroania. Formations of evergreen broad-leaved species cover most of the area, with the dominant species being *Quercus coccifera* and *Juniperus oxycedrus* and phrygana communities with species such as *Sarcopoterium spinosum* and *Phlomis fruticosa*. These are degraded communities due to human activities observed in the area. Abandoned fields are noticable and here the phrygana and macchia vegetation gradually develop in a process of natural succession.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: -

Animal species: *Rhinolophus mehelyi, Rhinolophus ferrum-equinum, Myotis blythi, Miniopterus schreibersii, Myotis myotis.*

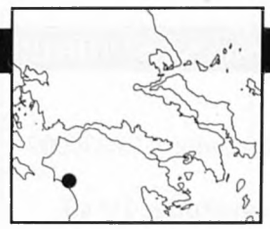
Other important species: — Flora: 12B.
— Fauna: 23B, 5C, 10D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 120, 140, 170, 230, 624, 690, 900, 943 (IN) 100, 120, 140, 170, 230, 624, 626, 690, 900, 910, 942, 943 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The evergreen sclerophylous vegetation of the area in combination with the occurrence of the Castria cave, make the area of a significant ecological, ecotourist and educational importance. Therefore, the protection and conservation of *Abies cephalonica* forest as a main element of this site is required.

Site Name: EKVOLES (DELTA) ALFEIOU



Sitecode: GR2330001 **Type**: E

Longitude: 21° 27′ **Latitude**: 37° 37′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): 50 **Area (ha)**: 4957 **Length**: -

Description: The Alfeios belongs to the arcuate morphodynamic type. It is wave dominated and its substrate consists of Holocene alluvials, clays, sands, conglomerates, etc., over which the following vegetation types are met:
- Sand - dune vegetation which is strongly degraded.
- Halophytic vegetation which is located in the inner part and suffers from overgrazing.
- Humid grasslands in areas not close to the river banks.
- Reed-beds in the areas near the river lands.
- Shrubs with *Tamarix* species near the river bank.
- Vegetation along the river banks with *Salix* sp., *Alnus* sp., *Platanus* sp., etc. The presence is limited at the delta and stretches towards the dam area. This vegetation type is seriously degraded in other areas.
- Phrygana vegetation which covers very small areas.
- The presence of *Pinus halepensis* stands is limited.
- *Pinus pinea* representatives are present.
- Agriculture is the dominant land use at this site.

Habitat types: Estuaries, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Aegean phrygana (*Sarcopoterium spinosum*), *Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Lutra lutra, Emys orbicularis, Elaphe situla, Rutilus alburnoides, Phoxinellus* spp., *Barbus meridionalis, Valencia hispanica.*

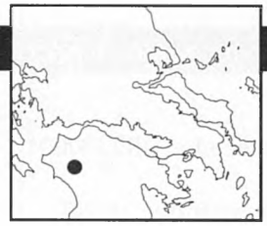
Other important species: — Flora: 2B, 3D.
— Fauna: 1A, 2B, 4C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 120, 140, 167, 180, 300, 401, 421, 801, 900, 952 (IN) 180, 230, 502, 890 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The Alfeios river is the largest river of Peloponnisos and its delta is an important part of the wetland chain of W. Greece. The edges of the delta and the vegetation covered areas are under constant pressure from low levels of sedimentation, so the site as a whole is under a state of continuous degradation due to human activities.

Site Name: OROPEDIO FOLOIS



Sitecode: GR2330002 **Type**: B

Longitude: 21° 43′ **Latitude**: 37° 46′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): 425 **Area (ha)**: 9723 **Length**: -

Description: The main vegetation type is forests of *Quercus frainetto* covering an area of 3917 ha. On the westerly exposed sites, *Q. frainetto* is found mixed with *Pinus halepensis* while at the edge of the forest it is mixed with evergreen broad-leaved species, which also represent its understorey (shrub understorey). The absence of natural regeneration is quite characteristic together with illegal tree-felling and the presence of a mosaic of cultivated and grazed land. The parasitic plant species *Loranthus europaeus* has been observed in this site. The woodlands of the studied site also contain a seed producing population of *Pinus nigra* species. The *Pinus halepensis* woods cover an area of 1231 ha from lower altitudes up to 700m and are used by farmers for resin collection. Their understorey is composed of evergreen broad-leaved species. In the lower altitudes some parts of the formations, which had previously experienced fires, are now at the stage of natural regenaration. The presence of macchie vegetation is uniform in small limestone area and occurs as an understorey of *Pinus halepensis* and in the lower part of *Quercus frainetto* formations. The area around the human habitations is occupied by phrygana, abandoned fields and wooded areas. Cultivated land covers areas around the buildings but also forests of *Quercus frainetto* where they originated from fires, trangression and tree-felling.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Quercus frainetto* woods, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Lutra lutra, Elaphe quatuorlineata.*

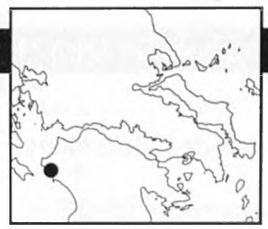
Other important species: — Flora: -
— Fauna: 1A, 2B, 5C.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 167, 180, 230, 243 (IN) / 180, 243 (AR)

Protection Status: — National and Regional level: -
— International level: IBA.

Significance: Clusters of saplings prevent soil erosion and positively affect the area. The forests of the area are within the drainage basin of the Erymanthos and Pineios rivers and help to protect the soil, the cultivated areas and the archaeological site. The oak forest and the *Pinus halepensis* forest occupy the larger part of the site. Macchie vegetation is limited. We consider that the protection of the habitat of *Quercus frainetto* in this ecologically sensitive region, which is threatened by a retreat from its natural distribution area in Greece and by extinction from Peloponnisos, will constitute an important measure, contributing to the conservation of the structure and functions of the Mediterranean ecosystems.

Site Name: EKVOLES (DELTA) PINEIOU



Sitecode: GR2330003 **Type**: B

Longitude: 21° 14′ **Latitude**: 37° 49′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): 1 **Area (ha)**: 970 **Length**: -

Description: This site is a Holocene delta. Its morphodynamic type, due to the decrease of river discharge and in relation to the increase in wave energy, is classified as birdfoot. The supply of the mixed river materials is quite important. The dunes existing in the area can be divided into two zones. The first is composed of lowland almost flat dunes (0.7-1 m height and 28-30 m width) with 20%-40% of their surface covered by vegetation, and the rest by plant remnants and humus. The second zone has a higher altitude (6-7 m) with dominant plants being *Ammophila arenaria* and *Medicago maritima*. Behind this area there is scrub vegetation (e.g. *Vitex agnus castus, Quercus coccifera, Sarcopoterium spinosum* etc). In order to limit the extension of this type of dunes and protect the nearby cultivated land, an artificial wood composed of *Pinus halepensis, Acacia* sp., *Nerium oleander, Gleditsia triakanthos* etc. was planted. Along the river banks the vegetation mainly consists of *Phragmites australis, Typha* spp., and *Salix alba*.

Habitat types: Estuaries, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Lutra lutra, Elaphe quatuorlineata, Rutilus alburnoides, Phoxinellus* spp., *Barbus meridionalis, Barbus capito, Valencia hispanica.*

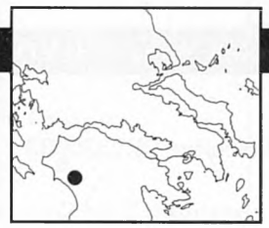
Other important species: — Flora: -
— Fauna: 4A, 2B, 16C.

Impacts/Activities:
— Positive: -
— Neutral: 403, 690 (IN) / 502 (AR)
— Negative: 100, 120, 130, 140, 163, 230, 300, 421, 422, 701, 803, 870 (IN) 100, 120, 130, 163, 401, 419, 490, 501 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The importance of this site is mainly due to the existing dunes, the aesthetic value of the artificial wood and the existing remnants of riparian forest stands along the river banks. The diversity of the local fauna is also notable.

Site Name: OLYMPIA



Sitecode: GR2330004 **Type**: B

Longitude: 21° 37′ **Latitude**: 37° 38′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): 130 **Area (ha)**: 317 **Length**: -

Description: This site is not characterized by ecological variability as the natural environment of this site has been under human influence since ancient years. However, the landscape of the examined site consists of a complex mosaic of natural, semi-natural, and agricultural units. Refering to the vegetation of the area, one can notice the occurrence of pine forests, phrygana and macchie and olive trees, vineyards, orchards and other types of cultivated land, pastures and rocky areas.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo hermanni, Elaphe quatuorlineata.*

Other important species: — Flora: -
— Fauna: 14B, 6C, 2D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 140, 230, 243, 400, 690, 710 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: This site is not characterized by rare and endemic plant taxa or interesting vegetation types. Rather its importance is due, apart from the archaeological monuments, to the interesting fauna occurring there. The reason for this is the landscape variability.

Site Name: THINES KAI PARALIAKO DASOS ZACHAROS, LIMNI KAIAFA



Sitecode: GR2330005 **Type**: E

Longitude: 21° 36′ **Latitude**: 37° 30′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): 145 **Area (ha)**: 3127 **Length**: -

Description: The described site is a coastal zone located in the southern part of the Ileia Prefecture and compises the *Pine* forest of Strofilia, the lake Kaiafa, the dunes extending between the drained lake Agoulinitsa and the village Kakovatos, the hill Elliniko (or Stavros), the archaeological site of Kaiafa area, the caves of Anygrides Nymphes, and the curative spring of Kaiafa. The dunes occurring at the beach of Kaiafa form two parallel lines. The first one has a distance of 30 m from the sea, a height of 1.5-2 m and consists of the plant community Agropyretum mediterraneum. The second line is 12 m in height and Greek fixed dunes with *Euphorbia terracina* and *Silene nicaensis* are developed there. At the beach between Kaiafa and Zacharo are developed dunes with an average width of 150-200 m and average height 7-10 m, with the plant community of *Ammophila arenaria*. Behind them Greek fixed dunes are again developed. The forest of Strofilia consists mainly of *Pinus halepensis* and *Pinus pinea*, and is unique in shape and size. Some clusters of *Platanus orientalis* and *Ceratonia siliqua* as well as bushes of *Juniperus phoenicea, Quercus coccifera, Pistacia lentiscus, Myrtus communis, Cercis siliquastrum, Arbutus unedo, Erica manipuliflora* and *Phillyrea latifolia* etc. cover a significant area. The lake Kaiafa is a natural water ecosystem, a significant wetland with an area of 200 ha. It is located behind the forest and is connected to the sea by a canal. Around the lake dense and extensive aquatic associations with *Phragmites australis* and the endangered species *Cladium mariscus* are developed. Close to the reed belts, stands of Scirpetum maritimi occur.

Habitat types: Mudflats and sandflats not covered by seawater at low tide, Annual vegetation of drift lines, Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Dunes with *Euphorbia terracina*, Natural euthropic lakes with Magnopotamion or Hydrocharition type vegetation, *Juniperus phoenicea* arborescent matorral, Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo hermanni, Mauremys caspica, Caretta caretta.*

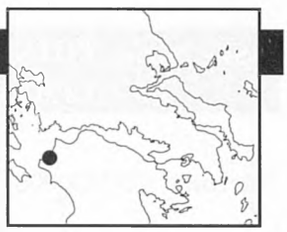
Other important species: — Flora: 2D.
— Fauna: 1B, 5C, 1D.

Impacts/Activities:
— Positive: -
— Neutral: 502, 503 (IN)
— Negative: 100, 120, 140, 180, 200, 230, 490, 608, 623, 690, 701, 720, 802, 870, 973 (IN) / 100 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: -

Significance: The combination of coastal forest, dunes and lake in the area site consists an important and complex ecosystem with a rich flora and fauna. At the beach between Kaiafa and Zacharo, dunes in good conservation status are developed.

Site Name: LIMNOTHALASSA KOTYCHI



Sitecode: GR2330006 **Type**: J

Longitude: 21° 18′ **Latitude**: 38° 00′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): 1 **Area (ha)**: 6302 **Length**: -

Description: Kotychi (or Neophytos) is a brackish coastal lagoon situated some kilometres to the north of the cape of Kyllini. It covers an area of approximately 800 ha and is the largest lagoon remaining in the western Peloponnisos after the drainage of the Agoulinitsa lagoon. Its surface presents strong seasonal fluctuations (710-850 ha) depending on the annual rainfall. Kotychi is a shallow lagoon with a depth of 30-40 cm. It is fed by considerable quantities of fresh water input from several small streams and torrents, the largest of these being Brantzeleiko, Gouvos, Sykias and Trikokkia. These streams enter the lagoon mainly in its southern and eastern sides. At the centre of its western side there is an opening almost 30m in width, which links the lagoon with the Ionian Sea. The salinity of the water tends to be kept low and the depth of the water tends to be reduced due to the deposition of suspended matter brought into the lagoon by the streams. These streams are also used as main drainage ditches from the surrounding agricultural land. The soil of the area consists mainly of alluvial and lacustrine sedimentary deposits. The deeper layers are a mixture of sand, pebbles and cobles. The area surrounding the lagoon which is flooded during the winter has a pH higher than 7. Presently the majority of the surrounding area is agricultural land and only a narrow natural zone occurs around the lagoon. Ammophilous vegetation is limited to the narrow sandy zone on the western side which separates the lagoon from the Ionian Sea. In this zone dunes with the dominating species *Ammophila arenaria* develop mainly near the opening of the lagoon, as well as to the northwest of it.

Habitat types: Mudflats and sandflats not covered by seawater at low tide, Lagons, Embryonic shifting dunes, Mediterranean temporary ponds, *Juniperus phoenicea* arborescent matorral, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Salt steppes (Limonietalia), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Quercus macrolepis* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Lutra lutra, Caretta caretta, Elaphe quatuorlineata, Aphanius fasciatus, Valencia hispanica.*

Other important species:
— Flora: 1B, 3D
— Fauna: 1A, 4B, 20C

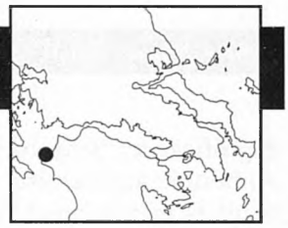
Impacts/Activities:
— Positive: -
— Neutral: 340 (IN)
— Negative: 100, 120, 140, 200, 230, 243, 701, 910, 950 (IN) / 100, 120 (AR)

Protection Status:
— National and Regional level: -
— International level: Ramsar Convention site, IBA

Site Name: LIMNOTHALASSA KOTYCHI (cont.)

Significance: Kotychi is the largest and the most significant lagoon occurring in the Peloponnisos. Although agricultural activitiy has been intensified around the Kotychi wetland, the wetland habitats themselves have not been significantly affected by such work. From an ornithological point of view, the lagoon has great ecological interest because it is the southernmost lagoon on the western migration route of many birds. For this reason it is a major resting station for migratory birds. The avifauna includes herons, egrets, bitterns, ibises, flamingos, pochards, ducks, terns, and waders as well as birds of prey (eagles, harriers) etc. many of which are threatened taxa in Greece. The flora of this lagoon includes the species *Halocnemum strobilaceum*, the populations of which are very degraded in Greece and must be protected. Also, the species *Cotula coronopifolia*, which has an interesting geographical distribution from a phytogeographical point of view. *Pancratium maritimum*, is a species whose populations have been reduced along the Greek coasts. Furthermore, the examined area consists a natural ecological laboratory for education and research and is also widely used for fishing.

Site Name: PARAKTIA THALASSIA ZONI APO KALOGRIA EOS KYLLINI



Sitecode: GR2330007 **Type**: E

Longitude: 21° 17′ **Latitude**: 38° 01′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): -10 **Area (ha)**: 4385 **Length**: -

Description: The site includes the coastal region extending from Kalogria beach to the Kyllini cape. The substrate is sandy and not very deep (max. depth 15 m), hosting the beds of *Posidonia oceanica*. Studies have shown that these sandy beaches are potential nesting areas of the Loggerhead Turtle *Caretta caretta*. The beach from Kalogria to Manolada is backed by a dune system with typical vegetation such as *Ammophila arenaria* and *Euphorbia paralias*. Further up the dunes, there is a strip of *Juniperus phoenicea, Pistacia lentiscus*, etc. After the dunes the coastal forest of Strofilia starts, which is gradually substituted by agricultural land. Further south, the beach is comprised of fine sand and is backed by low-lying dunes down to the mouth of Kotychi lagoon where the sandstrip becomes narrower. South of the lagoon the beach becomes too narrow and muddy, thus unsuitable for nesting.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Lagoons, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes).

Plant species: -

Animal species: *Tursiops truncatus, Caretta caretta.*

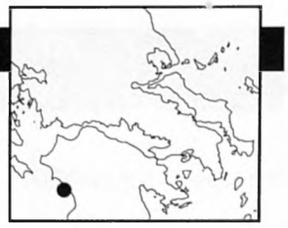
Other important species: — Flora: 1D.
— Fauna: 1C, 4D.

Impacts/Activities: — Positive:
— Neutral:
— Negative: 100, 200, 608, 710 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The *Posidonia oceanica* beds are extensive and have a high density of plants. This marine phanerogam is sensitive to pollution and hosts great numbers of both animal and plant organisms. Many epiphytic macroalgal species, and more than thirty species of gastropod use the leaves as substrate for their growth. The seagrass *Cymodocea nodosa* grows in the very shallow waters of the area. It consists the characteristisc vegetation of the lagoon and it replaces the *Posidonia oceanica* beds at the Kyllini harbour.

Site Name: THALASSIA PERIOCHI KOLPOU KYPARISSIAS



Sitecode: GR2330008 **Type**: E

Longitude: 21° 30′ **Latitude**: 37° 20′

Administrative Region: Dytiki Ellada **Prefecture**: Ileia

Altitude (m): -1 **Area (ha)**: 4910 **Length**: -

Description: This marine area expands from Cape Katakolo to Kyparissia town in western Peloponnisos. The substrate is sandy and the seabed is covered by fine-grained sand with scattered eroded calcareous rocks. Wide beaches of fine sand are backed by dunes along the coastline. The bay is not deep. Patches of *Cymodocea nodosa* in the shallows are followed by the beds of *Posidonia*. The latter are very well developed with high density population and robust plants. On the calcareous rocks a few species of macrophytes grow.

Habitat types: *Posidonia* beds.

Plant species: -

Animal species: *Caretta caretta*.

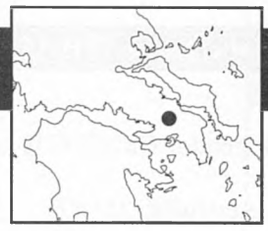
Other important species: — Flora: 1D.
— Fauna: 2C.

Impacts/Activities:
— Positive:
— Neutral: 220
— Negative: 590, 690 (IN) / 690 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The beds of *Posidonia* in the site are probably the best developed of all around Peloponnisos. They constitute an unseparable part of the marine ecosystem as they offer ground for fish to lay eggs, to find food and shelter. The marine phanoerogam *Posidonia oceanica* is a very good bioindicator of the ecological conditions of a marine environment. Additionally, the sea turtle *Caretta caretta* uses the *Posidonia* meadows for resting and feeding. Studies have shown that the adjacent sandy beaches of the bay are very important nesting areas for the loggerhead turtle *Caretta caretta*.

Site Name: LIMNES YLIKI & PARALIMNI - SYSTIMA VOIOTIKOU KIFISSOU



Sitecode: GR2410001 **Type**: B

Longitude: 23° 13′ **Latitude**: 38° 25′

Administrative Region: Sterea Ellada **Prefecture**: Voiotia

Altitude (m): 80 **Area (ha)**: 14000 **Length**: -

Description: The site contains the lakes Yliki and Paralimni and the springs Piges ton Chariton connected by the river Voiotikos Kifissos that runs into Yliki. The mountains around the lakes are basically bare. The rest of the surrounding area is part of the plain of the now drained lake Kopais and is cultivated land. Kifissos has been canalised where it drains the plain. Around Paralimni there are some small vineyards. Lake Yliki can be described as an oligotrophic lake. Before 1993, lake Paralimni could have been described with Parvapotamion, and not with Magnopotamion.

Habitat types: Oligotrophic waters containing very few minerals of West Mediterranean sandy plains with *Isoetes*, Mediterranean temporary ponds, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Vegetated calcareous inland cliffs with chasmophytic vegetation, Caves not open to the public, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Myotis myotis, Lutra lutra, Testudo hermanni, Testudo marginata, Emys orbicularis, Elaphe quatuorlineata, Elaphe situla, Scardinius graecus, Phoxinellus* spp., *Rutilus rubilio, Barbus capito, Unio crassus*.

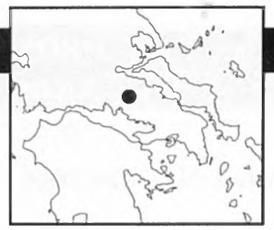
Other important species: — Flora: -
— Fauna: 2B, 14C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 120, 140, 200, 220, 230, 302, 701, 852, 853 (IN) / 402, 502 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: -

Significance: The area has 4 endemic species of fish: *Scardinius graecus*, endemic to the lakes; *Barbus graecus* endemic to the region; *Rutilus beoticus, Rutilus ylikiensis* endemic to Greece. *Barbus graecus* and *Rutilus ylikiensis* are considered locally threatened. Here lives a genetically differentiated population of the dice snace *Natrix tesselata*. Kifissos river is an important site for the presence of otters. The caves around the lake Yliki have an endemic species of Coleoptera, *Laemostenus vignai*. In the area around Orhomenos an endemic species of Orthoptera *Dolichopoda vandeli* is present. As a wetland the lakes are nowadays less important although they have some raptor species and are the southernmost nesting area of storks in Greece. The lake Paralimni was completely drained in 1993 due to the draught and a significant part of it is presently cultivated. The remaining underground water is pumped off for the irrigation of the nearby cultivations and also used for the water supply of Chalkida. Lake Yliki is used for the water supply of Athens and Paralimni for the water supply of Chalkida.

Site Name: ETHNIKOS DRYMOS PARNASSOU



Sitecode: GR2410002 **Type**: H

Longitute: 23° 30′ **Latitude**: 38° 31′

Administrative Region: Sterea Ellada **Prefecture**: Voiotia

Altitude (m): 1590 **Area (ha)**: 3513 **Length**: -

Description: The site includes the National Park of Parnassos with one part in Voiotia and the rest in Fokida Prefectures. The predominate climate is continental with a relatively cool yet dry summer period, rainy autumn and heavy winter, the latter lasting for many months. The highest rainfall occurs in November with August being the driest month. The mean annual rainfall is about 1000mm. There is also a considerable occurrence of hail storms which cause damages to the cultivations and the breeding animals. For at least two months per year the National Park is covered by snow, which lasts from December until March and can reach up to 4m above ground. The National Park of Parnassos has a core area of 3513ha (about 20% of the site) and does not include the highest peaks of the mountain (e.g. Liakoura, Gerontovrachos, etc.). The dominant species is *Abies cephalonica*, endemic greek fir, forming pure extensive stands. Some stands of *Pinus nigra* ssp. *pallasiana* can also be observed. In certain spots, the forest is being interrupted by smaller or larger gaps covered by shrubs.

Habitat types: Stepped and garland grasslands, Sub-continental steppic grasslands, Eu-mediterranean greek calcareous cliffs, Pioneer vegetation of rock surfaces, Subalpine and alpine tall herb communities.

Plant species: *Paeonia parnassica.*

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Myotis blythi, Myotis myotis, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo marginata, Lucanus cervus.*

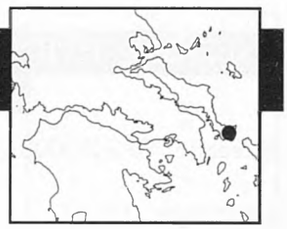
Other important species: — Flora: 93B, 1C, 52D
— Fauna: 2A, 45B, 17C, 35D

Impacts/Activities:
— Positive: 166 (IN)
— Neutral: 163, 164, 403, 501, 511, 624, 948 (IN) / 100, 180, 948 (AR)
— Negative: 140, 170, 171, 240, 250, 502, 530, 602, 608, 626, 710, 720 (IN) 120, 140, 170, 330, 402, 421, 508 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Game refuge.
— International level: IBA

Significance: The quality and importance of the site is based on the ecological and aesthetic value of its natural elements-especially on its biodiversity-and in the cultural value of its archaeological and historical elements. From an ecological point of view, a variety of vegetation types, which are of excellent structure, are maintained and among them there exist special priority habitat types. This, in conjuction with its interesting geomorphology, make the area remarkably rich in flora and fauna. It has high alpine pastures, bare rocks and scree, and impressive forests, especially the oak forests and the endemic fir forest. The National Park of Parnassos was established in 1983 and is the second Greek National Park, the first being Mount Olympos. Its core coincides with a Special Protection Area (SPA), according to the Bird's Directive. The whole area is particularly important for birds of prey, woodpecters and alpine birds.

Site Name: OROS OCHI - KAMPOS KARYSTOU - POTAMI-AKROTIRIO KAFIREFS



Sitecode: GR2420001 **Type**: B

Longitude: 24° 28′ **Latitude**: 38° 04′

Administrative Region: Sterea Ellada **Prefecture**: Evvoia

Altitude (m): 600 **Area (ha)**: 15700 **Length**: -

Description: The site is located in the southern part of the island of Evvoia. It contains two distinct areas: The "Kampos Karystou" plain and the mountain Ochi with the coastal areas of Cape Kafirefs and Potami. Kampos Karystou is a coastal plain lying west of Karystos, with extensive cultivated fields, small freshwater lakes, intermittently flowing streams and freshwater marshes, which are characterized by the presence of the plant species *Typha latifolia, Salix* sp. and *Phragmites australis*. Ochi mountain (1398 m) is located NE of Karystos and is characterized by an extensive area with phrygana and sclerophyllus shrubs, valleys with *Platanus orientalis*, a small chestnut forest near the highest peak, and rivers in which the dominant species are *Vitex agnus-castus* and *Nerium oleander*. The marine area of the site is characterized by the existence of *Posidonia* beds, mainly in deep waters (>20 m) and by reefs (along Cape Kafirefs). Both of these ecosystems are in excellent condition.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Estuaries, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Dunes with *Euphorbia terracina*, Natural euthropic lakes with Magnopotamion or Hydrocharition type vegetation, Floating vegetation of *Ranunculus* of plane, submountainous rivers, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Aegean calcareous cliffs, Caves not open to the public, Submerged or partly submerged sea caves, Chestnut woods, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Olea* and *Ceratonia* forests, Quercus ilex forests.

Plant species: -

Animal species: *Lutra lutra, Monachus monachus, Testudo hermanni, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Lycaena dispar, Lucanus cervus.*

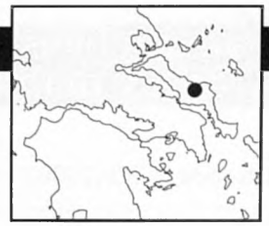
Other important species: — Flora: 18B, 2D.
— Fauna: 10B, 9C.

Impacts/Activities: — Positive: -
— Neutral: 230 (IN)
— Negative: 100, 140, 171, 400, 500, 948 (IN)

Protection Status: — National and Regional level: -
— International level: IBA.

Significance: The ecological quality and importance of the site result from the following elements: (1) The variety of habitat types which it contains with interesting fauna and flora communities; (2) The great number of passage birds and raptor which have been recorded in the area; (3) Its rich herpetofauna; (4) Well conserved aquatic habitats such as *Posidonia* beds in deep waters and reefs at the coastline of Cape Kafirefs.

Site Name: DIRFYS: DASOS STENIS - DELFI



Sitecode: GR2420002 **Type**: B

Longitude: 23° 50′ **Latitude**: 38° 35′

Administrative Region: Sterea Ellada **Prefecture**: Evvoia

Altitude (m): 900 **Area (ha)**: 1000 **Length**: -

Description: The Aesthetic Forest Dasos Stenis, which covers half of the site, is situated at the south slope of Dirfys mountain. A variety of inclines, ranging from smooth to steep, characterize this mountainous area. The parent material of the soil consists of clay and crystal schists with scattered occurrence of Permion, Upper Triassic, and Jurassic limestones. The existence of numerous springs, small streams and ravines crossing the forest surface is notable. The dominant tree species in the woody area are *Pinus halepensis, Castanea sativa, Abies cephalonica* (at high altitudes), *Quercus* sp., and *Platanus orientalis*. The other half of the site, located at higher altitudes and including the peak Delfi mainly consists of steep limestone screes.

Habitat types: Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, Balkan screes, Chestnut woods, Oriental plane woods (Platanion orientalis), Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Nepeta dirphya.*

Animal species: *Testudo hermanni.*

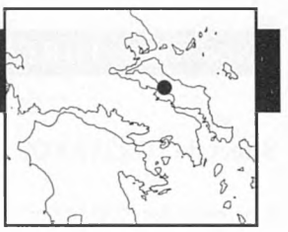
Other important species: — Flora: 47B, 20D.
— Fauna: 1A, 6C, 12B.

Impacts/Activities:
— Positive:
— Neutral: 160, 170, 948, (IN) / 403, 502, 511 (AR)
— Negative: 180, 230, 240, 250, 421, 502, 690 (IN)

Protection Status:
— National and Regional level: Aesthetic forest
— International level: IBA.

Significance: The site gains special ecological and aesthetic interest from the combination of its floristic diversity with the geomorphological and hydrological features. In this area, many representative habitat types are found which support numerous local endemic or greek endemic plant species. The presence of both endemic invertebrates and vertebrates which, although their exact populations are still indeterminate, are under threat should be greatly emphasized, since many of them have limited distribution areas.

Site Name: OROS KANTILI - KOILADA PROKOPIOU - DELTA KIREA



Sitecode: GR2420003 **Type**: B

Longitude: 23° 25′ **Latitude**: 38° 43′

Administrative Region: Sterea Ellada **Prefecture**: Evvoia

Altitude (m): 450 **Area (ha)**: 14000 **Length**: -

Description: The site is located in the northern-central part of Evvoia. The marine part covers 3% of the site. Kandili mountain (1246 m) is characterized by dense and extensive pine forests, a forest of the endemic fir, *Abies cephalonica* (6% of the site), and the rough and large rock formations. In certain areas the *Pinus halepensis* forest is substituded by maquis, while in some cases the forest consists of a mixture of *Pinus nigra* ssp. *pallasiana* and *Abies cephalonica*. Prokopi valley, with some cultivated fields, lies below the eastern slopes of the mountain. Kireas river, with well conserved riverine communities along its banks, runs along the valley, with constantly flowing water from Mantoudi to Prokopi and intermittent flow beyond Prokopi. The Alepo pine forest extends to the coastal area at both the eastern and westwrn parts of the site. Halophilous communities have been recorded at the maritime zone of the site.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Wooded dunes with *Pinus pinea* and/or *Pinus pinaster*, Mediterranean temporary ponds, Floating vegetation of *Ranunculus* of plane, submountainous rivers, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Balkan screes, Eu-mediterranean greek calcareous cliffs, Chestnut woods, *Quercus frainetto* woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Olea* and *Ceratonia* forests, *Quercus ilex* forests, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Myotis emarginatus, Tursiops truncatus, Lutra lutra, Monachus monachus, Testudo hermanni, Testudo marginata, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Barbus plebejus.*

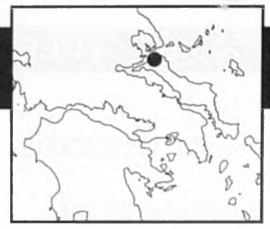
Other important species: — Flora: 35B, 3C, 4D.
— Fauna: 6A, 4B, 26C.

Impacts/Activities:
— Positive: -
— Neutral: 160, 171, 230 (IN)
— Negative: 100, 101, 140, 330, 400, 500, 600, 948 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The following elements indicate the ecological quality and importance of the site: (1) The great variety of habitat types existing within the site (2) The variety of well conserved woodlands with deciduous, evergreen, and coniferous trees (3) The numerous endemic and local endemic, rare in their majority, species which have been recorded in the area and especially on serpentine formations (4) The presence of many important birds, especially raptors.

Site Name: MEGALO KAI MIKRO LIVARI - DELTA XIRIA - YDROCHARES DASOS AG. NIKOLAOU



Sitecode: GR2420004 **Type**: B

Longitude: 23° 08′ **Latitude**: 39° 00′

Administrative Region: Sterea Ellada **Prefecture**: Evvoia

Altitude (m): 0 **Area (ha)**: 450 **Length**: -

Description: The site is located at the northern edge of Evvoia island. The marine part covers 38% of the site, the lagoons 18% and the terrestrial part is 38%. The site includes the lagoons Megalo Livari, Strongylo and Mikro Livari, the estuary of Xirias River and Agios Nikolaos deciduous forest (designated as Natural Monument). This forest and two others near Megalo Livari are remnants of an once extented riverine forest which has been restricted because of logging and expansion of cultivation. Megalo Livari was extensively exploited in the past for fish production, but digging, landfilling, and changes of the orifice have recently been conducted for the intensification of fish culture. Road construction, habitation and tourism activities are extended towards the lagoon. In addition, a fish hatchery was constructed at the northern edge of the lagoon. The conservation status of the wetland vegetation around the lagoon, of the reedbeds and the riverine forest has seriously deteriorated. Halophilous vegetation is also present. Mikro Livari lagoon is a private area where drainage works have been done. Marsh and reedbeds surround the lagoons, and sand beach and sand dunes extend along coastal zone of the site.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Lagoons, Annual vegetation of drift lines, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Dunes with *Euphorbia terracina*, Mediterranean temporary ponds, Floating vegetation of *Ranunculus* of plane, submountainous rivers, Intermittently flowing Mediterranean rivers, Residual alluvial forests (Alnion glutinoso-incanae), *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Lutra lutra, Monachus monachus, Testudo hermanni, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla.*

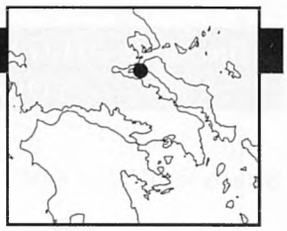
Other important species: — Flora: -
— Fauna: 15C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 101, 110, 120, 130, 140, 151, 180, 200, 230, 403, 502, 690, 720, 800, 810, 811, 820, 830, 850, 920 (IN) / 101, 110, 120, 130, 140, 151, 180, 230, 403, 502, 690, 811, 830, 850 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks.
— International level: IBA.

Significance: The following elements indicate the ecological quality and importance of the site: 1) It is one of the few wetlands of eastern continental Greece. 2) There is great variety of habitat types. 3) It is important for migrating and wintering birds, especially for the mute swan, the flamingo, the spoonbill, the glossy ibis, ducks, herons and waders. 4) It supports an isolated population of otter, the most important site for the species in Evvoia. 5) The presence of small riverine forests (one of them has been declared as a Natural Monument). 6) The great variety of herpetofauna.

Site Name: TELETHRIO - LICHADA - GIALTRA



Sitecode: GR2420005 **Type**: B

Longitude: 23° 09′ **Latitude**: 38° 54′

Administrative Region: Sterea Ellada **Prefecture**: Evvoia

Altitude (m): 500 **Area (ha)**: 21192 **Length**: -

Description: The site is located at the northern part of Euboea island. It includes mount Telethrio (max altitude 990 m) and mount Lichada, the area of Gialtra, the surrounding cultivated fields, the islets of Strongyli and Monolia and a coastal marine area. The marine area covers 21% of the site. Telethrio is covered by oak forest (mainly *Quercus frainetto*) in the upper zone and maquis and phrygana in the lower zone. The maquis are dominated by kermes oak (*Quercus coccifera*), holm oak (*Quercus ilex*) and wild olive (*Olea europaea* var. *sylvestris*). Lichada mountain and the area of Gialtra are covered by aleppo pine (*Pinus halepensis*), maquis and the rest is cultivated fields, orchards and vineyards. Understory vegetation consists of maquis and phryganic species. Maquis have deteriorated as a result of intense grazing. The site also includes vegetated rocks, steep cliffs and streams that dry in summer and support stands of plane tree (*Platanus orientalis*).

Habitat types:, *Posidonia* beds, Large shallow inlets and bays, Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Embryonic shifting dunes, Dune-slack reedbeds and sedgebeds, Natural euthrophic lakes with Magnopotamion or Hydrocharition type vegetation, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Matorral with *Laurus nobilis*, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Vegetated calcareous inland cliffs with chasmophytic vegetation, Eu-mediterranean greek calcareous cliffs, Thermophilous ash (*Fraxinus angustifolia*) woods, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), *Olea* and *Ceratonia* forests, *Quercus ilex* forests, Forests of *Ilex aquifolium*, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo hermanni, Barbus capito.*

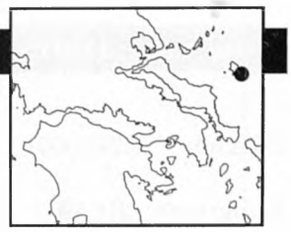
Other important species: — Flora: 6B, 1D.
— Fauna: 1A, 9B, 9C, 4D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 101, 110, 120, 140, 151, 164, 166, 210, 230, 403, 900, 948 (IN) / 101, 180, 210 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: IBA.

Significance: The elements of the ecological importance of the area are: 1)The great variety of habitat types 2) The extended well-conserved oak and pine forests 3) The presence of endemic plant species 4) The presence of endemic invertebrates (two of them are new species) and of many important birds (especially raptors) 5) Gialtra bay is important as a fish nursery.

Site Name: SKYROS: OROS KOCHYLAS



Sitecode: GR2420006 **Type**: B

Longitude: 24° 38′ **Latitude**: 38° 49′

Administrative Region: Sterea Ellada **Prefecture**: Evvoia

Altitude (m): 400 **Area (ha)**: 4300 **Length**: -

Description: The island of Skyros lies in the central part of the Aegean sea and is the largest island of the North Sporades with a total area of 20.9 ha. The island of Skyros is 19 miles off shore Euboea island. The climate is typical Mediterranean with mean annual rainfall not exceeding 500 mm. A 4 km long plane, running from Achilli village up to Kalamitsa village divides the island into two parts. The north-west is covered by Aleppo pine forests and lush vegetation. The south east part is a completely contrast, mountainous rocky scenery. The proposed site contains the mountainous block of Kochylas (792 m) as well as south-eastern rocky shores. The whole area consists mainly of limestone. The chasmophytic flora is well developed but contains rather few plant species. The maquis formation consists mainly of *Quercus coccifera, Genista* sp. and *Olea europaea* shrubs of very low height, mainly due to overgrazing. It is worth noting that the area of the ravines is covered by thickets of *Quercus coccifera* and *Acer monspessulanum* forests. The area of mountain Kochylas is where the Skyrian shepherds graze their thousands of animals (about 40, 000 goats and sheep). The unique miniature Skyrian horse (a race of *Equus cabalus*, not exceeding 1, 07 m height) has been living free and semi-wild in that place for ages.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Balkan screes, Vegetated calcareous inland cliffs with chasmophytic vegetation, Aegean calcareous cliffs.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla.*

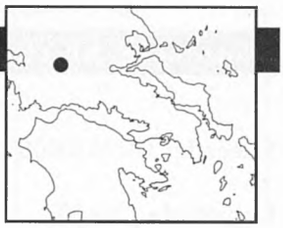
Other important species: — Flora: 15B, 2D.
— Fauna: 1A, 7B, 7C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 140, 230, 967 (IN) / 730 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The quality and importance of the site result mainly from the large number of local or very restricted plant endemic species. The rather few plant species of the area in comparison to the comparatively high number of local endemic indicates strong isolation. Therefore the species in common with northern Sporades and the Cyclades respectively according to Snogerup (1978) will constitute local populations which will have been isolated for long from the other part of the species. The area of Kochylas mountain is also highly esteemed for the presence of the *Podarcis gaigeae*, a strictly local endemic species of lizard (one of the two Aegean endemic lizard species). Although overgrazed, the site is also a place of great aesthetic value.

Site Name: OROS TYMFRISTOS (VELOUCHI)



Sitecode: GR2430001 **Type**: B

Longitude: 21° 49′ **Latitude**: 38° 57′

Administrative Region: Sterea Ellada **Prefecture**: Evrytania

Altitude (m): 1700 **Area (ha)**: 4000 **Length**: -

Description: Tymfristos (Velouchi) is one of the highest mountains of Greece, with extensive alpine and sub-alpine grassland and an extensive forest of the endemic greek fir, *Abies cephalonica*. Tymfristos mountain (2316 m), characterized by Fagetalia and by Daphno-Festucetalia, could be considered part of the continental biogeographic region.

Habitat types: Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, Stepped and garland grasslands, Vegetated calcareous inland cliffs with chasmophytic vegetation, Limestone pavements, *Olea* and *Ceratonia* forests

Plant species: *Centaurea alba* ssp. *princeps*.

Animal species: *Barbastella barbastellus, Canis lupus, Bombina variegata, Testudo hermanni, Testudo marginata, Elaphe situla*.

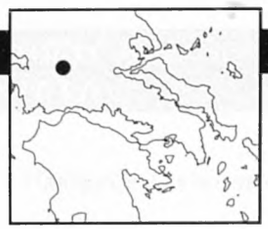
Other important species: — Flora: 52B, 49D.
— Fauna: 18B, 5C, 16D.

Impacts/Activities: — Positive: -
— Neutral: 100, 160 (IN)
— Negative: 140, 170, 230, 241, 243, 250, 502, 602, 626 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: Although it is a quite degraded and virtually unprotected area, it is of great importance because of: 1. The nesting of threatened birds, especially birds of prey. 2. The presence of species that face the danger of extinction, e.g., the presence of *Canis lupus*, near the southern boundary of its distribution. 3. The presence of many endemic and local endemic species of invertebrates (Orthoptera and Coleoptera) and of plants, most of them protected by legislation.

Site Name: TECHNITI LIMNI KREMASTON



Sitecode: GR2430002 **Type**: B

Longitude: 21° 32′ **Latitude**: 38° 56′

Administrative Region: Sterea Ellada **Prefecture**: Evrytania

Altitude (m): 500 **Area (ha)**: 21600 **Length**: -

Description: The greatest part of the site is covered by an artificial lake, Techniti Limni Kremaston, with a surface of 82km². The lake was created after the construction of a dam in the confluence of three major rivers, Acheloos, Agrafiotis, Tavropos, and of two smaller rivers, Karpenisiotis and Agalianos, in 1966. The adjacent area is mainly covered by evergreen woodland as well as by deciduous woodland and phrygana. There is also riparian vegetation with common perrenials or annuals. The fluctuation of the water level, reaching up to 30 m, prevents the creation of a littoral zone as well as of littoral benthic communities. Next to the dam there is a hydroelectric unit with a production potential of 1430 GWh. A fish culture unit, with carp and trout, is operating, in the lake.

Habitat types: Oligotrophic waters containing very few minerals of West Mediterranean sandy plains with *Isoetes*, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, Diss-dominated garrigues, Sclerophyllous grazed forsts (dehesas) with *Quercus suber* and/or *Quercus ilex*, Mixed oak-elm-ash forests of great rivers, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Canis lupus, Lutra lutra, Bombina variegata, Testudo hermanni, Testudo marginata, Testudo graeca, Emys orbicularis, Elaphe quatuorlineata, Elaphe situla, Salmo macrostigma, Phoxinellus* spp. *Rutilus rubilio, Barbus meridionalis, Barbus capito.*

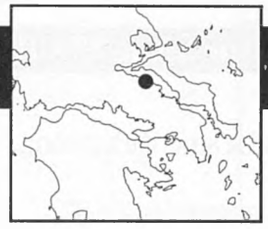
Other important species: — Flora: 1B.
— Fauna: 2A, 3B, 21C

Impacts/Activities:
— Positive:
— Neutral: 100, 130, 403, 507 (IN) / 100, 130, 401, 403 (AR)
— Negative: 140, 200, 230, 243, 290, 401, 502, 511, 690, 701 (IN) / 140, 230, 243, 502, 701 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The main importance of the site lies in the existence of many endemic, endengered and protected animal species. The importance of the artificial lake is also associated with: energy production (hydroelectric unit); water supply for the adjacent areas; the increased biodiversity of the area; the bird fauna of migratory birds that use it as an intermediate station.

Site Name: YGROTOPOS KAI NISIA TOU KOLPOU ATALANTIS



Sitecode: GR2440001 **Type**: B

Longitude: 23° 05′ **Latitude**: 38° 35′

Administrative Region: Sterea Ellada **Prefecture**: Pthiotida

Altitude (m): 20 **Area (ha)**: 1470 **Length**: -

Description:Atalanti gulf is located inside the N Eubean (Evvoikos) gulf and the nearest coast is that of Fthiotida Prefecture. The marine area covers 65% of the site. The site comprises a narrow coastal zone with salt marshes, degraded wetland vegetation, agricultural land, shallow inlets and mudflats (Atalanti or Vourlias wetland) and also four limestone islands {Atalantonissi (185 ha), Gaidouronissi (1.70 ha), Prassonissi (1.2 ha), Agios Nikolaos (1.4 ha)}. Atalantonissi, grazed for many decades, is dominated by wild olive trees, mastic tree and rock rose. Recently, the island was designated as a controlled hunting area, and Cretan agrimi (*Capra aegagrus cretica*) and mouflon (*Ovis ammon musimon*) have been introduced on it. Rabbits had been introduced in the past and by now they have seriously affected the vegetation. Long-term overgrazing and burning have favoured the expansion of *Phlomis fruticosa* versus the maquis in Gaidouronissi. Agios Nikolaos island is grazed only by a few rabbits. Prassonissi island is ungrazed. Marine area of the site comprises shallow waters, sandbanks and *Posidonia* beds. Remnants of reed beds (*Phragmites australis*), are present in the coastal zone of the site.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Large shallow inlets and bays, Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Emys orbicularis.*

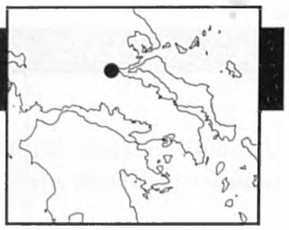
Other important species: — Flora: 1B, 2D.
— Fauna: 1B, 10C, 1D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 140, 151, 180, 200, 221, 230, 403, 502, 690, 710, 720, 852 (IN) / 120, 331, 403, 411, 421 (AR)

Protection Status:
— National and Regional level: Controlled hunting area
— International level: -

Significance:The site includes a small wetland used as a station by migratory birds. It is one of the few wetlands of eastern Greece. Atalanti gulf is a significant breeding area for numerous species of fish and *Posidonia* beds are present. Atalantonissi supports a forest of wild olive, a small mediterranean xeric grassland and 12 pairs of kestrel (*Falco tinnunculus*) breed on it. Also, a small introduced population of *Capra aegagrus cretica* (National Red Data List, Bern Convention) exists on it. Vegetation of Prassonissi is considered undisturbed by human activities.

Site Name: KOILADA KAI EKVOLES SPERCHEIOU-MALIAKOS KOLPOS



Sitecode: GR2440002 **Type**: B

Longitude: 22° 27′ **Latitude**: 38° 52′

Administrative Region: Sterea Ellada **Prefecture**: Fthiotida

Altitude (m): 650 **Area (ha)**: 34000 **Length**:

Description: The site is located in the eastern part of central Greece; it is attached to the periphery zone of the Oiti National Park and it is neighbour to Timfristos and Vardousia Mountains. Three different parts can be distinguished in the site: a) Maliakos Bay, b) the estuary of Spercheios River and its surrounding area and c) Spercheios River valley and its springs. The site covers in total 34.000 ha. Maliakos Bay covers 9.000 ha. It is a small enclosed embayment connected to the Aegean Sea and N. Evoikos Gulf by two small openings on the east. In the outer eastern part the average depth is 30 m and in the inner western part it does not exceed 25 m; the bottom is covered mostly by soft sediments. Spercheios River meets the sea in the SW corner of the bay. The innermost part of the bay close to the mouth of the river is the shallowest one. The fishing activity of the bay is conducted by 322 registered fishing boats (7-150 HP, 4-12 m long), owned by 700 fishermen. Fish and shellfish production of the bay is high. There are fishing restrictions by the State for the inner part (nearly half of the total of the bay). The core of the estuary covers 319.5 ha while the wider area comes up to 10.000 ha. The estuary and its surrounding area forms a diverse landscape. There are two types of natural vegetation. The first one is located along the river bank while the second covers the area of the salt meadows. The former is dominated by *Salix* sp., *Populus* sp., *Rubus* sp., *Agnus* sp., *Phragmites* spp., *Typha* sp. and the latter by *Phragmites australis* close to the river and by *Arthrocremnum* sp., *Tamarix* sp. and *Salicornia* sp. in the rest of the area. Most the area outside the core is intensively cultivated-mainly ricefields. The land around the estuary is occupied mainly by dry cropland and grasslands while a small portion is covered by olive trees. The last part of the estuary, close to the mouth of the river and where the land meets the sea, forms a shallow lagoon-like embayment called Livari (500 ha); the depth in the biggest part of it is 5 m. Here hunting is forbidden by law. Hunting is also illegal in the estuary and its neighbouring parishes. The westernmost part of the site includes the mountain-type part of Spercheios River, its valley and springs. The length of the river is 82,5 km and it starts from Tymfristos Mountain at 2.327 m altitude. Its valley covers 15.000 ha, with an average altitude of 621 to 810 m. Moving from the city of Lamia to the river's springs, the landscape is dominated by permanent dry and irrigated cropland. At the northern part of the valley there is cropland under shifting cultivation, grasslands and abandoned agricultural lands. Finally, close to the springs of the river, apart from small patches of land occupied by orchards, the area is dominated by abandoned agricultural land. At the fringe around of the valley, close to the foot of the surrounding mountains, the vegetation is characterised by phrygana.

Habitat types: Estuaries, Large shallow inlets and bays, *Salicornia* and other annuals colonizing mud and sand, Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Dune-slack reedbeds and sledgebeds, Dunes with *Euphorbia terracina*, Mediterranean temporary ponds, Floating vegetation of Ranunculus of plane submountainous rivers, Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*, Intermittently flowing Mediterranean rivers, Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Site Name: KOILADA KAI EKVOLES SPERCHEIOU-MALIAKOS KOLPOS (cont.)

Animal species: *Myotis blythi, Lutra lutra, Bombina variegata, Testudo hermanni, Testudo marginata, Emys orbicularis, Elaphe situla, Phoxinellus* spp., *Barbus plebejus, Barbus capito.*

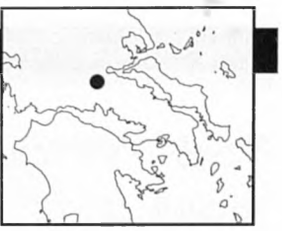
Other important species: — Flora:
— Fauna: 5A, 3B, 9C, 8D

Impacts/Activities:
— Positive: -
— Neutral: 140, 200, 210, 501, 810 (IN)
— Negative: 100, 110, 120, 130, 220, 230, 421, 424, 502, 504, 802 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The quality and importance of the site spring of the following reasons:
1) Maliakos Bay supports a significant fish and shellfish production; there is also a very good potential for the development of aquaculture. 2) Livari, the innermost part of Maliakos Bay, is a natural sea park for the reproduction of fish and growth of their juvenilles. 3) The estuary of Spercheios River offers ideal environmental parameters for many species of the avifauna many of which are protected. 4) The surrounding cultivated area-mainly ricefields-is of major financial importance for the neighbouring parishes. 5) The river itself, supports a diverse fishfauna with many important-endemic, protected-species. Also, it irrigates the fertile soils of its valley and of its estuary. 6) The thermal springs of Thermopyles, hosting the african fish *Tilapia nilotica*, as well as the carstic springs of Agia Paraskevi, are of great ecological interest.

Site Name: FARANGI GORGOPOTAMOU



Sitecode: GR2440003 **Type**: K

Longitute: 22° 21′ **Latitude**: 38° 48′

Administrative Region: Sterea Ellada **Prefecture**: Fthiotida

Altitude (m): 1000 **Area (ha)**: 524 **Length**: 2

Description: The area contains the gorge and its fringes. The gorge is very deep, 1500 k m, with very steep slopes, which make it practically inaccessible. The substrate is calcareous with local patches of chasmophytes. Along the gorge runs an intermittently (seasonaly) flowing river. The fringes are covered by maquis and phrygana.

Habitat types: Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Pioneer vegetation of rock surfaces.

Plant species: -

Animal species: *Myotis blythi, Barbastella barbastellus, Lutra lutra, Rupicapra rupicapra balcanica, Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Elaphe situla.*

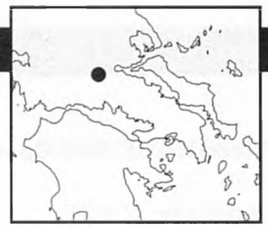
Other important species: — Flora: -
— Fauna: 1A, 1B

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 230 (IN)

Protection Status: — National and Regional level: Peripheral zone of National Park
— International level: -

Significance: The main importance of the area lies on that, due to its geomorphological structure and inaccessibility, it is naturally protected and offers a refuge to vultures, the golden eagle and the chamois.

Site Name: ETHNIKOS DRYMOS OITIS



Sitecode: GR2440004 **Type**: J

Longitute: 22° 17′ **Latitude**: 38° 50′

Administrative Region: Sterea Ellada **Prefecture**: Fthiotida

Altitude (m): 1600 **Area (ha)**: 7210 **Length**: -

Description: The site is on the mountain of Oiti. It covers some of the highest peaks of the mountain (all of them above 2000 m), but not the highest one, called Pyrgos (2152 m), which is not included in the National Park. The main parent rock material of the mountain is the limestone. This is the reason why carstic formations of great aesthetic value are widespread in the site; the nature of the parent rock material has led to the formation of numerous caves in and around the site. The most famous of all is that of Anemotrypa (Spilaio Anemotrypas), above the village of Ypati, at the north-western part of the site. In the core of the National Park there is a small alpine plateau, Leivadeies, with interesting herbaceous vegetation and with a pond which floods during the summer months in its centre.
The vegetation of the site is dominated by endemic greek fir, *Abies cephalonica*, forests. In addition, Trifoliun parnassi associations and the greek Supra-mediterranean humid meadows are also found. At lower altitudes the vegetation is replaced by *Quercus frainetto* forests and maquis vegetation which is dominated by moderately grazed *Quercus coccifera* tall shrubs. At the higher peaks the vegetation is typical of the alpine zone of Central Greece. A small association of *Pinus nigra* ssp *pallasiana* (Pallas's pine) is found at the north-eastern part of the site.

Habitat types: Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, *Juniperus communis* arborescent matorral, Stepped and garland grasslands, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Subalpine and alpine tall herb communities, Balkan screes, Southern greek montane cliffs, Caves not open to the public, *Quercus frainetto* woods, Oriental plane woods (Platanion orientalis), Pallas's pine forests.

Plant species: *Veronica oetea.*

Animal species: *Barbastella barbastellus, Myotis emarginatus, Rupicapra rupicapra balcanica, Bombina variegata, Testudo hermanni, Testudo graeca.*

Other important species:
— Flora: 49B, 55D
— Fauna: 3A, 12B, 14C, 10D

Impacts/Activities:
— Positive: -
— Neutral: 500, 501, 511, 629 (IN) / 511 (AR)
— Negative: 140, 230, 241, 250 (IN) / 100, 140, 230, 400, 421, 500, 502 (AR)

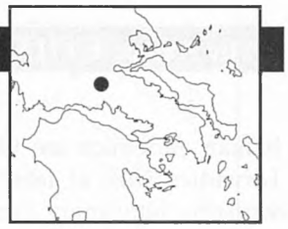
Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Peripheral zone of National Park.
— International level: Council of Europe Biogenetic Reserve, IBA

Significance: The National Park of Mt. Oiti is regarded as one of the best in Greece, both in terms of ecological importance and of status of management. It was founded in 1966 for the conservation of the mountain's unique flora and wildlife in general. Recently, the National Park has been designated as a Special Protection Area for birds (SPA). Until now 50 greek endemic taxa have been included in the flora of the site, 8 of them being protected by the Greek law. Furthermore, 40

Site Name: ETHNIKOS DRYMOS OITIS (cont.)

balkan endemics are found in the area of the site. Of great ecological importance is the plateau at Leivadies with at least tree types of grasslands and an amazing variety of plants and insects and with the temporary pond which provides niche to an important population of *Triturus alpestris*. In addition, the *Pinus nigra* ssp. *pallasiana* association is of great ecological importance because of its isolation from the rest *P. nigra* ssp. *pallasiana* forests of Central Greece. The caves formed in the mountain are of spilaiologic interest, especially the cave of Anemotrypa; yet, a great deal of research has to be done in order to provide the necessary information for the evaluation of the importance of those caves. The mountain of Oiti is closely related to Greek history, both modern and ancient. It was in that area that an important part of the fights during the Greek revolution (1821-1827) and the German occupation (1941-1944) took place. It was during the late Byzantine period that Ypati met its greatest development - the impressive monastery of Agathonas was constructed during that era. Finally, it was on the highest peak of Oiti that Hercules was supposed to have put an end to his life and to have given his weapons to Philoctitis. Temples for Hercules and Diana are believed to had been built there but no remains of them can be seen nowadays. In the monastery of Agathonas there is a small Natural History museum, providing basic information on the wildlife of mountain Oiti, thus contributing to the environmental awareness of the public.

Site Name: ORI VARDOUSIA



Sitecode: GR2450001 **Type**: B

Longitude: 22° 08′ **Latitude**: 38° 41′

Administrative Region: Sterea Ellada **Prefecture**:Fokida

Altitude (m): 1597 **Area (ha)**: 19483 **Length**: -

Description: The Vardousia mountain range is divided into three groups according to their peak arrangement, the highest being Korakas. The northern group has the smoothest relief while the southern (Korakas 2495 m) and the western consist of abrupt crests and saddles. From a geological point of view, the mountain range belongs to the geotectonic zone of Olonos-Pindos having flysch and limestone as the main substrates. In the northern part of the mountain range, flysch dominates in the lower area and limestone in the higher altitudes. In the southern part concrete limestone dominates. These factors result in the formation of an extended plateau especially in the northern part while steep slopes and conglomerates occur in the south. The presence of flysch contributes to the creation of many torrents and streams which supply the River Evinos to the north, River Kokkinos to the southwest, and River Mornos to the southeast. The vegetation of the mountain range is characterized by the dominance of *Abies cephalonica*, whereas in some areas *Abies borisii-regis* extends up to an altitude of 1500-1600 m. In the lower areas there are formations of evergreen broad-leaved woodland with the main representatives being *Quercus coccifera* and *Quercus ilex*, *Arbutus unedo*, *Juniperus oxycedrus* and *Erica arborea*. *Quercus ilex* mainly occurs in the area of the river Kokkinos, forming dense stands together with *Erica arborea* and *Arbutus unedo*. Among the formations of evergreen broad leaved species, individuals of *Quercus coniferta* and *Q. pubescens* occur. Around areas of the numerous streams, *Platanus orientalis* together with *Salix alba* and *Populus alba* are prevalent. Above the forest of *Abies cephalonica* extensive grazing land (stepped grazing lands) occurs, in some parts of which aquatic vegetation exists near fountains or streams. Also, *Juniperus* formations with *Juniperus foetidissima* predominating occur. Finally, in the rocky and conglomerate areas, well-adapted plant associations occur.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Subalpine and alpine tall herb communities, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Oriental plane woods (Platanion orientalis), Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Canis lupus, Lutra lutra, Bombina variegata.*

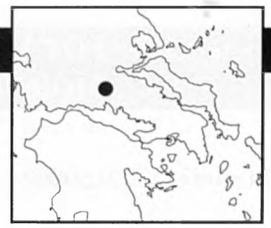
Other important species: — Flora: 73B, 1C, 80D.
— Fauna: 2A, 3B, 18C, 5D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 140, 230, 250, 501, 502, 622, 624, 900(IN)/140, 230, 250, 300, 502, 800, 900 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The occurence, especially in the non-forest plant associations, in Vardousia mountain range, of a great number of endemic and rare plants render the area as an important one from an ecological point of view.

Site Name: OROS GKIONA



Sitecode: GR2450002 **Type**: B

Longitude: 22° 15′ **Latitude**: 38° 39′

Administrative Region: Sterea Ellada **Prefecture**: Fokida

Altitude (m): 1605 **Area (ha)**: 21907 **Length**: -

Description: Gkiona is the highest mountain in South Greece (2510 m) and the fifth highest in Greece. From a geological point of view, Mt. Gkiona belongs to the geotectonic zone of "Parnasos-Gkiona", having limestone as the main geological substrate and only in some parts of the surface do flysch and conglomerate deposits occur. A main element of the above series is the existence of many karstic formations and three horizons of bauxite intercalating in the continuous limestone series. From a geomorphological point of view, there are three main mountain crests converging to the highest peak (pyramid). The most important of these is the one to the south with a length of 13 km. On both sides of the crest a ravine occurs, Reka to the left and Lazorema to the right. This whole geological feature posseses significant ecological importance. The ravine of Reka (12 km long) is characterized by large steep slopes, and seasonal flowing water, whereas Lazorema is 4km long with high slopes (1000-1200 m alt.). In addition to these, many plateaux and conglomerate areas exist. In the above geological substrates there is a variety of vegetation types with dominant species being *Abies cephalonica* extending from 800-1800 m altitude. In the lower areas there are formations of evergreen broadleaved species, with main representatives being *Quercus coccifera, Juniperus oxycedrus*, while in some areas there are individuals of *Quercus pubescens* and *Ostrya carpinifolia*. Apart from these taxa, in some parts the north-west mountain range small formations of *Platanus orientalis* and *Salix alba* occur. Above the limits of the *Abies cephalonica* forest, grazing areas occur (stepped grasslands) having less than 50% cover. Also *Juniperus* formations exist, with dominant species being *Juniperus communis* ssp. *alpina*. Finally, in the rocky formations and conglomerates adapted plant associations occur. Endemism is quite a common phenomenon on this mountain, a plant species being strictly endemic to Mt. Gkiona: *Arenaria gionaea*.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Subalpine and alpine tall herb communities, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Oriental plane woods (Platanion orientalis), Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Canis lupus, Rupicapra rupicapra balcanica, Bombina variegata*.

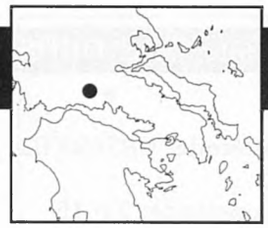
Other important species: — Flora: 89B, 1C, 89D.
— Fauna: 1A, 5B, 12C, 6D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 140, 230, 250, 331, 502, 624, 710, 720, 900, 910 (IN) 100, 140, 230, 331, 502, 710, 720, 800, 803, 900, 910 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: IBA.

Significance: The presence of a great number of endemic or important species (e.g. *Arenaria gionaea*, etc.) in the mountain range of Gkiona, especially in the rocky formations of its summits and the steep slopes of the ravines, makes the area of great ecological importance.

Site Name: POTAMOS MORNOS KAI TECHNITI LIMNI MORNOU



Sitecode: GR2450003 **Type**: B

Longitude: 22° 10′ **Latitude**: 38° 31′

Administrative Region: Sterea Ellada **Prefecture**: Fokida

Altitude (m): 490 **Area (ha)**: 2953 **Length**: -

Description: From a geological point of view this area is characterized by flysch and limestone. The mean inclination of soils in the examined site is about 10%. The greatest part of the artificial lake of Mornos is covered by flysch formations, apart from its southern side where calcareous rocks are present. The presence of the extensive calcareous mountain massifs in the northern and eastern part of the site [Vardousia mountain range (2406 m) and Gkiona mountain (2510 m) respectively] characterizing the wider drainage basin, contribute to the formation of an intense relief (average inclination 34%). This geomorphological characteristic, in combination with the presence of forests and the artificial lake of Mornos, give the area special aesthetic value from an ecotourist and educational point of view. In the eastern part of the area there are characteristic clusters of arborescent *Quercus coccifera* reaching up to 15-20 m in height. In the southern part between the scrubs of *Quercus coccifera* and *Juniperus oxycedrus* individuals of *Q. pubescens*, and *Q. frainetto* are interspersed. On the west side (the area with flysch) there is a thick forest with *Q. ilex*, *Arbutus unedo* and *Erica arborea*.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests.

Plant species: -

Animal species: *Salmo macrostigma, Barbus meridionalis, Barbus capito.*

Other important species: — Flora: -
— Fauna: 1A, 7C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 140, 390, 502, 900, 943 (IN) / 100, 140, 390, 502, 511, 850, 900, 943 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: -

Significance: The woodland in the area of the artificial lake of Mornos is of great importance because the formations of *Quercus ilex* are limited in southern Greece ; therefore their protection and preservation is necessary.

Site Name: PARALIAKI ZONI APO NAFPAKTO EOS ITEA



Sitecode: GR2450004 **Type**: B

Longitude: 22° 13′ **Latitude**: 38° 22′

Administrative Region: Sterea Ellada **Prefecture**: Fokida

Altitude (m): 287 **Area (ha)**: 10927 **Length**: -

Description: Limestone is a main element of the geological substrate and, in combination with the intense inclination of coastal hills and mountains, forms an impressive and strong relief. The site is characterized by the alternation of cliffs with small alluvial plains and the presence of small villages well incorporated, from an aesthetic point of view, within the landscape. The presence of artificial forest stands with *Pinus halepensis* must be emphasized. The areas, characterized by unproductive soil, have bauxite deposits and established docking facilities.

Habitat types: *Juniperus phoenicea* arborescent matorral, Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Oriental plane woods (Platanion orientalis), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Monachus monachus, Testudo hermanni, Elaphe situla.*

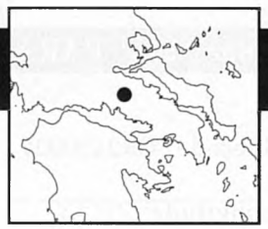
Other important species: — Flora: 2B.
— Fauna: 1A, 4B, 5C, 4D.

Impacts/Activities:
— Positive: 160, 163 (IN) / 160 (AR)
— Neutral: 100, 401, 501, 520 (IN) / 100 (AR)
— Negative: 140, 180, 200, 230, 423, 511, 608, 790, 870 (IN) / 140, 180, 200, 230, 301, 331 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The forests with *Juniperus phoenicea* are very well represented and distributed. Taking into consideration the intense inclination of the relief, their slow growth and the difficulties of reestablishment of the vegetation on hard limestone, we realise their special ecological and aesthetic value. Their protection and sustainable management would be important for the future development of the area.

Site Name: NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS



Sitecode: GR2450005 **Type**: I

Longitude: 22° 23′ **Latitude**: 38° 31′

Administrative Region: Sterea Ellada **Prefecture**: Fokida

Altitude (m): 1200 **Area (ha)**: 18400 **Length**: -

Description: The site extents within three prefectures, Voiotia, Fthiotida and Fokida, and covers an area of 18400 ha. It comprises the National Park of Parnassos with one part in Voiotia and the rest in Fokida, the south-east parts of the mountain and the Aesthetic Forest of Tithorea, situated in Fthiotida. The archaeological site of the Delfoi Oracle (Manteio ton Delfon) has also been included in the proposed site. The predominate climate is continental with a relatively cool yet dry summer period, rainy autumn and heavy winter, the latter lasting for many months. The highest rainfall occurs in November with August being the driest month. The mean annual rainfall is about 1000 mm. There is also a considerable occurrence of hail storms which cause damages to the cultivations and the breeding animals. For at least two months per year, the high peaks of the mountain and definitely the National Park are covered by snow, which lasts from December until March and can reach up to 4 m above ground. At the subalpine zone, the snow goes on melting until the middle of June. The substrate consists of calcareous deposits of various age periods. The Aesthetic Forest of Tithorea is situated on the north-east side of Parnassos and over the homonymous village. Its altitude ranges from 500 m up to 1200 m above sea level and it covers an area of 200 ha. Its geomorphology is interesting, with karstic caves and palaeontological rocks. The National Park of Parnassos has core area of of 3513 ha (about 20% of the site) and does not include the highest peaks of the mountain (e.g. Liakoura, Gerontovrachos, etc.) which are yet incorporated in the proposed site. Setting off from the lowest altitude of the site (500 m) and reaching up to 800 m, the sclerophyllous evergreen-broadleaved formations prevail. As the altitude increases, there is a transition towards the montane conifers. There, the dominant forest species is *Abies cephalonica*, forming pure extensive stands. Some strands of *Pinus nigra* ssp. *pallasiana* can also be observed. In certain spots, the forest is being interrupted by smaller or larger gaps covered by shrubs.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus communis* formations on calcareous heaths or grasslands, Karstic calcareous grasslands (Alysso-Sedion albi), Stepped and garland grasslands, Sub-continental steppic grasslands, Balkan screes, Vegetated calcareous inland cliffs with chasmophytic vegetation, Eu-mediterranean greek calcareous cliffs, Pioneer vegetation of rock surfaces, Oriental plane woods (Platanion orientalis), *Quercus ilex* forests, Pallas's pine forests.

Plant species: *Paeonia parnassica, Bupleurum capillare.*

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Myotis blythi, Myotis myotis, Triturus cristatus, Bombina variegata, Testudo hermanni, Testudo marginata, Lucanus cervus.*

Other important species:
— Flora: 93B, 1C, 53D
— Fauna: 2A, 45B, 16C, 34D

Impacts/Activities:
— Positive: 166 (IN)
— Neutral: 163, 164, 230, 403, 501, 511, 624, 948 (IN) / 100, 180, 948 (AR)
— Negative: 100, 140, 170, 171, 240, 250, 331, 421, 502, 530, 602, 608, 626, 710, 720 (IN) 120, 140, 170, 330, 402, 503, 508 (AR)

Site Name: NOTIOANATOLIKOS PARNASSOS - ETHNIKOS DRYMOS PARNASSOU - DASOS TITHOREAS (cont.)

Protection Status:

— National and Regional level: Core strict nature reserve in National Park, Aesthetic Forest, Game refuge
— International level: IBA

Significance: The quality and importance of the site under consideration is based on the ecological and aesthetic value of its natural elements -especially on its biodiversity- and in the cultural value of its archaeological and historical elements. From an ecological point of view, a variety of vegetation types, which are of excellent structure, are maintained and among them there exist special priority habitat types. This, in conjuction with its interesting geomorphology, make the area remarkably rich in flora and fauna. It has high alpine pastures, bare rocks and screes, and impressive forests, especially the oak forests and the endemic fir forest. The National Park of Parnassos was established in 1938 and is the second Greek National Park, the first being Mount Olympos. Its core coincides with a Special Protection Area (SPA), according to the Bird's Directive. The Aesthetic Forest of Tithorea has been reported as being considerably rich in terms of flora and fauna, while its karstic formations and caves add to its attractions. The very famous, at a worldwide scale, archaeological site of the Delfoi Oracle (Manteio ton Delfon) has also been included in the proposed site, as it has been thoroughly studied in terms of floral and faunal species' presence and thus contains some of the most significant species reported. The preservation of Delfoi, even in the form of a natural reserve, is suggested not only for the conservation of the important plant and animal taxa but for its ecotouristic attraction as well.
Finally the whole area is particularly important for birds of prey, woodpeckers and alpine birds.

Site Name: OROS ARACHNAIO



Sitecode: GR2510001 **Type**: B

Longitude: 22° 59′ **Latitude**: 37° 39′

Administrative Region: Peloponnisos **Prefecture**: Argolida

Altitude (m): 800 **Area (ha)**: 10670 **Length**: -

Description: Mt. Arachnaio lies in northeastern Peloponnisos and extends beyond the hilly area which borders the eastern and northeastern part of the Argolida plain. All peaks have altitudes between 890-1200 m and are E-W orientated. Mt. Arachnaio is bordered on the north by the calcareous mountains of Trapezona and Angelokastro, from the northeast by the semiclosed Dimaina basin (mean altitude 170 m), from the east by a series of hills, from the south by the Ligourio- Arkadiko basin (mean altitude 350 m), and from the southwest by the hills of Agios Dimitrios (Metochi)- Amarianos - Midea area. The relatively smooth peaks and gentle slopes of the mountainous plain of Arachnaio contrast sharply with the steep rocky gorges on the steep southern mountain flanks. The most important gorge is the Choni Rema.
The limestone terrain has practically no surface runoff, due to its karstification; almost 60% of the precipitations is infiltrated into the limestone which is the main geological substrate of the mountain (Triassic-Jurassic limestones). A dense network of more or less vertical faults traverses the limestones, and controls the hydrographic pattern. Karstic groundwater infiltrated into the limestones ensures some proliferous groundwater resources in the Ligourio and Dimaina basins and subsequently the groundwater for domestic and agricultural use. The mean annual precipitation is c. 700 m. Snow is not rare in the period between December and March.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs.

Plant species: -

Animal species: -

Other important species: — Flora: 5B, 2D.
— Fauna: 1A, 6B, 2C, 8D.

Impacts/Activities:
— Positive: -
— Neutral: 100 (IN)
— Negative: 140, 180, 230, 301, 790 (IN) / 100, 140, 180, 230, 421, 424, 790 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: -

Significance: The original oak forests have been totally degraded to some isolated groups of goat-eaten remnants of trees, a phenomenon typical of the eastern Greek mountains. Sheep, goats and fires contributed to rapid erosion of the top soil which left bare rocks instead of the initial forest humus. Terra rossa trapped in karstic fissures and holes is often the only "soil" which ensures the existence of some small plants. Most of the soil was eroded away towards the lower plains or in some cases to the lower parts of dolines. In spite of the degradation of the forest ecosystem, smaller plants flower in spring time just after colder winter days, because of the existence of the wet terra rossa soil.

Site Name: OROS DIDYMO



Sitecode: GR2510002 **Type**: B

Longitude: 23° 13′ **Latitude**: 37° 29′

Administrative Region: Peloponnisos **Prefecture**: Argolida

Altitude (m): 657 **Area (ha)**: 6525 **Length**: -

Description: Mt. Didymo lies in the southeast part of the Argolida Peninsula. It has two main summits, both with max. altitude of 1129 m, hence the name Didymon The mountain is E-W orientated, while the two main summits are N-S orientated relative to each other. The mountain is bordered from the northeast by the Iliokastron basin, from the north by the Kochi Charta hills, from the east by the Aderes mountainous range, from the south by the closed basin of Didyma and the Salanti hills and finally its northwest border is the Tracheia-Vothiki-Pelei basin. The prevailing rock type of the mountain is crystallized limestone of Triassic - Jurassic age, a very saught-after rock, since it has the same appearance as marble. The karstification of limestone is very strong since this area has been part of the mainland for a long geological time. This is indicated by the local bauxitic lenses on the east flank of Didymo, which are ancient soils of Pre-Cretaceous age formed under tropical conditions. The higher altitudes of the mountain between the two summits form a well-developed, westwards sloping, mountainous plain with characteristic scattered dolines. These dolines are the only places where eroded soils and red clays (terra rossa) were concentrated, thus forming a substrate of good quality for vegetation and temporarily favouring wet conditions.
The Didyma-polje bears two sites (caves with no ceilings) of special interest which are the product of karstic dissolution of the limestone. The first site lies on the southeast flank of the Gkrava summit and has a rather cylindrical form. The other one lies just west of the village of Didyma and has a round shape with a diameter of c. 70-100 m and depth of c. 40 m. There is a small old church built in this cave. Deep gorges are generally absent and only in the north and northeastern parts of the mountain do steep narrow valleys exist. Surface waterflow is totally absent and the only existing spring lies in the northeastern part of the Vgeti area. The origin of the hydrographic pattern lies in older geological times before the development of karstification. Climatically, the mountain area often suffers from drought and the average annual precipitation hardly exceeds 500 mm. Snow coverage exists for some days almost every year, especially at altitudes above 700 m. There is a sharp contrast between the northern and southern sides of the mountain in terms of its vegetation. The southern flanks are covered by *Juniperus* sp., with local mixtures of *Quercus* sp. which is dominant above 700 m but which suffers heavily from intensive grazing. The northern and eastern flanks of the mountain suffer much more from grazing relatively to the other flanks. This is due to the fact that soil moisture is conserved here for a longer period of time during the spring season compared to other parts of the mountain, so development of herbaceous plants in this area is favoured. This also explains the shepherds' preference to bring their goat herds to graze in this region.

Habitat types: *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs.

Plant species: -

Animal species: *Testudo marginata, Mauremys caspica, Elaphe situla.*

Other important species: — Flora: 3B, 4D.
— Fauna: 3B, 8C, 6D.

Impacts/Activities: — Positive: -

Site Name: OROS DIDYMO (cont.)

— Neutral: -
— Negative: 100, 140, 230, 301, 501, 709 (IN) / 100, 140, 230, 301, 709 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: Mt. Didymo is of great importance for the villages around the site since the water resources of the Tracheia-Vothiki-Pelei basin are able to sustain the domestic needs of a series of small villages (Pelei, Tracheia, Rado, Karatza, etc.). The ancient forest of Didymo was also significant as it sustained extensive pasture land for grazing. The result of this was the rapid degradation of the oak forest and the creation of a new habitat after the erosion of the mountainous forest soils. We can assume that this degradation didn't permit the survival of a number plant species and contributed to the extinction of all larger wild mammals (only mountain rats, some birds, lizards and snakes could survive). Nevertheless, endemic plants, especially bulbous ones are encountered since their short life cycle is limited to the spring season, before the arrival of grazing animals.

Site Name: AKRONAFPLIA KAI PALAMIDI



Sitecode: GR2510003 **Type**: B

Longitude: 22° 48′ **Latitude**: 37° 34′

Administrative Region: Peloponnisos **Prefecture**: Argolida

Altitude (m): 111 **Area (ha)**: 360 **Length**: -

Description: This site, lying within the Prefecture of Argolida, is a steep rocky hill with a fortress of historical importance on its summit. It is a remarkable monument that atracts the tourists interest. It is very close to the city of Nafplio (the first capital of Greece) and has a historical and also aesthetic value. This rocky hill exhibits a rather interesting biotope of some regional endemic plants (*Stachys swainsonii* ssp. *argolica, Campanula andrewsii* ssp. *andrewsii, Petrorhagia armerioides*, etc.) and also a considerable vertebrate fauna. The area has been touristically developed, so, these human activities cause negative impacts on the natural ecosystem. Geologically, the site belongs to the Sub-pelagonian zone (zone of the Eastern Greece) which is characterized of shale-sandstone-chert formations (shaly-marl beds with sandstones, limestones and sometimes marly cherts).

Habitat types: Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Eu-mediterranean greek calcareous cliffs.

Plant species: -

Animal species: *Rhinolophus blasii, Myotis blythi, Testudo hermanni, Testudo marginata, Mauremys caspica, Callimorpha quadripunctata.*

Other important species: — Flora: 5B, 1D.
— Fauna: 9B, 7C, 3D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 401, 403, 419, 502, 690 (IN)

Protection Status:
— National and Regional level: -
— International level: -

Significance: This site has historical interest and aesthetic value which attract many tourists. Its flora is rather poor as concerns its floristic composition but contains some rare and endemic plants. Although the combination of historical, floristic and zoological information could be of interest to visitors, the tourist development of the area negatively affects its flora and fauna. So, with a good management, the tourist facilities, the fortress, the endemic plants and the animals could possibly coexist.

Site Name: OROS MAINALO



Sitecode: GR2520001 **Type**: B

Longitude: 22° 17′ **Latitude**: 37° 39′

Administrative Region: Peloponnisos **Prefecture**: Arkadia

Altitude (m): 1340 **Area (ha)**: 22796 **Length**: -

Description: The mountain range of Mainalo is situated in Central Peloponnisos NW of Tripolis. Geologically, it belongs to the Gavrovo-Tripoli zone and is mainly composed of calcareous substrate. Its highest summit reaches 1980 m. Here, pure forest of *Abies cephalonica* and pure forest of Palla's pine are formed, and have their best representation in Peloponnisos. On its slopes conifer forest of the Greek fir *Abies cephalonica* (endemic to Greece), mixed with *Pinus nigra* ssp. *pallasiana* thrive.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Stepped and garland grasslands, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Chestnut woods, Pallas's pine forests.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Testudo hermanni, Testudo marginata, Elaphe situla, Callimorpha quadripunctata.*

Other important species: — Flora: 37B, 19D.
— Fauna: 1A, 27B, 23C, 11D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 948, 973 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: The area of the Mainalo mountain range presents a great variability of habitats offering shelter to about 37 Greek endemic plant taxa.

Site Name: LIMNI TAKA



Sitecode: GR2520002 **Type**: B

Longitude: 22° 22′ **Latitude**: 37° 26′

Administrative Region: Peloponnisos **Prefecture**: Arkadia

Altitude (m): 757 **Area (ha)**: 1020 **Length**: -

Description: The lake which characterizes the site is situated close to Tripoli and between sparsely vegetated hills. The size and depth of the freshwater lake fluctuates remarkably seasonally and also from year to year, depending on annual precipitation and the function of springs, underground streams, etc. It is expected that in some years the lake will be completely dry. Information regarding the flora and vegetation of the site is presently not available. It is to be pointed out, however, that most of the area formely covered by the lake nowdays has been transformed into apple orchards.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs.

Plant species: -

Animal species: *Callimorpha quadripunctata*.

Other important species: — Flora: -
— Fauna: 2A, 3B, 8C.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 110, 120, 130, 140, 230, 810, 830, 853 (IN)

Protection Status: — National and Regional level: -
— International level: IBA.

Significance: Thirteen non-bird vertebrate species recorded in this site are considered as important species.

Site Name: PERIOCHI PARALIOU ASTROUS KAI LIMNOTHALASSAS MOUSTOU



Sitecode: GR2520003 **Type**: B

Longitude: 22° 45′ **Latitude**: 37° 23′

Administrative Region: Peloponnisos **Prefecture**: Arkadia

Altitude (m): 193 **Area (ha)**: 3747 **Length**: -

Description: The lagoon of Moustos covers about 45% of the whole area. Smaller lagoons and salt marshes extend to the north and the south of the site. The rocky hill of Sopotos (387 m) dominates the west of the site, while sand-dunes cross the coastline. The surrounding vegetation is composed of typical phrygana while there are spots including *Tamarix* spp., and groves of *Olea europaea*. Geologically, the area's substrate belongs to the Olonos-Pindos zone. The salinity of the lagoon varies between 11-25%. Its depth is about 5 m and its margins consist of sand mixed with pebbles.

Habitat types: Lagoons, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Testudo marginata, Elaphe situla, Aphanius fasciatus.*

Other important species: — Flora: -
— Fauna: 1B, 3C.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 810, 952 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: The area is very important for resting and nesting birds, especially migratory species. Amongst the various elements of the avifauna the threatened heron *Ardea purpurea* is particularly noteworthy. The area is used for fish-farming, and could also be used for scientific, educational and recreational purposes.

Site Name: OROS ORIONTAS



Sitecode: GR2520004 **Type**: B

Longitude: 22° 45′ **Latitude**: 37° 15′

Administrative Region: Peloponnisos **Prefecture**: Arkadia

Altitude (m): 950 **Area (ha)**: 2473 **Length**: -

Description: Mt. Oriontas lies in the southeastern part of Peloponnisos and belongs to the large mountain range of Parnonas. The distance between the crest and the sea to the east is 8 km while that between the crest and the main peak of Parnon, to the west, is just 12 km. Its main peaks have a N-S orientation and altitudes of around 1000 m. A series of valleys and gorges of various depths transverse the mountain in N-S and E-W directions. The main valley (Vatheia) is cerved in limestone and drains the western part of the mountain. The closed mountain plain of Paliochora (with a mean altitude of 770-800 m) is the natural border of Oriontas from the east. Geologically two groups of formations are encountered in the Oriontas area; the Tripoli-zone formation and the Olonos-Pindos zone formation. Flysch areas are of special interest because they contribute to the emergence of water springs. On the contrary, the prevailing limestones, especially the Tripoli limestones are totally dry, due to the higher karstification (thus higher infiltration of rain water). The generally good karstification and the relatively high amount of vegetation cover both prevent erosion. The lack of water and good roads together with the great distances between the coast and Mt. Oriontas were factors favouring the building of monasteries rather than villages. Panagia Karyas is such an old monastery, near the heart of the site, while on the peak of Mt. Oriontas (1191 m) the ruins of an old ancient Spartan castle exist. Only scattered cottages and clusters of small agricultural buildings are encountered in the outskirts of the area. The relatively high annual precipitation levels and the prevailing humid N-NE winds favour natural vegetation; scattered oak trees indicate the old wood ecosystem. Grazing exists mainly in relatively flat areas. Areas with little or no grazing are covered with a very dense, rich maquis. The presence of *Acer*, the locally prevalent tree species is very impressive.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs.

Plant species: -

Animal species: *Testudo marginata*.

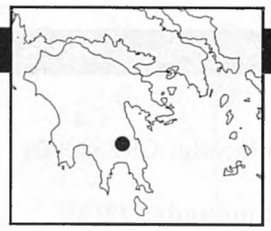
Other important species: — Flora: 5B, 1D.
— Fauna: 3B, 5C.

Impacts/Activities:
— Positive: -
— Neutral: 230, 409 (IN) / 409 (AR)
— Negative: 140 (IN) / 100, 230 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: This site has a generally high amount of vegetation cover including many important elements. The dense maquis is a favourable refuge for smaller plants (and also animals). The central position of the site between the main Parnonas crest and the sea, combined with the relatively low altitude and the lack of any significant human presence, ensure the survival of animals during heavy winters.

Site Name: MONI ELONAS KAI CHARADRA LEONIDIOU



Sitecode: GR2520005 **Type**: E

Longitude: 22° 46′ **Latitude**: 37° 09′

Administrative Region: Peloponnisos **Prefecture**: Arkadia

Altitude (m): 550 **Area (ha)**: 7163 **Length**: -

Description: The area of Moni Elonas and Charadra Leonidiou is a long gorge at the eastern side of Parnonas mountain range. Starting from sea level close to the village of Leonidio, it crosses the Elona's Monastery locality ending in the village of Kosmas at about 1000 m altitude. It is composed mainly of calcareous rocky habitats but at the higher parts *Abies cephalonica* thrives.

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs.

Plant species: -

Animal species: *Testudo marginata*.

Other important species: — Flora: 20B
— Fauna: 1A, 4C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 948, 967 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: Some very interesting plant taxa have been found in the site. Some of these are very important and very rare like *Potentilla arcadiensis*. Also, in the calcareous rocky ecosystems 24 Greek endemics prosper. Four of them are exclusively endemic to this gorge and exist in very small populations, consequently being in danger of extinction.

Site Name: OROS PARNONAS (KAI PERIOCHI MALEVIS)



Sitecode: GR2520006 **Type**: E

Longitude: 22° 37′ **Latitude**: 37° 17′

Administrative Region: Peloponnisos **Prefecture**: Arkadia

Altitude (m): 1250 **Area (ha)**: 55593 **Length**: -

Description: The mountain range of Parnonas geologically belongs to the Gavrovo-Tripoli zone and is composed mainly of calcareous substrate. It is one of the oldest areas of Peloponnisos and was isolated for a long period like Taygetos. It has a height of 1935 m. On its slopes conifer forests of *Abies cephalonica* and *Pinus nigra* ssp. *pallasiana* thrive, and this is the only European site for *Juniperus drupacea*, the Syrian Juniper. Chestnut forests are also represented here in good condition and in extensive areas.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Chestnut woods, *Quercus frainetto* woods, Pallas's pine forests, Stinking juniper (*Juniperus foetidissima*) woods, Syrian juniper (*Juniperus drupacea*) woods.

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Myotis emarginatus, Testudo hermanni, Testudo marginata, Elaphe quatuorlineta, Elaphe situla.*

Other important species:
— Flora: 93B, 37D.
— Fauna: 2A, 16B, 18C, 11D.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 948, 967, 973, 979 (IN)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge.
— International level: -

Significance: The area of the Parnonas mountain range shows a great variability of habitats which offer shelter to about 100 Greek endemic taxa, 6 of these being exclusively endemic to this site.

Site Name: KORYFES OROUS KYLLINI (ZIREIA) KAI CHARADRA FLAMPOURITSA



Sitecode: GR2530001 **Type**: B

Longitude: 22° 24′ **Latitude**: 37° 56′

Administrative Region: Peloponnisos **Prefecture**: Korinthia

Altitude (m): 1488 **Area (ha)**: 24530 **Length**: -

Description: In Mount Kyllini the *Abies cephalonica* forests occupy great areas (880.9 ha), followed by *Pinus nigra* ssp. *pallasiana* forests covering a surface of 350.6 ha. The Flampouritsa gorge is crossed by the Sithos river and it is characterized by *Abies cephalonica* and *Pinus nigra* ssp. *pallasiana* forests, while hydrophilous facies with *Platanus orientalis*, limestone rocky habitats and open-stripped grasslands in the higher altitudinal levels in the transition to the above the timberline vegetation. The medium altitudinal levels (600-800 m) are characterized by remnant deciduous forest stands with *Quercus pubescens* and great areas of cultivated land.

Habitat types: Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Caves not open to the public, Oriental plane woods (Platanion orientalis), Pallas's pine forests, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: *Globularia stygia.*

Animal species: *Rhinolophus hipposideros, Myotis myotis.*

Other important species: — Flora: 128B, 60D.
— Fauna: 2A, 29B, 15C, 1D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 140, 167, 180, 230, 390, 502, 900 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: Mount Kyllini is characterized by a rich flora (ca. 1000 taxa) and a relatively high percentage of endemism (122 taxa or 12.80%) of which 4 are local endemics, 28 are Peloponnisos endemics and 90 are Greek endemics distributed in more than one phytogeographical region. In the upper altitudinal levels (>= 1000-2376 m) an important concentration of endemic species is observed related to phytosociological isolation (1000-1500 m: 62 taxa, 1500-2000 m: 97 taxa, 2000-2376 m: 59 taxa). Morover, a great diversity of habitat types is observed in the upper altitudes (above 1600 m). Most of the rare, endangered or vulnerable species are present more or less exclusively in the varius plant communities.

Site Name: LIMNI STYMFALIA



Sitecode: GR2530002 **Type**: B

Longitude: 22° 28′ **Latitude**: 37° 51′

Administrative Region: Peloponnisos **Prefecture**: Korinthia

Altitude (m): 700 **Area (ha)**: 1317 **Length**: -

Description: The lake Stymfalia is a part of plateau situated in the southern part of Korinthia Prefecture and surrounded by the mountains of Killini (Zireia), Oligyrtos, Mavrovounio and Garrias. The main substrate of the area is calcareous rock which belongs to the Gavrovo - Tripoli geological zone. The bottom of the lake is covered with recently deposited alluminum. There are many karstic wells surrounding the lake which input freshwater. The surface area of the lake fluctuates seasonally being larger during the winter and covering approximately 770 ha, while during summer it usually covers about 350 ha. From time to time the lake is even totally drained. During the droughts of 1988-1990, the lake was completely dry and was used for agricultural purposes by the inhabitants of the nearby villages. The lake covers an area from 25% to about 45% of the surface area of the site depending on the season, but it may even be totally drained. From the rest of the area around the lake, coniferous forest in the higher altitudes around the lake may cover the 20% of the area, Phrygana about 15%, broad-leaved formations 10%, rocky ecosystems about 5% and the remaining 50% is under cultivation although the latter figure changes constantly.

Habitat types: Natural euthropic lakes with Magnopotamion or Hydrocharition type vegetation, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), Pallas's pine forests.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Testudo hermanni, Emys orbicularis, Mauremys caspica, Elaphe situla, Phoxinellus* spp.

Other important species: — Flora: 7B, 1D.
— Fauna: 2A, 9B, 19C, 2D.

Impacts/Activities:
— Positive:
— Neutral:
— Negative: 810, 830, 920 (IN)

Protection Status:
— National and Regional level: Game refuge.
— International level: IBA.

Significance: Such mountainous lakes are very rare not only in Peloponnisos but all over Greece. This site is a very important refuge for migratory birds and of course a breeding area for many of them. Moreover it is home to the endemic taxon *Pseudophoxinus s. stymphalicus*. This fish has a very interesting biology since, during the dry periods of the lake it survives by sinking down into the mud and forming a slippery envelope around the body. In addition the variety of ecological niches existing in the surroundings of the lake and inhabited by a number of Greek endemic plant taxa show much ecological diversity within this site. The well-developed formations of coniferous forests with the Greek endemic *Abies cephalonica* and Pallas Pine *Pinus nigra* ssp. *pallassiana* give an additional value to the whole site. Recently this area was used by the high school students of Korinthia Prefecture for environmental studies.

Site Name: AKROKORINTHOS



Sitecode: GR2530003 **Type**: B

Longitude: 22° 52′ **Latitude**: 37° 53′

Administrative Region: Peloponnisos **Prefecture**: Korinthia

Altitude (m): 387 **Area (ha)**: 610 **Length**: -

Description: The area of Akrokorinthos geologically belongs to the ancient areas of Peloponnisos similar to those of Mts. Parnon and Taygetos. The area consists of a hill with an altitude of 574 m, mainly of hard calcareous substrate, forming steep slopes rich in chasmophytic vegetation. Near the top of this rocky formation a Venetian castle is present, and at the top the ruins of an ancient Greek temple exist.

Habitat types: Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs.

Plant species: -

Animal species: *Testudo marginata, Callimorpha quadripunctata.*

Other important species: — Flora: 9B.
— Fauna: 11B, 11C, 4D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 948, 967, 979 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The area is of great archaeological inerest since it is combined with the antiquities of Ancient Korinthos. It is an area of natural beauty and hosts a number of Greek endemic plant taxa with the most important being *Stachys virgata* which is a very rare taxon also mentioned for Argolida but not found recently. This taxon should be given special treatment since it may be about to face extinction.

Site Name: OROS OLIGYRTOS



Sitecode: GR2530004 **Type**: B

Longitude: 22° 23′ **Latitude**: 37° 48′

Administrative Region: Peloponnisos **Prefecture**: Korinthia

Altitude (m): 1367 **Area (ha)**: 8620 **Length**: -

Description: The examined mountain extends over the northeastern part of central Peloponnisos and connects the mountains of Zireia on the north, Artemision and Farmakas on the SE and Saitas on the west. The largest northern and central part of the mountain consists of deeply karstified limestones belonging to the Tripoli geotecnonical zone. Less extended metamorphic schists are also encountered. In the southern part, limestones of the Pindos-zone dominate with local outcrops of cherts and flysch rocks. The highest zone of the mountain includes stony slopes, steep rocky cliffs, and grasslands. The *Abies cephalonica* forests prefer the northern part of the mountain and altitudes of 1200-1600 m (in some cases, however, *Abies* are present in altitudes lower than 700 m), while the southern part is overgrazed, with scattered *Quercus* and remnants of maquis or older forests. The summit-chain of Oligyrtos is the water boundary between the basin areas of Feneos (alt. 710 m) on the northwest, the lake of Stymphalia (alt. 600 m) on the northeast, Alea (alt. 600 m) on the southeast and Kandila (alt. 630 m) on the south. The main gorges and ravines have a NE-SW direction but they are not very deep. Large springs emerge mainly along the southern boundary of Oligyrtos between limestones and the Kandila plain sediments. The main springs (Kourpa and Sintzi) are connected to a river which flows to the Plaissia sinkhole. In the area of the springs a wetland is formed. Another large spring emerges at the northeastern part of the mountain, at the Lafka area, contributing to the water balance of the lake Stymphalia, which is the most important mountainous of NE Peloponnisos. There is also a large spring on the foothills of Skiathis near the village of Alea, the water of which flows towards the sinkhole of the Alea karstic plain.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Southern greek montane cliffs, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Elaphe quatuorlineata, Elaphe situla.*

Other important species: — Flora: 32B, 13D.
— Fauna: 7B, 14C.

Impacts/Activities:
— Positive: -
— Neutral: 160, 409, 501 (IN)
— Negative: 100, 140, 230 (IN) / 100, 140, 810, 900 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: -

Significance: The region is of great importance, due to the following features: 1)Mt. Oligyrtos is in the central part between the Feneos, Stymphalia and Kantila mountain plains, which are the most important hydrological basins of N. Peloponnisos. 2) It is an area of high altitudes and important forests in the northern part, with habitats suitable for plants and animals, and the rocky steep slopes of the crest areas (and not only them) also include habitats which are suitable for rare and endemic plants. 3) Many interesting plant taxa are found in the examined area.

Site Name: ORI GERANEIA



Sitecode: GR2530005 **Type**: B

Longitude: 23° 08′ **Latitude**: 38° 01′

Administrative Region: Peloponnisos **Prefecture**: Korinthia

Altitude (m): 700 **Area (ha)**: 6989 **Length**: -

Description: The mountain volume of Geraneia (highest summit 1351 m) is situated quite close to the city of Athens, about 60 km away. The eastern part of the site belongs to the prefecture of Attica and the western one to the prefecture of Korinthia. The rocks of the mountain range of Geraneia consist mainly of flyschs and limestone. The climate is Mediterranean, having a strictly dry period during the summer months, while the maximum, minimum and the mean temperatures are 22.6, 13.0 and 18.5°C, respectively. The habitat types within the site are typical of the Mediterranean type ecosystems, such as the evergreen oak matorral, with *Quercus coccifera, Pistacia lentiscus, P. terebinthus, Phillyrea latifolia, Cistus cretius, C. monspelliensis* and *Brachypodium ramosum* that cover the majority of the calcareous slopes. The site is well forested mainly with temperate coniferous forests of *Pinus halepensis*. Along the intermittent streams of the site there are small formations of hydrophilous species, *Nerium oleander* and *Vitex agnus-castus*. The upper and coldest part of the site is covered by well structured forests of the endemic greek fir, *Abies cephalonica*. Phryganic vegetation and *Juniperus phoenicea* formations are present as well. *Oleo-Ceratonion* is also present in shrubby formations of *Ceratonia siliqua, Juniperus phoenicea, Pistacia lentiscus* and *Olea oleaster*.

Habitat types: Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Olea* and *Ceratonia* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Centaurea attica* ssp. *megarensis*.

Animal species: *Testudo hermanni, Testudo marginata, Elaphe situla*.

Other important species: — Flora: 16B, 3D.
— Fauna: 4C.

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 140, 180, 243, 402, 410, 421, 423, 948 (IN)

Protection Status:
— National and Regional level: Game refuge.
— International level: -

Significance: The quality and importance of the site should be assessed in view of the fact that it is an area close to the urban centre of Athens that supports fairly well conserved natural ecosystems, most importantly forests. The formations of *Abies cephalonica* are at a good conservation status and the *Pinus halepensis* forests create a natural environment of great aesthetic value and of outmost ecological importance due to the proximity of the site to the west part of Attica, which is an area heavily aggravated by the existing industrial activity. Although the number of the habitat types present in the site is not impressive, a significant number of endemic plants exist in the area. Mount Geraneia is the only biotope of the endangered local endemic species *Centaurea attica* ssp. *megarensis* (*Centaurea megarensis*). Its populations are small and scattered, under considerable pressure from overgrazing by sheep and goats.

Site Name: ORI GIDOVOUNI, CHIONOVOUNI, GAIDOUROVOUNI, KORAKIA, KALOGEROVOUNI, KOULOCHERA KAI PERIOCHI MONEMVASIAS



Sitecode: GR2540001 **Type**: B

Longitude: 22° 55′ **Latitude**: 36° 55′

Administrative Region: Peloponnisos **Prefecture**:Lakonia

Altitude (m): 648 **Area (ha)**: 29093 **Length**: -

Description: The site consists of bare or sparsely forested mountains and of scrub in many places. The coastal line often ends with steep sea-cliffs and rocky shores. Geologically, the site belongs to the Gavrovos-Tripolis zone and consists mainly of phyllites and dark-coloured limestones of Jurassic age as well as Eocenic and Oligocenic flysch. At higher altitudes the vegetation consists of coniferous forests with *Abies cephallonica* and *Pinus nigra* ssp. *pallasiana*. At lower altitudes *Juniperus phoenicea* arborescent matorals is present, while Thermo-Mediterranean brush vegetation, thickets and heath-garrigues mixed with *Sarcopoterium spinosum* phrygana predominate in the area. Scattered spots of *Platanus orientalis, Nerium oleander* and *Tamarix* galleries are also present while some thickets of *Castanea sativa* exist.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Juniperus phoenicea* arborescent matorral, Tree- spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, *Olea* and *Ceratonia* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Mauremys caspica, Callimorpha quadripunctata.*

Other important species: — Flora: 22B, 1D.
— Fauna: 1A, 16B, 20C, 3D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: -

Protection Status: — National and Regional level: Game refuge.
— International level: IBA.

Significance: The whole site offers a great veriety of ecological niches. It is very interesting area for resting and nesting of migratory birds. At the southernmost limits of the site, the unique rocky landscape of Monemvasia occurs. This landscape pays host to a Venetian castle as well as some very rare floral elements.

Site Name: PERIOCHI NEAPOLIS (VOION) KAI NISOS ELAFONISOS



Sitecode: GR2540002 **Type**: B

Longitude: 23° 01′ **Latitude**: 36° 31′

Administrative Region: Peloponnisos **Prefecture**: Lakonia

Altitude (m): 386 **Area (ha)**: 26880 **Length**: -

Description: The greatest part of the area forms a peninsula ending in cape Maleas. Phytogeographically this is the northern part of the South Aegean area, that starts from the SW Asia and through Rodos, Karpathos, Kriti and Kythira ends at the eastern part of the three peninsulas of S. Peloponnisos. The island of Elafonisos lies to the west of the peninsula and is a geological and ecological continuation of the area.

Habitat types: Lagoons, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Dune juniper thickets (*Juniperus* spp.), Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs.

Plant species: *Linaria hellenica.*

Animal species: *Monachus monachus, Testudo marginata, Mauremys caspica, Elaphe situla.*

Other important species: — Flora: 36B.
— Fauna: 1A, 5B, 19C.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 948, 966, 971, 979 (IN)

Protection Status: — National and Regional level: Game refuge.
— International level: -

Significance: The variety of biotopes give shelter to a great number of very interesting plant taxa which are endemic to Greece and some of them endemic to the site.

Site Name: EKVOLES EVROTA



Sitecode: GR2540003 **Type**: B

Longitude: 22° 42′ **Latitude**: 36° 49′

Administrative Region: Peloponnisos **Prefecture**: Lakonia

Altitude (m): 25 **Area (ha)**: 5820 **Length**: -

Description: This site is located a few km east of the town of Gytheio and is the innermost place of Lakonikos Gulf. Evrotas is one of the most historic rivers of Peloponnisos. The river, with a total length of c. 100 km, crosses the historic town of Sparti and plays a significant role in the economy of the area. Existing information regarding the fauna, flora and vegetation of the site is scattered and a detailed study of the area seems necessary. It is to be pointed out however that in nowdays the natural habitats of the area have been restricted to the river and chanel beds and the sea shores while the majority of the delta surface has be planted by orange trees.

Habitat types: Estuaries, Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Aegean phrygana (*Sarcopoterium spinosum*), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Testudo marginata, Mauremys caspica, Caretta caretta, Elaphe quatuorlineata, Elaphe situla, Rutilus alburnoides, Phoxinellus* spp., *Leuciscus souffia, Callimorpha quadripunctata.*

Other important species:
— Flora: -
— Fauna: 3A, 13B, 24C, 5D.

Impacts/Activities:
— Positive: -
— Neutral: 100, 220 (IN) / 100 (AR)
— Negative: 101, 120, 151, 180, 230, 300, 403, 608, 810, 830 (IN) / 120, 200 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA.

Significance: The site has already been characterized as an EU Important Bird Area and there is no doubt that as a wetland it presents a combination of several important habitats and species keeping in mind that the whole of S. Peloponnisos, and especially the coasts, are characterized as rocky areas. Those areas play an important role in the conservation of the sites' biodiversity.

Site Name: NOTIA MANI, OROS SANGIAS KAI AKROTIRIO TAINARO



Sitecode: GR2540004 **Type**: B

Longitude: 22° 26′ **Latitude**: 36° 39′

Administrative Region: Peloponnisos **Prefecture**: Lakonia

Altitude (m): 609 **Area (ha)**: 31387 **Length**: -

Description: The site is a peninsula ending at Cape Tainaro. Geologically, it belongs to the Gavrovo-Tripoli zone and consists mainly of phyllites and dark coloured limestones of Jurassic age as well as Eocenic and Oligocenic flysch. The relief of the site is dominated by the mountain of Sangias which has altitude of 1218 m, and which at higher levels is covered with coniferous forest of *Pinus nigra* ssp. *pallasiana* and *Abies cephalonica*. At lower levels the maquis and phrygana predominate while rural mosaics with olive and lentisc matorrals are mixed with calcareous cliffs and rocky shores. The bare mountain slopes, stony ground, stone wall boundaries of the olive groves and the typical stone "tower houses" together form typical unique landscape of the Mani Peninsula.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Caves not open to the public, *Quercus frainetto* woods, *Olea* and *Ceratonia* forests, Pallas's pine forests.

Plant species: -

Animal species: *Monachus monachus, Testudo marginata, Elaphe situla, Callimorpha quadripunctata.*

Other important species: — Flora: 30B.
— Fauna: 2A, 14B, 17C, 6D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: -

Protection Status: — National and Regional level: -
— International level: IBA.

Significance: Apart from the unique landscape, the area offers a great variety of ecological niches for mainly migratory and nesting birds (this site is characterised as an Important Bird Area), but also gives shelter to many rare and endemic plants.

Site Name: LAGKADA TRYPIS



Sitecode: GR2540005 **Type**: E

Longitude: 22° 18′ **Latitude**: 37° 05′

Administrative Region: Peloponnisos **Prefecture**: Lakonia

Altitude (m): 1157 **Area (ha)**: 1607 **Length**: -

Description: The area of Lagkada Trypis is a gorge of c. 13 km in length. It consists of a large area of rocky habitats. However, forests of *Abies cephalonica* and *Pinus nigra* ssp. *pallasiana* prosper well. The area is located next to the north side of Mt. Taigetos. It includes part of the valley of Alagonia and is the only natural path to cross the Taigetos mountain range from Sparti to Kalamata. It is a well isolated area.

Habitat types: Endemic oro-mediterranean heaths with gorse, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Pallas's pine forests.

Plant species: *Micromeria taygetea.*

Animal species: *Testudo marginata, Elaphe quatuorlineata, Elaphe situla.*

Other important species: — Flora: 38B
— Fauna: 9B, 8C, 2D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 948, 973, 979 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The gorge of Lagkada Trypis, with unique rocky habitats, offers shelter to more than 35 Greek endemic plants, four of them i.e. *Hypericum taygeteum, Satureja taygetea, Silene echinosperma* and *Silene goulimyi* prosper only on the vertical rocks of this area and their populations consist of very few individuals.

Site Name: FARANGI KAI EKVOLES NEDONA



Sitecode: GR2550001 **Type**: E

Longitude: 22° 06′ **Latitude**: 37° 01′

Administrative Region: Peloponnisos **Prefecture**: Messinia

Altitude (m): 400 **Area (ha)**: 2383 **Length**: -

Description: The River Nedonas flows through the town of Kalamata. Its mouth lies west of the Kalamata harbour and its catchment area lies at the western side of the north part of Mt. Taygetos. The special feature of this site is a deep narrow gorge, with a length of 9 km, lying between Chani Lagou and the military shooting area just north of Kalamata. The typical landscape of this site is formed by deeply carved limestone occurring along the gorge as well as the tributaries, the main ones being: Karveliotiko Rema, Grias Rema, Dafnorema and Skoura Rema. These black bituminous limestone belong to the Tripolis geotectonic zone and are deeply karstified. The substrate of the limestones is phyllitic-quartzitic rock (metamorphic units of the Tripolis zone). These metamorphic rocks outcrop in the Cheromata-Lazarolakka and Alagonia-Artemisia areas, east and north-east of the site. Their relative impermeability ensures a high runoff of water moving towards the Nedonas gorge. Due to the karstification a high percentage of runoff water in the Nedonas riverbed infiltrates through the limestone, thus contributing to the enrichment of the groundwater and maintaining the relatively low runoff towards the river mouth. The geomorphological development of the Nedonas gorge is due to extensive erosion which occurred during the postalpine elevation of the area; erosion was promoted across large NE-SW striking faults. At the same time, zones of weaknes in the limestones (due to tectonic stresses) were exposed to erosion, thus promoting rockslides and landslides on the slopes. This led to the temporary obstruction of the water flow in the gorge and to the formation of small lakes behind dams of landslide material. These longitudinal lakes were not perennial; the destruction of the dam during a subsequent flashflood was the rule, but muddy sediments were left behind and formed a locally soft substrate for plants. Karstic holes and caves have been observed in many places along the gorge. These indicate older levels of groundwater circulation as well as positions of paleo-springs, before the deepening of the gorge to its present level. These holes are very important habitats for many wild animals (bats, foxes, hares, birds etc.) according to the location, the relative accesibillity of water, and the degree of safety which they offer to the respective animals. Finally, the maquis vegetation belonging to the Oleo-Ceratonion zone is highly developed and of very good quality and biodiversity.

Habitat types: Estuaries, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Caretta caretta, Elaphe quatuorlineata, Lucanus cervus.*

Other important species: — Flora: 3B, 1C, 3D
— Fauna: 8B, 20C, 1D

Impacts/Activities:
— Positive: 606, 624 (IN)
— Neutral: 100, 130, 490, 501 (IN) / 160 (AR)
— Negative: 110, 120, 140, 230, 301, 421, 946, 948 (IN) / 100, 140, 230, 421, 900, 946, 948 (AR)

Site Name: FARANGI KAI EKVOLES NEDONA (cont.)

Protection Status: — National and Regional level: -
— International level: -

Significance: Our on-site investigation showed from the beginning that this site is very important, even when compared to the famous Lagkada gorge at the eastern part of the Kalamata-Sparti pass. Lagkada is the natural continuation of the Nedonas-Lagkada connection between Kalamata and Sparti. The importance of the site is due to following factors:
-A very impressive landscape
-High quality of the maquis vegetation, consisting of *Quercus coccifera, Q. ilex, Pistacia lentiscus, Olea europaea, Ceratonia siliqua, Arbutus unedo, A. adrachne, Phillyrea latifolia, Acer creticum, Laurus nobilis*, etc.
-Development of pure riverside vegetation (*Platanus orientalis, Salix sp.* etc.).
-Water runoff occurring for at least several months, especially in the northeastern part of the gorge.
-The existence of rare, endemic and interesting plants from a phytogeographical point of view.

Site Name: PIGES KAI EKVOLES PAMISOU



Sitecode: GR2550002 **Type**: B

Longitude: 22° 01′ **Latitude**: 37° 01′

Administrative Region: Peloponnisos **Prefecture**: Messinia

Altitude (m): 137 **Area (ha)**: 4463 **Length**: -

Description: The spring-system of River Pamisos is at the western edge of Makreiki Rachi-Tsouka hills (which belong to the mountain complex of Taygetos). The spring of Agios Floros is the most important one in the Messinia plain, in the large catchment area of the Pamisos-Mavrozoumaina basin. The direct distance between the spring and the coast is 16 km. The geomorphology of the Messinia plain is controlled by tectonic factors; the whole plain is a subsidence terrain formed by large NNW-SSE tectonic faults, forming the Messinia Graben. The Messinia plain is covered with Pliocene marine-lagoon sediments (marls, sands and pebbles in alternating layers) overlain with Pleistocene-Holocene unconsolidated fluvial sediments. Holocene alluvial sediments (fluvial, lacustrine and wetland facies) cover the eastern part of the plain near the Agios Floros springs. Large drainage interventions in the '60s aiming at the agricultural exploitation of the area, contributed to the drying of the old extended wetland. The only natural wetland vegetation is limited to a small area of the spring of Agios Floros, at the river mouth, as well as along the direct riverbed and some tributaries. A thin belt of dense reed communities (Phragmitetum) covers the area of the Ag. Floros spring and the riverbed, while stands of *Salix fragilis* and *Platanus orientalis* exist along the river banks. The spring area is also characterized by communities of water-loving taxa such as *Nympaea alba, Typha domingensis, Equisetum telmateia, Ranunculus trichophyllus, Zantedeschia aethiopica* and various *Juncus* spp., *Carex* spp. etc. The surrounding hills are covered by maquis vegetation. The main agricultural activity is the cultivation of olive for the production of olive oil. Organic material present in the waste water of the olive processing factories is a major pollutant between the months November and February. The nearby airport also produces the minor pollutants of noise and disturbance; agricultural pollution is estimated to be heavier. The Messini landfill site near the mouth of the Pamisos river is a source of pollution.

Habitat types: Estuaries, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex, Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae), *Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Lutra lutra, Testudo hermanni, Mauremys caspica, Caretta carreta, Rutilus alburnoides, Barbus meridionalis, Lucanus cervus.*

Other important species: — Flora: 1D
— Fauna: 1A, 5B, 9C, 3D

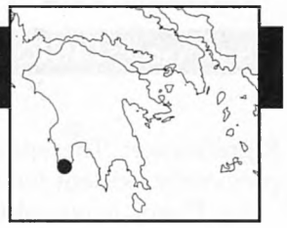
Impacts/Activities:
— Positive: -
— Neutral: 130, 200, 220, 502, 505 (IN)
— Negative: 100, 110, 120, 140, 150, 230, 250, 424, 604, 701, 810 (IN) / 100, 140, 180, 701, 703 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Site Name: PIGES KAI EKVOLES PAMISOU (cont.)

Significance: The springs of Agios Floros and the mouth of Pamisos are significant remnants of previously existent wetlands. The site's importance is due to following factors:
- Ag. Floros is one of the largest springs in Peloponnisos without severe pollution problems.
- The presence of the village of Ag. Floros (just above it) and the existence of attractive riversides with large *Platanus orientalis* trees, are important features which may have potential for ecotourism.
- The municipal domestic water supply to a series of towns and villages is based on the springs of Agios Floros.
- River Pamisos has a riverbed 16 km in length (though artificially regulated); the riversides are suitable for the development of a riverside forest.
- It must be noted the occurence of *Typha domingensis* (it is distributed in S Europe), *Nymphaea alba* and *Iris pseudacorus*, the populations of which must be protected since their populations are gradually declined.
- "The "delta" region is a place of importance, with dense reed communities.

Site Name: NISOI SAPIENTZA KAI SCHIZA, AKROTIRIO AKRITAS



Sitecode: GR2550003 **Type**: E

Longitude: 21° 46′ **Latitude**: 36° 44′

Administrative Region: Peloponnisos **Prefecture**: Messinia

Altitude (m): 254 **Area (ha)**: 11253 **Length**: -

Description: The area of this site covers Cape Akritas (SW Peloponnisos) and the neighbouring islands of Schiza (1090 ha) and Sapientza (963 ha), as well as the islets of Venetiko, Ag. Mariani, Avgo, etc., of the Oinouses island group. The island of Sapientza is wooded, whereas the rest of the site is covered with scrub vegetation.

Habitat types: Embryonic shifting dunes, *Juniperus phoenicea* arborescent matorral, Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Eu-mediterranean greek calcareous cliffs, Oriental plane woods (Platanion orientalis).

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Tursiops truncatus, Monachus monachus, Mauremys caspica, Caretta caretta.*

Other important species: — Flora: 6B.
— Fauna: 3B, 20C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 810, 811, 920, 948, 979 (IN)

Protection Status: — National and Regional level: Natural monuments and landmarks, Controlled hunting area.
— International level: Council of Europe Biogenetic Reserve

Significance: The main botanical interest of this site is the fact that the sea cliffs and rocky shores are home to endemic *Limonium* taxa. The great zoological importance of the area is indicated by the occurrence here of 29 important vertebrate taxa (birds excluded).

Site Name: LIMNOTHALASSA PYLOU (DIVARI) KAI NISOS SFAKTIRIA



Sitecode: GR2550004 **Type**: B

Longitude: 21° 40′ **Latitude**: 36° 58′

Administrative Region: Peloponnisos **Prefecture**: Messinia

Altitude (m): 50 **Area (ha)**: 3350 **Length**: -

Description: The almost circular bay of Navarino, accounts for approximately 48% of the surface area of this site. The western part of the bay is closed by the elongated island of Sfaktiria which has an orientation parallel to that of the opposite coast. This island is hilly, with a height of 106 m, and has a calcareous substrate. A very characteristic vegetation of *Juniperus phoenicea* mixed with *Euphorbia dendroides, Ruta chalepensis, Phlomis fruticosa* and other phrygana species exists on this island. The entrance to the bay is at the southern edge of the site, and is partly, closed by the islet of Pylos, almost opposite the small town of the same name. To the north-west of the site, the coastal lagoon "Divari" of Pylos or of Gialova is situated. This is a shallow, brackish lake (with marshes), partly drying up in the summer. Around the lake, formations of mud-and sand-flats occur, mixed with salt marshes and salt forest of *Tamarix* sp. Cliffs and rocky shores are present at the north of the lagoon, and give the appearance of being a continuation of the island of Sfaktiria. Well-developed sand-dunes occur between the lagoon and the sea-shore, and here healthy formations of *Juniperus phoenicea* and *Platanus* sp. grow. Sea inlets cover an area of about 48%, the lagoon covers a mean area of 8%; Coastal sand dunes 4%; mud-and sand-flats 2%; saltmarshes, salt steppes, salt scrubs and salt forest 6%; agricultural activities 15% and phrygana formations on the mainland 5%. The remaining area is covered with human settlements, etc.

Habitat types: Mudflats and sandflats not covered by seawater at low tide, Lagoons, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Dune juniper thickets (*Juniperus* spp.), Aegean phrygana (*Sarcopoterium spinosum*).

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Caretta caretta, Elaphe quatuorlineata, Elaphe situla.*

Other important species: — Flora: 5B.
— Fauna: 1A, 6B, 21C, 2D.

Impacts/Activities: — Positive:
— Neutral:
— Negative: 810, 830, 920, 952

Protection Status: — National and Regional level: -
— International level: IBA.

Significance: Significant formations of *Juniperus phoenicea* exist on the sand-dunes and calcareous rocky habitats of the island of Sfaktiria, where they may grow to a considerable height. The phrygana around Pylos offer shelter to some very rare endemic plant taxa with significant phytogeographical and biological interest.

Site Name: THINES KYPARISSIAS



Sitecode: GR2550005 **Type**: E

Longitude: 21° 40′ **Latitude**: 37° 15′

Administrative Region: Peloponnisos **Prefecture**: Messinia

Altitude (m): 50 **Area (ha)**: 1087 **Length**: -

Description: This site is a part of the Western Peloponnisos coastline, where very favourable ecological conditions for sand-dune development prevail. The coasts of the examined site of Western Peloponnisos, more than anywhere else along the Greek coasts, are exposed to open sea and consequently to the prevailing SW winds that cause sand-dune formation. Nearly all the soils of the area investigated belong to the sandy soil class, resulting from physical rock weathering. They consist of small angular fragments derived from rock which are later transported by wind or water. The landscape of this site is composed of Ammophilous ammonitrophilous vegetation of low and high sand-dunes, phrygana and maquis vegetation, *Pinus halepensis* forests on sandy substrate and other landscape features, such as cultivated land, villages, et. The height of the sand-dunes ranges from 1 to 8 (-10) m above sea-level and, depending on their height and the presence of humus and plant remains, various plant associations and other syntaxa occur, for example: *Agropyretum mediterraneum, Ammophiletum arrundinaceae, Cakiletea maritimae, Euphorbia terracina-Silene nicaensis*. A more or less distinct zonal pattern can be observed from the sea to the inland, i.e., a strip of sand, followed by low sand dunes, and high sand dunes, with ammophilous vegetation, then high sand dunes with *Pinus halepensis* forests.

Habitat types: Annual vegetation of drift lines, Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Dunes with *Euphorbia terracina*, Dune juniper thickets (*Juniperus* spp.), Aegean phrygana (*Sarcopoterium spinosum*), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Caretta caretta, Elaphe situla.*

Other important species: — Flora: 1D.
— Fauna: 14B, 11C, 13D.

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 180, 230, 300, 608, 690 (IN) / 100, 140, 180 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The main ecological value of this site is due to the sand-dune ecosystems. In Greece, sand dune ecosystems are decreasing in number and area, and in some cases have disappeared altogether. On these coasts of the Western Peloponnese, well-developed sand-dune formations still survive. The presence of well-structured coastal Aleppo pine forests at a distance of not more than 100-200 m from the sea growing on the top of high stabilized sand-dune formations, is of high aesthetic value. The mosaic of vegetation in this site is fairly unique, and it is representative of well-preserved sand-dune ecosystems, in Greece.

Site Name: OROS TAYGETOS



Sitecode: GR2550006 **Type**: E

Longitude: 22° 21′ **Latitude**: 36° 57′

Administrative Region: Peloponnisos **Prefecture**: Messinia

Altitude (m): 1500 **Area (ha)**: 53625 **Length**: -

Description: Oros Taygetos is a mountain range including the highest peaks of Peloponnisos (2407 m). Geologically, it is a continuation of the Gavrovo-Tripoli zone composed of phyllites, plated limestones and flysch. Together with mountain range of Parnonas it is the oldest area of Peloponnissos. Its length is about 40 km and its southern limits touch Mt. Sangias while the northern one is the Lagkada gorge. The forest present on the mountain is mainly composed of *Pinus nigra* ssp. *pallasiana* and the Greek fir *Abies cephalonica*.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Balkan screes, Eu-mediterranean greek calcareous cliffs, Southern greek montane cliffs, Caves not open to the public, Chestnut woods, *Quercus frainetto* woods, Pallas's pine forests, Stinking juniper (*Juniperus foetidissima*) woods, Southern greek montane cliffs.

Plant species: *Globularia stygia, Crepis crocifolia.*

Animal species: *Testudo hermanni, Testudo marginata, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Callimorpha quadripunctata, Lucanus cervus.*

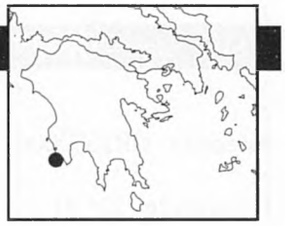
Other important species: — Flora: 152B, 43D
— Fauna: 1A, 67B, 27C, 5D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 971, 973, 979 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: Mt. Taygetos includes a large variety of habitats offering shelter to more than 160 Greek endemic plant taxa, 21 out of these being locally endemic to Taygetos. Some taxa are Balkan endemics or have scattered populations in Greece and surrounding countries. Some other are mostly new to science and, moreover, a new genus is mentioned but also some Balkans endemics or plants with small and scattered populations in Greece, some countries of the Balkans and Anatolia, are reffered. The above taxa have not yet been included in any Red Data Book despite their small populations and their vulnerability and variety, which place them in the category of "Endangered" taxa.

Site Name: THALASSIA PERIOCHI STENOU METHONIS



Sitecode: GR2550007 **Type**: E

Longitude: 21° 40′ **Latitude**: 36° 40′

Administrative Region: Peloponnisos **Prefecture**: Messinia

Altitude (m): -5 **Area (ha)**: 973 **Length**: -

Description: This site is located in Southern Peloponnisos and includes the coasts from Akrotirio Kolyvri to Chondros Kavos, as well as the northern coasts of Sapientza island. The substrate consists of hard, fine-grained sand with scattered, eroded calcareous rocks. Beds of *Cymodocea nodosa* grow at 1 to 2 m depth, followed by *Posidonia* communities at slightly greater depth. At 8 to 10 m depth communities of the phanerogam *Halophila stipulacea* along with the green alga *Caulepra prolifera* have been found. On the hard substrate, macroalgal vegetation grows where *Cystoseira* communities predominate.

Habitat types: *Posidonia* beds, Reefs.

Plant species: -

Animal species: *Tursiops truncatus*.

Other important species: — Flora: 4D
— Fauna: 1C

Impacts/Activities: — Positive:
— Neutral:
— Negative: 210, 220, 520 (IN) / 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The Mediterranean endemic species *Posidonia oceanica*, which is distributed throughout this sea down to 40 m depth, forms extensive meadows with high densities. The species *Posidonia oceanica* is very sensitive to pollution and, thus, used as a bioindicator of the ecological condition of the area. Within its foliage it hosts a number of plant and animal species. The seagrass *Halophila stipulacea* is confined to the eastern Mediterranean, and its westernmost post is in Peloponnisos. This euryhaline species occurs in the Indian Ocean and the Red Sea. It has invaded the Mediterranean sandy seabed phanerogam vegetation of *Posidonia oceanica* and the algal meadows of *Caulerpa prolifera* after the opening of the Suez Canal. The green alga *Caulerpa prolifera* is a tropical species of the Mediterranean and grows in the warmest parts of the sea, on soft substrate.

Site Name: OROS PARNITHA



Sitecode: GR3000001 **Type**: I

Longitude: 23° 43′ **Latitude**: 38° 11′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 900 **Area (ha)**: 14950 **Length**: -

Description: The mountain of Parnitha (1413 m, Karambola) is located in the northern part of Attica, very close (40 Km) to the centre of Athens. The mountainous block of Parnitha consists mainly of marbles and schists. The climate is typical Mediterranean. The site is a well forested area, characterised mainly by forests of the endemic greek fir, *Abies cephalonica*, temperate coniferous forests (mainly *Pinus halepensis*), sclerophyllous scrub/maquis, mountain grassland, rocky cliffs, springs and streams. Regarding the zonal vegetation of the area, two main zones exist: 1) The zone of *Abies cephalonica* at the upper parts, starting from 600-800 m and upwards, with *A. cephalonica* forest, also characterised by *Quercus ilex* formations as well as by the presence of *Quercus pubescens, Fraxinus ornus* and other high altitude Mediterranean shrubs; and 2) The zone of *Pinus halepensis* and the evergreen, sclerophyllous shrubs (*Quercus coccifera, Arbutus unedo, Phillyrea latifolia, Myrtus communis, Olea europea, Ceratonia siliqua, Pistacia lentiscus* etc.) which occur in unmixed communities or understorey vegetation of the pine forests. The area has been characterised as a National Park since 1961. The core of the National Park (3800 ha) is located in the centre of the site and includes the summit area of the mountain.

Habitat types: Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Vegetated calcareous inland cliffs with chasmophytic vegetation, *Olea* and *Ceratonia* forests, *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Myotis emarginatus, Myotis myotis, Testudo hermanni, Testudo marginata, Elaphe quatuorlineata, Elaphe situla.*

Other important species:
— Flora: 41B, 11D
— Fauna: 12A, 11B, 20C, 3D

Impacts/Activities:
— Positive: -
— Neutral: 624, 625 (IN)
— Negative: 230, 244, 251, 421, 622, 623, 626, 720, 948, 974 (IN) / 180, 401, 402, 411, 701, 702 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Game breeding station
— International level: IBA

Significance: The National Park of Parnitha is a very interesting region regarding biodiversity, suitable to function as a shelter for the protection and conservation of the flora and fauna of southern Greece. Moreover, it has already been designated an a Special Protection Area (SPA) for birds. The flora of mount Parnitha is one of the richest in Greece. There have been recorded 818 plant species, many of which are endemic or threatened by extinction. It also hosts a variety of animal species, vertebrates and invertebrates, many of them legaly protected at national and international level. In addition, it is the only area in southern Greece where the deer (*Cervus elaphus*) survives.

Site Name: OROPOS - EKVOLES ASOPOU



Sitecode: GR3000002 **Type**: B

Longitude: 23° 44′ **Latitude**: 38° 20′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 2 **Area (ha)**: 420 **Length**: -

Description: The site is a wetland lying at the northern part of Attiki and is characterized by the presence of Asopos river estuary at its western part and of a complex system of sand flats, mud flats and lagoons at its eastern part. Its central part was a saltmarsh formation whose continuity has recently been interrupted by buildings and roads. More specifically, the formations that characterize the site are: 1) Small boggy fields with *Juncus* spp. scattered inbetween buildings and roads at the central part of the site. The plant species *Artiplex portulacoides, Sarcocornia perennis, Suaeda maritima, Salsola soda, Spergularia salina, Triglochin bulbosa barrelieri, Ruppia maritima, Juncus maritimus* and *Juncus subulatus* are important for the structure of the wetland formation. 2) Sand flats and mud flats at the eastern part of the site that are seasonally inundated by seawater, forming lagoons and changing the sea-inlets' landscape. 3) Hydrophilous vegetation i.e. riparian formations of *Vitex agnus-castus, Arundo donax* etc., that cover the banks of Asopos river at a distance of about 100 m off the coast. The lowest part of the river banks is void of hydrophilous vegetation. The terrestrial part of the site has been delimited according to the presence of man made artificial borders (roads, buildings, fences, etc.) that include the larger part of the important biotopes. The site limits in the sea follow a line parallel to the coast and at a distance of ca. 50 m from the coastline in order to include the part of the marine environment that is affected by the seasonal innudations and related topographical modifications.

Habitat types: Sandbanks which are slightly covered by sea water all the time, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Lagoons, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers.

Plant species: -

Animal species: *Phoxinellus* spp.

Other important species: — Flora: -
— Fauna: -

Impacts/Activities:
— Positive:
— Neutral: 170, 120, 221, 801 (IN) / 430, 690 (AR)
— Negative: 230, 401, 402, 502, 511, 530, 701, 710, 800, 803, 870, 952 (IN) 401, 402, 419, 502, 504, 710 (AR)

Protection Status:
— National and Regional level:
— International level: -

Significance: The site is an important wetland serving as an intermediate resting station for migratory birds. Its quality is gradually diminishing but, at its present condition, it can still sustain some bird populations. Its most characteristic habitat type, the seasonally inundated sand and mud flats, is unique for eastern central Greece. The quantity of Asopos river waters is satisfactory during most of the year but its quality is poor because of industrial, agricultural and urban waste discharge, especially at its upper parts (outside the site).

Site Name: SCHINIAS



Sitecode: GR3000003 **Type**: B

Longitude: 24° 02′ **Latitude**: 38° 09′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 20 **Area (ha)**: 5000 **Length**: -

Description: The area is located at the NE part of Attiki, 40 km from Athens, at Marathon plain and is fringed by the lowlying mountains of Karoubalo, Pounta and Draconera at the north-east. The centre is occupied by the formerly great marsh of Marathon, now drained (since over 30 years) by a system of canals. The marsh, which is dry in summer and turns into swamp in winter, receives significant quantities of sea water subterraneously and fresh water from springs in autumn and winter (changes in salinity). Mediterranean salt meadows and salt scrubs are intermixed giving way to glasswort swards in the swamp (SE, a saline temporary pond) with vegetation established on a substrate of decomposing sea-grasses -mainly *Posidonia oceanica*. North-west there is Makaria (Mati) spring with freshwater, aquatic flora. The presence of two habitats not included in Annex I should be noted: the reed swamp with *Phragmittes communis* and *Typha angustifolia* extending from the spring down to the water line and in patches in the swamp and serves as a shelter for migratory birds; and at the perimeter of the spring a characteristic vegetation close to running water with the mints (*Mentha pulegium, M. aquatica, Teucrium scordioides*), *Apium nodoflorum* and *A. graveolens, Ranunculus muricatus*. A narrow zone of ammophilous psammophytic vegetation (*Elymus farctus, Medicago marina, Anthemis tomentosa*) extends at the seashore of Schinias bay (fine sand, unstabilized dunes followed by transitional zone with stabilized dunes). Above there are the *Pinus pinea* (west) and *Pinus halepensis* (east) forest -the two species intermingle in the middle- with understorey where *Pistacia lentiscus* is dominant followed by *Juniperus, Quercus* and *Myrtus*. Eastwards is the promontory of Kynosoura -limestone, calcareous rocks and the hills with two zones of vegetation, from the higher to the lower areas *Juniperus phoenica* matorral and low *Euphorbia* formations, very well preserved and a third zone, at the sea-cliffs with Critmo-Limonietalia. The marine vascular vegetation includes *Posidonia* beds at Schinias bay (515 m depth), sublittoral soft-seabed with *Cymodocea nodosa* and reefs (Kynosoura). The arable land includes orchards and vineyards. The site sustains heavy pressure by the housing development (on the west and in the swamp, over the forest, and near the sea). There is also a small airport (W, airway 500 m).

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Dune juniper thickets (*Juniperus* spp.), Wooded dunes with *Pinus pinea*, Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Mediterranean temporary ponds, *Juniperus phoenicea* arborescent matorral, Low formations of euphorbia close to cliffs, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo hermanni, Testudo marginata, Emys orbicularis, Mauremys caspica, Elaphe situla, Phoxinellus* spp.

Other important species: — Flora: 4B, 2C, 2D
— Fauna: 7C, 1D

Site Name: SCHINIAS (cont.)

Impacts/Activities:
— Positive: -
— Neutral: 100, 621, 625 (IN)
— Negative: 140, 210, 220, 230, 250, 400, 502, 506, 608, 720 (IN)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The site retains an ecological quality despite its proximity to Athens, and because of it, its protection is urgent. This ecological quality and importance is comprised of the following elements: 1) a variety of habitat types with rapid interchange in a relatively small area (*Pinus pinea* forest, one of the few in Greece, though at a degraded conservation status; typical halophytic flora, at a good status, not to be found elsewhere in Attiki any more; well conserved *J. phoenicea* matorral, a natural botanical garden at Kynosoura; marine vascular vegetation -*Posidonia* beds-), 2) its flora is rich in common species and also contains endemics and local endemics, 3) its fauna contains strictly protected species (birds, amphibians, reptiles, fish); 4) the area is very important for migratory birds as one of the few resting places, whereby spring and autumn routes transverse the peninsula of Attiki, and as a potential breeding area. The importance of the area also lies on social and cultural reasons because of its historical associations (Marathon battle) and the nearby archaeological sites (Marathon tomb, Rhamnous); because it can be used for educational and biological research purposes; and, last but not least, as a holiday-recreation area for the city of Athens. Furthermore, it is of great aesthetic value, being one of the last few parts of Attiki that retain the classical beauty of the attican landscape.

Site Name: VRAVRONA



Sitecode: GR3000004 **Type**: B

Longitude: 24° 01′ **Latitude**: 37° 56′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 153 **Area (ha)**: 4000 **Length**: -

Description: The site is characterised by: 1) extensive vineyard cultivations; 2) coniferous woodland in a good condition; 3) maquis and phrygana affected by grazing locally; 4) a wetland habitat type, although restricted, with *Phragmites australis, Juncus* sp. and *Arudo donax* being important for its structure; 5) the protected archaeological site near the wetland; 6) a not well balanced sea bed, with the species *Cymodocea nodosa, Posidonia oceanica, Zostera nolti* being important for its ecological balance; 7) restricted building activities.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Mediterranean temporary ponds, Floating vegetation of Ranunculus of plane submountainous rivers, Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, *Juniperus phoenicea* arborescent matorral, Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Eu-mediterranean greek calcareous cliffs, Caves not open to the public, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Miniopterus schreibersii, Myotis myotis, Testudo hermanni, Testudo marginata, Emys orbicularis, Elaphe situla.*

Other important species: — Flora: -
— Fauna: 1A, 1B, 4C, 2D

Impacts/Activities:
— Positive: 100 (IN) / 100 (AR)
— Neutral: -
— Negative: 120, 140, 220, 230, 401, 530, 623, 802, 810, 870, 941 (IN) 120, 220, 301, 402, 411, 419, 430, 502, 621, 702, 810 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The quality and importance of Vravrona site is indicated by the following characteristics: 1) the variety of sufficiently conserved habitat types within a relatively small area; 2) the archaeological site with the temple of Artemis nearby the wetland acts as a barrier for extensive human activities since it has a protection status; 3) the position of the site, nearby Athens (40 km); 4) the importance of the wetland as a refuge for many bird species; 5) the traditional vineyard cultivations (since 500 B.C.) which prohibit extensive and intensive industrial use; 6) the actually not-altered general site character since ancient times.

Site Name: SOUNIO - NISIDA PATROKLOU



Sitecode: GR3000005 **Type**: B

Longitude: 24° 01′ **Latitude**: 37° 41′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 187 **Area (ha)**: 5150 **Length**: -

Description: The terrestrial part of the site comprises a typical mediterranean landscape. It consists of three ecosystems, which represent all the three types of mediterranean ecosystems of Greece, that is, pine forests, maquis (both continental and littoral) and phrygana, at several successional stages. The continental maquis are dominated by heavily grazed *Quercus coccifera* shrubs or small trees. Old mines and sites of archaeological and paleontological interest are also present.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Caves not open to the public, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Monachus monachus, Testudo hermanni, Testudo marginata.*

Other important species:
— Flora: 7B, 2D
— Fauna: 6B, 3C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 100, 501, 511, 622, 624, 948 (IN) / 100, 140, 948 (AR)
— Negative: 140, 151, 230, 250, 402, 411, 421, 424, 500, 502 (IN) / 230, 250, 421, 424, 702 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Peripheral zone of National Park
— International level: Barcelona Convention site

Significance: The Sounion National Park (SNP) was founded in 1971. It covers 3500 ha, 750 ha of which is strictly protected area. The decision for the foundation of this National Park, which is also protected by the Barcelona Convention, was taken because of the ecological, historical, geological and paleontological importance of the area in question. 1. The Aleppo pine forest that overdominates the vegetation is the most extended and well preserved pine forest in the area of eastern Attica. The importance of that forest for the microclimate of the overpopulated area of Athens is obvious. Also, a great number of plant and animal species find niches in this forest. 2. The flora of the SNF is of great interest. Two species are greek endemics only to be found in that particular area: *Centaurea laureotica* and *Centaurea attica* ssp. *asperula* (= *C. asperula*), their conservation status being vulnerable. Several other greek endemics are to be found here. 3. More than 260 minerals have been found in the area of the SNP. It is this variety of minerals and rocks that enhanced the development of a unique mining industry during the classic period (480 BC). 4. Evidence of the welfare of this mining industry in the antiquity can still be seen, as the SNP is full of relicts of ancient mines, labs, houses, sanctuaries and other monuments. 5. The area of the SNP has a lot of caves and other carstic formations. Those formations have worked as traps during the various geological periods. The result was the discovery of many fossils, especially at the northern part of the SNP. From the plant fossils found, the most interesting were those of *Pinus maritima* and

Site Name: SOUNIO - NISIDA PATROKLOU (cont.)

Quercus suber; both species are nowadays absent from the eastern part of the Mediterranean basin, and of *Pinus nigra, Buxus sempervirens*, that now are only restricted to higher elevations. Regarding the animal fossils, a *Spalax* species that is no more found in Greece, *Ursus arctos* is extinct from Southern Greece and *Cervus elaphus* is no more found at the Sounion peninsula. Apart from the SNP, a larger area that includes the SNP was nominated as Area of Archaeological and Historical Interest and as a Site of Particular Natural Beauty. The SNP is only a part of the present site. The islet of Patroklos, because of its geographical position (as well as the SNP), provides resort to all migrating birds passing above the Sounion peninsula. Also, the numerous marine caves along the coast of both the Sounion peninsula and Patroclos islet, can be an excellent refuge for the monk seal.

Site Name: YMITTOS- AISTHITIKO DASOS KAISARIANIS-LIMNI VOULIAGMENIS



Sitecode: GR3000006 **Type**: B

Longitude: 23° 48′ **Latitude**: 37° 56′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 513 **Area (ha)**: 8123 **Length**: -

Description: Ymittos is a long but narrow mountain (total length 20 Km), with its highest peak reaching at 1026 m. An intense but short gorge separates the northern part of the mountain from the southern. The commonest rock of northern Ymittos is the schist, while limestones can also be found particularly at the southern and western parts of the mountain. This explains the lack of springs, which can only be found at those parts of the site, where the two kinds of rock overlap. Occasionally, there are massif layers of marble under the schist. The annual precipitation ranges from 400 to 600 mm. Finally, the site of Ymittos includes a great number of small and large caves. The maquis vegetation of the site consists of low individuals of *Quercus coccifera*.

Habitat types: *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Caves not open to the public, Submerged or partly submerged sea caves, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus blasii, Testudo hermanni, Testudo marginata, Elaphe situla.*

Other important species: — Flora: 39B, 7D
— Fauna: 1A,15B, 8C,8D

Impacts/Activities:
— Positive: -
— Neutral: 500 (IN) / 500, 502, 505, 511, 600 (AR)
— Negative: 100, 140, 162, 230, 241, 250, 390, 401, 402, 421, 424, 948 (IN) 390, 400, 401, 410, 421, 422, 424 (AR)

Protection Status:
— National and Regional level: Aesthetic Forest, Game refuge
— International level: -

Significance: It is essential for the improvement of life quality in the urban areas to act towards the conservation of wild nature that might be neighbouring the urban areas in question. This is the case for the request for conservation of the natural habitats and the wild nature in general of Mt. Ymittos. Despite the fact that the natural ecosystems of the mountain have more of less been affected by human pressure, a well-organised and ecologically sound management plan will certainly contribute towards the conservation and enrichment of its wild life. Although not few people regard Ymittos as an area for waste deposits or as a land to host new settlements, the wild life of the mountain still survives any type of pressure and does not stop to surprise us by a biodiversity unique for a mountain so close to a huge urban area.

Site Name: KYTHIRA: KARAVAS EOS MYLOPOTAMO-PALAIOPOLI-AVLEMONAS



Sitecode: GR3000007 **Type**: B

Longitude: 22° 59′ **Latitude**: 36° 16′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 250 **Area (ha)**: 11000 **Length**: -

Description: This island of Kythira is located offshore the east-southern coast of PeloponnesEs. The site includes the northern and northwestern part of the island down to Piskopi cape, a central belt and the eastern part down to Agios Nikolaos bay with Mathonaion cape and the port of Avlemonas. The rocks consist mainly of limestone and slate. Coastal habitats; freshwater bodies (temporary ponds and intermittent streams) with the accompanying vegetation; inland calcareous cliffs, limestone pavements and caves; Olea-Ceratonia and pine forest; and marine habitats with inlets and bays, reefs and sea caves, are present in the site.

Habitat types: Estuaries, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Dune juniper thickets (*Juniperus* spp.), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Matorral with *Laurus nobilis*, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Limestone pavements, Caves not open to the public, Submerged or partly submerged sea caves, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Monachus monachus, Elaphe situla.*

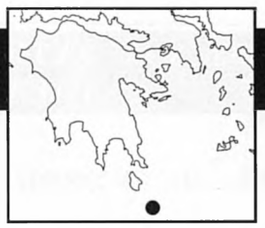
Other important species: — Flora: 33B, 3D
— Fauna: 19B, 7C

Impacts/Activities: — Positive: -
— Neutral: 100, 140, 170, 210, 402, 403, 501, 502, 511, 512, 608 (IN)
— Negative: 180, 230 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The quality and importance of the site lie in: 1) The island of Kythira is of great biogeographical interest as it is a zone influenced by both continental and South Aegean faunistic and floristic elements. 2) The site includes a variety of inland, coastal and marine biotopes, mostly well conserved and some of them considered priority habitat types. 3) Regarding the flora, there are more than 650 plant species on the site, among them many endemic ones. The species *Stachys spreitzenhöferi* ssp. *spreitzenhoferi, Centaurea cytherea, Centaurium erythraea* ssp. *limoniiforme* and *Polygala helenae* are endemic to Kythira. 4) At the eastern part of the site there are ancient sand dunes with fossils of many gastropod species of great scientific interest. 5) The island is important for migratory birds. 6) A fair population of the mediterranean monk seals live at the west and south coasts of the island. 7) The invertebrate fauna is interesting. 8) The reptile fauna includes rare and protected by the Bern Convention and by Presidential Decree 67/81 species.

Site Name: ANTIKYTHIRA - PRASSONISI KAI LAGOUVARDO



Sitecode: GR3000008 **Type**: B

Longitude: 23° 18′ **Latitude**: 35° 52′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 150 **Area (ha)**: 2100 **Length**: -

Description: The site is group of islands on the south of Kythira island: Antikythira, Thymontes, Pseira, Plakoulithra, Lagouvardos and Prasonisi. Most of the islands are characterised by steep sea-cliffs with a plateau on the top. Antikythira is the largest island of the group. It has an area of 20km² and a maximum altitude of 378 m. Few inhabitants live there throughout the year. The dominant rock is limestone but there are some Neogene deposits, too. The dominant vegetation is low maquis and phrygana, while part of the island is cultivated with cereals. Antikythira is one of the drier locations in Greece, receiving annualy less than 200 mm of rainfall. Prasonisi is located 7.5 km N-NW of Antikythira. Its area is about 0.27 km² and its maximum altitude 129 m. It consists of limestones. The vegetation consists mainly of herbaceous plants but there is a thick body of maquis shrubs at the western side. Lagouvardos island is located 7.2 km NW of Antikythira and 3 km from Prasonisi. Its area is about 0.06 km² and its maximum altitude 42 m. It consists of limestone rocks. Halophilous herbs and a few Gramineae are the only plants growing there.

Habitat types: Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Shifting dunes along the shoreline with *Ammophila arenaria*, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Monachus monachus*.

Other important species: — Flora: 10B, 1C
— Fauna: 14B, 4C

Impacts/Activities: — Positive: -
— Neutral: 100, 140, 170, 171, 180, 210, 230, 403 (IN) / 210 (AR)
— Negative: 500 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The group of islands that comprise the site is of great biogeographical interest, as it is a zone influenced by both continental and S. Aegean faunistic and floristic elements. Its flora is differentiated even from that of the closest island, Kythira. Particular elements of the ecological importance of the site are: 1) It is an important area for the migratory bird species. 2) The Mediterranean monk seal is resident in the site. 3) The reptile species present in the site are protected by the Bern Convention and by the Greek Law (Presidential Decree 67/1981). 4) The invertebrate fauna is also interesting. In addition, ancient sand-dunes with fossils of many gastropod species (most psychrophilic) in Potamos harbour are of great scientific interest. 5) The flora of this group of islands has not been adequately studied, but the few existing data indicate its interest.

Site Name: ETHNIKOS DRYMOS PARNITHAS



Sitecode: GR3000009 **Type**: H

Longitude: 23° 43′ **Latitude**: 38° 11′

Administrative Region: Attiki **Prefecture**: Attiki

Altitude (m): 950 **Area (ha)**: 3812 **Length**: -

Description: The proposed site is the core of the National Park of Parnitha and includes the summit area of the mountain. The area has been declared as a National Park since 1961 and is located in the northern part of Attica, very close (40 Km) to the centre of Athens. The mountainous block of Parnitha consists mainly of marbles and schists. The climate is typical Mediterranean with mean annual rainfall exceeding 650 mm. The site is a well forested area, characterised mainly by forests of *Abies cephalonica*, on fairly poor and dry soil; temperate coniferous forests (mainly *Pinus halepensis*); sclerophyllous scrub/maquis, mountain grassland, rocky cliffs, springs and streams. Regarding the zonal vegetation of the area, two main zones exist: 1) The zone of *Abies cephalonica* at the upper parts (starting from 600-800 m and upwards), with *A. cephalonica* forest, also characterised by the presence of *Quercus pubescens, Q. ilex, Fraxinus ornus* and other high altitude Mediterranean shrubs; and 2) The zone of *Pinus halepensis* and the evergreen, sclerophyllous shrubs (*Quercus coccifera, Arbutus unedo, Phillyrea latifolia, Myrtus communis, Pistacia lentiscus* etc.) which occur in unmixed communities or understorey vegetation of the pine forests, especially at the southern part of the site.

Habitat types: Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Vegetated calcareous inland cliffs with chasmophytic vegetation, *Olea* and *Ceratonia* forests, *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Myotis emarginatus, Myotis myotis, Testudo hermanni, Testudo marginata, Elaphe quatuorlineata, Elaphe situla.*

Other important species:
— Flora: 41B, 10D
— Fauna: 12A, 10B, 20C, 3D

Impacts/Activities:
— Positive: -
— Neutral: 624, 625 (IN)
— Negative: 230, 244, 251, 421, 622, 623, 626, 720, 948, 974 (IN) / 180, 401, 402, 411, 701, 702 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park
— International level: IBA

Significance: Regarding biodiversity, the core of the National Park of Parnitha is a very interesting region, suitable to act as a shelter for the protection and conservation of the flora and fauna of southern Greece. The flora of mount Parnitha is one of the richest in Greece. There have been detected 818 plant species, many of which are endemic of threatened by extinction. It also hosts a variety of animal species, vertebrates and invertebrates, many of them legaly protected at national and international level. In addition, it is the only area in southern Greece where the red Deer (*Cervus elaphus*) survives. The proximity of the site to the city of Athens in combination to its great ecological, aesthetic and educational value contributes to its significance as an area which has to be monitored and protected.

Site Name: LIMNOS: CHORTAROLIMNI - LIMNI ALYKI



Sitecode: GR4110001 **Type**: B

Longitude: 25° 27′ **Latitude**: 39° 57′

Administrative Region: Voreio Aigaio **Prefecture**: Lesvos

Altitude (m): 10 **Area (ha)**: 18000 **Length**: -

Description: Alyki is a shallow coastal salt lagoon and Chortarolimni is a coastal seasonal brackish marsh (hereafter they are called lakes for simplicity). They are located in the eastern part of the island of Limnos, along the coastal zone and in close proximity to each other. The surface of the lakes is about 600 ha and 230 ha respectively. Between the two lakes there is a smaller one (Asprolimni, ca. 42 ha). The access to the wetland is difficult during the rainy season and is made possible through a trail. Alyki is covered, for the most part, by sea water in contrast to Chortarolimni which is empty of water most of the time. When there is no water Alyki and Chortarolimni form an extended salt meadow, the skirts of which that face the sea are devoid of vegetation due to the severe winds. The area of the meadow is occupied by salt scrubs (*Salicornia sp. Arthrocnenum sp. Tamarix sp.*) intermixed with glasswort swards. In the outer zone of the skirts one finds *Juncus sp., Erica sp., Cistus sp., Euphorbia sp.* and *Sarcopoterium spinosum*. Wooded formations are very scattered within the broader area (olive trees, *Vitex agnus, Elaegnus angustifolius, Ficus carica, Quercus macrolepis).* There also exist mosaic-type areas of *Phragmites australis* and *Arundo donax*. The absence of *Limonium* spp. and the presence of *Tamarix sp.* and *Erica sp.* instead should be noted. Finally, a narrow zone of ammophilous psammophytic vegetation extends at the seashore. The sea covers 70% of its total area and includes a large plateau with submarine meadows (*Posidonia oceanica* beds) and two areas with reefs.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Lagoons, Reefs, *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Salt steppes (Limonietalia), Shifting dunes along the shoreline with *Ammophila arenaria*, Dune-slack reedbeds and sedgebeds, Dune scleorophyllous scrubs (Cisto-Lavenduletalia), Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Tursiops truncatus, Testudo graeca, Mauremys caspica.*

Other important species: — Flora: 1B, 1D
— Fauna: 1A, 4B, 5C, 1D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 110, 120, 140, 230, 300, 421, 423, 530, 730, 870 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: The wetland retains its naturalness in an excellent, almost ideal state. Especially Alyki may be the only natural salt lake in Greece with so large a surface that has not been influenced by man. The presence of saline and brackish areas in Alyki and Chortarolimni, respectively, as well as the rarity of fresh water (springs, rivers etc) create the picture of a unique landscape that reminds of a typical semi-desert. Furthermore, the avifauna of the site enhances this

Site Name: LIMNOS: CHORTAROLIMNI - LIMNI ALYKI (cont.)

similarity. The wetland of Alyki and Chortarolimni is one of only 5 or less sites in the region where breeding of *Glareola pratincola, Himantopus himantopus* and *Recurvirostra avosetta* takes place. It is also one of only 100 or less sites in the EC where breeding of *Falco naumanni* occurs. The geographical position of the site is of great significance since several migratory birds use it as a resting place. The fauna is also enriched by important invertebrate species. The above testify the significant scientific importance of the site which can be used for educational and biological research purposes. Lastly, one should not fail to mention that the importance of the area lies also on cultural reasons.

Site Name: AGIOS EFSTRATIOS



Sitecode: GR4110002 **Type**: B

Longitude: 25° 00′ **Latitude**: 39° 31′

Administrative Region: Voreio Aigaio **Prefecture**: Lesvos

Altitude (m): 150 **Area (ha)**: 4600 **Length**: -

Description: Agios Efstratios is an isolated island in the Central Aegean, circa 30 km from the nearest island, Limnos. The sea separating Agios Efstratios from the other islands is at least circa 200 m deep, in all directions. The marine area covers 12% of the site. The highest hilltop is 303 m according to the available maps. The rocks are schists, shales, and volcanic trachyte, with only some limestone patches. A large part of the coast consists of sea cliffs with caves. Today there are only 200 inhabitants, almost all or them concentrated at the fishing village of the NW side of the island. Cultivation and intense grazing take place in only small areas now. As a result, the formerly cultivated or grazed lands are being invaded by plants from various origins but no typical habitat has been formed yet. There are also *Centaurea spinosa* communities among the phrygana along the sandy beaches. *Quercus macrolepis* does not form an oak forest any more; the trees are only scattered and some thickets have remained only in the steep valleys. There are also some thickets of *Salix alba* near the village and the larger rivulet courses are bordered by *Nerium oleander* and *Vitex agnus-castus*. An earthquake has caused a lot of ruins where several species of reptiles occur.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Pseudo-steppe with grasses and annuals (Thero-Brachypodietea), Aegean calcareous cliffs, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Submerged or partly submerged sea caves, *Salix alba* and *Populus alba* galleries, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Monachus monachus*.

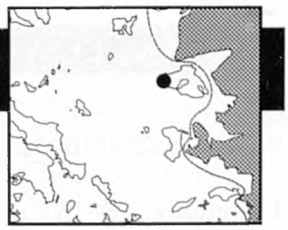
Other important species: — Flora: 2B, 1C, 7D
— Fauna: 1B, 5C

Impacts/Activities: — Positive: 530 (IN)
— Neutral: 100, 210, 211, 220, 403, 501, 511, 520 (IN)
— Negative: 140, 230, 290, 790, 946 (IN) / 213, 790 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The sea cliffs of the island form caves with beaches which consist ideal shelters for the monk seal population that breeds there. Eleonora's falcons and important sea-bird species (*Puffinus puffinus, Phalacrocorax aristotelis*) nest on the cliffs. The vernal pools are important for the migratory bird species and for rare species of plants, such as *Isoetes duriei, Pilularia minuta, Crassula vaillanti, Myosurus sessilis* ssp. *heldreichi*, and *Lythrum borysthenicum*. There still exist thickets of *Quercus macrolepis*, a species now rare in the Aegean. *Pancratium maritimum*, occurring at the sand beaches of the island, is in danger because of the destruction of its habitats in the Mediterranean. The presence of *Melilotus elegans* should be noted, since it is the first time it has been observed in Greece. The sea beds of *Posidonia oceanica* are in excellent condition. Finally, the geological interest of the island lies in the relicts of a petrified forest.

Site Name: LESVOS: DYTIKI CHERSONISOS - APOLITHOMENO DASOS



Sitecode: GR4110003 **Type**: B

Longitude: 25° 59′ **Latitude**: 39° 13′

Administrative Region: Voreio Aigaio **Prefecture**: Lesvos

Altitude (m): 370 **Area (ha)**: 16100 **Length**: -

Description: The area is located in the western part of the island. The most proximate towns and villages are Sigri, Eresos, Antissa, Vatoussa, Pterounta, Chidira and Agra. Volcanic rocks are the main geological components, whilst marls, sandy of clayey tuffites as well as schists, conglomerates, slates and limestones also exist N of Sigri and NNW of Antissa. The vegetation of the area consists of phrygana (dominant species are *Sarcopoterium spinosum, Centaurea spinosa*, and *Ballota acetabulosa*) and of forests of *Pinus brutia, P. nigra* ssp. *pallasiana* and *Quercus macrolepis*. At the west part of Lesvos, among Chidira, Parakoilia, and Agra there are riparian plant communities, along the banks of intermittently flowing streams, with *Rhododendron luteum* accompanied by *Osmunda regalis, Nerium oleander, Pteridium aquilinum, Juncus* sp., *Platanus orientalis*.

Habitat types: Reefs, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Oriental plane woods (Platanion orientalis), *Quercus macrolepis* forests, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus blasii, Myotis blythi, Miniopterus schreibersii, Myotis myotis, Monachus monachus, Testudo graeca, Elaphe situla.*

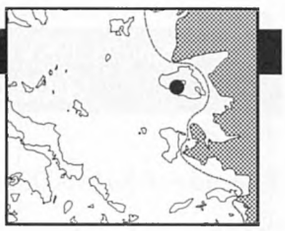
Other important species: — Flora: 3B, 9C, 6D
— Fauna: 3A, 2B, 15C

Impacts/Activities:
— Positive: 403 (IN)
— Neutral: 160, 180, 212, 213, 501, 504, 511, 621, 690, 730 (IN)
— Negative: 140, 171, 230, 250, 421, 502, 608, 740 (IN) / 100, 110, 400 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge
— International level: Barcelona Convention site

Significance: The petrified forest of Lesvos is a unique geological monument of enormous scientific interest. By the Presidential Decree 443/1985 it has been declared a protected Natural Monument and it is also protected by the Barcelona Convention. The surface of the strictly protected area is 51.7 ha. The most important appearances of fossils are located in Pali Alonia (28.7 ha), Chamandroula (4 ha), Akrotirio Sigri (5 ha), northern part of Megalonisi (4 ha) and Lafi (10 ha). From the floristic point of view the fossils belong to the following genera: *Pinus, Taxodioxylon, Pinoxylon, Cedroxylon, Pityoxylon, Alnus, Carpinus, Populus, Quercus, Platanus, Laurus, Cinnamomum, Palmoxylon*, etc. It is obvious that today most of the above mentioned genera are distributed only in tropical and subtropical areas. The existence of the antiquities in Eresos and Antissa as well as the byzantine convent of Ipsilos present great archaeological interest.

Site Name: LESVOS: KOLPOS KALLONIS



Sitecode: GR4110004 **Type**: B

Longitude: 26° 13′ **Latitude**: 39° 10′

Administrative Region: Voreio Aigaio **Prefecture**: Lesvos

Altitude (m): 5 **Area (ha)**: 14500 **Length**: -

Description: Kalloni's bay is the largest bay of Lesvos. Situated in the SW part of the island it has a surface of 110km², maximum depth 19 m approximately and a mean depth of 10 m. The marine area covers approximately 80% of the site. It is one of the most important fishery centres of Greece. Towns and villages surrounding the bay have a total population of 11600 inhabitants (1991 census). Within the bay and in a depth varying from 10 to 20 m characteristic VTC (Vases Terrigenes Cotieres) societies are observed. Geologically the area consists of volcanic rocks and alluvial deposits.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Mudflats and sandflats not covered by sea water at low tide, Large shallow inlets and bays, Reefs, Annual vegetation of drift lines, Mediterranean salt meadows (Juncetalia maritimi), Salt steppes (Limonietalia), Floating vegetation of *Ranunculus* of plane submountainous rivers, Aegean phrygana (*Sarcopoterium spinosum*), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus blasii, Myotis blythi, Miniopterus schreibersii, Myotis myotis, Monachus monachus, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe situla.*

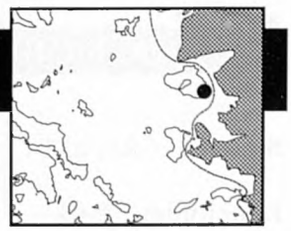
Other important species: — Flora: 8C, 3D
— Fauna: 3A, 5B, 12C, 6D

Impacts/Activities:
— Positive: -
— Neutral: 340, 621 (IN) 609 (AR)
— Negative: 140, 170, 171, 200, 210, 230, 240, 250, 300, 403, 421, 424, 501, 502, 511, 701, 800, 870, 948 (IN) / 100, 110, 400, 504, 608 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: Important wetlands are formed in the N and E parts of the bay. Rare, threatened and/or uncommon bird species for both Greece and Europe pass-by or nest in the area.

Site Name: LESVOS: KOLPOS GERAS, ELOS NTIPI KAI OROS OLYMPOS



Sitecode: GR4110005 **Type**: B

Longitude: 26° 26′ **Latitude**: 39° 04′

Administrative Region: Voreio Aigaio **Prefecture**: Lesvos

Altitude (m): 360 **Area (ha)**: 8500 **Length**: -

Description: The site is located in the SE part of the island. Geologically it consists of alluvial deposits (around Geras bay), marbles, schists, pyroxeno-peridotites and olivinites. The marine area covers 49% of the site. Mount Olympos (968 m) is covered by *Castanea sativa* and *Pinus brutia* forests whilst its summit is naked and rocky. On mount Olympos there are also arborescent forms of *Quercus coccifera* mixed with deciduous species such as *Rhamnus* sp., *Acer cempervirum, Crataegus* sp., etc. Between Agiasos and Megalochori there is comparatevily small area covered by *Pinus pallasiana* ssp. *nigra*. Kolpos Geras is an inland bay communicating with the Aegean sea through a narrow channel. Its surface is 42km² and its maximum depth 20 m. Saltmarshes are formed alongside the coasts of the bay and especially at Ntipi, Larsos, Evreiaki, Charamida, etc.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Mudflats and sandflats not covered by sea water at low tide, Large shallow inlets and bays, Reefs, Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Endemic oro-Mediterranean heaths with gorse, Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Chestnut woods, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Rhinolophus blasii, Myotis blythi, Miniopterus schreibersii, Myotis myotis, Testudo graeca, Emys orbicularis, Mauremys caspica, Elaphe situla.*

Other important species: — Flora: 7B, 29C, 15D
— Fauna: 3A, 5B, 12C, 7D

Impacts/Activities:
— Positive: -
— Neutral: 166, 212, 501, 502, 511, 608, 609, 622 (IN) / 180, 730 (AR)
— Negative: 140, 163, 171, 230, 250, 403, 421, 422, 504, 623, 701, 803, 860, 948 (IN) 100, 110, 301, 402, 411 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The bay is important for the migratory birds because of its saltmarshes. Mount Olympos has a great botanical interest due to the occurrence of the local endemic *Alyssum lesbiacum* and of other important and rare plant species for both Greece and Europe. Regarding the species it should be noted that a) *Festuca pseudosupina* is a local endemic species described from the summit area of mount Olympos. Its presence needs confirmation as this area has been deranged during the last years. b) *Myotis blythi lesviacus* is a subspecies endemic to Lesvos. Noteworthy regarding the vegetation is the presence of *Pinus brutia* and *Castanea sativa* forests at a very good conservation status.

Site Name: SAMOS: ALYKI



Sitecode: GR4120001 **Type**: B

Longitude: 27° 01′ **Latitude**: 37° 42′

Administrative Region: Voreio Aigaio **Prefecture**: Samos

Altitude (m): 3 **Area (ha)**: 240 **Length**: -

Description: The island of Samos lies in the east central part of the Aegean Sea very close to Asia Minor, from which its eastern end is separated by a strait, at the narrowest only 1200 m wide. The climate is typical Mediterranean with mean annual rainfall exceeding 500 mm. The marine part covers 29% of the site and the terrestrial part includes the area of Alyki, a big sandy beach, located in the south-eastern part of the island, 0.2 km W of Psili Ammos village. It is a shallow lagoon, which occupies the area of the old salt-pits where works stopped in 1970. The coastal shingle and sandy zone is rather narrow and does not allow the development of well-formed ammophilous plant associations. The vegetation of the beach is generally poor in plants which develop mostly as isolated individuals. At certain points of the coast, where organic substances accumulate and the beach consists almost exclusively of shingle, the presence of ammonitrophilous species is evident, as: *Anthemis tomentosa, Salsola kali, Medicago marina, Limonium virgatum, L. sinuatum* etc. *Centaurea spinosa* frequently participates in this vegetation unit. At the area of the lagoon (a flat area along the coast flooded by water during winter) halophilous formations result. The dominant species in this area are: *Limonium sinuatum, L. vulgare, Juncus heldreichianus, J. acutus, Phragmites australis, Sarcopoterium spinosum* and species of the genus *Tamarix*. During the last 25 years the area of Alyki has developed to an important wetland.

Habitat types: *Posidonia* beds, Lagoons, Mediterranean salt meadows (Juncetalia maritimi), Embryonic shifting dunes, Aegean phrygana (*Sarcopoterium spinosum*), *Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Testudo graeca, Elaphe situla.*

Other important species: — Flora: 1B, 1C, 1D
— Fauna: 1A, 6C

Impacts/Activities: — Positive: -
— Neutral: 100 (IN)
— Negative: 220, 230, 302, 600, 621 (IN) / 180, 948 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The quality and importance of the site result mainly from the big number of bird species visiting or breeding at the wetland. The area hosts more birds than many other islands due to the vicinity to the Turkish mainland. It is also a very important staging post for bird migration along the Turkish coast flyway. The area of Alyki is a place of great aesthetic and ecological value, as similar formations are rather rare in the Aegean islands.

Site Name: SAMOS: OROS AMPELOS (KARVOUNIS)



Sitecode: GR4120002 **Type**: B

Longitude: 26° 49′ **Latitude**: 37° 46′

Administrative Region: Voreio Aigaio **Prefecture**: Samos

Altitude (m): 900 **Area (ha)**: 4960 **Length**: -

Description: The island of Samos is located at the eastern part of the central Aegean sea, very close to the coasts of Asia Minor. The climate is typical Mediterranean with mean annual rainfall exceeding 500 mm. The mountain Ampelos (Karvounis) occupies the central part of the island. The highest summit is Profitis Ilias (1093 m). The site is a well forested mountainous area, characterized mainly by temperate coniferous forests, sclerophyllous scrub and excposed limestone rocks. Grazing and farming have affected the upper parts of the mountain less than usual in the Aegean, so much natural or semi-natural vegetation is still present. There are not main habituated areas within the proposed site and due to the lack of main roads the approach to the district by car is rather difficult. The traditional cultivation of cereals, vineyards and olive trees although nowadays limited is still balanced.

Habitat types: Endemic oro-Mediterranean heaths with gorse, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines, Stinking juniper (*Juniperus foetidissima*) woods.

Plant species: -

Animal species: *Callimorpha quadripunctata*.

Other important species: -- Flora: 11B, 5C, 19D
— Fauna: 1A, 5B, 7C, 10D

Impacts/Activities:
— Positive: -
— Neutral: 100 (IN)
— Negative: 140, 160, 180, 230, 948 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The quality and importance of the site result mainly from the great number of endemic and very rare plants and invertebrates existing in the area. This high degree of endemic plants derives mainly from the geographical location of Samos island (very close to Asia Minor) as well as from the high altitudes and the fair variety of biotopes existing within the proposed site. It is worth noting that the plant species *Asperula samia, Thymus samious* and *Erodium sibthorpianum* ssp. *vetteri* are local endemics. It must be mentioned, as well, that due to the isolation from the main tourist areas of Samos island and the limited human activities within the site, the *Pinus brutia* and *P. nigra* ssp. *pallasiana*, forests are at a very good conservation status.

Site Name: SAMOS: OROS KERKETEFS-MIKRO KAI MEGALO SEITANI - DASOS KASTANIAS KAI LEKKAS



Sitecode: GR4120003 **Type**: B

Longitude: 26° 38′ **Latitude**: 37° 45′

Administrative Region: Voreio Aigaio **Prefecture**: Samos

Altitude (m): 450 **Area (ha)**: 6110 **Length**: -

Description: The island of Samos lies in the east central part of the Aegean sea very close to Asia Minor, from which its eastern end is separated by a strait, at the narrowest only 1200 m wide. The climate is typical Mediterranean with mean annual rainfall exceeding 500 mm. Mount Kerkis (1434 m) is located in Western Samos and comprises a summit area with oreo-mediterranean vegetation, moist valleys and forests to the north, limestone cliffs and unusually extensive areas of scree to its west side. The mountainous block of Kerkis consists mainly of schists and marbles. The site is a well forested area, characterised mainly by temperate coniferous forests (mainly *Pinus brutia* and *Cupressus sempervirens*) and sclerophyllous scrub. The zonal vegetation of the area is divided into the following four zones: 1. Oleo-Ceratonion which occupies the coastal warmer areas and reaches 250-300 m. The formations of the evergreen, sclerophyllous shrubs, occur as unmixed or underwood vegetation of the Pinus brutia forests. 2. Quercion ilicis begins at the upper limits of Oleo-Ceratonion and reaches up to 600-700 m. It is characterised by the dominance of *Quercus ilex, Fraxinus ornus* and *Arbutus unedo. Pinus brutia* is best developed in this zone. 3. *Quercetalia pubescentis* which extends from 600-700 m to 900-1000 m, where the appearance of forest vegetation stops. It is characterised by the dominance of different species of deciduous shrubs *Crateogus* spp., *Rosa* spp., *Prunus* spp., *Quercus pubescens* et al. as well as isolated individuals of *Pinus pallasiana* ssp. *nigra*. 4. Daphno-Festucetalia which appears on the highest tops of Kerkis above the forest limits. The dominance of spiny shrubs with a characteristic cushion form is impressive. *Juniperus foetidisima* is found with a characteristic creeping form. In that zone we found the most endemics, such as *Alyssum samium, Erodium sibthorpianum* subsp *vetteri, Anthemis rosea* and *Centaurea xylobasis*. Mikro and Megalo Seitani is an area of sandy beaches, of great aesthetic and ecological value. Dasos Kastanias and Lekkas are well forested areas, characterised by natural stands of *Cupressus sempervirens*. Grazing and farming has affected the upper parts of the mountain less than usual in the Aegean, so much natural or semi natural vegetation is still present. The decline of agricultural activities has resulted in many cultivated areas being abandoned, especially the mountainous ones. The vineyards and olive groves are often no longer cultivated and so, step by step, they are being taken over by natural vegetation. The site's natural vegetation is not nowadays unduly affected by agriculture; indeed, it develops undisturbed and extends wherever possible, even into cultivated areas.

Habitat types: *Posidonia* beds, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Embryonic shifting dunes, Dunes with *Euphorbia terracina*, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Cypressus forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Pallas's pine forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Consolida samia.*

Animal species: *Monachus monachus, Caretta caretta, Callimorpha quadripunctata.*

Other important species: — Flora: 20B, 4C, 22D

Site Name: SAMOS: OROS KERKETEFS-MIKRO KAI MEGALO SEITANI - DASOS KASTANIAS KAI LEKKAS (cont.)

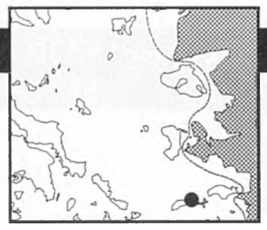
— Fauna: 2A, 6B, 7C, 11D

Impacts/Activities:
— Positive: -
— Neutral: 100 (IN)
— Negative: 140, 160, 180, 230, 608, 948 (IN) / 170, 608, 948 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The quality and importance of the site result mainly from the great number of endemic and very rare plants and invertebrates existing in the area. This high degree of endemism derives mainly from the geographical location of Samos island (very close to Asia Minor) as well as from the high altitudes and the variety of biotopes existing within the proposed site. It is worth noting that the plant species *Alyssum samium, Anthemis rosea* ssp. *rosea, Centaurea xylobasis, Muscari kerkis, Consolida samia* and *Erodium sibthorpianum* ssp. *vetteri* are local endemics. It must be mentioned, that due to the isolation from the main tourist areas of Samos island and the limited human activities within the site, the *Pinus brutia* and *Cupressus sempervirens* forests are at very good conservation status. The area has more birds of prey than many other islands due to the vicinity to the Turkish mainland. It is also a very important staging post for bird migration on the Turkish coast flyway and it is characterized as one of the Important Bird Areas (IBA) in Europe. The area of Mikro and Megalo Seitani, an area of great aesthetic and ecological value, is important to both *Caretta caretta* and *Monachus monachus*.

Site Name: IKARIA - FOURNOI



Sitecode: GR4120004 **Type**: B

Longitude: 26° 14′ **Latitude**: 37° 36′

Administrative Region: Voreio Aigaio **Prefecture**: Samos

Altitude (m): 500 **Area (ha)**: 14500 **Length**: -

Description: The island of Ikaria is situated at the east central part of the Aegean sea, SW of Samos island and close to Asia Minor coasts. The marine area covers approximately 5% of the site. The climate is typical Mediterranean with mean annual rainfall exceeding 870mm. The annual mean temperature reaches up to 19.3° C, while its maximum and minimum values are 22.5° and 15.7° C. Mount Atheras is located at central Ikaria and consists mostly of schist. Frequent mist and cloud formation make the highest part relatively humid even in summer. Here the open type of vegetation is the result of grazing. The small thickets at a few protected spots indicate, that the island was once totally covered by forest. On the southern side (Agios Nikolaos) there are large, well developed limestone cliffs. A significant proportion of the endemic flora of the island is present in that part. There is also a constantly flowing river, Chalaris, that crosses the island from the south to the north, with oriental plane woods flanking its banks. An archaeological site, the temple of Tavropolos Artemis, is situated at the mouth of the river. The area of Fanari, includes mainly the coastal and marine habitat types of the site. Fournoi consist a complex of small islands SE of Ikaria island. It's noteworthy to mention, that even though their total surface is relatively small, their coasts (about 126 km in length) are characteristic of most typical Aegean cliffs, reefs and cavities.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Embryonic shifting dunes, Dunes with *Euphorbia terracina*, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Aegean calcareous cliffs, Caves not open to the public, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Iberis runemarkii.*

Animal species: *Rhinolophus blasii, Myotis blythi, Myotis emarginatus, Tursiops truncatus, Monachus monachus, Mauremys caspica, Callimorpha quadripunctata.*

Other important species: — Flora: 25B, 12D
— Fauna: 1A, 17B, 10C, 3D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 162, 180, 210, 608, 948 (IN)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: The site exhibits high biodiverstity, explicit in the variety of habitat types (19) and in the plenitude of endemic and local endemic plants (21) and invertebrates (15) existing in the area.

Site Name: IKARIA - FOURNOI (cont.)

Most notably *Iberis runemarkii* is a local endemic to Ikaria, with only one small population at Praya. This high degree of endemism derives mainly from the geographical location of Ikaria island (very close to Asia Minor) as well as from the high altitudes and the fair variety of biotopes existing within the proposed site. It must also be mentioned, that due to the isolation from the main tourist areas of Greece and the limited human activities within the site, the *Pinus brutia* forests and the mixed *Cupressus sempervirens* formations on Ikaria island are at a very good conservation status. The undisturbed marine biotopes which maintain an excellent conservation status, mainly on Fournoi islands, offer a representative ecosystem for the survival and conservation of rare or endangered species in the Mediterranean region, such as the monk seal (*Monachus monachus*) and dolphin (*Tursiops truncatus*). Fournoi islands, an area of significant aesthetic and ecological value, function as an important shelter for birds of prey, due to their position at eastern part of the Aegean Sea and the neighbouring to the mainland of Asia Minor. It is also a very important staging post for bird migration on their seasonal coast flyway.

Site Name: VOREIA CHIOS KAI NISOI OINOUSES



Sitecode: GR4130001 **Type**: B

Longitude: 26° 00′ **Latitude**: 38° 33′

Administrative Region: Voreio Aigaio **Prefecture**: Chios

Altitude (m): 400 **Area (ha)**: 32200 **Length**: -

Description: The island of Chios can be divided, in terms of morphology and vegetation, into three regions: The mountainous northern and western region, included the Pelinaion range (1297 m), the Kampos area which is a much cultivated belt in the east centre, and the hilly south-eastern region, famed for the cultivation of *Pistacia lentiscus* var. *chia* and the production of gum mastic. The site contains most of the first region and Oinouses, while its marine part covers 18% of the area. Oinouses is a group of small islands and islets 9 miles north-east of Chios town. The main characteristics of these islands are the open hills with scrub and narrow valleys that fall sharply to the sea with tiny coastal plains. Regarding geology, the greater part of Chios is composed of coarse grey, chalky limestone, forming, particularly in the northern region, bold ridges, rugged summits and craggy cliffs. Some other remarkable characteristics of the site are: the extensive area with evergreen shrubs and phrygana (a part of this area is used for grazing), the *Pinus brutia* forest which in some cases is dense and well conserved, the inland water bodies especially in the NE part of Chios, the extended arable part of the site, and the extensive marine area with *Posidonia* beds and reefs.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Floating vegetation of *Ranunculus* of plane submountainous rivers, Aegean phrygana (*Sarcopoterium spinosum*), Eu-mediterranean greek calcareous cliffs, Cretan *Quercus brachyphylla* forests, *Olea* and *Ceratonia* forest, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Tursiops truncatus, Lutra lutra, Monachus monachus, Testudo graeca, Mauremys caspica, Elaphe situla, Callimorpha quadripunctata.*

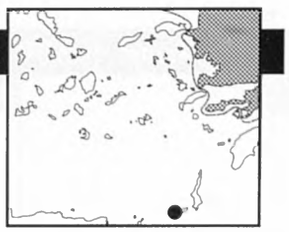
Other important species:
— Flora: 8B, 7C, 16D
— Fauna: 5A, 5B, 15C, 5D

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 140, 200, 230, 243, 421, 422, 730, 800, 811, 852, 948 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The most remarkable elements indicating the quality and importance of the site are: 1) The variety of habitat types within the described area. 2) The interesting flora of the area with many endemic and rare plant species. 3) The greater number of migratory birds passing through the site every year. 4) The numerous reptiles which have been recorded in the area. 5) The interesting plant and animal communities in the wetlands of Limnos Kardamilon, Delfini-Givari and Parpanta. 6) The extensive and in good condition marine habitats of reefs and *Posidonia* beds.

Site Name: KASOS KAI KASONISIA



Sitecode: GR4210001 **Type**: B

Longitude: 26° 55′ **Latitude**: 35° 24′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 250 **Area (ha)**: 15700 **Length**: -

Description: The site is located east of Crete, between the islands of Crete and Karpathos. It includes the island of Kasos, its surrounding small islands and the marine area that is included up to the depth curve of 50 m (the marine part covers 2% of the site). It is the southernmost island group of Dodekanisos archipelagos and it comprises 14 small islands and islets; the most important of them are: Armathia, Kariofila, Porioni, Mikro Pontikonisi, Megalo Pontikonisi and Lytra. The largest one (Armathia) with an area of 2567 km² and maximum altitude 111 m, lies NW of Kasos. The smallest one (Porion) with an area 21 km² lies between the islands of Armathia and Makronisi. The island of Kasos (with maximum altitude 597 m), can be considered as a typical example of environmental downgrading. It is characterized by areas occupied by phrygana of a bad state, due to the intensive grazing. The predominant plant species are *Sarcopoterium spinosum, Thymus capitatus* and *Genista acanthothamnos*; only in the SW part of the island (Avlaki bay) there is a small area with *Juniperus phoenicea*, which has also been overgrazed. Moreover, there is locally restricted cultivation, occupying different parts on the island. The extensive sea-cliffs around the island, are in an excellent condition. Since 1980 there has been an extremely uncontrolled increase in the number of goats and sheeps, that stretches the ability of the ecosystem to overcome. This event has affected the soil and the vegetation adversely; the original maquis have been downgraded to phrygana, the abandoned cultivation has also been occupied by phrygana, the slopes of the mountains have been stripped of their vegetation and the soil has become eroded. The small island of Armathia, is distinguished for the abandoned cultivations at the coastal areas, which have been colonized by phrygana (*Thymus capitatus* and *Limonium graecum*), while in the interior of the island and along their slopes there is a formation of *Juniperus phoenicea*. Nowadays, the grazing is not so intense at this part of the site (Armathia island), so there is a remarkable regeneration of Juniperus phoenicea. There are also sand dunes (of a bad state, with *Limonium graecum* and *Teucrium gracile*), shallow inlets and bays and at the western end there is a small lake. On the islet of Makronisi there are saltmarsh scrubs (on the coastal area) and phrygana (in the interior of the island). The islet of Lytra is still under overgrazing. There are phrygana and flattened sea-cliffs. The rest of the islets are characterized by sea cliffs and halophilus vegetation.

Habitat types: *Posidonia* beds, Lagoons, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Salt steppes (Limonietalia), Gypsum steppes (Gypsophiletalia), Shifting dunes along the shoreline with *Ammophila arenaria*, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public.

Plant species: *Silene holzmannii.*

Animal species: *Monachus monachus, Mertensiella luschani.*

Other important species: — Flora: 34B, 4C, 18D
— Fauna: 9B

Impacts/Activities: — Positive: -

Site Name: KASOS KAI KASONISIA (cont.)

— Neutral: 120, 130, 220, 403, 501, 504, 621 (IN)
— Negative: 100, 110, 140, 210, 230, 240, 250, 421, 900, 948 (IN)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The quality and importance of the site result from the following elements: 1) The island of Kasos is very important for the avifauna of Greece. It is designated as Important Bird Area in Europe. Moreover, it is very important for its invertebrate subfossils (especially terrestrial molluscs subfossils). 2) The small island of Armathia is of great aesthetic value. Also, there is remarkable regeneration of *Juniperus phoenicea*, which means that this habitat follows an upgrade process and it must be protected. 3) In the small island of Armathia as well as in the most of the islets, the human impact is very restricted nowadays. 4) There are many other rare and endemic species of plants and animals. In general terms, the whole of the site is of great aesthetic value featuring also a variety of habitat types remarkable for their representativity as well as for their conservation status.

Site Name: KENTRIKI KARPATHOS: KALILIMNI-LASTHOS-KYRA PANAGIA



Sitecode: GR4210002 **Type**: B

Longitude: 27° 09′ **Latitude**: 35° 35′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 500 **Area (ha)**: 9350 **Length**: -

Description: The site is located in the center of the island of Karpathos and comprises the area that is delimited by the bays Lares, Adeias, Vronti and the Cape Marathos. The marine part covers 2% of the site. The site comprises the major mountainous area of the island. The mountain Kali Limni (with maximum altitude 1215 m) occupies the major part of site. There are extensive coniferous woodland of *Pinus brutia* (the major part of which was burned in the recent past) and phrygana in a good state. It is the most forested area of Karpathos island, especially the eastern slopes of the mountain Kali Limni. As for its geology, there are two types of rocks (petrifications). The areas of siliceous substrate are very smooth, while the areas with limestones have a rugged relief. There are inland cliffs, screes, chasms and small gorges that are typical of the island of Karpathos and springs with running water surrounded by characteristic vegetation. Moreover, the coastline is intended, with vegetated sea cliffs, which are very steep, and with not extended sand beaches (e.g. the bay of Kyra Panagia). Small villages, with cultivations all around, are dispersed throughout the site. Access to these villages is possible by non asphalted roads.

Habitat types: *Posidonia* beds, Reefs, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Silene holzmannii*.

Animal species: *Monachus monachus, Mertensiella luschani*.

Other important species:
— Flora: 38B, 4C, 15D
— Fauna: 1A, 18B, 5C

Impacts/Activities:
— Positive: -
— Neutral: 100, 120, 171, 403, 430, 501, 502, 511 (IN)
— Negative: 110, 130, 140, 230, 421, 900, 948 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The quality and importance of the site result from the following elements: 1) The site is very important for its terrestrial molluscs subfossils. In particular, there are subfossils of the gastropod *Assyriella rechingeri* (which in the Greek area is distributed only on the mountain Kali Limni and it is likely to be still alive). 2) The natural environment is of great aesthetic value due to its geomorphology (cliffs, screes, chasms etc) and its coniferous woodland. 3) There are many rare and endemic species of plants and animals. 4) It is the most forested area of Karpathos island. 5) The composition of the rocks (calcareous and siliceous rocks) existing in the site has given rise to a striking combination of calciphile and silicicolous vegetation.

Site Name: VOREIA KARPATHOS KAI SARIA



Sitecode: GR4210003 **Type**: B

Longitude: 27° 14′ **Latitude**: 35° 49′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 350 **Area (ha)**: 8300 **Length**: -

Description: The site includes the northern part of Karpathos (delimited by the villages Olympos and Diafani to the south) and the island Saria, situated at the northern tip of Karpathos. The islands are separated by a narrow channel, whose width does not exceed 80 metres. The marine part covers 1% of the site. The largest part of northern Karpathos is mountainous (highest altitude 589 m), characterized by steep cliffs and screes with phrygana as the dominant vegetation. The shores are mostly steep and rocky, typical of the area. Thickets of pines are found at the eastern coasts. Tristomo gulf, at the northern part of the island, is considered as the most important marine area of Karpathos. It is a closed gulf, forming a natural harbour, its natural entrance being on the west, flanked by two huge rocks. Inside the bay the seabed is soft and muddy while outside it is hard. The highest summit of Saria island (9 x 6 km) is Pachy Vouno (631 m), with steep cliffs and screes. The shores are steep and rocky, too. Phrygana consist the dominant vegetation throughout the island. There are also a few parts of abandoned arable land. At the northern tip of the island, near Palatia cove, there is an area of special archaeological interest.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Monachus monachus, Mertensiella luschani.*

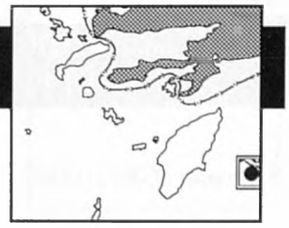
Other important species: — Flora: 24B, 2C, 8D
— Fauna: 1A, 8B, 5C, 1D

Impacts/Activities: — Positive: -
— Neutral: 100, 120, 130, 171, 220, 403, 430, 501, 502, 520 (IN)
— Negative: 110, 140, 210, 230, 421, 900, 948 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: The quality and importance of the site result from the following elements: 1) The island of Saria is very important for the avifauna of Greece. It is one of the Important Bird Areas, according to the Directive 79/409/EEC. Moreover, it is of great aesthetic and archaeological value. 2) The site has significant biodiversity, indicated by the many rare and endemic species of plants and animals. 3) Tristomo gulf is the most important marine area of Karpathos. It is a fishing port with great productivity. At hard substrate surrounding the bay, the bivalve *Arca noae* thrives in abundant populations, while the soft seabed of the interior of the gulf hosts the greater population of the bivalve *Pinna nobilis* in the south Aegean. 4) The geomorphology of Karpathos island with screes, precipices and rocky shores with cliffs, is very typical of the Aegean region.

Site Name: KASTELLORIZO KAI NISIDES RO KAI STRONGYLI



Sitecode: GR4210004 **Type**: B

Longitude: 29° 35′ **Latitude**: 36° 08′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 60 **Area (ha)**: 1400 **Length**: -

Description: This site includes the island of Kastellorizo (or Megisti) and the smaller islands of Ro and Strongyli. The marine part covers 16% of the site. Very few people live on the two small islands. The island Kastellorizo has now a resident population of less than two hundred people. The village was, at the beginning of the century, a town with many thousands of people (it reached up to 14.000). Even now, during the summer the population is much greater. The island is rocky with hills, covered by phrygana and maquis. At some areas the slopes are covered with pioneer vegetation with *Sedum* spp. The inland water bodies cover a very small area. Many buildings and other human constructions on Kastellorizo have an architectural interest. There are stone constructions built during the Arabs' pass from the island as water tanks. There are also houses dated from the nineteenth and from the first decades of the twentieth century, very beautiful, with complex architectural decoration.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves.

Plant species: *Polygonum praelongum*.

Animal species: *Monachus monachus, Mertensiella luschani*.

Other important species: — Flora: 3B, 1C, 18D
— Fauna: 1A, 8B, 8C, 3D

Impacts/Activities: — Positive: -
— Neutral: 100, 401, 501, 502 (IN) / 211, 212 (AR)
— Negative: 140, 211, 212, 230, 505, 621 (IN) / 621 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The islands Kastellorizo, Ro and Strongyli, the easternmost border of Europe, close to the Asian coast, are, regarding their flora and fauna, of great ecological and scientific interest. The inland water bodies of the island, although limited, host the salamander *Mertensiella luschani*. The distribution of this species in EU areas is restricted in only three greek islands. At the rocky coasts and the marine caves one can often observe the monk seal *Monachus monachus*. This is one of the 100 or less sites of this species in EU. The three islands are also important for their invertebrates. From the floristic point of view, the islands' importance is evident in the endemic or stenoendemic species, and in the rare or isolated species with wider distribution, but for which the three islands are the only sites they are found in Greece or in Europe. However, floristic data are scarce and further studies are needed. Finally, many buildings and other human constructions on Kastellorizo have architectural interest.

Site Name: RODOS: AKRAMYTIS, ARMENISTIS, ATTAVYROS



Sitecode: GR4210005 **Type**: B

Longitude: 27° 49′ **Latitude**: 36° 09′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 300 **Area (ha)**: 17600 **Length**: -

Description: The site is situated at the south-west part of Rhodos island and includes the mountainous region of Attavyros (1217 m) and Akramytis, the area of Sianitis river and the coastal area from Papagiorgis bay, to cape Armenistis and southwards to Apolakkias bay. The marine part covers 7% of the site. It is a region without many tourists, in contrast to other regions of the island. The more characteristic terrestrial habitats are the two types of coniferous wood. At some areas there is pioneer vegetation with *Sedum* spp. The site also includes a broad area with maquis and phrygana. There are areas with garrigues of *Quercus coccifera*. Very important are the two marine habitat type (the grasslands of *Posidonia* and the much smaller areas with reefs). Two other types of habitats, although covering a smaller area, are nevertheless noteworthy: the artificial lake and the inland caves.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Cypress forests (Acero-Cupression), Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Paeonia clusii* ssp. *rhodia, Asyneuma giganteum.*

Animal species: *Rhinolophus ferrum-equinum, Rhinolophus blasii, Monachus monachus, Elaphe situla, Ladigesocypris ghigii.*

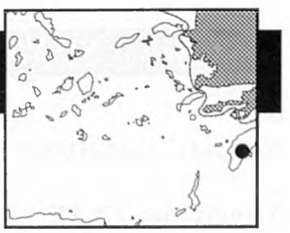
Other important species:
— Flora: 27B, 7D
— Fauna: 46B, 13C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 100, 120, 160, 220, 240, 250, 402 (IN) 220, 500 (AR)
— Negative: 110, 140, 210, 230, 421 (IN) / 100, 110, 120, 140, 210, 230, 240, 250, 400, 620 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks
— International level: Council of Europe Biogenetic Reserve

Significance: The region has two types of important coniferous woodlands. The *Pinus brutia* forest is especially important since it covers a significant area in relation to the total area of the distribution of this pine. The cypress forest near the village Emponas, which mainly consists of perennial trees, has a special scientific value as a biogenetic reserve and is considered a natural monument. The importance of the small artificial lake lies on the fact that it constitutes the last remaining safe refuge for the endemic fish of the inland waters of Rhodes (*Ladigesocypris ghigii*). The management of the island rivers has possibly caused the extinction of the species from these habitats. But even in the case the fish does still exist in the rivers it has less possibilities to survive than in the lakes.

Site Name: RODOS: PROFITIS ILIAS - EPTA PIGES - PETALOUDES



Sitecode: GR4210006 **Type**: B

Longitude: 27° 57′ **Latitude**: 36° 20′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 500 **Area (ha)**: 6900 **Length**: -

Description: The site is located at the central part of the island of Rhodes. The parent material of the substrate consists mainly of limestones and flyschs. The slopes of the mountain Profitis Ilias (mean altitude 600 m) are covered by pine (*Pinus brutia*) forests, pure or mixed with cypress (*Cupressus sempervirens*), as well as by maquis vegetation with *Pistacia lentiscus, Juniperus macrocarpa, Quercus coccifera* and *Cistus* sp. The area of Epta Piges (mean altitude 200 m) is situated along the bed of Loutari river. It includes mountains, hills, plain and alluvial zone covered by forest, maquis and wetlands. The landscape is characterized by the presence of dense vegetation which consists of *Pinus brutia, Platanus orientalis, Nerium oleander, Vitex agnuscastus, Pistacia terebinthus* and *P. lentiscus.* Regarding the vegetation of the valley of Petaloudes (mean altitude 300 m) the dominant tree is *Liquidambar orientalis*, a deciduous species with limited distribution.

Habitat types: Intermittently flowing Mediterranean rivers, Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Oriental plane woods (Platanion orientalis), Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Paeonia clusii* ssp. *rhodia, Asyneuma giganteum.*

Animal species: *Rhinolophus ferrum-equinum, Rhinolophus blasii, Ladigesocypris ghigii, Callimorpha quadripunctata.*

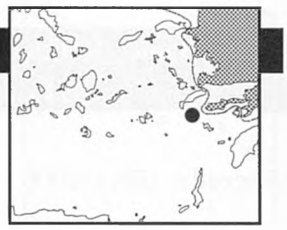
Other important species: — Flora: 12B, 3C, 10D
— Fauna: 4A, 44B, 7C, 1D

Impacts/Activities: — Positive: 160 (IN)
— Neutral: 690 (IN) / 690 (AR)
— Negative: 230, 241, 948 (IN) / 230, 948 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The presence of a large number of endemic and protected plant and animal species indicates the special ecological value of the site in reference. Regarding the flora of the site, a fair number of species are endemic to Greece, or endemics with a wider distribution; two of them, *Asyneuma giganteum* and *Paeonia clusii* ssp. *rhodia*, included in Annex II of the Directive 92/43/EEC. It is also notable that the island is the only locality in the EU where the species *Liquidambar orientalis* an east-mediterranean endemic species, occurs. The vegetation of the site is also significant. The forest of Profitis Ilias is one of the more extensive forested areas on the island with a great floristic diversity. The quality of the tree stands is very good. On the other hand, the vegetation of the valley of Petaloudes is characterized by the presence of a large number of Liquidambar trees. Regarding the fauna, many important invertebrate and vertebrate species, inhabiting the area have been recorded. The river Loutari hosts the endemic fish species *Ladigesocypris ghigii* and a small population of the Jersey Tiger moth *Euplagia quadripunctaria* has been found in the surrounding area. The most interesting characteristic of the valley of Petaloudes is the great population of the species of the above moth, inhabiting the valley during the aestival period.

Site Name: NISYROS KAI STRONGYLI



Sitecode: GR4210007 **Type**: B

Longitude: 27° 11′ **Latitude**: 36° 37′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 200 **Area (ha)**: 5700 **Length**: -

Description: The site is located in the area of Dodekanissos, between the islands of Kos and Rodos. It includes the island of Nisyros and the islet of Strongyli. The marine part covers 3% of the site. Strongyli islet is actually an active volkano, the crater of which is surrounded by primary vegetation. The island of Nisyros is characterized by pure oak forests and phrygana and in the east part of the island there are extensive sand dunes. There are also inland cliffs and small screes and springs which are surrounded by water related vegetation. Small villages of traditional architecture and, not extended, cultivations all around, are dispersed all over the island. In the center of Nisyros, there is an active volcano, the crater of which is surrounded by virgin natural areas, similar to Strongyli.

Habitat types: *Posidonia* beds, Reefs, Embryonic Shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Pioneer vegetation of rock surfaces, Fields of lava and natural excavations, *Quercus macrolepis* forests, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.).

Plant species:

Animal species: *Monachus monachus, Callimorpha quadripunctata.*

Other important species: — Flora: 5B, 6D
— Fauna: 6B, 2C

Impacts/Activities:
— Positive: -
— Neutral: 100, 120, 130, 402, 501, 502, 504, 511, 621 (IN)
— Negative: 110, 140, 171, 210, 220, 230, 421, 900 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The quality and importance of the site result from the following elements: 1) It is of great aesthetic value due to the presence of the two active volcanoes, as well as because of its virgin vegetation. 2) There are rare and endemic species of plants and animals. 3) There are areas of great archaeological interest. 4) The human impact is rather restricted. 5) The broader marine area between the islands Kos and Tilos is very important for tuna and swordfish fishing.

Site Name: KOS: AKROTIRIO LOUROS-LIMNI PSALIDI-OROS DIKAIOS-ALYKI



Sitecode: GR4210008 **Type**: B

Longitude: 27° 16′ **Latitude**: 36° 52′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 200 **Area (ha)**: 9500 **Length**: -

Description: The site is located on the eastern part of the island of Kos, starting from cape Louros, including lake Psalidi, covering the massif of mountain Dikaios and extending to the north to include the salt-marsh (Alyki). The marine area is delimited by the depth curve of 50 m (2% of the site). Lake Psalidi is actually a coastal salt-marsh, permanently flooded by salt or brackish water. It supports halophilous or semi-halophilous vegetation and permanently inundated reed beds with *Phragmites australis* and *Typha* spp. The mountain Dikaios (maximum altitude 843 m) is located in the southern part of the site and is characterised by extensive coniferous woodland of *Pinus brutia*, phrygana at a good conservation state, inland cliffs, screes, chasms and small gorges. At the southern foot of the mountain, there are craggy coasts and vegetated sea cliffs which are very steep. In the eastern part of the site there is Alyki, a small logoon with salt-pit, with halophytic vegetation, reedbeds, and *Tamarix* spp. Around it there are sand dunes and sand beaches. Small villages, with cultivations all around, are dispersed all over the site.

Habitat types: *Posidonia* beds, Mudflats and sandflats not covered by seawater at low tide, Lagoons, Reefs, Mediterranean salt meadows (Juncetalia maritimi), Shifting dunes along the shoreline with *Ammophila arenaria*, Humid dune slacks, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Cypress forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Testudo graeca, Mauremys caspica, Caretta caretta, Elaphe situla, Callimorpha quadripunctata.*

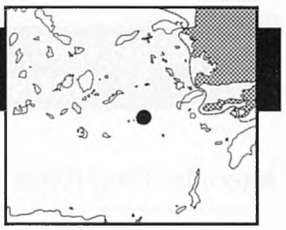
Other important species:
— Flora: 4B, 5C, 8D
— Fauna: 1A, 20B, 11C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 100, 120, 130, 501 (IN) /
— Negative: 110, 140, 200, 212, 220, 230, 421, 502, 621, 900, 948 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The broader marine area between the islands Kos and Tilos is very important for tuna and swordfish fishing. In addition there are many and rare and endemic species of plants and animals. Moreover the site has been characterized as one of the Important Bird Areas and the small wetlands of the site, although unprotected, are important for passage migrant bird species, notably herons and raptors, as well as for breeding of several bird species. Finally, Lake Psalidi and Alyki have also scientific, educational and recreational value.

Site Name: ASTYPALAIA: ANATOLIKO TMIMA, GYRO NISIDES KAI OFIDOUSA



Sitecode: GR4210009 **Type**: B

Longitude: 26° 25′ **Latitude**: 36° 36′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 150 **Area (ha)**: 9500 **Length**: -

Description: The site includes a part of the island Astypalaia and a complex of 12 islets, Kounoupi (140 ha), Ofidousa (65 ha), Koutsomyti (40 ha), Tigani (4 ha), Moni (3 ha), Fteno (2 ha), Chondropoulos (1, 5 ha), Phokionisia (60 ha), Ligno (18 ha), Chondri (30 ha), Agia Kyriaki (23 ha), and Pontikousa (90 ha) with impressive sea cliffs. The substratum of the site consists of Cretaceous limestone in its major part. The north part of the site consists of marine Pliocene sediments. All these islets, except Ophidousa, are surrounded by the depth curve of 100 m whereas Ophidousa, lying 3 km west of Astypalaia, is joined with the main island with the depth curve of 200 m. The maximum altitude of Astypalaia reaches 366 m. The islets Pontikousa and Ophidousa are characterized by a central hill, reaching an altitude of 250 m and 130 m, respectively, high for their small surface, with very steep slopes. The vegetation is mainly phryganic but also includes *Juniperus phoenicea* arborescent matorral. At places, where the matorral is grazed and degraded, *Pistacia* shrubs have appeared tending to dominate the vegetation. There are also intermittent streams with characteristic vegetation. The marine part occupies 53% of the site. The coastline has a total length of about 130 km, 66 km on Astypalaia and 44 km on the islets. It is indended, with numerous small bays and typical sea-cliff vegetation. There are also five well protected bays (Vathy, Vlychada, Ag. Phokas, Agriolithi, Maltezana). Limestones are susceptible to erosion; this has led to the formation of several caves, the most interesting of which is Dracospilia.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, *Juniperus phoenica* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Caves not open to the public, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Tursiops truncatus, Monachus monachus, Caretta caretta.*

Other important species: — Flora: 15B, 11D
— Fauna: 2A, 7B, 4C, 2D

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 180, 210, 230, 401 (IN) / 180, 210, 230 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The most important element of the site is the existence of 9 habitat types, out of 10, with excellent representativity. Among them, *Posidonia* beds, the sublittoral rocky seabeds, and the sea inlets, could be considered as the most representative ones in the Aegean Sea and probably even in the whole South East Mediterranean Sea. The complex of islands, also host rare and endemic plants. In conclusion, the site has an exceptional biogeographic value as its fauna is characterized by cycladic and eastern faunistic elements.

Site Name: ARKOI, LEIPSOI, AGATHONISI KAI VRACHONISIDES



Sitecode: GR4210010 **Type**: B

Longitude: 26° 45′ **Latitude**: 37° 19′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): 100 **Area (ha)**: 12667 **Length**: -

Description: The site is composed by three island groups, Arkoi, Leipsoi, and Agathonisi, consisting of one main inhabited island and of a number of small islets, around them as well as the isolated islets lying easternwards of the main islands of Leros and Kalymnos. These are: Kalapodi (2 islets), Tripiti (2 islets), Pharmakonisi, Kalolimnos, Pitta, Prassonisi and Imia (2 islets). The terrestrial part of the site is 4160 ha and the marine part is 7133 ha. Maximum altitudes are rather low: 114 m on Arkoi, 320 m on Leipsoi, and 210 m on Agathonisi. The marine part is delimited by the depth curve of 50 m. The geological profiles of the islands are more or less uniform, characterized by low grade metamorphic rocks. In the smaller islets the psammitic rocky formations are predominant. Conglomerate layers, marls, and marly limestones are also present.

Habitat types: Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Tree-spurge formations, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Submerged or partly submerged sea caves.

Plant species: *Silene holzmannii.*

Animal species: *Monachus monachus, Caretta caretta.*

Other important species: — Flora: 4B, 5D
— Fauna: 2C

Impacts/Activities: — Positive: -
— Neutral: 100, 200, 403 (IN)
— Negative: 140, 180, 421, 502, 504, 530 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The three island groups exhibit high biodiversity. They are interesting in view of their potential as study "laboratories" for speciation and as biological conservation phenomena. Field works as well as analysis of the floristic data have shown an impressive diversity in the flora of these islands. Although the number of plant species in Arkoi, Leipsoi and Agathonisi is limited, they share an exclusive contigent of species seeking their shelter. Each one of the small islets is characterized by its own distinctive flora and vegetation. It should also be noted that some species occur mainly on islets and they even show preference to the most isolated and exposed ones (e.g. *Convolvulus oleifolius, Helichrysum orientale, Allium commutatum, Lavatera arborea,* etc.). These species have been termed "islets specialists" and some of them seem to base their existence in the area on islet population mainly, occurring in only few and small populations on the main islands. Once having reached an islet, some species may develop great populations, mainly because some otherwise common competitors or predators are lacking. In several cases, a species may develop on a islet a degree of dominance that it could never have attained in other places. Such are the cases of *Silene holtzmannii* recently found on Trypiti, of *Malcomia flexuosa* on E. Aspronisi, of *Didesmus aegyptious* on W. Aspronisi in Leipsoi group and of *Ruta halepensis* on Minaronisi, in Arkoi group. Notably, a new species, *Allium dodecanesii*, has recently been described from Leipsoi. The fauna of the island is scarsely known.

Site Name: VRACHONISIA NOTIOU AIGAIOU: VELOPOULA, FALKONERA, ANANES, CHRISTIANA, PACHEIA, FTENO, MAKRA, ASTAKIDONISIA, SYRNA - GYRO NISIA



Sitecode: GR4210011 **Type**: B

Longitude: 25° 10′ **Latitude**: 36° 13′

Administrative Region: Notio Aigaio **Prefecture**: Dodekanisos

Altitude (m): - **Area (ha)**: 6350 **Length**: -

Description: The site comprises a complicated area with more than 25 small islets of the Aegean situated between the Cyclades and Crete. The two westernmost islets, Velopoula and Falkonera, are situated in the Myrtoon Sea, while all the others are situated on the south of the Cyclades and Astypalaia, north of Crete and northwest of Karpathos. The total of the area of all the islands does not exceed a few square kilometres. The largest is the island of Syrna with an area of 7.8 km². They are very remote since almost all of them are found away from any large land mass and also they are surrounded by very deep sea the depth of which in most cases exceeds 1000 m. All the islets can be clustered in two groups according to their geologic history. One group consists of volcanic origin islets (Ananes and Christiana groups) while the second includes islets mainly of sedimentary origin (the rest of the islets). The limestones belong to the zones of Gavrovo-Tripoli and/or Paxoi. In general the islets are rocky places. Their heght ranges from 50 to 200 m. The influence of strong winds and rough sea, which act on the islets the whole year round, is obvious at first sight. The general appearance of the islets is the result of the combination of substrate and climatic factors. On small islands there are two distinct vegetation zones: a litoral zone inhabited by true halophytes and a sublittoral zone, which is not washed by sea water even at stormy weather. In this zone the vegetation is phrygana with *Centaurea raphanina* ssp. *mixta, Sarcopoterium spinosum, Euphorbia* sp., *Thymus capitatus*, etc. On some islets, phrygana vegetation is lacking or is represented by very few species. Instead, there is a special sublittoral vegetation, with species confined to small islands or rarely found on shores of larger islands. On the eastern islets there are some patches of maquis vegetation with *Juniperus phoenicea* and *Pistacia lentiscus*. On the larger one, Syrna islet, the vegetation is mainly maquis, *Juniperus phoenicea* being the predominant species. On some islets there are remains of terraces that people used to cultivate, and also remnants of lighthouses and shepherds' houses. Today the islets are uninhabited; the only islet where a couple lives almost the whole year is Syrna. Vertical seacliffs are present on all islets, even at the ones with the lowest altitudes; rarely is there a beach, and if there is one it is usually with pebbles. The only exception is on one islet of Tria Nisia group, south of Syrna, where there are extensive sand dunes on its northeast side. The vegetation of the cliffs is mostly composed by Aegean endemics, many of which are obligate chasmophytes. There is a very small area with shallow waters. This is very important for the marine ecosystems, especially for the oligotrophic systems of the east Mediterranean.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Shifting dunes along the shoreline with *Ammophila arenaria*, Dune juniper thickets (*Juniperus* spp.), Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Submerged or partly submerged sea caves.

Plant species: *Silene holzmannii.*

Animal species: *Monachus monachus.*

Other important species: — Flora: 14B, 5D

Site Name: VRACHONISIA NOTIOU AIGAIOU: VELOPOULA, FALKONERA, ANANES, CHRISTIANA, PACHEIA, FTENO, MAKRA, ASTAKIDONISIA, SYRNA - GYRO NISIA (cont.)

— Fauna: 2B, 3C

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: -

Protection Status:
— National and Regional level: -
— International level: -

Significance: The scientific knowledge (published data) for the area is very poor. However, the importance of the islets is great for both terrestrial and marine ecosystems. They can be considered as a unique "oasis" of terrestrial and marine ecosystems in the Aegean, even in the whole eastern Mediterranean Sea. The shallow waters that surround them, even though they cover a small area, are essentially important for the marine ecosystems, especially for the oligotrophic systems of the east Mediterranean; marine organisms breed and they also seek shelter in these areas. The rocky substrate of the sea bottom is covered by *Cystoseira* sp. In addition, these islets are the only peaks of land in a large area of a deep sea. The terrestrial ecosystems are remnants of the old Aegaeis and this is reflected in their flora and fauna. Also these ecosystems, though tiny, are very important for migrating birds as well as for breeding seabirds. Their whole fauna and flora, which contain rare and endemic species, is in dynamic state, due to the constantly changing environment. The flora is characterized by the presence of vicariant species (or islet specialists).

Site Name: ANDROS: ORMOS VITALI KAI KENTRIKOS OREINOS OGKOS



Sitecode: GR4220001 **Type**: B

Longitude: 24° 51′ **Latitude**: 37° 51′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 300 **Area (ha)**: 7240 **Length**: -

Description: The island of Andros is the northernmost island of the Cyclades complex. It is also the closest to the mainland, having the biggest size and altitude, and it receives the highest precipitation in Cyclades. The site is located at the northern part of the Andros, which is the less habituated area of the island and it includes the main mountainous area and Vitali gulf. Although the site in general can be considered a typical Cycladian ecosystem (featuring the typical rock surfaces, the steep sea cliffs and the typical aegean phrygana vegetation) it is also characterized by a unique mosaic habitat distribution, mainly because of the high altitudes (mountain Petalo, 995 m) the presence of gorges, springs, intermittently flowing streams and temporary ponds. It is also noticeable that the human activities in the area do not have as such an impact as in other Greek islands with greater tourism development. The traditional cultivations of cereals, legumes and vegetables, are nowadays limited.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Embryonic shifting dunes, Dunes with *Euphorbia terracina*, Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Mediterranean temporary ponds, Floating vegetation of *Ranunculus* of plane submountainous rivers, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Residual alluvial forests (Alnion glutinoso-incanae), Chestnut woods, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Callimorpha quadripunctata.*

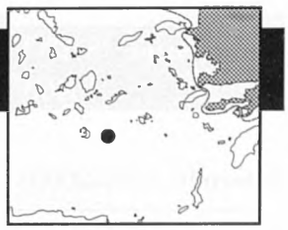
Other important species: — Flora: 10B, 1C, 1D
— Fauna: 16B, 10C, 4D

Impacts/Activities: — Positive: -
— Neutral: 100 (IN)
— Negative: 140, 171, 180, 230, 401, 421, 502 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The quality of the site results from the following elements: 1) It is an area of great aesthetic value (especially the gulf of Vitali and the area around Arnas village) 2) It contains a fair number of habitat types. Three of them, chestnut tree forests, residual alluvial forests, galleries with *Salix alba* and *Populus alba* although they exist in the form of thickets, are especially important for the biodiversity of the island since they are unique in the Cyclades complex; 3) There is a high degree of flora and fauna endemism; 4) There exist rare plant species as well as plant communities with a great distribution in the Aegean area; 5) There are important birds' refugia on cliffs; 6) The site is naturally protected because of the steep rocks and cliffs and the lack of roads that make the area difficult to access, so it is isolated from the main touristic areas of Andros island.

Site Name: ANAFI: CHERSONISOS KALAMOS - ROUKOUNAS



Sitecode: GR4220002 **Type**: B

Longitude: 25° 50′ **Latitude**: 36° 21′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 180 **Area (ha)**: 700 **Length**: -

Description: The site covers the coastal area from Roukounas to the bay Prasies and Kalamos peninsula. It is the only area in the island with limestones, in contrast to the rest of the island, where the main geological components are volcanic rocks. Kalamos peninsula is characterized by sea cliffs, inland cliffs with chasmophytic vegetation, chasms, screes, caves, and small gorges; in the surrounding marine area there are also submarine and coastal caves. In the area of Monastiri there is an important archaeological site and a monastery. The coastal area of Roukounas is characterized by sand dunes, springs, and locally restricted cultivations. In general, the site as a whole, can be characterized as a typical Cycladian ecosystem.

Habitat types: *Posidonia* beds, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Shifting dunes along the shoreline with *Ammophila arenaria*, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Monachus monachus*.

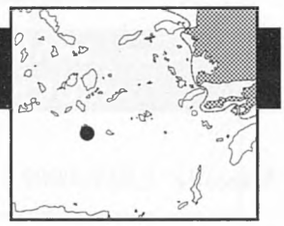
Other important species:
— Flora: 13B, 5D
— Fauna: 8B, 4C, 1D

Impacts/Activities:
— Positive: -
— Neutral: 100, 120, 171, 200, 210, 220, 402 (IN) /100, 120, 130, 171, 210, 220, 402 (AR)
— Negative: 130, 140, 230, 622, 900, 920, 948 (IN) / 140, 230, 900, 920 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The quality and importance of the site result from the following elements: 1) The site is naturally protected in the area of Kalamos peninsula, because of the steep rocks and cliffs and of the lack of roads that make the area difficult to accesss. 2) It is an area of both great aesthetic value (especially the area of Kalamos peninsula) and archaelogical importance (especially the area of Monastiri). 3) There are a lot of unexplored caves. 4) The site as a whole (and particularly Kalamos peninsula) is very important for the avifauna and for the mammals, due to its geomorphology and the presence of many refuges/shelters. The mammals populations are in excellent condition. 5) Its flora is rich in common and endemic species; the latter are of great interest, as many of them are rare Aegean endemic species. For example, Anafi is the only locality where *Erysimum candicum* ssp. *candicum* is found outside Crete. Its fauna is also rich in local endemic invertebrates; the snails *Mastus anafiensis* and *Albinaria brevicolis* are endemic to the island and *Albinaria brevicolis contraria* and *Zonites anafiensis* are local endemics to the site. 6) The sand dunes are very important for the conservation of the endemic flora.

Site Name: SANTORINI: NEA KAI PALIA KAMENI - PROFITIS ILIAS



Sitecode: GR4220003 **Type**: B

Longitude: 25° 25′ **Latitude**: 36° 24′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 250 **Area (ha)**: 1150 **Length**: -

Description: The site includes the mountain Agios Ilias with its surrounding area (which is located in the SE part of the island of Santorini) and two small islands (Nea Kameni and Palaia Kameni) located west of Santorini. The mountain Agios Ilias is the only area of Santorini island that is not covered by the products of volcanic eruption; its main geological components are limestones. There are screes in the area and an homonymous monastery has been built at the top of the mountain; the neighbouring NE slope, has been planted with pine-trees, which are not in a good condition. At the foot of the mountain, near the small villages Kamari, Emporeio and Perissa, there are vineyards, while the rest of the mountain is covered by typical Aegean phrygana. In the area of Kamari village there is a cave with endemic invertebrates. The ancient Thira is also located in this part of the site, at the top of a hill north of Perissa. The two small islands were created relative recently by volcanic eruption. Their surface constitutes of barren fields covered by lava, which, not being capable of developing permanent vascular vegetation yet, are mainly characterized by the presence of primary vegetation. The shores have very steep cliffs, with almost vertical slopes adjacent to the sea. The marine area surrounding the islets has a hard seabed and is characterized by the presence of hot springs and vapour columns.

Habitat types: Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Fields of lava and natural excavations.

Plant species: -

Animal species: *Monachus monachus, Elaphe situla.*

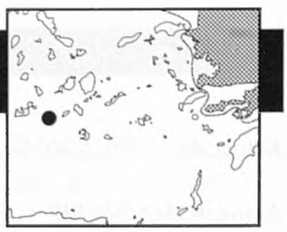
Other important species:
— Flora: 11B 3C, 5D
— Fauna: 10B, 2C

Impacts/Activities:
— Positive: -
— Neutral: 100, 110, 120, 130, 140, 171, 180, 403, 501, 502, 504, 621, 624 (IN) 100, 110, 120, 130, 140, 171, 180, 402, 501, 502, 504, 621, 624 (AR)
— Negative: 210, 220, 230, 240, 250, 421, 900, 948 (IN) / 210, 220, 230, 240, 250, 421, 900, 948 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The site is significant for the following reasons: 1) It is of great archeological value due to the existence of the ancient town of Thira. 2) The mountain Agios Ilias assembles all the old elements of the island of Santorini (floristic and geological). Thus, it plays a very important role in species' dispersion, (especially of the calciphilous ones) to the rest of the island. 3) There are subfossilis of terrestrial molluscs. 4) There is a cave with endemic invertebrates. 5) In the two small islands, colonization, although it has already started and reached at a certain degree, is still an evolving process.

Site Name: FOLEGANDROS ANATOLIKI MECHRI DYTIKI SIKINO



Sitecode: GR4220004 **Type**: B

Longitude: 25° 07′ **Latitude**: 36° 41′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 250 **Area (ha)**: 6500 **Length**: -

Description: The site consists of two major islands, Folegandros and Sikinos, and of four islets, Kardiotissa, Kalogeroi and Adelfia, which are two islets close to each other, with the terrestrial part of the site covering 5130 ha and the marine part covering 570 ha. Their main characteristics are: 1) The typical rock surfaces and sea cliffs that exhibit an endemic flora and an important avifauna; 2) The typical Aegean phrygana vegetation; 3) The sustainable, although nowadays limited, traditional cultivations of cereals and legumes; 4) The degraded stony habitats; 5) The relatively restricted but ever expanding building activities and road construction triggered by tourism development.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Dunes with *Euphorbia terracina*, Dunes sclerophyllous scrubs (Cisto-Lavenduletalia), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Matorral with *Laurus nobilis*, Low formations of *Euphorbia* close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Limestone pavements, Caves not open to the public, Submerged or partly submerged sea caves.

Plant species: *Silene holzmannii, Symphytum cycladense.*

Animal species: *Monachus monachus, Elaphe quatuorlineata.*

Other important species: — Flora: 20B, 6D
— Fauna: 16B, 2C

Impacts/Activities:
— Positive:
— Neutral: 100, 140, 402, 502, 504, 520, 530, 608, 690, 870 (IN) / 620 (AR)
— Negative: 150, 210, 220, 230, 390, 421, 701, 790, 810, 871, 890, 900, 948 (IN) / 210, 701 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The site consists a typical cycladian ecosystem as it is exhibiting the following characteristics: 1) High degree of flora (mainly) and fauna endemism; 2) Important birds' refugia on cliffs and on islets; 3) Mosaic habitat distribution; 4) Traditional small cultivated fields; 5) Isolation from the mainland; 6) Cave refugia for the Monk Seal.

Site Name: DYTIKI MILOS



Sitecode: GR4220005 **Type**: B

Longitude: 24° 22′ **Latitude**: 36° 40′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 270 **Area (ha)**: 13500 **Length**: -

Description: The site comprises the west side of Milos island, from the port, Adamas, up to the westernmost side of the island. The highest part is on the south-west side, i.e. Profitis Ilias mountain reaching at an altitude of 748 m. There are a few streams that usually dry up during summer. On the north side there is a saltmarsh and a small lake. On the north and south coast there are a few sand beaches. Apart from these beaches the rest of the shores of the site is steep cliffs, and there are hardly any other sandy seashores. The vegetation is characterized by phrygana, maquis and old or recent cultivations. The dominant plants in the maquis are *Juniperus phoenicea* and *Pistacia lentiscus* but there are also small patches, mainly in the valleys, with olive trees, (*Olea europea*), carob trees (*Ceratonia siliqua*) and *Quercus coccifera*. There are also small patches with *Arbutus unedo* and *Juniperus oxycedrus* ssp. *macrocarpa*. Along the streams there are communities with *Nerium oleander, Myrtus communis, Juncus* spp. and *Carex* sp. Geologically, the island had been an active volcano till the middle of Quaternary. It consists of Plio-Pleistocene volcanic rocks and there is also a small area with Pliocene limestones. There are a lot of minerals in the area, mainly products of the older volcanic activity. There used to be a number of mines but today only few of them still operate. On the north coast of the area there are *Cymnodocea* beds, while *Posidonian* beds exist throughout the entire marine part of the site. On the south side there are volcanic gas columns, (CH_4, H_2S, at 90°C) in the sea. At the east side of the site, Zefyria, there is a geothermal unit. There are few villages in the whole area. At the south side, at the gulf of Provatas, there are some hotels. This area is now under tourism development with an increasing number of hotels being built. In the area of the site there are mesolithic settlements.

Habitat types: *Posidonia* beds, Lagoons, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae). Shifting dunes along the shoreline with *Ammophila arenaria*, Dune juniper thickets (*Juniperus* spp.), Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Floating vegetation of *Ranunculus* of plane submountainous rivers, Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Fields of lava and natural excavations, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica, Elaphe situla, Vipera schweizeri.*

Other important species: — Flora: 5B, 1C, 1D
— Fauna: 16B, 8C

Impacts/Activities: — Positive: -
— Neutral: 100, 945, 946 (IN) / 100, 505 (AR)
— Negative: 140, 230, 301, 330, 410, 422, 505 (IN)

Protection Status: — National and Regional level: -
— International level: -

Site Name: DYTIKI MILOS (cont.)

Significance: The special quality of the whole area of the site, a complex area of volcanic and sedimentary rocks, is due to the geological history of Milos which gives the island a distinctive character. Thus the site combines ecological, geological and paleontological importance. All the known animal and plant species of the area are of special importance because of this complexity; there are a lot of endemic species, fossil findings and also special habitat types. One of the characteristics of the site is the existence of volcanic formations that occur all over the island and of course all over the site. The area consists of lava formations of Pliocene/Pleistocene age. There are findings of fossil dwarf elephants and also of *Equus caballus*. Also notable are the marine habitats included in the site, which are characterized by variety and abundance including shallow waters with *Posidonia* beds, volcanid vapour columns, and *Cymnodocea* beds on rocky surfaces. The saltmarsh and the lake support a large number of migrating birds as well as resident birds and seabirds. In addition, of great importance is the presence of the snake *Vipera schweizeri*. This species exhibits a very restricted distribution area, occurring only in three islands, and having its biggest population in this site.

Site Name: NISOS POLYAIGOS



Sitecode: GR4220006 **Type**: B

Longitude: 24° 37′ **Latitude**: 36° 45′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 100 **Area (ha)**: 4400 **Length**: -

Description: The site includes the island of Polyaigos and the surrounding sea area delimited by the depth curve of 50 m. Today it is an uninhabited island, though formerly there was a small village. There are no roads on the island. There are only abandoned cultivations near the old village. Today there is only one shepherd living there. The island has a steep relief, its highest peak reaches 350 m a.s.l. In the centre of the island there is a plateau. Geologically it consists of volcanic rocks of the Plio-Pleistocene age. There are old mines on the island. The vegetation consists of phrygana and maquis. Botanically, it seems similar to the nearby Antimilos island, but on Polyaigos there is also a swamp. Notably, there are *Arbutus unedo* formations while in the valleys there are oleanders (*Nerium oleander*). By the swamp there are halophilous with *Juncus* sp.

Habitat types: *Posidonia* beds, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Shifting dunes along the shoreline with *Ammophila arenaria*, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Vegetated silicicolous inland cliffs with chasmophytic vegetation, Pioneer vegetation of rock surfaces, Fields of lava and natural excavations, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Vipera schweizeri.*

Other important species: — Flora: 3B, 1D
— Fauna: 8B, 2C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: -

Protection Status: — National and Regional level: -
— International level: -

Significance: The whole area of the site is quite important. It has all the typical characteristics of the volcanic islands of Milos group. As far as we are aware of, it is an undisturbed island especially regarding human activities. It seems that this island is very important ecologicaly and scientifically, but the existing data, though indicative, is only limited. The only available data concern the presence of some reptiles, of very few plant species and of some invertebrates (land snails, orthoptera).

Site Name: NISOS ANTIMILOS



Sitecode: GR4220007 **Type**: B

Longitude: 24° 13′ **Latitude**: 36° 47′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 150 **Area (ha)**: 2150 **Length**: -

Description: The island of Antimilos is located on the west side of the Aegean Volcanic arc. It belongs to the island group of Milos. Geologically, it was an active volcano till the beginning of Quaternary. It totally consists of Pilocene and Pleistocene volcanic rocks. On the top of the island an old, non-active, caldera can be seen. The vegetation is phrygana and dry maquis. There are intermittent streams on the island. On the top, at a height of 670 m, there is a small hollow area with standing water during spring time, most likely it is a temporary pond. An old water reservoir, which dates back to World War II, and two buildings are the only constructions by the top. Today the island is uninhabited but there are signs of previous cultivations and settlements. The coastline is rocky and there is only one pebble beach on the south. The sea surrounding the island is not deep, but the depth between Antimilos and the island of Milos can exceed 200 m. In the marine area (20% of the site), up to the depth curve of 50 m there are *Posidonia* beds and near the island there are shallow reefs with a rocky substrate with *Cymnodocea* beds.

Habitat types: *Posidonia* beds, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Fields of lava and natural excavations, Submerged or partly submerged sea caves.

Plant species: -

Animal species: *Monachus monachus, Capra aegagrus, Elaphe quatuorlineata.*

Other important species: — Flora: 1B
— Fauna: 4B, 1C

Impacts/Activities:
— Positive: -
— Neutral: 230, 945, 946 (IN) / 945, 946 (AR)
— Negative: 140, 210, 240, 948 (IN)

Protection Status:
— National and Regional level: Game breeding station
— International level: -

Significance: The parameters of the ecological and scientific quality and importance of Antimilos are related to its geological history and to its fauna and flora. The most important characteristic of the site area the volcanic formations that occur all over the island. Concerning the fauna of Antimilos the data are satisfactory. On the island there is the endemic subspecies *Capra aegagrus pictus* which is endangered and strictly protected (Bern Convention, Appendix II). The island is today a refuge for the wild goats. The endemic species, *Podarcis milensis* warrants special attention since it is among the few endemic vertebrate species, apart from fish, in Greece and probably the only one in the Aegean. The cliffs of the island are important for seabirds, raptors and migrating birds. Regarding the flora and vegetation of the island, we are aware of the richness in plant species as well as of the very good condition of the vegetation.

Site Name: SIFNOS: PROFITIS ILIAS MECHRI DYTIKES AKTES



Sitecode: GR4220008 **Type**: B

Longitute: 24° 41′ **Latitude**: 36° 57′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 150 **Area (ha)**: 1700 **Length**: -

Description: Most of the site is occupied by a small mountain, Profitis Ilias, with the highest peak of the island (Apidia, 600 m) and the springs of Agia Marina, Agios Ioannis and Panagia. These springs are very important for the water equilibrium on this island. In some parts there are very characteristic screes with singular formations of stones without strict structure, maybe the most distinctive ones in the Aegean. At some areas there is pioneer vegetation with *Sedum* spp. There are areas with garrigues of *Quercus coccifera*. The marine part of the site (6%) site includes *Posidonia* beds and small shallow bays.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Mauremys caspica, Elaphe situla, Vipera schweizeri.*

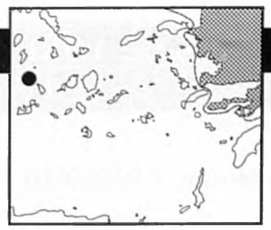
Other important species:
— Flora: 1B
— Fauna: 12B, 5C

Impacts/Activities:
— Positive: -
— Neutral: 100, 220 (IN) / 220 (AR)
— Negative: 140, 210, 230 (IN) / 210, 400 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA.

Significance: The most important elements of the site are the *Juniperus* forest, the three springs and the marine habitats. It is also notable for the small mountain as a whole. From the sea level to the top of the mountain, all the typical landscapes of Cyclades are represented at a good to excellent conservation status without the burden of many tourism pressures.

Site Name: NOTIA SERIFOS



Sitecode: GR4220009 **Type**: B

Longitute: 24° 29′ **Latitude**: 37° 09′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 250 **Area (ha)**: 3400 **Length**: -

Description: The site is a part of the geological formation of north Cyclades. This unit belongs to the Attikocycladic zone. The substratum consists mostly, of crystalline gneiss. In the past, the exploitation of the iron deposits used to be profitable for the economy of the island. The annual average rainfall is one of the highest of the Cyclades islands. The average annual rainfall is about 600 mm and the average annual temperature is 19°C. The site starts from the sea level and reaches up to 582 m (Troulos, the highest peak of the island), in its northern part. The terrestrial part covers 77% of the site. Almost half of it is covered by typical low Aegean phrygana. The site's coastline is in the south, with a length of about 14k m. Four bays (Kalo Ampeli, Koytalas, Malliako, Dyo Gialloudia) are formed in the south. At the shores of the bays Kalo Ampeli and Koutalas there are sand beaches that cover about the one per cent (1%) of the site. There are also sand dunes with characteristic vegetation. The hydrographic net of the site includes rivers with N-S direction and a total length of about 14k m. It also includes a number of springs, foundains and wells; There are about 24 of these, and most of them are located at the southern part of the site. In the west part of the site (Megalo Livadi) there are abandoned mines. Throughout the site there are pavements and stone hedges demarking the borders of properties and fields, mostly now abandoned. In the south of the site there are still few cultivations, vineyards and olive trees, mainly, and a fair number of habitations.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean salt meadows (Juncetalia maritimi), Dunes with *Euphorbia terracina*, Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Floating vegetation of *Ranunculus* of plane, submountainous rivers, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Aegean calcareous cliffs, Submerged or partly submerged sea caves, *Quercus macrolepis* forests, Thermo-Mediterranean riparian galleries (Nerio-Tamaricetae).

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica, Elaphe situla.*

Other important species: — Flora: 6B, 1D
— Fauna: 1A, 15B, 10C, 1D

Impacts/Activities:
— Positive: 508 (IN)
— Neutral: 130, 220, 502 (IN)
— Negative: 140, 211, 230, 402, 690, 700, 890 (IN) / 402, 502, 700 (AR)

Protection Status:
— National and Regional level: Game refuge.
— International level: -

Significance: The main characteristic of the site is the combination of geomorphological and hydrogeological features that gives rise to a lot of different habitats types. The morphological features and the scientific interest in addition to the ancient monuments and modern relics (abandoned mines), make it a site of exceptional value. In the recent years there is an increacing tourism development in the site.

Site Name: VOREIODYTIKI KYTHNOS: OROS ATHERAS kAI AKROTIRIO KEFALOS



Sitecode: GR4220010 **Type**: B

Longitude: 24° 25′ **Latitude**: 37° 27′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 200 **Area (ha)**: 2100 **Length**: -

Description: The site is a part of the geological formation of north Cyclades. This unit belongs to the Attikocycladic zone. The site lies mostly on mica schist with little parts of marble (Uper Triassic - Lower Jurasic). The annual average rainfall is one of the highest of the Cyclades islands (about 600 mm). The site starts from the sea level and reaches up to 355 m (Mt. Kakovoulo) and its terrestial part covers 1722 ha (82%). The axis of the site has a direction NE-SW with a maximum length about 9.5 km and a maximum width 3 Km. The relief of the site is sharp, with small valleys among the boulders. The coast line is rugged, with numerous small bays. Its length is about 22 km. In these bays there are small sea caves, used as refugia by the Monk Seals. The coasts at the north and west are very steep. In the south, there are two shallow inlets with a special geomorphological formation called tombolo, joined with the mainland by the islet of Agios Loukas. This tombolo is one of the few (only about twenty) in Greece. In these two inlets there are sand beaches. At the inlet of Apokrisis is the estuary of the river Vathyrema. The main part of this site constitutes a complex hydrographic net. Its length is about 32 km. There are streams, springs and in some cases we can find small waterfalls. The river banks are vegetated mainly by *Nerium oleander* and *Rubus ulmifolius*. The springs are formed in the junction of strata. At the altitude of 200 m there is a large plateau which covers 250 ha. It is covered by Aegean phrygana, maquis and abandoned cultivations. A part of the site consists of cliffs and bare rocks. Throughout the site we can find traditional stone hedges which are used as refuges for many species like snakes, lizards, molluscs, etc. There are also scattered habitations and little churches.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Floating vegetation of Ranunculus of plane, submountainous rivers, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Aegean calcareous cliffs, Caves not open to the public, Submerged or partly submerged sea caves.

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica, Elaphe situla.*

Other important species: — Flora: 9B.
— Fauna: 1A, 11B, 8C

Impacts/Activities:
— Positive: 403, 501 (IN)
— Neutral: 220, 520, 900 (IN)
— Negative: 140, 211, 230, 530, 690, 851, 871 (IN) / 130, 140, 151, 230, 401, 502 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The main features of the site are the large variety of habitat types, the rare and endemic plants (11) and the endemic invertebrates (11), all related to the site's exceptional geomorphology. The large number of habitat types and the numerous microhabitats that exist in the site, create a patchy environment.

Site Name: ANATOLIKI KEA



Sitecode: GR4220011 **Type**: B

Longitude: 24° 20′ **Latitude**: 37° 36′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 285 **Area (ha)**: 6900 **Length**: -

Description: The site covers the south-eastern part of the island of Kea. The main parent rock material is schist. The relief is quite variable, with sharp lines, ranging from the highest peaks of Profitis Ilias and Agios Panteleimonas (561 and 547 m, respectively), to the eastern coasts of the island, with an impressive gorge in the middle of the site and many secondary smaller gorges, which end up to the sea. The coastline is dentelated. The understorey of the *Quercus macrolepis* forest usually consists of phrygana shrubs (*Sarcopoterium spinosum, Centaurea spinosa*). In several places the shrubs have been removed and the soil is cultivated.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Mediterranean salt meadows (Juncetalia maritimi), Dunes with *Euphorbia terracina*, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Submerged or partly submerged sea caves, *Quercus macrolepis* forests.

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica, Elaphe quatuorlineata, Elaphe situla, Callimorpha quadripunctata*

Other important species: — Flora: 6B, 1D
— Fauna: 7B, 7C

Impacts/Activities:
— Positive: -
— Neutral: 500, 511 (IN) / 500, 506, 511 (AR)
— Negative: 100, 140, 151, 230, 400, 421, 501, 502, 690, 948 (IN) / 100, 140, 151, 400, 421, 501, 502, 690, 948 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: It is striking that the island of Kea is the less studied island of the Cyclades group. Very little is known either about the fauna or the flora of the island. The most interesting feature of the wildlife of the site in question is the existence of the *Quercus macrolepis* forest. These are two contradictory hypothesis regarding the origin of this deciduous oak forest: it is possible that the forest in question is a relict from the period when the Cyclades islands were covered by deciduous forests, while according to another point of view the oak forest is artificial. The fact is that the *Q. macrolepis* forest is one of the largest ones in the Cyclades region and maybe in the whole area of the Central Aegean Sea. The oak forests (the valonean oak forests in particular) are among the most threatened habitats in the Mediterranean basin, because of their relative difficulty in regenerating after fire (in comparison with the mediterranean coniferous forests) and in tolerating overgazing. The lack of any kind of severe human pressure on the wildlife of the site will make easy the work of the local authorities in effectively applying any management plan for the site, according to ecologically sound principles, in order to conserve this forest and the other habitats of the island as well.

Site Name: VOREIA AMORGOS KAI KYNAROS, LEVITHA, MAVRIA



Sitecode: GR4220012 **Type**: B

Longitude: 26° 2′ **Latitude**: 36° 53′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 350 **Area (ha)**: 5000 **Length**: -

Description: This site comprises the north-eastern part of Amorgos island and the offshore islets Levitha, Kynaros and Mavria. The maximum altitude is 821 m a.s.l. It is a rocky place with a lot of inland cliffs and sea cliffs. The islets are located almost in the centre of the Aegean between Amorgos and Leros islands with maximum altitude not exceeding 200 m. The two larger ones are inhabited by one family each. There are cultivations in the centre of Levitha islet. There are also a lot of free grazing goats all over the island. On Kinaros islet there are also cultivations and goats but fewer than on Levitha. In both islets there are very deep bays, which could be considered similar to fjords. The vegetation on Kynaros and Levitha is phrygana and maquis. There are very few intermittent streams. Geologically the whole area consists of limestones of the Jurassic - Triassic period. The marine area, delimited by the depth curve of 50 m, includes shallow waters with *Posidonia* and *Cymodocea* beds on rocky surfaces. It should be mentioned that because of the substrate there must be caves in the area, but there are not enough data.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, *Quercus macrolepis* forests.

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica, Elaphe quatuorlineata.*

Other important species: — Flora: 23B, 1C, 6D
— Fauna: 35B, 3C

Impacts/Activities: — Positive: -
— Neutral: 100 (IN)
— Negative: 140, 210, 230 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The whole area, north-eastern Amorgos and the offshore islets, is quite important regarding its ecological and scientific quality as well as its aesthetic value. Though the area has not been sufficiently studied yet, the available data show a high degree of endemism both in plant and animal species. The floristic and faunistic importance of the area is due to the position of the islets, being in the centre of the Aegean sea, and to their relatively large size (compared to other Aegean islets). Their fauna and flora has elements of the surrounding areas. Also, the island of Amorgos, which is the easternmost island of the Cyclades, shows characteristic elements of the Asian and European fauna and flora. Regarding the flora, the limestone cliffs and screes that chracterise the site are typical habitats of endemic plant species.

Site Name: MIKRES KYKLADES: APO KERO MECHRI IRAKLEIA



Sitecode: GR4220013 **Type**: B

Longitude: 25° 34′ **Latitude**: 36° 54′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 209 **Area (ha)**: 15690 **Length**: -

Description: The site comprises a complex of small islands, most of which are rocky and relatively bare. The major islands of the complex in descending size order are: Irakleia (where the highest peak of 418 m is found), Keros, Schinousa, Ano Koufonisi and Kato Koufonisi, Antikeros and Drima. The total terrestrial area of the site (5420 ha) is somewhat larger than the sum of the above islands' areas, as some rocky islets have also been incorporated in the site. In the delimitation of the site's boundaries in the sea, the depth curve of 100 m was used. The *Posidonia* beds for Cyclades region extend to 50 m depth. Representative steep rocks are characteristic of all the islets. The islands of the site have a low number of inhabitants which has moreover shown a decreasing trend during the last 30-40 years. Until very recently there had been no port and approach was possible only by small boats from the ships. The islands were supplied with electical power in 1984, whilst there are no organised discharge units. The few inhabitants occupy themselves with fishing, cultivations beekeeping and animal breeding. During the last year, tourism activities are developing at increasing rates.

Habitat types: *Posidonia* beds, Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Dune juniper thickets (*Juniperus* spp.), Dune scleorophyllous scrubs (Cisto-Lavenduletalia), *Juniperus phoenicea* arborescent matorral, Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex*, Aegean calcareous cliffs, Caves not open to the public, Submerged or partly submerged sea caves.

Plant species: -

Animal species: *Phocaena phocaena, Monachus monachus, Elaphe quatuorlineata.*

Other important species: — Flora: 15B, 3C, 9D
— Fauna: 2A, 1B, 9C

Impacts/Activities: — Positive: -
— Neutral: 100, 140, 170, 171, 210, 501, 511, 622, 920 (IN), / 210 (AR)
— Negative: 220, 230, 421, 504 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The whole island complex is important for migratory birds and also hosts endemic plant and animal species. Endemic and/or rare plant species are found on the islands. The marine habitats are most important. The site has a rich underwater life and *Posidonia* beds. Most importantly, in the site there are areas where the Monk Seal, a priority species, finds shelter. Other important marine mammals reported in the site are *Phocaena phocoena* and *Delphinus delphis*. Regarding the terrestrial fauna, another two mammals and several protected reptiles are found in the site. The endemic subspecies *Podarcis erhardii amorgensis* is observed at Ano Koufonisi and Keros. Keros has an archaleogical interest as well. Tourism development is expected to expand in the area in the near future and therefore the need for the site's protection and for plans for sustainable development is urgent.

Site Name: KENTRIKI KAI NOTIA NAXOS: ZEFS KAI VIGLA EOS MAVROVOUNI



Sitecode: GR4220014 **Type**: B

Longitude: 25° 30′ **Latitude**: 37° 01′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 400 **Area (ha)**: 8155 **Length**: -

Description: The site includes a steep mountainous ridge running the island from north to south, as well as the coastal area from Vigla to the west side up to Moutsouna at the east side of the island. The rocky mountains sides are covered with low phrygana and high or mesic maquis vegetation. The dominant plants of phrygana are *Thymus capitatus, Genista acanthoclada, Cistus sp.* and *Sarcopoterium spinosum*, while the shrubs of *Calycotome villosa, Pistacia lentiscus, Quercus coccifera* and trees of *Juniperus phoenicea* dominate the maquis. Stands with trees of Kermes oak, some up to 9 m high, are scattered on the slopes of the mountains. There is also deciduous oak which occurs as large isolated trees or scattered stands near Philoti and Apeiranthos, as well as in some ravines of the eastern side. Trees of *Platanus orientalis* occur in some of the ravines, too. Throughout the area there are many narrow intermittent streams with approximately total length of 32 km, as well as about 20 springs and many wells. In the coastal area of the site there is a large variety of alternating habitats. Some of the coastal plains, as in Agiassos and Kalandos, are composed largely on Quaternaly alluvium.

Habitat types: Lagoons, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Dune jupiter thickets (*Juniperus* spp.), Oligotrophic waters containing very few minerals of West Mediterranean sandy plains with *Isoetes*, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public

Plant species: -

Animal species: *Monachus monachus, Elaphe quatuorlineata, Callimorpha quadripunctata.*

Other important species:
— Flora: 22B, 1C, 6D
— Fauna: 36B, 11C, 1D

Impacts/Activities:
— Positive: 100, 965 (IN) / 100, 900 (AR)
— Neutral: 401, 501, 502 (IN) / 331, 401, 530 (AR)
— Negative: 140, 210, 220, 230, 403, 690, 900 (IN) / 140, 210, 230, 403 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The large variety of habitat types in combination with the high density of flora and fauna make the whole area one of the most important sites in the central Aegean Sea. The island of Naxos lies on the main migratory route over the central Aegean. Especially the southeastern side constitutes one of the most important stepping stones in the Cyclades area for migratory bird species. Botanically, the site is important because of the high diversity of the flora and the presence of local endemics and other rare interesting species such as *Bolanthus graecus*. The high diversity and the abundance of reptiles, moluscs and epigeic arthropods, some of which are local endemics, also characterize this site.

Site Name: ALYKI NAXOU



Sitecode: GR4220015 **Type**: B

Longitude: 25° 22′ **Latitude**: 37° 04′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 0 **Area (ha)**: 122 **Length**: -

Description: The main part of the site is a shallow lagoon on the SW side of the island of Naxos, situated at a distance of 2 km from the capital. It is the largest lagoon of the Cyclades islands. There is hydrophilous, halophilous and ammophilous vegetation with high diversity, which grows mainly on alluvial and lagoon deposits and on dunes. There also exists submerged vegetation in the open water. Stands of trees and shrubs with tamarisk (*Tamarix sp.*), juniper (*Juniperus oxycedrus* ssp. *macrocarpa, J. phoenicea*) and dense maquis vegetation of lentisk (*Pistacia lentiscus*) and Kermes oak (*Quercus coccifera*), as well as phrygana (*Sarcopoterium spinosum, Thymus capitatus*) occur in certain areas. During 1985 a part of the lagoon was drained to serve as an airport area.

Habitat types: Sandbanks which are slightly covered by the sea all the time, Lagoons, Mediterranean salt meadows (*Juncetalia maritimi*), Fixed dunes with herbaceous vegetation (grey dunes), Dune-slack reedbeds and sedgebeds, Dune juniper thickets (*Juniperus* spp.), Mediterranean temporary ponds, Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica, Elaphe quatuorlineata.*

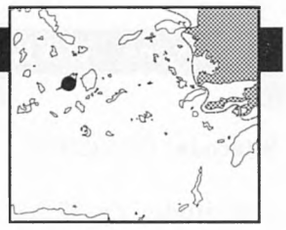
Other important species: — Flora: -
— Fauna: 10B, 7C, 1D

Impacts/Activities:
— Positive: 965 (IN) / 100, 130 (AR)
— Neutral: 511, 629, 710 (IN) / 402 (AR)
— Negative: 230, 502, 505, 870 (IN) / 530, 720 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: According to older and more recent publications this wetland is very important for migratory bird species over the central Aegean Sea. It attracts large numbers and populations of bird species mainly during spring migration. The wetland lies on a main migratory route over the Aegean Sea and constitutes one of the most important sites in the Cyclades area. Wading birds, waterfowl, shore birds, gallinules, snipes, gulls, terns, birds of prey and many passerines use the lagoon, the coastal area and the sublittoral organogenic concretions during their migration in order to feed and rest. In the various habitats of the site, there is also a reasonable diversity in bird, amphibian, reptile and invertebrate species, some of which are endemic.

Site Name: NISOS PAROS: PETALOUDES



Sitecode: GR4220016 **Type**: B

Longitude: 25° 06′ **Latitude**: 37° 03′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 120 **Area (ha)**: 100 **Length**: -

Description: The area is located at the central part of Paros (Moni Christou), the central island of the Cyclades (Aegean Sea). The site is characterised by a little river and rocky lands which are covered by phrygana (with *Genista acanthoclada* and *Thymus capitatus*), garrigue with *Quercus coccifera* and a dense mid-elevation matorral of *Juniperus phoenicea*. There is also riparian vegetation with common perennials or annuals (the vegetation of a constantly flowing mediterranean river with gravel bed, usually pebbles). There are cultivations, vineyards and olive trees which are property of the church.

Habitat types: *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Mauremys caspica, Callimorpha quadripunctata.*

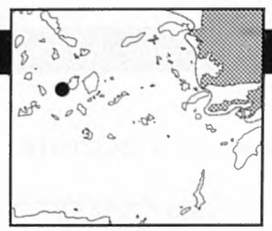
Other important species:
— Flora: 1B, 1D
— Fauna: 3B, 9C

Impacts/Activities:
— Positive: -
— Neutral: 402
— Negative: 100, 110, 120, 140, 230, 240, 421 (IN) / 100, 110, 120, 140, 230 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The ecological quality of the site consists of a) the presence of a great population of the rare butterfly *Callimorpha quadripunctata* near the river, a rare phenomenon in Greece (the butterfly forest in Rhodos is another such example); and b) its variety of natural and semi-natural habitat types (phryganas, matorral, garrigues and olive trees). Its biodiversity is expected to be of great interest, but further investigation is needed, since only few species of plants, amphibians, reptiles and gastropods have been described up to now.

Site Name: NISOI DESPOTIKO KAI STRONGYLO



Sitecode: GR4220017 **Type**: B

Longitude: 24° 57′ **Latitude**: 36° 57′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 75 **Area (ha)**: 2193 **Length**: -

Description: The small islands of Strongylo and Despotiko are located near Antiparos and Paros at the centre of the Cyclades islands (Aegean sea). A zone of *Posidonia* beds surrounds the islets. The site is characterised by rocky lands which are covered by phryganas (dominated by *Genista acanthoclada* and *Cistus* spp.), dense mid-elevation matorral of *Juniperus phoenicea* (also on sandy dunes) and a garrigue with *Quercus coccifera*. There are some abandoned old cultivations which are now recovered by phryganas (*Sarcopoterium spinosum* and *Thymus capitatus*).

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Shifting dunes along the shoreline with *Ammophila arenaria*, Dune juniper thickets (*Juniperus* spp.), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Submerged or partly submerged sea caves.

Plant species: -

Animal species: *Monachus monachus*.

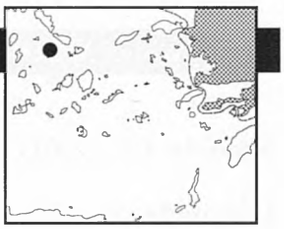
Other important species: — Flora: -
— Fauna: 4B, 6C

Impacts/Activities: — Positive: -
— Neutral: 167
— Negative: 140, 210, 220, 690, 948 (IN) / 210, 220, 690 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The ecological quality of the site is due to the variety of well conserved natural habitat types, which are typical of the central Cyclades: *Posidonia* beds in the sea, phryganas, matorral and garrigues on the terrestrial part of the site. The human presence is low and not permanent. The pasture pressure is moderate and contributes to the conservation of phryganas. The seal *Monachus monachus* is a permanent resident of underwater caves of the islets. The biodiversity of the site is expected to be of great interest, but needs further investigation since only a few species of reptiles and gastropods have been described up to now.

Site Name: SYROS: OROS SYRINGAS OS PARALIA



Sitecode: GR4220018 **Type**: B

Longitude: 24° 54′ **Latitude**: 37° 28′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 200 **Area (ha)**: 700 **Length**: -

Description: The site is located at the north part of the island. It contains the mountain Syringas and is extended up to the western coastal area, from the bay Marmari to the bay Delphini. It is the only area in the island with limestones, in contrast to the rest of the island where volcanic rocks are the main geological componets. There are many springs, surrounded by running water related vegetation, sea and inland cliffs, caves, screes and small gorges. At the coastal area there are sand dunes which are not extended. In general, the site can be considered as a typical phryganic ecosystem.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Shifting dunes along the shoreline with *Ammophila arenaria*, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: *Rhinolophus ferrum-equinum, Monachus monachus, Mauremys caspica, Caretta caretta, Elaphe situla.*

Other important species:
— Flora: 9B
— Fauna: 16B, 5C, 3D

Impacts/Activities:
— Positive: 130 (AR)
— Neutral: 100, 110, 120, 130, 171, 402, 501, 621 (IN) / 100, 120, 171, 402, 501, 502, 621 (AR)
— Negative: 140, 220, 230, 240, 250, 421, 900, 948 (IN) / 110, 140, 220, 230, 240, 250, 421, 900, 948 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The quality and importance of the site result from the following elements: 1) The mountain Syringas is naturally protected because of the steep rocks and cliffs and the lack of roads that make the area difficult to access. 2) There are a lot of unexplored caves. 3) The site as a whole (and particularly the mountain Syringas) is very important for the avifauna and the mammals, due to its geomorphology and to the presence of many refuges. Mammals populations are in excellent condition. 4) Its flora is rich in common and endemic species. The latter are of great interest, as many of them are rare endemic species of the Aegean. Its fauna is also rich in local endemic invertebrates. 5) Sand dunes are very important for the conservation of the flora.

Site Name: TINOS: MYRSINI - AKROTIRIO LIVADA



Sitecode: GR4220019 **Type**: B

Longitude: 25° 13′ **Latitude**: 37° 35′

Administrative Region: Notio Aigaio **Prefecture**: Kyklades

Altitude (m): 150 **Area (ha)**: 1800 **Length**: -

Description: The site is located at the eastern part of Tinos island. It is an area with no tourism activities. The small mountain (600 m) has adequate standing and running water (intermittent streams) during the cold season. Flanking the streams there is typical water fringed vegetation, with Nerio-Tamaricetea and *Platanus orientalis*. The site also includes areas with broadleaved deciduous woodland with *Quercus macrolepis*, maquis and phrygana. There are areas with garrigues of *Quercus coccifera*. The marine part of the site (5%) with the bay Livada, rocky coasts and *Posidonia* sea beds, are also important.

Habitat types: *Posidonia* beds, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Mediterranean temporary ponds, Floating vegetation of Ranunculus of plane submountainous rivers, Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Vegetated silicicolous inland cliffs with chasmophytic vegetation, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica.*

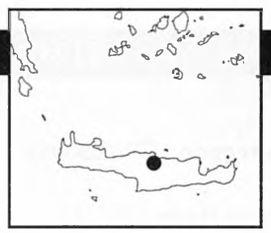
Other important species: — Flora: -
— Fauna: 12B, 8C

Impacts/Activities:
— Positive: -
— Neutral: 100 (IN)
— Negative: 140, 210, 230, 290 (IN) / 210 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The site includes the most undisturbed area of the island of Tinos. It supports a number of habitats at a good to excellent conservation status and, most importantly, inland water bodies with their typical vegetation, not often encounterd in the Aegean. The marine ecosystems with *Posidonia* beds are also important. The invertebrate fauna is interesting, with a number of endemic species. The fauna also includes a number of protected reptile species.

Site Name: ALMYROU FARANGI KAI YGROTOPOS



Sitecode: GR4310001 **Type**: B

Longitude: 25° 01′ **Latitude**: 35° 20′

Administrative Region: Kriti **Prefecture**: Irakleio

Altitude (m): 100 **Area (ha)**: 700 **Length**: -

Description: The site, located at the northern part of central Crete, includes the gorge and the wetland of Almyros. Almyros freshwater system consists of a spring with a significant supply of brackish water, an artificial lake created after the construction of a dam that collects the water, and of a stream with permanent flow stream that carries the overflow water at a distance of 1100-1200 m to the sea. The estuary of the stream forms a delta flanked by a sandy beach with some shifting dunes. In the past, there was a well structured marsh between the two branches of the delta, but today it has been drastically restricted and degraded because of tourism activities in the area. The state power-station of Irakleion, located on the beach of Almyros, uses the water from one of the delta branches for cooling. There is also a plan for supplying the city of Irakleion with water. At the entrance of the gorge of Almyros, just over the wetland, there is a stand of *Phoenix theophrasti*.

Habitat types: Estuaries, Reefs, Shifting dunes along the shoreline with *Ammophila arenaria*, Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Aegean phrygana (*Sarcopoterium spinosum*), Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, Palm groves of *Phoenix*,

Plant species: *Phoenix theophrasti*.

Animal species: *Mauremys caspica*.

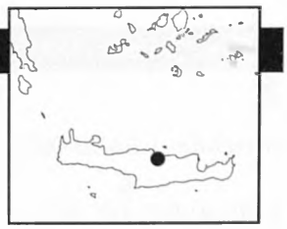
Other important species: — Flora: 17B, 1D
— Fauna: 4B, 6C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 130, 140, 180, 230, 400, 411, 422, 502, 512, 710, 810 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The hydrological system of Almyros (spring, dam, lake, stream and delta) in connection with Almyros gorge over it form a very important site for Crete. This importance rises from the following: The fact that there is a limited number of freshwater systems in Crete, gives an ecological value to the ecosystem of Almyros; moreover the presence of such a large quantity of water close to the city of Iraklion is important. There is a variety of biotopes (spring and lake, stream, marsh, gorge) with a variety of vegetation types in the relatively small area of the site. Many endemic and rare species of flora (mainly species of the chasmophytic vegetation of the gorge) and notably of the palm tree *Phoenix theophrasti* exist in the area. Also, the fauna is rich in reptiles and amphibians. The area is important for migratory birds and generally for breeding water birds.

Site Name: GIOUCHTAS - FARANGI AGIAS EIRINIS



Sitecode: GR4310002 **Type**: B

Longitude: 25° 08′ **Latitude**: 35° 14′

Administrative Region: Kriti **Prefecture**: Irakleio

Altitude (m): 400 **Area (ha)**: 600 **Length**: -

Description: The southern part of the site is a rocky mountain with very steep slopes. The main rock is limestone of the Tripoli series. It is surrounded by extensive cultivation with vineyards and olivetrees. It is a very important archaeological site. Human activities have not stopped there since the early Neolithic times. The dominant vegetation is maquis and phrygana, but also artificial pine and cypress groves. A T.V. transmitor and a church have been constructed on the two highest peaks. The north-east and the north parts of the site comprise an intermittently flowing river with rich riparian vegetation. There is a small canyon at the north-east edge of the mountain. The rocks are neogene marbles.

Habitat types: Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Cretan Sardinian Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Caves not open to the public, Oriental plane woods (Platanion orientalis).

Plant species:

Animal species: *Mauremys caspica, Elaphe situla.*

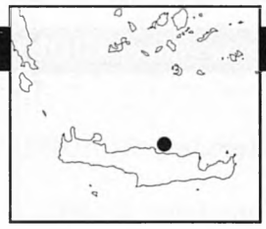
Other important species: — Flora: 15B
— Fauna: 1A, 4B, 5C

Impacts/Activities:
— Positive: -
— Neutral: 100, 501 (IN) / 150, 170, 171, 331, 402, 423, 430 (AR)
— Negative: 140, 162, 180, 230, 400, 403, 421, 500, 502, 606 (IN)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The site is characterized by high biodiversity and by the presence of many Cretan and Greek endemic species of flora and fauna. It is surrounded by extensive cultivation, mainly vineyards and olive groves. Giouchtas mountain is one of EU's Important Bird Areas due to the presence of an important vulture colony. It is designated as "Important archaeological site" and as "Site of special natural beauty". However, legislation and protection are not effective.

Site Name: NISOS DIA



Sitecode: GR4310003 **Type**: B

Longitude: 25° 13′ **Latitude**: 35° 27′

Administrative Region: Kriti **Prefecture**: Irakleio

Altitude (m): 100 **Area (ha)**: 1250 **Length**: -

Description: The island of Dia is located 14 km north of Irakleion Bay, with 5 km maximum length and 3 km maximum width. It is uniformly covered by low sclerophyllous vegetation with *Sarcopoterium spinosum* (dominant species) and *Pistacia lentiscus* in the form of small shrubs (mostly at the western parts). The vegetation of the island has become considerably degraded, having been overgrazed for the last 50 years, initially by domestic goats and, after 1955, by the introduction of the Cretan "agrimi" (*Capra aegagrus cretica*), which overpopulated the island. During the last 5 years, an effort is being made by the Department of Forestry to remove all goats (wild or hybrid ones) and to reintroduce -after vegetation has recovered- the wild type of the Cretan "agrimi".

Habitat types: Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Caves not open to the public, Submerged or partly submerged sea caves.

Plant species: -

Animal species: *Monachus monachus*.

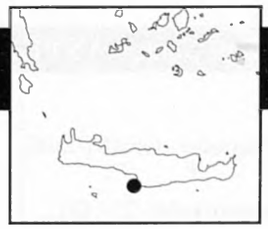
Other important species: — Flora: 14B, 2D
— Fauna: 3A, 4B

Impacts/Activities:
— Positive: 171, 230 (IN)
— Neutral: 501, 590, 629 (IN) / 210 (AR)
— Negative: 140, 161, 162, 180, 240, 409, 964, 966 (IN)

Protection Status:
— National and Regional level: Controlled hunting area
— International level: IBA

Significance: The island seems to be a very important biotope for endemic plants and for plants with low dispersal to the Southern Aegean. Two strictly endemic species to the island have been identified until now; however, there are strong suggestions for the presence of more. The rabbit population belongs to the endemic subspecies *Oryctolagus cuniculus cnossicus*, whilst also population of the lizard *Podarcis erhardii schieberi* is found. The island also represents one of the most important nesting areas for Eleonora's Falcon in the Southern Aegean. Monk seals are also often seen by local fishermen around the island.

Site Name: DYTIKA ASTEROUSIA (APO AGIOFARANGO OS KOKKINO PYRGO)



Sitecode: GR4310004 **Type**: B

Longitude: 24° 46′ **Latitude**: 35° 01′

Administrative Region: Kriti **Prefecture**: Irakleio

Altitude (m): 50 **Area (ha)**: 3700 **Length**: -

Description: The site has two main parts. The first one is rocky with cliffs and gorges. The second one, includes a sandy beach, where the longerhead turtle (*Caretta caretta*) ponds its eggs, and the mouth of Geropotamos river. The site reaches up to Kokkinos Pyrgos, including two thirds of the coastline of Messara's bay. The gorges present continuous changes of landscape, especially Agiofarango gorge (the name literally means the "saint's gorge"). There are impressive cliffs and rocks. At places there is pioneer vegetation of rocks surfaces with *Sedum* spp. There is also a large variety of many small plant communities; amongst them, there are galleries with *Nerium oleander*, a small patch with *Phoenix theophrasti*, in the region of Martsalos, a small forest with *Juniperus phoenicea*, Oleo-Ceratonion matorral and phrygana.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, Palm groves of *Phoenix*.

Plant species:

Animal species: *Mauremys caspica, Caretta caretta, Elaphe situla.*

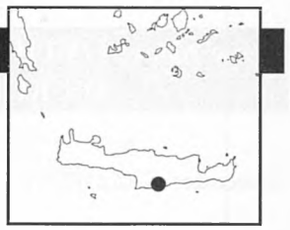
Other important species: — Flora: 11B, 3C, 2D
— Fauna: 15B, 5C, 1D

Impacts/Activities:
— Positive:
— Neutral: 100, 120, 130, 140, 151, 402, 501 (IN) / 220, 608 (AR)
— Negative: 110, 230, 608, 710, 810 (IN) / 210, 290, 400 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The gorges have a great aesthetic value and they present an alternation of different landscapes, with a big variety of plants and animals. The flora consists of many endemic species, such as *Limonium creticum*, which is a local endemic. On the sandy beach, the turtle *Caretta caretta* lays its eggs, making the site one of the three most important places for *C. caretta* in Greece. The fauna also includes other amphibians and reptiles, as well as mammals protected by the Bern Convention. There are also endemic invertebrates, some of them local endemics.

Site Name: ASTEROUSIA (KOFINAS)



Sitecode: GR4310005 **Type**: B

Longitude: 25° 06′ **Latitude**: 34° 58′

Administrative Region: Kriti **Prefecture**: Irakleio

Altitude (m): 400 **Area (ha)**: 15400 **Length**: -

Description: The site includes the eastern range of the massif of Asterousia Ori in southern Crete. The marine area covers less than 1% of the site. The rocks consist mainly of limestones and dolomites, and the lowland eastern area is covered by Neogene sediments. Mount Kofinas, the highest summit (1231 m), is a bare, rugged mountain. At some areas the slopes are covered with pioneer vegetation with *Sedum* spp. On its southern slopes there are woods with *Pinus brutia* and small patches of *Cupressus sempervirens*. The dominant vegetation type is phrygana and there are many areas affected by regular overgrazing by sheep and goats. There are also intermittent streams running down to the sea. There are caves in southern Asterousia, most of them very important from the archaeological point of view. The coastline is rocky and indended with bays and small capes and numerous caves. Notably, there is a small thicket of *Phoenix theophrasti* at Agios Nikitas cove (near Achendrias). The marine habitats are in excellent condition and monk seals live in the marine caves.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, Cypressus forests (Acero-Cupression), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, Palm groves of *Phoenix*, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Origanum dictamnus, Phoenix theophrasti.*

Animal species: *Monachus monachus, Elaphe situla.*

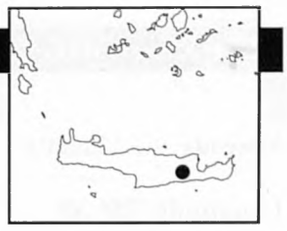
Other important species: — Flora: 26B, 4C, 5D
— Fauna: 13B, 2C, 1D

Impacts/Activities: — Positive: -
— Neutral: 100, 401 (IN)
— Negative: 140, 180, 230, 501, 502, 948 (AR)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: The importance of this site rises from the following points: 1) Mount Kofinas provides nesting places for big rapaces, such as *Gyps fulvus* and, notably of the very rare *Gypaetus barbatus*. 2) The presence of monk seals in the marine caves; 3) The area hosts endemic and protected plant species. 4) There are also interesting endemic snails: 9 species are endemic to Crete; and *Albinaria terebra* is endemic to Asterousia; 5) The whole site is of archaeological importance, with very interesting caves with prehistoric remnants, archaeological relics and temples, byzantine monasteries etc.; 6) The aesthetic value of the site due to its morphology; the whole area of Asterousia mountains is characterized as a Natural Beauty Landscape.

Site Name: DIKTI: OMALOS VIANNOU (SYMI - OMALOS)



Sitecode: GR4310006 **Type**: E

Longitude: 25° 26′ **Latitude**: 35° 03′

Administrative Region: Kriti **Prefecture**: Irakleio

Altitude (m): 900 **Area (ha)**: 3400 **Length**: -

Description: The site is mountainous, located in south-central Crete and covers part of the southern massif of Dikti in Irakleion Prefecture. It is delimited by Omalos plateau and Erganas stream on the north and by the contour of 700 to 800 m on the south including the southeastern peak and slopes of Dikti mountains, the area of Ano Viannos in the south and Symi in the south-east. Springs and small intermittent streams are scattered throughout the site with *Platanus orientalis* and *Nerium oleander* riparian formations along the watercources. There is also a temporary pond at Omalos Viannou. The vegetation in most of the site is typical of Cretan calcareous cliffs and rocks, with phrygana and maquis (*Q. coccifera*) formations. There are also bare rocks and caves. At some areas the slopes are covered with pioneer vegetation with *Sedum* spp. Finally, there are *Pinus brutia* on the southern slopes and also cypress forests, over 800 m.

Habitat types: Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Stepped and garland grasslands, Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Cypressus forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Origanum dictamnus.*

Animal species: *Elaphe situla.*

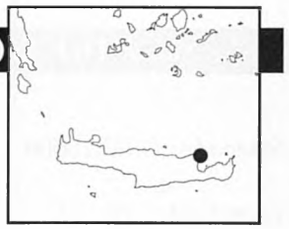
Other important species: — Flora: 23B, 1D
— Fauna: 16B, 3C

Impacts/Activities: — Positive: -
— Neutral: 100 (IN)
— Negative: 140, 230 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: The site is of great ecological and aesthetic value due to the existence of important habitats with rare and endemic animals and plants. The ecological importance lies on the existence of a range of habitat types, with a vegetation mostly at a good conservation status. The flora and fauna of these habitats typically contain endemic and moreover local endemic species in Crete.

Site Name: MILATOS (MECHRI AKROTIRIO AGIOU IOANNI)



Sitecode: GR4320001 **Type**: B

Longitude: 25° 39′ **Latitude**: 35° 19′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 80 **Area (ha)**: 4400 **Length**: -

Description: The site consists of many rocky hills and sea cliffs. There are also important caves, concerning their zoological interest. Most of the area is covered by phrygana vegetation. Besides the phryganic areas and the areas with the cliffs, there are also: a) Oleo-Ceratonion mattoral, b) areas with garrigues of *Quercus coccifera*; the garrigues are grazed and low. At some areas there is pioneer vegetation with *Sedum* spp.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Rhinolophus mehelyi, Rhinolophus hipposideros, Rhinolophus ferrum-equinum.*

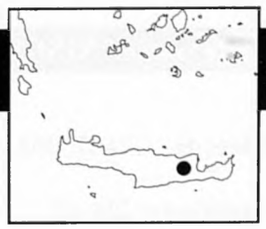
Other important species: — Flora: 7B
— Fauna: 32B, 7C

Impacts/Activities:
— Positive: -
— Neutral: 100, 170 (IN) / 300
— Negative: 110, 120, 140, 948, 240, 400 (IN)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: Two of the main geomorphological characteristics of the region, the rocky cliffs and the caves of the site, also constitute the basis of its importance. The flora of the cliffs contains many species, including endemic ones. The fauna, especially the invertebrate, of both the cliffs and the caves is rich in endemic and stenoendemic species. In the caves there are also chiroptera (bats).

Site Name: DIKTI: OROPEDIO LASITHIOU, KATHARO, SELENA, KRASI, SELEKANOS



Sitecode: GR4320002 **Type**: E

Longitude: 25° 30′ **Latitude**: 35° 08′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 1000 **Area (ha)**: 32050 **Length**: -

Description: The area is located at the central-east part of Crete and is characterized by mountains, Dikti (alt. 2148 m, one of the three principal mountains of Crete), Selekano, Katharo and Selena, which surround the biggest plateau of Crete, Lasithi (at 800 m alt.). The dolines are of special interest; the wet dolines are characterized by scanty vegetation of annuals common in other places but rare in Crete while the dry dolines are characterized by dense vegetation and, in Dikti, by the occurence of *Polygonum idaeum*, specialized in this type of habitat and confined to Psiloritis and Dikti. The characteristic types of vegetation are; phrygana, forests of pines (*Pinus brutia*); and a kermes oak (*Quercus coccifera*) ungrazed forest. There is also low - not exceeding 1 m - grazed, sparsely covered *Quercus coccifera* garrigue. The plateau is cultivated. A small part of the site is covered by vineyards.

Habitat types: Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Stepped and garland grasslands, Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Cypress forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Cretan *Quercus brachyphylla* forests, *Olea* and *Ceratonia* forests, *Quercus ilex* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Zelkova abelicea, Convolvulus argyrothamnos, Origanum dictamnus, Cephalanthera cucullata.*

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Elaphe situla.*

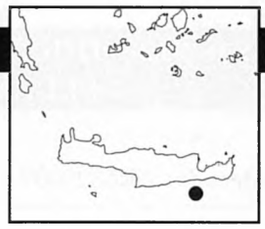
Other important species: — Flora: 56B, 1C, 6D
— Fauna: 15B, 4C

Impacts/Activities:
— Positive: 141 (IN)
— Neutral: 120, 130, 162, 165, 402, 624, 941 (IN)
— Negative: 110, 140, 164, 180, 230, 240, 250, 403, 421, 622, 623, 900, 948 (IN) / 140, 180, 230, 948 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The following elements comprise the ecological quality of the site: 1) A great variety of habitat types, mostly well conserved. 2) Its flora is extremely rich in common and in rare and vulnerable endemic species (over 50 species). 3) Its fauna, although it needs further investigation. There are also colonies of vultures (*Gyps fulvus*) at most of the mountains and gorges. 4) The plateau of Lassithi has a unique in Crete old venetian drainage system and there are hundreds of windmillds used as water pumps and composing a rare aesthetic landscape. 5) There are still vineyards with old varieties of vines at the slopes of Selekanos. 6) There are many caves with endemic fauna. 7) There are many and scientifically important fossils at Katharo mountains.

Site Name: NISOS CHRYSI



Sitecode: GR4320003 **Type**: B

Longitude: 25° 42′ **Latitude**: 34° 51′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 5 **Area (ha)**: 700 **Length**: -

Description: The island of Chrysi has shallow gulfs and sand beaches laid with shells. The marine area covers 22% of the site. The characteristic vegetation of the sand dunes is the *Juniperus oxycedrus* ssp. *macrocarpa* arborescent matorral. A large part of the island is covered with *J. oxycedrus* maquis and with a mixed forest of *J. oxycedrus* ssp. *macrocarpa* and *J. phoenicea*. The island of Mikronisi is a rocky, over-grazed island.

Habitat types: Large shallow inlets and bays, Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Shifting dunes along the shoreline with *Ammophila arenaria*, Dune juniper thickets (*Juniperus* spp.), Mediterranean arborescent matorral: Juniper formations, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*).

Plant species: -

Animal species: *Monachus monachus*.

Other important species: — Flora: 3B, 4D
— Fauna: 4B, 3C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 230, 250, 290, 608 (IN) / 211, 212 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: Chrysi is one of the very few sites in Greece where the rare maquis with *Juniperus oxycedrus* ssp. *macrocarpa* is found on sand dunes. Also, the mixed forest of *J. oxycedrus* ssp. *macrocarpa* and *J. phoenicea* is not very common in Greece. The sandbeaches laid with shells constitute an extraordinary feature. Overall, it is a site with great aesthetic value being designated as "Special natural beauty" site and encompassing a rare combination of ecosystems which form the habitats of several endemic species.

Site Name: MONI KAPSA (FARANGI KAPSA KAI GYRO PERIOCHI)



Sitecode: GR4320004 **Type**: B

Longitude: 26° 03′ **Latitude**: 35° 02′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 300 **Area (ha)**: 1250 **Length**: -

Description: The site is located at the SE part of Crete, about 35 km E of Ierapetra. It includes a small gorge (3 km long) and a monastery, Moni Kapsa, which is inside the gorge. There are a small sand beach and coastal sand dunes at the exit of the gorge to the sea. The marine part covers less than 1% of the site. The site encompasses inland cliffs, chasms, and exposed rocks. There are phrygana in good condition.

Habitat types: Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Caves not open to the public, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: -

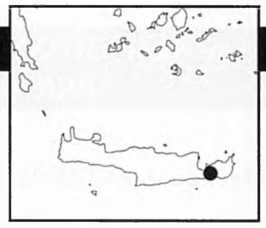
Other important species: — Flora: 13B, 2D
— Fauna: 2A, 3B

Impacts/Activities:
— Positive: -
— Neutral: 402, 501, 502, 621, 624 (IN) / 100, 110, 120, 130, 402, 501, 502 (AR)
— Negative: 140, 171, 230, 240, 250, 400, 900 (IN) / 140, 171, 230, 240, 250, 400 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The site is of great aesthetic value. It is also very interesting for its flora (with 14 endemic and local endemic species and with rare species) and for its geomorphology.

Site Name: OROS THRYPTIS KAI GYRO PERIOCHI



Sitecode: GR4320005 **Type**: B

Longitude: 25° 52′ **Latitude**: 35° 05′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 750 **Area (ha)**: 8550 **Length**: -

Description: The site is located between the towns Ierapetra and Sitia at the eastern part of Crete. It includes the coastal area of Tholos and the mountain range of Thrypti with several peaks. Cha gorge is one of the most impressive gorges in Crete; The wet dolines are characterized by scanty vegetation of annuals rare in Crete while the dry dolines are characterized by dense vegetation and, in Afentis Kavousi, by the occurence of *Polygonum idaeum*, specialized in this type of habitat and confined to Psiloritis and Dikti. The dolomites near the peak Afentis and limestones at the rest of the site are also important. Small valleys and plains are formed among the mountain slopes and are cultivated with vineyards. Small valleys with springs and rivers of constantly running water and riparian galleries and thickets, at the southern part of the site. Locally restricted building activities and minor roads are present.

Habitat types: Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Cretan Sardinian Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Origanum dictamnus.*

Animal species: *Myotis myotis.*

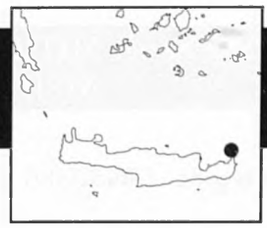
Other important species: — Flora: 57B, 2C, 6D
— Fauna: 2A, 18B

Impacts/Activities:
— Positive: -
— Neutral: 100, 120, 130, 180, 240, 402 (IN) / 100, 120, 130, 180, 240, 402 (AR)
— Negative: 110, 140, 171, 230, 250 (IN) / 110, 140, 171, 230, 250 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The quality of the site is indicated by the following elements: 1) It is of great aesthetic value, especially its southern slopes; 2) The cave Theriospilios at Tholos area is of great importance because of the presence of both a relatively big colony of the bat *Myotis myotis* and many endemic invertabrates; 3) The peaks of the mountain are very important for the avifauna of Crete; 4) Its flora is rich in common and endemic species which are of great interest as most of them are endemic to the site or to the island. Its fauna is rich in endemic invertebrates; 5) The mammals populations are in excellent condition due to both the geomorphology of the site and to the limited human presence and impact; 6) There is a variety of quite well conserved habitats in a relatively small area, which are not very easy to access, 7) The pine forest is one of the few in Crete; however, it has been burnt twice (12 and 2 years ago) without having a chance for sufficient regeneration until now.

Site Name: VOREIOANATOLIKO AKRO KRITIS: DIONYSADES, ELASA KAI CHERSONISOS SIDERO (AKRA MAVROVOUNI-VAI-AKRA PLAKA)



Sitecode: GR4320006 **Type**: I

Longitude: 26° 14′ **Latitude**: 35° 14′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 150 **Area (ha)**: 9630 **Length**: -

Description: The site includes the easternmost area of the island, the peninsula of Sidero, and the nearby islets, Dionysades and Elasa. Their area reaches 9630 ha. Geologically, it consists of limestones and dolomites of the upper Cretaceous, bedded crystalline limestone of the Permian, phylites and neogene and alluvial deposits. The vegetation is mainly phrygana. There are a lot of valleys with maquis, some of them degrading. The palm forest of Vai, unique in Europe, is situated in a coastal valley, on the easternmost coast of Crete. This part of Crete is one of the driest parts of Greece. Almost all streams dry up during summer; they are surrounded by a typical vegetation of Oleanders, etc. There are 2-3 villages in the area. There are plantations of bananas in greenhouses while the land near the villages is cultivated. At the eastern coast there are a lot of sand dunes, mainly between the palm forest and the sea and east of Palaikastro at Grantes gulf. On the west side of Sidero peninsula there are *Posidonia* beds, and flocs of *Tursiops truncatus* have been observed. The nearby islets are uninhabited. The vegetation on the islets is phrygana. In the larger islet of Dionysades group as well as on the opposite coast of Crete the coastline is characterized by sea cliffs.

Habitat types: *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), *Salicornia* and other annuals colonizing mud and sand, Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae). Shifting dunes along the shoreline with *Ammophila arenaria*, Dune-slack reedbeds and sedgebeds, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Palm groves of Phoenix.

Plant species: *Silene holzmannii, Phoenix theophrasti.*

Animal species: *Tursiops truncatus, Monachus monachus.*

Other important species:
— Flora: 59B, 2C, 18D
— Fauna: 1A, 13B, 6C

Impacts/Activities:
— Positive:
— Neutral: 220 (IN) / 100, 162, 220 (AR)
— Negative: 100, 140, 165, 180, 212, 230 (IN) / 140, 165, 180, 212, 230 (AR)

Protection Status:
— National and Regional level: Game refuge, Aesthetic Forest
— International level: Barcelona Convention site, IBA.

Significance: The whole area is very important for its flora and fauna, both marine and terrestrial. The palm forest is one of the most important characteristics of the area. It reaches an area of 20 ha. The species *Phoenix theophrasti* is under protection. The forest has already been characterized as an Aesthetic Forest (979/858585) and it is under the management of the Forestry Department. It is also a Special Protection Area (SPA) and a site protected by the Barcelona Convention.

Site Name: NOTIOANATOLIKO AKRO KRITIS KAI NISIDES KAVALLOI



Sitecode: GR4320007 **Type**: B

Longitude: 26° 14′ **Latitude**: 35° 04′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 330 **Area (ha)**: 10700 **Length**: -

Description: The site includes the southeastern end of Crete, the area south of Andravastoi village and the nearby islets, Kavalloi islets. Geologically the area consists of upper Cretaceous and Miocene limestones, Triassic dolomites; also of phlysch, neogene and alluvial deposits. The vegetation is mainly phrygana. Maquis vegetation is very rare, mainly in valleys. Regarding the climate, this part of Crete is the driest part of Europe. The rainfall is less than 400 mm per year, while the mean annual temperature is more than 20C. Although the area is the hottest and driest part of Europe, watersprings are found in various places. There are a lot of streams and springs; around them grow the associated plants, such as Oleanders, Plane trees etc. In the ponds one can find freshwater invertebrates, such as molluscs, insects etc. There are very few people living in the area. Most settlements have been abandoned. There are cultivations of olives; here is the only place of Crete where olivegroves are irrigated. There are a lot of deep gorges in the area with a lot of chasmophytes and rapaces. By the village of Xerokambos, at Ziros, there is a wetland (130 ha), with a small lagoon and saltmarsh. West of this village there are sand-dunes. The Kavalloi islets are two very small steep islets offshore the coast of Xerokambos village. They consist of neogene deposits. Their vegetation is phrygana.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Shifting dunes along the shoreline with *Ammophila arenaria*, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: -

Animal species: -

Other important species: — Flora: 34B, 8D
— Fauna: 13B

Impacts/Activities: — Positive: -
— Neutral: 100, 180, 220 (IN) / 100, 180, 220 (AR)
— Negative: 140, 210, 230 (IN) / 140, 210, 230 (AR)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The scientific knowledge for the area is very poor. The vegetation, especially in the gorges, is very interesting and the flora includes endemic and rare plants. Though there are no references about vertebrates in the literature, we know that reptiles, mammals and birds are present in the area and their populations are not negligible. The *Quercus coccifera* maquis, scattered in patches and rare, mainly due to overgrazing and fires, should be preserved, since the fauna and flora in these areas is of great interest and very important for eastern Crete. In the south side of the site there are extensive sand dunes. By the village Kato Zakros there are important archaeological findings of the Minoan civilization. In the same area and at other places of the site there are very important pleistocene vertebrate fossil findings.

Site Name: NISOS KOUFONISI



Sitecode: GR4320008 **Type**: B

Longitude: 26° 08′ **Latitude**: 34° 56′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 0 **Area (ha)**: 700 **Length**: -

Description: The site includes the island Koufonisi and the small islets on its north (Strongyli, Makrouli and Marmaros) and on its south (Trachilos). The marine part covers 60% of the site. Koufonisi is a small island, one of the southernmost european islands, together with Chrysi and Gavdos. Being at the south-easternmost part of Crete it has a dry and hot climate. This fact is evident in the persisting North African desert-like floristic elements and in the steppe vegetation observed with the typical presence of the perennial esparto grass, *Lygeum spartum*, as well as of *Erodium crassifolium*. There are both sandy and rocky beaches. The marine part of the site is very representative and well conserved and comprises sea caves, reefs and *Posidonia* beds. There are no permanent inhabitants on the island. In summer, tourists visit the island, but tourism activities are not intense.

Habitat types: *Posidonia* beds, Reefs, Annual vegetation of drift lines, Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Gypsum steppes (Gypsophiletalia), Shifting dunes along the shoreline with *Ammophila arenaria*, Aegean phrygana (*Sarcopoterium spinosum*), Caves not open to the public, Submerged or partly submerged sea caves.

Plant species: -

Animal species: *Monachus monachus*.

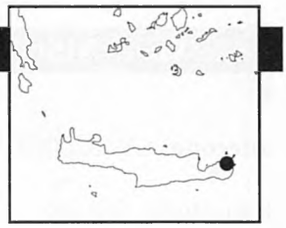
Other important species: — Flora: 2B, 9D
— Fauna: 1B, 1C

Impacts/Activities: — Positive: -
— Neutral: 622 (IN)
— Negative: 210, 220 (IN) / 210, 220 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The quality of this site has many aspects, related with its geographical location and excellent conservation status of the habitats. From the botanical view, both the flora and vegetation are interesting, as they are characterized by the persisting North African element which may have been depleted from the mainland of Crete. There are endemic plants and also plants at the margins of their northern distribution, such as *Zygophyllum album, Helianthemum stipulatum* and *Astragalus peregrinus* spp. *peregrinous*, which have in these islands their only known populations in the area of Crete or of Greece. The marine habitats are very important. Finally, the site combines the biological with the archaeological importance. There is an ancient theatre and archaeological value of the island is considered great, though not fully apprehended yet.

Site Name: AISTHITIKO DASOS VAI



Sitecode: GR4320009 **Type**: H

Longitude: 26° 15′ **Latitude**: 35° 15′

Administrative Region: Kriti **Prefecture**: Lasithi

Altitude (m): 2 **Area (ha)**: 20 **Length**: -

Description: The Aesthetic Forest of Vai is situated at the easternmost part of Crete; it is a wet, coastal forest and the largest palm forest in Crete. The Vai forest, which is under the management of the Ministry of Agriculture, is fenced and it is visited by tourists. Inside the forest there is a spring with very low water supply and a stream. The palm is accompanied by an understorey of *Nerium oleander* along the watercourses. Towards the beach, the palm is accompanied by very thin vegetation forming a small dune where the palm finds ideal growth conditions while inside the valley, and mainly at the lowest places where the water level is higher, there is a cover of *Juncus* sp. and *Equisetum hiemalie* where the palm is absent. At the edges of the valley there is a drier environment with phryganic vegetation (*Coridothymus capitatus, Genista acanthoclada*, etc.) where the palm is at the limits of its ecological resistance. Natural regeneration of the palm trees (by seeds) is easy and abundant. Vegetative propagation is also easy.

Habitat types: Mediterranean temporary ponds, Palm groves of *Phoenix*.

Plant species: *Phoenix theophrasti*.

Animal species: -

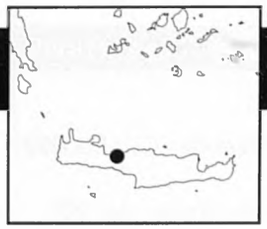
Other important species: — Flora: -
— Fauna: 1A, 2B, 2C

Impacts/Activities: — Positive: -
— Neutral: 100, 690, 162 (AR)
— Negative: 165 (IN) / 140 (AR)

Protection Status: — National and Regional level: Aesthetic Forest
— International level: Barcelona Convention site

Significance: The Vai palm forest is of unique importance for Europe. *Phoenix theophrasti* is one of the only two palms native in Europe (the other is at Canarian islands and very rare) and occurs outside Crete only locally in south-western Turkey. *P. theophrasti* might be a relict of the Tertiary European *Phoenix* which has persisted in some places with a favourite climate and where human activity has been low. The palm occurs at about another ten localities in Crete but always at small populations (only few individuals); the Vai forest is by far the largest palm grove in Crete and possibly in Europe.

Site Name: PETRE FARANGI KAI PETRES EOS PARALIA ZOURIDA



Sitecode: GR4330001 **Type**: B

Longitude: 24° 24′ **Latitude**: 35° 21′

Administrative Region: Kriti **Prefecture**: Rethymno

Altitude (m): 50 **Area (ha)**: 4000 **Length**: -

Description: The site is situated in north-central Crete, west of Rethymno and includes the low Petre gorge (max altitude 120 m), through which Petres river flows, and the seashore from Petres to Zourida. The marine part covers 4% of the site. The site is a region of low altitude, full of caves and intermittent streams. The vegetation along the watercourses is dominated by *Platanus orientalis, Salix alba, Nerium oleander* and *Vitex-agnus castus*. It is notable that at some places the riverbank vegetation is dominated by *Asclepias fruticosa* or by cane (*Arundo donax*). The larger part of the site is dominated by phrygana. At some areas the slopes are covered by pioneer vegetation with *Sedum* spp. The coast has a sandy part, where Petres river flows into the sea and a rocky part, with typical maritime sea cliff vegetation. At the delta of Petres river there is a salt meadow with halophytic vegetation (*Juncus maritimus*). In the marine area (which covers a belt delimited by the depth curve of 50 m) there are reefs and *Posidonia* beds.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Mediterranean temporary ponds, Floating vegetation of *Ranunculus* of plane submountainous rivers, Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Quercus macrolepis* forests.

Plant species: -

Animal species: *Mauremys caspica, Caretta caretta.*

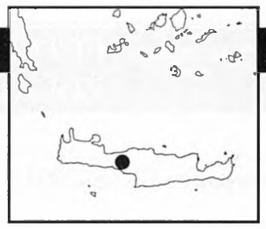
Other important species: — Flora: 5B, 1D
— Fauna: 18B, 2C

Impacts/Activities: — Positive: -
— Neutral: 400 (IN)
— Negative: 140, 230, 290, 502, 511 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The ecological importance of the site lies on the wetland of Petres and on the numerous streams around the area, on the existence of many caves and on the marine and coastal habitats. The ecological importance is combined with the archaeological value of the site. It worths to mention the cave of Gerani, an archaeological site and special aesthetic value landscape and the area of Prines. The wetland of Petres is considered as important for the avifauna area as a station for autumn and spring migration and a nesting place being part of the greater unit of Kourna lake and Georgioupoli coastal area. The invertebrate fauna is interesting, with endemic and stenoendemic species. The reptile amphibian and fauna includes a number of protected species.

Site Name: OROS KEDROS



Sitecode: GR4330002 **Type**: B

Longitude: 24° 35′ **Latitude**: 35° 10′

Administrative Region: Kriti **Prefecture**: Rethymno

Altitude (m): 1000 **Area (ha)**: 4500 **Length**: -

Description: The site is situated in the southwest of Psiloritis mountain (Idi), consisting exclusively of the massif of the mount Kedros; it comprises a cone delimited by the contour of 600 m with the highest summit (1776 m) almost in the middle. It is surrounded by a zone of 15 small villages, at the altitude range between 400 and 600 m, with no major settlement above the village zone. The geological substrate is limestone. The overall vegetation profile of the mountain can be described as short, dry scrubs and phrygana, with lack of tree forms. Canyons and rock cliffs are characteristic of the landscape, and, to a limited extend, there are naturally treeless slopes. There is an E4 mountain footpath, climbing up to the highest point of the site.

Habitat types: Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces.

Plant species: *Zelkova abelicea.*

Animal species: *Mauremys caspica, Elaphe situla.*

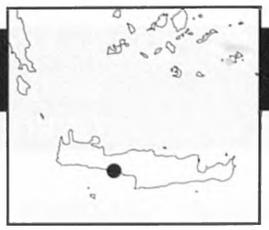
Other important species: — Flora: 24B, 3D
— Fauna: 18B, 5C

Impacts/Activities:
— Positive: -
— Neutral: 100, 501, 624 (IN)
— Negative: 140, 230, 240, 250, 430, 502, 530, 948 (IN)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The ecological importance of the Kedros mountain, closely related to its geomorphological structure, lies mainly on the endemic or rare floristic elements (mostly chasmophytes) and on the ideal conditions its geological relief provides for big rapace nesting. Big rapaces, such as *Gyps fulvus* and *Hieraaetus fasciatus* nest on Kedros Mt., while there is evidence of the presence of the rare *Gypaetus barbatus*. Besides, the site is considered an Important Bird Area.

Site Name: KOURTALIOTIKO FARANGI-MONI PREVELI-EVRITERI PERIOCHI



Sitecode: GR4330003 **Type**: B

Longitude: 24° 28′ **Latitude**: 35° 10′

Administrative Region: Kriti **Prefecture**: Rethymno

Altitude (m): 300 **Area (ha)**: 3425 **Length**: -

Description: The site, at the south-central Crete, includes the gorge of Kourtaliotis river, a narrow river with permanent water supply, which cuts through the gorge, flowing down a rocky bed, to end up to a small cove, with a sandy beach, 250 m in length and 60-70 m in width. At the estuary, a small pond with brackish water is formed, in the middle of the beach, 10 m from the sea. The water from the springs of Agios Nikolas, middleway in the gorge, is collected by a water lock which supplies water to all the villages around. The main types of habitats that characterize the site are: rock faces with characteristic chasmophytic vegetation and phrygana, at the slopes of the gorge; riparian arborescent vegetation with *Phoenix theophrasti, Nerium oleander, Ceratonia siliqua*; small coastal habitas at the estuary of the river, with *Vitex agnus-castus* and halophytic vegetation (*Juncus maritimus* and *Phragmites australis*) and small sand dunes; sea cliff vegetation and marine habitats, with *Posidonia* sea beds. The *Phoenix theophrasti* forest - the second most important palm forest of Phoenix in Crete, aged of several decades, extends into the gorge at a distance of at least 600 m from the beach.

Habitat types: *Posidonia* beds, Estuaries, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Shifting dunes along the shoreline with *Ammophila arenaria*, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Palm groves of *Phoenix*.

Plant species: *Origanum dictamnus, Phoenix theophrasti*.

Animal species: *Mauremys caspica, Elaphe situla*.

Other important species: — Flora: 30B, 4D
— Fauna: 1A, 7B, 2C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 130, 140, 180, 230, 250, 421, 608, 701 (IN)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: The gorge of Kourtaliotis, including the surrounding area and the estuary, is an area of rare and unique natural beauty. Its great biological diversity makes it a place of great, ecological and aesthetic importance at the level of Crete and of the Mediterranean.

Site Name: PRASIANO FARANGI-PATSOS-SFAKORYAKO REMA. PARALIA RETHYMNOU KAI EKVOLI GEROPOTAMOU



Sitecode: GR4330004 **Type**: E

Longitude: 24° 28′ **Latitude**: 35° 20′

Administrative Region: Kriti **Prefecture**: Rethymno

Altitude (m): 300 **Area (ha)**: 14500 **Length**: -

Description: The area is located at the nothern part of Crete on the south-east of Rethymnon town. It comprises the stream Sfakoryako, its tributaries and their valleys and the gorges of Prases (Prasiano) and Agios Antonios Patsou. It is surrounded by many hills and low mountains, named Angoli, Soros, Angathi, Veni koryfi, Mavrou koryfi, and Gasparis. The coastal part of the site starts at 3 km east of Rethymnon and extends up to the cape Lianos kavos including a sea belt delimited by the depth 50 m (*Posidonia* belt). Finally, it includes the small wetland system of Geropotamos river, a narrow belt from cape Lianos to the interior. The site is characterised by various vegetation types changing from one part to the other and by diverse vulnerability, as most of the human activities are limited to the coastal area. Matorrals of *Querqus coccifera* and phryganas cover most of the terrestrial part of the site. Other characteristic vegetation is the Oleo-Ceratonium mattoral on the northwest part, a forest of *Querqus ilex* at the entrance of Patsos gorge, and the gallery of *Salix* at the banks of the Sfakoryako stream. There is also riparian vegetation with common perrenials of annuals (the vegetation of a constantly flowing mediterranean river with gravel bed, usually pebbles). The cultivated land is located mostly around the villages and the valley.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria*, Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Mediterranean temporary ponds, Floating vegetation of *Ranunculus* of plane submountainous rivers, Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, *Salix alba* and *Populus alba* galleries, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Cretan *Quercus brachyphylla* forests, *Olea* and *Ceratonia* forests, *Quercus ilex* forests.

Plant species: *Origanum dictamnus.*

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Monachus monachus, Mauremys caspica, Caretta caretta, Elaphe situla.*

Other important species: — Flora: 22B, 1D
— Fauna: 1A, 18B, 9C

Impacts/Activities:
— Positive: -
— Neutral: 100 (IN)
— Negative: 130, 140, 210, 230, 300, 400, 621, 690, 710, 900, 948 (IN) / 110, 701 (AR)

Site Name: PRASIANO FARANGI-PATSOS-SFAKORYAKO REMA. PARALIA RETHYMNOU KAI EKVOLI GEROPOTAMOU (cont.)

Protection Status: — National and Regional level: Game refuge
— International level: IBA

Significance: The importance of the site lies mainly on the variety of terrestrial and marine habitats that give rise to a significant biological diversity. In particular, the elements that comprise the ecological quality and importance of the site are: 1) A variety of natural well-structured and mostly well conserved vegetation types. In particular, the mattoral of *Querqus coccifera*, is at a very good conservation status in comparison with other mattorals in Crete and many species of the flora of the maquis vegetation are represented very well in it. 2) *Origanum dictamnus* as well as other 17 important plants are found at the gorge of Prases. 3) There are a lot of caves but their fauna is not adequately known yet. The endemic Cretan species *Troglophyllus spinulosus* (order Orthoptera) and two endangered species of bats have been reported in the site. 4) The Molluscs of the site are interesting: Eleven species of endemic Cretan terrestrial snails have been recorded in the area. 5) The monk seal, *Monachus monachus*, has been recorded at the marine area of the eastern part of the site. There are some underwater caves which form appropriate habitats for this endangered species. 6) *Caretta caretta* uses the beach of Rethymnon to nest. The beach from Perivolia to Scaletta is one of the three most important nesting beaches in Greece and one of the most important in the Mediterranean Sea. A mean of 410 nests per nesting season were reported. 7) The gorge of Prases and the surrounding area have been recognised as a very good habitat for reptiles. 8) All three amphibians of Crete, which are threatened and protected species, are found in the site. 9) All the mammals occurring in the site are legally protected. *Meles meles arcalus* is narrow endemic of Crete, included in the National Red Data Book. Also, *Rhinolophus ferrumequinum creticum* is a subspecies endemic to Crete. 10) The avifauna is also important. The wetland of Geropotamos is a very important area for them, especially for Craradriformes, Herons and some Passeriformes. 11) The site combines the ecological importance with archaeological, historical and aesthetic value. Such sites of interest are the village Maroulas, which is an important and rare example of the Middle Ages architecture in Crete and the old water mills at the uninhabited old village Kato Myli, an example of a traditional use of the water in Crete.

Site Name: IDI OROS



Sitecode: GR4330005 **Type**: E

Longitude: 24° 50′ **Latitude**: 35° 15′

Administrative Region: Kriti **Prefecture**: Rethymno

Altitude (m): 1100 **Area (ha)**: 44800 **Length**: -

Description: The site is surrounded by several villages. Psiloreitis (Idi Oros) is one of the three major mountain ranges of Crete. The highest peak is 2456 m (Timios Stavros). Southern slopes are steep. Psiloreitis is the "drainage basin" of central Crete. Most of the site's area is karstified. Karstic forms comprise canyons, poljes, numerous dolines and many hundreds of caves and potholes including the deepest in Greece (-475 m). Deer fossils and Agrimi sceletons (*Capra aegagrus cretica*-extinct from Psiloritis some decades ago) have been located in several potholes. The dolines are of special interest; the wet dolines are characterized by scanty vegetation of annuals common in other places but rare in Crete while the dry dolines are characterized by dense vegetation and, in Psiloritis, by the occurence of *Polygonum idaeum*, specialized in this type of habitat and confined to Psiloritis and Dikti, and of *Gagea fibrosa*, a strict endemic to the dolines of Psiloritis. Phrygana and maqui shrubs are dominant up to 1600 m. Groves of *Quercus coccifera* are spread within the site. Rouvas' Kermes-oak grove, above Gergeri, is the largest. Pine groves (*Pinus brutia*) occur at the south slopes while cypress (*Cupressus sempervirens*) and maple trees (*Acer sempervirens*) are scattered up to 1700 m, only occasionally forming small groves. Above 1700 m vegetation is patchy with low bushes of spiny plants. Many taxa that characterise these formations are Cretan endemics (*Asperula idaea, Centaurea idaea,* etc.). There are several archaeological sites. The ancient town "Zomynthos", the cave Idaion Adron and the cave of Kamares are the most important.

Habitat types: Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Diss-dominated garrigues, Aegean phrygana, Cretan, Sardinian, Italian and Balearic phrygana formations, Stepped and garland grasslands, Sclerophyllous grazed forests with *Quercus ilex*, Mediterranean tall-herb and rush meadows, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Limestone pavements, Caves not open to the public, Cypress forests, Oriental plane woods, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Origanum dictamus, Cephalanthera cucullata.*

Animal species: *Elaphe situla.*

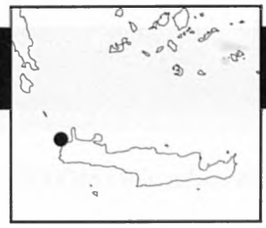
Other important species: — Flora: 73B, 7D
— Fauna: 3A, 40B, 7C, 1D

Impacts/Activities:
— Positive: 507 (AR)
— Neutral: 100, 331, 409, 500, 501, 502, 512, 620, 622, 624 (IN) 100, 331, 402, 501, 502, 511, 512, 603, 620, 622, 623, 624, 626 (AR)
— Negative: 140, 162, 170, 171, 230, 900, 948 (IN) / 140, 162, 170, 171, 180, 230, 421, 701, 703 (AR)

Protection Status:
— National and Regional level: Natural monuments and landmarks, Game refuge
— International level: IBA

Significance: The site is characterised by landscape diversity, high biodiversity, the presence of many Cretan and Greek endemic species of flora and fauna, rare plant associations, rare species, threatened species and species in danger of extinction. More than 100 plant species of the site are endemic to Crete.

Site Name: IMERI KAI AGRIA GRAMVOYSA - TIGANI KAI FALASARNA - PONTIKONISI



Sitecode: GR4340001 **Type**: B

Longitude: 23° 35′ **Latitude**: 35° 35′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 200 **Area (ha)**: 5500 **Length**: -

Description: The site lays in the western part of Crete, including Granvousa peninsula, the islands Imeri Gramvousa and Agria Gramvousa offshore the northern edge of the peninsula, and the islet Pontikonisi, 10 km west of the centre of the peninsula. Almost all along, the peninsula consists of rocky calcareous massifs with steep slopes which create rugged coastlines, inaccesible from the sea. Marine caves are a quite common feature of the coastline. The vegetation is mostly phryganic, dominated by the shrubby perennial *Sarcopoterium spinosum, Coridothymus capitatus, Calycotome villosa, Cistus creticus* and *Ballota pseudodictamnus*, as well as by dwarf forms (creeping) of *Pistacia lentiscus* and *Ceratonia siliqua*. At Balos bay, on the northwest, there are not extended coastal sand dunes with *Erica manipuliflora* and *Pistacia lentiscus*, while the area is known for the lagoons that are formed by the mainland and the small Tigani peninsula. The islands Agria and Imeri Gramvousa show almost similar vegetation character, with a greater percentage of rock and sand halophytic species. Falasarna is a coastal belt (5 km in length) in part sandy and in part rocky, with sand-halophytic vegetation, and an inner rocky area covered by phryganic and maquis formations.

Habitat types: *Posidonia* beds, Lagoons, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Embryonic shifting dunes, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public.

Plant species: *Anthemis glaberrima.*

Animal species: *Monachus monachus, Elaphe situla.*

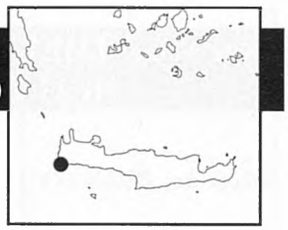
Other important species:
— Flora: 33B, 12D
— Fauna: 16B, 5C

Impacts/Activities:
— Positive: -
— Neutral: -
— Negative: 100, 110, 120, 140, 210, 230, 430, 502, 530 (IN) / 100, 140, 180, 210, 230, 430, 490, 502 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The peninsula and the islands of Gramvousa and Pontikonisi are very important areas for many Greek endemic or stenoendemic plant species as well as for endemic or rare species and subspecies of reptiles and invertebrates. In addition the area is important for migratory birds.

Site Name: NISOS ELAFONISOS- APENANTI PARALIA (APO CHRYSOSKALITISSA MECHRI AKROTIRIO KRIOS)



Sitecode: GR4340002 **Type**: B

Longitude: 23º 32′ **Latitude**: 35º 16′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 48 **Area (ha)**: 3133 **Length**: -

Description: The island of Elafonisos is located at the south-western corner of Crete. It is separated from the opposite coast by a shallow strait about 150 m in width. The island is oblong with a maximum length of 1500 m and a maximum width of 500 m although for the most part Elafonisos has a width of 150-300 m. The maximum altitude (39 m) is observed at the rocky western part while the rest of the area is principally a sandy lowland. Rocks and cliffs are found only on the periphery, along the coastline (with the exception of the eastern corner or the island). The extended beach of Elafonisos is characterised by the dominance of sand dunes with the well developed community Ammophiletum areanariae. A significant population of *Pancratium maritimum* (sea-lily) is found in this zone. Thickets of *Juniperus oxycedrus* ssp. *macrocarpa*, also on maritime sands, occupy the area behind the Ammophiletum community. Other species met in this scrub zone are: *Anthyllis hermanniae, Silene sedoides, Lotus creticus* ssp. *cytisoides, Ipomoea stolonifera, Orobanche versicolor, Plantago squarrosa*. On the rocky coasts that exist in certain parts of the island the following plants grow: *Atriplex halimus, Crithmum maritimum, Inula crithmoides, Capparis orientalis, Euphorbia dendroides, Ficus carica*. Finally, the central part of Elafonisos is occupied by phrygana (dwarf shrubs) with the following species predominating: *Coridothymus capitatus, Phagnalon graecum, Ballota pseudodictamnus, Hyparrhenia hirta, Ruta chalepensis*. Similar communities to the ones mentioned above are found on the opposite Cretan coast as well. The surrounding area of the monastery of Chrysoskalitissa is covered by characteristic phryganic vegetation intermixed with maquis, garigue and other scrubs. The following species predominate: *Erica manipuliflora, Pistacia lentiscus, Ceratonia siliqua, Anthyllis hermanniae, Calicotome villosa* etc. Studies carried out in this area revealed a very rich cliff flora, comprising many rare Greek endemics or species with discontinuous geographical distribution. Gypsum steppe vegetation dominated by the perennial grass *Lygeum spartum* is found near Chrysoskalitissa. *Juniperus oxycedrus* and *J. phoenicea* arborescent matorrals are found in the inner zone together with an evergreen sclerophyllous scrub dominated by *Pistacia lentiscus*, *Ceratonia siliqua* and *Olea europaea*. The hygrophilous *Tamarix parviflora* together with the exotic-looking shrub *Nerium oleander* form narrow galleries and small groves along the banks of streams present in the area. Finally, the marine component of the site, covering 53% of its total area, comprises sandbanks, shallow sea inlets, reefs and extended underwater "meadows" of *Posidonia oceanica*.

Habitat types: Sandbanks which are slightly covered by sea water all the time, *Posidonia* beds, Large shallow inlets and bays, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean salt meadows (Juncetalia maritimi), Gypsum steppes (Gypsophiletalia), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria*, Dunes with *Euphorbia terracina*, Dune juniper thickets (*Juniperus* spp.), Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests

Plant species: *Origanum dictamus, Androcymbium rechingeri.*

Animal species: -

Site Name: NISOS ELAFONISOS- APENANTI PARALIA (APO CHRYSOSKALITISSA MECHRI AKROTIRIO KRIOS) (cont.)

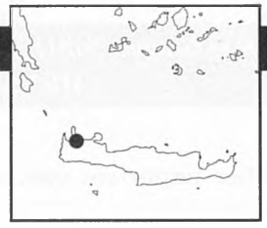
Other important species: — Flora: 8B, 7D
— Fauna: 2A, 4B, 4C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 140, 230, 250, 300, 331, 401, 421, 608, 623 (IN)

Protection Status: — National and Regional level: Game refuge
— International level: -

Significance: The island of Elafonisos and the opposite Cretan coast are separated by a relatively narrow zone of shallow waters over permanently submerged sandy sediments of the sea-floor. This combination constitutes a very important and unique geological formation. The ecological value of the landscape is considerable, since rare communities constitute part of the above mentioned sand dunes; a formation which becomes rearer due to sand removal and the building of hotel complexes. The site is also characterised by a variety of habitat types, most of them fairly well conserved. The flora of the site is rich in common species and also contains endemics, local endemics and species with geographical distribution of residual character. It is one of only 100 or less sites in the European Community where the plants *Androcymbium rechingeri* and *Ipomoea stolonifera* still exist. Endemic subspecies (*Felis silvestris cretensis, Meles meles arcalus* and *Podarcis erhardii elaphonisii*) constitute part of the fauna of the site. The area is also very important for migratory birds both as a resting and as a breeding place.

Site Name: CHERSONISOS RODOPOU - PARALIA MALEME



Sitecode: GR4340003 **Type**: E

Longitude: 23°45′ **Latitude**: 35° 36′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 300 **Area (ha)**: 13275 **Length**: -

Description: The site is located at the NW part of Crete, (about 20 km from Chania), and comprises Rodopos peninsula and the coastal area from Kolympari to Platanias. The marine part of the site (33.3 %) is delimited by the depth curve of 50 m and is characterised by the presence of *Posidonia* beds. The terrestrial part (66.7 %) is characterised by: 1) Vegetated sea cliffs, Aegean cliffs, chasms, screes and sink holes 2) Phrygana affected by grazing 3) Local *Pistacia lentiscus* thickets in good condition 4) Areas cultivated with vineyards 5) Locally restricted intensive building activities.

Habitat types: *Posidonia* beds, Estuaries, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), Shifting dunes along the shoreline with *Ammophila arenaria*, Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves.

Plant species: *Origanum dictamnus*.

Animal species: *Caretta caretta*.

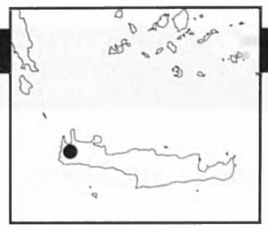
Other important species:
— Flora: 9B, 3C, 4D
— Fauna: 1A, 14B, 4C

Impacts/Activities:
— Positive:
— Neutral: 100, 120, 130, 161, 220, 402, 501, 502, 511, 530, 621, 624 (IN) / 130, 220, 621 (AR)
— Negative: 110, 140, 180, 210, 230, 240, 250, 421, 900, 948 (IN) 100, 110, 120, 140, 180, 210, 230, 240, 250, 402, 421, 501, 502, 511, 623 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: IBA

Significance: The ecological quality of "Rodopos" site is indicated by the following characteristics: 1) The archaeological site of Diktynaio in the northern area of the peninsula and the absence of a road in a good condition after the village Rodopos, act at a barrier for extensive human activities. 2) In the area of Ravdoucha, mammal subfossils have been found. 3) The site as a whole is very important for the avifauna of Crete because of its position and its geomorphology (important to cliff nesting birds - important migration route for harriers and herons). 4) There are a lot of endemic species in a variety of sufficiently conserved habitat types. There are also species such as *Fritillaria graeca*, an endemic of the Aegean islands, which in the island of Crete it has been found only in Rodopos peninsula and its presence is very rare. 5) The coastal area from Kolympari to Platanias is one of the most important places for the reproduction of *Caretta caretta* in Crete.

Site Name: ELOS-TOPOLIA-SASALOS-AGIOS DIKAIOS



Sitecode: GR4340004 **Type**: B

Longitude: 23° 40′ **Latitude**: 35° 23′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 600 **Area (ha)**: 5700 **Length**: -

Description: The site, is a mountainous area, begining at Topolia on the north, and ending just below the top of Dikaios mount (1008 m) on the south. It is delimited by Koutroulis mount (1071 m) and by the peak of Psilo Kefali mount (901 m) on the western side, while Sassalos & Milonou settlements are the east side borders. This area includes Topolia gorge, with Tiflos river, originating at Dikaios mt. and streaming down through the gorge; the north side and the summit of Dikaios mount, the east side and the summit of Koutroulis mt. and the lower mountains of Psilo Kefali, Oxo Koproula (695 m), Vitsilangos (683 m), and Sellakia (573 m). The well known cave of Agia Sofia is also in the area. The mountainous vegetation is mainly phryganic, dominated by the shrubby perennials *Sarcopoterium spinosum*, *Coridothymus capitatus*, *Calicotome villosa* and *Cistus creticus*. There are also shrub and tree formations of *Pistacia lentiscus* and *Ceratonia siliqua*. Chestnut groves (*Castanea sativa*), one of the rare chestnut formations in Crete, are situated between Elos and Pervolia settlements. Maquis formations with *Arbutus unedo* and *Erica manipuliflora* are common on non-limestone substrate. *Olea europea* groves occupy a considerable part of the site.

Habitat types: Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Chestnut woods, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Cretan *Quercus brachyphylla* forests, *Olea* and *Ceratonia* forests.

Plant species: -

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Myotis blythi, Miniopterus schreibersii, Myotis capaccinii.*

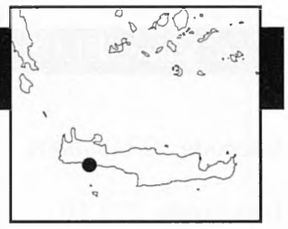
Other important species: — Flora: 13B, 1C, 1D
— Fauna: 4A, 17B, 2C

Impacts/Activities:
— Positive: -
— Neutral: 624 (IN) / 624 (AR)
— Negative: 100, 110, 130, 140, 180, 230, 400, 430, 501, 502 (IN) 100, 110, 130, 140, 180, 230, 400, 430, 501, 502 (AR)

Protection Status:
— National and Regional level: -
— International level: IBA

Significance: The site includes important bird areas such as Koutroulis mount, areas with endemic plant species (Dikaios mount and gorge), important caves (Agia Sofia) with stenoendemic invertebrates (the spider *Pholcus creticus* is found only in this cave), as well as gorges, running waters and rare plant formations, such as the chestnut groves and the *Arbutus unedo* maquis. Birds of prey and vultures as *Aquila chrysaetos, Gyps fulvus* and *Gypaetus barbatus* breed on Koutroulis mount, while *Pernis apivorus* and *Falco eleonorae* live in or pass through the site.

Site Name: SOUGIA- BARDIA- FARANGI LISSOU MECHRI ANYDROUS



Sitecode: GR4340005 **Type**: B

Longitude: 23° 46′ **Latitude**: 35° 15′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 350 **Area (ha)**: 3846 **Length**: -

Description: The site is located at the southern coast of western Crete covering an area of 3315.3 ha on land while the marine part covers 530.7 ha. To the west, the stream Dihalomata stretches from the coastline up to the village of Anydroi where it meets the road. The latter continues further towards the north, thus comprising the western border of the site. To the east, the limit is once again the road that starts from the village of Sougia and continuues northwards. Finally, the stream Kamariano and the sea constitute the natural borders of the site on the north and on the south, respectively. Except for two small areas on the eastern and western ends where the beach is sandy, the rest of the extended coast consists of rocks and steep cliffs; a natural refuge for many rare and endemic flora species. The presence of marine caves in this coastal zone is also characteristic. The site includes a fair number of springs, streams and gorge-beds with characteristic vegetation. Inland rocks, mobile screes and limestone pavements are also present. Very steep slopes of smooth rock, calcareous rocky debris, ledges and fine crevices combined with the harsh climatic conditions contribute to high level of relict endemism. Finally, on small patches of bare ground or in the understorey of *P. brutia* stands and olive groves numerous geophytes find a niche, including several endemic orchids.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, *Juniperus phoenicea* arborescent matorral, Low formations of euphorbia close to cliffs, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Semi-natural gry grasslands on calcareous substrates (Festuco Brometalia), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Limestone pavements, Caves not open to the public, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Origanum dictamnus.*

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Rhinolophus blasii, Monachus monachus, Mauremys caspica.*

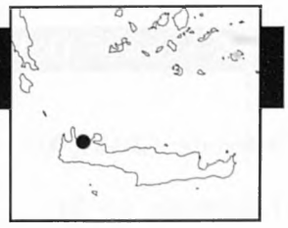
Other important species: — Flora: 38B, 2D
— Fauna: 2A, 6B, 6C

Impacts/Activities:
— Positive: -
— Neutral: 120, 220, 622 (IN)
— Negative: 110, 140, 230, 240, 250, 402, 421, 624, 948 (IN) / 140, 230, 948 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The ecological quality of the area derives from the following elements: 1) the plentitude of habitat types 2) the large number of encdemics and local endemics of flora species 3) the presence of important orchid sites 4) the presence of fauna species protected by international conventions 5) the Byzantine site of Lissos representing the cultural element of the site.

Site Name: LIMNI AGIAS-PLATANIAS-REMA KAI EKVOLI KERITI- KOILADA FASAS



Sitecode: GR4340006 **Type**: E

Longitude: 23° 56′ **Latitude**: 35° 28′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 30 **Area (ha)**: 410 **Length**: -

Description: The site is situated west of Chania. The coastal part includes Platanias, a sandy beach, and the estuary of Keritis stream. To the inland, the site continues along Keritis stream and it includes the artificial lake of Agia. Although it is not a natural lake, it supports a variety of wetland communities. On the south, the site reaches the Fasas valley. According to the historical data, in the past there was a small bog at the same place where the artificial lake exists today. At the periphery of the wetland, large stands of *Phragmites australis* are important for the structure of the lake ecosystem. On the southern part of Agia, the Public Enterprises of Water Supply and Draining of Chania are installed. Close to the installations there are two large stands of *Eucalyptus tostrata* and *Pinus brutia*. Keritis stream has a permanent flow only at its southern part -after the lake of Agia- where it is supplied by the lake's water; its upper part has an intermittent flow. The southern part of the site, Fasas valley, probably the most humid valley of Crete, is characterized by linear wetland habitats, particularly well developed. In the upstream part of the valley along the river there are three vegetation types of Brachypodio-Holoschoenion. Notably the steep wet schistos rocks harbour the Acrocladio-Adiantetum and particularly the species-rich variant *Scirpus cernuus* with many rare bryophytes. The ferns cover 3% of the site with excellent representativity and good conservation status.

Habitat types: Estuaries, Shifting dunes along the shoreline with *Ammophila arenaria*, Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Mediterranean temporary ponds, Floating vegetation of *Ranunculus* of plane submountainous rivers, Intermittently flowing Mediterranean rivers, Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Oriental plane woods (Platanion orientalis).

Plant species: *Woodwardia radicans*.

Animal species: *Rhinolophus hipposideros, Mauremys caspica, Caretta caretta, Elaphe situla.*

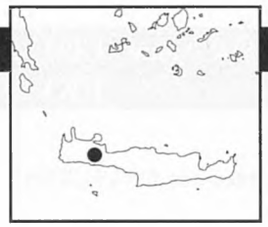
Other important species: — Flora: 1B, 2C, 2D
— Fauna: 3A, 7B, 7C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 130, 401, 421, 422, 701 (IN)

Protection Status: — National and Regional level: -
— International level: -

Significance: The quality of Agia lake and Keritis stream estuary is due to the following: 1) the limited number of freshwater bodies in Crete 2) the important role of freshwater habitats for the water balance and the biodiversity of Crete 3) the variety of habitat types 4) the high degree of diversity both in animals and plants. The presence of the endemic species *Podarcis erhardii cretensis* is important, as Crete is the southern distribution limit for the restricted population of the species 5) the geographical connection of the site with a quite significant biotope, the White Mountains of Crete. Fasas valley, consists the only habitat of the viviparous chain-fen, *Woodwardia radicans*, in Greece and one of the very few in the Europe.

Site Name: FARANGI THERISSOU



Sitecode: GR4340007 **Type**: B

Longitude: 23° 59′ **Latitude**: 35° 26′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 450 **Area (ha)**: 1 **Length**:

Description: Therissos gorge is located about 6 km south of the town of Chania, between the villages Perivolia and Therissos. Along the canyon there is a road joining Chania with the mountain Lefka Ori. Its width varies from 15 to 250 m. A small valley is formed at the broader area, at the entrance of the canyon which is cultivated with woody plants (orchards and vineyards). The rest of the site is characterized by cliffs, chasms, and screes, with a variety of endemic plants. Along the stream there are groups of *Platanus orientalis* and *Nerium oleander*. Around the gorge there are phrygana in a good condition and caves not open to the public. There is also a small cypress forest near the village of Therissos.

Habitat types: Intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum*), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Cypress forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests.
Plant species: -

Animal species: *Capra aegagrus, Elaphe situla.*

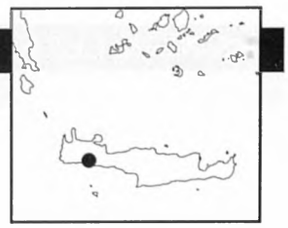
Other important species: — Flora: 18B, 4D
— Fauna: 1A, 3B, 2C

Impacts/Activities:
— Positive: -
— Neutral: 100, 624 (IN) / 100, 500, 501, 511, 624 (AR)
— Negative: 110, 120, 130, 140, 180, 230, 240, 250, 421, 500, 501, 502, 730, 900, 948 (IN) 110, 120, 130, 140, 230, 240, 250, 402, 502, 900, 948 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The quality and importance of Therissos gorge is comprised of the following elements: 1) It is of great aesthetic value. 2) It is easy to approach, due to its location near the town of Chania and the existence of the road, running along it. 3) There is a variety of sufficiently conserved habitats within a small area. 4) Its flora is rich in common and endemic species; the latter are of great interest and most of them are rare or threatened and protected at international (Bern Convention) or national (Presidential Decree 67/81) level. The local endemics *Ferulago thyrsiflora* and *Petrorhagia dianthoides* and the non-endemic *Ranunculus creticus* are included in the IUCN Red Data List (1993) in the category of threatened plants characterized as "rare" and they are protected by the Greek Law (Presidential Decree 67/81). Other important species are: *Lactuca acanthifolia* (= *Scariola acanthofolia*) found in Ydra, Cyclades, East Aegean Islands and only in SW Turkey out of Greece. The species *Onosma graeca* is found only in NW Anatolia, out of Greece. *Brassica cretica* ssp. *cretica* is a chasmophyte occurring only in C. and S. Lebanon out of Greece. 5) The rarity of the snake *Elaphe situla* which lives in the site together with the fact that Crete is the southernmost limit of this species distribution, make its preservation very important for the fauna of the island. 6) *Capra aegagrus cretica* is an endemic subspecies.

Site Name: LEFKA ORI



Sitecode: GR4340008 **Type**: I

Longitude: 24° 02′ **Latitude**: 35° 17′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 1000 **Area (ha)**: 54283 **Length**: -

Description: The site has a very variable geomorphological profile. There are 50 summits over 2000 m. It is characterized by a number of gorges (approximately 20) of which the gorge of Samaria is the most characteristic. There is also a great number of ravines, caves, dolines, potholes, poljes and plateaus forming a sequence of different habitats from 0 to 2453 m. The dolines are of special interest; the wet dolines are characterized by scanty vegetation of annuals common in other places but rare in Crete while the dry dolines are characterized by dense vegetation and, in Lefka Ori, by the occurence of *Hypericum kelleri*, specialized in this type of habitat and endemic to the Cretan mountains. Also the largest cypress forest in Crete (and one of the last remaining) as well as extended pine forests are found at the borders of the site. A small percentage of the area is covered by tall kermes oak formations. The coastal part is characterized by calcareous escrapments. The tallest ones (200 to 500 m), termed as plurizonal megacliffs, have several climatic and vegetation belts. The mosaic vegetation is intensified by the existence of karstic ravines that support a luxuriant and frutescent cliff vegetation (karst rockbush). Samaria ravine is the largest coastal ravine of the Balkans with a depth of more than 500 m. The marine part, characterized by *Posidonia* beds, reefs and sea caves, covers a belt of 1628,5 ha (3% of the total area of the site). Very few local communities, mostly coastal, and a very sparce network of secondary roads at the margins of the site are the only visible signs of human presence at the area.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, *Juniperus oxycedrus* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Limestone pavements, Caves not open to the public, Submerged or partly submerged sea caves, Cypress forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Hypericum aciferum, Zelkova abelicea, Bupleurum kakiskalae, Nepeta sphaciotica, Origanum dictamnus, Cephalanthera cucullata.*

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Monachus monachus, Capra aegagrus, Elaphe situla.*

Other important species: — Flora: 136B, 1C, 19D
— Fauna: 5A, 30B, 9C, 1D

Impacts/Activities:
— Positive: 624 (IN)
— Neutral: -
— Negative: 140, 243, 290, 300, 302, 421, 502, 530, 606, 621, 900, 974 (IN) / 140, 230, (AR)

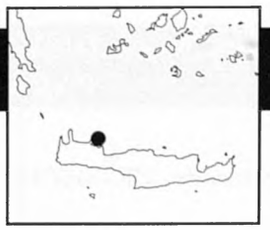
Protection Status: — National and Regional level: Core strict nature in National Park, Game refuge

Site Name: LEFKA ORI (cont.)

— International level: Council of Europe Biogenetic Reserve, Council of Europe Diploma site, Barcelona Convention site, UNESCO Biosphere Reserve, IBA

Significance: The described site is of utmost importance. It includes a great variety of very important habitats that host a great number of species of flora and fauna, a large proportion of which are endemics or even stenoendemics, restricted to the site. Most characteristic and indicative of the site's quality is the gorge of Samaria, that, in addition to being a Special Protection Area (SPA) for birds, it has been declared National Park since 1962, has been designated as a Biosphere reserve, and has also been awarded the European Diploma of the Council of Europe; besides, it is protected by the Barcelona Convention. An essential element of the site's importance, coupling its potential for bioversity, is that it is a vast area with low human impact and it includes many important biotic and non-biotic natural elements, whose true value we are not yet fully aware of. The great morphological complexity combined with the above give a high aesthetic result. The need of a global management plan is urgent if the site's invaluable elements are to be preserved.

Site Name: VOREIO AKROTIRIO: AGIA TRIAS-MONI TSAGAROLON- GOUVERNETOU - KATHOLIKO



Sitecode: GR4340009 **Type**: B

Longitude: 24° 08′ **Latitude**: 35° 34′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 100 **Area (ha)**: 1300 **Length**: -

Description: The site is located at the northern part of the Akrotiri peninsula in the north west part of Crete. This part of the peninsula is characterised by rocky calcareous hills (418 m max. altitude) with steep slopes falling down to the sea. The site includes the hills from the contour 100 m up to the top, the beach of Stavros village with some degraded sand dunes, a small pond and a zone of steep rocky shores extending east and west of the main area of the site. An area on the east of the site with similar characteristics belongs to the army and is used for army manoeuvres, so it is not included. Many inland and underwater caves are formed in the limestone substrate. The characteristic vegetation includes spiny phrygana and *Quercus coccifera* garrigue representing a degraded stage as a result of intensive grazing.

Habitat types: Reefs, Annual vegetation of drift lines, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Shifting dunes along the shoreline with *Ammophila arenaria*, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Submerged or partly submerged sea caves, *Olea* and *Ceratonia* forests.

Plant species: *Origanum dictamnus.*

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Rhinolophus blasii, Mauremys caspica.*

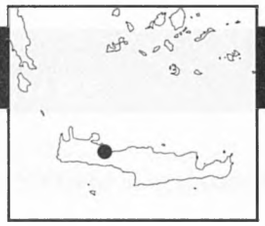
Other important species:
— Flora: 16B, 3C, 2D
— Fauna: 2A, 19B, 6C

Impacts/Activities:
— Positive: -
— Neutral: 100, 220, 400 (IN) / 100, 220, 506 (AR)
— Negative: 110, 120, 140, 230, 240, 250, 403, 421, 690, 948 (IN) 110, 120, 140, 230, 400, 403, 421, 690, 730 (AR)

Protection Status:
— National and Regional level: Game refuge
— International level: -

Significance: The ecological quality and importance of the site comprise the following elements: 1) A flora rich in endemic species most of which are rare or vulnerable; actually, all the species listed in section 3.3, with only one exception, are endemic to Crete. The steep rocky shores and slopes are of major interest, since the flora and their conservation status is quite high. 2) There are many terrestrial and aquatic caves with endemic species of invertebrates and some with paleontological interest. Actually, all the species listed on section 3.3 are endemic to Crete or to Crete and the surrounding islets. 3) There are three monasteries, Moni Gouvernetou, Moni Agias Triadas (Moni Tsagarolon) and Moni Katholikou, of major historical interest in the area. The monasteries and their surrounding areas are protected by the Greek Law as Special Natural Beauty Landscapes. 4) The fauna also includes some endemic species of gastropodes and some endemic subspecies of vertebrates.

Site Name: DRAPANO (VOREIOANATOLIKES AKTES) - PARALIA GEORGIOUPOLIS- LIMNI KOURNA



Sitecode: GR4340010 **Type**: B

Longitude: 24° 16′ **Latitude**: 35° 23′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 130 **Area (ha)**: 3092 **Length**: -

Description: The site includes the eastern part of Drapano Cape, the western part of the coastline of Almyros bay, including Almyros estuary and the area of Georgioupolis, and, towards the interior, Kournas lake. The hydrological system supplies and maintains a great peripheral area of humid land, which, especially around Almyros estuary, is mixed either with cultivations or with land which used to be cultivated in the past. At the estuary there are *Phragmites australis* reed beds. Another feature of the site is the big number of underground cold springs which continuously supply with water Kournas lake and the freshwater habitats around Georgioupolis village. At the lake-shore the vegetation is characterized by *Vitex agnus-castus, Ulmus minor* ssp. *canescens* and other hydrophilous species formations. Regarding the coastal area in the north and north-east of the village of Georgioupolis, it includes an extended sandy beach, with *Ammophila arenaria* sand dunes. The beach is covered in places by a hard, muddy layer. On the rocky east side of Drapano there is a fair cover of tree-spurge (*Euphorbia dendroides*) formations.

Habitat types: Estuaries, Large shallow inlets and bays, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Mediterranean and thermo-Atlantic halophilous scrubs (*Arthrocnemetalia fructicosae*), Shifting dunes along the shoreline with *Ammophila arenaria*, Dune-slack reedbeds and sedgebeds, Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Mediterranean temporary ponds, Floating vegetation of *Ranunculus* of plane submountainous rivers, Intermittently flowing Mediterranean rivers, Aegean phrygana, Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion), Calcareous fens with *Cladium mariscus* and *Carex davalliana*, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Caves not open to the public, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Cretan *Quercus brachyphylla* forests, Palm groves of *Phoenix*.

Plant species: *Phoenix theophrasti*.

Animal species: *Rhinolophus hipposideros, Rhinolophus ferrum-equinum, Mauremys caspica, Caretta caretta, Elaphe situla*.

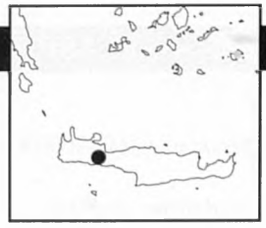
Other important species: — Flora: 10B, 4D
— Fauna: 1A, 10B, 3C

Impacts/Activities: — Positive: -
— Neutral: -
— Negative: 100, 110, 120, 130, 140, 400, 607, 701 (IN)

Protection Status: — National and Regional level: -
— International level: IBA

Significance: The lake of Kournas is the only natural freshwater lake in Crete. The whole freshwater system, is one of the most important in the east Mediterranean region. Drapano peninsula is also a quite important undisturbed area, which has to be protected. The extended *Euphorbia dendroides* formations and the several patches of *Phoenix theophrasti*, make the place unique for Crete.

Site Name: FRE - TZITZIFES - NIPOS



Sitecode: GR4340011 **Type**: B

Longitude: 24° 09′ **Latitude**: 35° 22′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 400 **Area (ha)**: 1175 **Length**: -

Description: The area is located at the east part of Crete, near the town of Chania, and it includes the villages of Tzitzifes and Fre. The site is characterised by rocky lands and steep slopes, which are covered by a matorral of daphne (*Laurus nobilis*), some woodlands of Cypress (*Cupressus sempervirens*), phryganas (dominated by *Sarcopoterium spinosum* and *Thymus capitatus*) and a garrigue with *Quercus coccifera*. At lower altitudes there are cultivated lands, principally olive trees, while vineyards cover a small part of the site.

Habitat types: Intermittently flowing Mediterranean rivers, Matorral with *Laurus nobilis*, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Balkan screes, Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Cypress forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), Cretan *Quercus brachyphylla* forests, *Olea* and *Ceratonia* forests.

Plant species:

Animal species: -

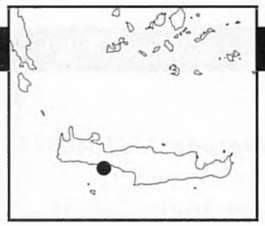
Other important species: — Flora: 6B
— Fauna: 12B

Impacts/Activities:
— Positive: -
— Neutral: 401 (IN) / 401, 502 (AR)
— Negative: 100, 110, 120, 140, 161, 164, 230, 240, 250, 403, 421, 502 (IN) 100, 110, 120, 140, 230, 240, 250 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: The ecological quality and importance of the site consist in the presence of the unique in Crete matorral of daphne (*Laurus nobilis*). Its biodiversity needs investigation but it is expected to have a great interest. Only a few species of plants, mammals and gastropods have been described up to now, but among them there are species endemic to Crete, such as all the plants and gastropods listed in section 3.3 (except *Vitrea clessini*, which is an endemic to the Aegian region). Notably, *Oxychilus spratti* is stenoendemic of Central and West Crete. One more endemic to Crete species reported from the site is the amphibian *Hyla arborea cretensis*.

Site Name: ASFENDOU - KALLIKRATIS



Sitecode: GR4340012 **Type**: B

Longitude: 24° 15′ **Latitude**: 35° 14′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 400 **Area (ha)**: 13400 **Length**: -

Description: The site has a complex geomorphological structure, gorges, ravines, caves, dolines, port holes, poljes, and plateaus, mostly at the higher altitudes, that in combination with low human activity have resulted in the creation and maintainance of very important natural habitats. The lowland part of the site consists of a plateau, with cultures and phrygana, and of a number of beaches, where increasing tourism activities take place. A natural spring at Argyroupolis and an extended oak forest are two of the habitats that are in urgent need of protection. It must be noted that our global knowledge of the site is very poor and there is urgent need for primary data. It must be stressed that a significant proportion of the site, an estimated 5%, is covered by oak woods (*Quercus coccifera*). The presence of *Phragmittes* formations covering a small percentage of the area, should be noted. Finally, the marine part of the site, covering 15% of its total area, includes *Posidonia* beds, reefs, and sea caves.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.), Shifting dunes along the shoreline with *Ammophila arenaria*, Dune-slack reedbeds and sedgebeds, Intermittently flowing Mediterranean rivers, Diss-dominated garrigues, Aegean phrygana, Cretan, Sardinian, Italian and Balearic phrygana formations, Sclerophyllous grazed forests with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Aegean calcareous cliffs, Limestone pavements, Caves not open to the public, Submerged or partly submerged sea caves, Cypress forests, Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae).

Plant species: *Origanum dictamnus.*

Animal species: *Monachus monachus, Elaphe situla.*

Other important species: — Flora: 28B, 1C, 2D
— Fauna: 11B

Impacts/Activities:
— Positive: 624 (IN)
— Neutral: 100 (IN)
— Negative: 140, 243, 290, 300, 302, 402, 421, 502, 530, 621 (IN) / 140, 210, 243, 290 (AR)

Protection Status:
— National and Regional level: -
— International level: -

Significance: There are well structured habitat types which are considered important for conservation. Such are the oakwood formations; the fact that they are not included in Annex I makes the exact characterization and evaluation of the site in terms of biological importance problematic. Besides, the area hosts 28 endemic plants, 19 of them Cretan endemics, except *Centaurea poculatoris*, which is endemic to the site. At the lower parts of the site, whose natural beauty has brought about expanding tourism activities, there is also need of a planned development. The springs of Argyroupolis, from which the town of Rethymnon is provided with water, constitute a case needing special consideration.

Site Name: NISOI GAVDOS KAI GAVDOPOULA



Sitecode: GR4340013 **Type**: B

Longitude: 24° 05′ **Latitude**: 34° 51′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 100 **Area (ha)**: 3600 **Length**: -

Description: This site includes two islands, Gavdos and Gavdopoula. They are found 21 miles south of the southwest Cretan coast. The island of Gavdos is the largest of the two, with an area of 29.58 km² and maximum altitude 362 m. Gavdopoula lies 3 miles northwest of Gavdos with an area of 2.62 km² and maximum altitude 113 m. Geologically the two islands consist of limestone of upper Cretaceous (Pindos zone). In Gavdos there are extensive neogene deposits with marine fossils. In the east side there are also Pleistocene deposits (psammitic) with well conserved land snail fossils. The vegetation on Gavdos island is maquis (Juniper), wood (Pine) and phrygana while on Gavdopoula is mainly phrygana and very few clusters of *Pistacia* sp. On the north side there are extended sand dunes with *Juniperus sp*. On the south cape of Gavdos Isl. there is a salt marsh. Though the island is not high, there are a lot of valleys and temporary streams. In the north side there is a spring with permanently running water and with typical aquatic vegetation. Human presence on the islands dates back to Neolithic times. Today only the larger island is inhabited. There are less than 50 people dispersed all over Gavdos. On the island of Gavdopoula, only grazing takes place. During the last 3-4 years there has been an increase in tourism and as a consequence more and more buildings are built without any planning, especially near the port Karave and the sand beach Sarakiniko.

Habitat types: *Posidonia* beds, Reefs, Vegetated sea cliffs of the Mediterranean coasts, Mediterranean and thermo-Atlantic halophilous scrubs, Shifting dunes along the shoreline with *Ammophila arenaria*, Dune juniper thickets (*Juniperus* spp.), Hard oligo-mesotrophic waters with benthic vegetation of chara formations, Mediterranean temporary ponds, Intermittently flowing Mediterranean rivers, *Juniperus oxycedrus* arborescent matorral, *Juniperus phoenicea* arborescent matorral, Aegean phrygana (*Sarcopoterium spinosum*), Aegean calcareous cliffs, Pioneer vegetation of rock surfaces, Submerged or partly submerged sea caves, Thermo-Mediterranean riparian galleries and south-west Iberian Peninsula riparian galleries, Mediterranean pine forests with endemic Mesogean pines.

Plant species: -

Animal species: *Monachus monachus, Mauremys caspica, Caretta caretta.*

Other important species: — Flora: 7B, 17D
— Fauna: 15B, 1C

Impacts/Activities: — Positive: -
— Neutral: 100, 403, 500, 400 (IN)
— Negative: 140, 210, 230, 290 (IN) / 210, 212, 213, 290 (AR)

Protection Status: — National and Regional level: -
— International level: -

Significance: The islands are quite important due to their position and history. Regarding their floristic synthesis the islands are one of the most important sites in Europe since a proportionally high number of African species are found here; for example *Artemisia herba alba* is a desert plant that is found in Africa.

Site Name: ETHNIKOS DRYMOS SAMARIAS



Sitecode: GR4340014 **Type**: H

Longitude: 23° 57′ **Latitude**: 35° 17′

Administrative Region: Kriti **Prefecture**: Chania

Altitude (m): 1000 **Area (ha)**: 4850 **Length**: -

Description: The main geological formations composing the geological substrate of the National Park of Samaria Gorge are three: platy crystalline limestones, compact limestones and dolomites, slope debris and fans. The core of the site consists of the approximately 18 km long Samaria gorge, directed from the North to the South. The gorge has a unique geomorphology which is characterized by an extremely narrow path, not wider than 3-4 m, and by nearly vertical inclines, 300-400 m high. The karstic Samaria ravine is of the largest coastal ravines in the Balcans. Furthermore the site is characterized by: 1) A number of secondary ravines beginning from the peaks of Volakias and Avlimonokou and flowing into the main gorge (in its torrent) 2) An impressive altitudinal variation; within 6.5 km the altitude increases from nearly zero to more than 2100 m and there are 4 peaks exceeding 2000 m 3) Several geological faults which have resulted in characteristic crags reaching up to 300-400 m high. 4) Characteristic geomorphological elements of the karstic landscape of Crete such as the limestone dolines, caves (most of them being unexplored), formations of slope debris and fans, and several springs. 5) Areas with abandoned terraces, a significant human made element of the landscape. The *Pinus brutia* stands are generally found in the lower elevation zone (0-600 m approximately); The formations of Pistacio-Ceratonion do not exceed 200 m a.s.l.; the mixed *P. brutia* - *Cupressus sempervirens* stands dominate the altitude zone from 500-1000 m approx. and the pure *Cupressus sempervirens* stands usually exist between 900-1800 m Above this altitude, important formations of mixed or pure, stands or clusters of *C. sempervirens, Quercus coccifera, Acer sempervirens* and *Zelcova abelicea* are quite common, not exceeding 1600 m At higher altidudes there are formation characterized by *Astragalus creticus* and *Astragalus angustifolius*.

Habitat types: Annual vegetation of drift lines, Intermittently flowing Mediterranean rivers, Endemic oro-Mediterranean heaths with gorse, *Juniperus phoenicea* arborescent matorral, Diss-dominated garrigues, Aegean phrygana (*Sarcopoterium spinosum*), Cretan, Sardinian, Italian and Balearic phrygana formations (Euphorbieto-Verbascion), Sclerophyllous grazed forests (dehesas) with *Quercus ilex* and/or *Quercus suber*, Balkan screes, Pioneer vegetation of rock surfaces, Caves not open to the public, Cypress forests (Acero-Cupression), Oriental plane woods (Platanion orientalis), Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae), *Olea* and *Ceratonia* forests, Mediterranean pine forests with endemic Mesogean pines.

Plant species: *Zelkova abelicea, Bupleurum kakiskalae, Cephalanthera cucullata.*

Animal species: *Rhinilophus hipposideros, Rhinolophus ferrum-equinum, Capra aegagrus, Elaphe situla.*

Other important species:
— Flora: 24B
— Fauna: 3A, 27B, 4C

Impacts/Activities:
— Positive: -
— Neutral: 943 (IN)
— Negative: 243, 251, 490, 624, 964 (IN) / 140, 230, 243, 251, 402, 690, 948, 974 (AR)

Protection Status:
— National and Regional level: Core strict nature reserve in National Park, Game refuge

Site Name: ETHNIKOS DRYMOS SAMARIAS (cont.)

— International level: Council of Europe Biogenetic Reserve, Council of Europe Diploma site, Barcelona Convention site, UNESCO Biosphere Reserve, IBA

Significance: Samaria gorge is one of the oldests National Park in Greece. The complexity and the beauty of the site are unique; proof of this fact are the thousands of visitors who come to cross it (circa 150000 visitors annualy). The National Park is relatively well managed. Undisturbed for a long period, it contains very well balanced and highly diverse plant and animal communities. The National Park is practically the only area where grazing, which is one of the major causes of negative impacts on habitats elsewhere, is forbidden. Field research is necessary in order to document the indications we have about Samaria's gorge importance.

PART C

HABITAT TYPES

C.1. LIST OF HABITAT TYPES OF ANNEX I TO DIRECTIVE 92/43/EEC, ENCOUNTERED IN GREECE

Annex I to Directive 92/43/EEC lists 255 European natural habitat types including 91 priority (i.e. habitat types in danger of disappearance and whose natural range mainly falls within the territory of the European Union) that are marked with an asterisk (*). It is based on the hierarchical classification of the European habitats developed by the CORINE Biotopes project (CORINE Biotopes - Technical Handbook 1989). The table that follows includes the habitat types which are present in Greece (110) and shows the relation between Annex I habitats, the Standard Data Form "Natura 2000" habitat codes and the CORINE habitat list 1991 (first three columns) as cited in the Interpretation Manual of European Union Habitats (ver EUR12, April 1995). Column "CORINE (GREECE)" introduces certain changes in codes in order to correspond to the habitat types in Greece more accurately.

COASTAL AND HALOPHYTIC HABITATS

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Open sea and tidal areas				
11.25	1110	11.125, 11.22, 11.31	11.125, 11.22, 11.31	Sandbanks which are slightly covered by sea water all the time
11.34	1120	11.34	11.34	*Posidonia beds
13.2	1130	13.2, 11.2	13.2, 11.2	Estuaries
14	1140	14	14	Mudflats and sandflats not covered by seawater at low tide
21	1150	21	21	*Lagoons
–	1160	12	12	Large shallow inlets and bays
–	1170	11.24, 11.25	11.24, 11.25	Reefs
Sea cliffs and shingle or stony beaches				
17.2	1210	17.2	17.2	Annual vegetation of drift lines [Cakiletea maritimae][1]
18.22	1240	18.22	18.22	Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.)
Atlantic and continental salt marshes and salt meadows				
15.11	1310	15.1	15.1	*Salicornia* and other annuals colonizing mud and sand
Mediterranean and thermo-Atlantic salt marshes and salt meadows				
15.15	1410	15.5	15.5	Mediterranean salt meadows (Juncetalia maritimi)
15.16	1420	15.6	15.6	Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae)
Salt and gypsum continental steppes				
15.18	1510	15.8	15.8	*Salt steppes (Limonietalia)
15.19	1520	15.9	15.9	*Gypsum steppes (Gypsophiletalia)

[1] The text in brackets [ ] is not part of the title of the habitat types. Its addition was considered necessary by the members of the Project Working Team.

COASTAL SAND DUNES AND CONTINENTAL DUNES

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Sea dunes of the Atlantic, North Sea and Baltic coasts				
16.211	2110	16.211	16.211	Embryonic shifting dunes
16.212	2120	16.212	16.212	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
16.221 to 16.227	2130	16.221 to 16.227	16.224, 16.227	*Fixed dunes with herbaceous vegetation (grey dunes)
16.31 to 16.35	2190	16.3=16.31 to 16.35	16.31 to 16.35	Humid dune slacks
	2195		16.35	Dune-slack reedbeds and sedgebeds
Sea dunes of the Mediterranean coasts				
16.224	2220	16.224	16.224	Dunes with *Euphorbia terracina*
16.228	2230	16.228	16.228	Malcomietalia dune grasslands
16.27	2250	16.27 and 64.613	16.27	*Dune juniper thickets (*Juniperus* spp.)
16.28	2260	16.28	16.28	Dune sclerophyllous scrubs (Cisto-Lavenduletalia)
16.2942.8	2270	16.29x42.8	16.29x42.8	*Wooded dunes with *Pinus pinea* and /or *Pinus pinaster*

FRESHWATER HABITATS

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Standing water				
22.11X22.34	3120	22.11X22.34	22.11X22.34	Oligotrophic waters containing very few minerals of West Mediterranean sandy plains with Isoetes.
22.12X22.44	3140	22.12X22.44	22.12X22.44	Hard oligo-mesotrophic waters with benthic vegetation of chara formations
22.13	3150	22.13 (22.41 and 22.421)	22.13 (22.41 and 22.421)	Natural eutrophic lakes with Magnopotamion or Hydrocharition- type vegetation
22.34	3170	22.34	22.34	*Mediterranean temporary ponds
Running water				
24.221 and 24.222	3220	24.221 and 24.222	24.221 and 24.222	Alpine rivers and the herbaceous vegetation along their banks
24.224	3240	24.224 and 44.112	24.224 and 44.112	Alpine rivers and their ligneous vegetation with *Salix eleagnos*
24.4	3260	24.4	24.4	Floating vegetation of *Ranunculus* of plane, submountainous rivers
24.53	3280	24.53	24.53	Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*.
-	3290	24.16 and 24.53	24.16 and 24.53	Intermittently flowing Mediterranean rivers

TEMPERATE HEATH AND SCRUB

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
31.4	4060	31.4	31.4	Alpine and subalpine heaths
31.7	4090	31.7	31.7	Endemic oro-Mediterranean heaths with gorse

SCLEROPHYLLOUS SCRUB (MATORRAL)

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Sub-Mediterranean and temperate				
31.82	5110	31.82	31.82	Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.).
31.88	5130	31.88	31.88	*Juniperus communis* formations on calcareous heaths or grasslands
Mediterranean arborescent matorral				
32.131 to 32.135	5210	32.131 to 32.136	32.131 to 32.135	Juniper formations
	5211		32.131	*Juniperus oxycedrus* arborescent mattoral
	5212		32.132	*Juniperus phoenicea* arborescent mattoral
	5213		32.133	*Juniperus excelsa* and *J. foetidissima* arborescent mattorals
	5214		32.134	*Juniperus communis* arborescent mattoral
32.18	5230	32.18	32.18	*Matorral with *Laurus nobilis*

SCLEROPHYLLOUS SCRUB (MATORRAL)

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Sub-Mediterranean and temperate				
32.216	5310	32.216	32.216	Laurel thickets
32.217	5320	32.217	32.217	Low formations of euphorbia close to cliffs [Communities with *Euphorbia acanthocamnos*]
	5331		32.22	Tree-spurge formations [Communities with *Euphorbia dendroides*]
	5332		32.23	Diss-dominated garrigues
Phrygana				
33.3	5420	33.3	33.3	*Sarcopoterium spinosum* phrygana
33.4	5430	33.4 to 33.A	33.4, 33.5	Cretan formations Euphorbieto-Verbascion

NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Natural grasslands				
34.11	6110	34.11	34.11	*Karstic calcareous grasslands (Alysso-Sedion albi)
36.41 to 36.45	6170	36.41 to 36.44, 36.37, 36.38	36.43	Alpine calcareous grasslands
	6173		36.43	Stepped and garland grasslands
	6175		36.37	Oro-Mediterranean stripped grasslands

NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Semi-natural dry grasslands and scrubland facies				
34.31 to 34.34	6210	34.31 to 34.34	34.31 to 34.34	Semi-natural dry grasslands on calcareous substrates (Festuco-Brometalia) (*important orchid sites)
	6211		34.31	*Sub-continental steppic grasslands
34.5	6220	34.5	34.5	*Pseudo-steppe with grasses and annuals (Thero Brachypodietea)
35.1	6230	35.1, 36.31	35.1, 36.31	*Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in continental Europe)
Sclerophyllous grazed forests (dehesas)				
32.11	6310	32.11X84.6	32.1141X45.31C	Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*
			32.1142X45.31D 32.1143X45.41	[32.11 and 45.41 refer to arborescent evergreen oak matorral (*Quercus* spp.) and Greek Kermes oak forests (*Q. coccifera*) and 45.31C refers to Adrachno-Quercetum ilicis]
Semi-natural tall-herb humid meadows				
37.4	6420	37.4	37.4	Mediterranean tall-herb and rush meadows (Molinio-Holoschoenion)
37.7 & 37.8	6430	37.7 and 37.8	37.7, 37.8 and 37.87	Eutrophic tall herbs
	6432		37.8 and 37.87	Subalpine and alpine tall herb communities
Mesophile grasslands				
38.2	6510	38.2	38.2	Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)

RAISED BOGS AND MIRES AND FENS

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Sphagnum acid bogs				
51.1	7110	51.1	51.1	*Active raised bogs
Calcareous fens				
53.3	7210	53.3	53.3	*Calcareous fens with *Cladium mariscus* and *Carex davalliana*
54.2	7230	54.2	54.23	Alkaline fens

ROCKY HABITATS AND CAVES

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Scree				
61.4	8140	61.4	61.4	Balkan Screes
Chasmophytic vegetation on rocky slopes				
62.1 and 62.1A	8210	62.1	62.1	Vegetated calcareous inland cliffs with chasmophytic vegetation
	8216		62.16	Eu-mediterranean greek calcareous cliffs
	8217		62.17	Aegean calcareous cliffs
	8218		62.18	Southern greek montane cliffs

ROCKY HABITATS AND CAVES

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Chasmophytic vegetation on rocky slopes				
	8219		62.19	Central greek montane cliffs
	821A		62.1A	Northern greek calcareous cliffs
62.2	8220	62.2	62.2	Vegetated silicicolous inland cliffs with chasmophytic vegetation
62.3	8230	62.42	62.3 (62.42)	Pioneer vegetation of rock surfaces
62.4	8240	62.3	62.3	*Limestone pavements
Other rocky habitats				
65	8310	65	65	Caves not open to the public
-	8320	66.1 to 66.6	66	Fields of lava and natural excavations
-	8330	11.26	11.26	Submerged or partly submerged sea caves

FORESTS

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Forests of temperate Europe				
41.11	9110	41.11	41.11	Acidophilous (Luzulo-Fagetum) beech forests
41.12	9120	41.12	41.12	Beech forests with *Ilex* and *Taxus*, rich in epiphytes (Ilici-Fagion)
41.13	9130	41.13	41.13	Neutrophilous (Asperulo-Fagetum) beech forests
41.15	9140	41.15	41.15	Subalpine beech woods with *Acer* and *Rumex arifolius*
41.16	9150	41.16	41.16	Calcareous beech forests (Cephalanthero-Fagion)
41.26	9170	41.26	41.26	Eastern (Galio-Carpinetum) oak-hornbeam forests
41.4	9180	41.4	41.4	*Tilio-Acerion ravine forests
41.86	91B0	41.86	41.86	Thermophilous ash (*Fraxinus angustifolia*) woods
44.3	91E0	44.3, 44.2 and 44.13	44.3 and 44.13	*Residual alluvial forests (Alnion glutinoso-incanae)
44.4	91F0	44.4	44.4	Mixed oak-elm-ash forests of great rivers
Mediterranean deciduous forests				
41.85	9250	41.78	41.78	*Quercus trojana* woods (Italy and Greece)
41.9	9260	41.9	41.9	Chestnut woods
41.1A42.17	9270	41.1AX42.17	41.1AX42.17	Hellenic beech forests with *Abies borisii-regis*
41.1B	9280	41.1B	41.1B	*Quercus frainetto* woods
42.A1	9290	42.A1	42.A1	Cypress forests (Acero-Cupression)
44.17	92A0	44.141 and 44.6	44.141 and 44.6	*Salix alba* and *Populus alba* galleries
44.7	92C0	44.71 and 44.72	44.71, 44.711 and 44.72	Oriental plane woods (Platanion orientalis)
44.8	92D0	44.81 to 44.84	44.8, 44.81	Thermo-Mediterranean riparian galleries (Nerio-Tamaricetea) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae)

ANNEX I (Dir 92/43/EEC)	NATURA 2000 S.D.F.	CORINE 91 E.U.	CORINE 91 (GREECE)	TITLE Habitat type (Annex I, Dir 92/43/EEC and S. D. F.)
Mediterranean sclerophyllous forests				
41.7C	9310	41.735	41.735	Cretan *Quercus brachyphylla* forests [*Quercus pubescens* ssp. *brachyphylla*]
45.1	9320	45.1	45.1 and 32.12	*Olea* and *Ceratonia* forests [*Olea* and *Ceratonia* forests and matorrals]
Mediterranean sclerophyllous forests				
45.3	9340	45.3	45.3	*Quercus ilex* forests
45.5	9350	41.79	41.79	*Quercus macrolepis* forests
45.7	9370	45.7	45.7	*Palm groves of *Phoenix*
45.8	9380	45.8	45.8	Forests of *Ilex aquifolium*
Alpine and subalpine coniferous forests				
42.21 to 42.23	9410	42.21 to 42.23	42.21 to 42.23	Acidophilous forests (Vaccinio-Piceetea)
Mediterranean mountainous coniferous forests				
42.14	9510	42.15	42.15	*Apennine *Abies alba* and *Picea excelsa* forests
	9536		42.66	*Pallas's pine forests
42.8	9540	42.8	42.8	Mediterranean pine forests with endemic Mesogean pines, including *Pinus mugo* and *Pinus leucodermis*
	9562		42.A3	*Grecian juniper woods
	9563		42.A4	*Stinking juniper (*Juniperus foetidissima*) woods
	9564		42.A5	*Syrian juniper (*Juniperus drupacea*) woods
42.A71 to 42.A73	9580	42.A71 to 42.A73	42.A71 to 42.A73	**Taxus baccata* woods

C.2. HABITAT TYPES PRESENT IN GREECE

by Margarita Arianoutsou, Pinelopi Delipetrou, P. Dimopoulos, Evangelia Economidou, Vasiliki Karagiannakidou, P. Konstantinides, P. Panagiotides, Maria Panitsa and G. Tsiourlis

C.2.1. Habitat types of Annex I to Directive 92/43/EEC

Data processing and analysis of the habitats of Greece was based on the information provided in the Standard Data Forms (SDFs), that is, the habitats of Annex I (field 3.1) and the overall habitat classes (field 4.1) for all 296 proposed sites distributed throughout Greece. These sites are representative of the natural environment in Greece. Limitations of data input in the database as well as the fact that several important habitats, found in Greece, are not included in the list of Annex I were taken into consideration during data interpretation. The Annex I habitat types occurring in Greece are 109 and correspond to 110 code numbers (the general code 2190 which describes "humid dune slacks" is represented in Greece by the special case of code 2195 "dune slack reedbeds and sedgebeds"). The habitat types were grouped to facilitate processing and interpretation of the voluminous data. The main idea was to have all ecologically relevant habitat types in one group so as to handle the data in a more efficient way, aiming to show the distribution of these types throughout Greece, the number of their occurrences, the area they cover and their relative importance.

Twenty five groups have been defined. The group numbers (1-25) and titles as well as the codes of the habitat types included within each group are shown in Table C.1; for practical reasons each habitat type has been assigned a *group code* as well. Certain groups consist of only one habitat type as in the cases of lagoons (habitat code 1150- group number 2) and sea cliffs (habitat code 1240 - group number 7), while others contain more, as for example group 13, which includes 12 habitat types.

TABLE C.1. Assignment of habitat types to habitat groups. The habitat types are assigned a group code and appear in ascending order of their occurrence within each group. Information on the area they cover is also provided. The asterisk (*) in column P indicates "priority habitat type".

Group No	Habitat Group Name	Group code	Habitat Code	P	No of records	Area (ha)
1	Marine	1.1	**1110**		29	6277
1	Marine	1.3	**1130**		32	10459
1	Marine	1.4	**1140**		32	17339
1	Marine	1.5	**1160**		35	26236
1	Marine	1.6	**8330**		38	2212

TABLE C.1. (continued)

Group No	Habitat Group Name	Group code	Habitat Code	P	No of records	Area (ha)
1	Marine	1.2	1120	*	92	70548
2	Lagoons	2	1150	*	46	47274
3	Reefs	3	1170		62	10489
4	Salt marshes and salt pastures	4.1	1310		47	10317
4	Salt marshes and salt pastures	4.3	1420		57	24651
4	Salt marshes and salt pastures	4.2	1410		73	19536
5	Salt stepes	5.2	1520	*	3	117
5	Salt stepes	5.1	1510	*	9	1928
6	Shingle and sandy beaches & dunes	6.7	2230		1	0
6	Shingle and sand beaches & dunes	6.10	2270	*	3	294
6	Shingle and sand beaches & dunes	6.9	2260		4	2698
6	Shingle and sand beaches & dunes	6.5	2195		9	802
6	Shingle and sand beaches & dunes	6.6	2220		12	2086
6	Shingle and sand beaches & dunes	6.4	2130	*	12	2459
6	Shingle and sand beaches & dunes	6.8	2250	*	16	2012
6	Shingle and sand beaches & dunes	6.1	1210		46	4541
6	Shingle and sand beaches & dunes	6.2	2110		50	7300
6	Shingle and sand beaches & dunes	6.3	2120		56	7626
7	Sea cliffs	7	1240		73	14549
8	Running water	8.2	3240		1	584
8	Running water	8.1	3220		2	1140
8	Running water	8.3	3260		16	850
8	Running water	8.4	3280		16	16658
8	Running water	8.5	3290		86	9444
9	Standing water	9.1	3120		3	10736
9	Standing water	9.2	3140		18	1911
9	Standing water	9.3	3150		38	15102
9	Standing water	9.4	3170	*	48	4685
10	Bogs, calcareous fens	10.1	7110	*	2	848
10	Bogs, calcareous fens	10.3	7230		12	6112
10	Bogs, calcareous fens	10.2	7210	*	13	879
11	Riparian forests	11.2	91F0		7	2498
11	Riparian forests	11.1	91E0	*	22	6211
11	Riparian forests	11.3	92A0		59	15889
11	Riparian forests	11.5	92D0		90	21019
11	Riparian forests	11.4	92C0		100	22830
12	Phrygana	12.2	5331		12	4389

TABLE C.1. (continued)

Group No	Habitat Group Name	Group code	Habitat Code	P	No of records	Area (ha)
12	Phrygana	12.1	**5320**		12	5220
12	Phrygana	12.5	**5430**		12	28594
12	Phrygana	12.3	**5332**		26	25084
12	Phrygana	12.4	**5420**		152	245443
13	Matorral, maquis	13.12	**9380**		1	21
13	Matorral, maquis	13.9	**5310**		2	250
13	Matorral, maquis	13.6	**5213**		3	1808
13	Matorral, maquis	13.7	**5214**		4	734
13	Matorral, maquis	13.3	**5210**		6	3183
13	Matorral, maquis	13.8	**5230**	*	7	1360
13	Matorral, maquis	13.1	**5110**		10	5187
13	Matorral, maquis	13.2	**5130**		10	7252
13	Matorral, maquis	13.11	**9320**		31	24199
13	Matorral, maquis	13.4	**5211**		33	14615
13	Matorral, maquis	13.5	**5212**		39	19237
13	Matorral, maquis	13.10	**6310**		115	254448
14	Dry grassland	14.2	**6210**	*	1	38
14	Dry grassland	14.1	**6110**	*	5	2602
14	Dry grassland	14.4	**6220**	*	12	5464
14	Dry grassland	14.5	**6230**	*	12	14020
14	Dry grassland	14.3	**6211**	*	22	18323
15	Tall herb humid and mesophile grassland	15.2	**6430**		2	322
15	Tall herb humid and mesophile grassland	15.4	**6510**		2	323
15	Tall herb humid and mesophile grassland	15.3	**6432**		3	825
15	Tall herb humid and mesophile grassland	15.1	**6420**		21	5303
16	Alpine and sub-Alpine formations (grassland & heaths)	16.5	**6175**		2	3808
16	Alpine and sub-Alpine formations (grassland & heaths)	16.3	**6170**		3	3458
16	Alpine and sub-Alpine formations (grassland & heaths)	16.1	**4060**		6	4119
16	Alpine and sub-Alpine formations (grassland & heaths)	16.4	**6173**		35	56592
16	Alpine and sub-Alpine formations (grassland & heaths)	16.2	**4090**		41	116446
17	Deciduous forest	17.7	**9180**	*	1	174
17	Deciduous forest	17.6	**9170**		3	2438

TABLE C.1. (continued)

Group No	Habitat Group Name	Group code	Habitat Code	P	No of records	Area (ha)
17	Deciduous forest	17.4	**9140**		4	1695
17	Deciduous forest	17.8	**91B0**		5	1519
17	Deciduous forest	17.9	**9250**		6	4917
17	Deciduous forest	17.12	**9310**		7	309
17	Deciduous forest	17.5	**9150**		7	12335
17	Deciduous forest	17.2	**9120**		8	2782
17	Deciduous forest	17.13	**9350**		17	5016
17	Deciduous forest	17.3	**9130**		26	33000
17	Deciduous forest	17.10	**9260**		30	29556
17	Deciduous forest	17.1	**9110**		32	72403
17	Deciduous forest	17.11	**9280**		63	154450
18	Thermophilous coniferous forest	18	**9540**		68	137654
19	Montane coniferous forest	19.4	**9562**	*	1	389
19	Montane coniferous forest	19.6	**9564**	*	1	1112
19	Montane coniferous forest	19.7	**9580**	*	5	935
19	Montane coniferous forest	19.2	**9290**		11	15474
19	Montane coniferous forest	19.5	**9563**	*	15	4775
19	Montane coniferous forest	19.1	**9270**		33	53005
19	Montane coniferous forest	19.3	**9536**	*	48	76039
20	Montane and subalpine coniferous forest	20.2	**9510**	*	1	70
20	Montane and subalpine coniferous forest	20.1	**9410**		12	18279
21	Sclerophyllous evergreen woodland	21.2	**9370**	*	6	101
21	Sclerophyllous evergreen woodland	21.1	**9340**		29	27924
22	Calcareous and siliceous screes	22	**8140**		67	13733
23	Inland rocks	23.6	**821A**		5	3174
23	Inland rocks	23.9	**8240**	*	7	534
23	Inland rocks	23.1	**8210**		7	2742
23	Inland rocks	23.5	**8219**		10	2470
23	Inland rocks	23.7	**8220**		13	2488
23	Inland rocks	23.4	**8218**		14	6436
23	Inland rocks	23.8	**8230**		46	8605
23	Inland rocks	23.2	**8216**		46	12780
23	Inland rocks	23.3	**8217**		61	15686
24	Inland caves	24	**8310**		58	5330
25	Fields of lava	25	**8320**		5	2435

Prior to data analysis, we have considered necessary to present a brief description of most of these groups, pointing out the particular character and distinctive features of certain habitats, their distribution and the threats they face as well as to explain the context in which certain habitat codes have been used in this project. In addition, information is given about priority and unique habitat types (found only in one site). Where necessary, the relation of the habitat codes to the descriptions of the Corine Biotopes Manual 1991 (CBM) is mentioned. The analysis of the distribution of habitats in Greece was based on the division of Greece into 13 phytogeographic regions as defined in The Flora Hellenica project (Strid, 1991) (Table C.2).

TABLE C.2. Number of sites and area they cover per phytogeographical region in the Natura 2000 database. **NE**: North East, **Pe**: Peloponnisos, **NC**: North Central, **StE**: Sterea Ellas, **WAe**: West Aegean islands, **KK**: Kriti and Karpathos, **SPi**: Southern Pindos, **NPi**: Northern Pindos, **IoI**: Ionian islands, **EAe**: East Aegean islands, **Cyc**: Cyclades, **EC**: East Central, **NAe**: North Aegean islands (Strid 1991). The number of sites is given in two columns: the first includes the total number of sites registered in the database; from the second column, sites (SPA) included in larger proposed sites have been excluded. The numbers of the last column were based on this calculation.

Phytogeographical region	No of sites (+ SPA)	No of sites (- SPA)	Cover (ha)
NE	53	50	427616
Pe	44	44	429183
KK	37	35	306328
StE	31	28	350934
NC	26	25	358820
Cyc	21	21	99350
SPi	16	16	212114
IoI	15	15	156162
EAe	14	14	149503
NAe	13	13	101723
NPi	10	10	171893
WAe	8	8	308114
EC	7	6	98707

Groups 1, 2 & 3: Marine habitats, lagoons & reefs

All marine habitats are included in code 11 of CBM. The directive, does not practically use any ecological criterion to properly define the marine habitats as it does with other habitat types, such as freshwater habitats. Their finer division is considered necessary, since they are of great significance for Greece due to its long coastline.

The ecological criteria used in order to distinguish these habitat groups, (*group codes* 1, 2, 3; see Table C.1) were the substrate and the hydrodynamism, with the latter acting as a limiting factor for the development of plant species.

Habitat type **1110** describes the upper layer of sandy beaches exposed to high hydrodynamism. In these areas communities of the angiospermes *Zostera noltii* and *Cymodocea nodosa* replaces *Posidonia* beds. Invertebrate communities of sandy sublittoral (polychaetes) also grow. A typical example of this habitat is the bay of Laganas in Zakynthos. This habitat is threatened by tourism development. Its proximity to significant terrestrial habitats such as sand-dunes, imposes the effective protection of this habitat type.

Posidonia beds (code **1120**) are a priority habitat type. This habitat is found in sandy areas of the sublittoral zone and is characterized by the occurrence of the angiosperm *Posidonia oceanica*. The habitat may expand over the whole sea bottom from a depth of 1 m (upper limit) down to 40 m (lower limit). In the enclosed gulfs, like Thermaikos and Saronikos, this depth never exceeds 25-30 m as a consequence of the reduced water clarity.

Posidonia oceanica is endemic to the Mediterranean Sea. In Greece, *Posidonia* beds are the most widespread habitat of the sublittoral zone. They occur all through the Greek seas, except for the estuaries of large rivers (Evros, Nestos, Strymon, Axios, Sperheios), the semi-enclosed gulfs receiving large rivers (Amvrakikos and Maliakos) and very polluted areas (Elefsina and Thessaloniki Bay). *Posidonia* beds are considered as a high water quality indicator species. Furthermore, they contribute to the stabilisation of coasts, in the sense natural vegetation cover protects soils from erosion. The major direct threats they face are due to human activities which restrict their vertical distribution. The presence of *Posidonia* beds is also indirectly affected by eutrophication, the major consequence of which is their restriction to deeper waters. The protection of *Posidonia* beds is expected to have a positive effect not only on the species itself but on the complex communities it forms.

Habitat type **1130** is found in or near the mouth of large rivers, in the ecotones between the fresh and marine water. In these areas, the angiosperms *Zostera noltii* and *Ruppia maritima*, being tolerant to the fluctuating water salinity, replace the more sensitive *Posidonia oceanica* and *Cymodocea nodosa*. This habitat type suffers from the main threats affecting the wetlands.

Habitat type **1140** corresponds to the upper layer of the communities formed in mudflats of low water movement. Typical formations are found in Amvrakikos and Kalloni gulfs, Thessaloniki bay, and Elefsina bay.

Priority habitat type **1150*** occurs in places where freshwater meets sea water but the formation is well isolated from the sea. Lagoons are characterized by the presence of *Zostera noltii* and *Ruppia maritima*, both angiosperms. At the bottom of the lagoons many fish species are found such as *Sparus auratus, Dicentrarchus labrax* and also some very valuable commercial species like the shrimp *Penaeus kerathurus*. When lagoons tend to dry up, resistant chlorophytes develop.

Habitat type **1160** comprises submerged meadows of the angiosperm *Cymodocea nodosa*. This community is relevant to *Posidonia oceanica* beds but is less species rich. The meadows start to develop from a depth of 0.5 m down to 5-10 m. In the meadows, chlorophytes such as *Caulerpa prolifera* and the angiosperm *Halophila stipulacea* also develop in some places. These meadows suffer from human activities, due to the fact that they occur in natural harbours which were exploited to construct ports and industrial infrastructures nearby. In addition, their fish resources were overexploited. Still, there are areas such as Kalloni and Maliakos gulfs which host quite representative examples of this habitat type.

Habitat type **1170** refers to the rocky bottoms of the sublittoral zone, usually dominated by macroalgal communities of the photophilous *Cystoseira* species. Chlorophytes such as *Ulva, Enteromorpha, Cladophora* and *Chaetomorpha* grow in polluted areas. The presence of many rocky

islets and reefs in the seas of Greece offers adequate protection to these habitats. However, increasing sea transportation creates an extra threat.

Group 4: Salt marshes and salt meadows

Habitat type **1310** describes *Salicornia* and other annuals colonizing mud and sand. This habitat is characterized by periodic inundation and is found throughout Greece. Representative habitats have been recorded in the estuaries of Acheloos (StE), Spercheios (StE) and Evros (NE), in Limnos (EAe), and at the NE end of Kriti.

Habitat type **1410**, Mediterranean salt meadows (Juncetalia maritimi), refers to the vegetation zone surrounding lagoons or salt marshes and is mainly dominated by *Juncus maritimus*. This habitat occurs all over Greece and is representative at the estuaries of Nestos (NE) and Pineios (EC), at Porto Lagos lagoon, at Ismaris (Mitrikou) lake (NE), at Kalloni gulf (Lesvos), etc.

Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae), habitat type **1420**, are found in salt marshes and around coastal wetlands in areas periodically flooded for long periods. The dominant vegetation is characterized by woody glassworts such as *Arthocnemum perenne, Halocnemum strobilaceum*, and/or *Arthocnemum fruticosum*. This habitat is distributed all over Greece; it is representative at Axios and Evros deltas, the lagoons of Agios Mamas, Keramoti (NE), the salt marsh Kitros (NC), Atalanti wetland (StE), Geropotamos estuary, Tigani lagoon (KK), Mikro and Megalo Livari lagoons (WAe), Mesolongi lagoons and Acheloos estuary (StE), etc.

Group 5: Salt steppes

The priority habitat type **1510** describes Mediterranean salt steppes (Limonietalia). This habitat covers large areas or borders of the dry parts of salt marshes or inland marshes that are subject to extreme dryness in summer and permeated by salt water in winter. It is not a common habitat. It has been found at the estuary of Evros (NE), Mesolongi lagoons and Acheloos estuary (StE), Chortarolimni in Limnos and Kalloni gulf in Lesvos (EAe), Kalogria lagoon and the salt marsh of Aigio (Pe), Makronisi islet near Kasos (KK), and Palionis and Avlimon lagoons (IoI).

Habitat code **1520***, defined in Annex I as «gypsum steppes», although it describes the Gypsophiletalia of the Iberian peninsula in the CBM, has been used in this project to describe steppes on gypsum soils; notably, the esparto (*Lygeum spartum*) steppes at the region with hotter and drier climate of SE Kriti (Koufonisi), and the *Lygeum* formations at the dry area south of Timbaki and at SW Kriti near Elafonisi.

Group 6: Shingle and sand beaches and dunes

Habitat code **2110** refers to the annual vegetation of drift lines, a habitat found on many narrow sand or shingle beaches or on the drift line of sand-dunes, distributed all over Greece. It consists of therophytic communities often halonitrophilous since they are subject to inundation by seawater thus enriched in decomposing marine organisms (mainly algae and marine phanerogams) and with organic or inorganic drift material. They are also subject to human influence.

The primary (embryonic) shifting dunes, code **2110**, are distributed all over Greece. They are low sandy or gritty ripples or ridges representing the first stages of dune development, or

cordons or the first lines of large dune formations. They are flat or have a more developed micro-relief and are colonized by perennial plant species; in Greece they are characterized by the association Agropyretum mediterraneum. They generally constitute an intermediate zone between habitat types 1210 and 2120 which are often absent from the Greek shores due to the lack of extended sand dunes.

Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), code **2120**, represent the best developed phase of the coastal unstable dunes created by the accumulation of wind-carried maritime sands. At seashores lacking a continuous supply of sand, these habitats are located exclusively at zones with adequate sand particle deposition. In the absence of this habitat type, non - vegetated beaches or low coastal zones at immediate contact to the stabilized dune habitats appear.

Dunes with *Ammophila arenaria* are found: in West Greece, with Echinophoro-Ammophiletum arundinaceae (recorded with excellent representativity in western Peloponnisos sites); in East Greece, Makedonia, the Aegean Islands and Kriti with Medicagini-Ammophiletum (with excellent representativity in the South Aegean Arc, the Milos island complex and in many sites on Kriti); and in Thraki with Ammophilo-Elymetum gigantei (typically in the site of Ptelea lagoon). The sandy habitats of the islands off southern Kriti in the Libyan Sea (Chrysi, Koufonisi, Gavdos and Gavdopoula) are of special importance.

Codes **2130*-2220** of Annex I describe the same habitat type (corresponding to the same code, 16.224, in CBM): fixed dunes with herbaceous vegetation (grey dunes) and dunes with *Euphorbia terracina*. These dunes generally develop behind the habitats with *Ammophila arundinacea* where the stabilization of sand dunes has been allowed under natural conditions.

These communities occur on the western coasts of Peloponnisos with *Silene nicaensis* (typical at the sand dunes of Zacharo) and on the coasts of Makedonia and Thraki with *Ephedra distachya*. Similar formations regarding their position, but with different species composition have been recorded in West and East Aegean islands, and the Cyclades (with representativity C or D). This habitat type should also include the herbaceous vegetation of inner dunes with *Artemisia campestris*, a shrubby perennial occurring in Makedonia and Thraki.

Malcolmietalia dune grasslands, code **2230**, are open communities of semi-unstable sands belonging to the class of Malcolmietalia where therophytes are dominant. They occur in dry patches of sand dunes or at their borders, where sand particles are still suspended in the air, but at much smaller densities. This habitat is found in N. Greece and in the Northern Sporades and, as concerns the Natura 2000 sites, has been recorded only once, on Skiathos island.

Habitat code **2250***, a priority one, describes dune juniper thickets. This habitat type consists primarily of *Juniperus oxycedrus* ssp. *macrocarpa* stands and secondarily of *Juniperus phoenicea* stands. The *Juniperus oxycedrus* ssp. *macrocarpa* matorral is usually found in ecotones of dune habitats but also develops on rocky seashores which are gritty, friable, of sedimentary origin or even on sandy pavements; also on cliffs or gravel pavements. The formations of this habitat are very representative on the islets off the southern coast of Kriti and on Gavdos island, in the Cyclades and on the western coast of Peloponnisos. The communities of *Juniperus schweinforthii* found on Rodos and Karpathos are found in environments richer in salt.

The habitat of dune slack reedbeds and sedgebeds, code **2195**, includes the small *Juncus* stands or small reedbeds developing on slacks behind dune formations at locations flooded with freshwater for periods longer than for the previous habitats. Typical communities have been recorded from a few sites in Kriti (northeastern end and Georgioupoli) and in salt marshes in the Aegean and Makedonia.

Habitat code **2260** describes dune sclerophyllous scrubs. Generally, dune systems in Greece are rarely wide enough to allow the development of sclerophyllous scrubs with good structure. This habitat type has been recorded in the Aegean but mostly characterized as just fairly or not representative as these habitats do not conform with the description given in Annex I.

The priority habitat type **2270*** is analysed under group 18, habitat type 9540.

Group 7: Sea cliffs

This group consists of one habitat type (code **1240**), which refers to vegetated sea cliffs on the Mediterranean coasts (with endemic *Limonium* spp.). The vegetation of the rocky shores and cliffs includes chasmophytes and aerohaline species and, in general, belongs to the class Crithmo-Limonietea. This habitat, with variations, occurs all over the Greek coasts.

Group 9: Standing water

Habitat type **3170***, defined as Mediterranean temporary ponds, is a special case of **3120** (oligotrophic waters containing very few minerals of West Mediterranean sandy plains with *Isoetes*) and describes temporary, usually small to tiny ponds. Quite often only relicts of the old vegetation remain. They have been studied little, although they include species that have mainly west European or west Mediterranean distributions and they are rare in the east Mediterranean region and especially in Greece (some of them are legally protected, such as *Pilularia minuta*).

In Greece, these habitats are located in depressions on metamorphic crystallic (hard schists, gneiss etc.) or volcanic (lava, etc.) substrate. They are flooded by water during the winter and they drain gradually during spring. The soil is sandy or gritty.

Mediterranean temporary ponds have been recorded mainly from the sites of the Aegean and Kriti, but also in Peloponnisos and central Greece. Habitat type 3120 has been recorded in only 3 sites, with excellent representativity in the artificial lake of Kremasta and at the lakes Yliki and Paralimni (StE).

Group 10: Bogs and calcareous fens

Bogs and fens are represented in Greece by three habitat types: raised bogs (**7110**), alkaline (**7230**), and calcareous (**7210**) fens. They are mostly unstable habitats thus requiring special protection; they are priority habitat types in Annex I. Alkaline fens are daval sedge fen communities usually at high altitudes. They were recorded on the mountains of Makedonia, most representative on Pindos range (Smolikas, Agrafa, Aspropotamos mountains), with excellent structure and high value in most cases. Calcareous fen beds with *Cladium mariscus* and *Carex davalliana* are usually found at lowland areas of lakes and lagoons. This habitat type was recorded in central and southern Greece with excellent representativity at Kournas lake and Fasas valley (KK), Kalodiki marsh (SPi) and Kaiafa lake (Pe). Active bogs were recorded in only two sites, Voras mountain (NV) and Elatia mountain (NE). Although the area they cover is small, these two stations are of scientific interest since they represent the southern distribution limit of a typically northern habitat type. However, the vulnerability of bogs is mainly due to their small size.

Group 12: Phrygana

Phrygana is the most typical low shrubby vegetation in Greece. They are dominant in areas with dry Mediterranean climate. The shrubs are usually thorny or aromatic exhibiting seasonal dimorphism. They represent approximately 15% of the terrestrial ecosystems of Greece and they are mainly found in Attiki, Evvoia, SE Peloponnisos and the Aegean islands. Some thickets may be found in other areas of the country up to an altitude of 800 m.

The most common plant species participating in the phryganic formations are *Sarcopoterium spinosum, Coridothymus capitatus, Cistus* spp., *Phlomis fruticosa, Genista acanthoclada, Erica* spp., *Euphorbia* spp., *Satureja thymbra, Salvia* spp., *Ballota* spp., etc.

Five Annex I habitat types have been assigned to the phrygana group:

- habitat type **5420**, which expresses the typical, most widespread phrygana communities of the Aegean, where the dominant species are *Sarcopoterium spinosum, Coridothymus capitatus, Genista acanthoclada*, and *Cistus* spp.
- habitat types **5320** and **5331**, where *Euphorbia* spp. are dominant
- habitat type **5430** occurring on hilly and mountainous areas of Kriti with some endemic species such as *Verbascum spinosum* and *Berberis cretica*; this habitat occurs solely in Kriti.
- habitat type **5332**, described in Annex I as «diss-dominated garrigues», was used to describe low -not exceeding 1 m-, sparsely covered *Quercus coccifera* garrigue (not including the species *Ampelodesmus*). This does not conform exactly with the corresponding description of this code in CBM; however no code was assigned to this habitat type which constitutes an element of many Greek natural ecosystems.

Pure phryganic stands with *Euphorbia dendroides* are found in Peloponnisos, Sterea Ellas and the Ionian islands. Low grazed *Quercus* formations are found in Kriti, Sterea Ellas and the Cyclades.

The group of phrygana covers 9.7% of the overall surface of the proposed sites. The group's highest cover (40%) is in Kriti and Karpathos (KK), while this phytogeographic region represents only 10% of the overall sites area. Typical phryganic formations (habitat type 5420) are encountered in half of the sites and they constitute approximately 80% of the total phryganic formations. The most representative habitats, with high floristic diversity and cover, are found on the Aegean islands and in Sterea Ellas, while the phrygana of Kriti have a less diverse floristic composition and lower plant cover.

Group 13: Matorral and maquis

The other typical shrubby formation of the densely arranged low and sub-mountainous areas of Greece is the maquis (matorral), which consists of densely arranged evergreen sclerophyllous shrubs, taller than 1.5 m. They constitute 25% of the terrestrial ecosystems in Greece and they can be found over a great variety of soil types up to an altitude of 800 m. Their main domain is in the mainland, the islands of the Aegean and the Ionian Sea. The dominant plant species are *Quercus coccifera, Pistacia lentiscus, Ceratonia siliqua, Olea europea* var. *sylvestris, Arbutus unedo* and *A. andrachne, Erica arborea*, etc. In several sites they constitute the latest successional stage of the plant communities, especially under dry climatic conditions.

Habitat group 13 includes the habitat types **5211-5215** and **5130** for *Juniperus* formations, **5230*** and **5310** for matorrals with laurels, and **5110** for matorral with *Buxus sempervirens* (these box-thickets occur only in northern Greece), mainly on serpentine rocks as

well as on calcareous-dolomitic rocky substrates, where they represent degraded stages of former extensive *Pinus nigra* ssp. *pallasiana* forests. The habitat type **9320** (which corresponds to forests in CBM) has also been included in this group, describing olive-carob (Oleo-Ceratonion) matorral, which is the form in which this habitat usually occurs in Greece. Habitat code **6310** has been used to describe *Quercus coccifera* and *Q. ilex* grazed arborescent matorral, or ungrazed *Q. coccifera* matorral, although this does not conform exactly with the corresponding description of the code in CBM. This habitat has not been assigned a code in the Annex, although it is one of the main formations of the Greek wildland. It should be noted that codes 9320 and 6310 have also been used to describe forests, as mentioned below (group 20).

Maquis constitute 9% of the overall surface area of the selected sites. Grazed *Quercus* formations are found in 1/3 of the sites and they represent 75% of the total surface covered by maquis. *Juniperus* matorrals (15% of the area covered by maquis) are distinguished in two types: that of the thermophilous matorral with *J. phoenicea* and *J. oxycedrus* ssp. *macrocarpa* found on the Aegean islands (very representative on Koufonisi and Gavdos off the eastern coasts of Kriti as well as on the rocky islets of the south Aegean arc) and Southern Greece, and secondly that of Northern and Southern Greece with *J. communis, J. excelsa* and *J. foetidissima*.

Habitat type **5230*** that corresponds to the laurel maquis, covers only a limited area (this habitat is representative in Fre, north of Lefka Ori in Kriti).

Conservation of the habitat types of this group mainly depends on the grazing pressure they are subject to and on their resistance to this pressure. As an example of the habitats showing low resistance to grazing, we may consider the rare dense arborescent juniper thickets growing on sandy soils and dunes, such as those occurring on Gavdos and Chrysi. These habitat types are in imminent danger mainly due to the increase in tourism activities. Among the major threats that maquis face, we should mention continuous tree felling and land use changes.

Group 17: Deciduous forests

Broad-leaved deciduous forests cover approximately 30% of the forests of Greece (First National Survey of Forest Species 1992). They mainly occur in the vegetation zones of Quercetalia pubescentis (especially in Quercion confertae) and Fagetalia and they comprise xerophilous and hydrophilous forest ecosystems. The dominant types in Greece are beech (5%) and oak (22%) forests, while chestnut woods, distributed throughout Greece, cover only 0.5% and birch forests 0.02%. The floristic composition of these forests also includes other deciduous species such as ash, hornbeam, lime and elm, as well as sclerophyllous species such as junipers.

• **Beech (*Fagus*) forests** occur in many areas of Northern and Central Greece (*Fagus moesiaca f. tainiolepis* in the mainland of Greece above 1000 m, and intermediate forms with the subspecies *orientalis*, often called *Fagus moesiaca f. spatulolepis*, below 1000 m). Their distribution is fragmented and they occur on NNE and NW-exposures, mostly on calcareous and siliceous rocks. Their structure and species composition vary depending on the altitude, age, human influence, management, etc.

Pure *Fagus* forests in Natura 2000 sites cover 59% of the beech forests of Greece and include three habitat types. Acidophilous (Luzulo-Fagetum) beech forests, code **9110**, have excellent representativity in the phytogeographical regions EC (Ossa, Pilio), NE (Pangaio, Ori Vrondous-Lailias, Treis Vryses), NC (Vernon, Vermio, Pieria), and SPi (Valia-Kalda,

Aspropotamos). Neutrophilous (Asperulo-Fagetum) beech forests, code **9130**, were recorded mainly in northern and central Makedonia and Thessalia. Calcareous beech forests (Cephalanthero-Fagion), code **9150**, were only recorded in the phytogeographical region NC, having the highest "global assessment" values on the mountains of Olympos and Tzena.

Mixed *Fagus* forests with *Ilex* sp. and *Taxus* sp., code **9120**, and subalpine beech woods with *Acer pseudoplatanus* (sycamore) and *Rumex arifolius*, code **9140**, cover small areas mainly in Makedonia, the latter being representative on the mountains Vermio and Pieria.

Beech forests have suffered from inappropriate management, i.e. over-exploitation, overgrazing, which has resulted in degradation of their structure and regeneration ability. An appropriate management, encouraging natural regeneration of the aged clumps and aiming at forest restoration, is necessary and falls within the priorities of the Natura 2000 Network.

• **Oak (*Quercus*) forests** are found at intermediate altitudes on the Greek mountains and are distributed in continuous zones. They form either pure or mixed forests with representative species composition. In Natura 2000 sites they have been included in five habitat types and cover 168,708 ha (11.5 % of total cover in Greece).

Quercus frainetto, code **9280**, is the main oak wood species found in Greece. It constitutes 94.5% of oak forests in Natura 2000 sites, with its largest cover in Ipeiros, Makedonia, Thessalia and smallest cover in Sterea Ellas and Peloponnisos. *Quercus pubescens* and *Q. cerris* often participate in the floristic composition of these forests, as well as other deciduous species. The vigour of these forests depends mainly on the topography and relief of the area, the substrate, inclination, accessibility, distance from urban areas etc. *Q. dalechampii* forests rich in lime, code **9170**, also occur in mainland Greece, and were only recorded in three sites, with excellent "global assessment" value on Mount Ossa and greatest cover on Smolikas.

Quercus macrolepis forests, code **9350**, occurring within the Thermo- and Meso-Mediterranean vegetation zones, were recorded mainly in the Aegean region (Cyc, EAe, KK), but also on the mainland. They are in need of protection since their general condition is problematic.

Another two oak forest habitats deserve special attention since they have a very restricted distribution and vulnerable structure combined with poor management practice. *Quercus trojana* woods, code **9250**, were recorded in 6 sites in northern Greece, with excellent (A) representativity, conservation and global value and greatest cover in Prespes (NC). Forests of *Q. brachyphylla* (currently included in *Q. pubescens* ssp. *pubescens*), code **9310**, were recorded mainly in Kriti (Prassiano farangi, Drapano-Kourna).

• **Chestnut (*Castanea sativa*) woods**, code **9260**, grow in the zone of deciduous oak forests forming dispersed clumps or vegetation 'islands'. They are native in Greece, consisting of resprouting or seed regenerating individuals and possess a special structure especially when they form pure forests. Representative chestnut woods with excellent "global assessment" value occur in the phytogeographical regions EC (Ossa, Pilio, Mavrovouni), NC (Vermio), NE (Athos, Stratonikon), WAe (Dirfys), EAe (Lesvos), Pe (Parnon), KK (Topolia-Sasalos-Agios Dikaios). Apart from the typical pure woods, mixed stands form with various broad-leaved species such as lime and ash (Tilio-Castanetum) in cool ravines and valleys, or oak (*Q. cerris*) at higher and colder stations (Castaneto-Quercetum cerris). Tree, bush and herb species, commonly found in oak forests, may also be found among the chestnut woods.

• **Tilio-Acerion** ravine forests (sycamore-lime-ash-elm forests), code **9180**, have been recorded only on Mt. Olympos, covering a small area of 170 ha.

Group 18: Thermophilous coniferous forests

This habitat group includes code **9540**, a habitat type which, in the context of the Directive 92/43/EEC, Annex I is described as «Mediterranean pine forests with endemic Mediterranean pines, including *Pinus mugo* and *Pinus leucodermis*», is represented in Greece by the three following natural forests: *Pinus halepensis, P. brutia* and *P. pinea* forests.

• The ***Pinus halepensis*** (Aleppo pine) forests are widely distributed on the Ionian islands, the western coasts of Ipeiros, the regions of Thessalia, Attiki, NW and NE Peloponnisos, central continental Greece, the islands of Evvoia and Skyros, the Chalkidiki peninsula and the Northern Sporades islands. They are generally well-structured forests of high aesthetic value. These thermophilous conifer forests occur on a great variety of geological substrata and soil types (marls, soft and hard limestones, serpentines, sandy soils), although they exhibit a special preference for certain substrates (e.g. marly limestones) where they show their optimum development. The altitudinal distribution limits range between 0-600(800) m, depending on latitude, exposure and other physiographic factors, subsequently incorporated in the Thermo- but also the Meso-Mediterranean vegetation zones.

• The ***Pinus brutia*** forests are distributed to the east of the Aleppo pine forests; specifically, in the prefecture of Evros, on the Northern and Eastern Aegean islands (mainly on Lesvos, Samos, Chios, Thassos, Rhodos, Samothraki, and Karpathos), as well as on some of the Dodekanisa islands (Symi, Kos, Leros, Ikaria). In comparison with the Aleppo pine forests, they comprise taller, more luxuriant and often extensive formations.

• The ***Pinus pinea*** forests are characterized by limited occurrence (in the form of extensive forests), in the following areas of Greece: Strofilia area in Peloponnisos, Skiathos island in the Northern Sporades, and Northern Sithonia in the Chalkidiki peninsula of Northern Greece. More sporadically or sometimes as isolated individuals, *Pinus pinea* is distributed on Kriti, in Attiki, Mount Athos in the Chalkidiki peninsula, and the islands of Lesvos, Ios, Naxos, Rhodos, Samos, Kefallinia, Kerkyra, etc. It mainly occurs in littoral areas and its altitudinal distribution ranges from 0 to 300 m a.s.l., within the Thermo- and Meso- Mediterranean vegetation zones. Habitat type **2270***, *P. pinea* forests on sand dunes, has been recorded only in three sites: the coastal areas of Kantili and Koukounaries Skiathou (WAe) and Schinias (StE). In the last two sites, the small forests are fairly degraded.

Group 19: Montane coniferous forests

This habitat group, as defined here, includes a great variety of habitat types either occurring in various phytogeographical regions of Greece or with limited occurrence in one phytogeographical region. These habitat types are represented by the following Natura 2000 codes: **9270** (Hellenic beech forests with *Abies borisii-regis*), **9290** (Cypress forests of *Acero-Cupression*), **9536** (Pallas pine forests), **9562** (Greek juniper woods with *Juniperus excelsa*), **9563** (*Juniperus foetidissima* woods), **9564** (*Juniperus drupacea* woods) and **9580** (*Taxus baccata* woods).

• The forests with ***Fagus moesiaca*** in combination with forests of ***Abies borisii-regis***, are widely distributed in Central and Northern Greece either as pure forests or as mixed forests of these two ecologically significant species. It should be noted that code **9270** has also been used to describe pure *A. borisii-regis* forests, for which no separate code is assigned neither in Annex I nor in the CBM. The beech forests (pure *Fagus* forests are referenced in detail under group 7) are widespread on the mountains of Northern and Central Greece, generally in the altitudinal zone between c. 800 and 1800 m extending southwards to Mt. Oxia in Sterea Ellas.

They are distributed from the Supra- to the Mountain- Mediterranean vegetation zones even up to the Mountain Central-European vegetation zone on the high mountains of Northern Greece and close to the country's borders. Moving further to the north, the floristic composition of these forests exhibits a Medio-European character. The most characteristic beech forests of the above-mentioned habitat type, with great coverage in the proposed sites, occur on the following mountains: Central and Southern Pindos, Smolikas, Grammos, Hasia and Olympos. The forests with *Abies borisii-regis* of this habitat type belonging to the Fagion hellenicum alliance, are mainly distributed on the Southern and Central Pindos mountains as well as partly on the Northern Pindos mountains growing within the Supra- and the Mountain-Mediterranean vegetation zones. Moreover, the *Abies borisii-regis* forests, ascribed, from a phytosociological point of view, at different high-rank syntaxa, are distributed in the mountainous areas of East Central, North Central and North Eastern Greece. Their altitudinal distribution ranges between 600 and 2000 m.

• The Cretan forests dominated by ***Cupressus sempervirens*** and ***Acer sempervirens*** and locally by *Zelkova abelicea*, are distributed within the altitudinal limits of the Supra- and Mountain- Mediterranean vegetation zones (1200-1700 m). The associations recognised within the alliance Acero sempervirens-Cupressetum sempervirentis are climatic mature stages occurring on limestones, schists and marls, generally on rather deep soils. From a bioclimatic point of view, these forests are present in the interior of the sub-humid and humid bioclimatic zone on the northern and southern slopes of the mountains of Kriti.

• The ***Pinus nigra* ssp. *pallasiana*** forests in combination with the *Abies cephalonica* (Greek fir) forests, constitute the dominant montane coniferous vegetation in Southern and Central Greece and cover about 25% of the total area of the Greek forests. As it concerns the total distribution of *Pinus nigra* ssp. *pallasiana* in Greece, it occurs on the high mountains of Peloponnisos, in Sterea Ellas, S and N Pindos, NC and NE Greece, as well as on the Aegean islands of Samos, Lesvos and Thasos. The Pallas pine forests either form pure or mixed forests with the Greek fir when these two species coexist in a small number of sites, e.g. Mts. Killini, Chelmos, Taygetos, Parnon, Olympos, Athos, etc. The altitudinal limits range from 600 to 2150 m (upper limits of the Meso- to the upper limits of the Montane- Mediterranean vegetation zones), on limestones, dolomites and serpentines.

• The ***Juniperus excelsa*** woods ascribed to the plant association Juniperetum excelsae belong to the alliance Ostryo-Carpinion, and are characterised by their unique occurrence around Lake Prespa within the site "Ethnikos Drymos Prespon". These woods form either pure or mixed formations (with various forest species of which *Quercus trojana* is the main co-dominant) to the zone around the lake, up to an altitude of 1000-1100 m and locally higher. A differentiation in the floristic composition of these woods is observed according to slope exposure (northern and southern slopes) which is also obvious on the basis of their physiognomy. These forests, unique in Greece, are distributed within the Meso- and Supra-Mediterranean vegetation zones, and cover only a relatively small surface area of the site (2% of its delimitated surface which comes to 19,470 ha). They are considered very representative as it concerns their structure. Their elements are well conserved, thus even the small degraded woods have a high potential for restoration.

• The ***Juniperus foetidissima*** woodlands are distributed in various mountainous areas throughout most of the phytogeographical regions of Greece (Peloponnisos, Sterea Ellas, Southern Pindos, Northern Pindos, North Central, North East Greece, and the Aegean islands), at altitudes between 800 and 2300 m. This habitat type participates in the vegetation mosaic of the Supra-, the Mountain-, and the Oro- Mediterranean vegetation zones all over Greece, at the

same altitudinal levels as the montane coniferous forests or the deciduous oak forests. They generally grow on superficial eroded soils which originate from various types of limestone substrata. The main threats come from grazing, and especially cutting for firewood.

• The ***Juniperus drupacea*** woods occur exclusively on the northern slopes of Mount Parnon in Greece on calcareous rocky substrates, at altitudes 550 - 1300 m, i.e. from the Meso- to the Supra- Mediterranean vegetation zone. These ecologically significant open stands have a disjunct, phytogeographically interesting distribution range, since their main distribution is mainly in the East (Anatolia on the Taurus mountain range, Syria and Lebanon), and they possess a high ecological value which must be maintained through sustainable management practices.

Group 20: Montane and subalpine coniferous forests

Abies alba and *Picea excelsa* (code **9510***, a priority habitat type) are important north European forest species, represented in northern Greece by stands at their temperature limit. This habitat type has been recorded only once in Elatia (Rodopi), with representativity "D" (not the typical natural habitat as described in Annex I).

The acidophilous forests (Vaccinio-Picetea) with *Picea abies* (code **9410**) constitute more typical montane and subalpine coniferous forests. This habitat type has also been used to describe the birch and *Pinus peuce* forests, species found in Makedonia at their temperature limit. Extensive forests with excellent structure are formed on the eastern side of Rodopi ridge, especially at Elatia, Chaidou, Frakto as well as on other mountains of Makedonia (Orvilos, Voras, Tzena, Paiko).

Group 21: Sclerophyllous evergreen woodland

The Mediterranean sclerophyllous forests occupy areas with Mediterranean climate in Western and Northern Greece, from 0 to 700 m and from 0 to 1000 m in Kriti. They are considered as the mature stage of succession in the Meso-Mediterranean vegetation zone.

The group includes the habitat types **9340**, for *Quercus ilex* forests and arborescent matorral, and **9370*** for palm forests with *Phoenix theophrastii*. The habitat type **6310** has been used for the description of the kermes oak forests of Kriti; however, a special code should be foreseen for the description of those particular *Quercus coccifera* formations of Southern Greece. Also, code **9320** has been used for the rather rare olive-carob woodland.

This habitat group covers 2.1% of the overall area of the proposed sites. *Quercus ilex* forests are found in most phytogeographic regions of Greece, though with a small cover. *Quercus coccifera* forests are frequent in Kriti (recorded on Dikti, Lefka Ori, Asfendou-Kallikkratis) and Peloponnisos.

Palm groves are found exclusively on Kriti, with the thickest populations in Vai and Kourtaliotiko gorge, where they face a major threat from increasing tourism activities and unwise groundwater management.

Groups 22 & 23: Balkan screes & Inland rocks - Group 25: Fields of lava

Inland rocks with typical chasmophytic vegetation and screes constitute habitat groups found throughout Greece: at the plains and the sub-montane zone of the continental region and of the islands, at the montane zone of continental Greece, and on the vertical cliffs of the islands. The substrate is usually limestone but there are also serpentine rocks and screes. The

plant communities colonizing the rock fissures and the steep, almost vertical, slopes present great diversity and are extremely rich in endemics, both in the continental mountainous zone and in the Aegean. The screes are also rich in endemic plant species.

The habitat types of the **inland rocks** group included in Annex I have been identified by: (a) geographical criteria, with the corresponding plant associations in most cases: **8216** for the cliffs of the Mediterranean continental zone, **8217** for the Aegean region, **8218**, **8219** and **8219A** for the montane zone of Southern, Central and Northern Greece, respectively; or (b) ecological criteria: **8230** for the pioneer vegetation of rock surfaces with *Sedum* spp. (this does not conform with the corresponding plant communities description in the CBM), **8210** and **8220** for the calcareous and siliceous subtypes, respectively, and **8240** for the limestone pavements.

The inland rocks group covers 1.7% of the total surface area of the proposed sites and has been recorded mainly in Southern Greece and the Aegean, with fewer records in the Ionian, Makedonia and Thraki and North Aegean. The Aegean cliffs (**8217**), recorded in 61 sites, have the most important occurrence and the largest cover (28%). The Eu-Mediterranean cliffs (**8216**) and the pioneer vegetation of rock surfaces (**8230**) have also been recorded in many sites (46), covering 23% and 16% of the groups total percentage respectively. Notably, type **8230** occurs mainly in the Cyclades and Kriti. The priority habitat type **8240** is rare and found only at the subdivisions of Kriti, the Cyclades, Peloponnisos and Sterea Ellas.

The **screes**, both calcareous and siliceous are described by code **8140**, which in the CBM describes screes of high altitudes of mainland Greece and Kriti. Especially for the Aegean islands, this code has been used to describe screes of low altitude with predominantly annual plants and some perennials. Their presence is more prominent in the Cyclades and in Kriti (the distinguished screes of Karpathos and of the Cretan mountains). Representative screes with characteristic plant communities and large cover have been recorded from Peloponnisos (Taygetos, Kyllini), Sterea Ellas (Oiti), Pindos (Aspropotamos), and North Central Greece (Olympos, Siniatsiko).

Group 25 includes habitat type **8320** which is defined in Annex I as «fields of lava and natural excavations» and the corresponding description in CBM does not include the volcanic features occurring in Greece. Consequently, the code has been used to describe habitats on substrate of volcanic origin (barren lava fields etc.) occurring in the Cyclades island complex (Milos, Santorini) and the East Aegean (Nisyros and Strongyli).

C.2.2. Habitat types not included in Annex I to Directive 92/43/EEC

In order to complete the reference to the habitats which are considered essential to the conservation of biodiversity and have guided the selection of the proposed sites we will refer to certain habitats that are considered important in the natural landscapes of Greece, but nevertheless are not included in Annex I.

Coastal sand, shingle and rock habitats

I. The embryonic dunes with *Ipomoea stolonifera* and *Elymus farctus* are rare in Greece and Europe and are only found on the islands of Rhodos and Samos although they are well developed mainly in the Middle East.

II. The unique community with *Limoniastrum monopetalum* and *Zygophyllum album* on stabilized dunes immediately neighbouring the sea; this habitat occurs on the dunes of the small islets of the Libyan Sea (Chrysi, Koufonisi).

III. The habitat formed by the postdunal communities of *Centauera spinosa,* which often develop on sandy seashores as autonomous communities accompanied by phryganic and ammophilous species, is typical in the Aegean Sea.

IV. The habitat that develops on the rocky coasts of Dodekanisa and Kriti and is characterised by woody aerohaline, almost phryganic, communities dominated by the spiny *Cichorium spinosum*.

Karstic dolines with freshwater communities

A special habitat type, not included in Annex I, is the one of the wet dolines of the mountains of Kriti (Lefka Ori, Idi, Dikti). They are characterized by scanty vegetation of annuals common in other places but rare on Kriti or in Greece, such as the vegetation with *Trifolium ornithopodioides*, a species which in Greece, occurs only on Kriti.

Reed beds

The water-fringe vegetation which develops in fresh as well as in brackish waters and consists of hydrophytes and helophytes, is represented by the class Phragmitetea and occurs in the wetlands of mainland Greece. This vegetation is interesting from a floristic and an ecological point of view. The dominant species is *Phragmites australis* (*P. communis*), forming compact, mixed (e.g., with *Scirpus* sp. or *Typha* sp.) or pure communities known as reed beds («kalamones»). A common feature of almost all the studied plant communities is the low species number.

Reed beds grow in the shallow waters of lakes, lagoons and canals. They are also found on the seashore, on turfs mainly on the wet sides of sand dunes, and at the mouth of rivers, as well as in marshes close to the sea with brackish waters of low salinity. Finally, they occur in wet and shady locations of watercourses (streams and rivers).

According to our observations, these formations reach their optimum development in the shallow waters and marshes of the lakes Vistonis and Ismaris (Mitrikou), as well as in the estuaries of the rivers Nestos and Strymonas. On the other hand, in the lagoons of NE Greece and at other wetlands, only small turfs form when conditions are favourable. In Kriti, reed beds are generally species poor and not well developed. They are restricted to lowland plains, especially at river mouths.

Maritime brackish reed beds, growing at the borders of salt marshes or covering large areas (reedmace beds with dryness and pollution tolerant species), are of special interest. They occur at Amvrakikos gulf, Kalamas delta (SPi), Messolongi lagoon, Spercheios delta (StE), Axios and Evros deltas (NE), Kotychi lagoon and Strophilia (Pe).

Although Annex I includes only one type of reed beds, i.e. those growing on dune slacks (code **2195**), we consider the conservation of this habitat, which is closely related to other Annex I habitats such as lagoons, deltas, sand-dunes, etc., very important.

Greek fir (*Abies cephalonica*) forests

Abies cephalonica is an endemic Greek species, forming either pure or mixed forests with *Pinus nigra* ssp. *pallasiana* in areas where they co-exist. *Abies cephalonica* forests are distributed in several phytogeographical regions of Greece: Peloponnisos, Sterea Ellas (the most typical fir forests occur on the mountains of these two regions), S. Pindos, North Central, North East and the island of Kefallinia.

The altitudinal distribution of these forests ranges from (750)900 to 1800(2100) m, that is, from the upper parts of the Meso-Mediterranean zone to the upper limits of the Mountain-Mediterranean vegetation zone. On high mountains, fir forests form the upper timberline. Depending on exposure, microclimatic conditions and anthropogenic pressure, the upper timberline ascends to 1900 or 1600-1750 m on W-NW or N-NE-faced slopes on Mt. Killini, and 2100-2150 m on Mts. Chelmos, Parnassos and Giona. These montane conifer forests represent the potential natural vegetation of these altitudinal levels.

At the middle and upper level of the fir forests (Supra- and Mountain-Mediterranean vegetation zones), fires are quite uncommon and anthropogenic pressure is moderate. Logging and grazing, although forbidden, are the most frequent activities. The composition of these fir forests is characterised by a high number of species and a high percentage of endemics (30-40%).

The conservation of the fir forests may be achieved through the establishment of protection zones, the decrease in the intensity of human disturbances, and the implementation of sustainable management plans.

Quercus forests

Annex I includes several types of oak forests, however we should point out certain types that are missing: the *Quercus pubescens* and *Q. cerris* dominated forests of mainland Greece, the *Q. coccifera* forests of Southern Greece, and *Q. dalechampii* of Northern and Central Greece (see group 21).

C.2.3. Data Analysis

The number of occurrences (frequency) of the 109 habitat types and their cover -in hectares- are shown in Fig. C.1. Note that in this figure the habitat types are arranged in groups and denoted by their *group code* (see Table C.1). Some of the habitat types are quite frequent such as habitat types 12.4 (Aegean phrygana) and 13.10 (*Q. coccifera* maquis), and also have a high cover indicating their dominant presence throughout Greece. Some others may have high frequency but their cover is relatively small, such as the ones belonging to groups 6 (sand and shingle beaches), 8 and 9 (running and standing water) e.g. the widespread intermittent streams and temporary ponds. The reverse situation also occurs - high cover, small frequency - as in group 16 (alpine and subalpine grassland and heaths), a habitat found only on the mountains of the mainland.

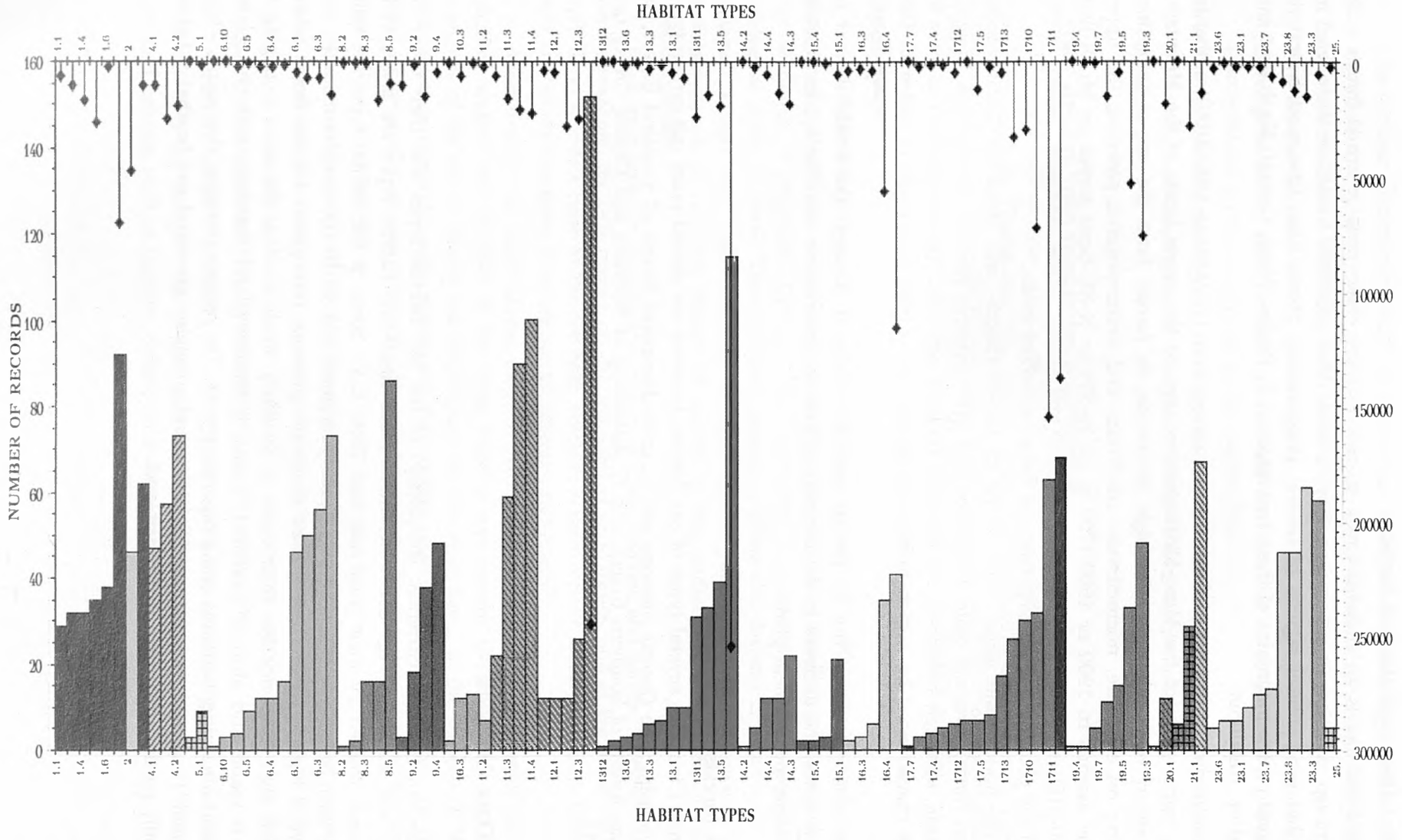


Fig. C.1. Number of records (bars) and cover (symbols) of habitat types in the proposed Natura 2000 sites. The legend of habitat types (group codes) and the habitat groups they belong to are given in Table C.1 where habitat types are listed in the order they appear in this figure.

The number of records (frequency) of the habitat groups is plotted against habitat groups cover in ascending order. Habitat group 11 (riparian forests) appears to have the highest frequency and a relatively small cover whereas habitat groups 13 (phrygana), 12 (matorral, maquis) and 17 (deciduous forests) show both high frequency and cover. Habitat group 25 has the lowest frequency and very low cover: actually it represents a single rare habitat type, fields of lava, with a very restricted distribution as noted above.

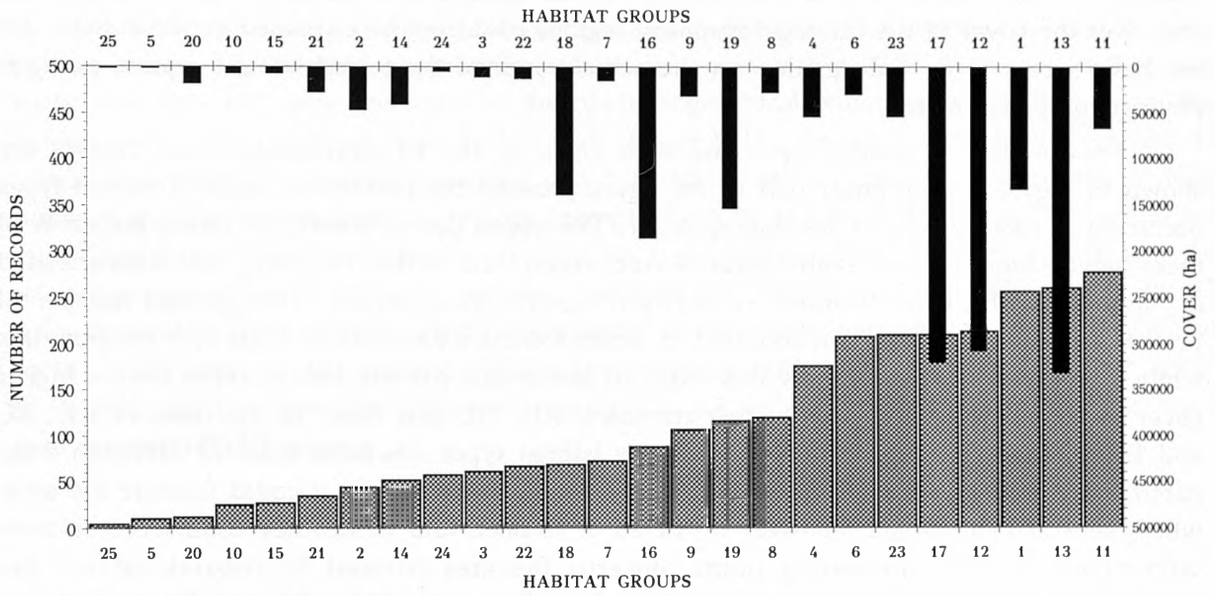


Fig. C.2. Number of records (wide bars) and cover (narrow bars) of habitat groups in the Natura 2000 database. Abbreviations are given in Table C.1.

Frequency distribution of habitat types is shown in Fig. C.3. Very few habitat types occur in more than 100 sites, while 12 of them have been recorded up to 35 times. We may consider the 8 habitat types appearing only once as rare, and the ones encountered from 2 to 7 times as relatively rare. Overall, approximately 8% of the habitat types have been recorded only once and are considered rare, about 30% appear 2-10 times and are considered relatively rare, while the remaining 60% have been recorded more than 10 times and are considered as common.

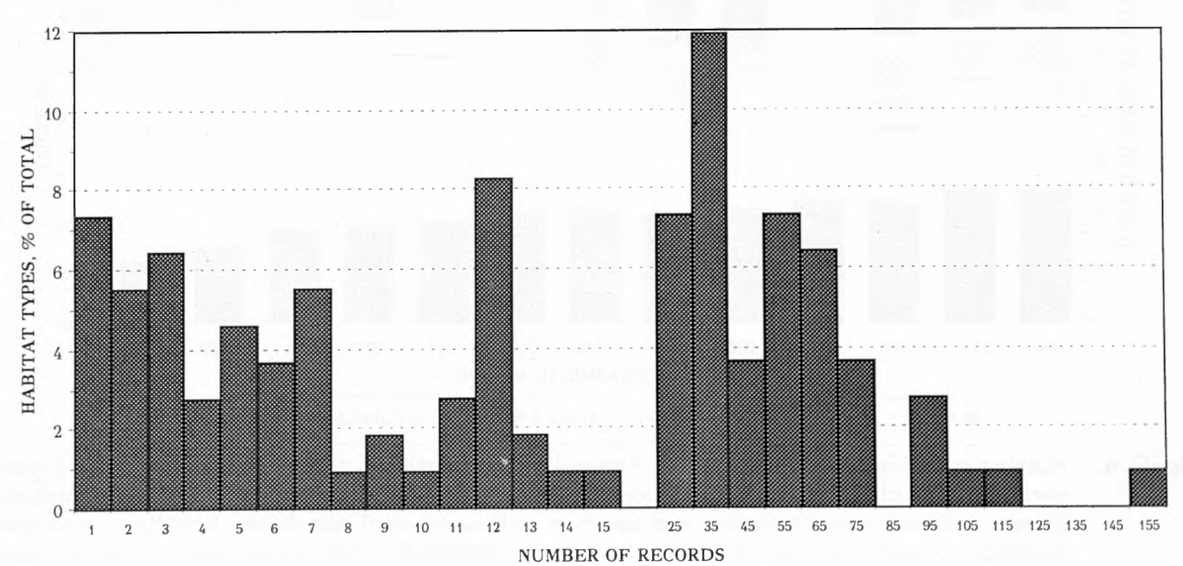


Fig. C. 3. Frequency of habitat types in the NATURA 2000 database.

The number of sites proposed for inclusion in the NATURA 2000 network and the area they cover per phytogeographical region are shown in Table C.2. Most of the sites (60) are encountered in North East region with a high cover as well, and the least (7) in the East Central region. Although the number of sites in Kriti and Karpathos is approximately half of those in North East, their relative cover is not much smaller. This is also observed in the case of the West Aegean islands; however this is due to the National Marine Park of Northern Sporades, a site with an area of 251,440 ha, 94% of which is marine area. The coverage of the sites over the cover of the phytogeographical regions could not be estimated as the authors did not have access to the information on the actual cover of the terrestrial and marine part per phytogeographical region.

The number of habitat types and their cover in the 13 phytogeographical regions are shown in Fig. C.4. The lower part of the figure presents the number of Annex I habitat types occurring in each region, in descending order. The upper part of the figure shows the cover of these habitat types as well as the cover of cultivations, and of the remaining area (characterised as "other") of the sites recorded in each phytogeographical region. The greatest number of priority habitat types has been recorded in North Cenral region, Sterea Ellas and Peloponnisos while their cover does not follow this order. It seems that priority habitat types have a higher cover in NC (that coincides with their number), NPi, NE and NAe. In the cases of KK, EC and EAe a relatively high number of priority habitat types has been recorded although these habitats are characterised by low cover. This is quite interesting as it could indicate the areas where several habitats are relatively restricted or isolated and hence they could become more vulnerable. Another interesting point concerns the area covered by natural habitats not included in Annex I. This is prominent in at least 3 regions: WAe, NE and IoI. In WAe, as noted above, this is due to the large marine area, which nevertheless is protected as an important marine biotope. In the regions StE and Pe, the main distribution areas of *Abies cephalonica*, the greek fir forests account for the large proportion of non Annex I habitats. Therefore, updating of Annex I habitats list in order to include these habitat types missing from the initial version becomes evident.

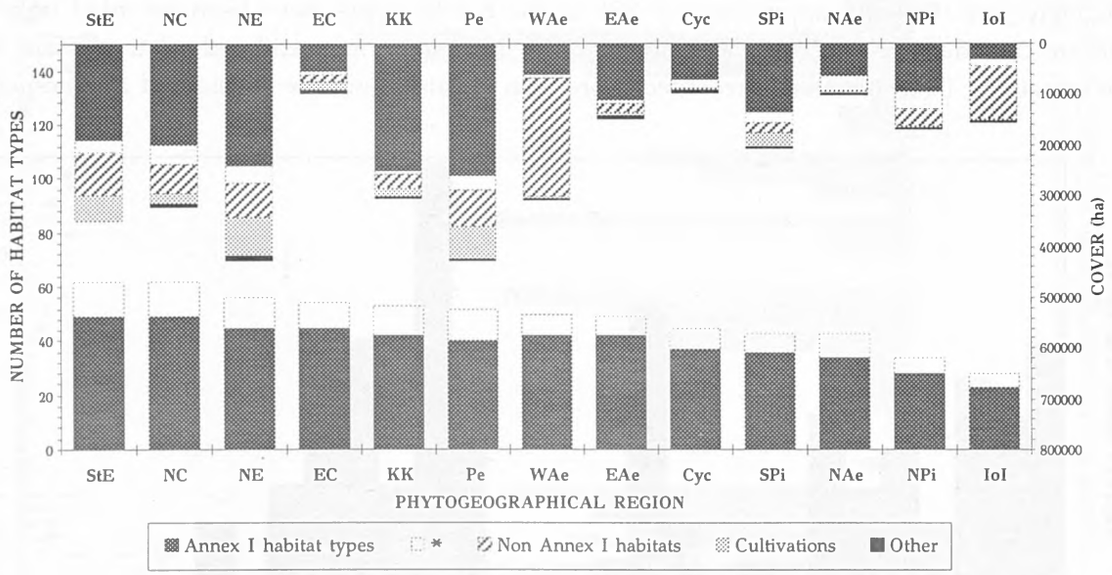


Fig. C. 4. Number of habitat types included in Annex I (lower part) and their surface areas in ha (upper part) in each phytogeographical region in the sites included in the NATURA 2000 database. Priority habitat types (*) number and cover as well as cover of non-Annex I habitats, cultivation (extensive cereal cultures, ricefields, improved grassland, other arable land, artificial forest monoculture and non-forest areas cultivated with woody plants), and other (towns, villages, roads, waste places, mines and industrial sites) are also shown.

At this point we should mention that the overall conclusions may be biased, i.e. overestimated or underestimated cover of some habitat types or groups compared with their total cover in Greece, for reasons related mostly to the site selection process (for initial site selection rules see relevant article in the same volume) and to the fact that many habitat types existing in Greece were not included in Annex I. This becomes clearer in the analysis of selected habitat types. Nevertheless, we believe that bias does not drastically change the overall picture of habitat distribution in Greece.

On the basis of the phytogeographical subdivision of Greece, the number of records of the habitat groups in each phytogeographical region is shown in Fig. C.5. Certain habitat groups have been recorded only few times in the phytogeographical region in which they occur like habitat groups 25 (fields of lava) and 5 (salt steppes). On the other side, habitat groups 11 (riparian forests), 13 (matorral, maquis) and 1 (marine habitats) have been recorded in high numbers in all phytogeographical regions (except group 11 in IoI). Some habitat groups do not appear in certain phytogeographical regions, such as habitat group 1 (marine habitats), the related groups 6 and 4 (shingle and sand beaches and salt marshes) in NPi, and group 18 (pine forests) in the Cyclades. Worth mentioning are: the high frequency of group 23 (inland rocks) in NC and NE; the relatively higher frequency of groups 22 (screes) and 12 (phrygana) in Pe, KK, and Cyc (see also reference in group 22); as well as the high occurrence of group 4 (salt marshes) in NE region.

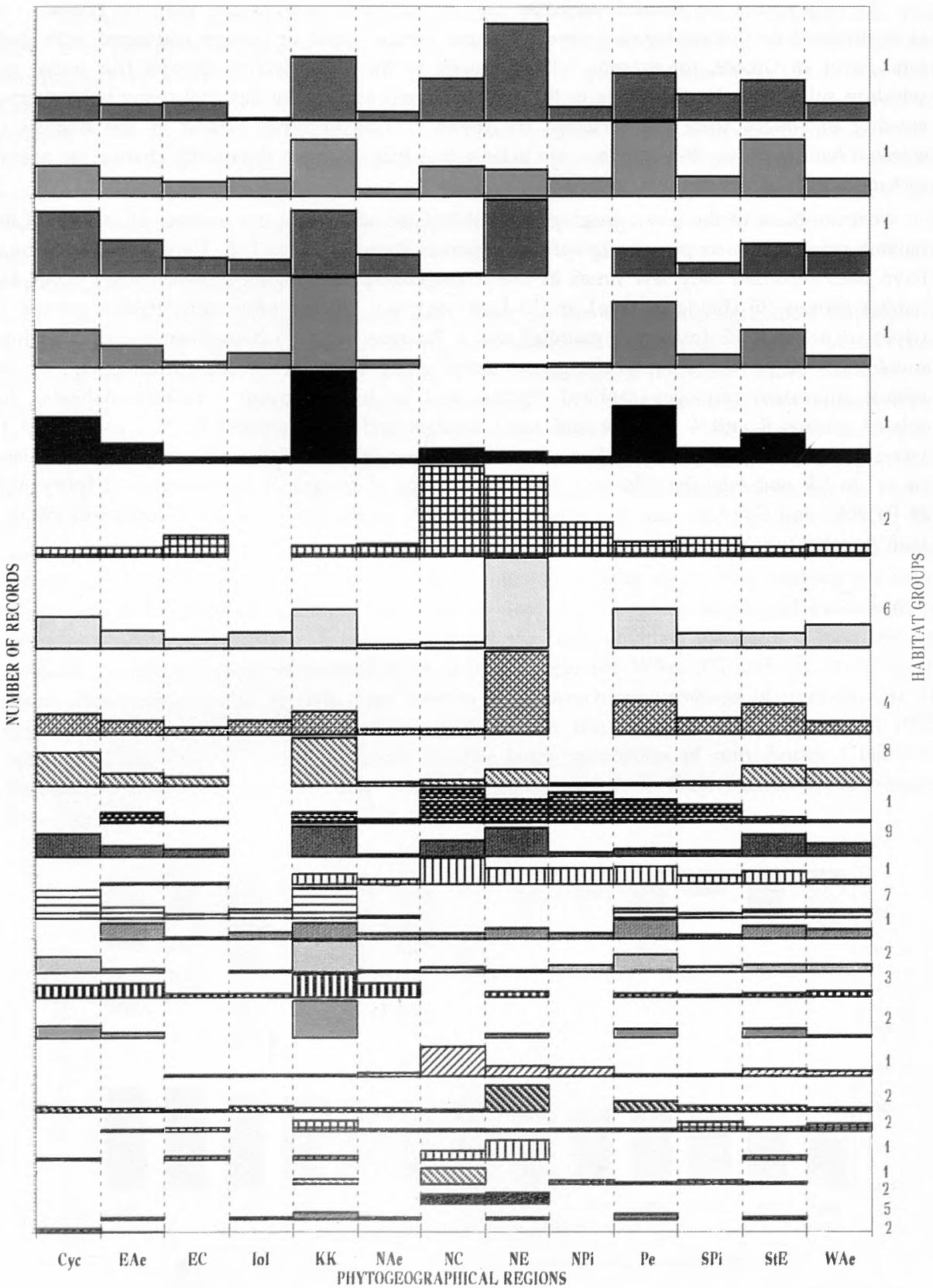
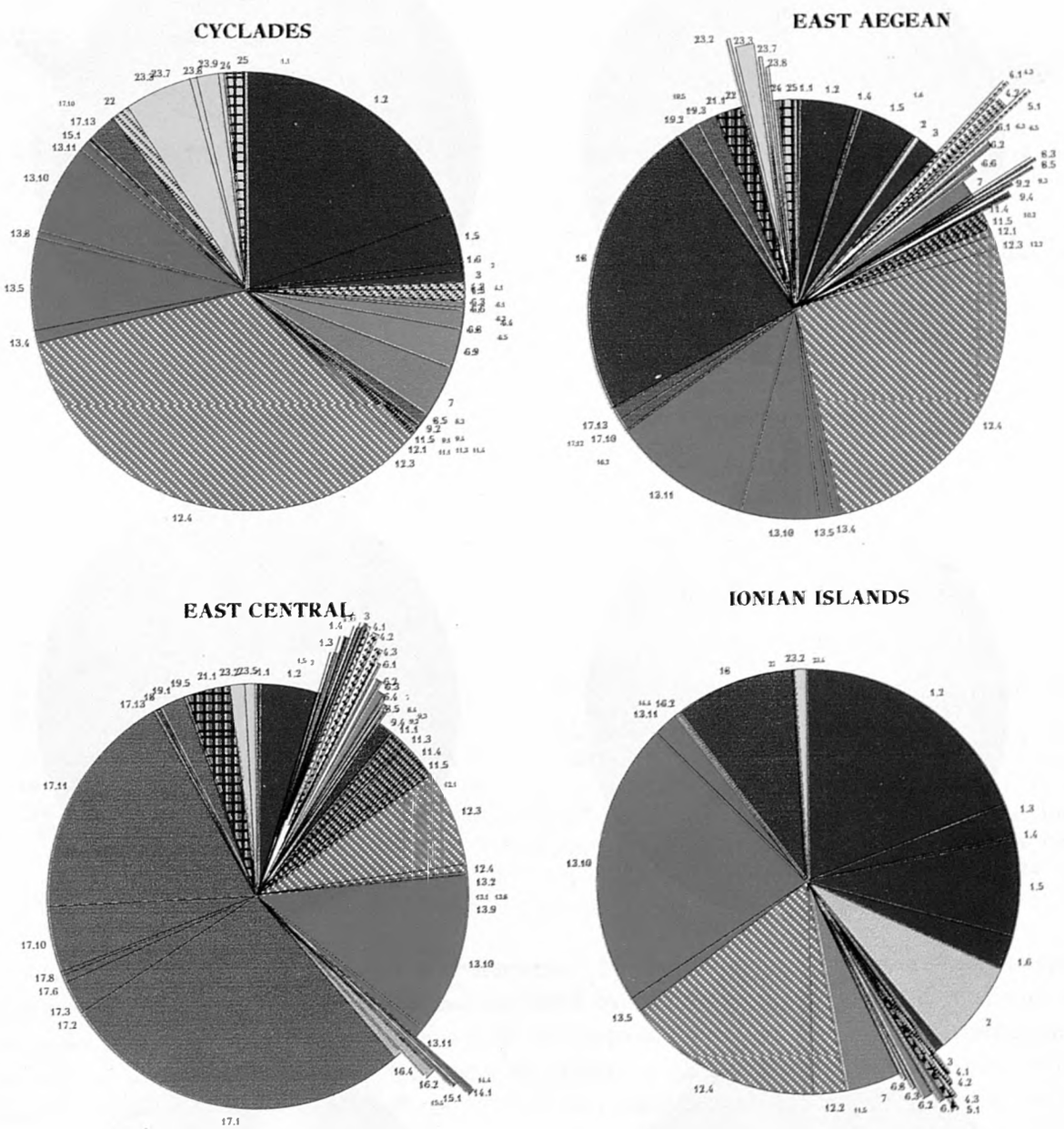
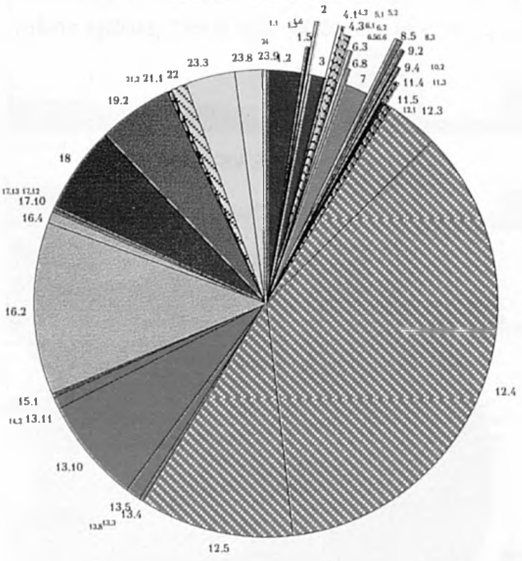


Fig. C.5. Distribution of habitat groups in the phytogeographical regions. Each tick on y-axis represents one record. (For abbreviations see Tables C.1, C.2).

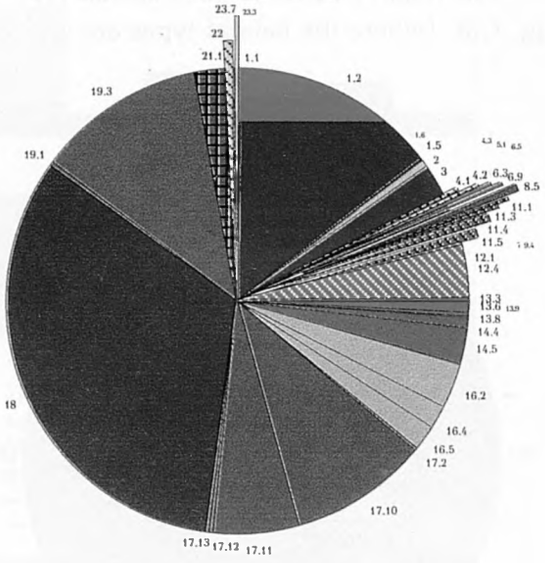
The relative cover of each habitat type in the 13 phytogeographical regions is presented in Fig. C.6. (where the habitat types are indicated -for practical reasons- by their group code.



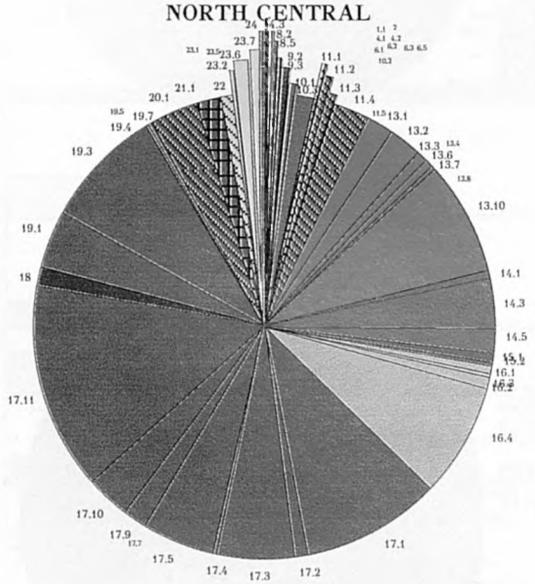
KRITI - KARPATHOS



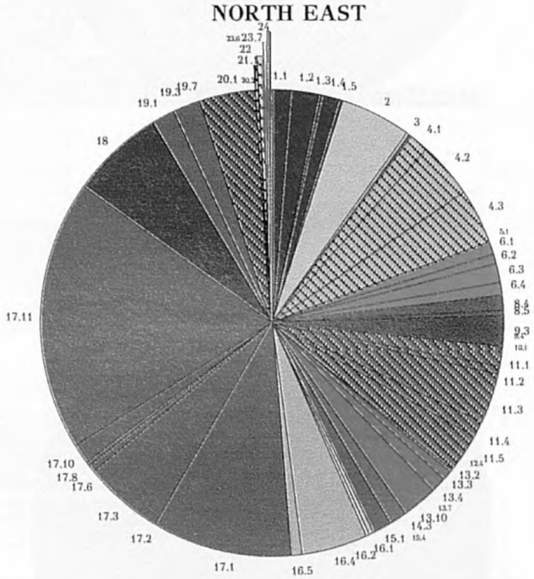
NORTH AEGEAN



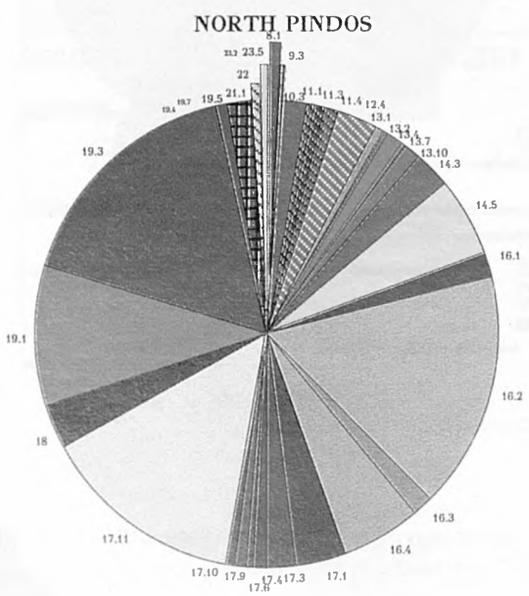
NORTH CENTRAL



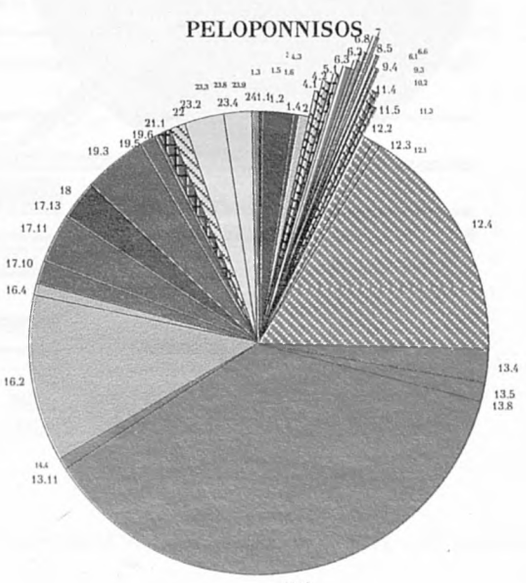
NORTH EAST



NORTH PINDOS



PELOPONNISOS



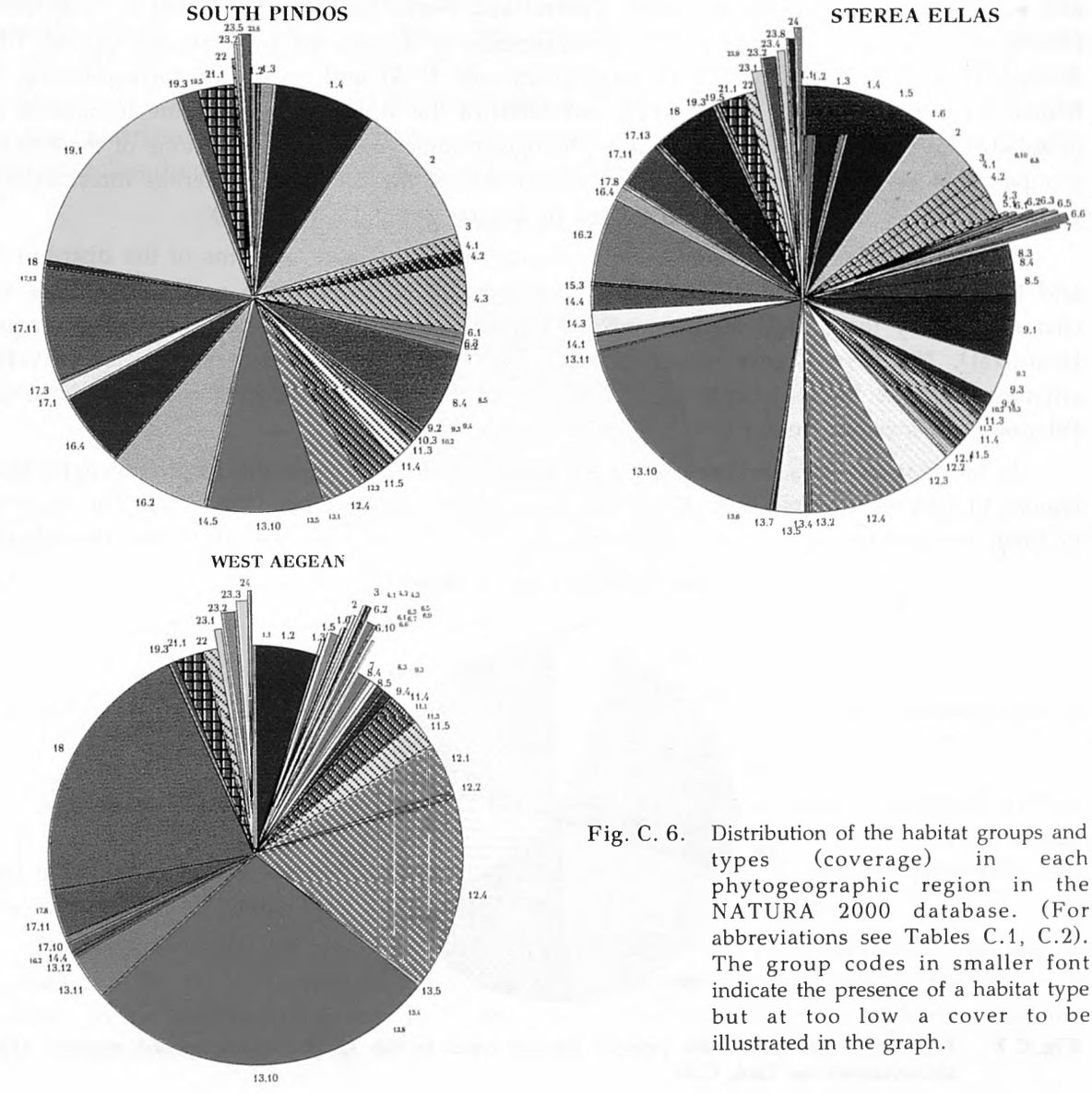


Fig. C. 6. Distribution of the habitat groups and types (coverage) in each phytogeographic region in the NATURA 2000 database. (For abbreviations see Tables C.1, C.2). The group codes in smaller font indicate the presence of a habitat type but at too low a cover to be illustrated in the graph.

Each phytogeographical region is characterised by the dominance of certain habitat types and groups. The East Aegean region is dominated by habitat group 12 which corresponds to phrygana and more specifically to those with *Sarcopoterium spinosum*. Group 18, corresponding to endemic Mediterranean pines (habitat type **9540**) is also dominant in the region. West Aegean is dominated by habitat groups 12 and 13, phrygana and matorral respectively, while pine forests (group 18) are also abundant. The Cyclades complex is dominated by habitat group 12 and more specifically 12.4 (habitat type **5420**: phrygana with *Sarcopoterium spinosum* and notably with the endemic *Centaurea spinosa*), while the marine habitat group 1, mainly represented by habitat 1.2 *Posidonia* beds (priority habitat type **1120**), is also prevalent. The East Central region is dominated by habitat group 17, which corresponds to the deciduous forests. North Aegean is dominated by thermophilous and montane coniferous forests (groups 18 and 19) and deciduous forests (group 17) as well as by *Posidonia* beds (*group code* 1.2). Kriti and Karpathos are dominated by habitat group 12 (phrygana) represented mainly by habitat types **5420** (*Sarcopoterium spinosum* phrygana), and **5430** (phrygana with endemic Cretan species). The Ionian islands are clearly dominated by *Posidonia* beds (due to the inclusion of a large marine area in site GR2220003), followed by habitat groups 13 (matorral)

and 12 (phrygana). The regions North Central and North East are dominated by deciduous forests of various types (group 17). Peloponnisos is dominated by matorral (group 13), *Sarcopoterium spinosum* phrygana (mainly *group code* 12.4) and group 16 corresponding to habitat types **6175**, **6170**, **4060**, **6173** and **4090** of the alpine and sub-alpine formations of grasslands and heaths. South Pindos is a phytogeographic region in which none of the habitat groups could be considered as prevalent, except that of the montane coniferous forest habitat group 19. Finally, Sterea Ellas is dominated by habitat group 13 (matorral).

From the above we may shape the ecological map of Greece in terms of the distribution and the prevalence of the habitat types. The islands of the Aegean and Sterea Ellas are characterised by the typical Mediterranean habitats of low phryganic shrublands and maquis (matorral). Northern Greece is occupied by deciduous forests indicating a more diverse environment. The Ionian islands seem to be one of the main centres for *Posidonia* beds, while Peloponnisos is rather similar to the Aegean islands.

As far as it concerns the presence of the priority habitat types in the 13 phytogeographical regions of Greece, it seems that all regions host priority habitat types (Fig. C.7). The majority of them -in number of records- is observed in NE, KK, NC and Pe. However, the relative

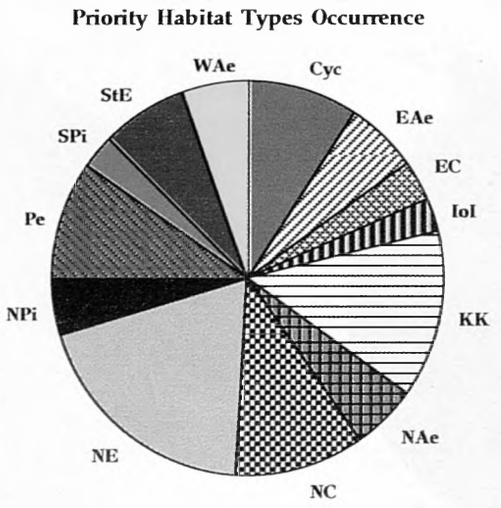


Fig. C.7. Number of records of the priority habitat types in the 13 phytogeographical regions. (For abbreviations see Table C.2).

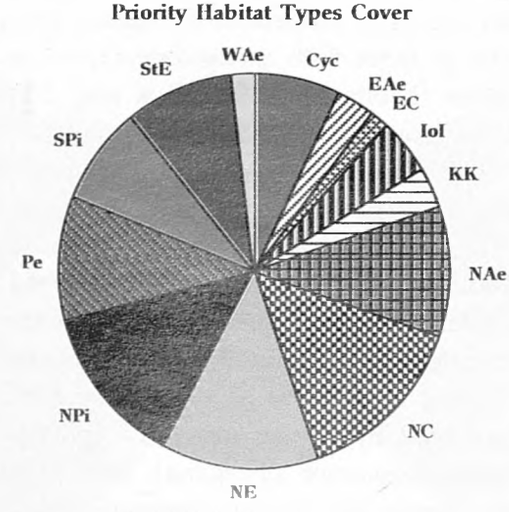


Fig. C.8. Area covered by priority habitat types in the 13 phytogeographical regions. (For abbreviations see Table C.2).

importance of the priority habitat types in terms of the area they cover does not entirely coincide with their occurrence. In other words, priority habitat types seem to cover a large area in NC, NE, NPi, Pe and NAe (Fig. C.8). Concerning the number of priority habitat types contained in each group, it seems that most of them (18%) are concentrated in habitat groups 14 (dry grasslands) and 19 (montane coniferous forest), while habitat group 6 (shingle and sandy beaches dunes) follows with 12% of the total (Fig. C.9).

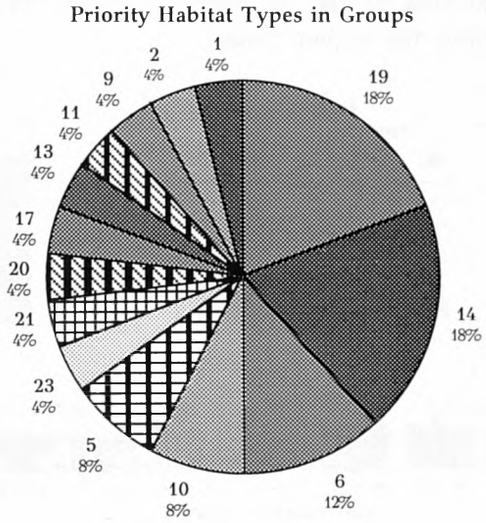


Fig. C. 9. Distribution of the priority habitat types (%) in the 25 defined habitat groups. (For explanation of the group codes see Table C.1).

More detailed information for 9 representative priority habitat types is provided in Fig. C.10. - C.18. In these figures, the number of records of each habitat type, the area it covers and information on the degree of representativity, conservation status and the value of global assessment for each habitat type per phytogeographical region are shown.

Posidonia beds, habitat type **1120**, is found in sandy areas of the sublittoral zone and is characterised by the occurrence of the marine phanerogame *Posidonia oceanica*. This species is endemic to the Mediterranean Sea. In Greece, *Posidonia* beds are the most widespread habitat type of the sublittoral zone (Fig. C.10).

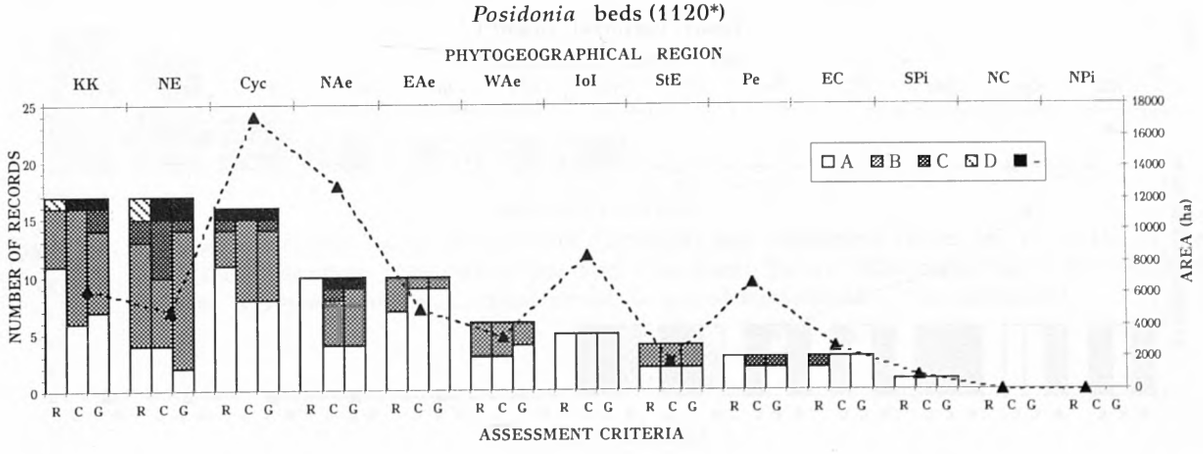


Fig. C.10. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

Figure C.10. reveals that most records are reported from the phytogeographical regions KK, NE and Cyc, while the largest area covered is reported for Cyc. It is interesting that *Posidonia* beds are assessed as having A in representativity (R), conservation status (C), and global assessment (G) in IoI region, although their recorded frequency and cover are not among the highest.

Lagoons are found in almost all phytogeographical regions (Fig. C.11.). They prevail in NE and Pe, while their highest area covered is observed in SPi, NE and StE. Concerning their assessment the NE region exhibits the higher values.

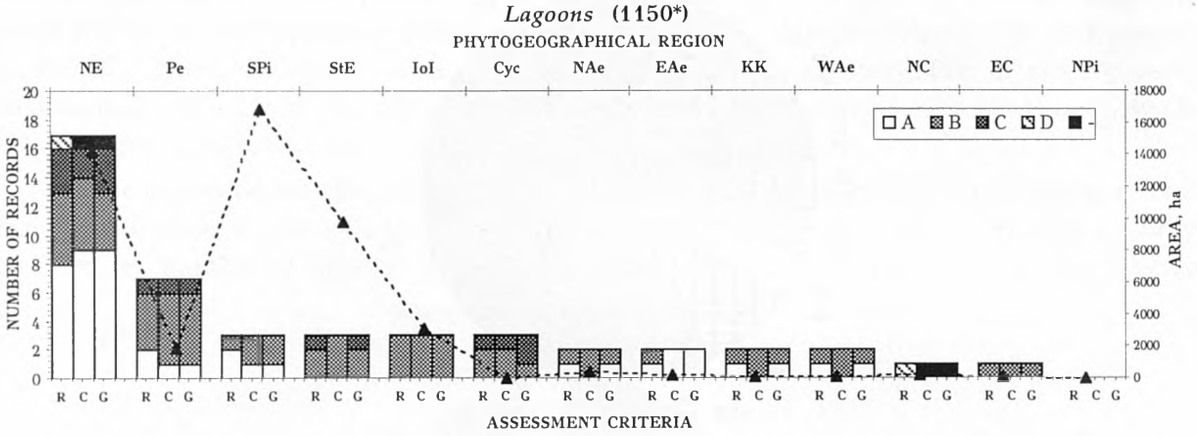


Fig. C.11. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

Matorral with *Laurus nobilis*, habitat type **5230**, is another priority habitat type found in 7 out of the 13 phytogeographical regions with the same number of records (frequency) but different area covered (Fig. C.12). The highest cover is observed in KK and the lowest in WAe. As far as its assessment is concerned, it seems that the best status is observed in the Cyclades, where, although its representativity is B (A was not observed in any of the sites), its conservation status and global assessment values puts it at the highest rank.

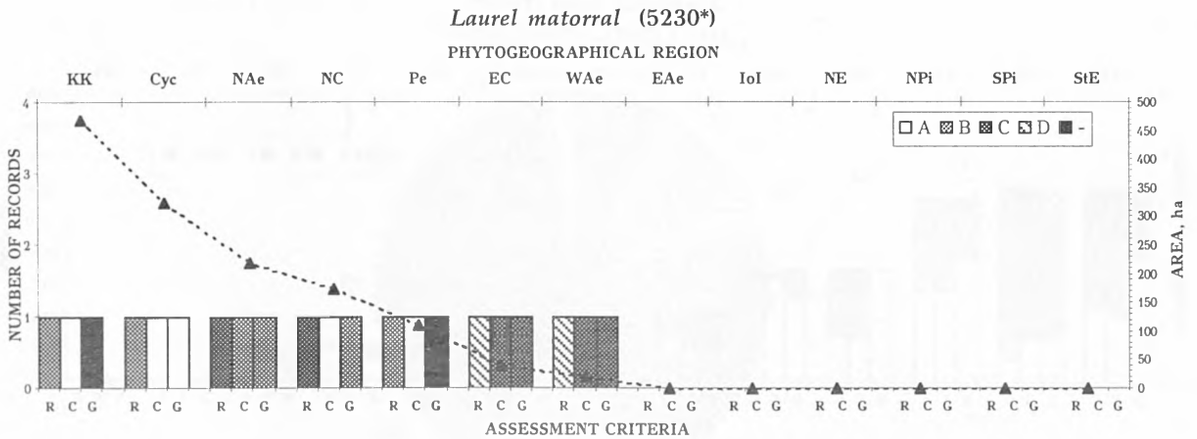


Fig. C.12. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

Pallas pine forests, habitat type **9536**, are recorded in 9 out of the 13 phytogeographical regions of Greece (Fig. C.13). NC and Pe have the highest number of records, while the highest area covered is observed in NPi. As far as their assessment is concerned, these are not ranked highly in any of the regions.

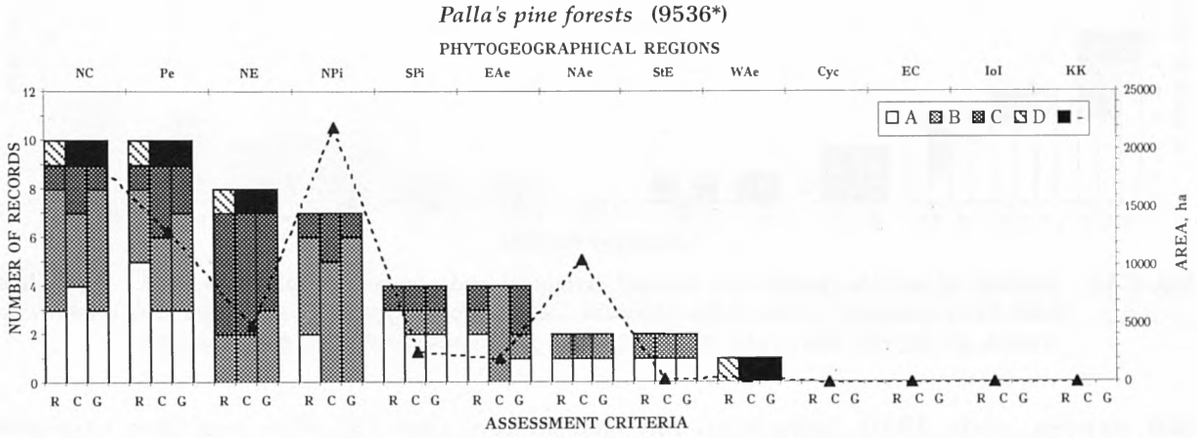


Fig. C.13. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

Stinking juniper woods, code **9563**, are most frequent in Pe and NPi regions, where they also have the highest cover (Fig. C.14). However, their assessment values are rather low in all regions in which they have been recorded. In addition, dune juniper thickets, code **2250**, have been reported in Southern Greece, with the best assessment values and largest cover in Cyc (Fig. C.15).

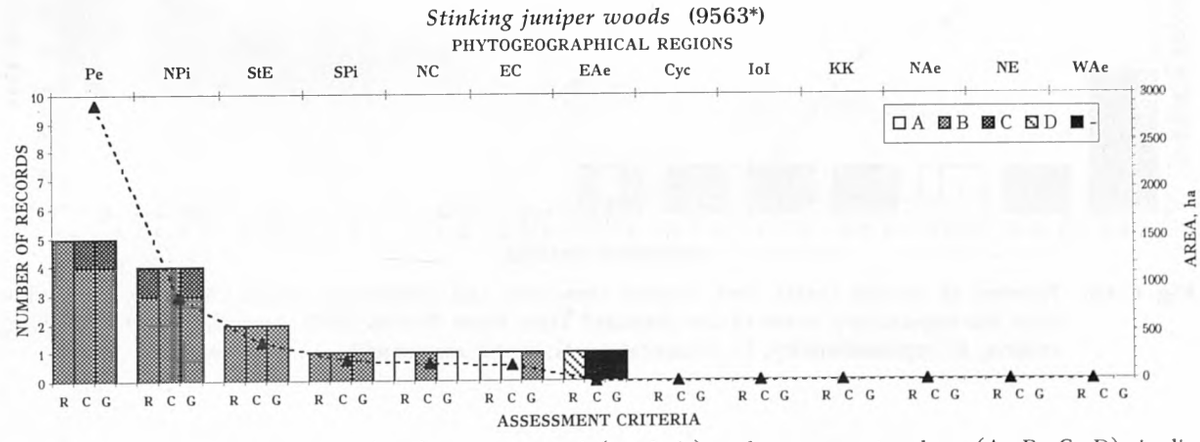


Fig. C.14. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

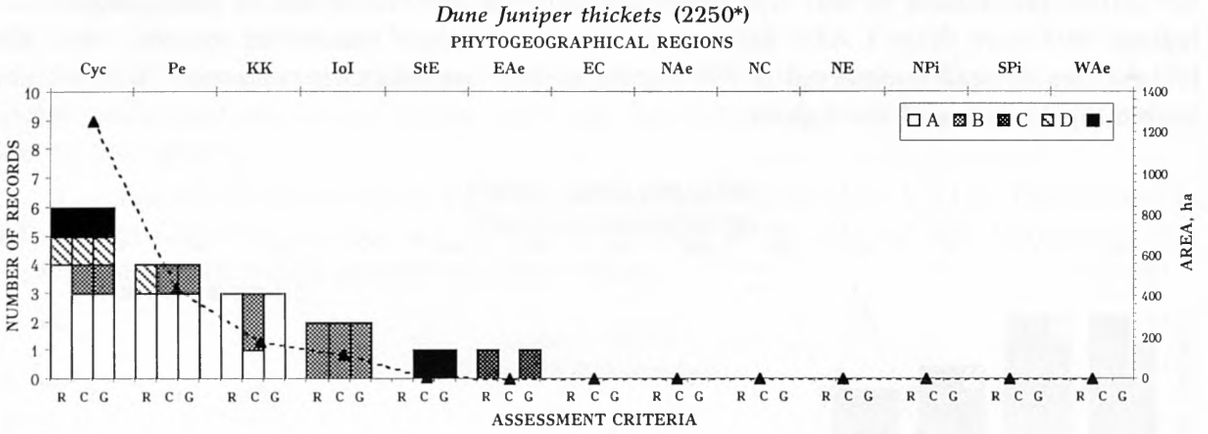


Fig. C.15. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

Salt steppes, code **1510**, have been reported in few sites (9) with less than excellent representativity in eight of them: most of the sites belong to Pe phytogeographical region. Salt steppes have the highest cover in StE, although the best assessment values were reported for the site of Karpathos (Fig. C.16). A similar situation is noted for the active raised bogs, code **7210**, with the higher assessment values in Kriti (Fig. C.17.).

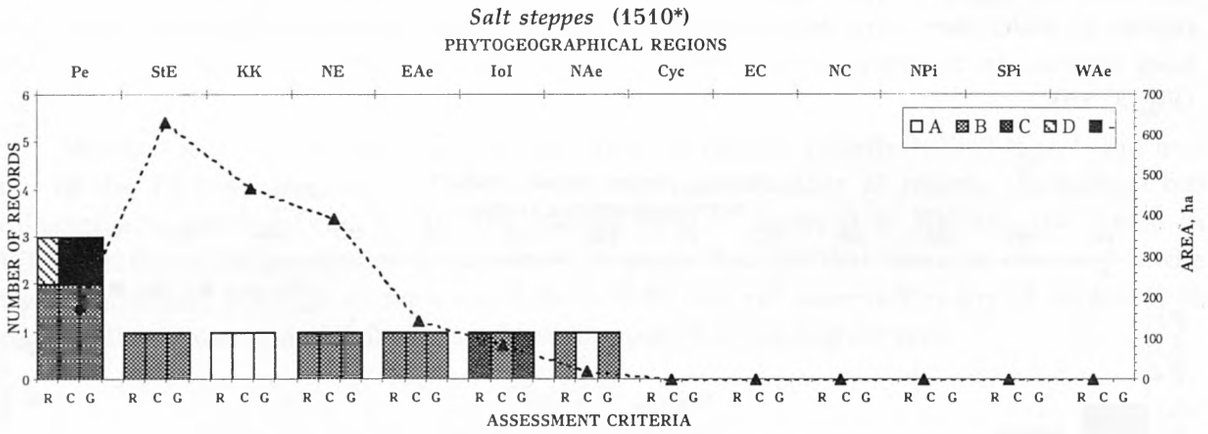


Fig. C.16. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

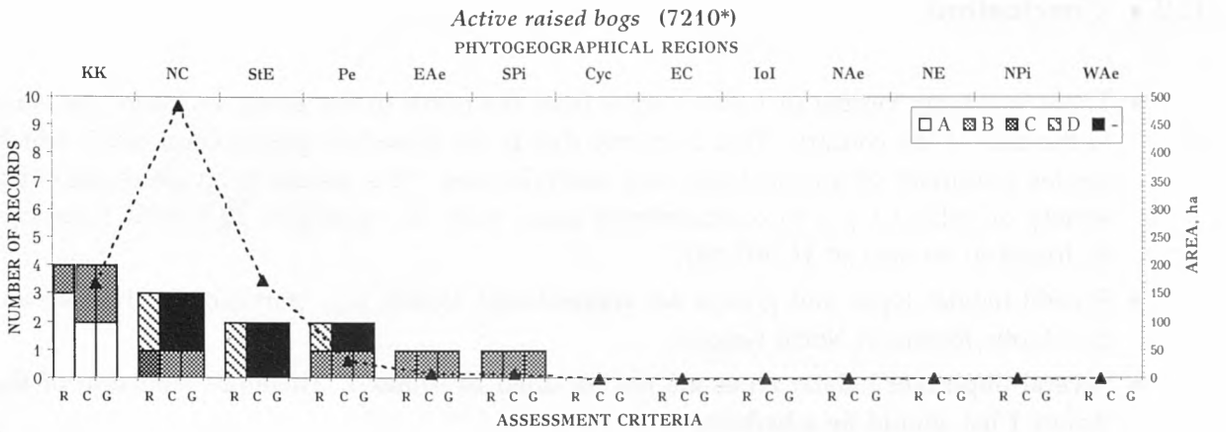


Fig. C.17. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

Mediterranean temporary ponds (code **3170**) show a wide distribution, being present in most of the phytogeographical regions, mainly in the Aegean and Sterea Ellas, where they have the highest frequency and the best assessment.

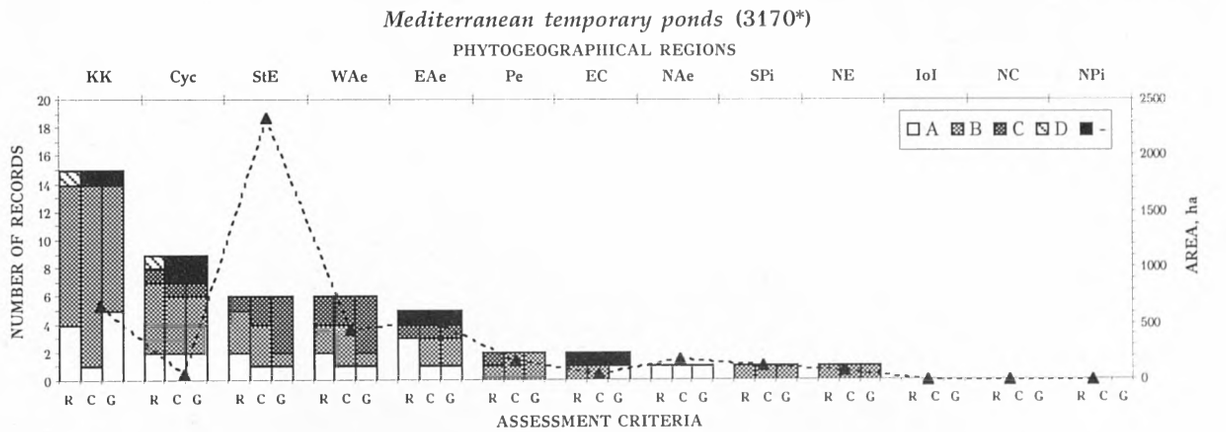


Fig. C.18. Number of records (bars), area covered (symbols) and assessment values (A, B, C, D), in line with the explanatory notes of the Standard Data Form Natura 2000, according to the following criteria. R: representativity; C: conservation; G: global assessment . - : no assessment

C.2.4. Conclusions

- There is a large variety of habitat types from the north to the south and from the west to the east of the country. This is mainly due to the dissected geographical relief, which creates a number of microhabitats and microclimates. This results in an alternation of a variety of habitat types in comparatively small areas (for example, 29 habitat types can be found in an area of 14,500 ha).
- Several habitat types and groups are concentrated locally, e.g. phrygana in the Aegean, deciduous forests in North Greece.
- Several important habitat types are not included in Annex I. Therefore, updating of the Annex I list should be scheduled .
- Most of the habitat types are threatened by rural and tourism activities.
- The selection of sites for inclusion in the National List must, among others, take into consideration the frequency, cover, isolation, representativity, and conservation status of the habitat types present.

PART D

FLORA

D.1. THE RICHNESS AND THE RARITY OF THE GREEK FLORA

by Gregorios Iatrou

The number of known Greek plant taxa (species and subspecies) increases with botanical exploration. It was calculated to be c. 6,200 (Strid 1991), and is currently estimated at 6,308 (Strid & Tan 1992). This is one of the greatest number of taxa recorded within all the other European countries of similar and even larger area (cf. Denmark with c. 1,300 and Great Britain with c. 1,800). However, the most important fact to consider is that a great number of these taxa are considered to be Greek endemics. Strid and Tan (1992) list 742 species as endemic to Greece (representing 15% of the flora). A total of 1,225 endemic taxa, was estimated by Iatrou in 1986, but this number has now increased to 1,275 taxa, or 20.21% of the total Greek flora (Iatrou, unpublished, 1996), and is the highest figure for any country or territory of a comparable size in Europe or the Mediterranean area (cf. Mainland Spain has 501 endemic species and Marocco has 536 endemic species). Not all of these endemic taxa, however, are vulnerable, and only a few of them could be considered as endangered, and even fewer as under threat of extinction.

The present unwise management of natural ecosystems by man, increases the threats and immediate dangers to the endemic flora. It has been calculated that 12% - 15% of the Greek endemic species could be considered as threatened, and this is a very different figure from the number of 39 plants listed in Directive 92/43 EEC.

This richness and great diversity of the Greek flora, especially in endemic taxa, can be attributed to the following reasons:

1. The very active geological history of Greece (Kiskyras 1959, Greutzburg 1963, 1966) which resulted in the fragmentation of the Greek continent and the creation of isolated areas and habitats with special ecological characters. These have contributed, to the survival of relict plant taxa and to the creation or the preservation of new endemic taxa via procedures such as polyploidy, genetic drift, and adaptivity to radiation.

2. The enrichment of the native Greek flora with: a) old floral elements, which had their closest relatives (often ancestors) in Anatolia (i.e. Western Asia Minor), through two main plant migratory routes; i.e. the "Central Aegean" and the "South Aegean". This influence had an East to West direction and took place in older geological periods (early Miocene), when the Greek continent and Asia Minor were still connected by the land which was called Aegeis (Turrill 1929, Iatrou 1986); b) floral elements of the Central and Northern Europe through the "Alpine" plant migratory route. This migration had a north to south direction and took place later than the previous one (Turrill 1929).

Selected References:

Greutzburg, N. 1963. Palaeogeographical evoloution of Crete from Miocene to present. Kritika Chronika IE-IST: 336-344 (In Greek).

Greutzburg, N. 1966. Die Sudägäishe Inselbrucke. Bau und geologische Vergangenheit. Erdkunde 20: 20-30.

Iatrou, G. 1986. Contribution to the study of endemism of the flora of Peloponnisos. Doctoral Dissertation, University of Patras. 310 p. (In Greek with English summary).

Kiskyras, D. 1959. About the paleogeography of Peloponnisos. Peloponnisiaki Protochronia. Athina. (In Greek).

Strid, A. 1991. The Flora Hellenica project. Bot. Chronika 10: 81-94.

Strid, A. and K. Tan. 1992. Flora Hellenica and the threatened plants of Greece. Opera Bot. 113: 55-67.

Turrill, W.B. 1929. The Plant-life of the Balkan Peninsula. Oxford.

D.2. PLANT SPECIES OF ANNEX II TO DIRECTIVE 92/43/EEC, ENCOUNTERED IN GREECE

by G. Iatrou, Stella Kokkini, K. Georghiou and I. Bazos

Thirty-nine plant taxa listed on Annex II to Directive 92/43 have been recorded in Greece (Table D.1). These consist of one Bryophyte, two Pteridophytes and 36 Spermatophytes. The distribution of these species in the proposed sites is given in Appendix 4.

These 39 taxa represent 9% of the total 433 taxa listed in the plant species list of Annex II, while 26 of them are priority taxa, representing 16% of the total number of priority taxa (164), and the remaining 13 are non-priority taxa, representing 4.83% of the total number of the non-priority taxa (269).

Figures D.1 and D.2 show the number of plant taxa in the administrative and phytogeographical regions in Greece, respectively.

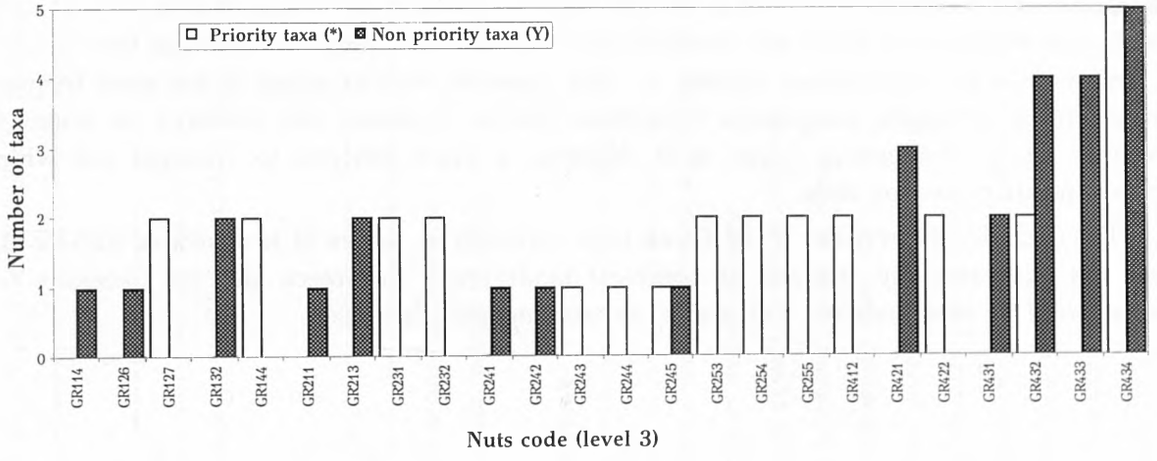


Fig. D.1. Number of plant taxa listed on Annex II to Directive 92/43/EEC in the administrative regions (NUTS) in Greece.

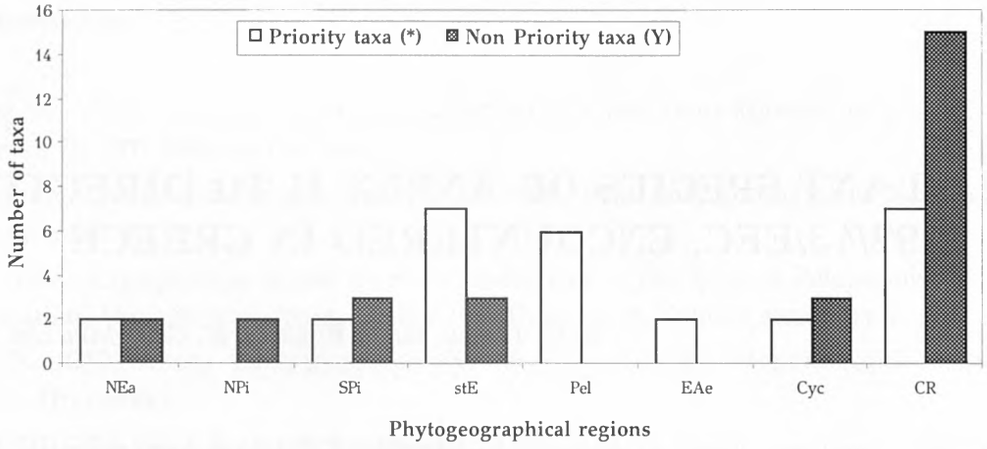


Fig. D.2. Number of plant taxa listed on Annex II to Directive 92/43/EEC per Phytogeographical region, in Greece.

It is noteworthy that 31 of the 39 taxa are Greek endemic plants, mostly local endemic, three are subendemic, while the rest 5 are very rare in Greece.

Regarding the conservation status, 22 taxa are considered to be Endangered (E), 14 are considered to be Vulnerable (V), and for the remaining three, their status has not yet been properly assessed. The expression "considered to be" is used to emphasise that current population data have to be collected in order to be accurate on the conservation status of these plant taxa.

We have also to emphasise that one more plant species of Annex II to Directive 92/43/EEC under the code no 1682, named *Thymus cephalotos* L. (declared also as a priority taxon), has neither been taken into consideration, nor has been listed in the Greek taxa, since it is synonymous to *Coridothymus capitalus* L., (the common thyme) which is the most frequent participant of phrygana ecosystems throughout Greece. Probably this reference in Annex II concerns *Thymus lotocephalos* Lopez & R. Morales, a plant endemic to Portugal and which perhaps needs protection there.

To conclude, the number of 39 Greek taxa, included in Annex II to Directive 92/43/EEC, does not expresses the richness of botanical biodiversity in Greece and the necessity for protection of its rare, endemic, vulnerable and endangered plant taxa.

TABLE D.1. Plant species of Annex II to Directive 92/43/EEC, that are present in Greece. The asterisk * denotes "priority species".

BRYOPHYTA (Bryophytes):					
Family	**Species**	**Subspecies**	**Distribution**	**Natura Code**	**Status**
BUXBAUMIACEAE	*Buxbaumia viridis* (Moug. ex DC.) Brid. ex Maug.		Widespread	1386	E?
PTERIDOPHYTA (Pteridophytes):					
Family	**Species**	**Subspecies**	**Distribution**	**Natura Code**	**Status**
OPHIOGLOSSACEAE	*Botrychium simplex* E. Hitchc.		Widespread	1419	E?
BLECHNACEAE	*Woodwardia radicans* (L.) Sm.		Cr.,SWEu	1426	V
SPERMATOPHYTA (Spermatophytes):					
Family	**Species**	**Subspecies**	**Distribution**	**Natura Code**	**Status**
BORAGINACEAE	*Solenanthus albanicus* (Degen &al.) Degen & Bald.		NG,Al	1671	V
BORAGINACEAE	**Symphytum davisii* Wickens	*cycladense* (Pawl) Stearn	KL	1672	V
CAMPANULACEAE	*Asyneuma giganteum* (Boiss.)Bornm.		Krp.,EAe	1748	V
CARYOPHYLACEAE	**Silene holzmanii* Heldr. ex Boiss.		Cr.,Krp.	1459	V
CARYOPHYLACEAE	**Silene orphanidis* Boiss.		NG.(Athos)	1463	E
COMPOSITAE	**Anthemis glaberrima* (Rech.f.)Greuter		Cr	1766	E
COMPOSITAE	**Centaurea heldreichii* Halacsy		ST	1770	E
COMPOSITAE	**Centaurea princeps* Boiss.& Heldr.		ST	1830	E
COMPOSITAE	**Centaurea megarensis* Halacsy & Hayek		ST	1806	E
COMPOSITAE	**Centaurea kalambakensis* Freyn & Sint.		TH	1776	E
COMPOSITAE	**Centaurea lactiflora* Halacsy		TH	1778	E
COMPOSITAE	**Centaurea niederi* Heldr.		Pel.,ST	1780	E

Family	Species	Subspecies	Distribution	Natura Code	Status
COMPOSITAE	**Centaurea peucedanifolia* Boiss.& Orph.		NG.(Athos)	1799	E
COMPOSITAE	**Crepis crocifolia* Boiss.& Heldr.		Pel.(TA)`	1786	E
CONVOLVULACEAE	**Convolvulus argyrothamnos* Greuter		Cr	1663	E
CRUCIFERAE	**Iberis runemarkii* Greuter		Eae	1495	V
CYPERAEAE	**Carex acuta* L.		Widespread	1897	V?
GLOBULARIACEAE	**Globularia stygia* Orph. ex Boiss.		Pel.(CE,KY,TA)	1432	E
HYPERICACEAE	**Hypericum aciferum* (Greuter) N.K.B.Robson		Cr	1433	E
LABIATAE	**Micromeria taygetea* P.H.Davis		Pel.(TA)	1697	E
LABIATAE	*Nepeta argolica* Bory & Chaub.	*dirphya* (Boiss.)Strid & Tan	EB	1683	V
LABIATAE	**Nepeta sphaciotica* P.H.Davis		Cr	1684	E
LABIATAE	*Origanum dictamnus* L.		Cr	1685	V
LILIACEAE	**Androcymbium rechingeri* Greuter		Cr	1842	E
ORCHIDACEAE	**Cephalanthera cucullata* Boiss.& Heldr.		Cr	1901	E
ORCHIDACEAE	*Cypripedium calceolus* L.		Widespread	1902	E
PAEONIACEAE	*Paeonia clusii* Stearn	*rhodia* (Stearn) Tzan.	EAe	1481	V
PAEONIACEAE	*Paeonia parnassica* Tzan.		ST	1482	V
PALMAE	*Phoenix theophrasti* Greuter		Cr.,Tu	1896	V
POLYGONACEAE	*Polygonum praelongum* Coode & Coolen		EAe,Tu	1440	V
RANUNCULACEAE	**Consolida samia* P. H. Davis		EAe	1478	E
SCROPHULARIACEAE	**Linaria hellenica* Turrill		Pel.(Kampos)	1718	E
SCROPHULARIACEAE	**Veronica oetea* L.-A Gustavson		ST	1732	V
ULMACEAE	*Zelkova abelicea* (Lam.) Boiss.		Cr	1426	V
UMBELLIFERAE	**Bupleurum capillare* Boiss.& Heldr.		ST	1605	E
UMBELLIFERAE	**Bupleurum kakiskalae* Greuter		Cr	1606	E

D.2.1. Description of plant species of Annex II to Directive 92/43/EEC, that are present in Greece

BRYOPHYTA (Bryophytes):

Buxbaumia viridis (Moug. ex DC.) Brid. ex Maug. & Nestl., Stirp. Crypt. Vog. Rhen. (1823).

Description: Plants minute, arising from brownish protonemal mat. Perichaetial leaves minute, ovate, ciliate, cilia becoming filamentous with age and forming protonemal-like mass at base of seta. Male plants on side of archegonial shoots. Seta erect, coarsaey papillose, 5-10 mm; capsule pale brown, not glossy, obliquely ellipsoid, scarcely flattened on back, cuticle splitting longitudinally and peeling off back of capsule at maturity; outer peristome of 4 concentric rows of teeth; spores c. 10 m.

Distribution: Europe, Corsica, Caucasus, China, N America. N.Greece: Prefecture of Drama, Rhodopi mountain, Elatia area.

Status: Endangered? Only small scattered populations occur.

Threats: Human activities in the area. Specific threats have not yet been determined by any study.

Conservation measures taken: Practically none. Registered to the Directive 92/43 EEC (Natura code: 1386) and in Bern Convention.

Conservation measures proposed:
1. Prevent any damage or destruction of its habitats.
2. Continuous monitoring of the population in nature

Selected references:
Geissler, P. 1977. Zur Moss- und Flechtenflora Nordgriechenlands. Bauhinia 6: 189-213.
Smith, A.J.E. 1980. The moss flora of Britain and Ireland, 106 p.

PTERIDOPHYTA (Pteridophytes):

Botrychium simplex E. Hitchc. in Silliman, Amer. J. Sci. 6: 103 (1832).

Description: Front solitary, 2-10 mm, sheathed at base by the brown, papery remains of previous year leaf. Common part of petiole short, sterile lamina branching off near the rhizome. Lamina 2-5 cm, simple, tri-lobed, trifoliate or pinnate with 2, rarely 3-4 pinnae, long petiolate; pinnae 3-9 pairs, ovate or rounded, entire, with rounded apex. Fertile panicle long-stalked, much exceeding sterile lamina, lanceolate to ovate in outline, 1-3 times branched. Sporangia spherical, 1-1.5 mm in diameter.

Distribution: Scattered in Europe, chiefly in the northern Canada, USA and S Greenland. Greece: Ipeiros, Prefecture of Ioannina, Mt. Smolikas, at 2000 m, on serpentine.

Status: Endangered? Only one small population occurs in Greece, on the margins of its total

area of distribution.

Threats: Human activities and genetic isolation. Specific threats have not yet been determined by any study.

Conservation measures taken: Practically none. It is registered in Directive 92/43 EEC (Natura code: 1419).

Conservation measures proposed:
1. Prevent any damage or destruction of its habitats.
2. Continuous monitoring of the population in nature to decide if further measures are needed.

Selected references:
Christiansen, S.G. 1986. *Botrychium* Swartz. Vol. 1, p.14. In: A. Strid (ed.). Mountain Flora of Greece.

Woodwardia radicans **(L.) sm.**, Mem. Acad. Sci. Turin 5: 412 (1793).

Description: Leaves up to 2.5 m, arcuate, producing young plants vegetatively on the distal part; lamina equalling petiole, deltate or ovate-lanceolate, pinnate; pinnae up to 30 cm, deeply and regularly pinnatifid; segments falcate, acuminate, serrulate. Sori oblong, in two rows along either side of the midrib of the pinnules; indusium coriaceous.

Distribution: From Azores, Algeria, and Canary Islands, to SW Europe, eastwards to S. Greece (on the island of Crete: Fasas valley, between Skines and Nea Roumata).

Status: Vulnerable? Only one small population occurs in Greece, on the margins of its total area of distribution, in a wet and shady gully in an otherwise dry woodland was a plant with fronds over two meters long (Brownsay & Jermy 1973).

Threats: Human activities in the area such as local agricultural development. Specific threats have not yet been determinedby any study.

Conservation measures taken: Practically none. It is registered in Directive 92/43 EEC (Natura code: 1426).

Conservation measures proposed:
1. Prevent any damage or destruction of its habitats.
2. Continuous monitoring of the population in nature to decide if further measures are needed.

Selected references:
Brownsay, P. J. and A. C. Jermy. 1973. A fern collecting expedition to Crete. Brit. Fern Gaz. 10: 331-348.
Greuter, W. 1973. Additions to the flora of Crete, 1938-1972. Ann. Mus. Goulandris 1: 15-83.
Jalas, J. and J. Suominen. 1972. Atlas Florae Europaeae 1. Helsinki.
Lawalree, A. 1993. Woodwardia Sm. Vol.1, p.31. In: Tutin, T. G. et al. (eds). Flora Europaea.
Turland, N. J., L. Chilton and J. R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

SPERMATOPHYTA (Spermatophytes):

Androcymbium rechingeri **Greuter**, Candollea 22: 248 (1967).

Description: Corms single or 2-3 one above the other. Stem 2-7(-10) cm. Leaves 20-150 x 4-15 mm, linear to lanceolate, flat or slightly plicate, glabrous, patent, sometimes deflected. Flowers often more than 4, shortly pedicellate; perianth-segments (including clow) 20-25 x 2-5 mm, the limb nearly twice as long as the claw, acute at the apex. Filaments 3-5 mm; anthers 1-1.5 mm. Fruit a capsule 6-8 mm, opyriform, not glandular-punctate except occasionally at the apex, remaining intact.

Distribution: Endemic to Greece: Crete, Prefecture of Chania, island of Elafonisos and opposite seashore.

Status: Endangered. Composed of small numbered populations in sandy places between rocks.

Threats: Tourist activities, agricultural expansion.

Conservation measures taken: The locality is protected as part of an archaeological site. It is registered in Bern Convention, in Directive 92/43 EEC (Natura 2000 code: 1842) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Heywood, V. H. 1980. *Androcymbium* Willd, Vol.5, p.21. In: Tutin T. G. et al (eds). Flora Europaea.

Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

Turland, N. J., L. Chilton and J. R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Anthemis glaberrima **(Rech.f.) Greuter**, Candollea 23: 148 (1968). =*Ammanthus glaberrimus* Rech. fil.

Description: Glabrous or sparsely hairy annual. Stems 2-30 cm, flexuous. Leaves pinnatisect to 3-fid or entire, more or less petiolate, fleshy. Segments distant, ovate-cuneate, more or less deeply divided or entire, lobes sub-obtuse to acute. Capitula up to 10 mm in diameter. Involucre adpressed-hairy, bracts obtuse, the outer ovate to oblong, the inner broadly elliptical, with wide hyaline margin. Ligules c. 2 mm, pink. Receptacle shortly conical, acute, scales lanceolate-cuneate to narrowly linear, acute, hyaline, rather shorter than florets, glabrous, caduceus. Achenes 1-1.25 mm, obsoletely ribbed, cylindrical-turbinate.

Distribution: NW Crete, endemic to the islands of Agria and Imeri Gramvousa.

Status: Small populations confined to calcareous rocks near the sea.

Threats: Over-grazing.

Conservation measures taken: Registered in Presidential Decree 67/81, Bern Convention and

in Directive 92/43/EEC.

Conservation measures proposed:
Estimation of the grazing levels that are appropriate for the plant's survival.
Cultivated material should be propagated for possible re-introduction.

Selected references:
Christodoulakis, D., E. Economidou and Th. Georgiadis. 1991. Geobotanische Studie Der Grabusen-Inseln (Sudagais, Griechenland). Bot. Helv. 101: 53-67.
Fernandes, R. 1976. Anthemis L. Vol.4, p.159. In: Tutin, T. G. et al. (eds). Flora Europaea.
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Turland, N. J., L. Chilton and J. R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London

Asyneuma giganteum **(Boiss.) Bornm.**, in Beih. Bot Centr. 38(2): 341 (1921) = *Podanthum giganteum* Boiss., Fl. Or. 3: 946 (1875).

Description: Monocarpic, erect, to 120 cm, glabrous. Stem simple, 1-2 cm diameter with rosette and cauline leaves crowded in lower part. Basal leaves lanceolate, to 6x3 cm, acute, irregularly crenate-serrate, undulate, narrowed into a long (10 cm) petiole. Flowers in clusters of 5-6, forming a dense, to 60 cm, spicate inflorescence. Pedicels 6 mm, curved upwards after anthesis. Stigmas 3. Capsule globose, 5x5 mm, opening by 3 median pores. Seeds broad ellipsoid, (flattened, 1.5 x 1.2 mm), light brown, shiny.

Distribution: Endemic to Greece: Known from the island of Rhodos, Mt Profitis Ilias near Salakos c. 600 m, the adjacent islet of Chalki, on limestone cliffs, and the island of Karpathos, Kalilimni 1150 m.

Status: Vulnerable. Only small scattered populations occur.

Threats: Collecting, over-grazing.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1748) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Damboldt, J. 1978. *Asyneuma* Griseb. & Schenk, Vol.6, p. 70-71. In: Davis P. H. et al. (eds). Flora of Turkey and the East Aegean islands.
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Turland, N. J., L. Chilton and J. R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Bupleurum capillare **Boiss. & Heldr.**, in Boiss. Diagn. Pl. Or. Nov. 3: 82 (1856).

Description: Slender annual up to 75 cm. Leaves narrow, bracts longer than the ray, narrowly lanceolate, straw-coloured, margin broadly scarious, entire, veins wide, yellow or brownish-yellow, ray 1.

Distribution: Greek Endemic: In lower areas of mountain Parnassos, between Arachova and Livadi, at the margins of vineyards.

Status: Endangered: Only few small-numbered populations exist.

Threats: Modern agricultural methods.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1605) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Protect the site from damaging land use changes.
2. If the population is large enough to support collecting, material should be brought into cultivation for reintroduction, if appropriate.

Selected references:
Boissier, E. 1856. *Bupleurum capillare*. Diagnoses Plantarum Orientalium Novarum Series II(2): 82.
Boissier, E. 1872. *Bupleurum capillare*. Flora Orientalis 2: 841.
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Tutin, T. G. 1968. *Bupleurum L.* Flora Europaea 2: 347.

Bupleurum kakiskalae **Greuter**, Bauhinia 3: 250-251 (1967).

Description: Monocarpic perennial. Leaves 15-30, oblanceolate up to 25 cm long. Fertile stems up to 1 m tall, bearing a loose freely-branched panicle of umbels each with 4-6 rays. Bracts and bracteoles 5-9 nerved herbaceous, c. 3 mm long obtuse or blunt, ligulate or spathulate. Petals yellow, ovaries pruinose, smooth.

Distribution: Endemic to Crete: province of Sfakia supra hiatum Kakiskala prope fontem Linoseli, 1450 m.

Status: Endangered: Known from a single locality. In 1971 only 4 or 5 individuals could be found. A thorough search in 1989 revealed 15 plants but all were sterile.

Threats: Reproductive collapse, rock falls.

Conservation measures taken: Practically none, despite the fact that it is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1606) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. A detailed search should be made to locate all plants and any further populations which may exist in the area.
2. Material should be brought into cultivation and propagated for study and, if required, for re-introduction.
3. Continuous monitoring of the population in nature and considered necessary.

Selected references:
Greuter, W. 1967. Beitrage zur Flora der Sudagais 8-9. Bauhinia 3: 243-254.
Lucas, G. and H. Synge. 1978. The IUCN plant red data book.
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Carex acuta L., Sp. Pl. 987 (1753). = *Carex panormitana* Guss.,

Description: Somewhat caespitose perennial with creeping rhizome. Stems up to c. 100 cm. Scales and basal leaf sheaths brown, not fibrillate when splitting. Leaves 4-6 mm wide, equalling stems. Bracts conspicuous, the lower one exceeding inflorescence. Female spikes 3-4, 3-8 x 0.5 cm, sessile, the upper ones often male at apex, the lower often distant and somewhat nodding: male spikes 2-3. Glumes lanceolate, blackish with yellowish midvein. Urticles c. 4 mm, elliptic, wider but usually shorter than glumes, flattened, veined, greenish to pale brown, with beak 0.2-0.4 mm. Stigmas 2.

Distribution: Europe to W. Asia and N. Africa. Greece: Dytiki Makedonia, Prefecture of Kastoria, Mt Grammos (Epano Arena), Ipeiros, Prefecture of Ioannina, NW of Metsovon, near Katara Pass and Mt Timfi.

Status: No information. Occurring in four populations in Greece, on the margins of its total distribution area.

Threats: No specific threats have been identified yet.

Conservation measures taken: Practically none. Registered in Directive 92/43/EEC (Natura code: 1897), IUCN.

Conservation measures proposed:
1. Survey of its population in the total area of its distribution to be decided if any measures are necessary.

Selected references:
Hartvig, P. 1991. *Carex* L. Vol.2, p. 863-864. In: Strid A. and K. Tan (eds). Mountain Flora of Greece.

Centaurea heldreichii **Halacsy**, Bull. Herb. Boiss. 6: 573 (1898). = *Centaurea alba* L. subsp. *heldreichii* (Halacsy) Dostal, Bot. Jur. Linn. Soc.71: 205 (1976).

Description: Perennial. Stems 30-60 cm, caespitose, paniculately branched. Leaves adpressed-white-tomentose; lower 2-pinnatisect, with linear-oblong segments. Involucre 13-20 mm in diameter, ovoid-globose; appendages up to 8 mm in diameter, covering bracts, orbicular, white, semi-pellucid, with large, triangular, brownish-black or black central spot, the margin wide, pellucid, denticulate-fimbriate, the apex mucronate. Florets pale purple. Achenes c. 4mm; pappus as long as or somewhat longer than achene.

Distribution: Greek Endemic: Prefecture of Aetolia-Akarnania, mountain Varasova, growing on limestone cliffs near the sea, mainly by the village Kryoneri from 0 to 50 m.

Status: Endangered. Occurring in very small number of individuals, only in one population.

Threats: Over-collecting. Genetic isolation.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1770) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Georgiadis, Th. 1980. Contribution à l' étude phylogenetique du genre *Centaurea* L. (Section *Acrolophus* (Cass) DC.) en Grèce. These, Univ. de Provence-Aix Marseille I. 286 p.

Centaurea kalabakensis **Freyn & Sint.**, Bull. Herb. Boiss. 5: 784 (1897).

Description: Perennial, stems 25-50 cm, erect, branched above. Leaves somewhat scabrid, green, glabrous, lower lyrate, with segments c. 2 mm wide. Capitula solitary. Involucre 14 x 8-10 mm, appendages pale brown, auriculate, with 4-6 fimbriae on each side and an apical spine c. 3 mm. Florets pink. Pappus as long as or longer than achene.

Distribution: Greek Endemic: Near Kalambaka and Makedonia in Pella Prefecture.

Status: Confined to two localities. In Makedonia 30-40 plants were found in 1981.

Threats: The use of herbicides.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1776) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Ensure that the sites are protected from destruction and damage.
2. Propagate wild collected stocks for re-introduction, if appropriate.
3. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Dostal, J. 1976. *Centaurea* L., Vol .4, p. 274. In: Tutin, T. G. et al. (eds). Flora Europaea.
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

Centaurea lactiflora **Halacsy**, Bull. Herb. Boiss. 6: 601 (1898).

Description: Biennial. Stems 30-40 cm, erect. Leaves with somewhat arachnoid indumentum and scabrid, lower pinnatisect. Capitula solitary. Involucre 10x5-6 mm, oblong-ovoid, appendages with an erecto-patent apical spine 2-3 mm. Florets white. Pappus c. half as long as achene.

Distribution: Greek Endemic: Dry roadsides and field margins, near the village of Koniskos, 15 km E of Kalambaka.

Status: Endangered: Only a small-numbered population confined to a very small area.

Threats: Road widening.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1778) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Evaluate numbers of plants remaining in the wild.
2. Protect all sites from further destruction and damage through the introduction of planning controls and/or the establishment of protected areas.
3. Propagate wild collected stocks for re-introduction, if appropriate.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Dostal, J. 1976. *Centaurea* L. Vol. 4, p.281. In: Tutin, T. G. et al. (eds). Flora Europaea.
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

***Centaurea megarensis* Halacsy & Hayek**, in Hay. *Cent. exs. crit.* no.29. = *Centaurea attica* Nyman subsp. *megarensis* (Halacsy & Hayek) Dostal, Bot. Jur. Linn. Soc.71: 198 (1976).

Description: Stems with short branches above. Leaves with adpressed arachnoid indumentum scabrid; segments ovate-lanceolate. Involucre 14-16 x 8-9 mm; appendages not covering the bracts, rather dark brown, auriculate, with erect or erecto-patent apical spine 3-5(7) mm. Florets pink. Pappus c. ½ as long as achene.

Distribution: Greek Endemic: Prefecture of Attiki, on mountain Gerania, close to Megara.

Status: Endangered. Occurring in very small number of individuals, only in one population.

Threats: Over-collecting, over-grazing.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1806) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Georgiadis, Th. 1980. Contribution à l' étude phylogenetique du genre *Centaurea* L. (Section *Acrolophus* (Cass) DC.) en Grèce. These, Univ. de Provence-Aix Marseille I. 286 p.
Akeroyd, J. R. 1992. *Centaurea attica* Nyman ssp. *megarensis* (Halacsy & Hayek) Dostal in Morgan, V. & Leon, C. (eds) Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Dostal, J. 1976. *Centaurea* L., Vol.4, p.275. In: Tutin, T. G. et al. (eds). Flora Europaea.

Centaurea niederi **Heldr.**, Ann. Sci. Nat. ser. 4, 13:380 (1860).

Description: Perennial. Stems 30-50 cm, numerous, erect or ascending, sparingly paniculately branched, whitish-tomentose. Leaves whitish-tomentose; lower 2- pinnatisect, the lateral segments oblong to broadly linear, acute, upper-1 pinnatisect. Capitula solitary. Involucre 18-20 mm, ovoid globose; appendages covering the bracts, pale brown, the apical spine 2-2,5 mm longer than the fimbriae. Florets purple. Pappus 11/2 times as long as achene.

Distribution: Greece: Prefecture of Aetolia-Akarnania, mountain Arakinthos, from the gorge of Klissoura, before Messolongion, south to the estuary of Evinos river. Prefecture of Achaia, in the area of Kalogria, on the calcareous rocks of Black Mountains.

Status: Endangered. Occurring in very small number of individuals, only in three populations.

Threats: Over-collecting.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1780) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Georgiadis, Th. 1980. Contribution à l' étude phylogenetique du genre *Centaurea* L. (Section *Acrolophus* (Cass) DC.) en Grèce. These, Univ. de Provence-Aix Marseille I. 286 p.

Centaurea peucedanifolia **Boiss. & Orph.**, in Boiss. Fl. Or. 3: 648 (1875).

Description: Biennial. Stems 40-60 cm, branched from about the middle. Leaves green, scabrid-pubescent, glandular punctate; lower 2-pinnatisect, the lobes up to 2 mm wide, narrowly lanceolate. Capitula solitary. Involucre 12-14 x 7-9 mm. appendages brown, with slender apical spine 1.5 mm, the fibriae 4-5(-6) on each side, as long as the spine. Florets pinkish-yellow. Pappus about as long as the achene

Distribution: Endemic to Greece: Kentriki Makedonia, Prefecture of Chalkidiki, Peninsula of Athos, near Daphni.

Status: Endangered. Occurring in only one population, prospering by the side of the road just before the port of Daphni.

Threats: Tourist and domestic activities. Over-collecting. Genetic isolation.

Conservation measures taken: Practically none. Registered in Directive 92/43/EEC (Natura code: 1799), European Red Data list (1991), Bern Convention and Presidential Decree 67/1981 of the Greek State

Conservation measures proposed:
1. Prevent any damage to its habitat.
2. Continuous monitoring of the population in nature.
3. Support its propagation by restocking it from cultivated material, if necessary.

Selected references:
Dostal, J. 1976. Centaurea L. Vol. 4, p.279. In: Tutin, T.G. et al. (eds). Flora Europaea.

***Centaurea princeps* Boiss. & Heldr.**, in Boiss. Diagn. ser. 2, 6:111 (1859).
= *Centaurea alba* l. var. *princeps* (Boiss. & Heldr.) Boiss., Fl. Or. 3:621 (1875).
= *Centaurea alba* l. ssp. *princeps* (Boiss. & Heldr.) Gugler, *Cent.* Ungar. Nat.-Mus.:31 (1907).

Description: Biennial. Stems 10-20 cm, much-branched from the base, with erect branches. Leaves viscid, grandular-punctate; lower 2- pinnatisect, with linear-lanceolate, entire or dentate segments. Involucre 20-25 mm in diameter, globose; appendages orbicular to ovate, covering bracts, up to 10 mm in diameter, cucullate-convex, with blackish-brown central spot, the margin wide, hyaline, white, denticulate, the apex aristate. Florets purplish-white. Achenes 3-3.5 mm; pappus c. 1-1.5 mm.

Distribution: Endemic to Greece: Mountain Timfristos, on limestone cliffs and screes, c.1500-1850 m.

Status: Endangered. The population consists of only a few individuals that grow near to quarry workings.

Threats: Quarrying.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1830) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its remaining sites.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Akeroyd, J.R. 1992. *Centaurea alba* L.ssp. *princeps*: In: Morgan V. and C. Leon (eds). Datasheets of flora species for revision of Appendix I of the Bern Convention.Nature & Environment, No 63. Council of Europe, Publishing and Documentation Service. Strasbourg.

Gamal-Eldin, E. and G. Wagenitz. 1991. *Centaurea* L. Vol. 2, p. 504-505. In: Strid, A. and K. Tan (eds). Mountain Flora of Greece.

***Cephalanthera cucullata* Boiss. & Heldr.**, in Boiss. Diagn. Pl. Or. Nov. 2(13): 12 (1853).

Description: Stem 15-30 cm, erect, glabrous, with c. 4 whitish basal sheaths. Leaves 2.5-6 cm oblong-lanceolate, acute, cucullate. Stem 4-15 cm up to 24-flowered. Flowers white or pinkish all but the lowest exceeding the bracts. Outer perianth segments 14-20 mm, oblong-lanceolate, acute, inner lateral 12-16 mm, ovate-oblong, subobtuse or acute. Labellum slightly shorter than other perianth segments. Hypochile with rounded lateral lobes, epichile chordate, subacute, with 3-6 ridges, spur 1-2 mm, conical, obtuse. Ovary glabrous.

Distribution: Endemic to Crete, mountain woods and scrub, on limestone between 700-1500 m.

Status: Restricted to 7 localities on the 3 main mountains of Crete with a total population probably less than 300 plants.

Threats: Over-grazing, water abstraction.

Conservation measures taken: Registered in Presidential Decree 67/81, Bern Convention and in Directive 92/43/EEC. One site above Kamares on Mount Idi, has been fenced, but this protects only 15 plants from grazing animals.

Conservation measures proposed:
1. Fence off plots to protect the surviving plants, allow vegetation to recover and give the species a chance to flower and set seeds.
2. Establish small local nature reserves with partial or total exclusion of grazing animals. Monitor carefully remaining populations to assess the success of management plan introduced.
3. Support research to perfect micropropagation techniques so that stocks are available to reinforce the wild populations as necessary.

Selected references:
Moore, D. M. 1980. *Cephalanthera* L.C.M. Richard, Vol.5, p.328. In: Tutin, T. G. et al (eds). Flora Europaea.

Morgan, V. and C. Leon (eds). Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

***Consolida samia* P. H. Davis**, in Notes R.B.G. Edinb. 26: 172 (1965).

Description: Annual. Stems 4-6 cm. Indumentum spreading, tomentellous. Flowers pale lilac with the spur nearly 2 x sepals. Posterior sepal 9-10 mm, spur 15-17 mm. Closely allied to *C. hellespontica* (Boiss.) Chater, from which it is eco-geograhically separated.

Distribution: Greek Endemic: East Aegean island of Samos, on mountain Kerkis, steep screes of limestone, c. 800 m.

Status: Endangered: Only 20 plants remaining in 1975.

Threats: Over-collecting and genetic isolation. Specific threats have not yet been determined by any study.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1478) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. More recent field information is required about this plant and the threats to it before conservation actions can be planned.
2. Material should be brought into cultivation for re-introduction if required.

Selected references:
Davis, P. H. 1965. *Consolida* (DC.) S. F. Gray, Vol.1, p.133. In: Davis, P. H. et al. (eds). Flora of Turkey and the East Aegean islands.

Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

Convolvulus argyrothamnos **Greuter**, Bauhinia 3: 251 (1967).

Description: Shrubby, silvery-hairy perennial. Stems arcuate-pendent straggling, slender up to 80 cm long, leaves linear. Flowers in clusters at the tips of the stems, corolla funnel-shaped white or pink, calyx 7 mm long.

Distribution: Endemic to Crete. Between Hristos and Metaxohori, gorge 0.75 km SE of Rokka, 150-175 m, on limestone cliffs.

Status: The first population contains only 3 to 4 plants. A careful count of the Rokka population showed 31 plants to be present.

Threats: The plant's tiny populations make it especially vulnerable to reproductive collapse or accidental disturbance.

Conservation measures taken: Registered in Presidential Decree 67/81, Bern Convention and in Directive 92/43/EEC. Wild origin material is in cultivation in Iraklion and the UK.

Conservation measures proposed:
1. Undertake field survey to evaluate the true extent of the species and conservation requirements.
2. Cultivated material should be increased, and distributed among botanical gardens, for possible reintroduction, where appropriate.

Selected references:
Greuter, W. 1967. Beitrage zur Flora der Sudagais 8-9. Bauhinia 3: 243-254.
Morgan, V. and C. Leon (eds). Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Stace, C. A. 1972. *Convolvulus* L. Europaea Vol.3, p.80. In: Tutin, T. G. et al. (eds). Flora Europaea.
Turland, N. 1992. Floristic notes from Crete. Bot. Jour. Linn. Soc. 108: 345-357.
Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Crepis crocifolia **Boiss. & Heldr.**, Diagn. Pl. Or. Nov. 1: 14 (1846-1847).

Description: Perennial; stems up to 25 cm, with a few slender branches. Leaves glabrous; basal 4-8 x 0,2-0,4 cm, numerous, linear or the lowest narrowly oblanceolate, acute or somewhat obtuse, gradually narrowed to the petiole, entire; lowest cauline like the basal, the remainder remote, gradually reduced or bract-like. Capitula 1-few. Involucre c. 10mm; bracts linear-lanceolate, acute, the outer c. 1/3 as long as inner, sparsely canescent-tomentulose. Achenes 5-5.5x0.6-0.7 mm, yellowish, fusiform, sometimes slightly curved, strongly attenuate at apex, c. 20-striate.

Distribution: Endemic to Greece: S. Peloponnisos, Prefecture of Lakonia, Endemic on mountain Taygetos, in the areas of Mavrovouna, Profitis Ilias, Xerovouna, Megala Zonaria, from 1450 - 2400 m.

Status: Endangered. Occurring in small numbered and scattered populations.

Threats: Over-grazing, over-collecting, genetic isolation.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1786) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Babcock, E. B. 1947. The genus *Crepis*. L. Part two. Systematic treatment. Univ. Calif. Publ. Bot. 22: 199-1030.
Kamari, G. 1991. *Crepis* L. Vol. 2, p.591. In: Strid, A. and K. Tan (eds.). Mountain Flora of Greece.

Cypripedium calceolus **L.**, Sp. Pl. 951 (1753).

Description: Perennial with long rhizome. Stem 15-50 cm, glandular-pubescent, with brown basal sheaths. Leaves 3-4, 10-17 x 3.5- 7 cm, elliptical to ovate oblong, acute to acuminate, sparsely puperulent. Flowers 1(-3), subtended by large, leaf-like bract. Perianth segments 6-9 cm, reddish brown, rarely outer median 3.5-5 cm, ovate to elliptic-lanceolate, the lateral forming a slightly narrower, downward-pointing bifid segment; inner 4-6 cm, asymmetrical, linear lanceolate, acuminate. Labellum c. 3 cm, shorter than outer perianth-segments, obovoid, rounded at apex, pale yellow, with reddish spots inside.

Distribution: N., C., E. & S.E. Europe, westwards to Norway and S.W. Alps. In Greece, it prospers in Anatoliki Makedonia, Prefecture of Drama, Mountains Orvilos and Rhodopi.

Status: Endangered. Only few, scattered individuals occur in Greece, on the margin of its total distribution area.

Threats: Over-collecting.

Conservation measures taken: Practically none. Registered in Directive 92/43/EEC (Natura code: 1902) and Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to its habitat.
3. Continuous monitoring of its population in nature.
4. Support the propagation of wild material, by restocking it from cultivated material, if necessary.

Selected references:
Moore, D.M. 1980. *Cypripedium L.* Vol 5, p.326. In: Tutin, T.G. et al. (eds). Flora Europaea.
Alkimos, A. The Orchids of Greece.72 p.

Globularia stygia **Orph. ex Boiss.**, Diagn. Pl. Or. Nov. 3: 60 (1859).

Description: Dwarf shrub with slender, creeping woody stems rooting at the nodes, and with subterranean stolons. Rosette-leaves suborbicular, obtuse, rarely weakly emarginate, petiolate. Capitula subsessile; involucral bracts numerous, oblong-lanceolate, acuminate. Calyx almost actinomorphic; teeth narrowly lanceolate, subulate at apex.

Distribution: Endemic to Greece: Peloponnisos, on mountains Chelmos and Kyllene in the north, and mountain Taygetos in the south, from 1300 to 2300 m.

Status: Endangered. Occurring in small number of individuals.

Threats: Over-collecting.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1432) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Strid, A. 1991. *Globularia* L. Vol. 2, p. 60-62. In: Strid, A. and K. Tan (eds). Mountain Flora of Greece

Hypericum aciferum **(Greuter) N.K.B. Robson**, Feddes Repert. 74: 23 (1967). = *Elodes acifera* Greuter

Description: Low procumbent shrub. Leaves 5-12 mm, narrowly linear-spathulate, coriaceous somewhat glaucous, not imbricate. Flowers (1) 3, pedicellate. Sepals sub-erect, elliptical. Petals c. 9 mm, deciduous. Stamens persistent. Ovary with 2 ovules in each loculus.

Distribution: Endemic to Greece: Crete, Prefecture of Chania, west of Chora Sfakion, Dhomata gorge 0 - 50 m, on calcareous cliffs and boulders near the sea.

Status: Endangered. Probably confined to only three sites in a very small remote area. At least 50 individuals were counted by Turland in the Tripiti gorge.

Threats: Tourist activities. Genetic isolation.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1433) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Robson, N.K.B. 1968. *Hypericum* L. Vol 2, p. 264. In: Tutin, T.G. et al. (eds). Flora Europaea.
Turland, N. 1992. Floristic notes from Crete. Bot. Jour. Linn. Soc. 108: 345-357.
Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Iberis runemarkii **Greuter & Burdet**, Willdenowia 15: 68 (1985). = *Iberis arbuscula* Runemark, Bot. Not. 116 : 32 (1963).

Description: Woody perennial, leaves toothed, glabrous, flowers in condensed corymbs white to lilac. Very closely related to the W. Mediterranean *I. gibraltarica* L. but differing in fruit shape.

Distribution: Endemic to the island of Ikaria, 3 km North of Praya, on limestone cliffs c. 600 m.

Status: Vulnerable: Only one population is known.

Threats: The plant's tiny population size make it particularly vulnerable to fortuitous damage or destruction.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1495) and in the Presidential Decree 67/81 of the Greek State

Conservation measures proposed:
1. More field information is required about this plant and the threats to it before conservation actions can be planned.
2. Material should be brought into cultivation for reintroduction if required.
3. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Hedge, I. C. 1965. *Iberis* L., Vol. 1, p. 310. In: Davis, P. H. et al. (eds). Flora of Turkey and the East Aegean islands.

Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

Linaria hellenica **Turrill**, Kew Bull. 10: 356 (1955).

Description: Annual, glabrous below, glandular-pubescent in inflorescence; steams c. 50 cm, erect, branched. Leaves 15-35 x 1-2,5 mm, linear to linear- oblong, obtuse, mostly alternate. Racemes with 10-20 flowers, very lax in fruit; pedicels up to 15 mm, erect. Calyx 4.5-5 mm; lobes oblong, subequal. Corolla 13-15 mm, yellow; spur 6-7 mm. Capsule c. 5 mm. Seeds c. 0.7 mm, reniform, strongly rugose, black.

Distribution: Endemic to Greece: S. Peloponnisos, Prefecture of Lakonia, in Maleas Peninsula (Gulf of Neapolis) and the adjacent island of Elafonisos.

Status: Endangered. Occupying a very restricted coastal area of c. 20km^2, in a very changeable sandy habitat.

Threats: The habitat face the immediate and potential danger of destruction through development.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1718) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.

4. Continuous monitoring of the population in nature is considered necessary.

Selected references:

Turrill, W.B. 1955. Some new plants from Greece. Kew Bull. 10: 356.
Contandriopoulos, J. and A. Yiannitsaros. 1975. Distribution geographique, ecologie et cytotaxinomie du *Linaria hellenica* Turrill (Scrophullariaceae). Candollea 30: 293-300.
Iatrou, G. 1986. Contribution to the study of the Endemic Flora Peloponnisos. Doctoral Dissertation, Univ. of Patras. 310 p. (In Greek with English summary).

***Micromeria taygetea* P.H. Davis**, in Kew Bull. 4: 110. 1949 = *Satureja taygetea* (P.H. Davis) Greuter & Burdet Willd. 14: 306 (1984).

Description: Stems 4-10 cm, erect, simple or branched, whitish -velutinus. Leaves up to 10 x 6 mm, broadly ovate, obtuse, entire, whitish - velutinus, somewhat punctate. Verticillasters with 2-10 flowers, dense, shortly pendunculate, the lower shorter than the subtending leaves. Calyx 2-3 mm, puberulent-velutinus, glabrous in throat; teeth c. (as long as tube, triangular, equal. Corolla c. 6 mm, purplish - violet. Nutlets obtuse.

Distribution: Endemic to Greece: S. Peloponnisos, Prefecture of Lakonia, on mountain Taygetos, over the village of Trypi, c. 1500 m, and on the area of Mavrovouna on the same mountain.

Status: Endangered. Occurring, in small number of individuals, only in two populations.

Threats: Over - collecting, genetic isolation.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1697) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:

1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:

Baden, C. 1991. *Micromeria* Bentham. Vol. 2, p. 132-133. In: Strid, A and K. Tan. (eds). Mountain Flora of Greece.
Davis, P. H. 1949. *Micromeria taygetea* sp. nov. Kew Bull. 4: 110.

***Nepeta argolica* Bory & Chaub. ssp. *dirphya* (Boiss.) Strid & Kit Tan**, in: C. Baden, 1991. *Nepeta* L., 2:112. In: Strid, A. and K. Tan (eds) Mountain Flora of Greece.
= *N. dirphya* (Boiss.) Heldr. ex Halacsy, Consp. Fl. Gr. 2: 538 (1902).
= *N. sibthorpii* Bentham ssp. *dirphya* (Boiss.) Baden, in Opera Bot. 93: 22 (1987).

Description: Flowering stems 20-40 cm, erect or ascending, branched, grey, tomentose to villous, hairs deflexed to patent. Leaves 1.5-2.5 x 0.9-1.5 cm, ovate, crenate, tomentose to lanate above, villous to lanate between veins beneath, grey to grey-green. Spikes 2-4 cm, verticillasters 15- to 25-flowered. Lower outermost bracteoles 4-6 x 0.7-1 mm narrowly elliptic, acuminate, puberulent, entire with narrow scarious margins. Calyx 5.5 - 7mm puberulent, hairs adpressed. Teeth 2-3 mm narrowly triangular to narrowly oblong with acuminate apex, margins narrowly scarious, ciliate. Corolla 9 - 11 mm. Nutlets 2 - 2.5 x 1

mm, oblong tuberculate.

Distribution: Endemic to Greece: Euboea, mountain Dirphys and mountain Xerovouni. Screes rock crevices and rocky ground on limestone, c. 1100 - 1600 m.

Status: Vulnerable. Occurring in scattered small-numbered populations.

Threats: Over-grazing, tourist activities, forest-road constructions.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1683) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Baden, C.1987. Biosystematic studies in the *Nepeta sibthorpii* group (Lamiaceae) in Greece. Opera Bot. 93:1-54.

Baden, C. 1991. *Nepeta* L., Vol. 2, p. 112. In: Strid, A and K. Tan. (eds). Mountain Flora of Greece.

Morgan, V. and C. Leon (eds).1992. Datasheets of flora species for revision of Appendix I of the Bern Convention.Nature & Environment, No 63. Council of Europe, Publishing and Documentation Service. Strasbourg.

Nepeta sphaciotica **P.H. Davis**, in Notes Roy. Bot Gard. Edinburgh 21: 136 (1953).

Description: Flowering stems 5-20 cm viscid, glandular-pubescent and villous to tomentose, hairs patent. Blade of middle leaves 12-20 x 9-11 mm, ovate-oblong, chordate at base, obtuse, crenate, glandular-pubescent, petiole 2-5 mm. Inflorescence 2-3 cm sub-capitate, verticillasters 6- to 12-flowered. Lower outermost bracteoles (5)6-8 x 0.9-1.1 mm, elliptic-lanceolate, glandular-puberulent and crispate-villous, with narrow scarious margins. Calyx 7-9 mm, with similar indumentum, teeth 3-4 mm. Corolla 10-12 mm, white with faint pinkish-purple spots. Nutlets 2- 2.3 x 1-1.2 mm, tuberculate.

Distribution: Endemic to Greece. Crete: Prefecture of Chania, mountain Svourichti in Lefka Ori. Rocky slopes and stabilised screes, 2200-2300 m.

Status: Endangered: Known only from the type locality. The whole population consists of only c. 100 individuals.

Threats: Over-grazing by sheep and goats which prevent fruit-setting.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1684) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Fence off plots to protect the surviving plants. This should be done urgently to allow the population to recover and give a chance to the individual plants to flower and set seeds.
2. For a long-term conservation, small local natural reserves should be established, with partial or total exclusion of grazing animals.

3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous and very careful monitoring of the population in nature is considered necessary, in order to find the best way of management.

Selected references:

Baden, C. 1987. Biosystematic studies in the *Nepeta sibthorpii* group (Lamiaceae) in Greece. Opera Bot. 93: 1-54.

Baden, C. 1991. *Nepeta* L., Vol. 2, p. 116. In: Strid, A and K. Tan. (eds). Mountain Flora of Greece.

Morgan, V. and C. Leon (eds).1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature & Environment, No 63. Council of Europe, Publishing and Documentation Service. Strasbourg.

Origanum dictamnus **L.**, Sp. Pl. 589 (1753).

Description: White-lanate dwarf shrub. Stems up to 20 cm. Leaves 13-25 x 12-25 mm, broadly ovate to orbicular, entire, lanate. Lower leaves shortly petiolate. Spicules in groups of 3-10, dense, ovoid or oblong, arranged in opposite pedunculate pairs, in lax panicles. Bracts 7-10 mm, conspicuous, purple, longer than calyx. Upper lip of calyx subentire, the lower shallowly toothed. Corolla pink, the tube twice as long as the calyx tube.

Distribution: Greek Endemic: island of Crete, distributed almost all over the island.

Status: Many populations are known.

Threats: Over-collecting, fires.

Conservation measures taken: Registered in Presidential Decree 67/81, Bern Convention and in Directive 92/43/EEC.

Conservation measures proposed:
Collection of wild plants should be strictly controlled.
Note: The plant is cultivated for commercial purposes.

Selected references:

Fernandes, R. and V.H. Heywood. 1972. *Origanum*, Vol. 3, p. 172. In: Tutin, T.G. et al. (eds). Flora Europaea.

Ietswaart, J. H. 1980. A taxonomic revision of the genus *Origanum* (Labiatae). Leiden University Press.

Morgan, V. and C. Leon (eds) 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Paeonia clusii **F. C. Stern ssp.** *rhodia* **(W. T. Stearn) Tzanoudakis**, Kytt. Meleti Gen. Paeonia Ell.25 (1977).
= *Paeonia rhodia* W. T. Stearn, Gard. Chron., ser.3, 110: 159 (1941).

Description: Stems 30-40 cm. Lower leaves with oblong, elliptic to lanceolate, acute segments, glabrous. Flowers (7) 8-10 (12) cm in diameter, petals white, sepals 3-4 whitish-green. Stamens 1.4 cm. Follicles 2-3, tomentose.

Distribution: Greek Endemic: East Aegean island of Rhodos.

Status: Vulnerable. Nine localities, five of which are on the slopes of mountain Profitis Ilias.

Threats: Habitat destruction, over-collecting.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1481) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Profitis Ilias should be established as a nature reserve and full protection should be given to its rare species.
2. Wild origin material should be propagated and increased, for restocking the wild populations as appropriate.

Selected references:
Akeroyd, J. R. 1993. *Paeonia* L. Vol. 1. p. 293. In: Tutin, T. G. et al. (eds). Flora Europaea Second Edition.
Carlstr, M. A. 1987. A survey of the flora and phytogeography of Rhodos, Simi, Tilos and the Marmaris peninsula (SE Greece, SW Turkey). Lund.
Morgan, V. and C. Leon (eds) 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Tzanoudakis, D. 1977. A cytotaxonomic study of the genus *Paeonia* L. in Greece. Doctoral Dissertation, Univ. of Patras (In Greek with English summary).

Paeonia parnassica **Tzanoudakis**, Kytt. Meleti Gen. Paeonia Ell. 43 (1977).

Description: Stems 30-65 cm, pubescent. Lower leaves divided into 9-13 ovate to narrowly elliptical or lanceolate segments, densely pilose beneath, giving a greyish-green appearance. Ultimate segments acute or acuminate, entire. Flowers 8-12 cm in diameter, blackish-red. Filaments purplish. Follicles 2 or 3, tomentose.

Distribution: Greek Endemic: Mt Parnassos and Mt Elikon, 800-1300 m.

Status: Vulnerable: The populations are small and very localised.

Threats: Over-collecting.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1482) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Protect all sites from habitat damage and destruction.
2. Control collecting and encourage the use by horticulturists of artificially propagated material.

Selected references:
Akeroyd, J. R. 1993. *Paeonia* L. Vol. 1, p. 293. In: Tutin, T. G. et al. (eds). Flora Europaea Second Edition.
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Tzanoudakis, D. 1977. A cytotaxonomic study of the genus *Paeonia* L. in Greece. Doctoral Dissertation, Univ. of Patras (In Greek with English summary).

Phoenix theophrasti **Greuter**, Bauhinia 3: 243 (1967).

Description: Tree to 10 m. Stems slender, usually several. Leaves erect-arcuate, becoming pendent with age, subglaucous, median segments 30-50 cm, rigid, basal segments 8-15 x 0.8-1 cm. Sepals of staminate flowers 2-3 mm, triangular-acute, petals 6-7 x 2.5 mm. Petals of pistillate flowers as long as sepals, 2.5 x 4-4.5 mm obtuse. Fruit ellipsoid, (12-)14-16 x 7-11 mm, ripening yellowish-brown, fibrous.

Distribution: Crete: Hrisoskalitissa, 3 km SSW of Kato Perivolakia, upper part of small gorge to NW of Moni Toplou, Finikias valley W of Plakias, Moni Preveli gorge, Almiros river near Gazi, Agios Nikitas S of Ahendrias, Stalidha, Erimoupolis, Vai. (Also found in SW Anatolia)
Note: Palms resembling *P. theophrasti* have been observed on the East Aegean islands of Kalimnos, Nisiros and Simi. These records require confirmation, however, because they might prove referable to the related *P. dactylifera* L. which is occasionally planted in the Aegean region.

Status: Vulnerable: Known only from ten coastal localities.

Threats: Tourist activities, by cars driven into the centre of the grove. It is also at risk from drainage schemes.

Conservation measures taken: Practically none, despite the fact that is registered, in Directive 92/43/EEC (Natura 2000 code: 1896) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. At Vai, a management plan is needed to ascertain how the survival of the palm grove can be reconciled with the pressures from the tourists it attracts.
2. Fencing off an inner sanctum as a strict reserve.
3. The situation of the water table should be carefully studied.
4. Consideration should be given to declaring one or more of the other sites as a strict reserve.

Selected references:
Amaral Franco, J. 1980. *Phoenix* L. Vol. 5, p. 268. In: Tutin, T. G. et al. (eds). Flora Europaea.
Barclay, C. 1974. A new locality for wild *Phoenix* in Crete. Ann. Mus. Goulandris 2: 23-29.
Greuter, W. 1967. Beitrage zur Flora der Sudagais 8-9. Bauhinia 3: 243-254.
Tan, K. 1984. *Phoenix* L. 8: 39. In: Davis, P. H. et al. (eds) Flora of Turkey and the East Aegean islands.
Lucas, G. and H. Synge. 1978. The IUCN plant red data book.
Turland, N. 1992. Floristic notes from Crete. Bot. Jour. Linn. Soc. 108: 345-357.
Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Polygonum praelongum **Coode & Coolen**, in Notes R.B.G. Edinb.27: 215 (1967).

Description: Perennial with a stout woody stock. Stems ascending erect, ashy-glaucous like the leaves. Lower ochrae lacinate. Leaves linear to linear-elliptic, flat less than 5 mm broad. Perianth pink, c. 2 mm. exceeding the bracts, with rather sparse pink glands near the base.

Distribution: East Aegean: Kastellorizo (Megisti). Small islands around Megisti. Also known from Turkey: Antalya.

Status: Vulnerable: Limited to a small coastal area, especially on the small islands. The only genuine halophyte on Kastellorizo largely replacing the genus *Limonium*.

Threats: Over-grazing. No other specific threats have been proved by any specific field-work.

Conservation measures taken: Practically none. Registered in Directive 92/43/EEC (Natura code: 1440).

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Coode, M.J.E. and J. Cullen. 1967. *Polygonum* L. Vol. 2, p. 275. In: Davis, P. H. et al. (eds). Flora of Turkey and the East Aegean islands.
Greuter, W. 1979. The flora and phytogeography of Kastellorizo (Dhodhekanisos, Greece). 1. An annotated catalogue of the vascular plant taxa.

Silene holzmanii **Heldr. ex Boiss.**, Fl. Or. suppl. 91 (1988).

Description: Hairless annual, stems up to 40 cm, erect, unbranched. Leaves lanceolate, 2-3 cm long, in pairs. Flowers except the lowest one overlapping. Calyx green, somewhat inflated at flowering time, later papery and adpressed to the fruit. Petals small, dull-coloured, bi-lobed, limb scarcely exerted. Capsule indehiscent, 10-12 mm long, seeds echinate with parallel-sided spines.

Distribution: Endemic to Greece. E. Crete: Sitia, small islet in front of the bay of Vai, Kasos: Strongilo, Karpathos, Salamina: islet of Arpidoni, Cyclades: islets of Mikro Safrani, Avgo and Karavi, Tinos, Paros, Folegandros, Ios, East Aegean islands: Trypiti.

Status: Vulnerable: Restricted to tiny islands some of which are quite remote. It has evolved as part of a highly specific small island vegetation type.

Threats: Short-term grazing, tourism.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1459) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prohibit grazing on all islands where it grows.
2. If necessary exclude tourists from certain accessible islands especially near Attica and eastern Crete.
3. Propagate wild collected stocks for replenishing wild populations if appropriate.
4. It would be advisable for several of the islands on which *Silene holzmannii* occurs to be declared as reserves.

Selected references:
Chater, A. O., S. M. Walters and J.R. Akeroyd. 1993. *Silene* L. Vol. 1, p. 214. In: Tutin, T. G. et al. (eds). Flora Europaea.
Greuter, W. 1972. L' ecueil a *Silene holzmannii*, en Crete, et son peuplement vegetal. Saussurea 3: 157-166.
Greuter, W. 1973. Additions to the flora of Crete, 1938-1972. Ann. Mus. Goulandris 1: 15-83.
Greuter, W., R. Pleger and Th. Raus. 1983. The vascular flora of the Karpathos island group (Dodecanesos, Greece). A preliminary checklist. Willdenowia 13: 43-78.

Lucas, G. and H. Synge. 1978. The IUCN plant red data book.
Morgan, V. and C. Leon (eds). Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Raus, Th. 1989. Die Flora von Armathia und der Kleininseln um Kasos (Dodekanes, Griechenland). Bot. Chron. 9: 19-39.
Rechinger, K. H. 1943. Flora Aegaea. Denkschr. Akad. Wiss. Wien 105 (1).
Runemark, H. 1969. Reproductive Drift, a neglected principle in reproductive biology. Bot. Notiser 122: 90-129.
Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Silene orphanidis **Boiss.**, Fl. Or. 1: 651 (1867).

Description: Caespitose perennial forming large cushions, with numerous persistent dwarf shoots at the woody base. Flowering stems numerous, suberect, slender, 12-20 cm, scabridulous below, glabrous and viscid above. Basal leaves withered at anthesis. Middle cauline leaves 15-30 x 1-1.5 mm, linear lanceolate. Uppermost pair of leaves small, inserted very close to the base of calyx. Inflorescence 1 (-3) flowered. Calyx 23-30 mm, cylindrical to subclavate, purplish or sometimes whitish-green, glabrous; teeth ovate to broadly triangular, acute, with scarious margins. Petal limb 6-8 mm, bifid for c. 1/2, white above, purplish beneath; coronal scales 0.5-1 mm, rounded, claw 7.5-9 mm. Capsule 8-10 mm, ovoid, almost completely exerted from the calyx. Anthophore 18-22 mm, glabrous. Seeds reniform, c. 1 mm, laterally flattened, grooved on the back, with sub-acute tubercles on the dorsal ridges, reddish-brown.

Distribution: Greece: Endemic to Mt Athos, Kentriki Makedonia, Prefecture of Chalkidiki, found only on the summit area, 1700-2000 m.

Status: Endangered. Occurring in only one population.

Threats: Specific threats have not been identified yet. Probable threats are over-collecting and genetic isolation.

Conservation measures taken: Practically none. Registered in Directive 92/43/EEC (Natura code: 1463), European Red Data List (1991), Bern Convention and Presidential Decree 67/1981 of the Greek State. IUCN.

Conservation measures proposed:
1. Prevent any damage to its habitat.
2. Continuous monitoring of the population in nature.
3. Support the propagation of wild material, by restocking it from cultivated material, if necessary.

Selected references
Melzheimer, V. 1986. *Silene* L. Vol. 1, p. 162. In: Strid, A. (ed.). Mountain Flora of Greece.

Solenanthus albanicus **(Degen & Bald.) Degen & Bald.**, Magyar Bot. Lapok 2: 315 (1903).
= *Cynoglosum albanicum* Degen & Bald., in Nuovo Giorn. Bot. Ital. N.S. 6: 37 (1899).
= *Solenanthus pindicus* Alden ,in Bot. Not. 129: 306 (1976).

Description: Biennial 40-90 cm. Cauline leaves (3)6-12x(1.5)3-3.5 cm, ovate-lanceolate to ovate-rhombic, sessile. Pedicels 0-4 mm. Calyx 4-6 mm; lobes lanceolate. Corolla (6)7(8) mm, with invaginations at or below the middle; lobes narrowly ovate, acute. Stamens exerted;

filaments 10-11 mm. Nutlets 7 mm; glochidia large, interspersed with smaller ones.

Distribution: It prospers on high altitudes of the mountains of NW Greece and probably also in S. Albania. It is known from S. Pindos on mountain Kakardhitsa from 2050 to 2250 m and from N. Pindos on mountain Grammos and mountain Dhouskon. The latter is very close to the Greek-Albanian borders, hence could be present on either side.

Status: Vulnerable. Occurring in small number of individuals.

Threats: Specific threats have not yet been identified. Probable threats are over-grazing, over-collecting.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1671) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Alden, B.1976. Floristic reports from the high mountains of Pindos, Greece. Bot. Notiser 129: 297-321.

Strid, A. 1991. *Solenanthus* Ledeb, Vol. 2, p. 60-62. In: Strid, A. and K. Tan (eds). Mountain Flora of Greece

Symphytum davisii **Wickens ssp.** *cycladense* **(Pawl.) Stearn**, Ann. Musei Goulandris 7: 196 (1986).
= *Symphytum cycladense* Pawl., Fragm. Fl. Geobot. 17: 25 (1971).

Description: Plant with numerous basal leaves in a rosette, densely and rather softly villous-pubescent with setae and hooked hairs. Stem 5-20 cm, simple or scarcely branched. Lower leaves ovate to ovate-oblong, shortly petiolate, greyish beneath. Calyx 6-10 mm. Corolla 13-16.5 mm. Scales 1.6-4 mm, lingulate, stamens 2.6-4.3 mm, anthers 2-3 mm 4-6 times as long as wide.

Distribution: Greek Endemic: South Aegean region (Kardiotisa, Sikinos). Limestone rocks near the sea.

Status: Vulnerable. Only three populations are known to exist, but the plant is easily mistaken for a small form of *Symphytum anatolicum*.

Threats: No information exists, but because of its tiny population size the species is prone to extinction by fortuitous disturbances.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1672) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. More field information is required about the species distribution, frequency and the threats to its survival.
2. Wild origin material should be propagated and increased for re-introduction, if required.

Selected references:
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.
Pawlowski, B. 1972. *Symphytum* L. Vol. 3, p. 105. In: Tutin, T. G. et al. (eds). Flora Europaea.
Stearn, W. T. 1986. The Greek species of *Symphytum* (Boraginaceae). Ann. Mus. Goulandris 7: 175-220.

Veronica oetea **L.-(. Gustavsson**, in Bot. Not. 131: 22 (1987).

Description: Glandular-pubescent annual, stems 1-5 cm, erect, simple or with one basal branch. Leaves subsessile up to 7 x 2 mm, narrowly ovate to lanceolate, entire, glandular-ciliate, otherwise glabrous. Inflorescence a terminal raceme with (1-)3- 12 flowers. Lower bracts leaf-like, upper ones gradually smaller. Fruiting pedicels 3-6 mm, patent, upwardly curved below capsule. Calyx 4-lobed, fruiting sepals 1.5- 3mm elliptic. Corolla 1-2 mm in diameter colour unknown. Capsule 1.8- 2.6 x 1.8- 3.1 mm suborbicular, only slightly compressed, glabrous or sparsely glandular hairy, acutely emarginate. Style 0.2-0.4 mm. Seeds 40-60 per capsule, ellipsoid pale brownish, smooth to slightly tuberculate.

Distribution: Endemic to Greece: Prefecture of Fthiotida, mountain Oiti, muddy places by vernal pools, 1850- 1950 m.

Status: Endangered. Known only from two small melt-water pools.

Threats: Road constructions and bauxite mining.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1732) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Prevent uncontrolled collecting.
2. Prevent any damage to or destruction of its habitats. Practically, any further mining of bauxite and related road constructions should be directed away from the pools and their catchment area.
3. Support the propagation and increase of wild material, in botanical gardens and of seeds in seed-banks, for restocking the wild population if necessary.
4. Continuous monitoring of the population in nature is considered necessary.

Selected references:
Akeroyd, J. R. 1992. *Veronica oetea* L.(. Gustavsson. In: Morgan V. and C. Leon (eds). Datasheets of flora species for revision of Appendix I of the Bern Convention.Nature & Environment, No 63. Council of Europe, Publishing and Documentation Service-Strasbourg.
Fischer, M. A. 1991. *Veronica* L., Vol. 2, p. 224-225. In: Strid, A. and K. Tan (eds). Mountain Flora of Greece.
Gustavsson, L. 1978. Floristic reports from the high mountains of Sterea Ellas, Greece. 1. Bot. Notiser 131: 22.

Zelkova abelicea **(Lam.) Boiss.**, Fl. Or. 4: 1159 (1879).
= *Zelkova cretica* (Sm.) Spach.

Description: Shrub or small tree 3-5 m. Twigs slender, hispid. Leaves up to c. 2.5 cm, subsessile, ovate, obtuse, coarsely 7- or 9-dentate. Flowers white, scented. Drupe pubescent.

Distribution: Endemic to Crete, where it grows on rocky slopes on mountains between 900-1700 m.

Status: Small populations. Due to pressures on the plants only about 50 of the remaining individuals have the tree form.

Threats: Small populations make the species vulnerable to disturbance. The loss of the tree form will be a serious genetic impoverishment.

Conservation measures taken: Practically none, despite the fact that is registered in Bern Convention, in Directive 92/43/EEC (Natura 2000 code: 1426) and in the Presidential Decree 67/81 of the Greek State.

Conservation measures proposed:
1. Protect the remaining trees.
2. Propagate a good sample of each population, to reinforce the wild population if required.

Selected references:
Morgan, V. and C. Leon (eds). 1992. Datasheets of flora species for revision of Appendix I of the Bern Convention. Nature and Environment, No 63. Council of Europe, Publishing and Documentation Service, Strasbourg.

Turland, N. J., L. Chilton and J.R. Press. 1993. Flora of the Cretan area. Annotated checklist & atlas. London.

Tutin, T. G. 1993. *Zelkova* Spach., Flora Europaea Vol. 1, p. 77 (Second Edition).

D.3. OTHER IMPORTANT PLANT SPECIES

by Stella Kokkini, G. Iatrou, K. Georgiou, Panoraia Artelari, I. Bazos, Th. Georgiadis, Ourania Georgiou, E. Drossos, Efrosyni Hanlidou, Regina Karousou, N. Krigas, Z. Kypriotakis and D. Tzanoudakis

D.3.1. Other Important Plant Species in the administrative regions of Greece (NUTS codes)

In total, 1852 taxa have been recorded as Other Important Species (OIS) for the sites studied (see Appendix 5). Among them, 837 (Greek Important Species) are additional entries to the initial list provided by the EEC (Other Important Species), proposed by our working group of researchers.

The motivation categories according to which each taxon was included in the field "Important Plant Species" (from now referred to as IPS) are as follows:

B: Greek endemic taxa

C: Taxa included in the in the lists of International Conventions (Bern and/or CITES 1992).

D: Other reasons. e.g.:

(i) Included in the WCMC database (as threatened), European Red Data List (1992) or Greek Presidential Decree (67/1981)

(ii) Balkan endemics and/or Balkan subendemics. The range of the latter extends to Turkey or Italy (Balkan subendemics)

(iii) Rare in Greece and/or reaching their extreme distribution limits in Greece, thus represented only by few and scattered populations.

The Red Data Book of rare and threatened plants of Greece, corresponding to motivation category "A" was available after the data of this article had been gathered and processed.

Distribution in NUTS 1 level

The distribution of the IPS in the administrative regions (NUTS 1), expressed as a percentage of the total number of important taxa recorded in all NATURA 2000 sites is shown in Fig. D.3. The majority (79.2%) of the IPS of Greece occurs in Kentriki Ellada (RA2). About 66% of the IPS appear in Voreia Ellada (RA1). As the number of the IPS present in each NUTS depends upon its surface area, Attiki (RA3), the smallest Greek NUTS 1, shows the lowest percentage (c. 7%).

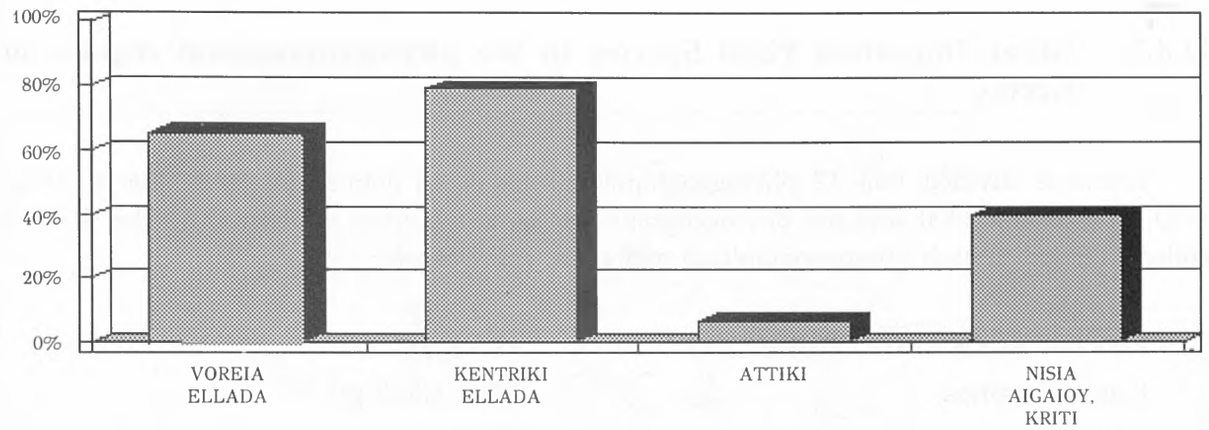


Fig. D.3. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in the administrative regions (NUTS 1) of Greece.

Distribution in NUTS 2 level

As shown in Fig. D.4, among the administrative regions of Greece (NUTS 2), Kentriki Makedonia (RA12), Peloponnisos (RA25) and Sterea Ellada (RA24), show the highest percentages of IPS, with more than 10% of the total number present.

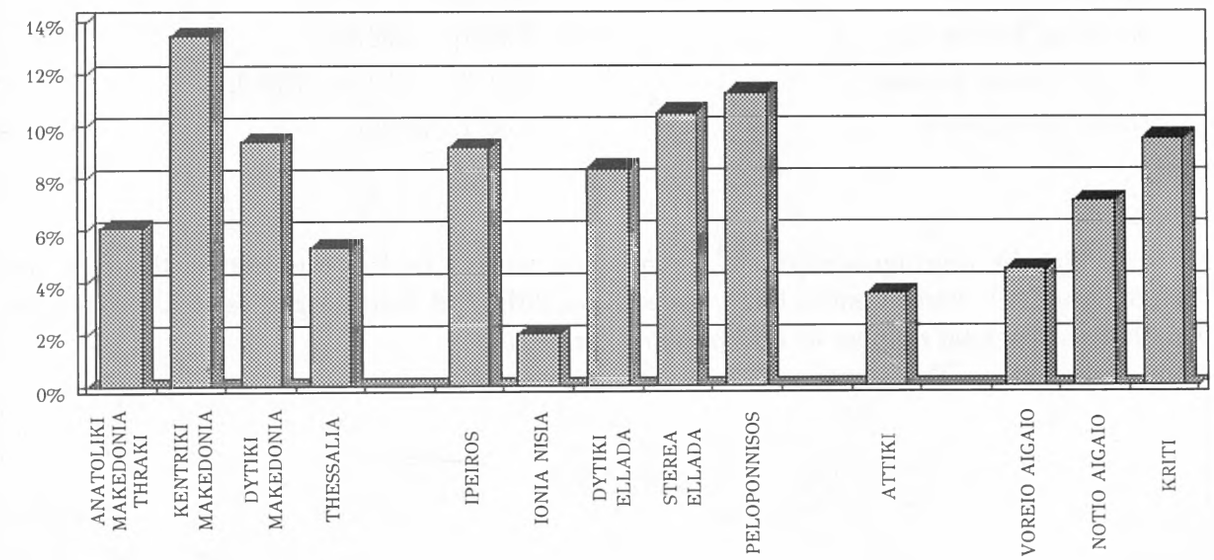


Fig D.4. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in each administrative region (NUTS 2) of Greece.

D.3.2. Other Important Plant Species in the phytogeographical regions of Greece

Greece is divided into 13 phytogeographical regions, as defined by Strid (1991b) (Fig. D.5). The Natura 2000 sites per phytogeographical region are given in Table D.2. The NUTS 2 codes included in each phytogeographical region are listed below:

PHYTOGEOGRAPHICAL REGION	NUTS 2
Kriti, Karpathos	GR43, GR42 p.*
Cyclades	GR42p.
East Aegean Islands	GR41p., GR42p.
West Aegean Islands	GR24p., GR14p.
North Aegean Islands	GR41p., GR11p.
Ionian Islands	GR22
Peloponnisos	GR23p., GR25
Sterea Ellas	GR23p., GR24p., GR3
East Central Greece	GR14p.
Southern Pindos	GR21p.
Northern Pindos	GR21p., GR13p.
North Central Greece	GR12p., GR14p., GR13p.
North East Greece	GR11, GR12p.

* p.: partly

The richest phytogeographical regions, in respect to the number of the IPS, are Peloponnisos (Pe), North Central (NC), Sterea Ellas (StE) and Kriti/Karpathos (KK), with more than 20% of the total number of taxa present (Fig. D.6).

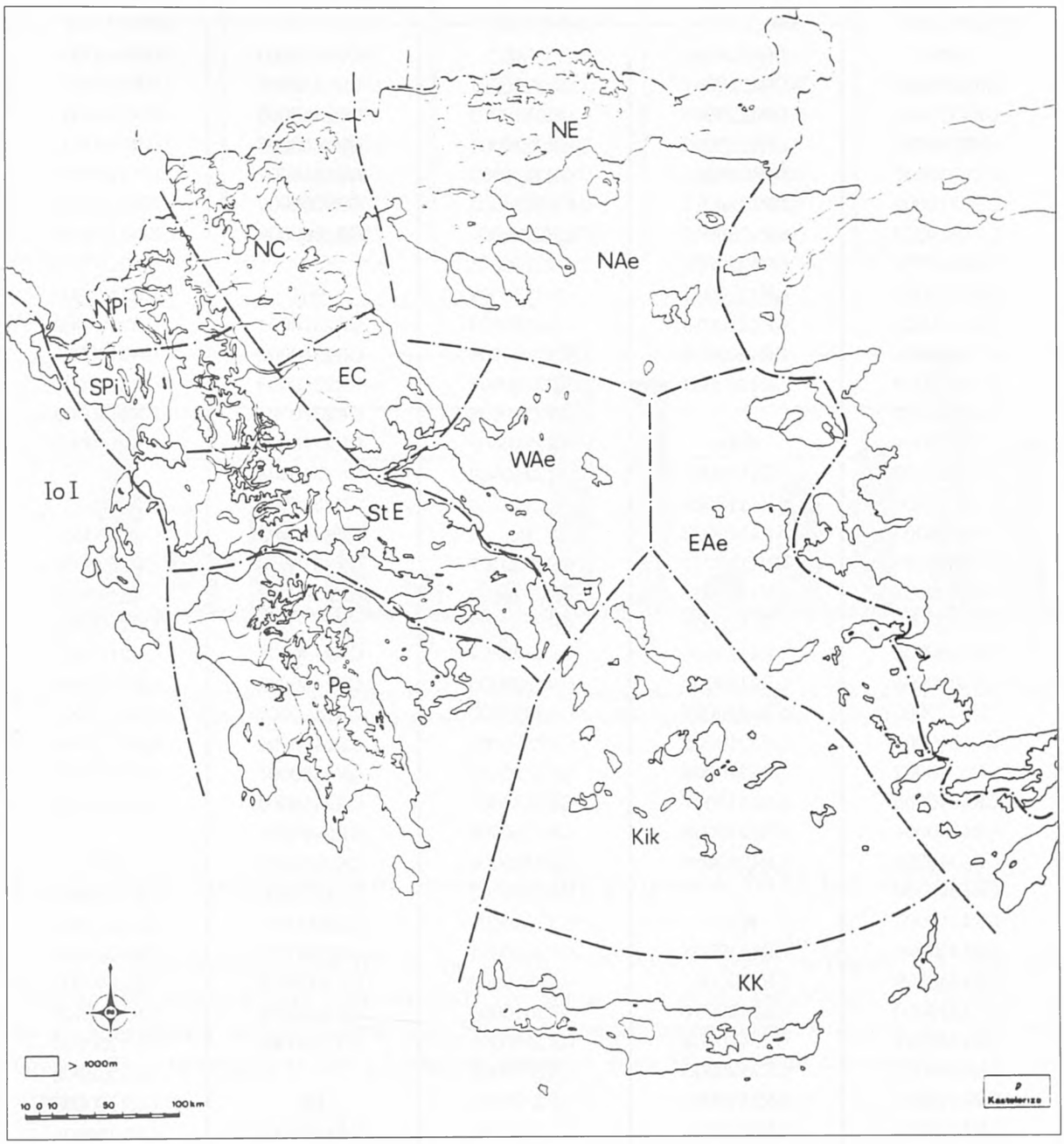


Fig. D.5. Phytogeographical regions of Greece. KK: Kriti and Karpathos, Cyc: Cyclades, EAe: East Aegean Islands, WAe: West Aegean Islands, Nae: North Aegean Islands, IoI: Ionian Islands, Pe: Peloponnisos, StE: Sterea Ellas, EC: East Central Greece, SPi: Southern Pindos, NPi: Northern Pindos, NC: North Central Greece, NE: North East Greece.

TABLE D.2. Phytogeographical regions of Greece including the proposed NATURA 2000 sites. For abbreviations see Figure D.5.

KK	GR4220006	IoI	GR2550003	GR1410001
GR4210001	GR4220007	GR2210001	GR2550004	GR1410002
GR4210002	GR4220008	GR2210002	GR2550005	GR1440001
GR4210003	GR4220009	GR2220001	GR2550006	GR1440002
GR4310001	GR4220010	GR2220002	GR2550007	GR2110001
GR4310002	GR4220011	GR2220003	GR3000007	GR2110002
GR4310003	GR4220012	GR2220004	GR3000008	GR2110003
GR4310004	GR4220013	GR2230001		GR2110004
GR4310005	GR4220014	GR2230002	StE	GR2120001
GR4310006	GR4220016	GR2230003	GR2310001	GR2120002
GR4320001	GR4220018	GR2230004	GR2310002	GR2120004
GR4320002	GR4220019	GR2230005	GR2310003	GR2140001
GR4320003		GR2230006	GR2310004	GR2140002
GR4320004	EAe	GR2240001	GR2310005	GR2140003
GR4320005	GR4110003	GR2240002	GR2310006	
GR4320006	GR4110004		GR2310007	NPi
GR4320007	GR4110005	Pe	GR2310008	GR1310001
GR4320008	GR4120001	GR2320001	GR2310009	GR1320002
GR4330001	GR4120002	GR2320002	GR2310010	GR2130001
GR4330002	GR4120003	GR2320003	GR2410002	GR2130002
GR4330003	GR4120004	GR2320004	GR2430001	GR2130003
GR4330004	GR4130001	GR2320005	GR2430002	GR2130004
GR4330005	GR4210004	GR2320007	GR2440001	GR2130005
GR4340001	GR4210005	GR2320008	GR2440004	GR2130006
GR4340002	GR4210006	GR2320009	GR2450001	GR2130007
GR4340003	GR4210007	GR2330001	GR2450002	GR2130008
GR4340004	GR4210008	GR2330005	GR2450004	
GR4340005	GR4210010	GR2330006	GR2450005	NC
GR4340006		GR2330007	GR2530005	GR1210001
GR4340007	WAe	GR2330008	GR3000001	GR1210002
GR4340008	GR1430003	GR2510001	GR3000003	GR1240001
GR4340009	GR1430004	GR2510002	GR3000005	GR1240002
GR4340010	GR2420001	GR2510003	GR3000006	GR1240003
GR4340011	GR2420002	GR2520001	GR3000009	GR1250001
GR4340012	GR2420003	GR2520004		GR1250002
GR4340013	GR2420005	GR2520005	EC	GR1250003
GR4340014	GR2420006	GR2520006	GR1420002	GR1250004
		GR2530001	GR1420003	GR1250005
Cyc	NAe	GR2530002	GR1420004	GR1320001
GR4210009	GR1110004	GR2530003	GR1430001	GR1330001
GR4210011	GR1150003	GR2530004	GR1440001	GR1330002
GR4220001	GR1150007	GR2540001	GR1440002	GR1340001
GR4220002	GR1150008	GR2540002		GR1340002
GR4220003	GR4110001	GR2540004	SPi	GR1340003
GR4220004	GR4110002	GR2540005	GR1310002	GR1340006
GR4220005		GR2550001	GR1310003	GR1420001
		GR2550002		GR1440003

TABLE D.2. (continued).

NE				
GR1110001	GR1130003	GR1150004	GR1230002	GR1270003
GR1110002	GR1130005	GR1150005	GR1260001	GR1270004
GR1110006	GR1130009	GR1150006	GR1260002	GR1270006
GR1120001	GR1140001	GR1150009	GR1260004	GR1270007
GR1120002	GR1140002	GR1150010	GR1260005	GR1270008
GR1120003	GR1140003	GR1220001	GR1260006	GR1270009
GR1120004	GR1140004	GR1220002	GR1260007	GR1270010
GR1130001	GR1140007	GR1220003	GR1260008	GR1270011
GR1130002	GR1150001	GR1220004	GR1270001	
	GR1150002	GR1220008	GR1270002	

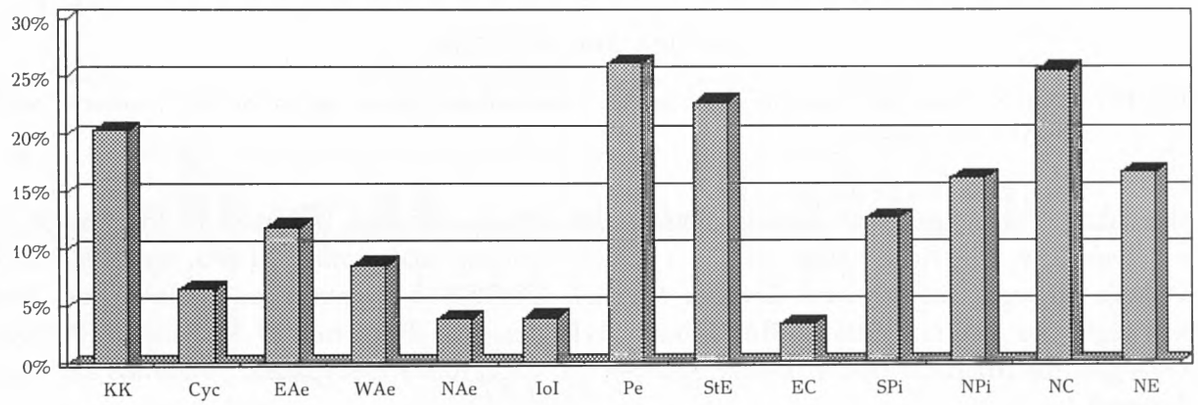


Fig. D.6. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in the 13 phytogeographical regions of Greece. For the abbreviations see Table D.2.

D.3.3. Other Important Plant Species in the proposed NATURA 2000 sites

The participation of the IPS in the Natura 2000 sites is given in Figure D.6. The sites with no IPS recorded have been omitted. The comparison of the percentages of IPS occurring in the sites shows that the richest sites belong to the phytogeographical regions of Continental Greece. Sites belonging to the islands are generally poor in IPS, with the exception of some Cretan sites.

Kriti/Karpathos (Fig. D.7): The richest site of Crete, with c. 8% of the total number of IPS, is GR4340008 (Lefka Ori). Other rich sites in this island are GR4330005 (Oros Idi), GR4320006 (Voreioanatoliko Akro Kritis), GR4320005 (Oros Thryptis kai Gyro Periochi) and GR4320002 (Dikti).

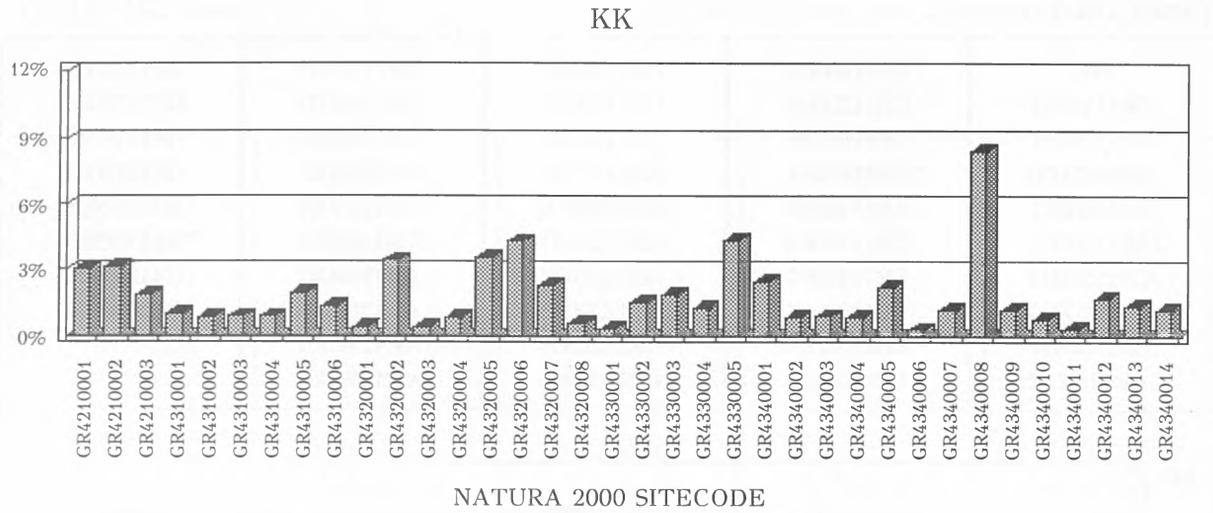


Fig. D.7. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in Kriti and Karpathos.

Cyclades (Fig. D.8): The participation of the IPS in the sites included in this region is relatively low. The richest sites, with c. 1 to 1.5 % of the total number of IPS, are GR4220012 (Voreia Amorgos kai Kynaros, Levitha, Mavria), GR4220014 (Kentriki kai Notia Naxos: Zefs kai Vigla eos Mavro), GR4220013 (Mikres Kyklades: apo Kero mechri Iracleia), GR422004 (Folegandros Anatoliki mechri Dytiki Sikinos) and GR4210009 (Astypalaia: Anatoliko kai Gyro Nisides)

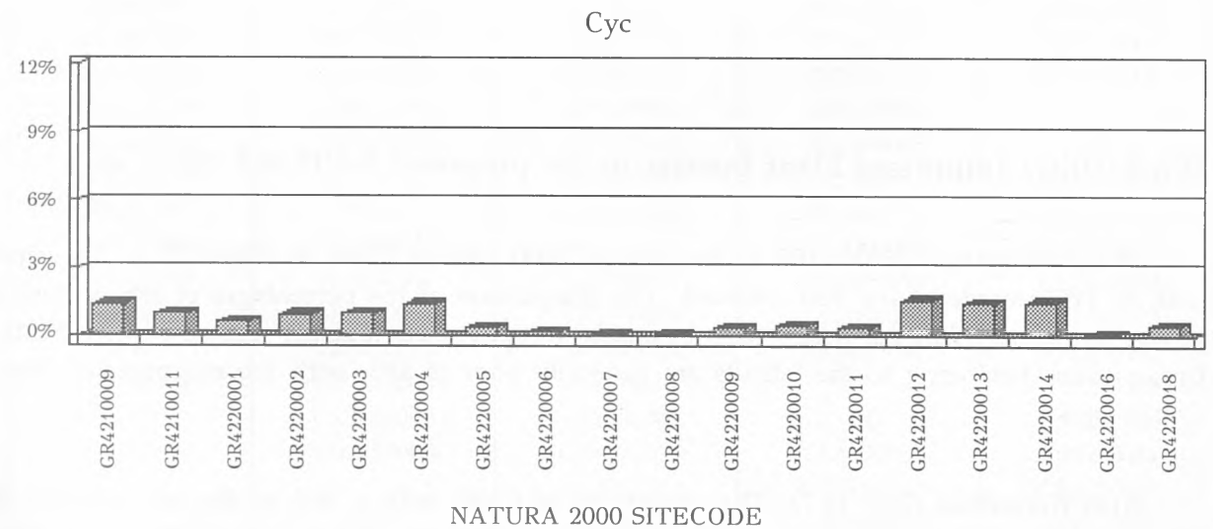


Fig. D.8. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in Cyclades.

West Aegean Islands (Fig. D.9): Sites included in this region with more than 2% of the IPS are GR2420002 (Dirphys: Dasos Stenis-Delphi), GR2420003 (Oros Kandili-Koilada Prokopiou-Delta Kirea) and GR1430004 (Ethniko Thalassio Parko Alonnisou - Voreion Sporadon).

North Aegean Islands (Fig. D.9): Within this region the highest participation of the IPS, with more than 1% of their total number, appears in sites GR1150003 (Oros Ypsari Thasou) and GR1110004 (Vouna Limnia).

East Aegean Islands (Fig. D.9): The richest sites included in this region, with 1.8 to 2% of the IPS, are GR4110005 (Lesvos: Kolpos Kalonis), GR4120003 (Samos: Oros Kerketefs-Mikro kai Megalo Seitani), GR4120004 (Ikaria-Fournoi) and GR4120002 (Samos: Oros Ampelos).

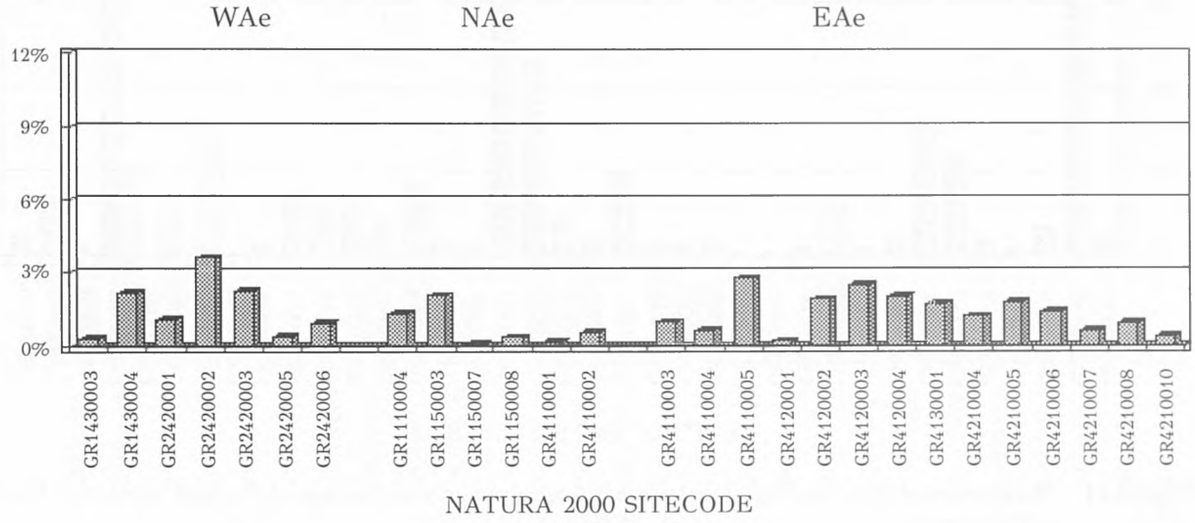


Fig. D.9. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in West Aegean Islands (WAe), North Aegean Islands (NAe) and East Aegean Islands (EAe).

Ioanian Islands (Fig. D.10): The sites included in this region are relatively poor in IPS. Among them the richest site (1.7%) is GR2220002 (Ethnikos Drymos Ainou).

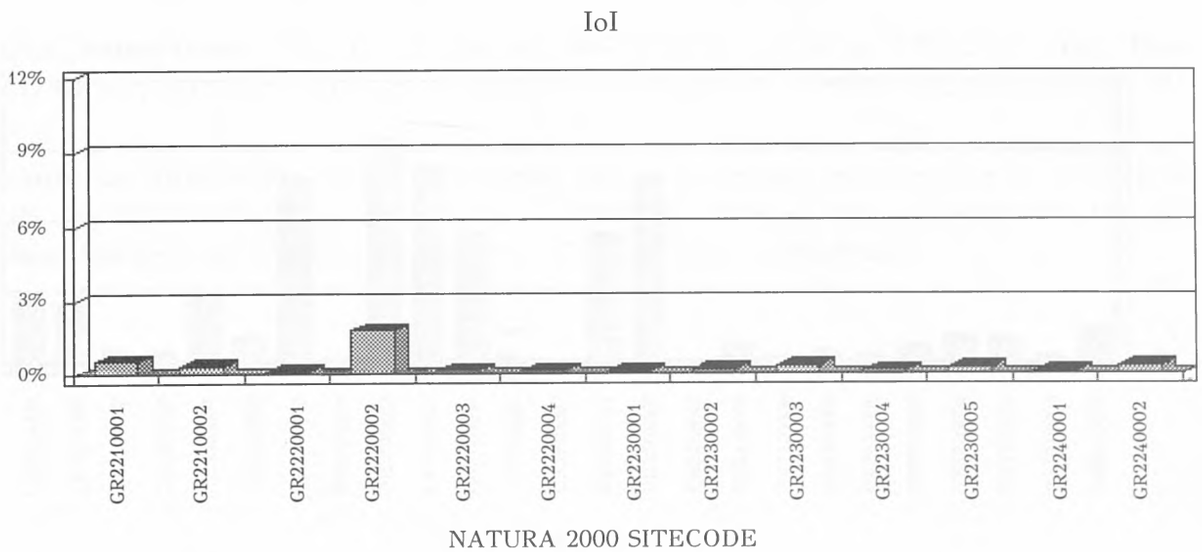


Fig. D.10. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in the Ionian Islands.

Peloponnisos (Fig. D.11): The highest percentages of the IPS, with more than 6% of their total number, appear in GR2550006 (Oros Taygetos), GR2530001 (Koryfes Orous Kyllini), GR2320002 (Oros Chelmos and Ydata Stygos) and GR2520006 (Oros Parnonas).

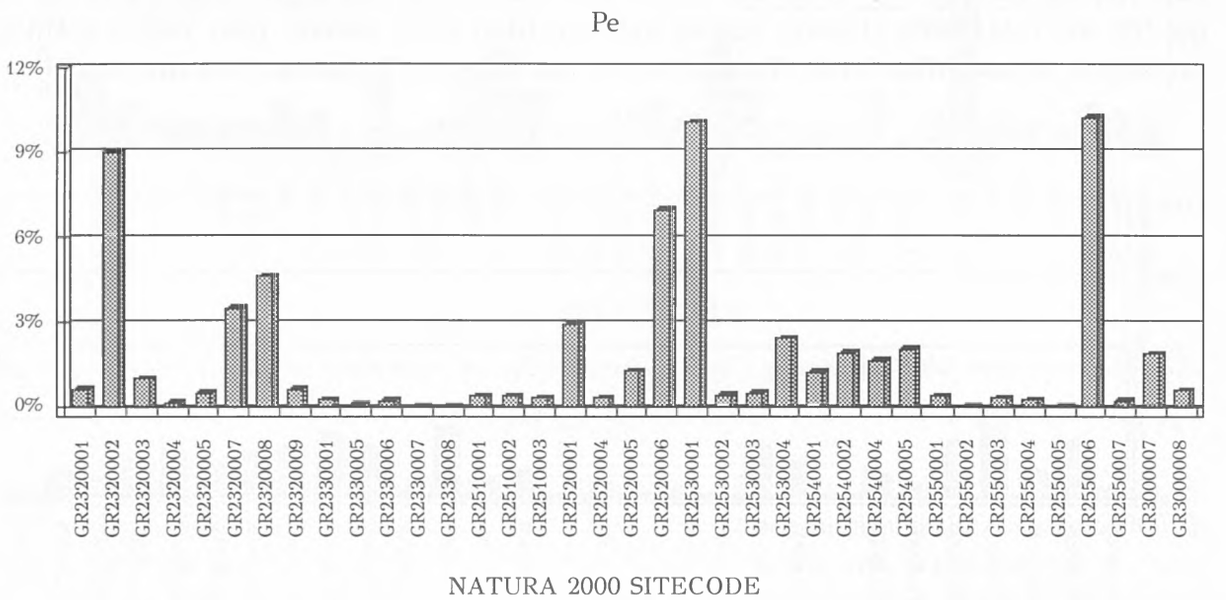


Fig. D.11. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in Peloponnisos.

Sterea Ellas (Fig. D.12): Within this region the richest sites, with more than 6% of the IPS, are GR2450002 (Oros Gkiona), GR2450001 (Ori Vardousia) and GR2450005 (Notioanatolikos Parnassos-Ethnikos Drymos Parnassou).

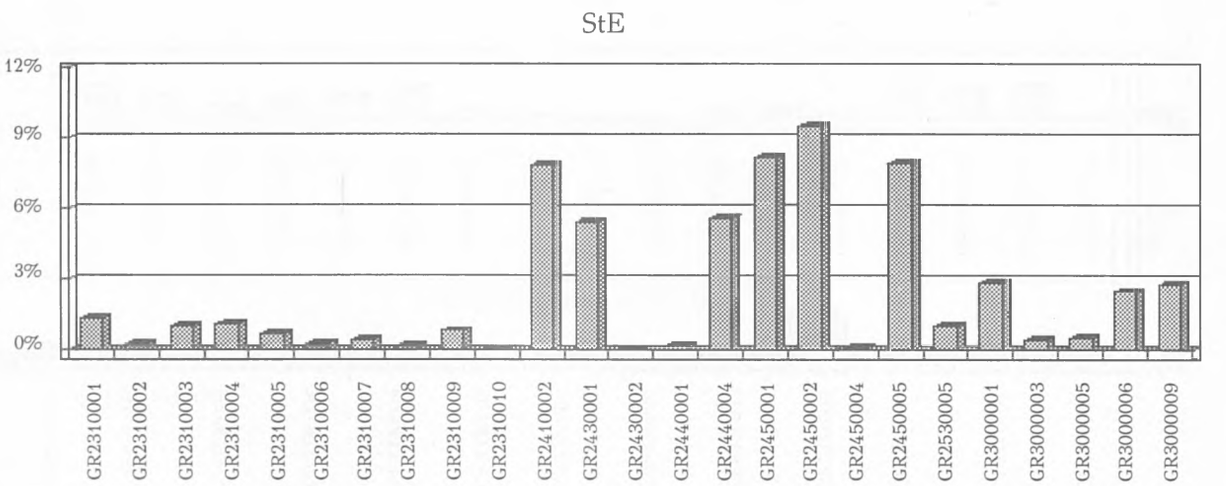


Fig. D.12. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in Sterea Ellas.

Northern Pindos (Fig. D.13): In this region the richest sites, with more than 6% of the IPS, are GR2130002 (Koryfes Orous Smolikas), GR1320002 (Koryfes Orous Grammos), GR2130001 (Ethnikos Drymos Vikou-Aoou) and GR2130007 (Oros Lakmos).

Southern Pindos (Fig. D.13): The richest site within this region is GR2110002 (Ori Athamanon), with c. 6% of the IPS present. A relatively rich site is also GR1310003 (Ethnikos Drymos Pindou, 4.8%).

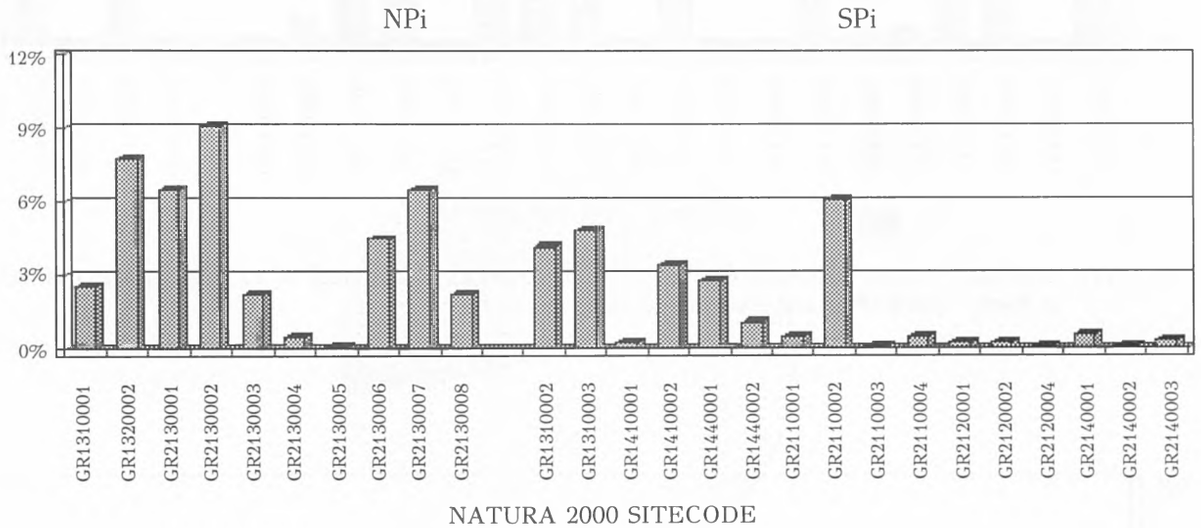


Fig. D.13. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in Northern Pindos (NPi) and in Southern Pindos (SPi).

North Central Greece (Fig. D.14): Particularly rich sites, with more than 6% of the total number of the IPS, are GR1250001 (Ethnikos Drymos Olympou), GR1240001 (Koryfes Orous Voras) and GR1210001 (Oros Vermio).

East Central Greece (Fig. D.14): The richest sites of this region are GR1430001 (Oros Pilio) and GR1420003 (Aisthitiko Dasos Ossas), with 1.9 % and 1.6 % of the IPS, respectively.

North East Greece (Fig. D.15): The richest sites of this region, including 3.8 to 5.7% of the IPS, are GR1270003 (Chersonisos Athos), GR1150005 (Vouna Evrou), GR1260005 (Koryfes Orous Orvilos), GR1260004 (Koryfes Orous Menoikio-Oros Kouskouras).

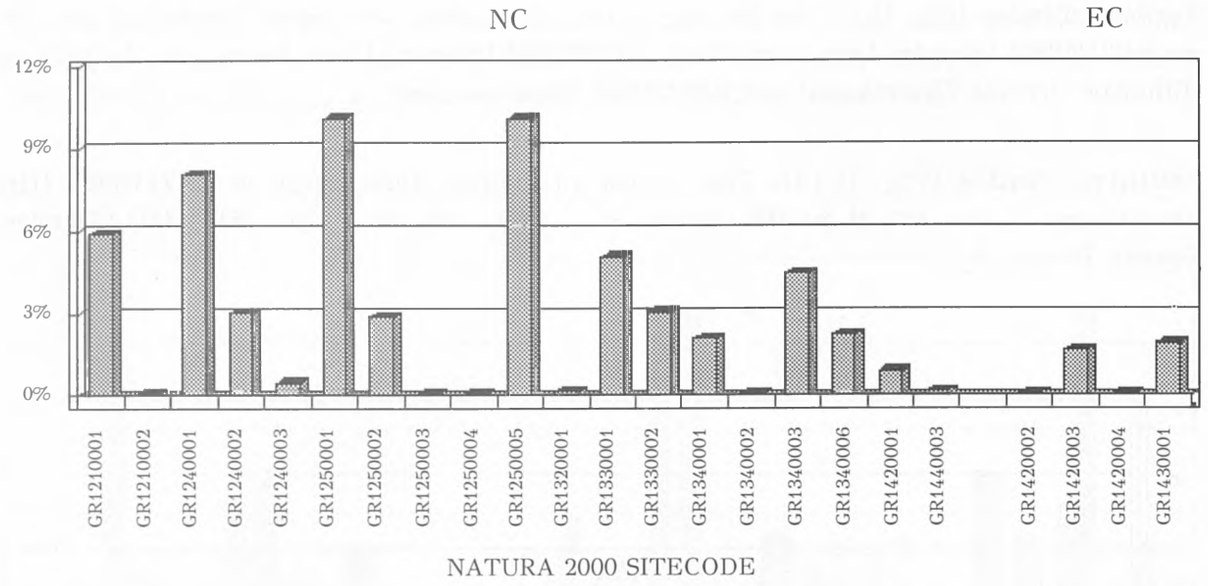


Fig. D.14. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in North Central (NC) and East Central (EEC) Greece.

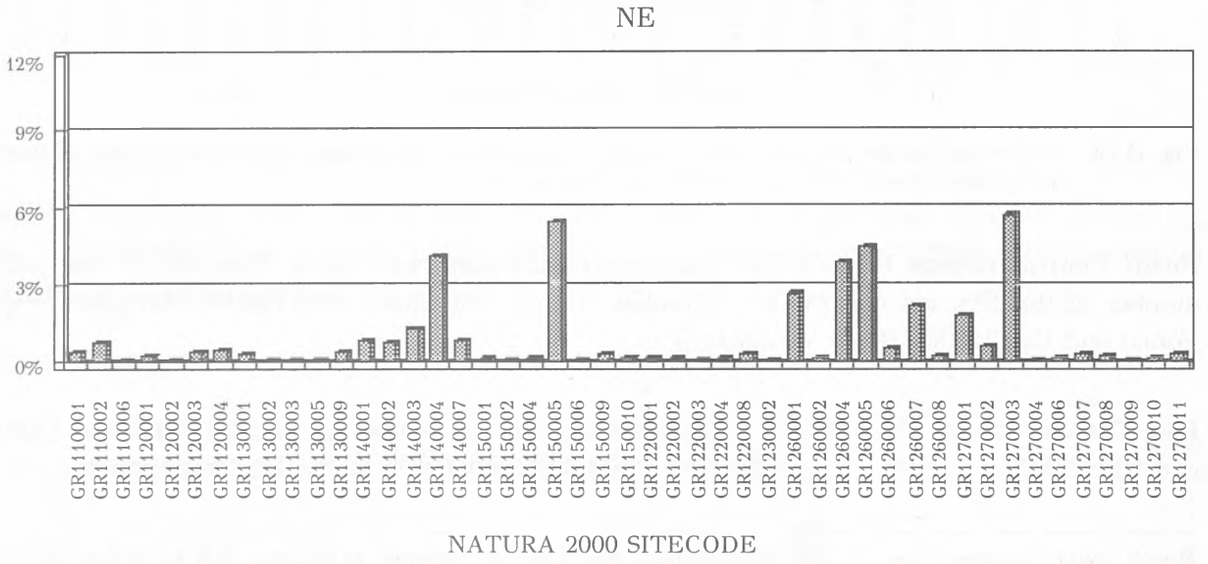


Fig. D.15. Distribution of the Important Plant Species (expressed as a percentage of the total number of taxa) in North East Greece.

D.3.4. Other Important Plant Species - Motivation

Distribution of the different motivation categories in Greece

The Greek endemic taxa (motivation indicated as B), represent a remarkable percentage of the total number of the IPS, 47.3%. Only 3.3% of the IPS is listed in the International Conventions, thus characterised as C, while IPS characterised as D reach 49.4% of the total number of taxa mentioned in NATURA 2000 sites (Fig. D.16).

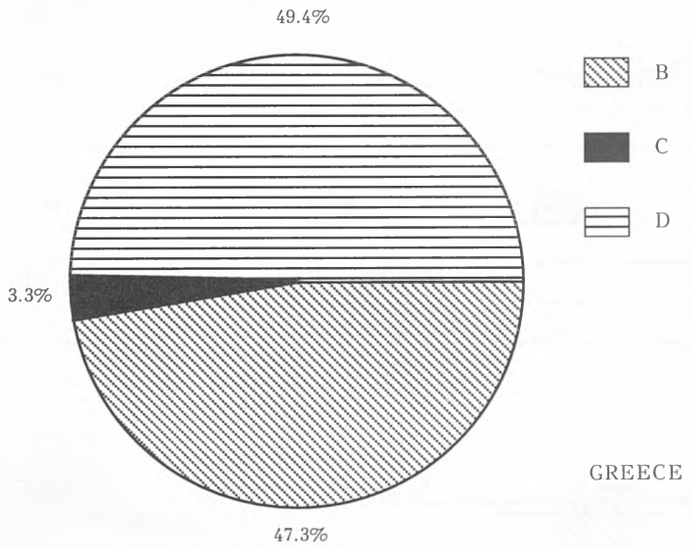


Fig. D.16. Percentage of the Important Plant Species with motivation B, C and D in Greece.

Distribution of the different motivation categories in NUTS 1 level

The participation of the IPS with motivation B, C and D in each administrative region (level NUTS 1) is shown in Figure D.17. In each case the percentage is presented in comparison to the total number of IPS in Greece with the same motivation.

The majority of the Greek endemic IPS, 45.8% of their total number, occur in GR2 (Kentriki Ellada), followed by GR4 (Nisia Aigaiou, Kriti, 27.8%). The highest percentage (53.5%) of the IPS indicated as C appears in GR4 (Nisia Aigaiou, Kriti), followed by GR1 (34.5%, Voreia Ellada). The highest participation of IPS indicated as D is found in GR1 (Voreia Ellada, 49.4%) and GR2 (Kentriki Ellada, 37.1%).

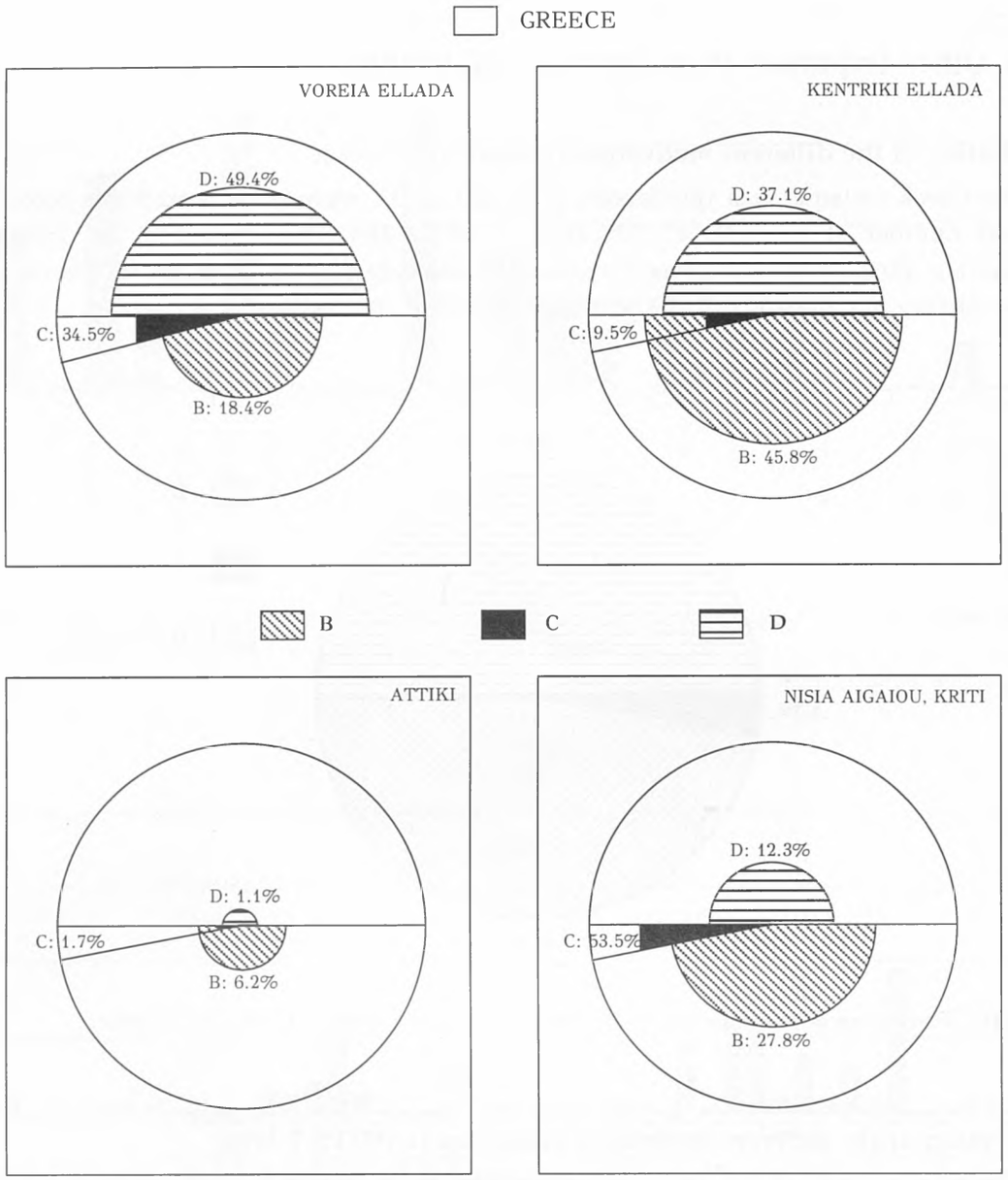


Fig. D.17. Percentages of the Important Plant Species with motivation B, C and D in each administrative region (level NUTS 1) of Greece. The outer circle shows the percentages of the IPS with the same motivation.

Distribution of the different motivation categories in NUTS 2 level

The distribution of the IPS according to their motivation category at NUTS 2 level is given in Fig. D.18-D.20. The percentages are given in comparison to the total number of IPS in Greece with the same motivation.

The administrative regions of Peloponnisos (GR 25), Sterea Ellada (GR24) and Dytiki Ellada (GR23) are particularly rich in endemic taxa. Among all regions Peloponnisos is the richest, with c. 18% of the endemic IPS, followed by Kriti (c. 16%). Most of the IPS indicated as C (c. 32%) occur in Nisia Voreiou Aigaiou (GR41). In respect to the D motivation category, the highest numbers of IPS occur in Kentriki Makedonia (GR12, 19.4%), Dytiki Makedonia (GR13, 14.8%) and in Ipeiros (GR21, 13.8%).

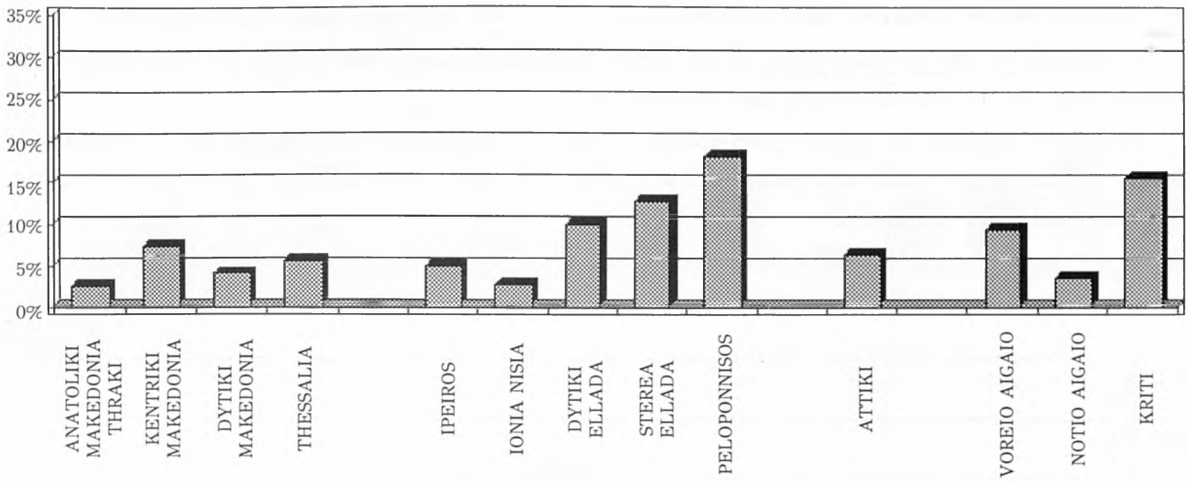


Fig. D.18. Distribution of the Important Plant Species with motivation B (expressed as a percentage of the total number of taxa with motivation B) in each administrative region (NUTS 2) of Greece.

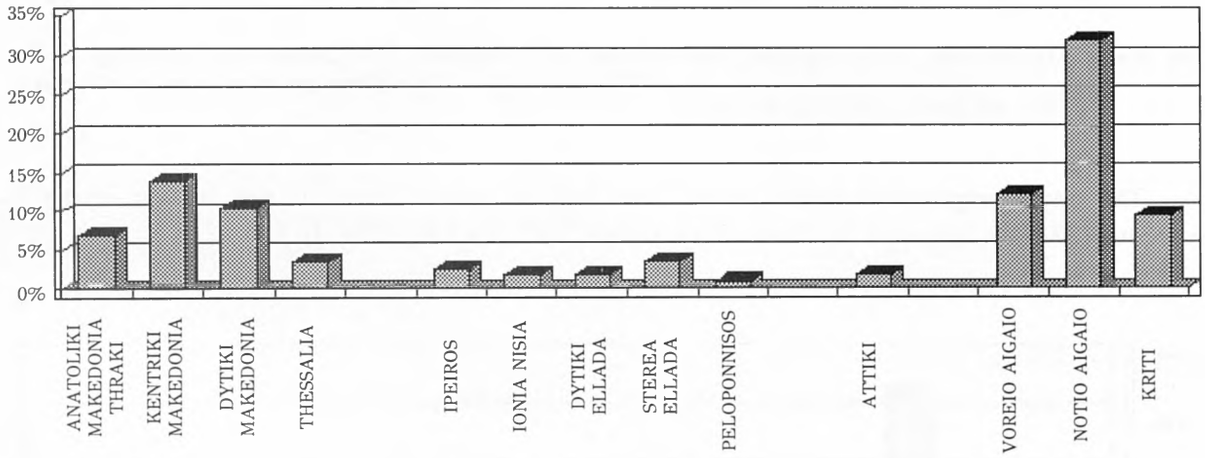


Fig. D.19. Distribution of the Important Plant Species with motivation C (expressed as a percentage of the total number of taxa with motivation C) in each administrative region (NUTS 2) of Greece.

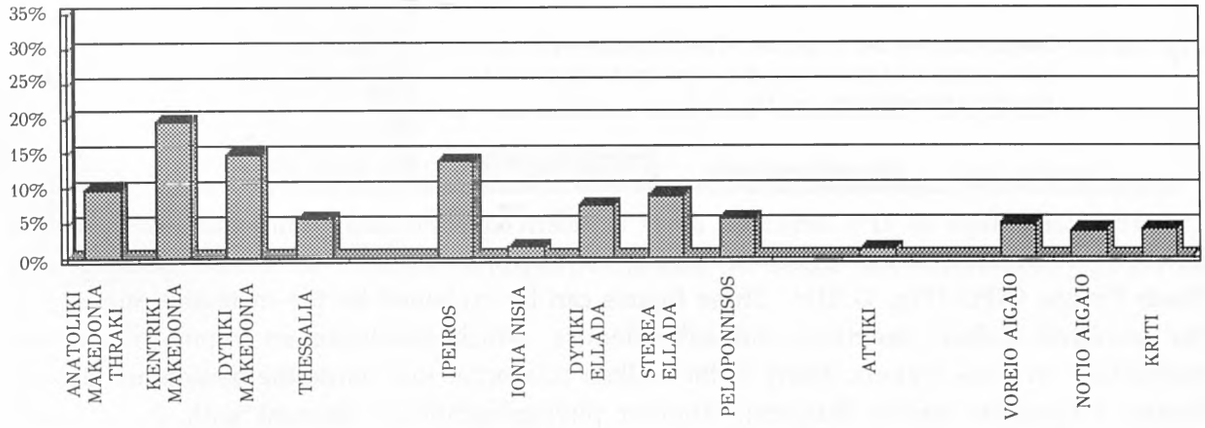


Fig. D.20. Distribution of the Important Plant Species with motivation D (expressed as a percentage of the total number of taxa with motivation D) in each administrative region (NUTS 2) of Greece.

Distribution of the different motivation categories in the phytogeographical regions

In respect to the participation of the three motivation categories in the phytogeographical regions (Fig. D.21), the following can be observed:

Endemics appear in higher percentages in the phytogeographical regions of Peloponnisos (Pe), Kriti/Karpathos (KK) and Sterea Ellas (StE), with more than 13% of the total number of IPS in this category (Fig. D.21a).

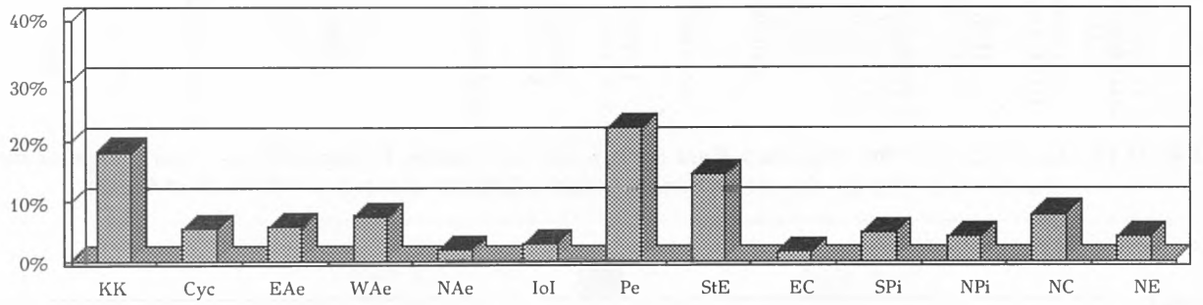


Fig. D.21a. Distribution of the Important Plant Species with motivation B (expressed as a percentage of the total number of taxa with the same motivation) in the 13 phytogeographical regions of Greece. For the abbreviations see Fig. D.5.

The phytogeographical region of the East Aegean Islands (EAe) is rich in taxa of the C category (33.6%), followed by North East Greece (NE) (14.6%) (Fig. D.21b).

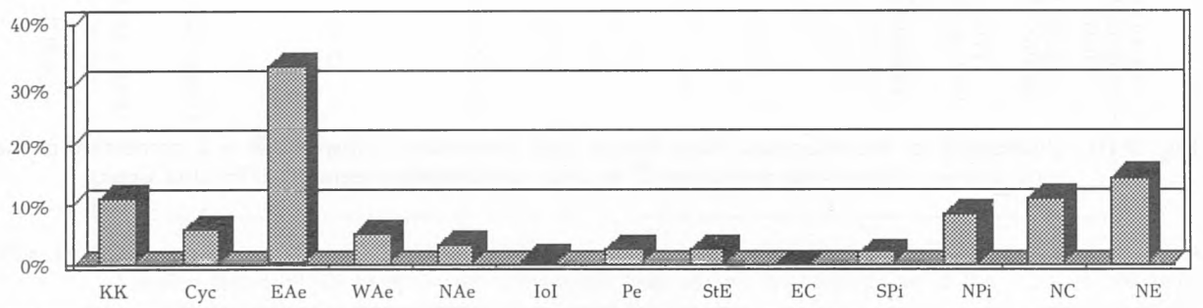


Fig. D.21b. Distribution of the Important Plant Species with motivation C (expressed as a percentage of the total number of taxa with the same motivation) in the 13 phytogeographical regions of Greece. For the abbreviations see Fig. D.5.

The percentage of IPS indicated as D is relatively increased (more than 12%) in the northern phytogeographical regions of Greece, i.e. in North Central (NC), North East (NE) and North Pindos (NPi) (Fig. D.21c). These figures can be explained by the increased numbers of the included Balkan endemics and subendemics, which constitute an important element particularly in these regions. Many of the Balkan taxa occur just across the borders to Albania, former Yugoslavia and/or Bulgaria. Another phytogeographical element with an increased participation in North Greece is the arctic-alpine or boreal element. Several of these taxa reach their southernmost distribution limits in these areas.

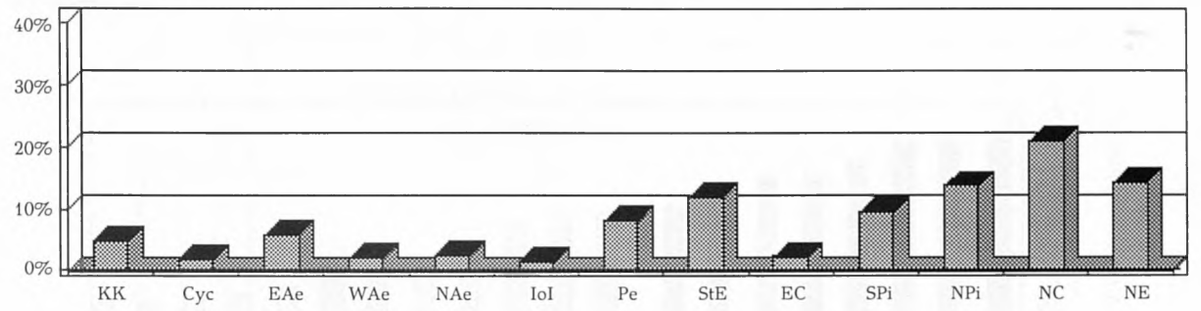


Fig. D.21c. Distribution of the Important Plant Species with motivation D expressed as a percentage of the total number of taxa with the same motivation) in the 13 phytogeographical regions of Greece. For the abbreviations see Fig. D.5.

D.3.5. Other Important Plant Species - The richest sites

All the Natura 2000 sites, with at least one IPS recorded, have been ordered into four classes (Fig. D.22). Sites with no IPS are omitted. The numbers of sites included, are as follows:

I. 1 - 50 taxa present : 204 sites.
II. 51 - 100 taxa present : 23 sites.
III. 101 -150 taxa present : 12 sites.
IV. more than 151 : 8 sites.

The 20 richest sites of Greece (classes III and IV) and the number of IPS present are given in Fig. D.23. It is interesting to note that all of them are mountainous areas.

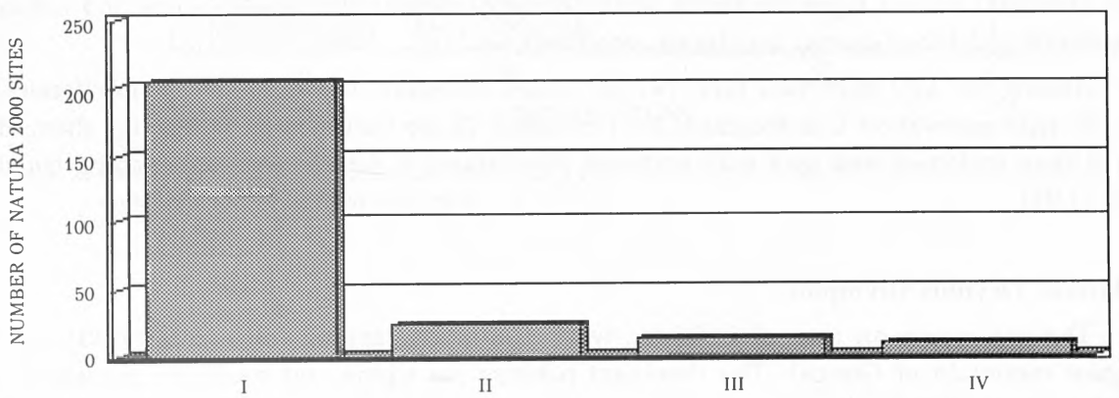


Fig. D.22. Number of Natura 2000 sites with (I) 1-50 taxa, (II) 51-100 taxa, (III) 101-150 taxa and (IV) more than 150 taxa.

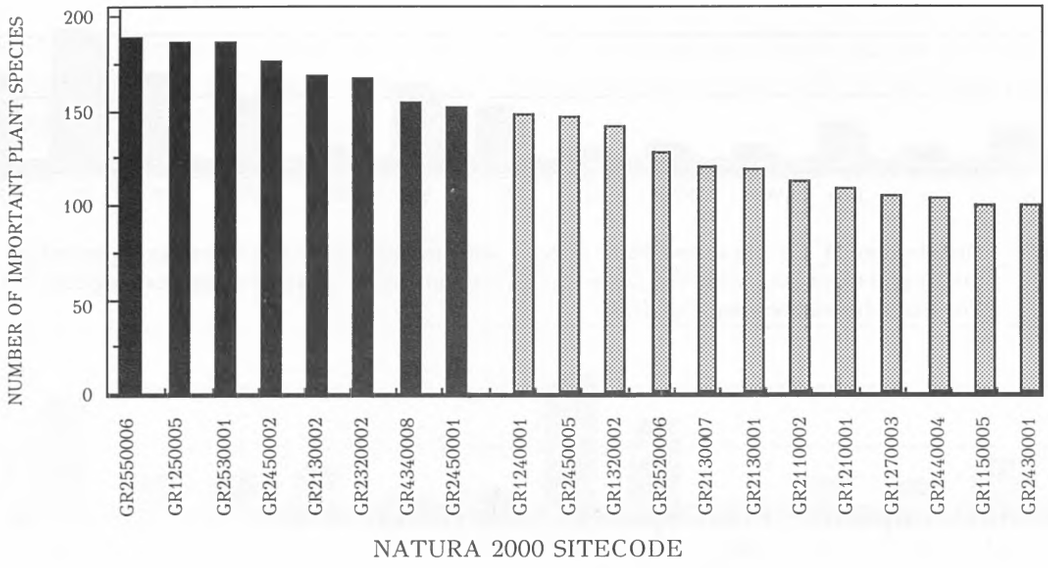


Fig. D.23. Total number of Important Plant Species per NATURA 2000 site. Black bars: sites with more than 150 taxa. Grey bars: sites with 101-150 taxa.

The three richest sites of Greece are: GR2550006 (Oros Taygetos) with 190 IPS, GR1250005 (Ethnikos Drymos Olympou) with 187 IPS and GR2530001 (Koryfes Orous Kyllini) with 187 IPS. In Fig. D.24 the motivations of the IPS in two of the richest sites, Oros Taygetos (South Greece) and Ethnikos Drymos Olympou (North Greece) are shown.

Oros Taygetos

The site covers a surface area of 53,626 ha, with an altitude ranging from 600 to 2407 m. The dominant habitat types are heath, scrub, maquis, garigue, phrygana, alpine and subalpine grasslands and broad-leaved deciduous woodland.

Among the 190 important taxa, 147 are Greek endemics, including 21 local endemics. As no IPS with motivation C is recorded, the remaining 43 are indicated as D. Among them, there are Balkan endemics and taxa with scattered populations in Greece and surrounding countries (Fig.D.24).

Ethnikos Drymos Olympou

The site covers an area of 4,450 ha, with an altitude ranging from 1100 to 2917 m (the highest mountain of Greece). The dominant habitats are alpine and subalpine grasslands and coniferous woodlands.

Among the 187 important plant taxa recorded (Fig. D.23.), 56 are Greek endemics (motivation B), including 21 local endemics and 5 taxa are protected by the Bern Convention (motivation C). The 126 taxa indicated with motivation D fall into one or more of the following categories: i) included in the WCMC and/or European Red Data List (19 taxa), or Greek Presidential Decree 67/1981 (18 taxa), ii) are rare in Greece and/or have their southernmost occurrence in Northern Greece (16 taxa), iii) are Balkan endemics (62 taxa) or with a Balkan main distribution, extending to Turkey or Italy (11 taxa).

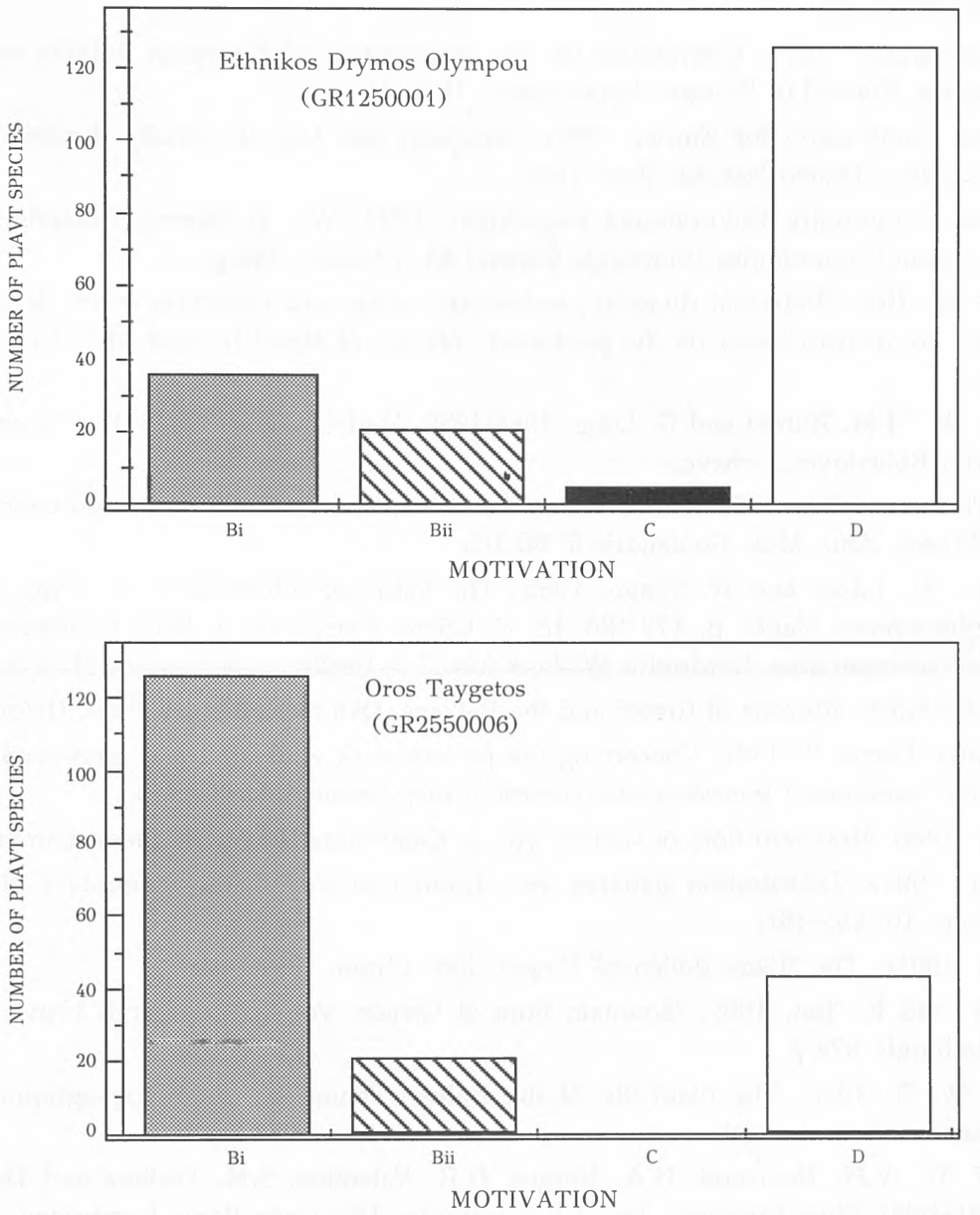


Fig. D.24. The richest NATURA 2000 sites of Greece. The motivations of the Important Plant Species. Bi: Greek endemics, Bii: local endemics.

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PART E

FAUNA

E.1. THE DIVERSITY OF THE FAUNA OF GREECE

by Dimitra Bobori, B.P. Chondropoulos, P.S. Economidis, Vasiliki Flari, S.E. Fraguedakis-Tsolis, S. Kazantzidis, Maria Lazaridou-Dimitriadou, A. Legakis, E. Valakos and V.P. Vogiatzis

E.1.1. Introduction

It is well known that the fauna of Greece is very rich compared to that of the other European States. The number of animal species recorded so far is high in relation to the surface of Greece. This is mainly due to the geographical position of Greece which lies at the crossroads of Europe, Asia and Africa, to the existence of many islands and the fluctuation of the sea level, to the karstic nature of the substrate that resulted in Greece having the highest number of caves in Europe after Yugoslavia and finally due to the fact that the glaciers didn't reach Greece and refuge areas for many species were created in the north. However, the long presence of man has created pressures on many populations and has even led several species and subspecies to extinction. The Habitat Directive, although not as complete as would have been expected, is a good opportunity to conserve what still exists today.

The animal species listed in the Annexes to Directives 92/43/EEC and 79/409/EEC include many of the species encountered in Greece. Among the approximately 200 species of Annex II to Directive 92/43/EEC, 76 have been recorded in Greece, including mammals, reptiles, amphibians, fish and invertebrates. To these we should add 129 species of birds that are included in Annex I to Directive 79/409/EEC (Fig. E.1).

Of the approximately 280 species of Annex IV to Directive 92/43/EEC (species of Community interest that require strict protection), 126 species have been recorded in Greece: 52 mammals, 40 reptiles, 11 amphibians, 2 freshwater fish and 21 invertebrates. Finally, among the approximately 60 species of Annex V (species of Community interest that can be removed from nature or exploited under control), 4 mammals, 2 amphibians, 13 freshwater fish and 8 invertebrates have been recorded in Greece.

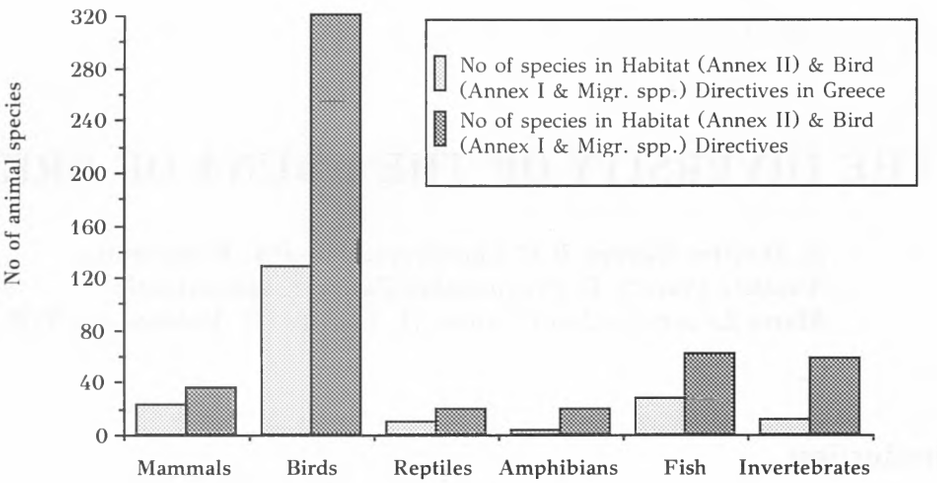


Fig. E.1. Number of species listed in Annex II to Directive 92/43/EEC, species in Annex I to Directive 79/409/EEC and migratory birds of Directive 79/409/EEC, recorded in Greece and Europe.

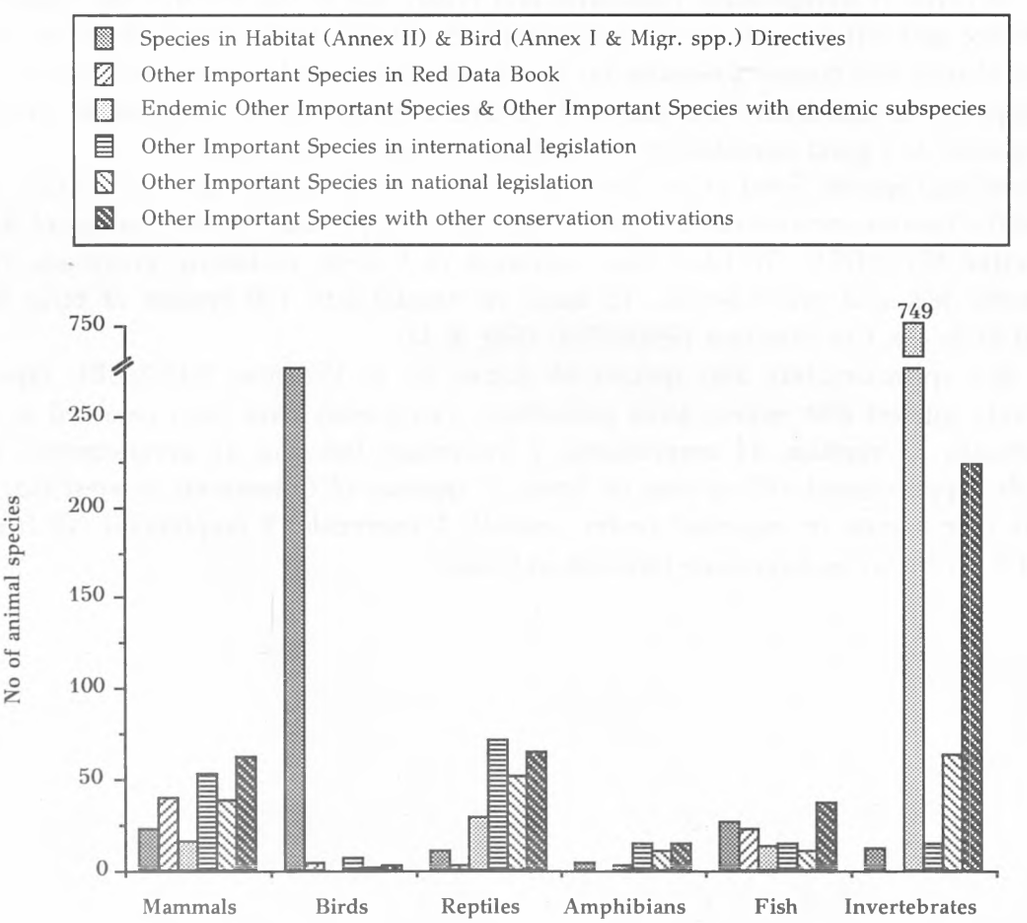


Fig. E.2. Number of species listed in Annex II to Directive 92/43/EEC, species in Annex I to Directive 79/409/EEC and migratory species of Directive 79/409/EEC, species recorded in the Red Data Book of Threatened Vertebrates, endemic species and species with endemic subspecies, species in the international and national legislation and other threatened species.

Most of the important vertebrates of Greece are included in the Annexes to Directive 92/43/EEC satisfactorily, one exception being the freshwater fish. Greece hosts many endemic, rare and threatened species and subspecies, a large number of which are not included in the directive. Moreover, the group of invertebrates is the least represented. It is estimated that approximately 25,000 species of invertebrates are found in Greece. Of these, at least 2,000 are endemic to Greece, some of them being very narrowly endemic. For example, many species have been recorded in only one site. Apart from the endemics, a significant number of species have very small populations or are threatened with extinction. However, only 33 species found in Greece have been included in the various Annexes to the Directive. Some of them are not threatened in Greece, whereas, several species that are representative of threatened habitats such as caves or sand dunes, are omitted.

One significant aspect that arose from the collection of data on the fauna was the identification of species that, although not included in Annex II to the Habitat Directive and Annex I to the Bird Directive, were considered as important by the experts. Such species would comprise those included in the Red Data Book of the Threatened Vertebrates of Greece and in various international conventions such as the Bern and Bonn Conventions and CITES or in the national legislation, the endemic species of Greece as well as other species that are rare or threatened with extinction (Fig. E.2). These species were recorded in two fields of the Standard Data Form: field 3.3 "Other Important Species" and field 3.4 "Greek Important Species". For the sake of clarity, species in both fields will be called henceforth Other Important Species. The recording of all these species, which certainly was not complete since it requires a long-term research, gave a better view of the biological diversity and the conservation status of the sites that were studied. The recording of these species will also aid in the adaptation of the Annexes to the Directive 92/43/EEC so that it can become a more useful and effective tool for nature conservation.

E.1.2. Methods

Most of the data presented in the Standard Data Forms (SDFs) for the proposed sites derive from literature. A small proportion comes from unpublished records of the SDFs' editors and from confirmed reports of local forestry and other officials. Recent literature was mainly scanned for data. Very old references were not taken into account as their data may have changed significantly over time. The majority of the literature on the invertebrates and a significant part of the vertebrate literature came from the archives of the Hellenic Zoological Society and the archives of the Project for the Survey of the Greek Fauna of the Dept. of Biology of the University of Athens. Unpublished data was also supplied by the Hellenic Society for the Conservation of Nature and Cultural Heritage, WWF-Greece, the Hellenic Society for the Study and Protection of the Monk Seal, the Society for the Protection of Sea Turtles and Arcturos, the Bear Protection Society.

SDFs editors reported on the reasons for which they thought that the other important species should be included in the database. These reasons (motivations) were discerned into four categories. Motivation A included all taxa contained in the Red Data Book of Threatened Vertebrates of Greece. Motivation B included all the taxa endemic to Greece. Motivation C included taxa that are mentioned in international conventions, namely the Bern, Bonn and CITES. Finally, motivation D included other reasons, such as national legislation, international lists of threatened species (IUCN, Council of Europe etc.), Balkan endemics, locally endangered taxa etc.

Of the 296 proposed sites, 274 were taken into consideration during data processing since the rest 22 sites were parts of larger designated sites.

It was decided to use zoogeographical regions for the analysis of the data instead of NUTS divisions because the latter are not meaningful for the distribution of animals in Greece. However, the NUTS divisions are used when presenting the sites where the Directives species were recorded. The zoogeographical regions of Greece are those accepted by many researchers (Map E.1). In Table E.1 the regions and the corresponding NUTS divisions are listed.

Table E.1. Zoogeographical regions of Greece.

Zoogeographical region	NUTS 1	NUTS 2	NUTS 3
I: Voreia Anatoliki Ellada (VAE)	Voreia Ellada	Anatoliki Makedonia, Thraki, Kentriki Makedonia (part)	Evros, Xanthi, Rodopi, Drama, Kavala, Serres, Kilkis, Thessaloniki, Chalkidiki
II: Voreia Dytiki Ellada (VDE)	Voreia Ellada	Kentriki Makedonia (part), Dytiki Makedonia	Pella, Imathia, Pieria, Florina, Kozani, Kastoria, Grevena
IV: Thessalia (TH)	Voreia Ellada	Thessalia	Karditsa, Larisa, Magnisia, Trikala
III: Ipeiros (IP)	Kentriki Ellada	Ipeiros	Arta, Thesprotia, Ioannina, Preveza
V: Ionia nisia (IOL)	Kentriki Ellada	Ionia nisia	Zakynthos, Kefallinia, Kerkyra, Lefkada
VI: Sterea Ellada (STE)	Kentriki Ellada, Attiki (part), Peloponnisos (part)	Dytiki Ellada (part), Sterea Ellada, Attiki (part), Peloponnisos (part)	Aitoloakarnania, Voiotia, Evvoia, Evrytania, Fthiotida, Fokida, Attiki (part), Korinthia (part)
VII: Peloponnisos (PE)	Kentriki Ellada, Attiki (part)	Peloponnisos, Dytiki Ellada (part), Attiki (part)	Achaia, Ileia, Argolida, Arkadia, Korinthia (part), Lakonia, Messinia, Attiki (part)
IX: Voreio Aigaio (VAi)	Nisia Aigaiou, Kriti	Voreio Aigaio	Lesvos, Samos, Chios
X: Dodekanisa (DO)	Nisia Aigaiou, Kriti	Notio Aigaio	Dodekanisos (part)
VIII: Kyklades (KYK)	Nisia Aigaiou, Kriti	Notio Aigaio	Kyklades, Dodekanisos (part)
XI: Kriti (KR)	Nisia Aigaiou, Kriti	Kriti	Irakleio, Lasithi, Rethymni, Chania

In the text that follows, names of places were mentioned using the Greek Standards Organization (ELOT) rules.



Map E.1. Zoogeographical regions of Greece. Modified after (a) W. Kuehnelt, 1965. Catalogus Faunae Graeciae. Pars I. Tenebrionidae, and (b) F. Willemse, 1984. Catalogue of the Orthoptera of Greece. Fauna Graeciae I. Hellenic Zoological Society. (**I**: Voreia Anatoliki Ellada, **II**: Voreia Dytiki Ellada, **III**: Ipeiros, **IV**: Thessalia, **V**: Ionia nisia, **VI**: Sterea Ellada, **VII**: Peloponnisos, **VIII**: Kyklades, **IX**: Voreio Aigaio, **X**: Dodekanisa, **XI**: Kriti)

E.1.3. General comments

A total of 1532 species and subspecies (the latter concern vertebrates only), covering a large number of animal groups, were recorded in the proposed sites (Fig. E.3). Of these, 351 are listed in Annex II to the Habitat Directive and in Annex I to Bird Directive or are migratory species, while 1183 were recorded as Other Important Species (fields 3.3 and 3.4 of the SDF). Of all the 1532 recorded animal species only 23% are species of the two Directives, and 3% are priority species.

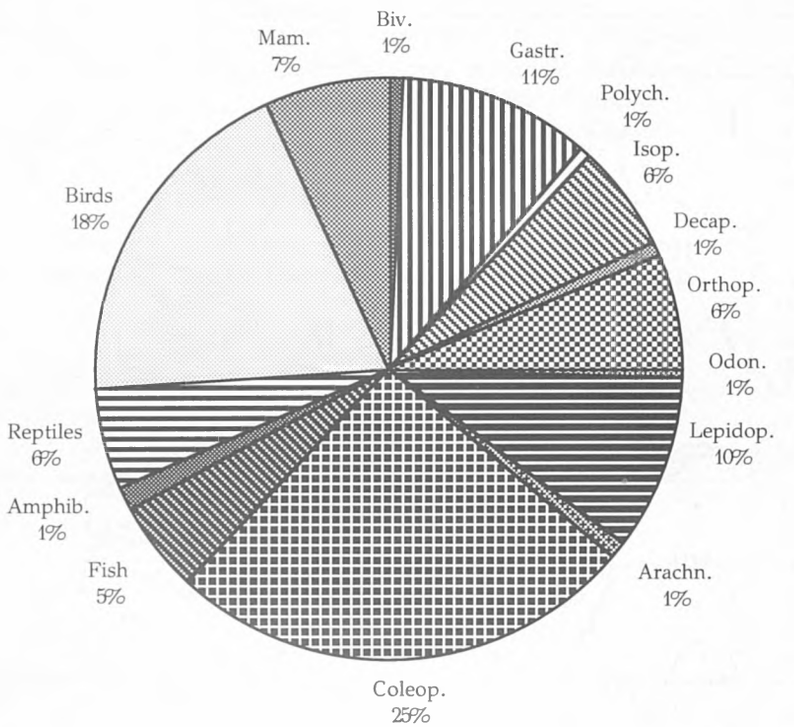


Fig. E.3. Percentage of each animal group in the total number of Annex II to Directive 92/43/EEC and Other Important Species. (Biv.=Bivalvia, Gastr.=Gastropoda, Polych.=Polychaeta, Arachn.=Arachnidia, Isop.=Isopoda, Decap.=Decapoda, Orthop.=Orthoptera, Odon.=Odonata, Lepidop.= Lepidoptera, Coleop.=Coleoptera, Amphib.= Amphibia, Mam.=Mammalia). Groups Porifera, Cnidozoa, Polyplacophora, Amphipoda, Diplopoda, Diplura, Heteroptera, Trichoptera, Echinoderma and Ascidia are represented by a percentage less than 1; therefore, they are not shown on the graph.

The majority of the recorded species are invertebrates most of which are registered in fields 3.3 and 3.4 of the SDFs as Other Important Species. The bird species are also numerous but almost all of them are included in Directive 79/409/EEC (Fig. E.2).

The taxa recorded were distributed in all the zoogeographical regions of Greece. The lowest number of taxa was recorded in the North Aegean (Voreio Aigaio) islands and the highest in Sterea Ellada and Peloponnisos (Fig. E.4).

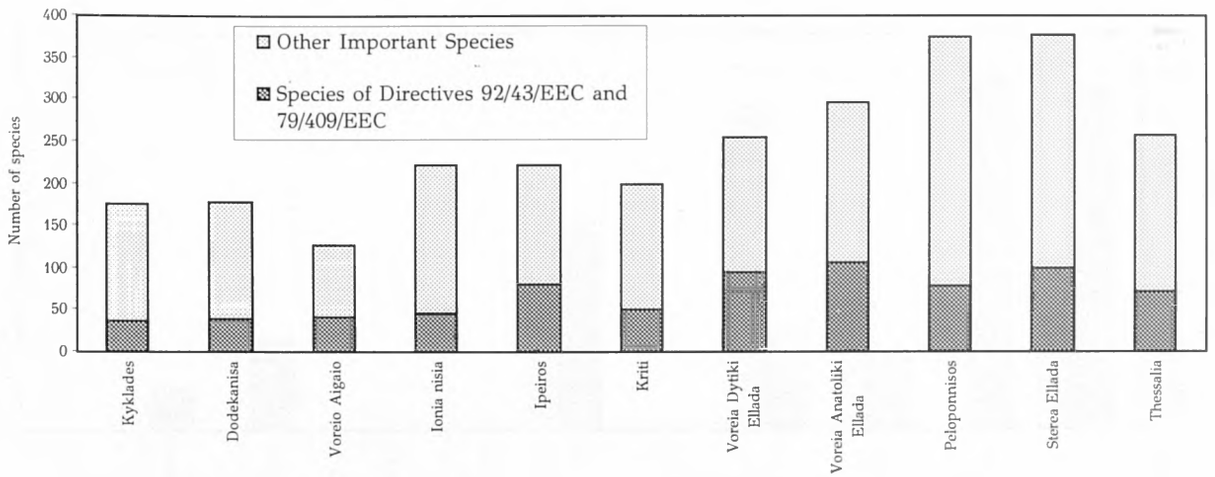


Fig. E.4. Number of Other Important Species and species referred to Directives 92/43/EEC and 79/409/EEC per zoogeographical region.

Fifty six percent of the sites host at least one species in the fields Other and Greek Important Species while 46% of the sites host at least one species mentioned in one of the Directives. Priority species have been recorded in 11% of the sites.

The endemic species which are important for Greece are distributed in the various zoogeographical regions as shown in Fig. E.5 to E.8. Endemic mammals and reptiles are mostly distributed in southern and insular Greece, endemic amphibians (2 subspecies) in central Greece and in Crete and endemic fish in northern and central Greece. There were no endemic birds while the data on invertebrates was considered as incomplete and would not produce meaningful results.

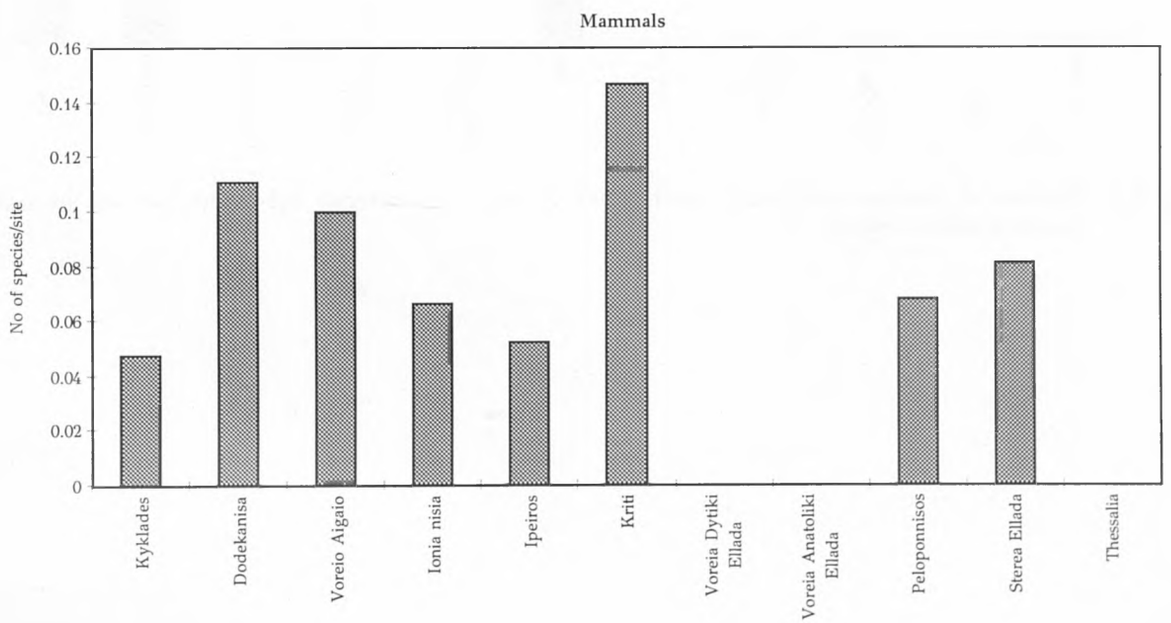


Fig. E.5. Number of endemic mammal species and species with endemic subspecies per site in each zoogeographical region.

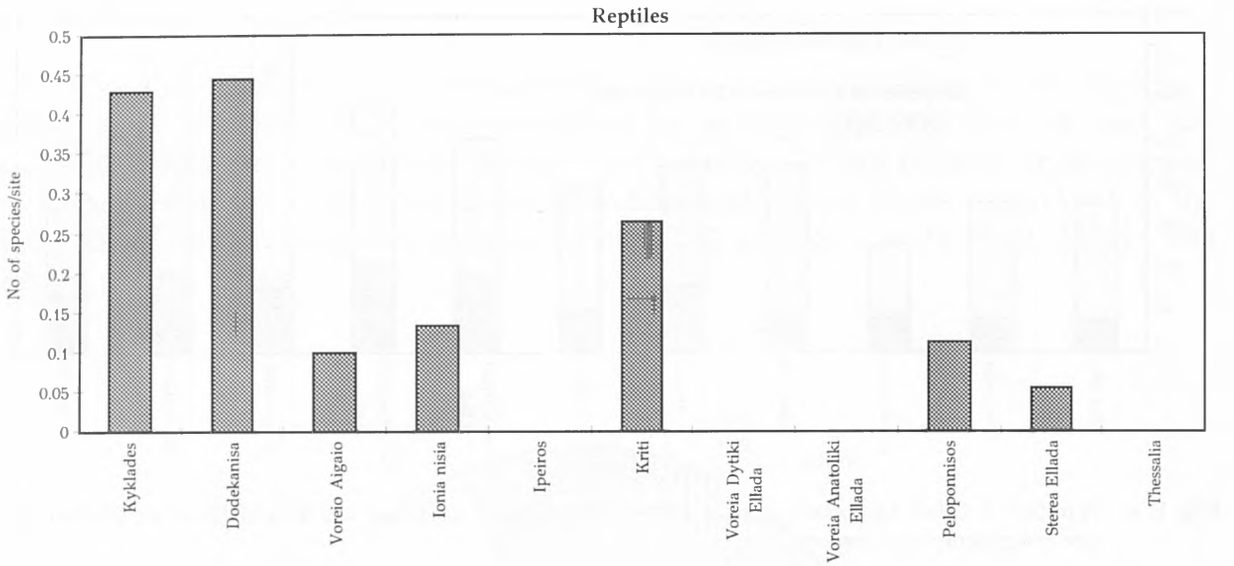


Fig. E.6. Number of endemic reptile species and species with endemic subspecies per site in each zoogeographical region.

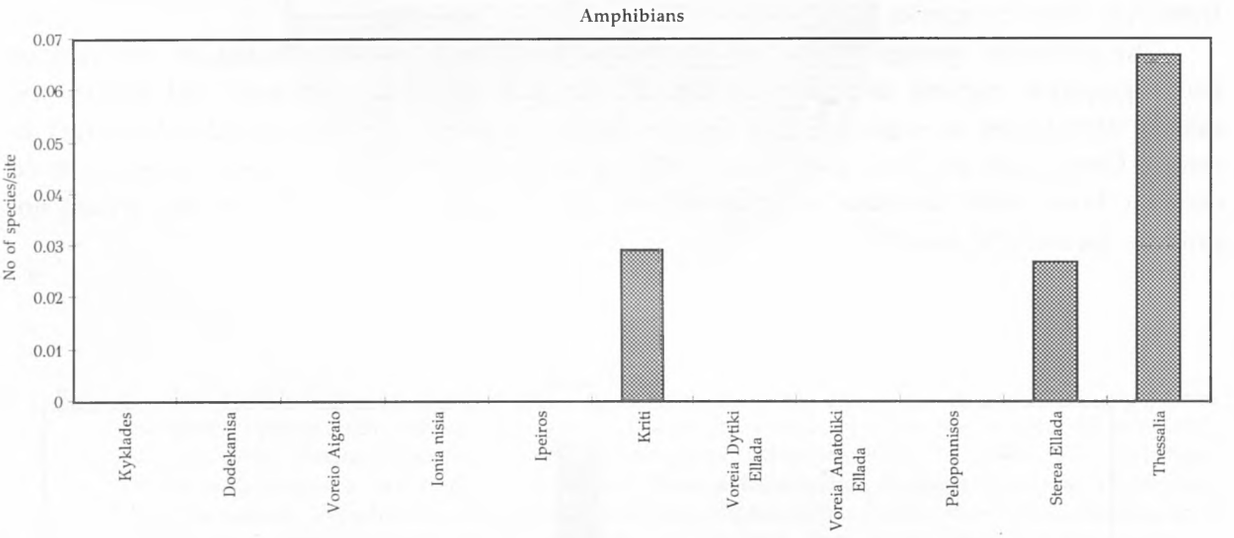


Fig. E.7. Number of endemic amphibian species and species with endemic subspecies per site in each zoogeographical region.

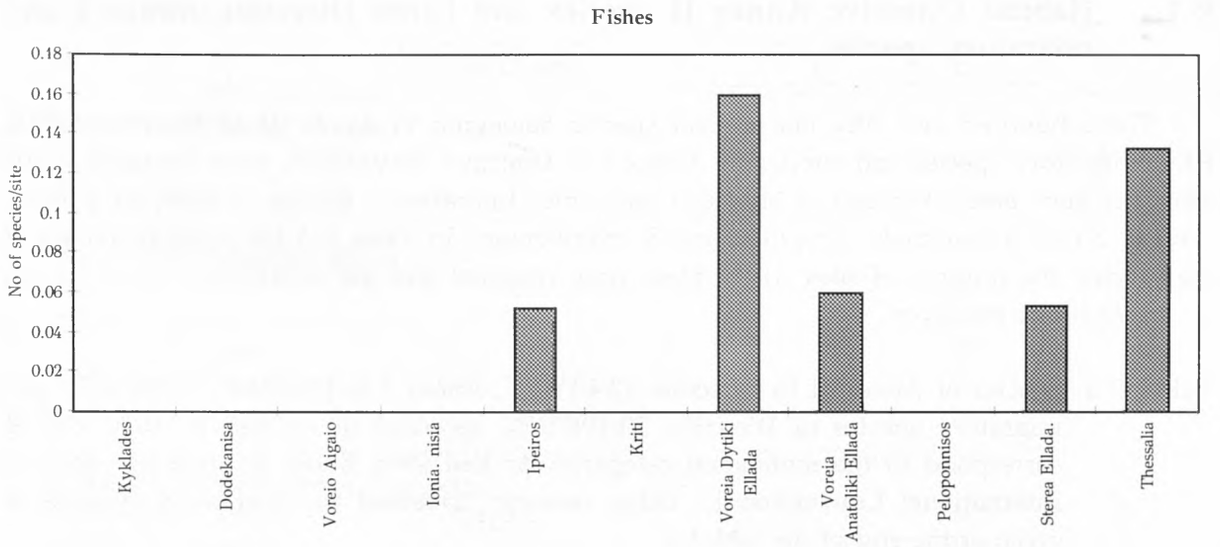


Fig. E.8. Number of endemic fish species and species with endemic subspecies per site in each zoogeographical region.

E.1.4. Habitat Directive Annex II species and Birds Directive Annex I and migratory species

Three hundred and fifty one animal species belonging to Annex II to Directive 92/43/EEC, migratory species and species of Annex I to Directive 79/409/EEC were recorded in the sites that have been proposed as Sites of Community Importance. Eleven of them are priority species: 3 fish, 3 mammals, 2 reptiles, and 3 invertebrates. In Table E.2 the scientific names of the species, the number of sites where these were recorded and the motivation (A, B, C, and D) for each one are given.

Table E.2. Species of Annex II to Directive 92/43/EEC, Annex I to Directive 79/409/EEC and migratory species of Directive 79/409/EEC recorded in Greece. A, B, C and D correspond to the motivation categories A: Red Data Book, B: Endemic taxa, C: International Convention D: Other reasons. (Detailed explanation of symbols is given at the end of the table).

MAMMALS (22 spp.)

Taxa	No of sites	A	B	C	D
Order Chiroptera (12 spp.)					
Barbastella barbastellus	3	R		II	3
Miniopterus schreibersii	11	E		II	1,3
Myotis bechsteinii	4	R		II	3
Myotis blythi	22	V		II	1,3
Myotis capaccinii	7	E		II	1,2,3
Myotis emarginatus	11	E		II	1,3
Myotis myotis	14	E		II	1,2,3,4
Rhinolophus blasii	14	E		II	1,2,3
Rhinolophus euryale	4	E		II	1,2,3
Rhinolophus ferrumequinum	35	V		II	1,3
Rhinolophus hipposideros	22	V		II	1,3
Rhinolophus mehelyi	5	E		II	1,3
Order Rodentia (1 sp.)					
Citellus citellus	28	V		II	1,3
Order Carnivora (4 spp.)					
Canis lupus	5	V		II,II	2,3,4
Lutra lutra	61	V		II,I	1,2,3,4
Lynx lynx	2	E		III	2,3
Ursus arctos	31	E		II,II	2,3
Order Pinnipedia (1 sp.)					
Monachus monachus	68	E		II,I,I/II	1,2,3,4
Order Artiodactyla (2 spp.)					
Capra aegagrus	5	E		II	3
Rupicapra rupicapra balcanica	20	R		III	3
Order Cetacea (2 spp.)					
Phocoena phocoena	1	R		II,II	1,2,3,4
Tursiops truncatus	19			II,II	1,3

BIRDS (276 spp.)

Taxa	No of sites	A	B	C	D
Order Gaviiformes (2 spp.)					
Gavia arctica	17			II	3
Gavia stellata	9			II	3
Order Podicipediformes (5 spp.)					
Podiceps auritus	5			II	
Podiceps cristatus	38				
Podiceps griseigena	6	I		II	
Podiceps nigricollis	36	K		II	
Tachybaptus ruficollis	39			III	
Order Procelariiformes (4 spp.)					
Calonectris diomedea	18			III	1,3
Hydrobates pelagicus	6	R		II	1,3
Puffinus puffinus	18			II	
Order Pelecaniformes (5 spp.)					
Pelecanus crispus	20	E1		II,I,II	2,3,4
Pelecanus onocrotalus	14	E1		II	3
Phalacrocorax aristotelis desmarestii	14	V		III	
Phalacrocorax carbo sinensis	35			III	1
Phalacrocorax pygmeus	27	E2		II	2,3,4
Order Ciconiiformes (13 spp.)					
Ardea cinerea	47			III	
Ardea purpurea	44	V		II	1
Ardeola ralloides	45			II	1
Botaurus stellaris	21	I		II	1,3
Bubulcus ibis	5			II	
Ciconia ciconia	50			II	1,3
Ciconia nigra	31	E2		II,II,II	1,3
Egretta alba	35	E2		II	1,3
Egretta garzetta	54			II	1,3
Ixobrychus minutus	42			II	3
Nycticorax nycticorax	41	K		II	1,3
Platalea leucorodia	21	E1		II,II,II	1,3
Plegadis falcinellus	39	E1		II	1,3
Order Phoenicopteriformes (1 sp.)					
Phoenicopterus ruber	24	R		II,II,II	1,3
Order Anseriformes (31 spp.)					
Anas acuta	35			III,-,II	
Anas clypeata	34			III,-,II	
Anas crecca	38			III,-,II	
Anas penelope	37			III,-,II	
Anas platyrhynchos	40			III,-,II	
Anas querquedula	36	K		III,-,II	
Anas strepera	26	K		III,-,II	
Anser albifrons	16			III,-,II	1
Anser anser	19	E2		II,-,II	
Anser erythropus	4	E2		II,-,II	2,3,4

BIRDS (276 spp.)

Taxa	No of sites	A	B	C	D
Anser fabalis	4			III,-,II	
Aythya ferina	37	K		III,-,II	
Aythya fuligula	24			III,-,II	
Aythya marila	7			III,-,II	
Aythya nyroca	23	V		III,-,II	1,3
Branta bernicla	1			III,-,II	
Branta ruficollis	7	E2		II,II,II	2,3
Bucephala clangula	12			III,-,II	
Clangula hyemalis	3			III,-,II	
Cygnus columbianus bewickii	2			II,-,II	1,3
Cygnus cygnus	16	K		II,-,II	1,3
Cygnus olor	34			III,-,II	
Melanitta fusca	3			III,-,II	
Melanitta nigra	3			III,-,II	
Mergus albellus	7			II,-,II	
Mergus merganser	3	E2		III,-,II	
Mergus serrator	15			III,-,II	
Netta rufina	21	R		III,-,II	
Oxyura leucocephala	6	E2		II,II,II	1,2,3,4
Somateria mollissima	1			III, II	1
Tadorna ferruginea	17	E1		II,-,II	3
Tadorna tadorna	26	V		II,-,II	
Order Accipitriformes (26 spp.)					
Accipiter brevipes	36			II,-,II	3
Accipiter gentilis	41			II,-,II	
Accipiter nisus	58			II,-,II	
Aegypius monachus	17	E1		II,-,II	1,2,3,4
Aquila chrysaetos	80			II	1
Aquila clanga	15	E2		II,-,II	3
Aquila heliaca	15	E1		II,-,I	2,3,4
Aquila pomarina	31	V		II,-,II	3
Buteo buteo	86			II,II	
Buteo lagopus	3			II,II	
Buteo rufinus	47	R		II,II	
Circaetus gallicus	81			II,II	1,3
Circus aeruginosus	62	V		II,II	1,3
Circus cyaneus	43			II,II	1,3
Circus macrourus	19			II,II	3
Circus pygargus	32	E1		II,II	1,3
Gypaetus barbatus	28	E1		II,II	1,3
Gyps fulvus	66			II,II	1,3
Haliaeetus albicilla	22	E1		II,I	1,2,3,4
Hieraaetus fasciatus	50	V		II,II	1,3
Hieraaetus pennatus	57	V		II,II	1,3
Milvus migrans	33	E1		II,II	1,3
Milvus milvus	13			II,II	1,2,3,4
Neophron percnopterus	45	V		II,II	1,3
Pandion haliaetus	21	I		II,II	1,3
Pernis apivorus	63			II,II	1,3

BIRDS (276 spp.)

Taxa	No of sites	A	B	C	D
Order Falconiformes (7 spp.)					
Falco biarmicus	37	V		II,II	1,3
Falco columbarius	21			II,II	3
Falco eleonorae	54	K		II,II	1,3
Falco naumanni	34	V		II,II	1,3,4
Falco peregrinus	88	K		II,I	1,3
Falco subbuteo	48			II,II	
Falco vespertinus	45			II,II	
Order Galliformes (3 spp.)					
Bonasa bonasia	6	I		III	3
Coturnix coturnix	35	K		III	
Tetrao urogallus	3	R		III	3
Order Gruiformes (7 spp.)					
Crex crex	2			II	
Fulica atra	44			III	
Grus grus	7			II	1,3
Porzana parva	10	R		II	3
Porzana porzana	6			II	3
Porzana pusilla	6			II	3
Tetrax tetrax	1	Ex		II,II	1,2,3,4
Order Charadriiformes (58 spp.)					
Actitis hypoleucos	39			III	
Arenaria interpres	14			II	
Burhinus oedicnemus	36	V		II	1,3
Calidris alba	17			II	
Calidris alpina	27			II	
Calidris canutus	3			II	
Calidris ferruginea	26			II	
Calidris minuta	32			II	
Calidris temminckii	14			II	
Charadrius alexandrinus	27			II	
Charadrius dubius	41			II	
Charadrius hiaticula	24			II	
Charadrius morinellus	3	K			1
Chlidonias hybridus	29	V		II	3
Chlidonias leucopterus	26			II	
Chlidonias niger	34	V		II	1,3
Gallinago gallinago	36			III	
Gallinago media	13				
Gelochelidon nilotica	22	K		II	1,3
Glareola pratincola	31	V		II	1,3
Haematopus ostralegus	22	K		III	
Himantopus himantopus	35	V		II	1,3
Hoplopterus spinosus	6	E2		II	3
Larus audouinii	11	E2		II,-,I	1,2,3,4
Larus canus	13			III	
Larus fuscus	6				
Larus genei	20	E2		II	1,3
Larus marinus	1				

BIRDS (276 spp.)

Taxa	No of sites	A	B	C	D
Larus melanocephalus	29	V		II	3
Larus minutus	24			II	
Larus ridibundus	44			III	
Limicola falcinellus	7	K		II	
Limosa lapponica	3			III	
Limosa limosa	27			III	
Lymnocryptes minimus	14			II	
Numenius arquata	26			III	
Numenius phaeopus	11			III	
Numenius tenuirostris	8	E1		II,I	2,3,4
Phalaropus lobatus	7			III	1
Philomachus pugnax	33			III	
Pluvialis apricaria	16			III	1,3
Pluvialis squatarola	27			III	
Recurvirostra avosetta	24	V		II	1,3
Scolopax rusticola	29			III	
Stercorarius parasiticus	4			III	
Stercorarius pomarinus	1			III	
Sterna albifrons	32			II	1,3
Sterna caspia	20	K			3
Sterna hirundo	38			II	1,3
Sterna sandvicensis	26	I		II	1,3
Tringa erythropus	22			III	
Tringa glareola	37			II	1,3
Tringa nebularia	27			III	
Tringa ochropus	33			II	
Tringa stagnatilis	24	K		II	
Tringa totanus	35			III	
Vanellus vanellus	35			III	
Xenus cinereus	3			III	
Order Columbiformes (12 spp.)					
Clamator glandarius	9			II	
Columba oenas	21	R		III	
Columba palumbus	48			II	
Cuculus canorus	50			III	3
Streptopelia turtur	67			III	
Order Strigiformes (5 spp.)					
Aegolius funereus	6	R		II,II	3
Asio flammeus	11			II,II	1,3
Bubo bubo	46			II,II	1,3
Glaucidium passerinum	2			II,II	3
Otus scops	58			II,II	
Order Caprimulgiformes (1 sp.)					
Caprimulgus europaeus	89			II	3
Order Apodiformes (3 spp.)					
Apus apus	64			III	
Apus melba	64			II	
Apus pallidus	21			II	

BIRDS (276 spp.)

Taxa	No of sites	A	B	C	D
Order Coraciiformes (4 spp.)					
Alcedo atthis	57			II	1,3
Coracias garrulus	47	V		II	3
Merops apiaster	56			II	
Upupa epops	59			II	
Order Piciformes (7 spp.)					
Dendrocopos leucotos	21	R		II	1,3
Dendrocopos medius	40			II	3
Dendrocopos syriacus	40			II	3
Dryocopus martius	19			II	1,3
Jynx torquilla	27			II	
Picoides tridactylus	2	R		II	3
Picus canus	10	R		II	3
Order Passeriformes (82 spp.)					
Acrocephalus arundinaceus	34			II	
Acrocephalus melanopogon	19	R		II	3
Acrocephalus paludicola	2				2
Acrocephalus palustris	10			II	
Acrocephalus schoenobaenus	21			II	
Acrocephalus scirpaceus	29			II	
Alauda arvensis	47			III	
Anthus campestris	58			II	
Anthus cervinus	11			II	
Anthus pratensis	47			II	
Anthus spinoletta	31			II	
Anthus trivialis	47			II	
Calandrella brachydactyla	56			II	3
Carduelis spinus	33			II	
Cercotrichas galactotes	31			II	
Coccothraustes coccothraustes	38			II	
Corvus frugilegus	19				
Delichon urbica	74			II	
Emberiza caesia	35			II	3
Emberiza cineracea	2	R		II	3
Emberiza citrinella	24			II	
Emberiza hortulana	53			III	3
Emberiza melanocephala	53			II	
Emberiza pusilla	2			II	
Emberiza schoeniclus	24			II	
Erithacus rubecula	66			II	
Ficedula albicollis	28			II	3
Ficedula hypoleuca	21			II	
Ficedula parva	4			II	3
Ficedula semitorquata	22	R		II	3
Fringilla coelebs	78			III	
Fringilla montifringilla	23			III	
Hippolais icterina	22			II	
Hippolais olivetorum	30			II	3
Hippolais pallida	43			II	
Hirundo daurica	68			II	

BIRDS (276 spp.)

Taxa	No of sites	A	B	C	D
Hirundo rustica	75			II	
Lanius collurio	87			II	3
Lanius excubitor	8			II	
Lanius minor	55	K		II	3
Lanius nubicus	12	R		II	
Lanius senator	61			II	
Locustella fluviatilis	4			II	
Locustella luscinioides	14	K		II	
Locustella naevia	7			II	
Lullula arborea	82			III	3
Luscinia luscinia	2			II	
Luscinia megarhynchos	62			II	
Luscinia svecica	3			II	1,3
Melanocorypha calandra	21			II	3
Monticola saxatilis	19			II	
Motacilla alba	56			II	
Motacilla cinerea	54			II	
Motacilla flava	55			II	
Muscicapa striata	60			II	
Oenanthe hispanica	57			II	
Oenanthe isabellina	10	R		II	
Oenanthe oenanthe	71			II	
Oriolus oriolus	50			II	
Panurus biarmicus	18			II	
Passer hispaniolensis	44			III	
Phoenicurus ochruros	49			II	
Phoenicurus phoenicurus	35			II	
Phylloscopus bonelli	33			II	
Phylloscopus collybita	61			II	
Phylloscopus sibilatrix	35			II	
Phylloscopus trochilus	40			II	
Prunella modularis	48			II	
Ptyonoprogne rupestris	51			II	
Pyrrhocorax pyrrhocorax	30			II	2,3
Regulus regulus	34			II	
Riparia riparia	42			II	
Saxicola ruberta	59			II	
Sitta krueperi	2	R		II	
Sturnus roseus	6			II	
Sturnus vulgaris	43				
Sylvia atricapilla	50			II	
Sylvia borin	22			II	
Sylvia cantillans	50			II	
Sylvia communis	52			II	
Sylvia conspicillata	1			II	
Sylvia curruca	33			II	
Sylvia hortensis	32			II	
Sylvia nisoria	9			II	1,3
Sylvia rueppelli	25			II	3
Turdus iliacus	23			III	
Turdus philomelos	52			III	
Turdus pilaris	27			III	

BIRDS (276 spp.)

Taxa	No of sites	A	B	C	D
Turdus torquatus	9	R		III	

REPTILES (10 spp.)

Taxa	No of sites	A	B	C	D
Caretta caretta	33	E		II,I	1,2,3,4
Elaphe quatuorlineata	77			II	1,3
Elaphe situla	96			II	1,3
Emys orbicularis	54			II	1,3
Mauremys caspica	76			II	1,3
Testudo graeca	48			II,II	1,2,3,4
Testudo hermanni	109			II,II	1,2,3,4
Testudo marginata	57			II,II	1,2,3
Vipera schweizeri	3	V	+	II	1,2,3,4
Vipera ursinii	5	R		II,I	3

AMPHIBIANS (4 spp.)

Taxa	No of sites	A	B	C	D
Bombina bombina	2			II	3
Bombina variegata	62			II	3
Mertensiella luschani	4	R		II	1,2,3
*Triturus cristatus**	45			II	3

* Includes *T. karelinii* and *T. carnifex*

FISH (28 spp.)

Taxa	No of sites	A	B	C	D
Acipenser sturio	1			III,I	1,2,3,4
Alosa alosa[1]	1				
Alosa fallax	7			III	3
Aphanius fasciatus	18			III	
Aspius aspius	4			III	3
Barbus capito[2]	15				
Barbus meridionalis[3]	29				
Barbus plebejus[4]	28				
Chalcalburnus belvica	1		+		
Chalcalburnus chalcoides	5	V		III	3
Cobitis taenia[5]	21				
Cobitis trichonica	5	L/V	+	III	
Eudontomyzon spp.[6]	4				
Gobio albipinnatus	1			III	
Gobio uranoscopus	2	L/V		III	
Ladigesocypris ghigii	2	V/E			1
Leuciscus souffia[7]	1				
Phoxinellus spp.[8]	23				

FISH (28 spp.)

Taxa	No of sites	A	B	C	D
Pomatoschistus canestrini[9]	2				
Rhodeus sericeus amarus	14			III	3
Rutilus alburnoides[10]	9				
Rutilus rubilio[11]	11				
Sabanejewia aurata	6	V		III	
Salmo macrostigma	19				
Scardinius graecus	1		+		
Silurus aristotelis	5			III	1
Valencia hispanica[12]	9				
Zingel streber	1			III	2,3

1 Includes *A. macedonica* and *A. caspia vistonica*

2 Includes *B. albanicus* and *B. graecus*

3 Includes *B. peloponnesius*

4 Includes *B. euboicus, B. cycloplepis* and *B. prespensis*

5 Includes *C. arachthosensis, C. hellenica, C. meridionalis, C. punctilineata, C. stephanidisi, C. strumicae* and *C. vardarensis*

6 Includes *E. hellenicus*

7 Includes *L. keadicus*

8 Includes *P. pleurobipunctatus, Paraphoxinus epiroticus, Pseudophoxinus beoticus* and *P. stymphalicus*

9 Includes *Economidichthys pygmaeus*

10 Includes *Tropidophoxinellus hellenicus* and *T. spartiaticus*

11 Includes *R. ohridanus* and *R. ylikiensis*

12 Includes *V. letourneuxi*

Because of the recent conception on fish taxonomy and distribution it was not possible to present the motivations of the fish species included in cases 1 to 12 mentioned above.

INVERTEBRATES

INSECTS (11 spp.)

Taxa	No of sites	A	B	C	D
Odonata (2 spp.)					
Lindenia tetraphylla	1			II	3,5,7,10
Ophiogomphus cecilia	2			II	2,3,4,5,6,7,10
Lepidoptera (4 spp.)					
Callimorpha quadripunctaria	27				5
Eriogaster catax	2			II	2,3,4,5,6,10
Euphydryas aurinia	7			II	3,5,8
Lycaena dispar	17			II	2,3,4,5,6,8,10
Coleoptera (5 spp.)					
Cerambyx cerdo	3			II	2,3,4,5,6,9,10
Lucanus cervus	14			III	5
Morimus funereus	6				2,3,4,5,6,9,10
Osmoderma eremita	1			II	2,3,4,5,6,9
Rosalia alpina	3			II	1,2,3,4,5,6,10

MOLLUSCS (1 sp.)

Taxa	No of sites	A	B	C	D
Unio crassus	5				2,5

Explanation of symbols

A: M. Karandinos (ed.). 1992.- The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society-Hellenic Ornithological Society, 356 p.
Ex: Extinct species
E: Endangered species (E1: Immediately endangered, E2: Not immediately endangered)
V: Vulnerable species
R: Rare species
I: Indeterminate species
K: Insufficiently known species
L: Locally threatened species

B: Species and subspecies (for vertebrates only) endemic to Greece.

C: Council of Europe 1979.- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973.
Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).
I: Annex I
II: Annex II
III: Annex III

D:

1: Presidential Decree 67/1981. "On the protection of wild flora and fauna and on the determination of procedures for the coordination and control of research". Ministerial Decree 414985/29.11.85. "Measures for the management of wild avifauna".
2: Economic Commission for Europe. 1991. European Red List of Globally Threatened Animals and Plants. United Nations. 150 p.
3: CORINE-Biotopes project. 1988. Technical Handbook vol. 1.
4: IUCN Conservation Monitoring Centre 1988. Red List of Threatened Animals. IUCN. 154 p.
5: Koomen, P. and P.J. van Helsdingen. 1996. Listing of biotopes in Europe according to their significance for invertebrates. Council of Europe, Nature and Environment No 77. 74 p.
6: Collins, N.M. and S.M. Wells. 1987. Invertebrates in need of special protection in Europe. Council of Europe, Nature and Environment No 34. 162 p.
7: Van Tol, J. and M.J. Verdonk. 1988. The protection of dragonflies (Odonata) and their biotopes. Council of Europe, Nature and Environment No 36. 181 p.
8: Heath, J. 1981. Threatened Rhopalocera (butterflies) of Europe. Council of Europe, Nature and Environment No 23. 157 p.
9: Speight, M.C.D. 1989. Saproxylic invertebrates and their conservation. Council of Europe, Nature and Environment No 42. 72 p.
10: European Invertebrate Survey. 1991. Proposed revised list of threatened invertebrates in need of protection of habitat in the community. Manuscript. 7 p.

Looking at the motivations of the various animal groups encountered in Greece, mammals of Annex II to Directive 92/43/EEC have the highest percentage of motivation A (inclusion in the Red Data Book of Threatened Vertebrates of Greece) (Fig. E.9). On the contrary, the other animal groups contain many species that are not considered as threatened in Greece. It must be noted though, that most of the Red Data Book species have been recorded in the NATURA 2000 database either as species of the Directives or as Other Important Species (Fig. E.10).

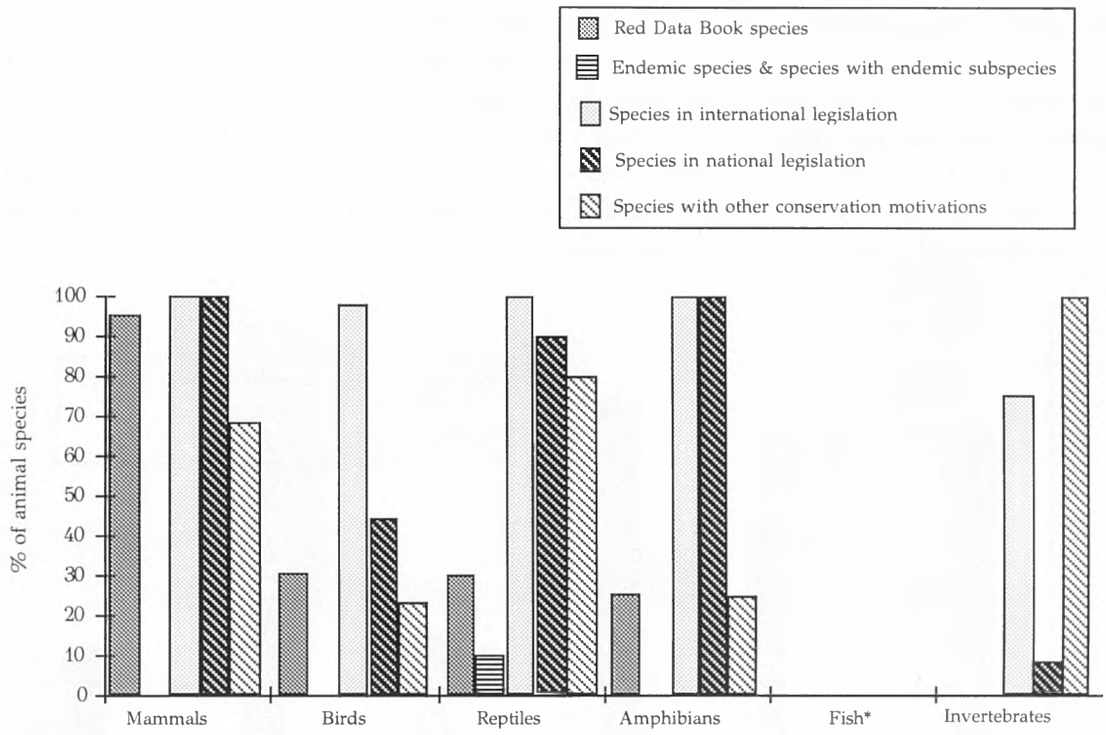


Fig. E.9. Percentage of animal species in Annex II to Directive 92/43/EEC and Annex I to Directive 79/409/EEC and migratory species to Directive 79/409/EEC, recorded in Natura 2000 sites in Greece, according to their conservation motivation (Red Data Book species, endemic species & species with endemic subspecies, species in international conventions, species in national legislation, species with other conservation motivations).
* The percentages of different motivations for fish species are not quoted (see section E.6.)

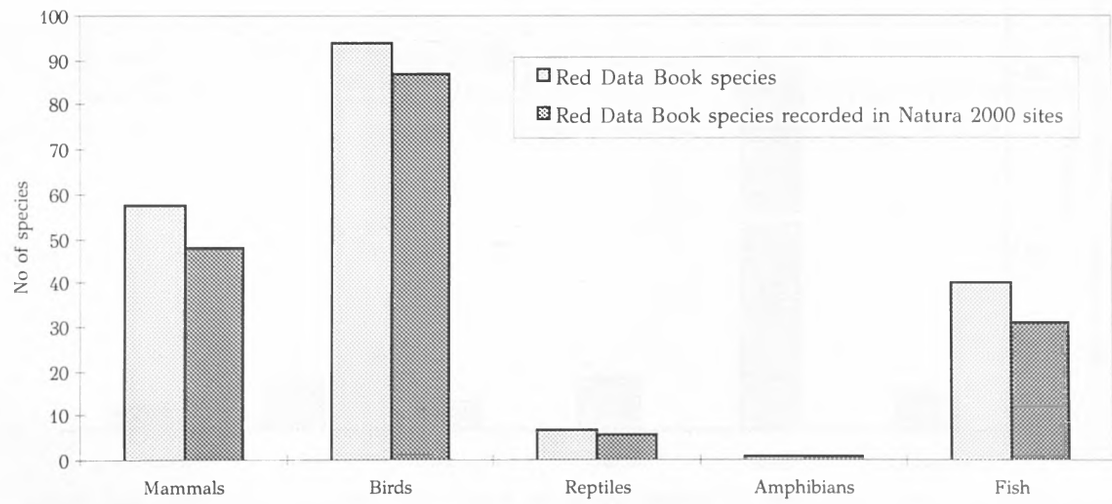


Fig. E.10. Comparison of the number of species in the Red Data Book with the number of Red Data Book species recorded in the Natura 2000 sites.

The Habitat and Bird Directives lack in Greek endemics (Fig. E.9) apart from a limited number of endemic reptiles. On the contrary, most of the species protected by international conventions that are present in Greece are listed in the Directives. As it concerns the species protected by the national legislation, they are also well represented in the Annexes to the Directives, with the exception of invertebrates. In particular, less than 10% of the invertebrate species recorded in the sites are protected by national legislation.

Among the various animal groups, mammals and reptiles are more often encountered in the studied sites (Fig. E.11). Approximately 70% of the sites host species from these two groups with a mean number of c. 2-3 species from each one per site (Fig. E.12). Bird Directive species have been recorded in half of the sites with a mean number of 60 species per site. However, it must be noted that only Important Bird Areas were surveyed for birds. Amphibians, fish and invertebrates are present in less than 1/3 of the sites. From the species listed in the two Directives, those referred also in the Red Data Book are present in 26% of the sites; endemic taxa are present in only 0.2%; species protected by international conventions in 47%, and those with motivation D (other reasons) in 48% of the sites.

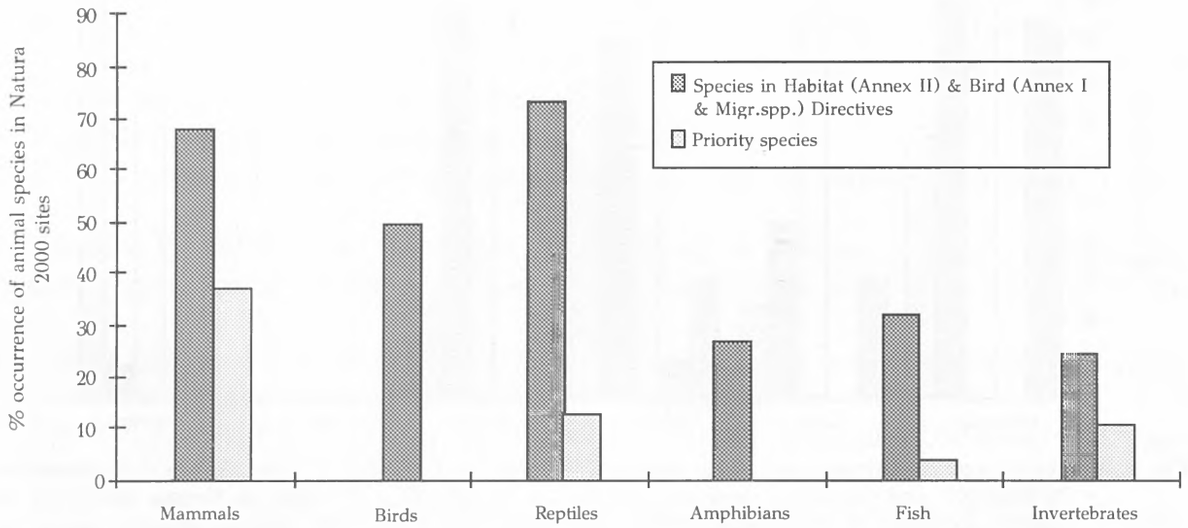


Fig. E.11. Percentage of sites in which the different animal groups (species of Annex II to Directive 92/43/EEC and Annex I to Directive 79/409/EEC and migratory species to Directive 79/409/EEC) are present.

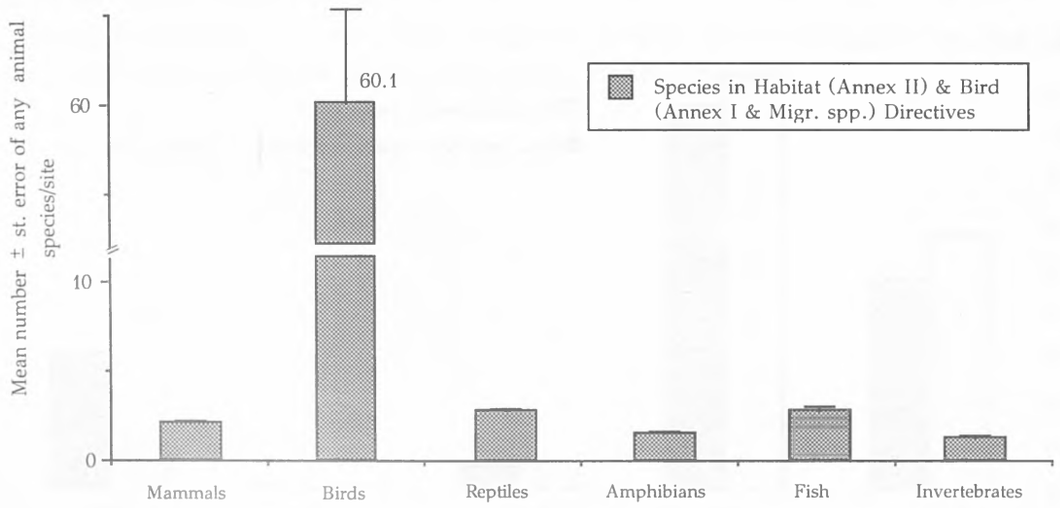


Fig. E.12. Mean number (±st. error) of animal species in Annex II to Directive 92/43/EEC and Annex I to Directive 79/409/EEC and migratory species to Directive 79/409/EEC per site, where they occur.

Comparing the proportion of sites where each animal group is present (Fig. E.11) with the mean number of species per site (Fig. E.12) we note that many animal groups which are present in a high proportion of sites are represented by a low number of species (from 3-5) with the exception of birds.

E.1.5. Other Important Animal Species

A large number of species and subspecies, namely 1183 taxa, not included in the Annexes to the two Directives were considered important and were recorded in the studied sites in fields 3.3. and 3.4 of the Standard Data Form, as Other Important and Greek Important Species, respectively. The distribution of these taxa in the various animal groups is shown in Fig. E.13.

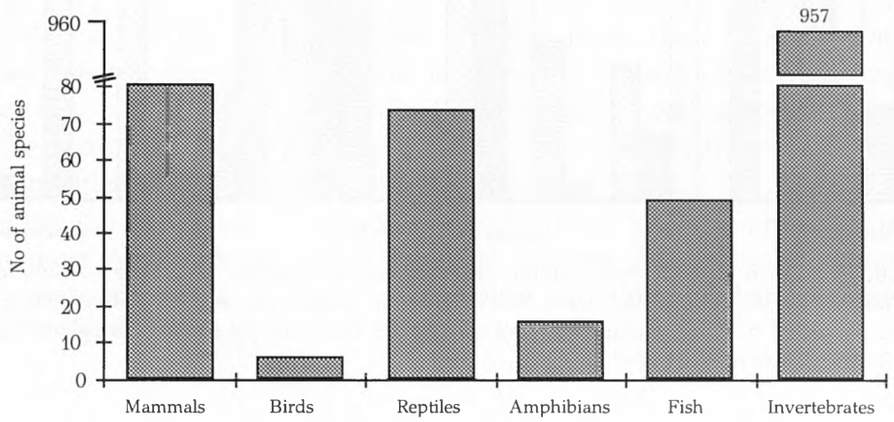


Fig. E.13. Number of Other Important Species in each animal group.

In Appendix 6 to the present publication, the scientific names of species, the number of sites in which these were recorded as well as the conservation motivations for each one are given. Only subspecies of the vertebrates were taken into consideration since invertebrate subspecies are very numerous and of uncertain taxonomic position.

Looking at the motivations of the Other Important Species per animal group (Fig. E.14) we observe that approximately 50% of the fish and mammal taxa are icluded in the national Red Data Book of Threatened Vertebrates, whereas only 4% of the reptiles and none of the amphibians belong to the same category. Data concerning the avifauna is not representative as only 5 species were recorded as Other Important Species (see also Chap. E.3.).

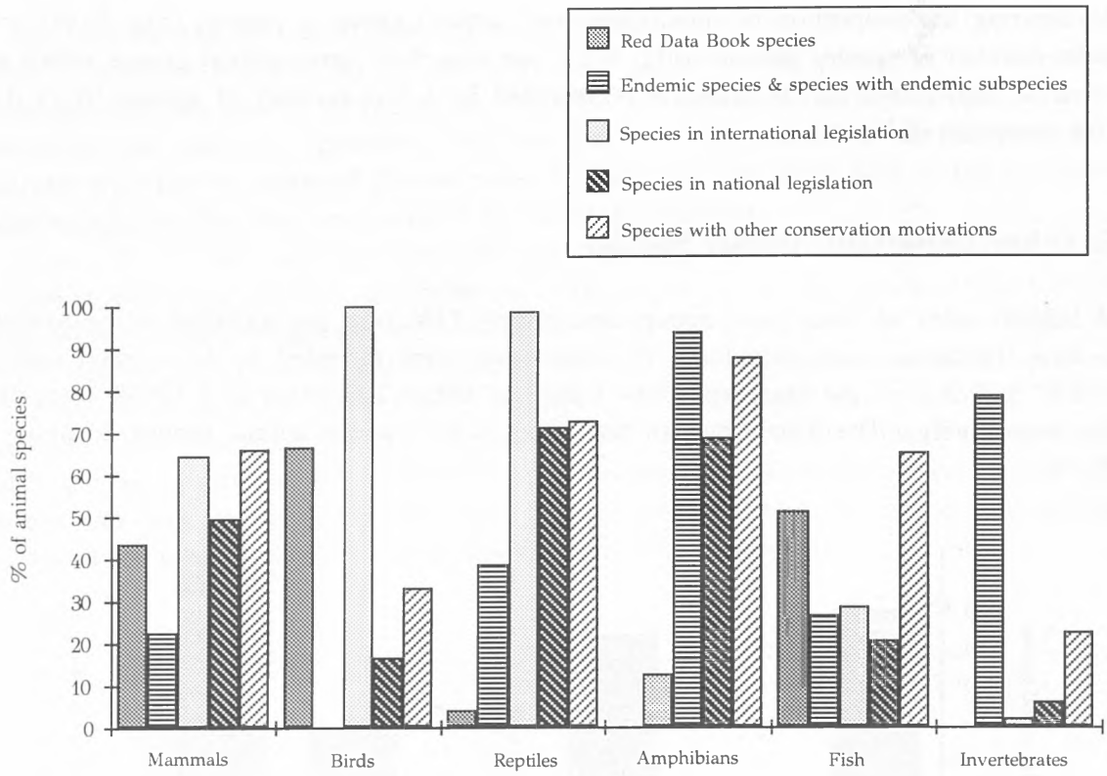


Fig. E.14. Percentage of each animal group of the Other Important Species according to their conservation motivation (species in the Red Data Book, endemic species & species with endemic subspecies, species protected by international conventions, species protected by national legislation, species with other conservation motivations).

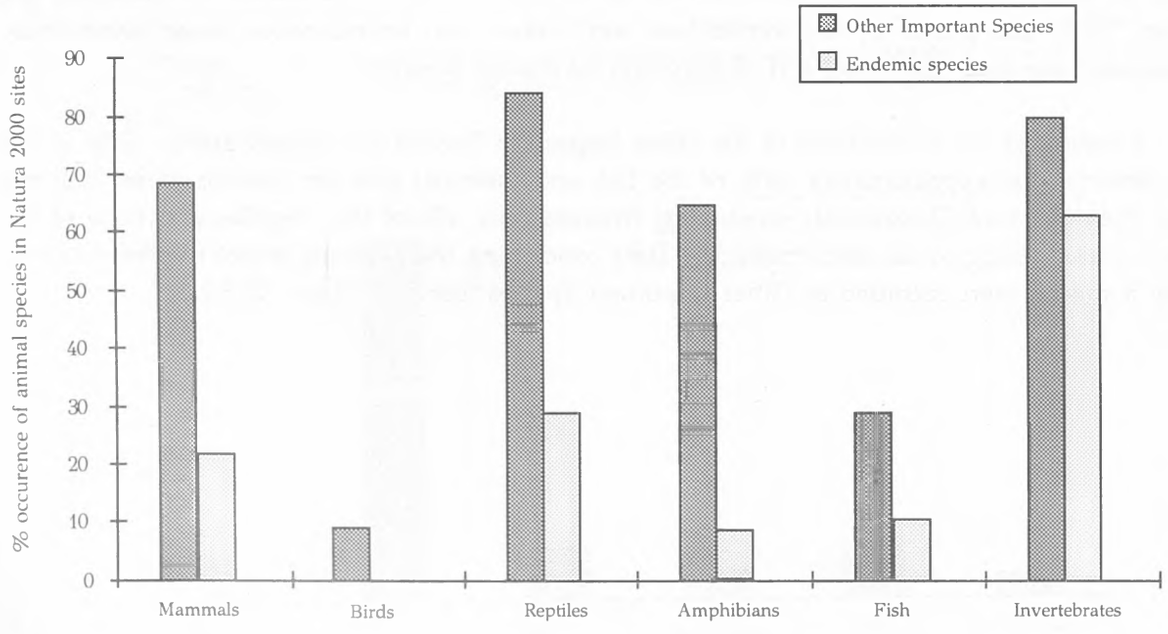


Fig. E.15. Percentage of the occurrences of each animal group of the Other Important Species in the Natura 2000 sites in Greece.

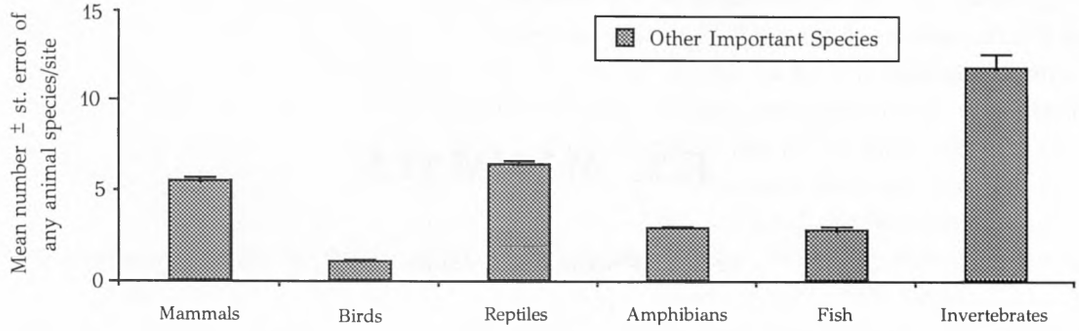


Fig. E.16. Mean number (± standard error) of each animal group of the Other Important Species per site where it occurs.

Other Important Species of reptiles, invertebrates, and mammals have the most frequent occurrence in the proposed Natura 2000 sites (Fig. E.15). Each site has on average more than 10 invertebrate species (Fig. E.16), 7 reptile and 6 mammal taxa. Of all the Other Important Species, those listed in the Red Data Book are present in 14.5% of the sites, endemic taxa in 22%, species in international conventions in 44% and species with other motivation in 39% of the sites. The most frequently occurring endemic taxa belong to the invertebrates. The other groups have medium to low occurring endemic taxa (Fig. E.15).

Comparing the percentage of sites where each animal group is present (Fig. E.15) with the mean number of species per site (Fig. E.16), we note that the animal groups which are present in a high percentage of sites are represented by a low number of species (from 3-5), the group of invertebrates excepted.

E.2. MAMMALS

by ***S.E. Fraguedakis-Tsolis*** *and* ***B. P. Chondropoulos***

E.2.1. Introduction

It is well known that mammals are a very diverse group concerning body size, shape, colouring and behaviour patterns. Although it is not the richest group of vertebrates in species number (it comprises 4,000 species), mammals have adapted to diverse environments (sea, freshwater, land and air).

The wild mammal fauna in Greece consists of 100 species belonging to 65 genera and are classified into 29 families and 8 orders. The number of mammals species in Europe is 190, belonging to 120 genera, 39 families and 9 orders. Thus, it is clear that a fairly rich mammal fauna occurs in Greece. This is further enhanced by the fact that among the mammal taxa in Greece 2 species (the insectivore *Crocidura zimmermanni* and the rodent *Acomys minous*), and 26 subspecies are endemic.

Greece offers habitats to a number of mammal species which are threatened with extinction or are already extinct in other European countries (e.g., otter, wolf, brown bear, jackal, etc.). However, mammal populations and their habitats face serious threats in Greece too. This situation has led to dwindling or extinction of at least some of the taxa and degradation or loss of their habitats. For example, during the last 100 years species such as the beaver, brown bear, wolf, lynx, or the deer have disappeared from most or the entire of their distribution areas in Greece. The reasons for their reduction are generally the same as those which also threaten the other animal groups and are attributed to various human activities which negatively influence both the species themselves and their habitats. Illegal hunting and fishing, deforestation, intensification of agriculture, excessive use of pesticides and fertilizers, road construction, destructive interference in wetlands, and urbanization, are the major activities with a negative effect. Illegal hunting and fishing directly reduce the populations of some terrestrial and marine mammals by killing a sizeable percentage of their populations, as in the case of hares, brown bears, deers, roe deers, wild goats, otters, wolfs, jackals, monk seals, and dolphins. Overfishing indirectly influences the food supply of monk seals. The alteration of the natural character of habitats through deforestation, intensification of agriculture, and urbanization, damage the populations of almost all the mammals in Greece, e.g., bats, ground-dwelling rodents, large carnivores and ungulates. The pollution of soil and water bodies affects otters, water insectivores, rodents, and some bats.

In the framework of the ''Natura 2000'' project, 102 Greek mammal species and subspecies have been recorded in the database. Among them, 22 taxa are listed in Annex II to Directive 92/43/EEC. The remaining 80 taxa have been recorded in fields 3.3 and 3.4 of the Standard Data Form as Other and Greek Important Species respectively, 26 of which are mentioned in Annex IV, and 4 in Annex V to the directive. Also, 60 out of the 102 evaluated taxa are listed in the "Red Data Book of Threatened Vertebrates of Greece".

The number of Greek endemic taxa recorded in the database is 16, i.e., about 57.1% of the total number of Greek endemic species and subspecies. Of the total number of 102 taxa, 57 are protected by Greek law (Presidential Decree 67/1981) and 76 by International Conventions (i.e. Bern, CITES and Bonn conventions). Finally, 92 taxa are considered important for a number of other reasons (motivation D) i.e.: their listing in the IUCN Red List of Threatened Animals (1988) and the European Red List of Globally Threatened Animals and Plants (1991); their inclusion in the CORINE-Biotopes database; their isolated populations; their limited distribution in the country; their exploitation; the fact that they are endemic to Greece and adjacent countries; the fact that Greece is in the limits of their distribution range.

The 22 Annex II taxa of Directive 92/43/EEC present in Greece belong to 6 orders (Table E.2). More than half of these taxa (12) are bats (Order: Chiropetra). All the other orders (Rodentia, Carnivora, Pinnipedia, Artiodactyla and Cetacea) are represented by one to four taxa. It should be noted that three of the 22 Annex II taxa are priority species (*Ursus arctos, Canis lupus,* and *Monachus monachus*).

As is shown in Table E.2, none of the mammal taxa endemic to Greece is included among the 22 Annex II taxa, although, many of these endemics, restricted to rather small regions of the total EC area, will possibly face serious population pressure if conservation measures will not be taken. The Annex II mammals have been recorded in 203 out of 296 proposed sites (about 69%).

All the Annex II mammal taxa present in Greece are protected by one or more International Conventions, whereas 15 of them (10 Chiroptera, 1 Rodentia, 1 Carnivora, 1 Pinnipedia and 2 Cetecea) are also protected by national legislation. The 80 mammals recorded as Other Important Species for Greece belong to 7 orders, the largest of which is Rodentia (25 taxa), followed by Chiroptera (15), Carnivora (14), Insectivora (13), Lagomorpha (5), Artiodactyla (5), and Cetacea (3).Twenty per cent of the Other Important mammal taxa are endemic to Greece. The order with the greater number of endemics is Carnivora (5 taxa), whereas the order with the greater number of endemics in proportion to the total number of this order's taxa is Lagomorpha (4 out of 5 taxa, 80%).

Fifty three out of 80 Other Important Species are protected by International Conventions (66.3%), and 41 (51.3%) by national legislation. Both these percentages are considered as high.

In conclusion, Directive 92/43/EEC is considered rather incomplete concerning the mammal taxa present in Greece. Furthermore, many threatened taxa mentioned in the national Red Data Book have been omitted and many taxa endemic to Greece are not included in any of the Annexes to the Directive (e.g. the shrew *Crocidura zimmermanni* and the Cretan spiny mouse *Acomys minous*) (see Table E.1 and Appendix 6). Certain taxa with populations in decline or with limited areas of distribution in Greece are also absent, e.g. *Talpa stankovici, Crocidura lasia, Sciurus anomalus* and *Dama dama*.

E.2.2. Mammals of Greece listed in Annex II to Directive 92/43/EEC

Rhinolophus blasii Peters, 1866
Class: Mammalia, Order: Chiroptera, Family: Rhinolophidae

Common names: Blasius' horseshoe bat - Ρινόλοφος του Blasius

Description: A bat of medium size: head-body length 45-69 mm, tail length 25-31 mm, ear length 16.5-21 mm, forearm length 43-51 mm, wingspan about 280 mm, condylo-basal length 16-17.5 mm and weight 12-15 g. Dental formula is 1/2, 1/1, 2/3, 3/3 = 32. Fur is fluffy. Dorsal surface grey-brown, underside almost white or yellowish-white; border between these colour areas is sharp. Ears and wing membranes light grey. Lower connecting process of the noseleaf sella seen from the front is narrow and rounded compared to the straight and pointed upper process; in profile it is clearly shorter than the upper one. Lancet is concave tapering off evenly towards its tip.

Ecology - habits: Usually found in warm limestone areas with rather open shrub and tree cover. A nocturnal, insect feeder with hunting and feeding habits probably similar to those of *Rhinolophus euryale*. Likely a sedentary species covering small distances during its daily and seasonal movements. Winters in caves, hanging free from the ceiling singly. Summer roosts also in caves where nurseries of up to 200 females are formed. Females give birth to one young once a year, but not all females breed every year.

Distribution: Known from scattered localities throughout the mainland. Also from some islands of the Ionio Pelagos (Ionian Sea) and Aigaio Pelagos (Aegean Sea) including the Echinades archipelago, Thasos, Lesvos, Fournoi, Ikaria, Rodos, as well as Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Kentriki Ellada	Ionia Nisia Dytiki Ellada Peloponnisos	GR2220003 GR2320002 GR2510003	Ramsar 10% Game refuge 3%
Attiki	Attiki	GR3000006	Game refuge 25%, Aesthetic forest 5%
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110004 GR4110005 GR4120004	Game refuge 1%, IBA IBA
	Notio Aigaio Kriti	GR4210005 GR4340005	Natural monument 1%, Biogenetic reserve

Status and reasons for decline: Although little information is available this species is thought threatened throughout its distribution area. In the Red Data Book of Threatened Vertebrates of Greece it is classified as "Endangered". Tourist development or destruction of caves and

disturbance by humans, as this taxon's summer resting places are conspicuous, constitute the main threats to this bat.

Protective legislation: Protected by Greek legislation (Presidential Decree 67/1981) and the Bern Convention (Appendix II).

Selected references

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Rhinolophus euryale Blasius, 1853

Class: Mammalia, Order: Chiroptera, Family: Rhinolophidae

Common names: Mediterranean horseshoe bat - Μεσορινόλοφος

Description: A medium-sized bat having head-body length 43-59 mm, tail length 22-30 mm, ear length 17-24 mm, forearm length 43-52 mm, wingspan 300-320 mm, condylo-basal length 15.5-18 mm and weight 8-17.5 g. Dental formula is 1/2, 1/1, 2/3, 3/3 = 32. Fur is fluffy, grey-brown with a reddish or lilac tinge on back, grey-white to yellowish-white ventrally. Demarcation between these two areas is unclear. Area around eyes often has darker hairs. Noseleaf is light brown, ears and wing membranes are light-grey. Lower connecting process of noseleaf sella is pointed in profile, and distinctly shorter than the pointed upper process which is slightly bent downwards. Lancet becomes narrow evenly, with its sides almost parallel.

Ecology - habits: Encountered in relatively warm hilly or mountainous limestone areas with woods, caves and in the vicinity of a water body. Active throughout night, moving with agility low over ground, often among dense vegetation cover. Feeds on insects. As a rule a sedentary species, however unusual movements of over 100 km have also been reported. Obviously, a more social species than *Rhinolophus hipposideros* and *R. ferrumequinum*. Winter roosts in caves and mines with temperatures above 10°C; bats hang free from ceiling usually at a distance from each other, sometimes in contact, without being completely wrapped up in their wings. During summer, nurseries of 50-400 females (sometimes a few males also coexist) are formed in caves. Each female bears one young once or twice a year (within the period May-July). Lifespan is about 10 years.

Distribution: Known from many scattered localities on the mainland as well as from the Echinades archipelago and Alonnisos island.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110005	IBA
	Thessalia	GR1430004	Game refuge 1%, Controlled hunting area 2%, Marine Park 88%, IBA, Barcelona Convention 88%
Kentriki Ellada	Ionia Nisia	GR2220003	Ramsar 10%
	Dytiki Ellada	GR2310001	Game refuge 1%, Natural monument, SPA, Ramsar 27%, IBA, Biogenetic reserve
		GR2310002	SPA, Ramsar, IBA

Status and reasons for decline: This bat is a threatened European species; in the Red Data Book of Threatened Vertebrates of Greece it is classified under the threat category "Endangered". The population decline is mainly attributed to pesticide use and tourist development or destruction of caves. Human disturbance, as the taxon's summer resting places are conspicuous, is another factor contributing to this taxon's decline.

Protective legislation: Protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Rhinolophus ferrumequinum (Schreber, 1774)

Class: Mammalia, Order: Chiroptera, Family: Rhinolophidae

Common names: Greater horseshoe bat - Τρανορινόλοφος

Description: A large-sized bat, the largest European member of the family. Head-body length 57-71 mm, tail length 32.5-43 mm, ear length 20-26 mm, forearm length 49-61 mm, wingspan 290-350 mm, condylo-basal length 19-22 mm and weight 14-34 g. Dental formula is 1/2, 1/1, 2/3, 3/3 = 32. Fur is soft and fluffy, grey or grey-brown with reddish tinge on back, underside grey-white to yellow-white. Ears and wing membranes are light grey-brown. As in the lesser horseshoe bat, lower connecting process of noseleaf sella is pointed in profile and distinctly longer than the rounded upper part.

Ecology - habits: Found in areas with woods and shrubs, access to meadows and pastures and close to water. Also in limestone rocky areas and near human settlements. In summer emerges after sunset. Flight is relatively slow, with flutters and short glides, and low (up to 6 m). Feeds on a variety of large-sized insects. A sedentary bat with distances between winter and summer roosts usually under 30 km (however movement of 180 km has exceptionally been recorded). Echolocation signals have a frequency peak at 85 kHz. Males become sexually mature after the end of their second year, females usually between their third and fifth year. Mating usually in autumn (end of September-October), rarely later in winter roosts. Sperm is stored in the female's reproductive system until fertilization occurs in spring (March-April). Hibernation takes place in buildings, caves, and mines having temperatures of 7-10°C. In hibernacula large numbers of these bats hang free, singly or in small clusters, and are capable of wrapping themselves in their wing depending on roost temperature. From May-early June, groups of 50-500 females (often more than 1000) withdraw to summer roosts (buildings, caves, mines) where they hang individually or in small clusters. Some males and immature individuals of both sexes may coexist in these nursery colonies. The males leave the roosts when the young appear. Birth occurs in June to July. Females breed once a year bearing one young, but some of them may not breed every year. Young become fully independent from their mothers after 50-60 days. Nurseries are dispersed in August. Summer roosts may also be occupied by *Rhinolophus euryale* and *Myotis emarginatus*. The maximum lifespan of 30 years is the oldest recorded among all European bat taxa.

Distribution: A common species distributed throughout the mainland and some islands (Skyros, Syros, Lesvos, Rodos and Kriti).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110005	IBA
		GR1120003	Game refuge 6%, Natural monument 1%, Biogenetic reserve 1%
		GR1130008	
	Kentriki Makedonia	GR1250001	Core strict 26%, SPA, IBA, Game refuge 8% Biogenetic reserve 26%, Biosphere reserve 26%
		GR1250005	Core strict 100%, SPA, IBA, Biogenetic reserve 100%, Biosphere reserve 100%
Kentriki Ellada	Dytiki Ellada	GR2310005	Game refuge 70%
		GR2310009	
		GR2320007	Game refuge 20%
		GR2320009	
	Sterea Ellada	GR2450004	
	Peloponnisos	GR2520001	Game refuge 2%
		GR2520006	Game refuge 3%, Natural monument
		GR2530002	Game refuge 7%, IBA
		GR2550003	Controlled hunting area 9%, Natural monument, Biogenetic reserve

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Nisia Aigaiou, Kriti	Notio Aigaio	GR4210005	Natural monument 1%, Biogenetic reserve 1%
	Kriti	GR4320002	Game refuge 3%, IBA
		GR4330004	Game refuge 4%, IBA
		GR4330005	Game refuge 3%, Natural monument, IBA
		GR4340004	IBA
		GR4340010	IBA
		GR4340014	Core strict 100%, Game refuge 94%, SPA, IBA, Biogenetic reserve 100%, Biosphere reserve 100%, Barcelona Convention 100%, Europian Diploma site 100%

Status and reasons for decline: The greater horseshoe bat is a threatened species in Europe and is mentioned in the Red Data Book of Threatened Vertebrates of Greece classified in the threat category "Vulnerable". Tourist development or destruction of caves and other anthropogenic alterations in the species' roosting places cause strong population decline. A reduction in the numbers of large-sized insects as a result of human activities strongly influences the food availability leading to a great reduction of populations of this taxon.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Rhinolophus hipposideros (Bechstein, 1800)

Class: Mammalia, Order: Chiroptera, Family: Rhinolophidae

Common names: Lesser horseshoe bat - Μικρορινόλοφος

Description: A small-sized bat, the smallest European member of the family. Head-body length 31-45 mm, tail length 23-33 mm, ear length 14.5-19 mm, wingspan 192-254 mm, condylo-basal length 12.5-16 mm and weight 5-9 g. Dental formula is 1/2, 1/1, 2/3, 3/3 = 32. Fur is soft and fluffy, grey-brown on back, grey to grey-white on belly. Ears and wing membranes are light grey-brown. Lower connecting process of noseleaf sella is pointed in profile and distinctly longer than the rounded upper part. Ends of folded forward ears exceed snout tip.

Ecology - habits: Prefers habitats with light woods, parks or shrubs, or with limestone substrate in hilly and mountainous areas. Emerges after dark. Flies quickly close to ground surface (up to 5 m). Feeds on a variety of insects and spiders; prey is caught both in flight and on bushes or ground. A sedentary bat, sometimes moving for distances no longer than 150 km between winter and summer roosting sites. Echolocation signals have a frequency peak of 100 kHz. Both sexes become reproductively mature at one year old. Mating period is usually in autumn, occasionally during winter in hibernacula. Sperm is stored in female's body until fertilization (March-April). Hibernation occurs in caves, mines and buildings, with temperatures between 6-9°C and high humidity, where up to 500 of these bats hang separately from ceilings. From April, up to 500 females form nursery roosts in caves, mines and buildings (a number of males are also present but they withdraw when the young appear). The same roost may also be occupied by *M. myotis* nurseries. Births take place from mid-June to early August and the young are dependent on their mother's care until the completion of their first 40-50 days. Females breed once a year, bearing one young. Nurseries disperse during late August-October. Lifespan 8-18 years.

Distribution: A rather common species living throughout the mainland country. Also known from some islands of the Ionio Pelagos (Ionian Sea) and Aigaio Pelagos (Aegean Sea), among which are Kerkyra, Lesvos and Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110005 GR1130008	IBA, SPA
Kentriki Ellada	Dytiki Ellada	GR2320007	Game refuge 20%
	Peloponnisos	GR2520001 GR2530001 GR2530002	Game refuge 2% Game refuge 3% Game refuge 7%, IBA
Attiki	Attiki	GR3000006	Game refuge 25%, Aesthetic forest 5%
Nisia Aigaiou, Kriti	Kriti	GR4320002 GR4330004 GR4330005 GR4340004 GR4340005 GR4340006 GR4340010 GR4340014	Game refuge 3%, IBA Game refuge 4%, IBA Game refuge 3%, Natural monument, IBA IBA IBA IBA Core strict 100%, Game refuge 94%, SPA, IBA, Biogenetic reserve 100%, Biosphere reserve 100%, Barcelona Convention 100%, European Diploma site 100%

Status and reasons for decline: The lesser horseshoe bat is threatened in Europe (being already locally extinct) and is mentioned as "Vulnerable" in the Red Data Book of Threatened Vertebrates of Greece. The tourist development or destruction of caves has strongly influenced the status of many populations of this species. Various habitat alterations may cause a decrease

in food availability. This taxon is easily disturbed by humans in its conspicuous summer resting places.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Cheiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Rhinolophus mehelyi Matschie, 1901

Class: Mammalia, Order: Chiroptera, Family: Rhinolophidae

Common names: Mehely's horseshoe bat - Ρινόλοφος του Mehely

Description: A medium-sized bat having head-body length 55-64 mm, tail length 21-30 mm, ear length 18-23 mm, forearm length 46-55 mm, wingspan 330-340 mm, condylo-basal length 16.5-17.5 mm and weight 10-28 g. Dental formula is 1/2, 1/1, 2/3, 3/3 = 32. Fur is relatively thick, grey-brown above, nearly white below, with rather sharp demarcation on flanks. Darker fur around the eyes. Horseshoe and lips are flesh-coloured. Ears and flight membrane grey-brown. Lower connecting process of noseleaf sella is wide and rounded in frontal view, pointed and slightly shorter than the rounded upper process in profile. Upper half of lancet narrows sharply forming a thin apex.

Ecology - habits: Usually found in limestone areas in the vicinity of water. Active at dusk, it flies low, slowly but very skillfully. Feeds on both flying and ground insects. Appears to be sedentary. Summer and winter roosts are usually located in caves where other bat taxa may coexist (other *Rhinolophus* species, *Miniopterus schreibersii*, *Myotis blythi*). Nursing assemblies consist of up to a few hundred females. Each female gives birth to one (very rarely two) young. Lifespan is about 10 years.

Distribution: The rarest rhinolophid bat in Greece, being found in scattered localities in Macedonia, Sterea Ellada, Peloponnisos and Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Kentriki Ellada	Dytiki Ellada	GR2310003 GR2320009	IBA

Status and reasons for decline: A threatened bat throughout its very broken European distribution area. Considered to be "Endangered" according to the Red Data Book of Threatened Vertebrates of Greece. Tourist development or destruction of caves and general human disturbance (the species' resting places are conspicuous) seem to be the reasons causing the decline of this taxon.

Protective legislation: This taxon is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Barbastella barbastellus (Schreber, 1774)

Class: Mammalia, Order: Chiroptera, Family: Vespertilionidae

Common names: Barbastelle bat - Μπαρμπαστέλλος

Description: A medium-sized bat, with head-body length 45-58 mm, tail length 38-54 mm, ear length 12-18 mm, forearm length 36-44 mm, wingspan 245-290 mm, condylo-basal length 12-14.7 mm and weight 6-13.5 g. Dental formula is 2/3, 1/1, 2/2, 3/3 = 34. Fur is long and silky, upperside black-brown with yellow-white hair tips and underside dark grey to grey-brown. Naked surface of face and ears are nearly black and wing membranes are grey-brown to black-brown. Ear conches are broad, turned forwards and joined along the lower part of their inner edges. On the outer ear edge there are 5-6 distinct transverse folds. If ear folds forward its tip exceeds tip of the obviously short snout. Tragus is triangular extending to about the half of the conch length. Nostril opens upwards. Lateral membrane extends as far as the base of toes. Calcar reaches about half the length of the tail membrane margin. A very narrow post-calcarial lobe also exists.

Ecology - habits: The barbastelle bat lives in wooded river valleys, hills and mountains; also in parks and near human settlements. Emerges around sunset and shows an intermittent night activity pattern. Flies slowly but skillfully near water surfaces or higher at tree-top level. Feeds on a variety of small-sized and soft-bodied insects. It is an occasionally migrant species, sometimes covering distances of up to 300 km. Females mature during their second year. Mating usually takes place in autumn, sometimes in hibernacula (caves, mines, tree holes, even nearly in the open) where several hundreds of these bats are assembled. It tolerates lower temperatures during hibernation compared to other bat species (0-5°C). From late-spring, the two sexes segregate, females retreating to summer roosts (caves, buildings, trees) usually in

small groups (10-20 individuals). Births occur from mid-June. Each female breeds once a year, giving birth to one young (rarely two), which are dependent on their mother's care. Maximum lifespan recorded is 23 years.

Distribution: Known from very few mountainous localities of the central mainland (Sterea Ellada).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites: None.

Status and reasons for decline: The barbastelle bat is a threatened European species. According to the Red Data Book of Threatened Vertebrates of Greece, this species is considered "Rare". Alterations or destruction of roosting sites due to tourist development of caves, timber treatment, etc., have great impact on this bat colonies.

Protective legislation: It is protected by the Bern Convention (Appendix II).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Miniopterus schreibersii (Kuhl, 1819)

Class: Mammalia, Order: Chiroptera, Family: Vespertilionidae

Synonyms: *Miniopterus schreibersi*

Common names: Schreiber's bat - Πτερυγονυχτερίδα

Description: A medium-sized bat, with a very short snout and high forehead. Head-body length is 44-62 mm, tail length 50-65 mm, ear length 9.5-13.5 mm, forearm length 42-48 mm, wingspan 305-350 mm, condylo-basal length 14-15.5 mm and weight 9-16 g. Dental formula is 2/3, 1/1, 2(3)/3, 3/3 = 36(38). Head fur is short, dense and erect. Fur of dorsal area is short, grey-brown to ash-grey, that of underside is lighter grey. Snout tip, ears and wing-membranes are grey-brown. Ears are short (not projecting above the head top), triangular, with 4-5 transverse folds. Tragus is short, with its rounded tip directed inwards. Lateral membrane reaches heel. Feet and tail relatively long. Calcar extends to about 1/3 to 1/2 length of the tail membrane margin. No post-calcarial lobe.

Ecology - habits: Typical habitats are open, rocky, limestone areas with caves and other ground cavities, at altitudes up to 1000 m. Emerges at dusk remaining active throughout the night. Moves very fast (50-55 km/hr) at a height of 5-20 m above the ground. Its prey consists

of a variety of flying and terrestrial insects. Usually a sedentary species with short seasonal migrations; however, longer ones (up to 350 km) have been recorded. Both sexes mature during the second year of age. The mating season is in autumn. From October to March the bats hibernate in caves (temperature 7-12°C), hanging free or in small clusters from roofs or walls. Moving from one hibernaculum to another is not unusual. From late-spring large numbers of females (usually more than 1000) retreat to caves and buildings and form nursery colonies. During summer these roosts are also occupied by males, as well as by other bat taxa (especially of the genus *Myotis*). Contrary to all other European species, Schreiber's bat shows a prolonged gestation period (8-9 months) due to delayed implantation of the embryo in the uterus wall. Each female bears one young per year. Maximum lifespan is 16 years.

Distribution: Known from scattered localities throughout the mainland and a few islands (Kerkyra, Zakynthos, Lesvos and Kriti).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Kentriki Ellada	Dytiki Ellada	GR2320009	
Attiki	Attiki	GR3000004	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110004 GR4110005	Game refuge 1%, IBA
	Kriti	GR4340004	IBA

Status and reasons for decline: This is a threatened species in parts of Europe; in Greece classified under the threat category "Endangered" in the national Red Data Book of Threatened Vertebrates. Very susceptible to disturbances in its habitat, especially caves. For this reason large colonies have greatly reduced in number or even disappeared.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece, Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Myotis bechsteinii (Kuhl, 1818)
Class: Mammalia, Order: Chiroptera, Family: Vespertilionidae

Synonyms: *Myotis bechsteini*
Common names: Bechstein's bat - Μυωτίδα του Bechstein

Description: A medium-sized bat having head-body length 43-55 mm, tail length 33-44 mm, ear length 20-26 mm, forearm length 38-45 mm, wingspan 250-300 mm, condylo-basal length 16-17 mm and weight 7-13 g. Dental formula is 2/3, 1/1, 3/3, 3/3 = 38. Fur is relatively long with hair base more dark than tip. Dorsal fur is reddish-brown, ventral greyish-white. Pink face, reddish-brown snout, light grey-brown ears and wing membranes. Ears are fairly long and broad (when they are folded forward they project beyond the snout tip). Nine transverse folds are present in the outer edge of each ear. Tragus is long (extends to half the ear length) and looks like a lancet. Lateral membranes reach to the base of the toes. Calcar is straight and extends to 1/3 -1/2 of the tail membrane margin length. Tail tip is not bordered by tail membrane.

Ecology - habits: This bat's habitats are woodlands, parks, gardens and generally areas with trees. Emerges usually soon after sunset, flying very slowly, fluttering 1-10 m above the ground. It moves with agility, even in very confined space. Hunts in calm weather, preying on various insects which are caught in flight or from foliage. A sedentary species (movements no longer than 35 km). Mating takes place between autumn and spring. Hibernation lasts from October to March/April, and occurs in buildings, caves and mines, where bats individually hang free from roof or walls (rarely in crevices). In these winter refuges temperatures of 3- 7°C prevail together with high humidity. From late April-May groups of 10-30 females retreat to nursery roosts (in tree holes, caves and buildings), whereas males remain solitary. Change of female roosting site is usual. Each female gives birth to one young per year (during June to early July) taking care of it for more than one month. Assembled females disperse in late August. Maximum lifespan recorded is 21 years.

Distribution: Known only from a few localities in Macedonia.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1140003	

Status and reasons for decline: A very uncommon bat throughout its range. In Greece it is a threatened taxon classified in the national Red Data Book of Threatened Vertebrates under the threat category "Rare". Loss of old deciduous forests and climatic changes are probably responsible for the decline of this taxon.

Protective legislation: It is protected by the Bern Convention (Appendix II).

Selected references:
Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.
Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.
Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Myotis blythi (Tomes, 1857)

Class: Mammalia, Order: Chiroptera, Family: Vespertilionidae

Synonyms: *Myotis oxygnathus*
Common names: Lesser mouse-eared bat - Μικρομυωτίδα

Description: Very similar to *Myotis myotis* but smaller. Head-body length 59-74 mm, tail length 46-60 mm, ear length 20-23.5 mm, forearm length 48-62.5 mm, wingspan 300-400 mm, condylo-basal length 17-22 mm and weight 15-28 g. Dental formula is 2/3, 1/1, 3/3, 3/3 = 38. Fur is short, brownish-grey dorsally and grey-white ventrally. Snout is narrower and more pointed than that of *M. myotis*. Ears are also narrower and shorter, with 5-6 transverse folds in their outer edge. The lancet-shaped tragus is narrower at the base, extending to nearly half the ear length. Wing membrane reaches base of toes. Calcar extends to about half the length of the tail membrane margin and is slightly keeled.

Ecology - habits: A bat of relatively warm areas with moderately dense tree and scrub vegetation. Also in limestone areas, parks and near human settlements. Emerges soon before or after dark. Flight is slow and even (more agile in cramped space than *Myotis myotis*). Diet consists of various insects caught both in the air and on the ground. Mostly sedentary, although migrations of up to 600 km have been reported. Mating takes place in autumn but sporadically it also occurs in winter and early spring. During the mating period the males have harems. Hibernacula are in caves and mines with temperatures between 6-12°C, where the bats usually hang free from ceilings or walls. From mid-spring large numbers of females (up to 5000) retreat to caves and buildings forming nurseries (often mixed with *M. myotis*, *Miniopterus schreibersii* and *Rhinolophus* species). Each female gives birth to one young per year. Maximum lifespan 13 years.

Distribution: Broadly distributed (though discontinuously) throughout the mainland. Also recorded from the islands of Kerkyra, the Echinades archipelago, Zakynthos, Samothraki, Lesvos, Ikaria, Fournoi and Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1120003	Natural monument 1%, Game refuge 6%, Biogenetic reserve

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
	Dytiki Makedonia	GR1310002	Core strict 100%, Game refuge 6%, SPA, IBA, Biogenetic reserve 100%
		GR1310003	Core strict 49%, Peripheral zone 51%, Game refuge 21%, SPA, IBA, Biogenetic reserve 49%
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, SPA, IBA
	Ionia Nisia	GR2210001	
		GR2220003	Ramsar 10%
	Dytiki Ellada	GR2310003	IBA
		GR2320009	
	Peloponnisos	GR2510003	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110004	Game refuge 1%, IBA
		GR4110005	
		GR4120004	IBA
	Kriti	GR4340004	IBA

Status and reasons for decline: *Myotis blythi* is a threatened species throughout Europe; according to the Red Data Book of Threatened Vertebrates of Greece it is considered "Vulnerable". Disturbance due to tourist development and other human influences on caves, as well as the direct killing of bats, is responsible for the decline of this bat populations.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Myotis capaccinii (Bonaparte, 1837)

Class: Mammalia, Order: Chiroptera, Family: Vespertilionidae

Common names: Long-fingered bat - Ποδαρομυωτίδα

Description: A medium-sized bat, with head-body length 47-53 mm, tail length 35-46 mm, ear length 13-16 mm, forearm length 38-44 mm, wingspan 230-260 mm, condylo-basal length 14-15 mm and weight 6-15 g. Dental formula is 2/3, 1/1, 3/3, 3/3 = 38. Upper parts grey with

a yellowish tinge, underside light grey, without a clear border between them. Snout end is brown, ears and wing membranes are grey-brown. Ears are quite long, slightly notched in their outer edge, with 5 transverse folds. Tragus is pointed, extending to half the ear length; its inner surface is convex, outer one slightly serrated. Nostrils are prominent. Wing membranes have both their surfaces covered with thick brown down. Lateral membranes extend to 3-5 mm above heel. Feet are large having distinct long hairs. Calcar is rectilinear and reaches to at least 1/3 of the tail membrane margin length. Tail membrane along calcar is hairy. Lateral membrane does not extend down to the heel. Tail tip is free of membrane.

Ecology - habits: *Myotis capaccinii* lives in limestone areas and in landscapes with woods and water. Active from late dusk, it feeds on flying or water-surface living insects. Forms colonies of several hundreds of individuals (sometimes associated with those of *M. myotis* and *M. blythi*). Mating occurs in autumn and hibernation occurs in caves and crevices. Nursery colonies are composed of up to 500 females clustered on the cave roof. Births take place in the second half of June. One young is born per year, becoming independent about one month after birth. Maximum lifespan can exceed 20 years.

Distribution: Reported from several mainland localities; also from the Echinades archipelago, Thasos and Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Kentriki Ellada	Ionia Nisia	GR2220003	Ramsar 10%
	Dytiki Ellada	GR2310003	IBA
Nisia Aigaiou, Kriti	Kriti	GR4340004	IBA

Status and reasons for decline: The long-fingered bat is considered a threatened European species; according to the Red Data Book of Threatened Vertebrates of Greece it is a "Vulnerable" taxon. The main reasons contributing to this taxon's decline are tourist development or destruction of caves and, possibly, the decrease of insect prey due to anthropogenic influences on the species' habitats.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Myotis emarginatus (Geoffroy, 1806)
Class: Mammalia, Order: Chiroptera, Family: Vespertilionidae

Common names: Geoffroy's bat - Πυρρομυωτίδα

Description: A bat of medium size: head-body length 41-53 mm, tail length 38-50 mm, ear length 14-17 mm, forearm length 36-44 mm, wingspan 220-245 mm, condylo-basal length 14-17 mm and weight 7-15 g. Dental formula is 2/3, 1/1, 3/3, 3/3 = 38. Fur is long with tricolour dorsal hair: base grey, middle yellow, tips brown. Underside is yellowish-grey. Nose is reddish-brown, ears and wing membranes darker grey-brown. Outer ear edge bears 6-7 transverse folds and a clear angular notch (at about 2/3 of ear's length). Tragus is slender, lancet-shaped, slightly exceeding half the length of the ear. Lateral membranes extend as far as the base of the toes. Calcar is straight reaching to about half of the tail membrane margin length, the rest of which has short, sparse soft hairs. Tail tip protrudes from tail membrane.

Ecology- habits: A thermophilous species usually found in woodlands, in limestone areas or in areas with human settlements, parks and water. Active after dark, flying low, about 1-5 m above the ground or water surface. Preys on spiders and various insects caught in flight, from foliage, branches or ground. Mostly a sedentary species with movements usually shorter than 40 km (rarely up to 100 km). Females become mature at about the end of their first year. The mating season is in autumn. Hibernation takes place in caves, mines and cellars with temperatures usually above 6°C, where these bats usually hang free from ceilings or walls (hanging in clusters or in crevices is rare). Nursing colonies, composed of up to 1000 females, are formed in warm caves, mines or buildings, where nursing colonies of *Rhinolophus* species are also sometimes present. Young appear from mid-June to early July. Each female gives birth to one young per year which becomes capable of living independently after 30-45 days. Nurseries disperse in September. Maximum lifespan is 16 years but usually much smaller.

Distribution: It is not a common species showing a discontinuous distribution in the mainland and some islands (Evvoia, Ikaria, Fournoi).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110005	IBA, SPA
		GR1120003	Natural monument 1%, Game refuge 6%, Biogenetic reserve 1%
	Kentriki Makedonia	GR1250001	Core strict 26%, SPA, IBA, Game refuge 8% Biogenetic reserve 26%, Biosphere reserve 26%
		GR1250005	Core strict 100%, SPA, IBA, Biogenetic reserve 100%, Biosphere reserve 100%
Kentriki Ellada	Dytiki Ellada	GR2310009	
	Sterea Ellada	GR2440004	Core strict 43%, Periph. zone 57%, SPA, IBA
	Peloponnisos	GR2520006	Natural monument, Game refuge 3%
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4120004	IBA

Status and reasons for decline: *Myotis emarginatus* is another threatened bat of Europe being very rare throughout its range and almost extinct in the northern part. In Greece it is considered "Endangered" according to the national Red Data Book of Threatened Vertebrates. A species very susceptible to disturbance in caves and other roosting sites.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Myotis myotis (Borkhausen, 1797)

Class: Mammalia, Order: Chiroptera, Family: Vespertilionidae

Common names: Greater mouse-eared bat - Τρανομυωτίδα

Description: A large-sized bat with head-body length 65-89 mm, tail length 45-65 mm, ear length 20-31 mm, forearm length 54-68 mm, wingspan 350-450 mm, condylo-basal length 22-24 mm and weight 20-40 g. Dental formula is 2/3, 1/1, 3/3, 3/3 = 38. Fur is short and dense, light grey-brown above (sometimes with a tinge of rust), white-grey underside. Snout is short and broad. Face, ears and wing membranes pink-brown. Ears are long, broad and thick, with 7-8 transverse folds in their outer edge. Tragus extends to about half of the conch length; it is broad at the base and pointed at the tip. Lateral membranes reach to the base of the toes. The slightly keeled calcar extends to about half the length of the tail membrane; no post-calcarial lobe. Tail tip protrudes beyond tail membrane.

Ecology - habits: A dweller of relatively open landscapes with light tree vegetation, in parks and gardens and populated areas. Prefers warm environments. Emerging in the evening, it remains active throughout the night. Its flight is slow, direct and noisy. Feeds on a variety of flying and non-flying insects. Seasonal migrations are usually short but movements of up to 400 km have also been reported. Females are usually mature soon after their first year; males at about 15 months. Mating commences in autumn and each male has a harem of 2-5 females. Winter roosts are in caves, mines and cellars with temperatures of 7-12°C. No more than 100 individuals occur in each hibernaculum where they hang free or in clusters from the ceiling; often in protected sites (gaps or cavities but rarely in narrow crevices). From March, large nursing colonies of up to 2000 females are formed in caves or buildings. Males do not usually participate in these colonies, remaining solitary. From early June, after a gestation period of 46-70 days, pregnant females give birth to one young. Forty days later (about mid-July) the

young become fully independent from their mothers. *Myotis myotis* lives 5 years on average, but the maximum lifespan recorded is more than 20 years.

Distribution: Discontinuously distributed throughout the mainland. Also recorded from the islands of Kerkyra, Lesvos and Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1120003 GR1130008	Game refuge 6%, Natural monument 1%, Biogenetic reserve 1%
Kentriki Ellada	Dytiki Ellada	GR2320009	
	Peloponnisos	GR2530001	Game refuge 3%
Attiki	Attiki	GR3000004	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110004 GR4110005	Game refuge 1%, IBA
	Kriti	GR4320005	Game refuge 10%, IBA

Status and reasons for decline: Threatened throughout its European distribution including Greece, where it is classified among the "Endangered" species, as mentioned in the Red Data Book of Threatened Vertebrates of Greece. This bat is locally in decline due to loss of suitable habitats and reduced food supply.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Iliopoulou-Georgoudaki, I. 1977. Systematic study and geographical distribution of the Chiroptera of Greece. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Iliopoulou-Georgoudaki, I., A. Legakis, I. Ondrias, L. Paraschi and R. Weid. 1992. Group II: Chiroptera. p. 303-321. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Stebbings, R.E. 1988. Conservation of European Bats. Christopher Helm, London.

Citellus citellus (Linnaeus, 1766)

Class: Mammalia, Order: Rodentia, Family: Sciuridae

Synonym: *Spermophilus citellus*
Common names: European souslick - Λαγόγυρος

Description: A medium-sized rodent with head-body length 19-25 cm, tail length 5.5-9.1 cm, hind-foot length 3.3-4.4 cm, condylo-basal length 41.4-45 mm and weight 240-340 g. Dental formula is 1/1, 0/0, 2/1. 3/3 = 22. It has almost no outer ears, relatively short limbs and a short furry tail. Pelage is rather dense, grey-brown on back (somewhat mottled but never spotted), white or yellow-white on belly. Moulting takes place once a year in summer (end of June - early August).

Ecology - habits: The habitats of this rodent are open plains, meadows, uncultivated fields and narrow zones among cultivated areas. It always prefers borrowing in dry substrates, with loamy soil rich in lime, in areas of various altitudes (100-2200 m). Each individual makes its own burrow (usually with two entrances, one of them vertical), but often complex burrow networks with many entrances are formed, occupied by a colony. This rodent shows diurnal activity. It feeds mainly on seeds, but roots, green plant parts, flowers, insects, mice and small birds are also preyed on. Food is carried in cheek pouches for underground storage. The European souslick lives in colonies, within which the individuals communicate with characteristic whistling sounds. It can run very fast and stand erect observing the surrounding area. Fat reserves are built up at the end of summer-autumn, in preparation for hibernation which lasts from October-November to March. The mating period is after the animals emerge in March. Births occur in April-June. Each female breeds once a year giving birth to 5-8 young, after a gestation period of about one month. Young are weaned about 40 days after birth. *Citellus citellus* is preyed upon by large birds of prey, storks, gulls, ravens, foxes, martens, cats and dogs.

Distribution: It occurs in northern Greece, from western Makedonia to Thraki, but its range is patchy.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110002	SPA, IBA
		GR1110003	Game refuge 58%, Game breeding station 3%
		GR1110005	IBA, SPA
		GR1120003	Game refuge 6%, Natural monument 1%, Biogenetic reserve 1%
	Kentriki Makedonia	GR1250001	Core strict 26%, SPA, IBA, Biogenetic reserve 26%, Biosphere reserve 26%, Game refuge 8%
		GR1250002	Game refuge 20%
		GR1260006	Game refuge 34%
	Dytiki Makedonia	GR1320002	Game refuge 13%, Natural monument 1%, IBA, Biogenetic reserve 1%
		GR1340003	
		GR1340006	Game refuge 15%

Status and reasons for decline: The species is thought to be threatened in Europe. In the Red Data Book of Threatened Vertebrates of Greece it appears as "Vulnerable". The decline of populations is mainly due to habitat loss because of expansion and intensification of cultivation.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Fraguedakis-Tsolis, S.E. 1977. Systematic and immunological study of some populations of the species *Citellus citellus* L. 1766. Doctoral dissertation, Univ. of Patras. 173 p. (In Greek).

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Paraschi, L. 1992. *Citellus citellus* (Linnaeus, 1766). p. 276-277. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Ruzic, A. 1978. *Citellus citellus* (Linnaeus, 1766) - Der oder das Europaische Ziesel. p. 123-144. In: Niethammer, J. and F. Krapp, (eds). Handbuch der Säugetiere Europas. Band 1/I, Akademische Verlagsgesellschaft, Wiesbaden (In German).

Canis lupus Linnaeus, 1758

Class: Mammalia, Order Carnivora, Family: Canidae

Common names: Wolf - Λύκος

Description: This animal has the appearance of a big shepherd dog, but has a shallower chest and a broader head with a thicker neck. It is the largest member of the family Canidae: head-body length is 90-150 cm, tail length 30-50 cm, hind-foot length 20-26.5 cm, shoulder height 65-80 cm, condylo-basal length about 22 cm, and weight 20-60 kg in males and 18-50 kg in females. Dental formula is 3/3, 1/1, 4/4, 2/3 = 42. The pelage is usually greyish-fawn sometimes with a brown-reddish colour on the back, the shoulders, the head and the ears. A characteristic ruff of hairs exists on the cheeks. Size and colour vary greatly according to geographical distribution.

Ecology - habits: The wolf lives in open country with some cover but is adapted to a large variety of terrestrial habitats except deserts and high mountain tops. Its den is in caves or burrows, sited in dense cover, between tree roots or under rocks. Usually active by night, it feeds on ungulates, lagomorphs, rodents, birds, domestic stock and even human garbage. Showing territorial behaviour the wolf travels 100-1000 km searching for food. It forms packs (family groups), the size of which depends on the food supply, but usually less than 10 individuals. Within each pack a dominant pair always exists. The wolf moults in early summer. It communicates and signifies its presence and/or dominance within packs using vocalizations, postures, droppings and urine. Their sense of smell is excellent, and their sense of hearing is also good. Their sight is good at close range, while only moving objects are visible at long range. It is a powerful animal with great endurance. Sexual maturity is attained

at the age of 2 years. Mating takes place once a year in February - April. Usually only one female reproduces in a given pack. Females bear one litter per year composed of 3-7 cubs, after a 63 days gestation period. Parental care is given by both parents for at least one year. The wolf lives 15-20 years in captivity, less in the wild; possible mortality reasons are shooting, poisonous baits and some diseases.

Distribution: The wolf is distributed in most of the mountainous areas of northern and central mainland Greece; absent from Peloponnisos. The southernmost end of its Greek distribution is the mountains of Sterea Ellada (Parnassos, Oiti, Gkiona, Vardousia, Panaitoliko) where the presence of this animal is mostly not permanent (especially in the eastern mountains).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Kentriki Ellada	Dytiki Ellada	GR2310004	Game refuge 10%
	Sterea Ellada	GR2430001 GR2450001 GR2450002	Game refuge 50% Game refuge 9%, IBA Game refuge 33%,IBA

(Note: The above sites have been selected among those lying south of the 39° parallel, in order the wolf to be considered a priority species according to Annex II to Directive 92/43/EEC specifications.)

Status and reasons for decline: The wolf is generally thought to be a vulnerable species in Europe. According to the Red Data Book of Threatened Vertebrates of Greece it is classified under the threat category "Vulnerable". Greece is one of the few European countries in which viable wolf populations are maintained. The estimated total Greek wolf population does not exceed 500 individuals. The main reasons for the decline of the wolf populations are: a) the decrease in nomadic stock-raising and the decline of populations of wild herbivorous animals which are an important element of the wolf diet; b) the division of valuable habitats due to construction of roads in the most inaccessible mountainous areas and the resulting increase in disturbances because of human activities; c) extensive hunting which threatens roe-deers, hares and partridges with extinction, these animals being the wolf's usual prey.

Protective legislation: The wolf is protected by the Bern Convention (Appendix II) and the CITES (Appendix II).

Selected references:

Hatzirvassanis, V. and L. Paraschi. 1992. *Canis lupus* (Linnaeus, 1758). p. 280-282. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Peters, G. 1993. *Canis lupus* Linnaeus, 1758 - Wolf. p. 47-106. In: Niethammer, J. and F. Krapp. (eds). Handbuch der Säugetiere Europas. Band 5/I, AULA - Verlag, Wiesbaden (In German).

Ursus arctos Linnaeus, 1758
Class: Mammalia, Order: Carnivora, Family: Ursidae

Common names: Brown bear - Αρκούδα or Καστανή αρκούδα

Description: A very large-sized heavy-built animal with a stout, triangular head, small rounded ears, small eyes, a thick neck and a hardly visible tail. Its head-body length is 170-280 cm, tail length 6-21 mm, hind-foot length 13-30 cm, shoulder height 90-150 cm, condylo-basal length 29-34 cm and usual weight 100-365 kg in males and 60-250 kg in females. Dental formula is 3/3, 1/1, 4/4, 2/3 = 42. Body size varies geographically (several subspecies have been recognized) and tends to increase from west to east and from south to north. The weight also varies seasonally becoming greater in autumn (often even double the spring weight) because of fat reserves accumulated for the hibernation period. The coat is mostly brown (from pale beige to dark brown) but greyish-yellow to black areas also exist. It moults once a year during the period April-June. The size of hind-foot prints correlates with age, ranging from 13-14 cm in 1 year old cubs to 27-30 cm in old males. The bear's occurrence is also evident by its faeces, excavations and overturned stones for food searching, scratches on tree trunks, and lairs (2-3 m in diameter) with flattened plants or pressed down soil or snow.

Ecology - habits: The brown bear lives in mountainous mixed and pure coniferous or deciduous forests, about 800-2000 m above sea-level. It also lives in open areas above the tree-line in mountains and in areas with tundra in the north where it needs some dense cover. Usually active by night due to human disturbance, but seasonal variation of daily activity pattern is known. It is essentially vegetarian feeding mainly on berries, acorns, and beech masts in autumn, and grasses, herbs, roots and green plant material in spring and summer. However, honey and flesh is also eaten when available (insects, fish, sheep, amphibians, reptiles, cows, carrion etc.), so it is virtually an omnivorous animal. The home range and population density vary greatly geographically (5-4000 km^2, 1-300 individuals/1000 km^2) depending on the existence of suitable habitats and the degree of disturbance caused by human activities. Daily travels of 2-3.5 km are usually taken but occasional movements of up to 400 km have been recorded (adult males always move more than females). It is usually a solitary animal except for the mating period when males may fight over females. Twins sometimes remain together for 1-2 years after leaving their mother. Communication between individuals is capable by means of a variety of vocalizations (grunts, howls, calls) and scent markings made by scrapes and scratches on tree trunks. Regarding the animal's senses, the smell and hearing are very keen but the sight is rather poor. Hibernation occurs in hollows lined with soft earth and dry plant material. Mating takes place in May-July in animals of at least 3-4 years old. Gestation last for 7-8.5 months (including a delayed implantation period of 4.5-7 months). Litter size is 1-5, often 2. When newly born, the young are very small (350 g), blind and hairless; they remain in the den for about 4 months, weaned at 1.5 years of age and are under their mother's care for 1.5-3.5 years. The next litter from the same female is produced 3 years or more later. Mortality is high for cubs during their first year of age (30-40%). Adolescent and adult mortality is 17-23% (being usually higher in males than in females). Maximum lifespan recorded is more than 30 years in the wild and up to 50 years in captivity.

Distribution: Nowadays, the brown bear still survives in the mountains of central and northern parts of the Pindos mountain range, as well as in the western part of the Rodopi

mountain range (on the Greek-Bulgarian borders). These two areas of distribution are fully isolated. Formerly, the species was distributed throughout almost all the Greek mainland.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1120003	Game refuge 6%, Natural monument 1%, Biogenetic reserve 1%
		GR1140001	Game refuge 100%, Natural monument 55%, IBA, Biogenetic reserve 55%, SPA
		GR1140002	
		GR1140007	Game refuge 100%, Natural monument 100%, IBA, Biogenetic reserve 100%, SPA
	Dytiki Makedonia	GR1310002	Core strict 100%, Game refuge 6%, SPA, IBA, Biogenetic reserve 100%
		GR1310003	Core strict 49%, Periph. zone 51%, Game refuge 21%, SPA, IBA, Biogenetic reserve 49%
		GR1320002	Game refuge 13%, Natural monument 1%, IBA, Biogenetic reserve 1%
		GR1340003	
		GR1340006	Game refuge 15%
	Thessalia	GR1410001	
		GR1440001	Game refuge 29%
		GR1440002	Controlled hunting area 85%, IBA
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Periph. zone 73%, Game refuge 9%, SPA, IBA
		GR2130002	Periph. zone 7%, Game refuge 18%, IBA
		GR2130004	IBA
		GR2130006	
		GR2130007	Game refuge 13%

Status and reasons for decline: The species is threatened all over Europe and only pockets of distribution are left, especially in the north, northeastern and southeastern parts of the continent. In Greece, it is considered "Endangered" according to the Red Data Book of Threatened Vertebrates of Greece. The present Greek bear population size is estimated to be no more than 100-150 individuals but is probably smaller. A strong, rapid decline is known especially during the last two centuries, due to habitat destruction (caused by overexploitation and mis-management of the country's forest wealth) and intensive illegal hunting, even within protected areas.

Protective legislation: The brown bear is protected by the Greek Presidential Decree 86/1969, the Bern Convention (Appendix III) and the CITES (Appendix II).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Jakubiec, Z. 1993. *Ursus arctos* Linnaeus, 1758-Braunbar. p. 249-300. In: Niethammer, J. and F. Krapp (eds.). Handbuch der Säugetiere Europas. Band 5. AULA-Verlag, Wiesbaden (In German).

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Mertzanis, G. 1992. *Ursus arctos* (Linnaeus, 1758). p. 260-262. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Mertzanis, G., D. Bousbouras and Ch. Papaioannou. 1995. Evaluation - delineation of important areas for the brown bear (*Ursus arctos* L.). A concise report. Manuscript. 9p. (In Greek).

Lutra lutra (Linnaeus, 1758)

Class: Mammalia, Order: Carnivora, Family: Mustelidae

Common names: Otter - Βίδρα or Ποταμόσκυλο

Description: Long, slender, streamlined body, short legs and long tail (thick at base and tapering evenly). Head is dorsolaterally flattened with broad, rounded muzzle and small ears almost completely concealed by the coat. All four feet are webbed. Head-body length is 60-100 cm in males, 59-70 cm in females; tail length is 36-52 cm in males, 35-44 cm in females; hind-foot length is 10.5-13.5 cm, shoulder height about 30 cm, ear length 2.1-3.4 cm, condylo-basal length 10.5-12.5 cm and weight 5-17 kg (females up to 12 kg). Dental formula is 3/3, 1/1, 4/3-4, 1/2 = 36-38. The coat is dense and waterproof with hard, smooth and sleek hairs (especially when otter emerges from water). Fur colour is uniform glossy brownish-olive above becoming tawny olive on flanks; underside is olive buff. Probably only one prolonged annual moult takes place.

Ecology - habits: Mainly lives in freshwater habitats but less frequently in marine ones (rocky coasts, estuaries, etc.), always in sites with enough cover (cavities in banks, hollow trees, between roots, rocky clefts, tunnels in peat, etc.). The entrance to a ventilated chamber may be underwater, but numerous resting sites are above ground in reed-beds or other riparian vegetation. The otter is a largely nocturnal animal. It swims smoothly having only the upper half of its head above water and leaving a U-shaped wake. It also dives smoothly and silently. It is carnivorous feeding mainly on fish and sometimes on other water vertebrates and invertebrates. Each adult has a long territory along the shoreline within which hunting trips of up to 10 km per night are performed. One or more females and their cubs form a family group living in common territory; otherwise the adults remain solitary except during a short, not seasonally confined, mating period. Sexual maturity is attained at the age of 1.5-2 years when adult size is also reached. Females bear a litter of 1-5 cubs once a year or every other year. Gestation lasts for two months. Cubs remain under their mother's care almost for one year. The lifespan of the otter is on average 3-4 years in the wild (11-15 years in captivity).

Distribution: Widespread in the mainland but population densities vary greatly from one area to another. Also known from the island of Kerkyra where small individual groups still survive.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110003	Game refuge 58%, Game breeding station 3%
		GR1120004	Game refuge 50%, Aesthetic forest 100%, IBA, SPA
		GR1150005	Game refuge 42%, IBA
	Kentriki Makedonia	GR1250005	Core strict 100%, SPA, IBA, Biogenetic reserve 100%, Biosphere reserve 100%
		GR1260006	Game refuge 34%
	Dytiki Makedonia	GR1310002	Core strict 100%, Game refuge 6%, SPA, IBA, Biogenetic reserve 100%
		GR1310003	Core strict 49%, Periph. zone 51%,Game refuge 21%, SPA, IBA, Biogenetic reserve 49%
	Thessalia	GR1440001	Game refuge 29%
		GR1440003	Game refuge 7%, IBA, World Heritage site
		GR1440004	IBA
Kentriki Ellada	Ipeiros	GR2110001	SPA, Ramsar, IBA, Barcelona Convention
		GR2110003	Game refuge 27%, IBA
		GR2110004	SPA, Ramsar, IBA, Barcelona Convention
		GR2120001	Game refuge 21%, IBA
		GR2120002	
		GR2120004	IBA
		GR2130001	Core strict 27%, Periph. zone 73%,Game refuge 9%, SPA, IBA
		GR2130004	IBA
	Ionia Nisia	GR2230001	
	Dytiki Ellada	GR2310001	Natural monument, Game refuge 1%, SPA, Ramsar, IBA, Biogenetic reserve
		GR2310006	Game refuge 14%, Ramsar
		GR2310009	
		GR2320001	Ramsar 75%, IBA
		GR2320002	Game refuge 3%
		GR2320005	IBA
		GR2330001	
		GR2330002	IBA
	Sterea Ellada	GR2410001	Game refuge 10%
		GR2420004	Natural monument, IBA
		GR2430002	
		GR2450001	Game refuge 9%, IBA
	Peloponnisos	GR2540003	IBA
		GR2550002	

Status and reasons for decline: A vulnerable mammal throughout its distribution area. In the Red Data Book of Threatened Vertebrates of Greece the otter is mentioned as ''Vulnerable''.

Although in decline due to habitat destruction, hunting and pollution, the Greek populations are thought to be among the best conserved in Europe.

Protective legislation: The otter is protected by the Greek Presidential Decree 67/1981, the Bern Convention (Appendix II) and the CITES (Appendix I).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Douma-Petridou, E. 1977. Systematics and geographical distribution of the families Canidae and Mustelidae of Peloponnisos. Doctoral dissertation. Univ. of Patras. 197 p. (In Greek).

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Paraschi, L. and M. Gaethlich. 1992. *Lutra lutra* (Linnaeus, 1758). p. 285-287. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Rupicapra rupicapra (Linnaeus, 1758)

Class: Mammalia, Order: Artiodactyla, Family: Bovidae

Common names: Chamois - Αγριόγιδο

Description: An ungulate with a size about equal to that of a domestic goat. Head-body length 100-130 cm, tail length 7-8 cm, hind-foot length about 33 cm, shoulder height 70-80 cm, condylo-basal length 18-20 cm and weight 30-60 kg in males, 25-45 kg in females. Dental formula is 0/3, 0/1, 3/3, 3/3 = 32. Relatively short, upright, bent backwards, hook-shaped horns occur in both sexes (these being thicker in males); the length and width of their cross-section varies geographically. Pelage is pale brown to grey-brown in summer, with dark marks on both head sides from ear to muzzle, a dark band along the back and darker feet; in winter the whole pelage becomes much darker to almost black. Moulting takes place in May-June. Hooves are well-separated but usually parallel, offering a firm foothold on rocks or snow.

Ecology - habits: The chamois lives on rocky, precipitous mountains up to 3500 m. It prefers higher altitudes during spring, summer and autumn (areas near the tree-line and above), whereas in winter it moves to the lower forested areas. It is adapted to rather restricted habitats. A mostly diurnal animal sometimes also grazing in the moon-light. Extremely agile, it is capable of jumps up to 7 m in length and falls of up to 15 m landing on narrow cliff steps. It feeds on meadow grasses and herbs (in summer) and on small branches and leaves of shrubs and trees, including conifers (in winter). Home range varies with area, age and sex. Small groups (up to 10 animals) are often formed, consisting of females with their current years young (sometimes those of the previous year coexist). Mature males live solitary except during the rutting period. Larger herds (up to 100 females and young) are sometimes formed, which break down into smaller groups in winter depending on food availability. Individuals communicate by means of a variety of sounds (bleating, characteristic alarm calls, etc.), during the rutting period, males mark the vegetation with secretions from their scent glands (located behind the horns) and perform displays erecting the dark pelage of the dorsal band. The senses are well-developed especially the excellent hearing and the good sight and smell.

Sexual maturity is attained at the age of 4 years, sometimes earlier in females. The mating period occurs in autumn when polygynous males invade the females areas. After a gestation period of 6-6.5 months, the female gives birth to one (rarely two) young in May-early June. Mothers rear their young for about one year. Lifespan is 15-17 years in the wild and 22 in captivity. The young mortality rate is increased due to cold and food scarcity.

Distribution: The Balkan subspecies *Rupicapra rupicapra balcanica* occurs on a number of mountains of the northern and central Greek mainland (Dytiki Rodopi, Grammos, Lygkos, Zygos, Smolikas, Tymfi, Olympos, Koziakas, Oiti, Gkiona and Vardousia).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1140001	Natural monument 55%, Game refuge 100%, Biogenetic reserve 55%, SPA, IBA
		GR1140002	
		GR1140007	Game refuge 100%, Natural monument 100%, IBA, SPA, Biogenetic reserve 100%
	Kentriki Makedonia	GR1240002	Game refuge 18%, IBA
		GR1250001	Core strict 26%, SPA, IBA, Biogenetic reserve 26%, Biosphere reserve 26%, Game refuge 8%, IBA, SPA
		GR1250005	Core strict 100%, SPA, IBA, Biogenetic reserve 100%, Biosphere reserve 100%
	Dytiki Makedonia	GR1310002	Core strict 100%, SPA, IBA, Biogenetic reserve 100%, Game refuge 6%
		GR1310003	Core strict 49%, SPA, IBA, Biogenetic reserve 49%, Peripherial zone 51%, Game refuge 21%
		GR 1320001	Game refuge 89%, IBA
		GR1320002	Game refuge 13%, Natural monument 1%, IBA, Biogenetic reserve 1%
	Thessalia	GR1410002	
		GR1420003	Aesthetic forest 100%, Controlled hunting area 80%, SPA, IBA
		GR1440001	Game refuge 29%
		GR1440002	Controlled hunting area 85%, IBA
		GR1440003	Controlled hunting area 1%, Game refuge 7%, IBA, World Heritage site
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Periph. zone 73%, Game refuge 9%, SPA, IBA
		GR2130002	Game refuge 18%, IBA
	Sterea Ellada	GR2440003	Periph. zone 35%
		GR2440004	Core strict 43%, Periph. zone 57%, SPA, IBA, Biogenetic reserve 43%
		GR2450002	Game refuge 33%, IBA

Status and reasons for decline: The species is threatened throughout most of its broken European area of distribution. According to the Red Data Book of Threatened Vertebrates of

Greece it is considered a ''Rare'' taxon. The total Greek population is estimated to be 200-500 individuals living in small isolated groups of 15-50 animals. The main threats to this taxon are illegal hunting, increased young mortality due to cold and food scarcity, epidemics, avalanches and predators (wolf, lynx).

Protective legislation: The chamois is protected by the Bern Convention (Appendix III).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Paraschi, L., V. Hatzirvassanis and T. Adamakopoulos. 1992. *Rupicapra rupicapra* (Linnaeus, 1758). p. 297-299. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Sagesser, H. and F. Krapp. 1986. *Rupicapra rupicapra* (Linnaeus, 1758) - Gemse, Gams. Band 2/II, p. 316-348. In: Niethammer, J. and F. Krapp. (eds). Handbuch der Säugetiere Europas. AULA- Verlag, Wiesbaden (In German).

Lynx lynx (Linnaeus, 1758)

Class: Mammalia, Order: Carnivora, Family: Felidae

Common names: Lynx - Λύγκας or Ρήσος

Description: The largest European feline mammal resembling a large, long-legged cat. Head-body length is 80-130 cm, tail length 11-25 cm, hind-foot length 19-22.5 cm, shoulder height 60- 75 cm, condylo-basal length 12-15 cm and weight 18-25 kg. Dental formula is 3/3, 1/1, 2-3/2, 1/1 = 28-30. Ears have long, hairy, black terminal tufts and the short tail has a black tip. Pelage colour depends on season being yellowish-brown in summer and paler in winter; it is closely spotted on the legs, by far less and sparsely spotted on back. The claws are retractable as becomes evident by the absence of claw marks in the animal's rounded, about 10 cm long, pawprints.

Ecology - habits: The lynx lives in coniferous or mixed forests with dense understories or in rocky mountainous areas up to an altitude of 2000 m. Its den is in thickets, caves, rocky crevices, badger burrows and other hidden places. It becomes active at dusk. The lynx feeds mainly on hares, but also takes ground birds, rodents and calves of deer, roe deer and chamois; requires about 1 kg of meat per day. Lives solitary using a large home range (up to 1000 km^2). Climbs, though not high, and scratches the tree trunk forming obvious marks. The senses, especially sight, are very keen. Sexual maturity is attained at an age of almost 2 years in females and 2.5 years in males. The mating period lasts from January to March and births take place in May-June, after a gestation period of 2.5 months. Each female bears a litter of 1-5 young per year. The young are weaned at 2-5 months but they stay with their mother for about one year. Lifespan is about 15-17 months.

Distribution: Lynx or its signs, marks and tracks have rarely been observed in Greece; it is

believed, however, that this animal lives in the Pindos mountain range and in forested mountains along the northern borders of the country.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Dytiki Makedonia	GR1310002	Core strict 100%, Game refuge 6%, SPA, IBA, Biogenetic reserve 100%
		GR1310003	Core strict 49%, Periph. zone 51%, Game refuge 21%, SPA, IBA, Biogenetic reserve 49%
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Periph. zone 73%, Game refuge 9%, SPA, IBA

Status and reasons for decline: The species is considered to be threatened throughout its very discontinuous European distribution range. According to the Red Data Book of Threatened Vertebrates of Greece, the lynx is an "Endangered" taxon. The size of the Greek lynx population is unknown but supposed to be very small. Persecution by hunters (considering lynx as a pest for game and domestic animals), deforestation and probably some animal diseases (e.g. mange) seem to be the main threats to the species' survival.

Protective legislation: It is protected by the Bern Convention (Appendix III).

Selected references:

Boitani, L. and S. Bartoli. 1983. Guide to Mammals. Simon & Schuster, New York.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Paraschi, L. 1992. *Lynx lynx* (Linnaeus, 1758). p. 263-264. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Capra aegagrus Erxleben, 1777

Class: Mammalia, Order: Artiodactyla, Family: Bovidae

Common names: Wild goat - Αίγαγρος or Αγρίμι

Description: Head-body length 100-150 cm, tail length 11-16 cm, hind-foot length 21-35 cm, shoulder height 58-74 cm, condylo-basal length about 20 cm and weight 15-80 kg (the animals from Kriti and some nearby small islands belong to the smallest-sized race of the species weighing up to 40 kg). Dental formula is 0/3, 0/1, 3/2-3, 3/3 = 30-32. An obvious sexual dimorphism exists with males being larger and heavier, having longer curved horns (up to 90 cm long) and a longer beard than the females. Generally, this goat resembles the alpine goat (*Capra ibex*) but the male's horns have a sharper, wedge-shaped leading edge and irregularly spaced and often indistinct transverse ridges. Pelage colour is very variable; during summer it is usually reddish-brown sharply contrasting to the black areas on back parts of limbs and shoulders, beard and dorsal tail surface. Greek animals are usually darker than those of other populations. Moulting takes place once a year, usually in May.

Ecology - habits: The typical habitats for this animal are mountainous rocky areas with maquis and garrigue vegetation, sometimes near coniferous woods. It is both a diurnal and nocturnal animal when it is cool (October - May), whereas in the hot summer period the daytime movements are almost totally reduced. The food consists of grasses and herbs. The home range is larger in higher barren areas (e.g., in sites such as the Samaria Gorge, Kriti), becoming more extensive in winter due to a reduced local food supply. Population density is 3.3-4.2 animals/ha, being much greater (up to 600 animals/ha) in some small islands around Kriti where this goat was introduced a few decades ago. Groups of 2-5 individuals often form consisting of females and their young, males being usually solitary. In larger groups a hierarchy evidently exists, with larger-sized males dominating the smaller ones and males, after their first year of age, dominating all females (regardless of their size or age). Communication sounds include characteristic bleats and alarm snorts. The senses of sight and smell are well developed. Males are probably sexually mature at 1 year old, females 1-2 months earlier; however in Kriti breeding males are 4-5 years old and females 2-3 years old (in some introduced populations, animals reaching maturity are even older). The rutting period lasts from October to December. In February - May (usually mid-March to April) females give birth to 1-2 young after a gestation period of 142-153 days. The young remain near their mothers for at least 6 months.

Distribution: The subspecies *Capra aegagrus cretica* occurs in the National Park of Lefka Ori (western Kriti); during the present century it has been introduced to some small islands adjacent to Kriti (Thodorou, Dia, Agioi Pantes), to the islands of Moni (Saronikos Gulf), Atalanti (Evvoikos Gulf) and Sapientza (adjacent to the southwestern end of Peloponnisos), and to the National Park of Parnitha (Attiki prefecture, Sterea Ellada). Other small populations occurring on the islands of Antimilos or Erimomilos (southwestern Kyklades archipelago) and Gioura (Voreies Sporades archipelago), are considered distinct forms, *Capra aegagrus pictus* and *C. aegagrus dorcas* or *jourensis*, respectively. *C. aegagrus* is thought to have been introduced to the Mediterranean islands during the Neolithic period or later; then becoming feral.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Thessalia	GR1430004	IBA, Marine Park 88%, Controlled Hunting Area 2%, Game refuge 1%, Barcelona Convention 88%
Nisia Aigaiou, Kriti	Notio Aigaio	GR4220007	Game breeding station 100%
	Kriti	GR4340007	
		GR4340008	Core strict 9%, Game refuge 17%, IBA, Biogenetic reserve 9%, Biosphere reserve 9%, European diploma 9%, Barcelona Convention 9%
		GR4340014	Core strict 100%, SPA, Game refuge 94%, Biogenetic reserve 100%, Biosphere reserve 100%, European diploma, Barcelona Convention

Status and reasons for decline: Counts from the last and present decade show that in Kriti (Samaria Gorge) the wild goat population is rather healthy but the Thodorou island population is in decline probably due to the unsuitable environment and over-population. In the Red Data

Book of Threatened Vertebrates of Greece this species is characterized as "Endangered". Hybridization with domestic goats, young mortality from ticks and mites, disturbance from tourism and illegal hunting are the main threats to *Capra aegagrus*.

Protective legislation: The Cretan Wild Goat is protected by the Bern Convention (Appendix II).

Selected references:

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Nievergelt, B. 1986. *Capra aegagrus* Erxleben, 1777 - Bezoarziege. Band 2/II, p. 367-383. In: Niethammer, J. and F. Krapp (eds). Handbuch der Säugetiere Europas. AULA-Verlag, Wiesbaden. (In German).

Paragamian, K. 1992. *Capra aegagrus cretica* (Schinz, 1838). p. 271-274. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Sfougaris, A.I. 1994. Wild goats (*Capra aegagrus*) in Greece: Distribution and status. Biol. Gallo-Hellen. 22: 233-240.

Monachus monachus (Hermann, 1779)

Class: Mammalia, Order: Pinnipedia, Family: Phocidae

Common names: Monk Seal - Φώκια μοναχός or Μεσογειακή φώκια

Description: Total body length of adults reaches 2-2.80 m (usually 2.20-2.40) and weight 400 kg (usually 250-300 kg). Condylo-basal length is about 25 cm and the dental formula is 2/2, 1/1, 5/5 = 32. Adult pelage colour varies with age, sex and geographical distribution, but is always darker on the upper parts (dark brown to black) than on the ventral surface; it moults annually. Young are born with a black, woolly coat, moulting at 4-6 weeks to give juvenile pelage, which is silver-grey dorsally and whitish ventrally.

Ecology - habits: *Monachus monachus* lives in temperate and subtropical coastal sea areas, mainly using sea caves and small sheltered beaches among steep cliffs. The adaptation to such habitats is obviously the result of monk seal persecution by man, since it is known that this animal formally used less hidden places for resting and young rearing. It is diurnal but tends to become nocturnal due to disturbance caused by human activities. The diet consists of fish, cephalopods, crustaceans and even algae. It is believed that the necessary amount of food per day is equivalent to 5-10% of the body weight. Considered to be generally sedentary but journeys of several hundreds of kilometers have been recorded. In the past it lived in large herds, today in only small groups (in the Mediterranean each of them always includes fewer than 10 individuals). Social organization is unknown, however males are possibly polygynous. Sexual maturity is acquired during the fourth year of the animal's life, when body length hardly exceeds 2 m. Young appear between May-November (mostly between September-October), after a gestation period of 11 months. Each female gives birth to one young per year, but a few barren years sporadically exist. Weaning occurs about 6 weeks after birth, the young becoming fully independent of its mother at the age of 3 years. Lifespan exceeds 25

years, but usually much smaller due to human disturbances.

Distribution: The main population lives in the Aigaio Pelagos (Aegean Sea), having several scattered subpopulations - groups of individuals, the most important of which is that of Voreies Sporades archipelago. Small groups have also been recorded in areas of the Ionio Pelagos (Ionian Sea) and the southern coast of Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Thessalia	GR1420004 GR1430001 GR1430004	Game refuge 16%, IBA Game refuge 20%, IBA Marine park 88%, Controlled hunting area 2%, Game refuge 1%, Barcelona Convention 88%
Kentriki Ellada	Ipeiros	GR2110004	SPA, Ramsar, IBA, Barcelona Convention
	Ionia Nisia	GR2210001 GR2210002 GR2210003 GR2220003 GR2220004 GR2230004	 Biogenetic reserve 49% IBA Ramsar 10%
	Sterea Ellada	GR2420004 GR2450004	Natural monument, IBA
	Peloponnisos	GR2540002	Game refuge 5%
Attiki	Attiki	GR3000007 GR3000008	Game refuge 15%
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110002 GR4110003 GR4120004 GR4130001	 Game refuge 20%, Natural monument 75%, Barcelona Convention 75% IBA Game refuge 8%
	Notio Aigaio	GR4210001 GR4210002 GR4210003 GR4210004 GR4210005 GR4210007 GR4210009 GR4220004 GR4220013 GR4220014 GR4220017	IBA Game refuge 6% Game refuge 21%, IBA Natural monument 1%, Biogenetic reserve 1% Game refuge 17% Game refuge 10% Game refuge 2%, IBA
	Kriti	GR4320006	Game refuge 14%, IBA, Aesthetic Forest, Barcelona Convention, SPA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR4320008 GR4330004 GR4340001 GR4340005	Game refuge 4%, IBA

Status and reasons for decline: *Monachus monachus* is threatened throughout its range. It is thought to be the most immediately threatened European vertebrate species. In the Red Data Book of Threatened Vertebrates of Greece, it has been placed under the threat category "Endangered". The monk seal populations have been reduced because of habitat loss or alterations, persecution by fishermen, entanglement in fishing equipment (including illegal net types), and overfishing which causes reduces the seal's food supply.

Protective legislation: This species is protected by the Greek Presidential Decree 67/1981, the Bern Convention (Appendix II), the Bonn Convention (Appendices I and II) and the CITES (Appendix I).

Selected references:

Boitani, L. and S. Bartoli. 1993. Guide to Mammals. Simon & Schuster, New York.

Kouroutos, V. 1992. *Monachus monachus* (Hermann, 1779). p. 265-269. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Phocoena phocoena (Linnaeus, 1758)

Class: Mammalia, Order: Cetacea, Family: Phocoenidae

Synonyms: *Phocaena phocaena*
Common names: Harbour porpoise - Φώκαινα

Description: The smallest of the cetaceans, with adult total body length usually no more than 1.8 m and weight no more than 90 kg (mostly 50-65 kg). There is no prominent snout. The dorsal fin is low, triangular, located in middle of back. Dorsal surface and flippers dark grey to black, flanks lighter grey, belly white. A narrow grey stripe extends on each side from the end of the mouth opening to the flipper. In each half of the jaws 22-28 small flattened teeth are found. Condylo-basal length is 20-30 cm. The new-born is 67-80 cm in length and 5-8 kg in weight. A sexual dimorphism in body length is obvious from birth and remains for life with females being slightly larger than males.

Ecology - habits: Usually lives in cold waters, moving at depths smaller than 50 m (rarely to 100 m). It prefers coastal seas, especially gulfs and areas adjacent to estuaries. Daily activity is affected by the daily vertical migration of herring which follow the respective copepods moving. Diet mainly consists of fish, but crustaceans and cuttlefish are also eaten. The individuals are solitary or in small groups (2-4 individuals), sometimes in larger aggregations

(e.g. during migration). Some animals seem to be resident in a given coastal area throughout the year, but in other cases seasonal migrations to the deep sea have been known. The harbour porpoise is probably equipped with a very effective echolocation system. Sexual maturity is attained at the age of 3-6 years (depending on sex and geographical area) when body length reaches 1.3-1.5 m. The mating period is June-August. Females give birth to one calf after an 11 month gestation period. The next gestation takes place after 1-2 years. The young stay under their mother's care until the age of 12 months, even if the mother has already given birth to another calf. Lifespan is usually 16-17 years (23 maximum).

Distribution: The species occurrence in Greek waters is very limited and occasional, confined to a small coastal area of the north Aigaio Pelagos (Aegean Sea).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites: None

Status and reasons for decline: *Phocoena phocoena* is considered a threatened animal throughout its range. In Greece it is classified as "Rare" according to the Red Data Book of Threatened Vertebrates of Greece. Entanglement in fishing nets (legally or illegally used) and changes in fish stocks due to overfishing are the main reasons responsible for the species' decline.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and by the Bern Convention (Appendix II) and CITES (Appendix II).

Selected references:

Kinze, C.C. 1994. *Phocoena phocoena* (Linnaeus, 1758) - Schweinswal oder Kleintummler (auch Braunfisch). Band 6, p. 242-264. In: Niethammer, J. and F. Krapp (eds.). Handbuch der Säugetiere Europas. AULA-Verlag, Wiesbaden (In German).

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Valoukas, V., A. Legakis and P. Economidis. 1992. p. 322-326. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Tursiops truncatus (Montagu, 1821)

Class: Mammalia, Order: Cetacea, Family: Delphinidae

Common names: Bottle-nosed dolphin - Ρινοδέλφινο

Description: A robust dolphin with adult length 2.5-4.1 m and average weight 150-200 kg (max. weight can exceed 400 kg). It seems that a large and a small body form exist in this species (the Mediterranean animals belong to the latter one). There is a distinct, short, characteristic beak, and the tip of the lower jaw protrudes beyond that of the upper one. The dorsal fin is slender, quite tall, located in the middle of the back, with its tip turned rearwards. Dorsal surface dark grey to brown-black, flanks grey and underside light grey. Each half of jaw bears 20-26 teeth having their maximum diameter equal to about 12 mm. Calves at birth are 1-1.3 m in length.

Ecology - habits: Usually a coastal sea dweller, preferring areas in front of estuaries; however, schools (groups) of these dolphins are seen in the open sea, sometimes together with single individuals or small groups of other cetaceans. It mainly feeds on a variety of fish (depending on season and availability). Also, it can swim at a speed of a least 14 knots and dive for more than 6-7 minutes. Home range in the coastal areas usually extends to a few tens of kilometers, but movements of hundreds of kilometers are known to be performed from time to time. Bottle-nosed dolphins live in schools of 2-10 up to 100 individuals. The sex and age composition of these groups varies significantly; however, a hierarchical organization seems to exist in each of them. Communication between the group members is feasible thanks to a large variety of sound emissions some of which are individual-specific. Echolocation is also possible using special sounds; such an ability helps dolphins in both their orientation and prey detection. All senses are very keen especially sight and hearing. Males become sexually mature at the age of 11 years, females one year later. Although there is no seasonallity to reproduction, the peaks of matings and births are confined to the period April-September. Gestation lasts 12-13 months, after which a single calf is born. The next gestation of the same female takes place 1-3 years later. Young stay near their mother for about 18 months, even if a new calf has already been born. Maximum lifespan is 35-40 years.

Distribution: The bottle-nosed dolphin has been observed in all Greek open seas, as well as in many coastal areas (gulfs, archipelagos, in front of river mouths, etc.).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Kentriki Ellada	Ipeiros	GR2110001 GR2140003	SPA, IBA, Ramsar 49%, Barcelona Convention 49%
	Ionia Nisia	GR2210002 GR2210003 GR2220003 GR2220004 GR2230004 GR2230005	Biogenetic reserve 49% IBA Ramsar 10%
	Dytiki Ellada	GR2310001 GR2310002 GR2330007	Game refuge 1%, Natural monument, Ramsar 27%, IBA, Biogenetic reserve, SPA Ramsar, IBA, SPA
	Sterea Ellada	GR2420003	Game refuge 8%, IBA
	Peloponnisos	GR2550003 GR2550007	Controlled hunting area 9%, Natural monument, Biogenetic reserve
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110001 GR4120004 GR4130001	Game refuge 5%, IBA IBA Game refuge 8%
	Dodekanisos	GR4210009	

Status and reasons for decline: Despite its absence from the Red Data Book of Threatened Vertebrates of Greece, it is thought that the Greek populations of this dolphin are now in decline, although they seem to be in a better status compared to most of the other Mediterranean populations. Illegal fishing, navigation traffic, tourist activities, pollution, etc. cause numerous deaths during each year and have led to a general degradation of the species habitats in the Mediterranean basin.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981, the Bern Convention (Appendix II) and the CITES (Appendix II).

Selected references:

Boitani, L. and S. Bartoli. 1993. Guide to Mammals. Simon & Schuster, New York.

Macdonald, D. and P. Barrett. 1993. Mammals of Britain and Europe. Harper Collins Publ., London.

Politi, E., S. Airoldi and G. Notarbatolo di Sciara. 1994. A preliminary study on the ecology of cetaceans in the waters adjacent to Greek Ionian Islands. European Research on Cetaceans 8: 111-115.

Tethys Research Institut. 1995. Project: Dolphins of Ionio. Information Report. 12 p. (In Greek).

E.3. BIRDS

by Savas Kazantzidis

E.3.1. Introduction

Greece is one of the richest countries in Europe as far as its avifauna is concerned. According to recent publications, 407 bird species have been recorded in Greece, outnumbering those recorded in the adjacent countries, the majority of which (approximately 60%) breed here while the rest are migratory species that winter or are present during the migration periods. The main reasons are the following:

a) Greece is an important wintering place for large bird populations that come from their breeding grounds in the former USSR, Scandinavia etc. Among them, thousands of ducks and Coots (Anatidae and *Fulica atra*) winter in the Greek wetlands. According to the annual Midwinter Waterfowl Counts of the International Waterfowl and Wetlands Research Bureau, approximately 500,000 ducks and Coots spend their winter in Greece. Considerable number of passerines, herons, wading birds etc. winter here as well. Species that are endangered world-wide like the Lesser white-fronted goose *Anser erythropus*, the Red-breasted goose *Branta ruficollis* etc. are also encountered during winter.

b) The geographical position of Greece is at the cross-roads of several migratory corridors.

c) The wide diversity of habitats (islands, coasts, wetlands, mountains etc.) offer suitable conditions for many species.

d) Although certain habitat types are undergoing serious degradation during the recent years, they are still valuable when compared with the habitats in other European countries. Several species that do not breed anywhere else in the European Union (e.g. Dalmatian Pelican *Pelecanus crispus*, White pelican *Pelecanus onocrotalus* etc.) find here suitable conditions to nest.

e) The proximity of Greece to Turkey, Middle East and Africa is the main reason for the occurrence of species that are not encountered in the rest of Europe as their distribution range is in Asia or Africa.

Although the level of our knowledge on the birds in Greece can be considered as good, there are still many gaps that need to be filled in. For example, our knowledge on the migratory populations, the timing and the movements of many species is still very limited. Furthermore, there are no data concerning the birds in small and remote wetlands, on small islands etc. Additionally, long term studies of certain bird species (e.g. raptors, waders etc.) are required in order to define the natural or anthropogenic factors accountable for population changes. Human activities are usually responsible for the degradation of habitats. The monitoring of certain species in relation with the monitoring of human activities is therefore considered essential in order to define the reasons that are responsible for the population decline of many species.

The data presented in the NATURA 2000 database were based on recently published studies of several experts and organisations, unpublished reports and personal observations. The species that have been included in the database are those listed in Annex I to Directive 79/409/EEC (field 3.2.a) and additionally migratory species of the directive (field 3.2.b). Resident species not listed in Annex I were not recorded in the database while other species important for the site they occur were recorded as «Other Important Species» (field 3.3 of the Standard Data Form).

It must be mentioned that data is lacking concerning the common migratory birds (included or not in Annex I to Directive 79/409/EEC). For example, the Swallow *Hirundo rustica* should have been included in 99% of the sites at least as a migratory species while other species are present in the majority of the sites. We chose to record only those species for which data existed and are cited in the bibliography rather than to presume their presence in sites in which they may not exist. With regard to the data recorded in NATURA 2000 database changes will be necessary in the future when we will acquire better knowledge of the subject. Many bird species have been inserted in a field of the database that may not be the proper one e.g. the Robin *Erithacus rubecula* has been inserted in the field STAGE in many sites, because that is when it has been observed, although we know that it winters at most sites. The population level that appears for many species maybe not true on the long run e.g. a population of 6-10 may appear in the database although we know that the population may vary considerably from year to year. Furthermore, it would have not been possible to determine migratory species with accuracy. The Buzzard *Buteo buteo* for example, although is found throughout the year at most sites, it has been considered as migratory species because it moves considerably locally. On the contrary, species like the Stonechat *Saxicola torcuata* or the Sardinian Warbler *Sylvia melanocephala*, have been considered as non migratory, and have therefore not been included in this study, although they make some local movements. Difficulties have been encountered with other species as well e.g. the Common Crossbill *Loxia curvirostra* (not included in the Database) which is non migratory in Greece although big numbers of migrating birds from northern Europe appear occasionally.

Population numbers considered as migratory included in the field STAGE refer to the number of individuals observed at a given moment (usually the peak of the migration period) and not to the total number of birds that use the area concerned during the whole migratory period (number that would be much bigger).

Data for 119 bird species from the Annex I to Directive 79/409/EEC and 157 migratory species not listed in the above Annex are given in the NATURA 2000 Database. Five more species were included as «Other Important Species». The sites with the biggest number of species are the wetlands of Thrace (Lake Vistonis -Porto Lagos, Lakes and lagoons of Thrace and Evros Delta). The species most often appearing are the Nightjar *Caprimulgus europaeus*, the Buzzard *Buteo buteo*, the Red-backed Shrike *Lanius collurio*, the Peregrine *Falco peregrinus*, the Chaffinch *Fringilla coelebs* etc.

The species presented in detail below are those of Annex I to Directive 79/409/EEC, listed in the Red Data Book of threatened vertebrates of Greece as endangered (E1: those in immediate danger of extinction).

E.3.2. Birds of Greece listed in Annex I to Directive 79/409/EEC

Pelecanus onocrotalus Linnaeus, 1758
Order: Pelecaniformes, Family: Pelecanidae

Common name: White pelican, Ροδοπελεκάνος

Description: A very large heavy white bird (body size 140-180 cm). Its white plumage becomes pink during the breeding period. The wings are white from above with black at the edge of the primary feathers while both primary and secondary feathers are black from below. Gular sac (pouch) yellowish. Sexes alike. Immature birds pale brown becoming grey-white with dark brown patches with each moult.

Habitat: Freshwater marshes and lakes and shallow coastal waters. Often seen at sea during migration.

Distribution: During migration period the species is often encountered at most large northern Greek wetlands.

Occurrence in the proposed NATURA 2000 sites: Breeds at one site in Greece (Mikri Prespa lake).

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Dytiki Makedonia	GR1340002	Ramsar, Core strict of National Park 100%, IBA, SPA

Reasons for decline: Illegal shooting may occur at feeding areas other than Lake Prespa. Increased disturbance of breeding colonies by visitors, photographers etc.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985 / 1985. Its nesting area is protected as a National Park. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Pelecanus crispus Bruch, 1832
Order: Pelecaniformes, Family Pelecanidae

Common name: Dalmatian pelican, Αργυροπελεκάνος

Description: The largest of the two pelican species occurring in Europe (body size 160 -180 cm). White plumage with a bit darker wings from above and brownish primary feathers. Pouch coloured orange, very vivid in the beginning of the breeding period.

Habitat: Both freshwater marshes and lakes, and shallow coastal waters.

Distribution: Often encountered in many large Greek wetlands throughout the year.

Occurrence in the proposed NATURA 2000 sites: Breeds in two sites in Greece.

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Dytiki Makedonia	GR1340002	Ramsar, Core strict of National Park 100%, IBA, SPA
Kentriki Ellada	Ipeiros	GR2110001	Ramsar, IBA, SPA, Barcelona Convention 49%

Reasons for decline: The destruction of its habitats (mainly wetland drainage) and hunting have been the main reasons for the decline of the species in the past. Electric power lines at both feeding and nesting sites have also caused deaths of many individuals. All kinds of interventions causing wetland deterioration affects the species that needs better protection at its wintering sites in Greece. At Lake Mikri Prespa the thickness of egg shell has been reduced by 12-20% due to agricultural chemical contamination.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Nesting area (Lake Mikri Prespa) protected as a National Park. Hunting forbidden at a part of Amvrakikos gulf. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Crivelli, A. 1987. The ecology and behaviour of *Pelecanus crispus*, a world endangered species. Final report for CEC Project ENV - 834 - F.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Plegadis falcinellus Linnaeus, 1766
Order: Ciconiiformes, Family: Threskiornithidae

Common name: Glossy ibis, Χαλκόκοτα

Description: Dark brown - purplish plumage that looks blackish from a distance. Upper wings become glossed blue-purple during the breeding period. Long curved bill. Flies with neck overstretched.

Habitat: Shallow fresh water with dense aquatic vegetation, reedbeds etc. Breeds in colonies usually together with heron species.

Distribution: During spring migration the species is encountered at many wetlands.

Occurrence in the proposed NATURA 2000 sites: Breeds at least at three wetlands in Greece.

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1130001	Ramsar, IBA, SPA, Game refuge 36%
	Kentriki Makedonia	GR1260008	Ramsar, IBA, SPA
Kentriki Ellada	Ipeiros	GR2110001	Ramsar, IBA, SPA, Barcelona Convention 49%

Reasons for decline: Wetland deterioration (drainage, overgrazing, tree cutting etc.), excessive illegal hunting especially during spring migration, disturbance at nesting sites.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Platalea leucorodia Linnaeus, 1758
Order: Ciconiiformes, Family: Threskiornithidae

Common name: Spoonbill, Χουλιαρομύτα

Description: Large bird with white plumage, black legs and long broad bill spoon-shaped at the tip. During the breeding period mature birds develop long crest and yellowish breast band. Wing tips of immature birds are black while legs and bill are pink. Flies with neck overstretched.

Habitat: Inhabits in shallow wetlands, deltas, freshwater or coastal marshes. Breeds in colonies usually with other heron species in dense vegetation. During migration and winter they are found both in fresh and coastal waters.

Distribution: The species breeds mainly in northern Greek wetlands and is present at more sites during migration. A small population winters in coastal wetlands of western Greece.

Occurrence in proposed "Natura 2000" sites: Breeds at five wetlands.

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1130001	Ramsar, IBA, SPA, Game refuge 36%
	Kentriki Makedonia	GR1260008	Ramsar, IBA, SPA
		GR1220002	Ramsar, IBA, SPA, Game refuge 28%
	Dytiki Makedonia	GR1240002	Ramsar, Core strict of National Park 100%, IBA, SPA
Kentriki Ellada	Ipeiros	GR2110001	Ramsar, IBA, SPA, Barcelona Convention 49%

Reasons for decline: Wetland deterioration and loss of nesting and feeding sites are the main threats for the species. Its prey abundance can be affected by pollution, flood control measures etc.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Tadorna ferruginea Pallas, 1764.
Order: Anseriformes, Family: Anatidae

Common name: Ruddy shelduck, Καστανόχηνα

Description: Large duck with buff-brown plumage. Drake has pale head with narrow black collar. Ducks' head whiter lacking collar. While in flight, distinguished by white greater wing coverts contrasted by black primaries.

Habitat: Prefers to nest at shallow sparsely vegetated marshes (salt and freshwater) and lakes, although during winter also occurs in coastal wetlands (deltas, lagoons etc.).

Distribution: Breeds at wetlands of northern Greece and some eastern Aegean islands. During migration and winter the species is seen at a wide range of wetlands although restricted mainly to north-eastern and eastern Greece.

Occurrence in the proposed "Natura 2000" sites: Breeds or has bred in the past in the following wetlands:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001 GR1130001 GR1150001 GR1120001	Ramsar, IBA, SPA, Game refuge 38% Ramsar, IBA, SPA, Game refuge 36% Ramsar, IBA, SPA, Game refuge 64% Ramsar, IBA, SPA, Game refuge 7%
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110004 GR4110001 GR4120001	IBA IBA, Game refuge 5%

Reasons for decline: Wetland deterioration has been the main reason for decline in the past. Hunting is the main threat at present especially during early (August - September) and late (February - March) hunting season that coincides with the migration movements of the species within Greece.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Bauer, W., O. Helversen, M. Hodge and J. Martens. 1969. Aves. In: Kanelis A. (ed.) Catalogus Faunae Graeciae. Thessaloniki.

Jerrentrup, H. 1986. The birds of Xanthi - Nestos area. Thrakika Chronika 41: 194-211.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Raines, R. 1962. The distribution of birds in NE Greece in summer. Ibis 104: 490-502.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Milvus migrans Boddaert, 1783
Order: Accipitriformes, Family: Accipitridae

Common name: Black kite, Τσίφτης

Description: Adult birds are dark brown with grey - white head, while immature birds are paler with yellow patches on head and upper part of the body. Legs yellow. Tail slightly forked but fork not always easy to see in flight. While flying, wings are held slightly crooked.

Habitat: Occurs at plains and semi-mountainous areas. Nests almost always near wetlands.

Distribution: Breeds in northern Greece. During migration may be seen in southern Greece, some Aegean islands etc. usually near wetlands.

Occurrence in the proposed "Natura 2000" sites: Occasionally breeds at the following sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Ramsar, IBA, SPA, Game refuge 38%
		GR1110005	IBA, SPA
	Kentriki Makedonia	GR1260008	Ramsar, IBA, SPA
	Thessalia	GR1440003	IBA, World Heritage Site, Game refuge 7% Controlled hunting area 1%
Kentriki Ellada	Ipeiros	GR2130003	IBA, Game refuge 5%

Reasons for decline: Deforestation of riparian forests, deterioration of wetlands and hunting. Further studies are needed to identify the major threats.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. It is included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Handrinos, G. and A. Dimitropoulos. 1982. Birds of prey in Greece. Eustathiadis Bros, Athens.

Handrinos, G. 1987. The significance of Greece for migrating and wintering raptors. In: «Rapaci Mediterranei III». Suppl. Ric. Biol. Selvaggina 12: 99-113.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Haliaeetus albicilla Linnaeus, 1758
Order: Accipitriformes, Family: Accipitridae

Common name: White - tailed eagle or Sea eagle, Θαλασσαετός

Description: One of the largest eagles in Europe with broad square wings, short white tail (adults) and big bill. Plumage buff-brown and head often pale. Immature birds darker become paler as they mature. Sexes alike. Adult birds' bill as well as legs yellow. Tarsus without feathers.

Habitat: The species is associated with big wetland sites mainly river deltas where food is abundant. Nesting sites are diverse but tall trees are preferred when available.

Distribution: Limited in Thrace and Macedonia where it breeds. Numbers encountered at large northern Greek wetlands increase in winter. Migrating birds may occur at eastern Aegean islands as well as Cyclades islands.

Occurrence in the proposed "Natura 2000" sites: Breeds at the following sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Ramsar, IBA, SPA, Game refuge 38%
		GR1110005	IBA, SPA
	Kentriki Makedonia	GR1260008	Ramsar, IBA, SPA

Reasons for decline: Deterioration of wetlands, poisoned baits (intended to kill foxes and wolves), hunting etc.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Hallmann, B. 1985. Status and conservation problems of birds of prey in Greece. In: Conservation studies of Raptors. International Council for Bird Preservation (ICBP) Tech. Publ. No 5: 55-59.

Handrinos, G. and A. Dimitropoulos. 1982. Birds of prey in Greece. Eustathiadis Bros, Athens.

Handrinos, G. 1987. The significance of Greece for migrating and wintering raptors. In: «Rapaci Mediterranei III». Suppl. Ric. Biol. Selvaggina 12: 99-113.

Jerrentrup, H. 1988. White tailed Eagle: Population developments and threats in the eastern Mediterranean. Proposals for conservation in Greece. In: ORNIS CONSULT (ed.). Conservation and Management of the White-tailed eagle *Haliaetus albicilla* in the European Community. Sept. 1988, Copenhagen.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Gypaetus barbatus Linnaeus, 1758

Order: Accipitriformes, Family: Accipitridae

Common name: Bearded Vulture, Γυπαετός

Description: One of the largest European birds, easy to identify when in flight from its long pointed wings and the long diamond - shaped tail. Adult birds have white head and pale brown or orange body. Wings and tail grey- black from above and dark brown from bellow. Conspicuous black band through eye resembling a «beard». Legs fully feathered.

Habitat: High and remote mountains, usually at a height of 800 - 2500 m, nesting on rock edges. Looks for food on open hills, alpine meadows etc.

Distribution: Very limited. Mainly on Crete and few pairs or individuals in the rest of Greece.

Occurrence in the proposed NATURA 2000 sites: The species is resident in the following sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110005	IBA, SPA
		GR1130006	IBA, Game refuge 1%, Ramsar 25%
		GR1140007	IBA, SPA, Biogenetic reserve 100%, , Game refuge 100%, Natural monument 100%
	Kentriki Makedonia	GR1240001	IBA, Natural monument 2%, Game refuge 28% Biogenetic reserve 1%
		GR1240002	IBA, Game refuge 18%
		GR1250005	Core strict of National Park 100%, IBA, SPA, Biosphere reserve 100%, Biogenetic reserve 100%
	Dytiki Makedonia Thessalia	GR2130002	IBA, Game refuge 18%
		GR1420001	IBA, Game refuge 6%
		GR1440002	IBA, Controlled hunting area 85%
		GR1440003	IBA, World Heritage Site, Controlled hunting area 1%, Game refuge 7%
Kentriki Ellada	Ipeiros	GR2110002	IBA, Game refuge 11%
		GR2130001	Core strict of National Park 27%, IBA, SPA, Peripherial zone 73%, Game refuge 9%
	Sterea Ellas	GR2430001	Game refuge 50%
		GR2440004	IBA, SPA, Biogenetic reserve 43%, Core strict of National Park 43%, Peripherial zone 57%

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR2450001	IBA, Game refuge 9%
		GR2450002	IBA, Game refuge 33%
		GR2450005	Core strict of National Park 20%, Aesthetic Forest 1%, IBA, SPA, Game refuge 58%
Nisia Aigaiou, Kriti	Kriti	GR4310005	IBA
		GR4310006	IBA, Game refuge 12%
		GR4320002	IBA, Game refuge 3%
		GR4320005	IBA, Game refuge 10%
		GR4330002	IBA
		GR4330003	IBA
		GR4330005	IBA, Natural monument, Game refuge 3%
		GR4340002	Game refuge 48%
		GR4340004	IBA
		GR4340008	Core strict of National Park 9%, IBA, SPA, Biogenetic Reserve 9%, Biosphere Reserve 9%, European Diploma 9%, Barcelona Convention 9%, Game refuge 17%

Reasons for decline: Poisoned baits (intended to kill foxes and wolves), hunting, nest destruction and habitat loss. Furthermore, changes of domestic live-stock raising methods has led to reduction of food resources.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Handrinos, G. and A. Dimitropoulos. 1982. Birds of prey in Greece. Eustathiadis Bros., Athens.

Handrinos, G. 1985. The status of Vultures in Greece. In: Conservation Studies of Raptors. International Council for Bird Preservation (ICBP) Tech. Publ. No 5: 103-115.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Aegypius monachus Linnaeus, 1766
Order: Accipitriformes, Family: Accipitridae

Common name: Black Vulture, Μαυρόγυπας

Description: The largest vulture in Europe. Dark brown-black coloured (almost black immature birds) with black collar. Short tail and square shaped wings that are held levelled when flying.

Habitat: Nests exclusively on trees. Prefers clumps of scattered *Pinus nigra* on cliffs at an altitude of less than 800 m.

Distribution: Its breeding population is confined in Evros region. There were a few pairs on Mount Olympus. Non breeding birds have been recorded at various mountainous areas.

Occurrence in the proposed NATURA 2000 sites: Breeds at the following site:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110005	IBA, SPA

Reasons for decline: Poisoned baits (intended to kill foxes and wolves), lowland forest management and hunting. Furthermore, changes of domestic live-stock raising methods has led to reduction of food resources.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Dadia forest where the species breeds is a protected area. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Handrinos, G. and A. Dimitropoulos. 1982. Birds of prey in Greece. Eustathiadis Bros., Athens.

Handrinos, G. 1985. The status of Vultures in Greece. In: Conservation Studies of Raptors. ICBP Techn. Publ. No 5: 103-115.

Bauer, W., O. Helversen, M. Hodge & J. Martens, 1969. Aves. In: Kanelis A. (ed.) Catalogus Faunae Graeciae. Thessaloniki.

Hallmann, B. 1985. Status and conservation problems of birds of prey in Greece. In: Conservation studies of Raptors. International Council for Bird Preservation (ICBP) Tech. Publ. No 5: 55-59.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Circus pygargus Linnaeus, 1758
Order: Accipitriformes, Family: Accipitridae

Common name: Montagu's Harrier, Λιβαδόκιρκος

Description: Mature males grey coloured. White lower breast, belly and underwings with rufous lines. Black wing tips with black bars on secondary feathers from above. Female and immatures brown, paler underparts with darker strips and spots. Smaller than any other harriers (*Circus* spp.).

Habitat: Prefers open country with low vegetation, cereal cultivations, meadows, or open land near wetlands. Nests in low dense vegetation and cereal fields. During migration moves mainly along the cost.

Distribution: Nests only at West Macedonia. During migration, it occurs at a wider variety of regions throughout Greece.

Occurrence in the proposed "Natura 2000" sites: Breeds at the following sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Dytiki Makedonia	GR1240001	IBA, Natural monument 2%, Game refuge 28%, Biogenetic reserve 1%
		GR1340004	IBA, Game refuge 8%
		GR1340005	IBA, Game refuge 49%

Reasons for decline: Disturbance during breeding period at nesting sites by cultivation activities (early harvesting, mowing) and probably affected by the use of pesticides. Often illegally shot during spring migration.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Handrinos, G. and A. Dimitropoulos. 1982. Birds of prey in Greece. Eustathiadis Bros., Athens.

Handrinos, G. 1987. The significance of Greece for migrating and wintering raptors. In: Rapaci Mediterranei III. Suppl. Ric. Biol. Selvaggina 12: 99-113.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Aquila heliaca Savigny, 1783
Order: Accipitriformes, Family: Accipitridae

Common name: Imperial Eagle, Βασιλαετός

Description: Adults dark brown with pale patches on crown and nape. White on shoulders and grey - brown tail with black bars. Immature birds light brown with brown spots and almost black primary feathers. Fully feathered legs.

Habitat: Lowland plains and open country in general. Prefers areas with scattered or isolated trees, meadows, large forest openings. Often seen in wetlands during winter. Nests in isolated high trees.
Distribution: It is considered that it does not breed any more in Greece. Confined in northern Greece, mainly Macedonia and Thrace. Only outside breeding season or during winter and migration, few birds, mainly immatures, are encountered at other parts of the country.

Occurrence in the proposed "Natura 2000" sites: Used to breed in the following site:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110005	IBA, SPA

Reasons for decline: Wetland deterioration, drainage etc., changes in agricultural and forestry practices, hunting and poisoned baits (intended to kill foxes and wolves).

Conservation measures taken: Its hunting is forbidden according to Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:
Handrinos, G. and A. Dimitropoulos. 1982. Birds of prey in Greece. Eustathiadis Bros., Athens.
Hallmann, B. 1989. Status and distribution of the Aquila in Greece. VI Congr. Int., Zoogeogr. Ecol. Grece reg. avoisin. April 1987. Kammena Vourla. Biol. Gallo-hellen. 15:171-176.
Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.
Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Numenius tenuirostris Vieillot, 1817
Order: Charadriiformes, Family: Scolopacidae

Common name: Slender billed Curlew, Λεπτομύτα

Description: Very similar to Curlew (*Numenius arquata*) and Whimprel (*Numenius phaeopus*) but

with shorter and thinner bill than Curlew and pale almost white breast and belly with dark spots. When in flight, dark primary feathers contrast with lighter secondary feathers and white rump becomes conspicuous.

Habitat: Coastal wetlands (lagoons, salt pans, salt marshes etc.)

Distribution: Occasionally encountered mainly at coastal wetlands of Thrace and Macedonia, usually during spring migration.

Occurrence in the proposed "Natura 2000" sites: Occurred sporadically in the following sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001 GR1120001 GR1130009 GR1150010	Ramsar, IBA, SPA, Game refuge 38% Ramsar, IBA, SPA, Game refuge 7% Ramsar, IBA, SPA, Game refuge 21% Ramsar, IBA, SPA, Game Breeding Station, Game refuge 46%
	Kentriki Makedonia	GR1220002 GR1220005	Ramsar, IBA, SPA, Game refuge 28% IBA
Kentriki Ellada	Ipeiros	GR2110001	Ramsar, IBA, SPA, Barcelona Convention 49%
	Sterea Ellada	GR2440002	IBA, Game refuge 8%

Reasons for decline: Hunting and wetland deterioration.

Conservation measures taken: Its hunting is forbidden according to Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Goutner, V. and G. Handrinos. 1990. The occurrence of the Slender-billed Curlew *Numenius tenuirostris* in Greece. Biol. Conserv. 53: 47-60.

Goutner, V., G. Handrinos and S. Kazantzidis. 1988. Conservation action for the Lesser White-fronted Goose *Anser erythropus* and the Slender-billed Curlew *Numenius tenuirostris* in the Evros delta, NE Greece. RSPB & Hellen. Orn. Soc. Unpubl. report.

Prater, A. and D. Scott, 1983. The Slender-billed Curlew *Numenius tenuirostris*: A vanishing species. Unpubl. report.

Gretton, A. 1991. The Ecology and Conservation of the Slender - billed Curlew (*Numenius tenuirostris*). International Council for Bird Preservation(ICBP). Monograph No. 6. Cambridge.

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

Gelochelidon nilotica Gmelin, 1789
Order: Charadriiformes, Family: Sternidae

Common name: Gull - billed Tern, Γελογλάρονο

Description: A large tern with light grey upperparts, white underwings and black crown. Black legs and stout all - black bill. Head of adult white in winter. Immatures have paler markings on upperparts, white forehead and reddish legs.

Habitat: Breeds in colonies usually with other terns and gulls at coastal wetlands, islands in lagoons, sand dunes, river deltas etc. Forage over both wet and dry habitats and generally shows a considerable variation in feeding sites (agricultural land, meadows, artificial wetlands or coastal areas).

Distribution: Nests at the bigger Greek wetlands. Encountered at a wider range of sites during migration.

Occurrence in the proposed "Natura 2000" sites: Breeds at the following sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001 GR1150001	Ramsar, IBA, SPA, Game refuge 38% Ramsar, IBA, SPA, Game refuge 64%
	Kentriki Makedonia	GR1220002 GR1250004	Ramsar, IBA, SPA, Game refuge 28% Ramsar, IBA, SPA
Kentriki Ellada	Ipeiros	GR2110001	Ramsar, IBA, SPA, Barcelona Convention 49%
	Dytiki Ellada	GR2310001 GR2320001	Ramsar, IBA, SPA, Game refuge 1% Natural monument, Biogenetic reserve Ramsar, IBA, SPA

Reasons for decline: Degradation and loss of foraging habitats through the intensification of agriculture, including the drainage of marshes and the disturbance while nesting.

Conservation measures taken: Specially protected species according to Annex I of Ministry of Agriculture Decision 414985/1985. Included in Annex I to Directive 79/409/EEC (on the conservation of wild birds), in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and in the Red Data Book of threatened vertebrates of Greece.

Selected references:

Karandinos, M. (ed.). 1992. The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society - Hellenic Ornithological Society. Athens. 356 p.

Kraus, M., P. Conradty, G. Hohlt and W. Bauer. 1969. Zur kenntnis der Vogelwelt Nordgriechenlands III. J. Orn. 110: 83-88.

Morgan, N., R. Britton, H. Hafner, P. Camperdon, A. Tamisier, G. Lassere, H. Eggers, G. Muller and B. Hallmann. 1978. Proposals for nature conservation in the Evros delta. Tour du Valat and Ministry of Coordination. Unpubl. rep. 93 p.

Tucker, G. M. and M. F. Heath. 1994. Birds in Europe: their conservation status. Birdlife International (Birdlife Conservation Series no. 3). Cambridge, U.K.

E.4. REPTILES

by ***B.P. Chondropoulos*** *and* ***E. Valakos***

E.4.1. Introduction

The most recent references in the bibliography raise the number of living forms of reptiles to about 6,450 species belonging to 950 genera and 43-48 families. However, controversy exists mainly concerning the taxonomic categories above the genus level. The living reptiles are members of only four of the 17-24 orders known (depending on the adopted classification systems). These are: a) Chelonia or Testudinata (the chelonians), composed of about 270 species and 12 families; b) Squamata (the lizards, snakes, and amphisbaenians), comprising 6,150 species of 28 families; c) Rhynchocephalia (the tuatara) including only one relic species (*Sphenodon punctatus*); d) Crocodilia (the crocodiles) numbering 22 species of 2-3 families.

In Europe (west of the Ural mountains), there are over 95 species of reptiles. As for the amphibians, the number of species greatly increases from the north to the south and the populations generally become more numerous, denser and demographically healthier.

The Greek reptile fauna is very diverse comprising 59 species and 117 subspecies of chelonians and squamates. There are 8 species of chelonians classified into 6 genera of 5 families. Lizards are represented by 28 species belonging to 15 genera of 6 families, and snakes by 22 species of 10 genera and 4 families. Also, there is one species of amphisbaenians. The subspecific diversity is notable, becoming particularly great in some lizard species (for example, *Cyrtopodion kotschyi* and *Podarcis erhardii* have 17 and 28 subspecies, respectively). Many local or more widespread transitional forms further add to the overall diversity of the Greek reptile fauna.

The richness in forms is related to historical and recent environmental factors which are responsible for the biodiversity of the overall fauna of Greece. Apart from its diversity, the composition of the reptile fauna of Greece is very interesting with regard to its origin from the zoogeographical point of view. Indeed, the fauna originates from central Europe and/or northwestern Asia, central-south-western Asia, northern Africa, the Balkans and from Greece itself. As for the geographical distribution, there are taxa distributed in western Eurasia, Europe, Circum-Mediterrenean and/or the Near East, the Balkans, and Greece only (endemics). Also, there are taxa with an almost cosmopolitan distribution (sea turtle species).

The endemic reptile species in Greece are 8-9 (depending on the taxonomic rank of 1 or 2 taxa); this figure corresponds to about 14% of the total number of the reptile species in Greece. Six of the endemic species are lizards (*Anguis cephallonicus, Algyroides moreoticus, Lacerta graeca, Podarcis gaigeae, P. milensis, P. peloponnesiaca*), and 2-3 are snakes (*Coluber gyarosensis, Vipera* (or *Macrovipera*) *schweizeri* and *Elaphe rechingeri*, if the latter taxon is ranked as a full species). All of these taxa are geographically restricted to certain parts of Greece, namely to Peloponnisos (the former two taxa also occur on some islands of Ionio Pelagos (Ionian Sea)) or to one island or one small island group of the Aigaio Pelagos (Aegean Sea) (*Podarcis gaigeae, P.*

milensis and the snake species). Among the valid 117 subspecies, 65 (i.e., 55.6%) are endemic (57 lizards and 8 snakes); nearly all of them are narrowly endemic to islands and islets of the Aigaio Pelagos. Several species and subspecies are also endemic to Greece and the adjacent Balkan countries or the western Asia Minor.

Differences in the distribution patterns of the reptiles are observed as a result of past geological factors and today's environmental conditions. Most species are widely distributed, others occur only in the mainland, and some others only on the islands. Furthermore, Greece is usally the southern or eastern limit of the distribution range for a number of taxa. With regard to vertical distribution, the less thermophilous taxa of northern origin are found at higher altitudes (e.g., the lizard *Lacerta agilis* and the snakes *Coronella austriaca, Vipera berus,* and *V. ursinii*). The most thermophilous species are usually absent or less common in the mountainous inland country, preferring the coastal zone and the islands, although they sometimes extend in the inland through valleys.

Available information indicates that the threats that the reptiles face in Greece, are almost always attributed to various human activities which negatively affect either the animals themselves or their natural environment, or both. Perhaps the most serious threat is the alteration or destruction of their habitats. This is especially evident in populations of terrapins in the case of wetland drainage or filling in, but also in populations of many other reptiles suffering loss and/or fragmentation of many habitats due to afforestation, intensive agriculture, land reclamation works, urbanization, road construction and mining activities. A great deal of urbanized areas in Greece are associated with tourist development (buildings and other settlements). Fire constitutes serious danger for the reptiles of the Mediterranean countries. Large, repetitive summer fires occurring in Greece cause an impact which has not yet been precisely evaluated but is supposed to be very detrimental or even critical for the survival of local populations of many reptile taxa (rare, threatened or endemic ones are often included). Pollution of habitats by biocides, mineral oil residues, heavy metals, and other toxic chemicals, is considered to be responsible for significant population decline; this factor acts either by killing the reptiles directly or more often by the entering of toxic substances into the food-chain, or by killing the invertebrate prey. The direct persecution of these animals by man (owing to ignorance) and their accidental death by traffic are also notable destructive factors, especially for small isolated populations. The killing of sea turtles by fishermen or by motor boats contributes to the decline of these endangered animals. Collection of reptiles for trade or as tourist souvenirs seems to be a continuously increasing danger for the fauna in Greece; the collected animals are usually the conspicuous, more or less easily caught or uncommon taxa that unfortunately rank highly on the collectors lists (e.g., *Testudo* spp., *Chamaeleo chamaeleon, Vipera* (or *Macrovipera) schweizeri*, and *V. ursinii*). Massive illegal exports of tortoises have caused a dramatic decline in several Greek populations.

Very few reptiles of Greece are truly threatened with extinction as species. In the Red Data Book of Threatened Vertebrates of Greece, only seven reptile species are mentioned; three of them are characterized as "Endangered" (*Caretta caretta, Chelonia mydas, Dermochelys coriacea*), one as "Vulnerable" (*Vipera* (or *Macrovipera) schweizeri*, mentioned in the book as *V. lebetina schweizeri*), and three as "Rare" (*Chamaeleo chamaeleon, Vipera ursinii, Blanus strauchi*). The status of their population is mostly unknown and long-term monitoring projects are non- existent.

All the above data give merely an outline of the morphological, zoogeographical and ecological complexity of the reptiles of Greece indicating the high scientific value of this fascinating group.

In the "Natura 2000" database 84 taxa of the reptiles of Greece were recorded, 54 of them being at the species, and 30 at the subspecies level. These figures constitute 30.4%, 91.5%

and 25.6% of the total numbers of Greek taxa included in the respective categories. Among the 84 evaluated taxa, only 10 (namely 11.9%) are mentioned in Annex II to Directive 92/43/EEC. Of the remaining ones (recorded in the database as Other Important and Greek Important Species) 46, i.e. 54.8% of the 84 taxa are mentioned in Annexes IV and V which refer to following stages of the directive implementation. Furthermore, the Annex II taxa *Caretta caretta* and *Vipera lebetina* (= *V. schweizeri*) are priority species denoted with an asterisk (*). Six out of the 7 threatened reptiles of Greece (85.7%) are included in the 84 reptile species that were recorded in the database (the very rare Leatherback turtle *Dermochelys coriacea*, is the only exception). Seven out of the 8-9 endemic species (87.5% or 77.8%) and 21 of the 65 endemic subspecies (32.3%) are among the 84 recorded taxa, figures corresponding to 8.3% and 25% of the total, respectively.

All 84 taxa are protected by the Bern Convention (Appendices II and III), whereas 62 of them (73.8%) are protected by the Greek Presidential Decree 67/1981. Only 6 (7.1%) and 5 (6%) of the 84 taxa are listed in the European Red List of Globally Threatened Animals and Plants (1991) and the IUCN Red List of Threatened Animals (1988) respectively. Moreover, 10 taxa (11.9%) are endemic to Greece and the adjacent Balkan countries, at least 6 (7.1%) are taxa with isolated populations, 26 taxa (31%) have the limit of their distribution range in Greece, and 23 taxa have limited distributions in Greece (27.4%). Finally, only 28 out of the 84 taxa (33.3%) were recorded in a previous survey for the evaluation of the Greek habitats and species (the CORINE-Biotopes Project).

The 84 reptile taxa have been recorded in 252 sites, i.e over 85% of the total number of proposed "Natura 2000" sites (296). The 10 Annex II taxa have been found in 217 sites (73.3%). One third of these sites (73) occur on islands, while the rest are distributed all over the Greek mainland. The species recorded as Other Important Species (field 3.3 of the SDF) and Greek Important Species (field 3.4 of the SDF) have been found in 246 sites (83.1%), 95 of them being insular sites (38.6%).

It is noteworthy that from the 74 species not included in Annex II to Directive, 50 are not recorded from any other country of the EU while 28 of them are Greek endemics. In reality, this number is higher since the number of taxa recorded in the database is less than half of the total reptile taxa present in Greece. The necessity for a revision of the lists of the Annexes to the Directive in order to include more of the reptiles present in Greece is for once more apparent.

E.4.2. Reptiles of Greece listed in Annex II to Directive 92/43/EEC

Testudo graeca Linnaeus, 1758
Class: Reptilia, Order: Chelonia, Family: Testudinidae

Common names: Spur-thighed tortoise - Γραικοχελώνα

Description: The rectilinear length of the carapace exceeds 30 cm (males usually being smaller than females). It has a strongly domed carapace shape, oval in sectional view (more rounded in juveniles and adolescents). In young individuals the carapace surface is smooth becoming rougher with age. Usually there are no lumps on the carapace surface. In older individuals the back of the carapace edge may be horizontal but not as evidently so as in *Testudo marginata*. The base colour of the carapace is yellowish-brown or olive-brown, rarely greenish or orange, with dark brown to black patches and splashes of various size. Sometimes these dark markings may be repeated more or less regularly on the successive plates of each plate series. Plastron is yellow-brown, locally overlaid by a varying amount of black. In some cases the entire shell has a uniform brown colour. Young generally have a less darker shell. The uncovered body parts are a light dirty olive-yellow in the young animals becoming almost black interrupted by yellow-brown in the adults. The distinction between this species and the other two European tortoises also living in Greece (especially from the morphologically similar *Testudo hermanni*) is based on the combined occurrence of the following characters: a) There is no large scale on the tail tip, b) there is usually a single supracaudal plate, and c) there are several conical, tubercle-like large scales on the rear surface of the thighs, by far larger than the neighbouring typical scales.

Ecology - habits: It lives in a variety of habitats including open woodland, thickets, grasslands, cultivated and fallow dry lands, stabilized dunes, etc. It always occurs in places with some cover, at altitudes ranging from sea-level up to 1500 m or more. A diurnal animal active mainly in the morning and afternoon. Although mostly herbivorous (leaves, fruit and flowers) it may also prey on snails, slugs, earthworms and carrion. It hibernates in a self-dug shallow hole from November to March. Mating takes place in April or May; the male courts the female by butting its shell against that of the female and mounts it clumsily from behind. The female normally produces one clutch per year (usually in June) composed of 4-15 whitish, oval eggs, which she buries in a hole of 10-15 cm in depth dug by her hind feet in soft soil. Hatchlings appear in late August-September and their carapace length is 30-40 mm.

Distribution: *Testudo graeca* is widespread in Thraki and Makedonia, being less common to rare along the eastern part of the rest of the mainland and southern to northeastern Peloponnisos. It also occurs on some islands of the Aigaio Pelagos (Aegean Sea).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Game refuge 38%, RAMSAR, IBA, SPA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
	Kentriki Makedonia	GR1260001	Game refuge 1%, RAMSAR, IBA, SPA
		GR1240001	Natural monument 2%, Game refuge 28%, IBA, Biogenetic reserve 1%
		GR1260004	Game refuge 10%, IBA
		GR1260007	Natural monument 38%, Controlled hunting area 62%
	Thessalia	GR1430004	Game refuge 1%, Controlled hunting area 2%, Marine Park 88%, IBA, Barcelona Convention 88%
		GR14440001	Game refuge 29%
		GR1440002	Controlled hunting area 85%, IBA
		GR1440003	Game refuge 7%, Controlled hunting area 1%, IBA, World Heritage site
Kentriki Ellada	Ipeiros	GR2110003	Game refuge 27%, IBA
	Sterea Ellada	GR2420003	Game refuge 8%, IBA
		GR2420004	Natural monument, IBA
		GR2430002	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110001	IBA, Game refuge 5%
		GR4130001	Game refuge 8%
	Notio Aigaio	GR4210008	Game refuge 20%, IBA

Status and reasons for decline: The status of the Greek populations of the spur-thighed tortoise is hardly known. Until the middle of the previous decade this and the other two tortoise species were thought to be rather safe in Greece. Therefore they are not mentioned in the Red Data Book of Threatened Vertebrates of Greece. However, more recent studies gave data indicating that a very large percentage of the populations of all three taxa (over 60%) shows some degree of decline. Perhaps *Testudo graeca* is the most threatened tortoise in Greece since it is mainly distributed in areas of the coastal zone and in low inland areas which are more susceptible to human activities (cultivation, tourism, etc.). Illegal mass collection and export to other European countries is another danger. A few instances of uncovering such illegal collections and the repatriation of tortoises are known. An indeterminable number of tortoises are also collected by tourists as pets and by hungry foreigners as a food source. Extensive summer fires, unfortunately frequent in the Circum-Mediterranean countries, are another reason for the extermination of many Greek tortoises each year.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981, the Bern Convention (Appendix II) and the CITES (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Ballasina, D. 1992. Report on the repatriation of tortoises to Greece. British Herpetological Society Bulletin 40: 2-4.

Gruber, U. 1994. Amphibien und Reptilien. Franckh-Kosmos, Stuttgart.

Hellmich, W. 1962. Reptiles and Amphibians of Europe. Blanford Press, London.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Willemsen, R.E. and A. Hailey. 1989. Review: Status and conservation of tortoises in Greece. Herpet. Journal 1: 315-330.

Testudo hermanni Gmelin, 1789

Class: Reptilia, Order: Chelonia, Family: Testudinidae

Common names: Hermann's tortoise - Ονυχοχελώνα

Description: The rectilinear length of the carapace usually does not exceed 25 cm. At a glance it is similar to *Testudo graeca* in the general shell shape, smoothness and colour in both the young and adult individuals. However, in the adults there is often a large lump on each carapace plate (mainly the vertebral and costal ones). The base colour of the carapace varies geographically from brown to bright yellow with a dark pattern similar to that of *Testudo graeca*. The plastron is usually less brightly coloured. Head, limbs and tail are yellowish-brown or greenish-brown to black. This tortoise differs from the other two *Testudo* species in Europe in having the following combination of features: a) There is a single or paired, tooth-like large scale on the tail tip (especially in males), b) there are usually two supracaudal plates on the carapace, and c) there are no conical, tubercle-like large scales on the rear surface of the thighs.

Ecology - habits: Very similar to *Testudo graeca*. It is often encountered in places with a richer vegetation cover. During the hot summer days it may enter water for a bath.

Distribution: It is the most widespread and common tortoise in Greece occurring throughout the mainland, as well as on the islands of the Ionio Pelagos (Ionian Sea) and in some islands of the Aigaio Pelagos (Aegean Sea).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Game refuge 38%, Ramsar, IBA, SPA
	Kentriki Makedonia	GR1260001	Game refuge 1%, Ramsar, IBA, SPA
		GR1240001	Natural monument 2%, Game refuge 28%, IBA, Biogenetic reserve 1%
		GR1260004	Game refuge 10%, IBA
		GR1260007	Natural monument 38%, Controlled hunting area 62%
	Dytiki Makedonia	GR1310002	Core strict of National Park 100%, Game refuge 6%, IBA, Biogenetic reserve 100%, SPA
		GR1310003	Core strict 49%, Peripheral zone 51%, Game refuge 21%, IBA, Biogenetic reserve 49%, SPA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
	Thessalia	GR1410002	
		GR1420003	Aesthetic forest 100%, Controlled hunting area 80%, IBA, SPA
		GR1420004	Game refuge 16%, IBA
		GR1430001	Game refuge 20%, IBA
		GR1430002	Aesthetic forest 20%, IBA, Biogenetic reserve 20%
		GR1440002	Controlled hunting area 85%, IBA
		GR1440003	Game refuge 7%, Controlled hunting area 1%, IBA, World Heritage site
Kentriki Ellada	Ipeiros	GR2110001	IBA, Barcelona Convention, Ramsar 49%, SPA
		GR2110003	Game refuge 27%, IBA
		GR2110004	IBA, Barcelona Convention, Ramsar 100%, SPA
		GR2120001	Game refuge 21%, IBA
		GR2120002	
		GR2120003	IBA
		GR2120004	IBA
		GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, IBA, SPA
		GR2130003	Game refuge 5%, IBA
		GR2130004	IBA
		GR2130006	
		GR2140001	IBA
	Ionia Nisia	GR2210001	
		GR2210002	Biogenetic reserve 49%
		GR2220001	IBA
		GR2220002	Core strict 100%, Biogenetic reserve 100%
		GR2220003	Ramsar 10%
		GR2230002	Game refuge 5%
	Dytiki Ellada	GR2310001	Natural monument, Game refuge 1%, Ramsar 27%, Biogenetic reserve, SPA
		GR2310003	IBA
		GR2310005	Game refuge 70%
		GR2310010	Game refuge 6%
		GR2320001	Ramsar 75%, IBA
		GR2320003	Game refuge 27%, IBA
		GR2320004	Aesthetic forest 100%, IBA
		GR2320007	Game refuge 20%
		GR2330004	
		GR2330005	Game refuge 9%
	Sterea Ellada	GR2420003	Game refuge 8%, IBA
		GR2420004	Natural monument, IBA
		GR2430001	Game refuge 50%,
		GR2430002	
		GR2440001	Controlled hunting area 13%
		GR2440003	Peripheral zone 35%
		GR2440004	Core strict 43%, Peripheral zone 57%, IBA, Biogenetic reserve 43%, SPA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR2410001	Game refuge 10%
		GR2450004	
	Peloponnisos	GR2510003	
		GR2520001	Game refuge 2%
		GR2520006	Natural monument, Game refuge 3%
		GR2530002	Game refuge 7%, IBA
		GR2530004	Game refuge 9%
		GR2530005	Game refuge 19%
		GR2540001	Game refuge 13%, IBA
		GR2540003	IBA
		GR2550001	
		GR2550002	
		GR2550004	IBA
		GR2550005	
		GR2550006	Game refuge 3%, IBA
Attiki		GR3000003	
		GR3000004	

Status and reasons for decline: Mostly as in *Testudo graeca*. Populations from many islands and the southern mainland are in danger from the same reasons as *Testudo graeca*. Populations from the southern mainland usually living in disturbed areas are characterized by an, at least, partly genetically determined smaller carapace length; therefore their decline reduces the overall genetic variability of this species.

Protective legislation: *Testudo hermanni* is protected by the Greek Presidential Decree 67/1981, the Bern Convention (Appendix II) and the CITES (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Ballasina, D. 1992. Report on the repatriation of tortoises to Greece. British Herpetological Society Bulletin 40: 2-4.

Gruber, U. 1994. Amphibien und Reptilien. Franckh-Kosmos, Stuttgart.

Hellmich, W. 1962. Reptiles and Amphibians of Europe. Blanford Press, London.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Willemsen, R.E. and A. Hailey. 1989. Review: Status and conservation of tortoises in Greece. Herpetological Journal 1: 315-330.

Testudo marginata Schoepff, 1792
Class: Reptilia, Order: Chelonia, Family: Testudinidae

Common names: Marginated tortoise - Κρασπεδοχελώνα

Description: The domed adult carapace seen in sectional view is evidently longer than in the other two *Testudo* taxa (occasionally exceeding 35 cm); a well-developed, wide, almost horizontal and serrated edge is always present in the rear part of the adult carapace. This feature is missing from the young and is progressively formed in adolescents as their rear marginal plates turn outwards. The base colour of the adult shell is mostly black with central yellow (rarely orange) blotches of various size at least on some plates. Almost entirely black animals also exist. The young are not easily distinguished from the equally-sized individuals of the other two tortoise species, since all are oval-shaped in sectional view, have similar colours and lack a horizontal edge on the rear part of the carapace. The distinction from *Testudo hermanni* is based on the usual occurrence of a single supracaudal plate and, sometimes, of a few small conical, tubercle-like scales on the rear surface of the thighs of *T. marginata*. The separation from *T. graeca* is more difficult, especially when the young of *T. marginata* possess the two features just mentioned. The adolescents of *T. marginata* are rather distinct however, since they already have acquired the characteristic long, dark shell and, at least some of them, the horizontal carapace edge.

Ecology - habits: It often lives in dry stony and rocky areas with maquis and other dense scrub and forest vegetation but sometimes in habitats frequented by the other two *Testudo* species, at altitudes ranging from sea-level up to 1000 m (usually 100-800 m). When it occurs in sympatry with *T. hermanni,* it tends to be confined to higher elevations (but exceptions are known). It is active from March to October. Sexual maturity is attained at the age of 10 years. Mating takes place in spring (April-May) after a courtship performed by the males; during this period the males show increased aggressive behaviour. Females produce clutches of 3-10 eggs which they bury in holes dug in soft soil.

Distribution: *Testudo marginata* is virtually a Greek and southernmost Albanian endemic species, also introduced to Sardinia and possibly other Mediterranean areas. Its distribution area in Greece includes the mainland, except Thraki and most of Makedonia, and some islands of the Aigaio Pelagos (Aegean Sea) and the Ionio Pelagos (Ionion Sea).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Thessalia	GR1410002	
		GR1420003	Aesthetic forest 100%, Controlled hunting area 80%, IBA, SPA
		GR1420004	Game refuge 16%, IBA
		GR1430001	Game refuge 20%, IBA
		GR1430002	Aesthetic forest 20%, IBA, Biogenetic reserve 20%
		GR1430004	Game refuge 1%, Controlled hunting area 2%, Marine park 88%, IBA, Barcelona Convention 88%
		GR14440002	Controlled hunting area 85%, IBA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR14400003	Game refuge 7%, Controlled hunting area 1%, IBA, World Heritage site
Kentriki Ellada	Ipeiros	GR2110001	IBA, SPA, Ramsar, Barcelona Convention 49%
		GR2110004	IBA, Ramsar, Barcelona Convention 100%
		GR2120001	IBA, Game refuge 21%
		GR2120002	
		GR2120003	IBA
		GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, IBA, SPA
		GR2130004	IBA
		GR2140001	IBA
	Dytiki	GR2310001	Natural monument, Game refuge 1%, Ramsar 27%, IBA, Biogenetic reserve
		GR2310005	Game refuge 70%
		GR2320001	Ramsar 75%, IBA
		GR2320003	Game refuge 27%, IBA
		GR2320007	Game refuge 20%
		GR2320008	Game refuge 5%, Game breeding station 1%
	Sterea Ellada	GR2410001	Game refuge 10%
		GR2420003	Game refuge 8%, IBA
		GR2430001	Game refuge 50%
		GR2430002	
		GR2440001	Controlled hunting area 13%
		GR2440003	Peripheral zone 35%
	Peloponnisos	GR2510002	
		GR2510003	
		GR2520001	Game refuge 2%
		GR2520003	Game refuge 8%
		GR2520004	
		GR2520005	
		GR2520006	Natural monument, Game refuge 3%
		GR2530003	
		GR2530004	Game refuge 9%
		GR2530005	Game refuge 19%
		GR2540001	Game refuge 13%, IBA
		GR2540002	Game refuge 5%
		GR2540003	IBA
		GR2540004	IBA
		GR2540005	
		GR2550001	
		GR2550004	IBA
		GR2550005	
		GR2550006	Game refuge 3%, IBA
Attiki		GR3000003	
		GR3000004	

Status and reasons for decline: Populations living in natural undisturbed habitats are generally safe, especially those occurring in rocky areas with sclerophyllous scrub vegetation. Such populations are threatened only if human interference affects the habitats integrity (e.g. road opening, clearance, fires). The populations living on the edges of cultivated land are more at risk, since there a continuous loss of individuals exists in these areas due to death by machinery and pesticides. Although slow, this loss may be critical bearing in mind the slow maturation, the smaller clutch size, and the possible greater young mortality rate of this species. All these factors make *Testudo marginata* extremely vulnerable to the collection of individuals for the pet trade; but unfortunately this species appears to be the most preferable for collection. Populations of this tortoise in southern Peloponnisos, eastern Sterea Ellada and some islands are known to be in need of immediate protection, but generally we are far away from sufficient knowledge on the status of the Greek populations.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981, the Bern Convention (Appendix II) and the CITES (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Ballasina, D. 1992. Report on the repatriation of tortoises to Greece. British Herpetological Society Bulletin 40: 2-4.

Gruber, U. 1994. Amphibien und Reptilien. Franckh-Kosmos, Stuttgart.

Hellmich, W. 1962. Reptiles and Amphibians of Europe. Blanford Press, London.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Willemsen, R.E. and A. Hailey. 1989. Review: Status and conservation of tortoises in Greece. Herpetological Journal 1: 315-330.

Emys orbicularis (Linnaeus, 1758)

Class: Reptilia, Order: Chelonia, Family: Emydidae

Common names: European pond terrapin- Βαλτοχελώνα

Description: The rectilinear carapace length of adults is usually 20-25 cm, sometimes up to 30 cm or more. In sectional view, the outline of the shell is oval and slightly wider behind. Young individuals have a central keel along the carapace which disappears in the adult animals. The plastron is more flexible in the young and more rigid in old individuals but its halves can move slightly up and down, due to a transverse flexible hinge. There are no inguinal plates at the rear end of the carapace-plastron join at each shell side. The base colour of the carapace is dark brown to black with a pattern of light, usually yellow, spots or radiating lines on each plate. Plastron is greyish-yellow with irregular brown marks. The head is brownish-black, spotted with yellow. Usually light-coloured spots on the neck. As with all terrapins, *Emys orbicularis* is distinguished from tortoises by the conspicuously more flattened shell, the much longer tail and the webbed fingers and toes. Hatchlings are very small (the

shell often shorter than 2 cm), have a more rounded outline, more brightly-coloured marks, and a relatively longer tail than the adults.

Ecology - habits: Usually found in still (ponds, ditches, swamps and lakes) or slow moving water with a good growth of aquatic plants and overhanging vegetation. It basks on stones or on logs at the waters edge. It is a timid animal; at the slightest disturbance it immediately dives and swims under water. It feeds mainly on small fishes, small frogs and tadpoles, crustaceans, molluscs, insects and worms. The northern populations hibernate from October to March or later. In hotter areas hibernation is shorter and the animals aestivate during summer. The reproduction period begins in mid-May and oviposition takes place in June-early July when the females lay 5-20 eggs in holes (about 15 cm deep) that they dig in the banks. The duration of incubation depends on the temperature. Normally the hatchlings appear after about 3 months, but in cold areas they hatch during the favourable period of the next year.

Distribution: It is distributed throughout the mainland as well as on many islands of the Ionio Pelagos (Ionian Sea) and Aigaio Pelagos (Aegean Sea).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Game refuge 38%, Ramsar, IBA, SPA
	Kentriki Makedonia	GR1260001	Game refuge 1%, Ramsar, IBA, SPA
		GR1260007	Natural monument 38%, Controlled hunting area 62%
		GR1270002	IBA
	Thessalia	GR1430001	Game refuge 20%, IBA
		GR1420004	Game refuge 16%, IBA
		GR1440001	Game refuge 29%
Kentriki Ellada	Ipeiros	GR2120001	Game refuge 21%, IBA
		GR2110001	Ramsar 49%, IBA, Barcelona Convention, SPA
		GR2110004	IBA, Barcelona Convention, Ramsar 100%, SPA
		GR2120002	
		GR2120003	IBA
		GR2130005	
		GR2140001	IBA
	Ionia Nisia	GR2230002	Game refuge 5%
		GR2230001	
	Dytiki Ellada	GR2310001	Game refuge 1%, Natural monument, Ramsar 27%, IBA, Biogenetic reserve, SPA
		GR2320007	Game refuge 20%
		GR2310002	Ramsar 100%, IBA
		GR2310001	Ramsar 75%, IBA
		GR2330001	

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
	Sterea Ellada	GR2410001	Game refuge 10%
		GR2420003	Game refuge 8%, IBA
		GR2420004	Natural monument, IBA
		GR2440001	Controlled hunting area 13%
		GR2440003	Peripheral zone 35%
		GR2430002	
	Peloponnisos	GR2530002	Game refuge 7%, IBA
		GR2550004	IBA
Attiki	Attiki	GR3000003	
		GR3000004	

Status and reasons for decline: This species is threatened in many European countries, being near to extinction or already extinct in some of them. In Greece, the species seems rather safe for the time being; however, many populations are decreasing in number. The loss of wetlands due to drainage projects and water pollution are the main reasons for population decline. The results are more dramatic in the island populations.

Protective legislation: *Emys orbicularis* is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Diesener, G., and J. Reichholf. 1986. Lurche und Kriechtiere. Mosaik Verlag, Munchen.

Engelmann, W.E., J. Fritzsche, R. Günther and F.J. Obst. 1985. Lurche und Kriechtiere Europas. Neumann, Leipzig.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Lanka, V. and Z. Vit. 1990. Anfibios y Reptiles. Susaeta, Madrid.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Mauremys caspica (Gmelin, 1774)

Class: Reptilia, Order: Chelonia, Family: Bataguridae

Common names: Stripe-necked Terrapin - Ποταμοχελώνα

Description: In adults, the rectilinear carapace length is usually up to 20 cm, sometimes longer. The general appearance is similar to that of *Emys orbicularis*, but several differences are easily recognized: a) The shell colouring is usually lighter, often being grey-brown or greenish-brown dotted with yellowish faint markings or without them; b) on the sides of the neck, there are distinct yellow (rarely orange) parallel stripes bordered in black; c) the conspicuous central carapace keel of the young is still well visible in adults, at least at the rear part; d) the

flexible plastron of the young always becomes rigid in the adults (no hinge); e) the inguinal plates are always present. The shell colour in young individuals is often warm brown with clear red or yellowish markings. Hatchlings are 2-3 cm long and show the features mentioned for those of the pond terrapin.

Ecology - habits: *Mauremys caspica* usually lives in larger, more open, still or slow flowing waters (lakes, large ponds, streams, irrigation canals, rivers, etc.). It likes basking on banks or floating objects but dives quickly when disturbed, disappearing within the aquatic vegetation or the muddy bottom. It may, however, be seen wandering on land at some distance from the water. Compared to *Emys orbicularis* it is much more tolerant of brackish or polluted waters. Its prey mainly consists of amphibians and their larvae and on various invertebrates; however it is not exclusively carnivorous as *E. orbicularis* is. The stripe-necked terrapin hibernates at least in the northern parts of its distribution range; when it lives in small water bodies it tends to aestivate if they dry up. Mating takes place in April, usually into water, and may be repeated in autumn. The clutch size is 6-12 eggs; they are laid in holes (about 10-15 cm deep) dug in the banks.

Distribution: It is distributed throughout the mainland, many islands of Ionio Pelagos (Ionian Sea) and Aigaio Pelagos (Aegean Sea), as well as on Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Kentriki Makedonia	GR1260001 GR1260007 GR1260008 GR1270002	Game refuge 1%, Ramsar, IBA, SPA Natural monument 38%, Controlled hunting area 62% Ramsar, IBA, SPA IBA
	Thessalia	GR1440001	Game refuge 29%
Kentriki Ellada	Ipeiros	GR2120001 GR2110003 GR2110001 GR2110004 GR2120003 GR2140001	Game refuge 21%, IBA Game refuge 27%, IBA Ramsar, IBA, Barcelona Convention 49%, SPA Ramsar, IBA, Barcelona Convention 100%, SPA IBA IBA
	Ionia Nisia	GR2230002 GR2210002 GR2230001	Game refuge 5% Biogenetic reserve 49%
	Dytiki Ellada	GR2310001 GR2330005 GR2310002 GR2320001	Game refuge 1%, Natural monument, Ramsar, IBA, Biogenetic reserve, SPA Game refuge 9% Ramsar, IBA, SPA Ramsar, IBA
	Sterea Ellada	GR2420004 GR2420003	Natural monument, IBA Game refuge 8%, IBA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
	Peloponnisos	GR2540001	Game refuge 13%, IBA
		GR2530002	Game refuge 7%, IBA
		GR2550003	Natural monument, Controlled hunting area 9%, Biogenetic reserve
		GR2540002	Game refuge 5%
		GR2550006	Game refuge 3%, IBA
		GR2510002	
		GR2540003	IBA
		GR2550002	
		GR2550004	IBA
		GR2510003	
Attiki	Attiki	GR3000003	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4110001	Game refuge 5%, IBA
		GR4110004	Game refuge 1%, IBA
		GR4130001	Game refuge 8%
		GR4120004	IBA
	Notio Aigaio	GR4210008	Game refuge 20%, IBA
		GR4220009	Game refuge 10%
		GR4220008	Game refuge 9%, IBA
		GR4220005	
		GR4220010	
		GR4220012	
		GR4220015	
		GR4220018	IBA
		GR4220019	
	Kriti	GR4330004	Game refuge 4%, IBA
		GR4310001	Game refuge 20%
		GR4330001	Game refuge 29%
		GR4310004	
		GR4330003	IBA
		GR4340005	
		GR4340006	
		GR4340010	IBA
		GR4340013	

Status and reasons for decline: The populations of this species are clearly decreasing in number throughout most of the distribution area. In Greece, *Mauremys caspica* is not thought to be a threatened species, but some populations have become extinct as a result of habitat alteration or destruction, pollution and possibly the collection of specimens.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and

Amphibians of Britain and Europe. Harper Collins Publ., London.
Diesener, G. and J. Reichholf. 1986. Lurche und Kriechtiere. Mosaik Verlag, Munchen.
Engelmann, W.E., J. Fritzsche, R. Günther and F.J. Obst. 1985. Lurche und Kriechtiere Europas. Neumann, Leipzig.
Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.
Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Caretta caretta (Linnaeus, 1758)

Class: Reptilia, Order: Chelonia, Family: Cheloniidae

Common names: Loggerhead turtle - Καρέττα

Description: Large-sized, horny-shelled sea turtle with a rectilinear carapace length reaching 110 cm but not exceeding 80 cm in the Mediterranean animals. The carapace of adults is oval in sectional view, often rather long, and its colour is brown to reddish-brown. The head is large with strong hooked jaws and the limbs are long, flat, flipper-shaped (especially the forelimbs, which usually bear two claws each). There are 5 costal and usually 3 inframarginal plates on each side of the carapace and plastron, respectively. Also, there are 4 (two pairs) of prefrontals in the middle of the head and 3 postoculars in each side of the head (in the morphologically closer species, the green turtle *Chelonia mydas*, the respective numbers are 4, 4, 2 and 4). In hatchlings, the carapace is 5-6 cm long, dark brown or blackish-brown with darker streaks and has keeled vertebral plates.

Ecology - habits: *Caretta caretta* lives in the warmer waters of the Atlantic Ocean, also entering the North Sea as a vagrant), Mediterranean and Black Seas, and Indian and Pacific Oceans. It is the commonest sea turtle in the Mediterranean. Its food mainly consists of jellyfish and salps (in deep waters), and molluscs, crustaceans, echinoderms and sponges (in shallow waters). Behaviour is rather aggressive. Reproduction is made by oviparity and oviposition takes place in sandy beaches of subtropical and temperate areas, usually during the night. Eggs are laid in a hole dug by the female in a place lying above the tidal line. After oviposition, the eggs are carefully covered with sand. In the Mediterranean area, nesting is known to occur only in Greece, Turkey and Cyprus. The number of females nesting in a given area varies from year to year. The reasons for such fluctuations are not sufficiently known. *Caretta caretta* is the only sea turtle nesting in Greece, and the values of nest density (i.e., the number of nests per km of beach length) concerning the Greek island of Zakynthos, are among the highest all over the world. The nesting beaches of western Peloponnisos are also very significant. The nesting period in Greece lasts from the end of May to late August. The production of more than one clutch of eggs per reproductive period by the same female is not unusual (up to four clutches have been recorded), however, the mature females do not lay eggs every year but mostly every two or three years. The number of eggs in Greek nests roughly ranges from 50 to 200 and the incubation period is about two months.

Distribution: It is distributed throughout all the Greek seas. The main nesting areas are in the island of Zakynthos, western and southern Peloponnisos and the island of Kriti. To a lesser degree, many other coastal localities of the mainland and insular country are also used by

Caretta caretta for ovipoisition.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Thessalia	GR1430004	Game refuge 1%, Controlled hunting area 2%, Marine Park 88%, IBA, Barcelona Convention 88%
Kentriki Ellada	Ipeiros	GR2110001	IBA, Barcelona Convention 49%, SPA, Ramsar
		GR2110004	IBA, Barcelona Convention, Ramsar, SPA
		GR2140001	IBA
	Ionia Nisia	GR2210002	Biogenetic reserve 49%
	Dytiki Ellada	GR2310001	Natural monument, Game refuge 1%, Ramsar, IBA, Biogenetic reserve, SPA
		GR2310002	Ramsar, IBA, SPA
		GR2320001	Ramsar, IBA
		GR2330005	Game refuge 9%
		GR2330006	Ramsar, IBA, SPA
		GR2330007	
		GR2330008	
	Peloponnisos	GR2540003	IBA
		GR2550003	Natural monument, Controlled hunting area 9%, Biogenetic reserve
		GR2550004	IBA
		GR2550005	
Nisia Aigaiou, Kriti	Notio Aigaio	GR4210009	
		GR4220018	IBA
	Kriti	GR4310004	
		GR4330001	Game refuge 29%
		GR4330004	Game refuge 4%, IBA
		GR4340003	Game refuge 28%, IBA
		GR4340006	
		GR4340010	IBA

Status and reasons for decline: The loggerhead turtle is a seriously threatened species throughout its range. It is included in the Red Data Book of Threatened Vertebrates of Greece under the threat category "Endangered". Destruction or degradation of nesting sites mainly due to building or tourist development are the most serious threats. Electric lights near the nesting beaches negatively affect the adult turtles and disorientate the hatchlings. Nest predation by dogs, foxes and badgers is responsible for the loss of a high percentage (sometimes up to 60%) of the total number of nests on some beaches. Entanglement in fishing nets, killing by boats and pollution from plastics, heavy metals and hydrocarbons are other threats hanging over the turtles.

Protective legislation: *Caretta caretta* is protected by the Greek Presidential Decrees 617/1980 and 67/1981, as well as by a number of Ministerial Decisions. It is also included in the Bern Convention (Appendix II) and the CITES (Appendix I).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Hellmich, W. 1962. Reptiles and Amphibians of Europe. Blanford Press, London.

Margaritoulis, D. 1992. *Caretta caretta* (Linnaeus, 1758). p. 97-100. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Elaphe quatuorlineata (Lacépède, 1789)

Class: Reptilia, Order: Squamata, Family: Colubridae

Common names: Four-lined snake - Λαφιάτης or Λαφίτης

Description: A robust snake, one of the biggest in its family. Adults usually 130-160 cm long but animals of 200 cm and rarely of 250 cm have been observed. As typical for the colubrid snakes, scaling on top of head consists of 9 large, symmetrically arranged scales. The number of dorsal scales around the mid-body is 25 (rarely 23-27) and that of the ventral scales is 195-234. The tail has two ventral rows of 49-90 scales each. The head is rather long, the pupils are round and the dorsal scales of adults are keeled. There are two preocular scales. Colouring shows variation depending on the geographical area and the individual's age. The adults of western origin (from the Kyklades archipelago, through mainland Greece, to Italy) are brown, yellow-brown or grey, with four dark stripes along both sides of the trunk and a dark streak on the side of the head from the eye to the corner of the mouth. The underside is light-coloured (usually yellowish) with a varying amount of dark markings. The young (until 2-3 years of age) are greyish in background and have a row of dark, broad spots or bars on their back and two series of smaller, dark spots on each flank; head has a dark pattern and the belly has dark markings in two rows or streaks. The young animals of eastern origin (NE Greece, Turkey, Bulgaria and Rumania) have the same colouring and pattern as in western populations. The adults, however, lack dark stripes and often keep the colouring and pattern of the young, or become darker with an invisible or faint pattern.

Ecology - habits: It lives in a wide variety of habitats, preferring some shade and humidity. Often found along the edges of woodland, open woods, maquis, rocky and bushy areas, and cultivated areas. Also found near river and pool edges as well as in marshy areas. In Europe, it occurs up to 1200 m but in Armenia it is found at altitudes of 2500 m. Active from March to November but at the southern end of its range active throughout the year. A diurnal snake with daily activity depending on the season and habitat; it generally avoids heat, often hunting in late afternoon and at dusk and even on cloudy days. It is a non-aggressive snake having climbing and swimming abilities. Its food consists mainly of small mammals (insectivores, rodents, small rabbits), although young birds, eggs and occasionally lizards are also preyed on.

The young feed on small mammals, lizards and large insects. The mating period is during April-May and in June-July. After a gestation period of about 2 months each female lays 3-18 eggs within soft soil or under rocks. The incubation period lasts about two months. Hatchlings are 25-40 cm long and emerge until September.

Distribution: It is widely distributed throughout mainland and insular Greece. Absent from Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Game refuge 38%, Ramsar, IBA, SPA
	Kentriki Makedonia	GR1260001	Game refuge 1%, Ramsar, IBA, SPA
		GR1240001	Natural monument 4%, Game refuge 28% IBA, Biogenetic reserve 1%
	Thessalia	GR1430004	Marine Park 88%, Controlled hunting area 2%, Game refuge 1%, IBA, Barcelona Convention 88%
		GR1440004	IBA
Kentriki Ellada	Ipeiros	GR2120001	Game refuge 21%, IBA
		GR2130001	Core strict 27%,Peripheral zone 73%, Game refuge 9%, IBA, SPA
		GR2130003	Game refuge 5%, IBA
		GR2110001	Ramsar, IBA, Barcelona Convention 49%, SPA
		GR2110003	Game refuge 27%, IBA
		GR2110004	Ramsar, IBA, Barcelona Convention 100%, SPA
		GR2120002	
		GR2130004	IBA
		GR2140001	IBA
	Ionia Nisia	GR2210001	
		GR2220003	Ramsar 10%
		GR2230001	
		GR2230003	
		GR2240001	
	Dytiki Ellada	GR2310001	Natural monument, Game refuge 1%, Ramsar, IBA, Barcelona Convention, SPA, Biogenetic reserve
		GR2320004	Aesthetic Forest 100%, IBA, SPA
		GR2310006	Game refuge 14%, Ramsar
		GR2310009	
		GR2320001	Ramsar, IBA
		GR2320007	Game refuge 20%
		GR2330002	IBA
		GR2330003	
		GR2330004	

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
	Sterea Ellada	GR2410001	Game refuge 10%
		GR2420001	IBA
		GR2420003	Game refuge 8%, IBA
		GR2420004	Natural monument, IBA
		GR2430002	
	Peloponnisos	GR2550006	Game refuge 3%, IBA
		GR2520006	Natural monument, Game refuge 3%
		GR2530004	Game refuge 9%
		GR2540003	IBA
		GR2540005	
		GR2550001	
		GR2550004	IBA
Nisia Aigaiou, Kriti	Notio Aigaio	GR4220004	Game refuge 10%
		GR4220014	Game refuge 2%, IBA
		GR4220016	
		GR4220007	Game breeding station 100%
		GR4220012	
		GR4220014	Game refuge 2%, IBA

Status and reasons for decline: As a species, this snake seems to be rather unthreatened in Greece. At the population level, habitat destruction (as a result of agricultural and tourist development) and the killing of individuals by humans, constitute the main reasons for declining populations.

Protective legislation: The species is protected by the Greek Presidential Decree 67/1981 and the Bern Convention 1988 (Appendix II).

Selected references

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Böhme, W. and N. Scerbak. 1993. *Elaphe quatuorlineata* (Lacépède, 1789)- Vierstreifennater. p. 373-396. In: Böhme W. (ed.). Handbuch der Reptilien und Amphibien Europas, Band 3/I. AULA - Verlag, Wiesbaden.

Bruno, S., and S. Maugeri. 1990. Serpenti d'Italia e d'Europa. Mondadori, Milano.

Engelmann, W.E., J. Fritzsche, R. Günther and F.J. Obst. 1985. Lurche und Kriechtiere Europas. Neumann, Leipzig.

Gruber, U. 1989. Die Schlangen Europas und rund ums Mittelmeer. Franckh-Kosmos, Stuttgart.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Elaphe situla (Linnaeus, 1758)
Class: Reptilia, Order: Squamata, Family: Colubridae

Common names: Leopard snake - Σπιτόφιδο

Description: A medium-sized, slender snake very rarely exceeding 100 cm (usually 70-90 cm). Dorsal scales at mid-body are in 27 (occasionally 23, 25 or 29) longitudinal rows; there are 215-260 ventral scales and 54-92 scales in each of the two subcaudal rows. The distinct head is rather narrow, the pupils are round and the dorsal scales are smooth. There is usually one preocular scale. The colouring and pattern is quite variable but usually the same in adults and juveniles. The basic colour is greyish, yellowish or buff. Along the back a row of almost rounded, black-edged, brown to red-brown large spots exists. In many animals these spots are (or tend to be) divided in two or replaced by two dark-edged brown or red-brown longitudinal stripes. In all cases, on the head top and neck these spots or stripes form a Y-shaped "crown". Additional dark markings also occur on head top and sides. Sometimes in adult animals, the back pattern is of less vivid colours. On each flank there is a row of smaller, red-brown or dark spots. Underside is yellowish with many dark markings towards the tail. Eyes are red-brown.

Ecology - habits: It is encountered in sunny habitats such as areas with Mediterranean type vegetation (phrygana, maquis), cultivated areas, edges of deciduous forests, rocky areas and dry-stone walls, roadsides, gardens and around buildings. Sometimes near marshes and streams. Usually found at altitudes of 500-700 m but in Greece it has been observed in localities up to 1600 m. It is a ground-dwelling snake also climbing quite well. Mainly a diurnal animal sometimes being active at dusk. Its daily activity depends on the area of its distribution. Hibernation lasts from October or November to April but at the southern parts of its range it may not hibernate. The adults mostly prey upon small rodents and occasionally lizards, birds and their eggs, whereas the young feed on lizards and large insects. A calm, non-aggressive snake. The reproductive season starts late in spring (mid-May to June) and after about 1.5 months females lay 2-7 eggs. Often two clutches per year are produced. The first clutch is laid until early July and the second in late July or early August. Hatchlings appear after an incubation period of 50-70 days and they are 30-35 cm long.

Distribution: It is distributed throughout the mainland and on most of the islands of the Ionio Pelagos (Ionian Sea), Aigaio Pelagos (Aegean Sea), and on Kriti.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Game refuge 38%, Ramsar, IBA, SPA
	Kentriki Makedonia	GR1260001	Game refuge 1%, Ramsar, IBA, SPA
	Dytiki Makedonia	GR1310003	Core strict 49%, Peripheral zone 51%, Game refuge 21%, IBA, SPA, Biogenetic reserve

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR1310002	Core strict 100%, Game refuge 6%, IBA, SPA, Biogenetic reserve
	Thessalia	GR1420003	Aesthetic Forest 100%, Controlled hunting area 80%, IBA, SPA
		GR1430004	Marine Park 88%, Controlled hunting area 2%, Game refuge 1%, Barcelona convention, IBA
		GR1430002	Aesthetic Forest 20%, IBA, Biogenetic reserve
		GR1430001	Game refuge 20%, IBA
		GR1440001	Game refuge 29%
		GR1440002	Controlled hunting area 85%, IBA
		GR1440003	Game refuge 7%, Controlled hunting area 1%, IBA, World Heritage site
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, IBA, SPA
		GR2110001	Ramsar, IBA, Barcelona Convention 49%
		GR2110004	Ramsar, IBA, Barcelona Convention 100%, SPA
		GR2130003	Game refuge 5%, IBA
		GR2130004	IBA
		GR2130005	
	Ionia Nisia	GR2220002	Core strict 100%, Biogenetic reserve, SPA
		GR2210001	
		GR2210002	Biogenetic reserve 49%
		GR2220001	IBA
	Dytiki Ellada	GR2320004	Aesthetic Forest 100%, IBA, SPA
		GR2320001	Ramsar, IBA
		GR2320005	IBA
		GR2320007	Game refuge 20%
		GR2330001	
		GR2320003	Game refuge 27%, IBA
	Sterea Ellada	GR2420004	Natural monument, IBA
		GR2410001	Game refuge 10%
		GR2430001	Game refuge 50%
		GR2420003	Game refuge 8%, IBA
		GR2430002	
		GR2440003	Peripheral zone 35%
		GR2450004	
	Peloponnisos	GR2550006	Game refuge 3%, IBA
		GR2520006	Game refuge 3%, Natural monument
		GR2520001	Game refuge 2%
		GR2530002	Game refuge 7%, IBA
		GR2540002	Game refuge 5%
		GR2510002	
		GR2520003	Game refuge 8%
		GR2530004	Game refuge 9%
		GR2530005	Game refuge 19%

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR2540003	IBA
		GR2540004	IBA
		GR2540005	
		GR2550004	IBA
		GR2550005	
Attiki	Attiki	GR3000007	Game refuge 15%
		GR3000003	
		GR3000004	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4130001	Game refuge 8%
	Notio Aigaio	GR4210005	Natural monument 1%, Biogenetic reserve 1%
		GR4210008	Game refuge 20%, IBA
		GR4220003	
		GR4220009	Game refuge 10%
		GR4220008	Game refuge 9%, IBA
		GR4220005	
		GR4220010	
		GR4220018	IBA
	Kriti	GR4310002	IBA
		GR4310004	
		GR4310005	IBA
		GR4310006	IBA, Game refuge 12%
		GR4330003	IBA
		GR4340001	
		GR4340006	
		GR4340007	
		GR4340010	IBA
		GR4330004	Game refuge 4%, IBA
		GR4320002	Game refuge 3%, IBA

Status and reasons for decline: It is not threatened in Greece. However, increasing habitat loss (because of expansion of agricultural areas, tourist development, etc.), killing due to ignorance and prejudice, and overcollection, are the reasons possibly explaining the local rarity of this species.

Protective legislation: This species is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Bruno, S. and S. Maugeri. 1990. Serpenti d'Italia e d'Europa. Mondadori, Milano.

Engelmann, W.E., J. Fritzsche, R. Günther and F.J. Obst. 1985. Lurche und Kriechtiere Europas. Neumann, Leipzig.

Gruber, U. 1989. Die Schlangen Europas und rund ums Mittelmeer. Franckh-Kosmos, Stuttgart.

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR1310002	Core strict 100%, Game refuge 6%, IBA, SPA, Biogenetic reserve
	Thessalia	GR1420003	Aesthetic Forest 100%, Controlled hunting area 80%, IBA, SPA
		GR1430004	Marine Park 88%, Controlled hunting area 2%, Game refuge 1%, Barcelona convention, IBA
		GR1430002	Aesthetic Forest 20%, IBA, Biogenetic reserve
		GR1430001	Game refuge 20%, IBA
		GR1440001	Game refuge 29%
		GR1440002	Controlled hunting area 85%, IBA
		GR1440003	Game refuge 7%, Controlled hunting area 1%, IBA, World Heritage site
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, IBA, SPA
		GR2110001	Ramsar, IBA, Barcelona Convention 49%
		GR2110004	Ramsar, IBA, Barcelona Convention 100%, SPA
		GR2130003	Game refuge 5%, IBA
		GR2130004	IBA
		GR2130005	
	Ionia Nisia	GR2220002	Core strict 100%, Biogenetic reserve, SPA
		GR2210001	
		GR2210002	Biogenetic reserve 49%
		GR2220001	IBA
	Dytiki Ellada	GR2320004	Aesthetic Forest 100%, IBA, SPA
		GR2320001	Ramsar, IBA
		GR2320005	IBA
		GR2320007	Game refuge 20%
		GR2330001	
		GR2320003	Game refuge 27%, IBA
	Sterea Ellada	GR2420004	Natural monument, IBA
		GR2410001	Game refuge 10%
		GR2430001	Game refuge 50%
		GR2420003	Game refuge 8%, IBA
		GR2430002	
		GR2440003	Peripheral zone 35%
		GR2450004	
	Peloponnisos	GR2550006	Game refuge 3%, IBA
		GR2520006	Game refuge 3%, Natural monument
		GR2520001	Game refuge 2%
		GR2530002	Game refuge 7%, IBA
		GR2540002	Game refuge 5%
		GR2510002	
		GR2520003	Game refuge 8%
		GR2530004	Game refuge 9%
		GR2530005	Game refuge 19%

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR2540003	IBA
		GR2540004	IBA
		GR2540005	
		GR2550004	IBA
		GR2550005	
Attiki	Attiki	GR3000007	Game refuge 15%
		GR3000003	
		GR3000004	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4130001	Game refuge 8%
	Notio Aigaio	GR4210005	Natural monument 1%, Biogenetic reserve 1%
		GR4210008	Game refuge 20%, IBA
		GR4220003	
		GR4220009	Game refuge 10%
		GR4220008	Game refuge 9%, IBA
		GR4220005	
		GR4220010	
		GR4220018	IBA
	Kriti	GR4310002	IBA
		GR4310004	
		GR4310005	IBA
		GR4310006	IBA, Game refuge 12%
		GR4330003	IBA
		GR4340001	
		GR4340006	
		GR4340007	
		GR4340010	IBA
		GR4330004	Game refuge 4%, IBA
		GR4320002	Game refuge 3%, IBA

Status and reasons for decline: It is not threatened in Greece. However, increasing habitat loss (because of expansion of agricultural areas, tourist development, etc.), killing due to ignorance and prejudice, and overcollection, are the reasons possibly explaining the local rarity of this species.

Protective legislation: This species is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Bruno, S. and S. Maugeri. 1990. Serpenti d'Italia e d'Europa. Mondadori, Milano.

Engelmann, W.E., J. Fritzsche, R. Günther and F.J. Obst. 1985. Lurche und Kriechtiere Europas. Neumann, Leipzig.

Gruber, U. 1989. Die Schlangen Europas und rund ums Mittelmeer. Franckh-Kosmos, Stuttgart.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Obst, F.J., N. Scerbak and W. Böhme. 1993. *Elaphe situla* (Linnaeus, 1758) Leopardnatter. p. 433-453. In: Böhme W. (ed.). Handbuch der Reptilien und Amphibien Europas, Band 3/I. AULA - Verlag, Wiesbaden.

Vipera schweizeri Werner, 1935

Class: Reptilia, Order: Squamata, Family: Viperidae

Synonyms: *Vipera lebetina schweizeri, Macrovipera schweizeri*
Common names: Blunt-nosed viper - Οχιά της Μήλου or Λασπόχεντρα or Θεριό

Description: A middle-sized snake. Its body length is usually 80-100 cm but occasionally up to 120 cm. Like all European vipers, it has a plump body with a short tail. The flattened, rounded, distinct head is covered by many small, almost equal-sized scales. It is easily distinguished from the nose-horned viper, *Vipera ammodytes*, by the lack of a distinct nose horn. The absence of supraocular scales differentiates it from *V. xanthina* which has one large supraocular on the top of the head over each eye. Usually it has 23 (21-25) longitudinal scale rows at mid-body, 126-181 ventral scales, and two rows of 33-58 scales each on the ventral surface of the tail. Colouring varies but usually females are grey-brown and males grey or yellowish-grey. Often there are four rows of rather weakly defined brownish blotches along the body, the two central ones joining on the mid-line. Both sexes are brighter coloured in Spring. Underside is pale with small dark markings, often yellow on tail tips. In some areas of Milos island a rare "red morph" is encountered with an impressive uniform dark red-brown colour without markings. Juveniles are usually grey-blue with four series of dark olive markings along the body.

Ecology - habits: Found in moist habitats, dry torrents, reed-beds and cultivated land. Occasionally in dry places with garrigue and maquis vegetation and on dry-stone walls. A good climber and swimmer. It is a mainly diurnal snake that is also active at dusk or early in the night during the summer. It preys upon small mammals, birds and their nestlings, and small snakes; the young feed on lizards and insects. Mating occurs in May. The female lays 5-12 eggs. Incubation lasts 30-45 days and the young hatch out in August. Hatchlings are 18-25 cm long. It is the only egg-laying viper in Europe. It is not an aggressive snake and whistles before attacking. Its venom is quite toxic compared to other vipers.

Distribution: The Greek populations of this snake are distributed on the islands of Milos (the biggest Greek population, about 90%), Kimolos, Polyaigos and Sifnos, all in the southwest Kyklades archipelago, Aigaio Pelagos (Aegean Sea). According to recent opinion, these populations belong to a distinct species, *Macrovipera schweizeri*, which is endemic to Greece.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Nisia Aigaiou, Kriti	Notio Aigaio	GR4220005 GR4220006	

Status and reasons for decline: This taxon is threatened in Greece, mentioned in the Red Data Book of Threatened Vertebrates under the category "Endangered". The isolated populations, the ignorance of local communities and the high demand for animals for foreign research centres and collectors, seriously threaten this species that is on the verge of extinction. Greek animals are estimated at 5,000-9,000 individuals and 90% of them are found on the island of Milos.

Protective legislation: It is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton, and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Bruno, S. and S. Maugeri. 1990. - Serpenti d'Italia e d'Europa. Mondadori, Milano.

Engelmann, W.E., J. Fritzsche, R. Günther, and F.J. Obst. 1985. - Lurche und Kriechtiere Europas. Neumann. Leipzig, Stuttgart.

Gruber, U. 1989. Die Schlangen Europas und rund ums Mittelmeer. Franckh-Kosmos, Stuttgart.

Matz, G. and D. Weber. 1983. - Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Paraschi, L. and B. Chondropoulos. 1992. - *Vipera lebetina* (Linnaeus, 1758). p. 103-105. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Stubbs, D. 1985. Biogenetic Reserve Assessment for *Vipera lebetina schweizeri* and *Podarcis milensis* in the Western Cyclades. European Committee for the Conservation of Nature and Natural Resources, Council of Europe. Strasbourg, France.

Vipera ursinii (Bonaparte, 1835)

Class: Reptilia, Order: Squamata, Family: Viperidae

Common names: Orsini's viper - Νανόχεντρα

Description: The smallest viper in Europe. Its total body length is 35-50 cm, occasionally up to 70 cm. Females tend to be longer than males. A rather thick snake with an elongated head. It is easily distinguished from the other Greek vipers by the occurrence of the well-developed frontal and parietal scales on the middle part of the top of its head. These scales also exist in another Greek viper, *Vipera berus*, from which *V. ursinii* differs by its smaller adult size, in having a narrower head, smaller parietal than frontal, and upper preocular nearly always in

contact with the nasal scale. The dorsal scales of *V. ursinii* are more obviously keeled and arranged at mid-body in 19 longitudinal series instead of usually 21 in *V. berus*. There are 114-152 ventral scales and subcaudal scales are in two rows of 19-41 scales each. The colouring varies; the ground colour is usually light grey, brownish or yellowish with a dark zig-zagged dorsal stripe edged in black, sometimes partly broken into spots. Flanks are darker, with a row of dark spots. Underside is dark grey to black, whitish or pinky, often with spots. Underside of tail tip yellow or dark with small, yellow spots. Melanistic animals are rare. As with all vipers, it is a solenoglyphic snake.

Ecology - habits: A montane species being found up to 2500 m but lowland populations are also known to occur in some parts of the species' range. It occurs in dry, rocky areas with low vegetation. Also found in meadows, edges of woodland or clearings, as well as near water or in moist places. A diurnal snake feeding on small lizards, beatles, crickets, grasshoppers and occasionally on small rodents. The hibernation period is long (up to 6 months in the north) and takes place under rocks, in vole galleries or under snow. It is an ovoviviparous species. The mating period starts in mid-April to May and the first juveniles appear in August and through September. A gravid female usually gives birth to 3-8 young (in extraordinary cases, up to 27) that are 12-18 cm long. It is not an aggressive snake and its venom is less toxic than that of the other European vipers.

Distribution: This species has a discontinuous distribution area in Greece. Its populations are always loose, confined to mountainous areas of Makedonia, Ipeiros and Thessalia, and they are the southernmost populations of this species in Europe.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment, in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Dytiki Makedonia	GR1310003	Core strict 49%, Peripheral zone 51%, Game refuge 21%, SPA, IBA, Biogenetic reserve 49%
		GR1310002	Core strict 100%,Game refuge 6%, Biogenetic reserve 100%, IBA, SPA
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, IBA, SPA
		GR2110002	Game refuge 11%, IBA
		GR2130007	Game refuge 13%

Status and reasons for decline: This species is threatened throughout its distribution. In Greece, it is characterized as "Rare" according to the Red Data Book of Threatened Vertebrates of Greece. The real status of the Greek populations is unknown but they are small and isolated, thus being vulnerable to even mild human interference within their habitats. Collection for scientific or trading purposes also possibly has a critical effect on populations.

Protective legislation: It is protected by the Bern Convention (Appendix II) and the CITES (Appendix I).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and

Amphibians of Britain and Europe. Harper Collins Publ., London.
Bruno, S. and S. Maugeri. 1990. Serpenti d'Italia e d'Europa. Mondadori, Milano.
Dimitropoulos, A. and B. Chondropoulos. 1992. *Vipera ursinii* (Bonaparte, 1835). p. 108-109. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.
Engelmann, W.E., J. Fritzsche, R. Günther and F.J. Obst. 1985. Lurche und Kriechtiere Europas. Neumann, Leipzig.
Gruber, U. 1989. Die Schlangen Europas und rund ums Mittelmeer. Franckh-Kosmos, Stuttgart.
Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.
Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

E.5. AMPHIBIANS

by E. Valakos and B.P. Chondropoulos

E.5.1. Introduction

According to up-to-date information, at least 4,320 living and about 150 fossil species of amphibians have been recorded all over the world. They are classified into 11 orders but only three of them include the recent forms: (a) Apoda or Gymnophiona (the limbless amphibians or caecilians) comprising about 160 species; (b) Urodela or Caudata (the tailed amphibians, i.e. the salamanders and newts) composed of 360 species, and (c) Anura (the tailless amphibians, i.e., the toads and frogs) consisting of over 3,800 species.

A total of only 50 species of tailed and tailless amphibians are known to live in Europe, west of the Ural mountain chain. As a result of historical and recent environmental factors, the southern parts of the continent (the Iberian, Italian and Balkan peninsulas) are by far richer in species than the central and northern parts. Also, the southern populations of these species that also occur in the north are more numerous, larger and healthier in structure (i.e., with a higher percentage of young individuals). Only taxa quite tolerant to the cold have larger populations in the north but these are often very isolated.

In Greece, 17-18 species occur (the exact number depends on the clarification of the taxonomic status of the newt populations formerly classified as *Triturus cristatus*). The anurans are represented by 12 species of toads and frogs belonging to 5 genera of the families Discoglossidae (or Bombinatoridae), Pelobatidae, Bufonidae, Hylidae and Ranidae. All 5-6 Greek tailed amphibians belong to 2 genera of the family Salamandridae. Since the zoogeography and systematics of at least some of the Greek species are insufficiently known, the subspecific division is somewhat unclear. However, at least 2-3 subspecies are considered to be endemic to Greece and some others endemic to Greece and the adjacent Balkan countries.

During the last 30 years an obvious decline in all European species of amphibians has been observed. This alarming situation is more remarkable in the countries of central and northwest Europe where a percentage of 15-33% of each countries' species are endangered or about to become extinct, and the remainder are mostly in sharp decline. Most threatened taxa seem to be the anurans of the genera *Bombina, Alytes, Bufo* and *Hyla*. In southern Europe, the conditions are somewhat better but many cases of locally or more widely destroyed or declining populations are known. At the species level, the cave-dwelling salamanders *Hydromantes* and *Proteus*, and some species of the anuran genera *Discoglossus, Pelobates, Hyla* and *Rana* are in rapid decline.

The reasons for this degradation are either natural or anthropogenic. In the first case, climatic changes and some natural processes leading to habitat alteration (e.g., the aging of the lakes and ponds) are the main reasons. However, these factors as well as the natural enemies of amphibians (predators, parasites) cannot result in a species disappearing from an area

unless human interference occurs (in some cases, however, climatic changes may be responsible of such an extinction). Human activities are by far more critical to the survival of amphibian species and populations, affecting both the animals themselves and their environment. They cause: a) loss of habitats (due to drainage, banking-up, rubbish tipping, etc.); b) pollution of surface and underground water (by acid rain, agricultural residues and byproducts, and untreated household and industrial wastes); c) breaking-up of habitats (due to urbanization and road construction) often forming fatal obstacles for many amphibians during their seasonal migrations; d) disturbance (due to noisy human activities which may cause a serious negative effect on their reproductive process); e) overcollection for trade, scientific and educational purposes, and f) introduction of native or foreign amphibians and other animals (usually causing competitive interactions between the local and the introduced animals or alterations in the genetic construction of the natural populations).

The status of the amphibians in Greece is not well known. At the species level, only one amphibian, the Luschan's salamander, *Mertensiella luschani* (or *Salamandra luschani*), is mentioned in the Red Data Book of Threatened Vertebrates of Greece as "Rare". Although it is generally accepted that in Greece many well-conserved or moderately affected amphibian habitats are still retained, many valuable areas have been lost or seriously damaged during this century. Extensive damage due to the acquisition of cultivated land, reclamation work, water intake, rubbish dumping, pollution from excess pesticides, olive-press waste, household and industrial waste, and eutrophication owing to excessive use of fertilizers and detergents, are some of the destructive impacts on Greek wetlands and other internal water bodies. Massive export of frogs is another threat; tens of tons amounting to some millions of individuals leave the country every year. Various kinds of disturbance have also detrimental effects on many amphibian populations, especially those living in the vicinity of urbanized or otherwise exploited areas (for tourist development, intensive agriculture, airports or motorways). Coastal and other areas of low and moderate altitude are the most susceptible. Finally, many amphibians, especially toads, are accidentally being killed by traffic mainly during the spring migration to their mating places.

The protective legislation in force in Greece has been proved to be ineffective at preventing the degradation of amphibian populations and their habitats. On the other hand, the information possessed by the Greek people about the role of and the need to protect this animal group and its natural environment seems to be very poor. Environmental education programs are limited and it is absolutely necessary that these become a general and intensive educational practice.

Twenty amphibian species and subspecies living in the proposed sites were recorded in the Greek "Natura 2000" database. They constitute 57.1% of the total number of the known amphibian taxa in Greece. Among the 20 taxa, 4 are included in Annex II to Directive 92/43/EEC, and the rest were recorded in the database as Other and Greek Important Species. Of these, 8 are listed in Annexes IV and V of the directive. The only amphibian record in the Red Data Book of Threatened Vertebrates of Greece is among the 20 recorded amphibians in the database. Moreover, 66% of the Greek endemic taxa (2 taxa) are also recorded. All 20 taxa are protected by the Bern Convention (Appendices II or III) and 12 of them (60%) by the Greek Presidential Decree 67/1981. Only one taxon is registered in the European Red List of Globally Threatened Animals and Plants (1991), and none in the IUCN Red List of Threatened Animals (1988). Moreover, 4 taxa (20%) are endemic to Greece and the adjacent Balkan countries, 5 (25%) have isolated populations in Greece, and 9 (45%) are at the limits of their distribution areas in Greece. In a previous survey (the CORINE-Biotopes Project) only 9 of the 20 species were referred.

The 20 evaluated amphibian taxa have been found in 217 sites, i.e. in over 73% of the total number of proposed "Natura 2000" sites. The four Annex II taxa have been recorded from 80 sites (27%). Only 4 of the 80 sites occur on islands, and 63 (83%) lie in the northern mainland (Thraki, Makedonia, Ipeiros and Thessalia). None of the Annex II taxa are distributed in Peloponnisos. The Other Important and Greek Important Species were reported from 192 sites (65%), 72 of which (37.5%) are insular sites.

Although 8 out of the 20 taxa are not found in any other country of the EU, only 4 of them are mentioned in the Directive 92/43/EEC. The 4 omitted taxa (*Triturus alpestris veluchiensis*, *T. vulgaris graecus*, *Rana balcanica*, and *R. epeirotica*) are endemic either to Greece or the Balkans. This situation justifies the accession of these and perhaps other Greek taxa in the lists of taxa of Community interest. According to what has been mentioned so far, is obvious that the accession of more of the amphibians present in Greece in the lists of the directive is required.

E.5.2. Amphibians of Greece listed in Annex II to Directive 92/43/EEC

Mertensiella luschani (Steindachner, 1891)
Class: Amphibia, Order: Caudata, Family: Salamandridae

Synonyms: *Salamandra luschani*
Common names: Luschan's salamander - Καρπαθοσαλαμάνδρα or Σκουκούταβλος

Description: The total body length can reach 13 cm, with the snout-vent length being slightly greater than the tail length. The body is slender with a thin, rather cylindrical tail, very prominent eyes, smooth skin and narrow but prominent paratoid glands. There are tiny prickles on the back and throat, especially in males which also always have an obvious soft "spike" on the upper surface of tail base. The base colour is brownish or orange above with dark brown blotches and/or small yellowish spots. Flanks are paler or whitish-yellow and belly flesh-coloured with lighter markings. Throat yellowish and underside of tail orange-yellow. Geographical variation in colouring is known to occur.

Ecology - habits: Fairly quick-moving for a salamander. Often found in quite dry habitats such as phrygana or near seasonal small water courses, and in Megisti island, it is also encountered in places related to human activities. Active from November (beginning of the rainy period) to April and its daily activity is related to air humidity. Usually moving during the night and when the humidity is over 60%. During the rainy or damp, cloudy days it is also active in the morning, otherwise it remains hidden under stones or in crevices of dry-stone walls. It is a widely foraging predator and feeds mainly on arthropods and molluscs. Breeding takes place during the winter (personal observation) but our knowledge of its reproduction is limited. It apparently gives birth to fully-developed young. The way of aestivation is also unknown; it probably aestivates deep in the ground from April to November.

Distribution: This species is distributed on the islands of Megisti (Kastellorizo), Karpathos, Saria and Kasos, all in the southeastern Aigaio Pelagos (Aegean Sea). It is the only tailed amphibian distributed on the islands in this area.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Nisia Aigaiou, Kriti	Notio Aigaio	GR4210001 GR4210002 GR4210003 GR4210004	IBA Game refuge 6% Game refuge 21%, IBA

Status and reasons for decline: *Mertensiella luschani* is a threatened species included in the Red Data Book of Threatened Vertebrates of Greece, under the category of "Rare". The population on Kasos island is the most vulnerable due to its small size. Habitat destruction and collection of individuals are the main threats to this salamander.

Protective legislation: This species is protected by the Greek Presidential Decree 67/1981 and the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Diesener, G. and J. Reichholf. 1986. Lurche und Kriechtiere. Mosaik Verlag, München.

Engelmann, W.E., J. Fritzsche, R. Gunther and F.J. Obst. 1985. Lurche und Kriechtiere Europas. Neumann, Leipzig.

Polymeni, R.M. 1994. On the biology of *Mertensiella luschani* (Steindachner, 1891): A review. Mertensiella 4: 301-314.

Tzannetatou-Polymeni, R. and B. Chondropoulos. 1992. *Salamandra luschani* (or *Mertensiella luschanni*). p. 110-111. In: Karandinos M. (ed.). The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society & Hellenic Ornithological Society, Athens. 356 p.

Triturus cristatus (Laurenti, 1768)

Class: Amphibia, Order: Caudata, Family: Salamandridae

Common names: Warty or Crested newt - Χτενοτρίτωνας

Description: A morphologically variable large-sized newt (the second largest in Europe) with dark, more or less warty skin. The total body length is up to 14 cm in males and 18 cm in females. Usually greyish or brownish above with scattered darker spots and fine white dots on flanks and throat. Belly yellow-orange or reddish-orange, with dark spots or variably fused blotches. Breeding males have a high irregularly serrated dorsal crest running to the tail tip but indented at tail base; crest's colour and spotting is similar to those of dorsal area. In these males tail sides have a whitish or bluish stripe. Populations of this newt from the S Balkans and NW Asia Minor (previously recognized as the subspecies *Triturus cristatus karelinii* and recently as the full species *T. karelinii*) have smoother skin, a bluish tinge in dark body areas, little stippling on flanks, a pale throat with dark spots and rather small spots on the belly.

Ecology - habits: This newt is usually a dweller of stagnant water (pools and small lakes) with abundant vegetation where it often lives throughout the year (however terrestrial populations also exist, becoming aquatic only during the breeding season). Encountered from sea-level up to 2000 m; this altitudinal range also applies to the Greek populations. Outside the breeding season, individuals are solitary, being active both by day and night. Prey consists of eggs and larvae of other amphibians and water insects. Males defend their territories. Sexual maturity is attained at the age of about 3 years. During the reproductive period (March - June) females lay 200-300 single, fertilized eggs, wrapping them carefully in plant leaves. The larval stage lasts about 3 months.

Distribution: According to recent opinions the Greek crested newts belong to *Triturus karelinii* or to this species and to a form of *Triturus carnifex*. Because of insufficient knowledge on the systematics of the S Balkan populations traditionally classified as *T. cristatus*, the real distribution of this newt in Greece remains unclear. However, we could say that Greek *Triturus*

"cristatus", i.e., all newts other than the taxonomically well-defined *T. alpestris* and *T. vulgaris*, have been recorded from the north of the country (Ipeiros, Thessalia, Makedonia, Thraki) and on the island of Kerkyra (Corfu).

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001 GR1110002 GR1110003 GR1110005 GR1140002	Game refuge 38%, Ramsar, IBA, SPA IBA, SPA Game breeding station 3%, Game refuge 58% IBA
	Kentriki Makedonia	GR1260007	Natural monument 38%, Controlled hunting area 62%
	Thessalia	GR1410002	
Kentriki Ellada	Ipeiros	GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, IBA, SPA

Status and reasons for decline: It is a declining species in most of its European distribution area. For the time being it seems not to be threatened in Greece, but some lowland populations are very susceptible because of their habitat degradation (lowering of the water-table or full drainage, eutrophy and pollution). It seems to be more sensitive to pollution than other newt species.

Protective legislation: *Triturus cristatus*, as well as *T. carnifex* and *T. karelinii*, are protected by the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Ballasina, D. 1984. Amphibians of Europe. David & Charles, London.

Gruber, U. 1994. Amphibien und Reptilien. Franckh-Kosmos, Stuttgart.

Hellmich, W. 1962. Reptiles and Amphibians of Europe. Blanford Press, London.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Sotiropoulos, K., A. Legakis and R.M. Polymeni. 1995. A review of the knowledge on the distribution of the genus *Triturus* (Rafinesque, 1815) in Greece. Herpetozoa 8(1/2): 25-34.

Bombina bombina (Linnaeus, 1761)
Class: Amphibia, Order: Anura, Family: Discoglossidae

Common names: Fire-bellied toad - Κοκκινομπομπίνα

Description: A small toad with adult snout-vent length usually less than 5 cm, a dorsoventrally flattened body and densely tuberculated skin on the entire upper body surface. Dark-coloured above, sometimes greenish-grey or greenish-brown with darker green markings, and with relatively smaller and less spiny tubercles than in the similar species *Bombina variegata*. Underside shows a pattern of irregular, variably extended single or fused black areas with scattered white dots and small spots, sharply contrasting to respective bright red or red-orange coloured areas. Finger tips are not usually brightly coloured. Pupil is round or triangular. No visible tympanic membrane. There is one internal vocal sac and webbing in the hind feet reaches the tips of the toes. Compared to *B. variegata* it is usually smaller-sized and has a narrower head. In areas where the two species live in sympatry hybridization is often observed giving individuals or populations with intermediate characters.

Ecology - habits: Usually lives in lowlands (0-150 m), encountered in shallow, temporary or permanent, still waters, less usually in slow-moving waters, and sometimes near human settlements. A rather aquatic, diurnal and gregarious toad. Its food consists of insects, worms and other small invertebrates. When disturbed this toad flattens its body and raises and outwardly turns its distal limb parts to expose bright colours as a warning sign. Hibernation lasts from October/November to March. During the breeding season (April-July) males usually call in choruses emitting a deep, sorrowful mating call which is repeated fewer than 40 times per minute. The sexual embrace (amplexus) is inguinal. It is an oviparous species with external fertilization; a few tens of fertilized eggs attach to the water vegetation, or the bottom of the water body, singly or in small groups (5-15 eggs). More than one clutch per season is produced.

Distribution: Known only from a few areas of Thraki.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	Game refuge 38%, Ramsar, IBA, SPA

Status and reasons for decline: A species already extinct or in decline in some parts of central and northern Europe. It is not mentioned in the Red Data Book of Threatened Vertebrates of Greece although little is known about the situation of its population in our country. Habitat alteration or even loss due to land reclamation work, road construction and pollution from pesticides, excess of fertilizers, etc., possibly affect the Greek populations of this taxon. The very limited distribution of this species in Greece needs detailed study and monitoring of all its populations.

Protective legislation: *Bombina bombina* is included in Appendix II of the Bern Convention.

Selected references:
Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.
Ballasina, D. 1984. Amphibians of Europe. David & Charles, London.
Gruber, U. 1994. Amphibien und Reptilien. Franckh-Kosmos, Stuttgart.
Hellmich, W. 1962. Reptiles and Amphibians of Europe. Blanford Press, London.
Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.
Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

Bombina variegata (Linnaeus, 1758)

Class: Amphibia, Order: Anura, Family: Discoglossidae

Common names: Yellow-bellied toad - Κιτρινομπομπίνα

Description: A small toad very like *Bombina bombina* with snout-vent length up to 5.5 cm, a dorsoventrally flattened body and densely tuberculated skin on the entire upper body surface. Differs from *B. bombina* in its ventral colour pattern which is characterized by irregular, variably extended single or fused black to bluish-grey areas, with or without scattered white dots and small spots, sharply contrasting to respective bright yellow or orange coloured areas with scattered black dots. Individuals with almost entirely black bellies may exist. The upper body surface is brown, greyish-brown, grey, yellowish-brown or olive-coloured, with large, spiny warts. Finger-tips, and rarely a small blotch on the rear femur surface, are yellow or orange. Pupil is round, triangular or heart-shaped. Vocal sacs are absent. Tympanic membrane and webbing in hind feet are as in *Bombina bombina*.

Ecology - habits: It lives in areas with altitudes of 100-1900 m. When this taxon occurs in sympatry with *Bombina bombina* it tends to prefer higher areas. Adapted to a variety of natural and man-made habitats with stagnant or flowing shallow water. A gregarious, largely diurnal animal (although night activity has also been reported). It preys on small vertebrates. When disturbed it reacts by throwing up its limbs to show belly colours or even turns itself upside down. During the breeding season (April-August) males call in choruses emitting a gentle, rather musical mating call, brighter and faster than that of *B. bombina* (more than 40 calls per minute). The sexual embrace (amplexus) is inguinal. It is an oviparous species with external fertilization; several tens of fertilized eggs are placed by each female in the environment of the reproduction area in a way similar to that of *B. bombina*.

Distribution: Widespread in the mainland except Peloponnisos.

Occurrence with a high degree (A or B) for Conservation and/or Global Assessment in the proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1120003	Natural monument 1%, Game refuge 6%, Biogenetic reserve
		GR1140001	Natural monument 55%, Game refuge 100%, IBA, SPA, Biogenetic reserve 55%
		GR1140002	
		GR1140003	
		GR1140007	Natural monument 100%, Game refuge 100%, IBA, Biogenetic reserve 100%, SPA
		GR1150004	IBA
		GR1150005	Game refuge 42%, IBA
		GR1110002	IBA, SPA
		GR1110003	Game breeding station 3%, Game refuge 58%,
		GR1110005	IBA, SPA
	Kentriki Makedonia	GR1210001	Game refuge 48%
		GR1240002	Game refuge 18%, IBA
		GR1240003	Game refuge 13%
		GR1250001	Core strict 26%, IBA, Biogenetic reserve, Biosphere reserve 26%, Game refuge 8%, SPA
		GR1250002	Game refuge 20%
		GR1250005	Core strict 100%, IBA, Biogenetic reserve, Biosphere reserve, SPA
		GR1260001	Game refuge 1%, Ramsar, IBA, SPA
		GR1260005	
		GR1260006	Game refuge 34%
		GR1260007	Natural monument 38%, Controlled hunting area 62%,
		GR1260008	IBA, Ramsar, SPA
		GR1270001	Game refuge 6%, IBA
		GR1270005	Game refuge 64%
	Dytiki Makedonia	GR1310001	
		GR1320002	Natural monument 1%, Game refuge 13%, IBA, Biogenetic reserve 1%
		GR1340001	Core strict 25%, Peripheral zone 75%, Game refuge 18%, IBA, Ramsar 25%, Biogenetic reserve 1%, SPA
		GR1340002	Core strict 100%, Ramsar, IBA, SPA
		GR1340003	
		GR1340006	Game refuge 15%
		GR1310002	Core strict 100%, Game refuge 6%, SPA, IBA, Biogenetic reserve 100%
		GR1310003	Core strict 49%, Peripheral zone 51%, Game refuge 21%, SPA, IBA, Biogenetic reserve
	Thessalia	GR1420001	Game refuge 6%, IBA
		GR1410002	
		GR1420003	Aesthetic forest 100%, Conrolled hunting area 80%, IBA, SPA
		GR1420004	Game refuge 16%, IBA
		GR1430002	Aesthetic forest 20%, Biogenetic reserve 20%, IBA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR1440001	Game refuge 29%
Kentriki Ellada	Ipeiros	GR2110002	Game refuge 11%, IBA
		GR2110003	Game refuge 27%, IBA
		GR2130001	Core strict 27%, Peripheral zone 73%, Game refuge 9%, IBA, SPA
		GR2130004	IBA
		GR2130006	
		GR2130007	Game refuge 13%
	Dytiki Ellada	GR2310004	Game refuge 10%
		GR2310010	Game refuge 6%
	Sterea Ellada	GR2430001	Game refuge 50%
		GR2430002	
		GR2450001	Game refuge 9%, IBA
		GR2450002	Game refuge 33%, IBA

Status and reasons for decline: A declining species in most of Europe (in some countries completely extinct); the status of the Greek populations is mostly unknown. Possible threats to this taxon's survival are associated with the degradation of its habitats (drainage, pollution). At the specific level *Bombina variegata* seems to be rather safe in Greece, and therefore it is not included in the Red Data Book of Threatened Vertebrates of Greece.

Protective legislation: It is protected by the Bern Convention (Appendix II).

Selected references:

Arnold, E.N., J.A. Burton and D.W. Ovenden. 1978. A field guide to the Reptiles and Amphibians of Britain and Europe. Harper Collins Publ., London.

Ballasina, D. 1984. Amphibians of Europe. David & Charles, London.

Gruber, U. 1994. Amphibien und Reptilien. Franckh-Kosmos, Stuttgart.

Hellmich, W. 1962. Reptiles and Amphibians of Europe. Blanford Press, London.

Honegger, R.E. 1981. Threatened Amphibians and Reptiles in Europe. Akademische Verlagsgesellschaft, Wiesbaden.

Matz, G. and D. Weber. 1983. Guide des Amphibiens et Reptiles d'Europe. Delachaux & Niestle, Paris.

E.6. FRESHWATER FISHES

by ***P.S. Economidis, V.P. Vogiatzis*** *and* ***Dimitra Bobori***

E.6.1. Introduction

It is widely accepted that freshwater fish fauna of Greece is one of the richest in Europe. According to more recent investigations (Economidis 1991, 1995), 107 fish species have been found in the rivers and lakes of the country, plus five which have doubtful occurrence. Of these, 21 species are euryhaline, i.e. fish which can move from the sea to the rivers, while the remaining 91 live exclusively in freshwater. From the total number, 11 species should be excluded because they have been introduced. The remaining 81 species are autochthonous primary freshwater, 39 of which are endemic to Greece and some to southern parts of neighboring countries; there are also about 40 endemic subspecies.

Many of the freshwater fish species, mainly in the south-western regions, have often a restricted distribution, living in small and isolated aquatic systems. Thus, they are exceptionally vulnerable to changes in their natural habitats due to accelerated development and urbanization in recent years. As a result, aquatic systems in the vicinity of urban areas (e.g. lakes Ioanninon and Kastoria, Pinios river in Thessaly) or close to areas with intense agricultural and industrial activities (especially the lower part of rivers Strymon, Axios, Loudias, Aliakmon, Pinios of Thessaly, Sperchios, Acheloos and Louros, and lakes Vistonis, Vegoritis, Lagada and Karla) have been heavily degraded. In addition, overfishing and certain fishing practices in lakes and rivers resulted in the reduction of fish populations and caused the decline of some sensitive species, as *Chalcalburnus chalcoides macedonicus* in Volvi and Vistonis lakes and Filiouris river, *Vimba melanops* in several rivers and lakes in Thessaly, Macedonia, Thrace etc. Unfortunately these phenomena should be considered as still ongoing.

Wetlands around and downstream of many karstic springs often host an important fauna, including endemic fish taxa. These springs which are widely distributed in the country suffer from partial or total destruction. The main reason for this destruction is the abstraction of water for the supply of many villages and towns, and for irrigation. The most severe destruction has occurred in the Kombotades spring near the town of Lamia in Central Greece (drainage basin of Sperchios River) and in the Zoodohos Pigi or Megali Vrysi in the Lefkas Island (Ionian Sea), both being completely dried up. Kombotades spring was the type locality of the endemic species *Pungitius hellenicus* (Stephanidis 1971) while Zoodohos Pigi the type locality of *Economidichthys pygmaeus* (Holly 1929) (Stephanidis 1939b, Economidis & Miller, 1990).

Special mention must be made to the introduction of exotic species. Some of the 11 introduced species are harmful for the indigenous fish fauna. The case of *Gambusia affinis* which is in strong competition with the endemic species *Valencia letourneuxi* in several water bodies of Western Greece is indicative.

The conservation of fish fauna, within the frame of an overall policy for the protection of

the environment, presupposes the monitoring of their habitats. This is a very difficult task since its realization requires a well organized group of scientists and adequate financial resources. All the existing information, comes from individual efforts performed within the framework of other activities. The development of NATURA 2000 network, which realizes the perception of the EU about the protection of biodiversity, comes to fill an important gap in the organization and coherence of these activities.

In the NATURA 2000 database, the fish species present in Annex II to Directive 92/43/EEC (field 3.2e of the Standard Data Form) as well as some important species of the Greek fish fauna are reported. The latter have been registered under their contemporary valid names (fields 3.3 and 3.4 of the Standard Data Form), as Other Important Species.

In Annex II to the Directive, 28 freshwater fish species present in Greece are included, belonging to 9 families. Following the more recent conception on fish taxonomy (Table E.3), and further investigation on fish distribution, this number rises to 49 taxa. Of these, 23 are classified in different categories of threats in the Red Data Book. Moreover, 27 are endemic to Greece, while the majority of 49 taxa are protected by international conventions and/or national legislation.

The species which are registered in fields 3.3 and 3.4 of the Standard Data Form are 49, much more than those included in the Annex (Fig. E.17). Of these, 13 are endemic, 24 threatened and 14 are listed in several international conventions. Finally, 10 species are protected by the Presidential Decree No 67/1981 of the Greek State. Taking into consideration the above, it is derived that Annex II should be revised and enriched with up to date data.

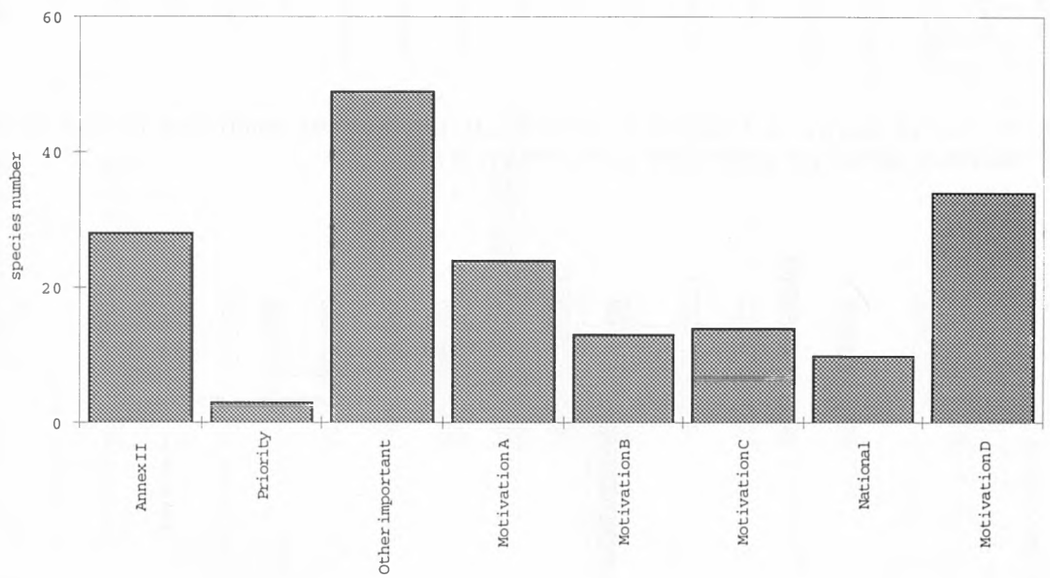


Fig. E.17. Number of fish species in Annex II of the Habitats Directive and number of Important Species per conservation motivation.

Amongst the families, Cyprinidae is the most numerous, represented by 38 species, compared to Gobiidae with 8 species, and Cobitidae with 7 species (Fig. E.18). The species of Cyprinidae family are also dominant since they are present in 283 cases of a total of 473 occurrences of fishes in all sites (Fig. E.19). Furthermore, one or more Annex II species of the Cyprinidae family are present in almost 28% of the sites while the Other Important Species of the same family are present in about 20% of the sites (Fig. E.20). The mean number of species per site and for each fish family separately ranges from 1 to 2.45, with Cyprinidae

being the most abundant (Fig. E.21). The geographical distribution of Annex II species is almost homogenous, in the terrestrial part of Greece. More specifically, 20% of the species are present in Voreia Anatoliki Ellada, 13% in Voreia Dytiki Ellada, 19% in Ipeiros, 12% in Thessalia, 20% in Sterea Ellada and 12% in Peloponnisos. (Fig. E.22).

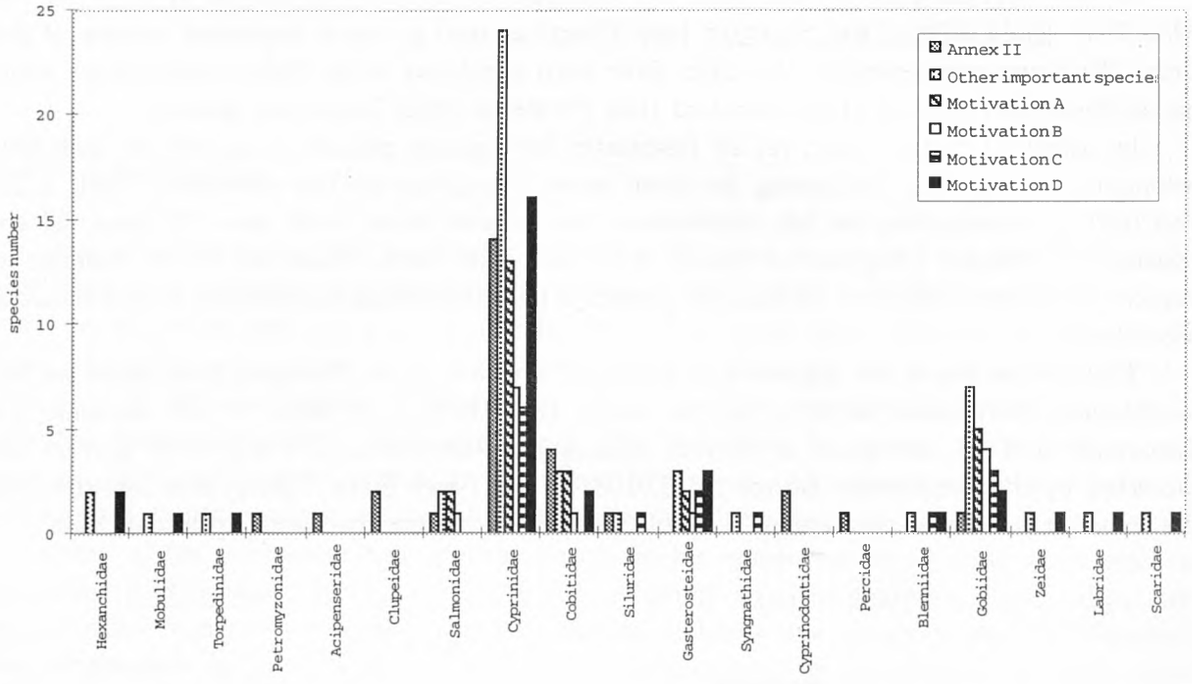


Fig. E.18. Number of species in Annex II of the Habitats Directive per family and number of Other Important Species per conservation motivation per family.

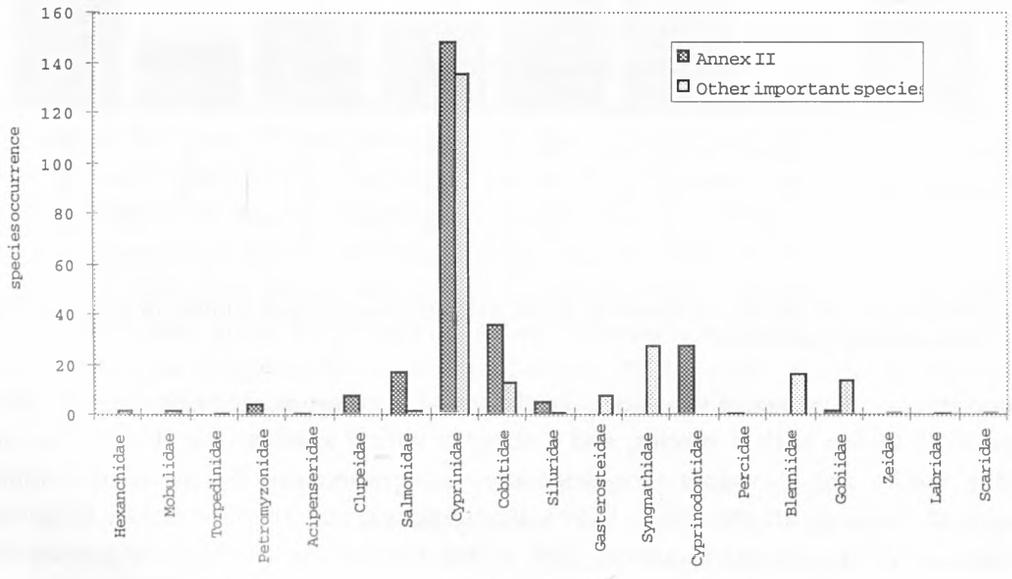


Fig. E.19. Species occurrence of fish in Annex II of the Habitats Directive and of Other Important Species per family.

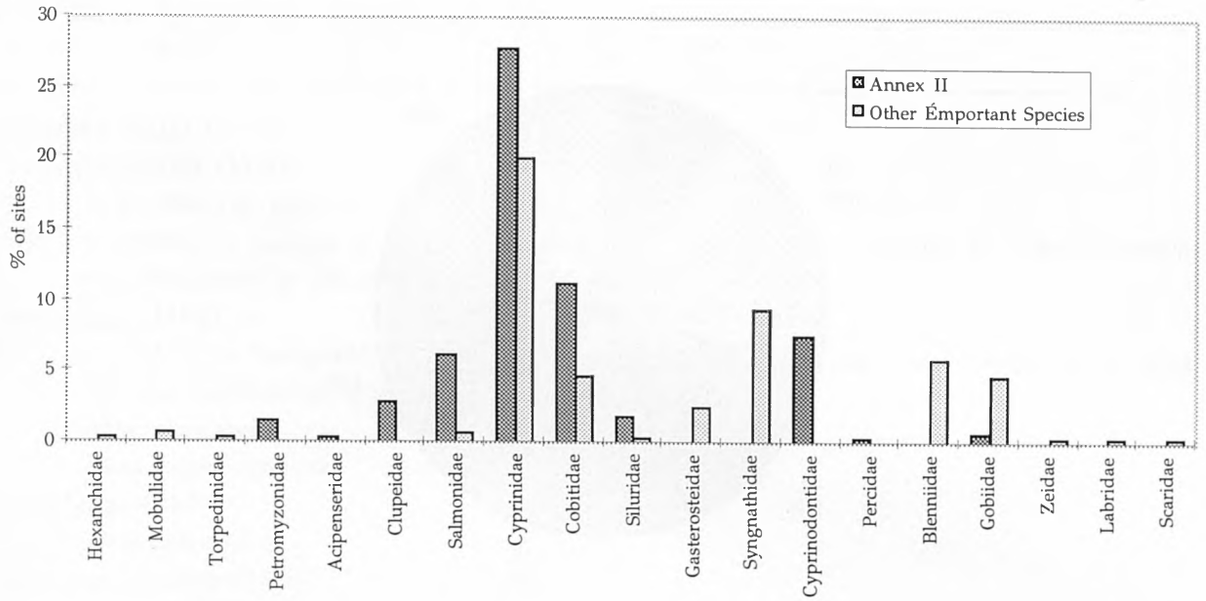


Fig. E.20. Percentage of sites containing different fish families of Annex II of the Habitats Directive and of Other Important Species.

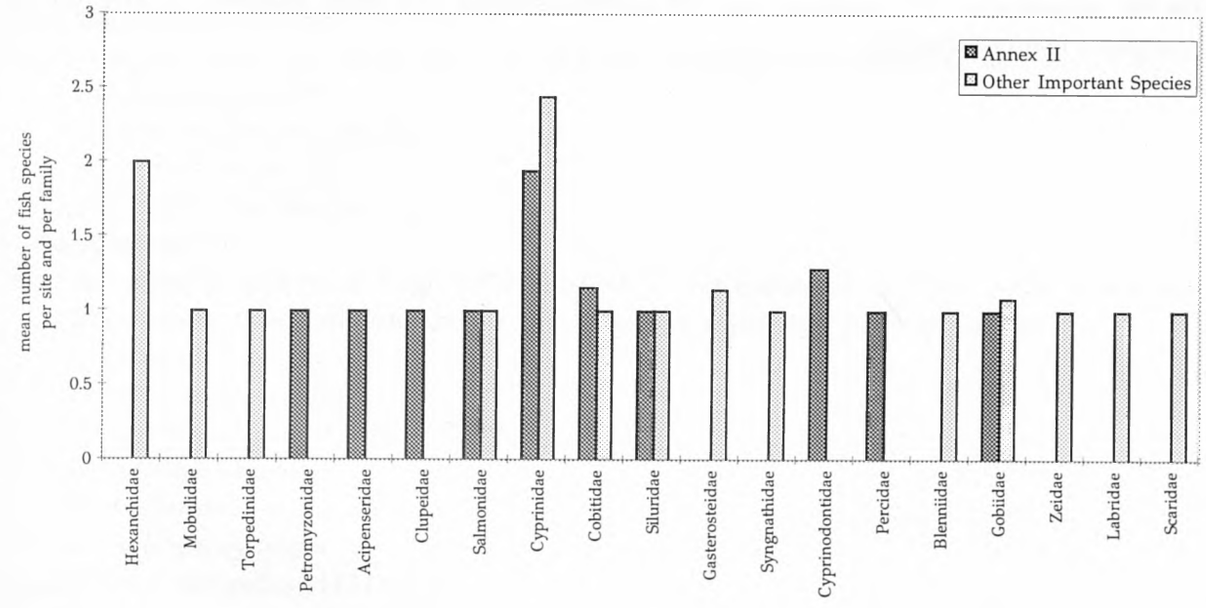


Fig. E.21. Mean number of species in Annex II of the Habitats Directive and of Other Important Species per site and per fish family.

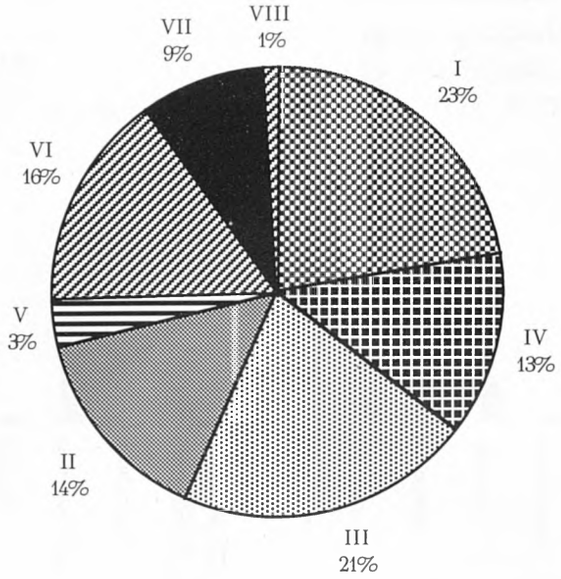


Fig. E.22. Distribution of Annex II species per zoogeographical region (I=Voreia Anatoliki Ellada, II=Voreia Dytiki Ellada, III=Ipeiros, IV=Thessalia, V=Ionia Nisia, VI=Sterea Ellada, VII=Peloponnisos, VIII=Dodecanisa) (See also table E.3.).

The global assessment of sites as per the conservation of fish species showed that high values were attributed to sites for most of the fish occurrences (139 B) and significant values for 89 occurrences (C), whereas only 49 excellent values (A) were assigned to sites for the respective fish occurrences.

Table E. 3. Revised list of freshwater fish of Greece (Annexes II & IV to Directive 92/43/EEC)

Acipenser sturio (1101)

Alburnus albidus (1120)

A. a. belvica or Chalcalburnus belvica

Note: According to Ladiges & Vogt (1979:126), *Alburnus albidus* also includes *A. a. belvica*, which must be named as *Chalcalburnus belvica* (see Economidis 1986)

Alosa alosa (1102)

Note: According to Ladiges & Vogt (1979:63), the valid species listed below belong to *A. alosa* (see also Economidis & Sinis 1986).

Alosa macedonica

Alosa caspia vistonica

Alosa fallax (1103)

Alosa fallax nilotica

Aphanius fasciatus (1152)

Aspius aspius (1130)

Barbus capito (1143)

Note: According to Karaman (1971), in this species are listed as synonyms the following two from Greece, which actually are considered as valid species (see Economidis 1991).

B. albanicus

B. graecus

Barbus meridionalis (1138)

Note: Long ago under this name were included the following valid nowadays taxa from Greece (see Economidis 1991).

B. peloponnesius peloponnesius

B. peloponnesius rebeli

B. peloponnesius petenyi

Barbus plebejus (1137)

Note: According to Ladiges & Vogt (1979:120-121), in this species are included some subspecies from Greece, which are listed below with their new names (see Economidis 1991).

B. euboicus

B. cyclolepis sperchiensis

B. cyclolepis cholorematicus

B. cyclolepis strumicae

B. prespensis

B. cyclolepis cyclolepis

Chalcalburnus chalcoides (1141)

Cobitis taenia (1149)

Note: Many populations of this species, recently valid, were classified formerly under the collective name *C. taenia*. For valid taxa from Greece see below (see also Ladiges & Vogt 1979:138-139, Economidis 1991, Economidis & Nalbant 1997).

C. t. vardarensis

C. stephanidisi

C. t. meridionalis

C. t. strumicae

C. punctilineata

C. hellenica

C. arachthosensis

Cobitis trichonica (1144)

Eudontomyzon sp. (1098)

E. hellenicus

Gobio albipinnatus (1124)

Gobio uranoscopus (1122)

G. u. elimeius

Ladigesocypris ghigii (1117)

Leuciscus souffia (1131)

L. keadicus

Note: According to Ladiges & Vogt (1979:104), this species is classified under the name *L. s. keadicus*, However, it is a valid species (see Economidis 1991).

Phoxinellus ssp. (1129)

Note: The taxa listed below have to be taken into consideration (see Ladiges & Vogt 1979: 97-99 and Economidis, 1991).

Phoxinellus pleurobipunctatus

Pseudophoxinus stymphalicus

Pseudophoxinus beoticus

Paraphoxinus epiroticus epiroticus

Paraphoxinus epiroticus prespensis

Pomatoschistus canestrini (1154)

Economidichthys pygmaeus

Note: According to Ladiges & Vogt (1979:168) in this species belongs the species *Gobius pygmaeus* which today is valid under the name *Economidichthys pygmaeus* (see Economidis & Miller 1990).

Rhodeus sericeus amarus (1134)

Rutilus alburnoides (1123)

Note: According to Ladiges & Vogt (1979:97), in this species belongs the *R. (Pararutitus) a. hellenicus* Stephanidis, 1971. However, the same author (Stephanidis 1974), rearranged the taxonomical situation as follow:

Tropidophoxinellus hellenicus

Tropidophoxinellus spartiaticus

Rutilus rubilio (1136)

Note: According to Ladiges & Vogt (1979:93), the following taxa (see Economidis 1991) belong to *R. rubilio.*

R. ohridanus prespensis

R. ylikiensis

Sabanejewia aurata (1146)

Salmo macrostigma (1108)

Scardinius graecus (1121)

Silurus aristotelis (1150)

Valencia hispanica (1153)

Note: Long ago this name included populations from Spain and Greece (see Ladiges & Vogt 1979:150). However, according to Villwock et al. (1982), *Valencia letourneuxi* (Sauvage 1880) from Greece is a valid species.

V. letourneuxi

Zingel streber (1160)

Zingel streber balcanicus

Selected references:

Economidis, P.S. 1986. *Chalcalburnus belvica* (Karaman, 1924) (Pisces, Cyprinidae), nouvelle combination taxinomique de la population povenant du lac Petit Prespa (Macédoine, Grèce). Cybium 10: 85-90.

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, Special publication. 48 p.

Economidis, P.S. and A.I. Sinis. 1986. Situation taxinomique et comparaisons des Aloses (Pisces, Clupeidae) provenant des lacs Volvi et Vistonis (Grèce). Description d' une nouvelle sous-espèce: *Alosa caspia vistonica*. J. Nat. Hist. 20: 723- 734.

Economidis, P.S. and P. J. Miller. 1990. Systematics of freshwater Gobies from Greece (Teleostei: Gobiidae). J. Zool., Lond., 221: 125-170.

Economidis, P.S. and T.T. Nalbant. 1997. A study of the loaches *Cobitis* and *Sabanejewia* (Pisces, Cobitidae) of Greece, with description of three new species. Trav. Mus. Hist. Nat. "Grigore Antipa" (in press).

Karaman, M.S. 1971. Süsswasserfische der Türkei. 8. Teil. Revision der Barben Europas, Vorderasiens un Nordafrikas. Mitt. Hamburg. Zool. Mus. Inst. 67: 175-254.

Ladiges, W. and D. Vogt. 1979. Die Süsswasserfische Europas. Verl.P.Parey, Hamburg und Berlin. 300 p.

Stephanidis, A., 1974. On some fish of the Ioniokorinthian region (W. Greece ect.) - A new genus of Cyprinidae: Tropidophoxinellus n. gen. Biologia Gallo-Hellenica 5: 235-257.

Villwock, W., A. Scholl and P. Labhart. 1982. Die Gattung Valencia Myers, 1928 (Pisces, Cyprinodontidae), ein Beitrag zur Verbreitung und Taxonomie. Mitt. Hamb. Zool. Mus. Inst. 79: 273-280.

E.6.2. Fishes of Greece listed in Annex II to Directive 92/43/EEC

Species which are described below are: (a) those of Annex II, listed in the Red Data Book, (b) those of Annex IV to Directive, (c) some, also listed in the Red Data Book, characterized with the symbol #, having a special interest, provided by more recent evaluations.

Eudontomyzon spp.

Order: Petromyzontiformes, Family: Petromyzontidae

Related taxa in the country, formerly under the above name (see Economidis 1991):
Eudontomyzon hellenicus Vladykov, Renaud, Kott, Economidis, 1982

Endangered species:
Eudontomyzon hellenicus Vladykov, Renaud, Kott, Economidis, 1982

Synonyms:
Eudontomyzon mariae Economidis, 1974

Common name: Γχαβόχελο

Description: As the other species of the family Petromyzontidae, this fish has in adult stage a naked, eel-like body, with 7 branchial openings in sides of the head and no scales and paired fins. In the funnel like mouth there are conical teeth, arranged in a special manner. Larvae have a horseshoe form mouth without teeth, and button hole like branchial openings. The species is characterized mainly by the number and arrangement of teeth in the mouth and some other anatomical and morphometric characters. The body length reaches up to 15 cm.

Habitat: This lamprey is a non parasitic species, living mainly in karstic springs, where it has a long period of life as larva (ammocoetus). The adult stage, which appeared after metamorphosis around December, is very short just to finish the reproduction.

Distribution: An endemic Greek species (Ipeiros: Louros river; Makedonia: Strymon river at Ai Giannis spring, near the town of Seres, and Mylopotamos, Kefalari near the town of Drama.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1140005	B	A	
		GR1140006	C	A	
	Kentriki Makedonia	GR1260003	B	A	Game refuge 60%
Kentriki Ellada	Ipeiros, Dytiki Ellada	GR2110001	B	A	Ramsar 49%, Barcelona Conventiom 49%, SPA 49%, IBA

Status and reasons for decline: Decline seems to be caused by alteration of habitats, mainly by pollution, public works and water abstraction.

Protective legislation: The species is included in the following lists: Directive 92/43, Convention on the conservation of European wildlife and natural habitats (Bern Convention), The Red Data Book of threatened vertebrates of Greece (1992).

Selected references:

Economidis, P.S. 1974. Étude morphologique, systématique et zoogéographique de poissons d'eau douce de Macédoine d' Est et de Thrace d' Ouest. Publ. Univer. Thessaloniki. 179 p. Thessaloniki (In Greek).

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature. (special publication) 48 p.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation. 72: 201-211.

Vladykov, V.D., C.B. Renaud, E. Kott and P.S. Economidis 1982. A new non-parasitic species of Holarctic lamprey genus *Eudontomyzon* Regan, 1911 (Petromyzontidae), from Greece. Can. J. Zool. 60: 2897-2915.

Acipenser sturio (Linnaeus, 1758)

Order: Acipenseriformes, Family: Acipenseridae

Synonyms: None

Common name: Ευρύχι

Description: The body is long and nearly cylindrical ending in a large and acute snout. In the lower part of the snout there are 4 pairs of barbels. Longwise of the body sides there are 5 rows of bony plates. The body length reaches up to 350 cm, even more.

Habitat: The species prefers muddy bottoms of shallow water (20-50 cm) near estuaries. In spring it migrates up to the river for spawning.

Distribution in Greece: Native, mostly in Evros river. Observed also in rivers Nestos, Strymon, Pinios (Thessaly) and Acheloos.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Kentriki Ellada	Dytiki Ellada	GR2310001	-	-	Natural monument, Game refuge 1%, IBA, Ramsar, Biogenetic reserve, SPA

Status and reasons for decline: Decline mainly is caused by water pollution, river bed alterations, especially lowering of the river depth, and intensive fisheries. The species probably has become extinct from Greek rivers, especially from Evros, where the most important

population and breeding grounds occurred. According to an investigation in summer 1995 the species does not move anymore the river Evros for spawning.

Protective legislation: The species is included in the following lists: Directive 92/43, Presidential Decree 67/1981 of the Greek State, Convention on the conservation of European wildlife and natural habitats (Bern Convention), IUCN Red List of Threatened Animals, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1973, European Red List of globally threatened Animals and Plants.

Selected references:

Berg, L.S. 1948. *Acipenser sturio* In: Freshwater fishes of the U.S.S.R. and adjacent countries. Vol. I, English translation by IPST, Jerusalem 1962. 92-94 p.

Economidis, P.S. 1974. Étude morphologique, systématique et zoogéographique de poissons d'eau douce de Macédoine d' Est et de Thrace d' Ouest. Publ. Univer. Thessaloniki. 179 p. (In Greek).

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Fischer. W. and M.L. Bauchot (Rédact.). 1987. *Acipenser sturio.* In: Fiches FAO d' identification des espèces pour les besoins de la pêche. Méditerranée et Mer Noire. Vol. II. Vertébrés. 951 p.

Alosa alosa (Linnaeus, 1758)

Order: Clupeiformes, Family: Clupeidae

Related taxa in the country, formerly under the above name (see Economidis 1991):
Alosa macedonica (Vinciguerra 1921)
Alosa caspia vistonica Economidis & Sinis, 1986

Endangered species:
Alosa caspia vistonica Economidis & Sinis, 1986

Synonyms:
Alosa (Caspialosa) macedonica Economidis, 1973

Common name: Θρίτσα

Description: In palatines and vomer bones there are well observed teeth. The body is shad-like, high and laterally compressed, covered by large detachable cycloid scales. In first branchial arch there are 78 to 97 long and thin gill rakers. The maximum body-length reaches up to 35 cm.

Habitat: This subspecies is an endemic landlocked fish living only in the lake Vistonis (in Thraki), which is a lagoon in its lower part. This fish prefers the fresh water part of the lake than the brackish one.

Distribution: An endemic subspecies of Vistonis Lake.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Kentriki Makedonia	GR1220001	A	A	Game refuge 10%, Ramsar, SPA, IBA

Status and reasons for decline: Decline seems to be caused both by water pollution and public works altering dramatically habitats. More recent investigation (summer 1995) in the area (upper part of lake Vistonis) showed that fish could be considered as extinct.

Protective legislation: The species is included in the following lists: Directive 92/43/EEC, The Red Data Book of threatened vertebrates of Greece (1992).

Selected references:

Economidis, P.S. 1974. Étude morphologique, systématique et zoogéographique de poissons d'eau douce Macédoine d' est et de Thrace d' Ouest. Publ. Univer. Thessaloniki. 179 p. (In Greek).

Economidis, P.S. and A.I. Sinis. 1986. Situation taxinomique et comparaisons des Aloses (Pisces, Clupeidae) provenant des lacs Volvi et Vistonis (Grèce). Description d' une nouvelle sous-espèce: *Alosa caspia vistonica*. J. Nat. Hist. 20: 723- 734.

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature. (special publication) 48 p.

Economidis, P.S. and A. I. Sinis. 1991. The Freshwater fishes of Europe, Vol. II, Clupeidae, Anguillidae, AULA Verlag 199-202, 297-308 p.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211.

Salmo macrostigma (Dumeril, 1858)

Order: Salmoniformes, Family: Salmonidae

Related taxa in the country (see Economidis, 1991):
Salmo trutta dentex Heckel, 1851
Salmo trutta fario Linnaeus, 1758
Salmo trutta macrostigma Dumeril, 1858
Salmo trutta pelagonicus (Karaman, 1937)
Salmo trutta peristericus (Karaman, 1937)
Salmo trutta macedonicus (Karaman, 1924)

Endangered species:
Salmo macrostigma Dumeril, 1858

Synonyms:
Salmo trutta dentex Heckel, 1851
Salmo trutta fario Linnaeus, 1758
Salmo trutta macrostigma Dumeril, 1858
Salmo trutta pelagonicus (Karaman, 1937)

Salmo trutta peristericus (Karaman, 1937)
Salmo trutta macedonicus (Karaman, 1924)

Common name: Πέστροφα

Description: The stream living populations are easily recognized mainly by the color pattern, especially the almost round spot or spots in the operculum. Furthermore, there are also some orange spots and some black speckles distributed accidentally in the body. A few populations are also frequent in lakes, where color pattern is more light. Total length up to 30 to 40 cm.

Habitat: The typical habitat is a stream with fast flowing water between large stones. In the bottom of the stream gravel and/or stones and rarely sand are dominated. Normally, there is some aquatic vegetation and in the river banks the roots of trees, mainly those of planes, forming good refuges for fish. Fish can be observed looking for food, moving fast to up or down stream, especially when in danger. Small or large pools preserving quite deep water are of special interest.

Distribution: Native, distributed in West Peloponnisos: Alfios river (tributaries Erymanthos and Ladon); West Greece: rivers Mornos, Evinos, Acheloos, Arachthos, Louros, Kalamas and Aoos; Makedonia: rivers Aliakmon (tributary Venetikos), Tripotamos (near the town of Veria), Axios (tributary Echedoros near the town of Florina, in three streams: Drossopyghi Achlada and Akritas), Strymon (Aggistro) and Nestos, and in a stream flowing in the Mikri Prespa Lake; Thrace: Evros river system (rare in tributary Ardas). Some subspecies (*pelagonicus, peristericus, macedonicus*) are endemic to North Greece and South Yugoslavia.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1140001	A	A	Game refuge 100%, IBA, SPA Natural monument 55%, Biogenetic reserve 55%
		GR1140002	A	A	-
		GR1140003	A	A	-
	Kentriki Makedonia	GR1240001	A	C	Game refuge 28%, Natural monument 2%, Biogenetic reserve 1%, IBA
		GR1260001	A	A	Game refuge 1%, Ramsar, SPA, IBA
	Dytiki Makedonia	GR1310001	A	B	-
		GR1310003	A	C	Core strict 49%, Game reguge 21%, Periph. zone 51%, IBA, Biogenetic reserve 49%, SPA
		GR1320002	A	B	Game reguge 13%, Natural monument 1%, Biogenetic reserve 1%, IBA
		GR1340001	B	A	Core strict 25%, Periph. zone 75%, Game refuge 18%, SPA, Ramsar 25%, IBA, Biogenetic reserve 1%

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
		GR1340003	B	A	-
		GR1340006	A	A	Game refuge 15%
Kentriki Ellada	Ipeiros	GR2110003	B	A	Game refuge 27%, IBA
		GR2120001	B	A	Game refuge 21%, IBA
		GR2120004	B	A	IBA
		GR2130001	B	A	Core strict 27%, Game refuge 9%, Periph. zone 73%, SPA, IBA
		GR2130002	A	B	Game refuge 18%, IBA
	Dytiki Ellada	GR2320002	A	A	Game refuge 3%
	Sterea Ellada	GR2430002	C	B	
		GR2450003	C	A	Game refuge 6%

Status and reasons for decline: Mainly the alteration of the above habitats. In addition, the illegal fishing with poisons or during spawning, pollution, water intake, and engineering works.

Protective legislation: The species is included in the following lists: Directive 92/43.

Selected references:

Economidis, P.S. 1973. Catalogue des poissons de la Grèce. Hellenic Oceanology and Limnology 11: 421-598. (In Greek).

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211

Karakousis, Y. and C. Triantaphyllidis, 1988. Genetic relationship among three Greek brown trout *Salmo trutta* L. populations. Polsk. Arch. Hydrobiol. 35: 267-285.

Karakousis, Y. and C. Triantaphyllidis, 1990. Genetic structure and differentiation among Greek brown trout (*Salmo trutta* L.) populations. Heredity 64: 297-304.

Karakousis, Y. 1990. A study of genetic polymorphism of brown trout *(Salmo trutta* L.*)* populations of northern Greece. Doctoral dissertation, University of Thessaloniki, 201 p. (In Greek).

Klossa-Kilia, E. 1990. Contribution to the study of Biology of *Salmo macrostigma* of upper Acheloos River. Doctoral dissertation, Univ. of Patras.

Papageorgiou, N., C. Neophytou and C. Vlachos. 1984a. Food and feeding of brown trout (*Salmo trutta fario* L.) in Aspropotamos stream, Greece. Pol. Arch. Hydrobiol. 31: 277-285.

Papageorgiou, N., C. Neophytou and C. Vlachos. 1984b. The age, growth and reproduction of brown trout (*Salmo trutta fario* L.) in the Aspropotamos stream, Greece. Acta Hydrobiol. 25/26: 451-467.

Stephanidis, A. 1939. The freshwater fish of western Greece and Corfu. Doctoral dissertation, Univ. of Athens 44 p. (In Greek).

Stephanidis, A. 1971. Poissons d'eau douce du Péloponnèse. Biologia Gallo-Hellenica 3: 163-212.

Phoxinellus ssp.

Order: Cypriniformes, Family: Cyprinidae

Related taxa in the country formerly under the above name (see Economidis, 1991):
Phoxinellus pleurobipunctatus (Stephanidis, 1939)
Pseudophoxinus stymphalicus (Valenciennes, 1844)
Pseudophoxinus beoticus (Stephanidis, 1939)
Paraphoxinus epiroticus epiroticus Steindachner, 1896
Paraphoxinus epiroticus prespensis Karaman, 1924

Endangered taxa:
Pseudophoxinus stymphalicus (Valenciennes, 1844)
Pseudophoxinus beoticus (Stephanidis, 1939)
Phoxinellus pleurobipunctatus (Stephanidis, 1939)

Pseudophoxinus stymphalicus (Valenciennes, 1844)

Synonyms:
Leuciscus stymphalicus Valenciennes, 1844
Leucaspius stymphalicus, Stephanidis, 1939, 1971
Phoxinellus stymphalicus, Stephanidis, 1974
Pseudophoxinus stymphalicus, Economidis, 1991

Common name: Ντάσκα

Description: A small size fish, no more than 6-7 cm, characterized by its small and embedded scales, the short snout and the incomplete lateral line. The color of the body is homogenous gray to green or olive in its back and sides, and more light in the belly. Sometimes there are some irregularly distributed small dark dots.

Habitat: The species prefers places where are small concentration of still and clean, and normally deep water, with rich aquatic vegetation. Such habitats are those of the stagnant waters of springs, of the coastal areas of lakes and the dead branches of rivers.

Distribution: An endemic species in Greece and South Yugoslavia, distributed in Attiki, Voiotia, Phthiotis (river Sperchios), Thessalia (Holorema steam), Peloponnisos (including rivers Evrotas and Erassinos and Spring Lerni), Aetolia, Akarnania, Ipeiros (rivers Arachthos, Louros, Aheron and Kalamas) and the islands Evvoia, Lefkada and Corfu.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Dytiki Makedonia	GR1340001	A	A	Core strict 25%, Periph. zone 75%, Game refuge 18%, SPA, Ramsar 25%, IBA, Biogenetic reserve 1%

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
	Thessalia	GR1410001	B	B	
Kentriki Ellada	Ipeiros, Dytiki Ellada	GR2110001	B	A	IBA, SPA, Ramsar 49%, Barcelona Convention 49%
	Ipeiros	GR2110003	B	A	Game refuge 27%, IBA
		GR2120001	B	A	Game refuge 21%, IBA
		GR2120003	B	A	IBA
		GR2120004	B	A	IBA
		GR2130005	B	A	
		GR2140001	B	A	IBA
	Dytiki Ellada	GR2310001	B	C	Natural monument, Game refuge 1%, IBA, SPA, Ramsar, Biogenetic reserve
		GR2310007	B	A	
		GR2310008	B	A	
		GR2310009	B	C	
		GR2330001	B	A	
		GR2330003	C	A	
	Sterea Ellada	GR2410001	B	C	Game refuge 10%
		GR2430002	B	B	
		GR2440002	B	B	Game refuge 8%, IBA
	Peloponnisos	GR2530002	B	C	Game refuge 7%, IBA
		GR2540003	B	A	IBA
Attiki		GR3000002	C	B	
		GR3000003	C	C	
		GR3000004	-	-	

Status and reasons for decline: Decline seems to be caused by engineering development which destroyed natural habitats, water intake and pollution.

Protective legislation: The species is included in the following lists: Directive 92/43, Presidential Decree 67/1981 of the Greek State, Convention on the conservation of European wildlife and natural habitats (Bern Convention), IUCN Red List of threatened Animals, The Red Data Book of threatened vertebrates of Greece (1992).

characterized by its uncompleted lateral line, its large embedded scales, its homogenous gray to dark green body color, the lacking of spots in the body, and the presence of a large dark band longwise the sides. Its body length is up to 7 cm.

Habitat: Its natural biotopes are the small freshwater pools near the estuaries of some streams in the island of Rodos. It can also live in upstream pools, and in some places where there is a little flow just between two successive pools. Alive fishes are observed to search for food in all the water column.

Distribution: Endemic to Rhodos island.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4210005	B	A	Natural monument 1%, Biogenetic reserve 1%
		GR4210006	B	A	

Status and reasons for decline: Decline is caused mainly by alteration of natural habitats provoked by engineering development, water intake and pollution.

Protective legislation: The species is included in the following lists: Directive 92/43/EEC, Presidential Decree 67/1981 of the Greek State, The Red Data Book of threatened vertebrates of Greece (1992).

Selected references:

Economidis, P.S. 1973. Catalogue des poissons de la Grèce. Hellenic Oceanology and Limnology 11: 421-598 (In Greek).

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature (special publication) 48 p.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211.

Gianferrari, L. 1927. Diagnosi preliminare di due nuove specie ittiche di Rodi. Atti Soc. Ital. Sci. nat. 66: 123-125.

Gianferrari, L. 1929. Ricerche faunistiche nell' isole italiane dell' Egeo. Pesci. Arch. Zool. ital. 13: 37-44.

Ghigi, A. 1929. Ricerche faunistiche nelle Isole italiane dell' Egeo. Risultati generi e conclusioni. Arch. Zool. ital. 13: 293-354.

Karaman, M.S. 1972. Süsswasserfische der Türkei. 9. Teil. Revision einiger kleinwuchsiger Cyprinidengattungen *Phoxinellus, Leucaspius, Acanthobrama* usw, aus Südeuropa, Kleinasien, Vorderasien und Nordafrika. Mitt. Hamburg. Zool. Mus. Inst. 69: 115-155.

Paget, O. & E. Kritscher, 1979. *Procamallanus bachmayeri* nov. spec. (Nemat., Camallanidae) und *Rhabdochona leucaspii* nov. spec. (Nem., Rhabdochonidae) aus *Leucaspius prosperoi* Gianferrari, 1929 (Pisces, Cyprinidae) von der Insel Rhodos. Ann. Naturhistor. Mus. Wien 82: 615-619.

Tortonese, E. 1947. Ricerche zoologiche nell' isola di Rodi (Mar Egeo). Pesci. Boll. Pesca Pisc. Idrobiol 23: 143-192.

Gobio kessleri (Dubovski, 1862)
Order: Cypriniformes, Family: Cyprinidae

Related taxa in the country formerly under the above name (see Economidis, 1991):
G. k. banarescui Dimovski & Grupce, 1974

Endangered taxa:
Gobio kessleri banarescui Dimovski & Grupce, 1974

Synonyms:
Gobio kessleri, Stephanidis, 1950

Common name: Μυλωνάκι

Description: The body has a rocket shape form, gently sloping back and flat belly. The tail is long and slender. The head is relatively large with a prominent and round snout, and the mouth is lying ventrally and having a pair of long barbel in its corner. The body is covered by moderately large scales, 40-42 in lateral line, but the underside of the body is scaleless. The color is pale greeny-brown on the back but with the side silvery with dusky blotches. On the tail fin there are faint spots running parallel with the fork of the tail. The total length of the body reach up to 10 cm, rarely more.

Habitat: As the nominal species, the sub-species in view is strongly rheophilic and bottom living fish, frequenting mainly in stream or river but in places whith swift flowing water and gravely or sandy bottom. It is lacking from lakes.

Distribution: An endemic subspecies in Greece and South Yugoslavia. In Greece found in Makedonia: rivers Axios, Aliakmon and Loudias; Thessaly: Pinios river.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Kentriki Makedonia	GR1220007	A	C	IBA, Ramsar 12%
	Thessalia	GR1440004	A	C	IBA

Status and reasons for decline: The main reasons for its decline are the destruction or pollution of spawning habitats.

Protective legislation: The species is included in the following lists: Convention on the conservation of European wildlife and natural habitats (Bern Convention), The Red Data Book of threatened vertebrates of Greece (1992).

Selected references:

Economidis, P.S. 1973. Catalogue des poissons de la Grèce. Hellenic Oceanology and Limnology 11: 421-598 (In Greek).

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and

protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.
Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211.
Kattoulas, M.E., A. Stephanidis and P.S. Economidis, 1973. The fish fauna of the Aliakmon River System (Makedonia, Greece). I. The species of the genus Gobio Cuvier, 1817 (Pisces, Cyprinidae). Biologia Gallo-Hellenica 4: 175-187.
Stephanidis, A. 1950. Contribution to the study of freshwater fish of Greece. Praktika of Academy of Athens 18 (1943): 200-210. (In Greek).

Gobio uranoscopus (Agassiz, 1828)

Order: Cypriniformes Family: Cyprinidae

Related taxa in the country formerly under the above name (see Economidis, 1991):
Gobio uranoscopus elimeius Kattoulas, Stephanidis & Economidis, 1973

Endangered taxa:
Gobio uranoscopus elimeius Kattoulas, Stephanidis & Economidis, 1973

Synonyms:
Gobio kessleri, Stephanidis, 1950
Gobio albipinnatus elimeius Kattoulas, Stephanidis & Economidis, 1973
Gobio uranoscopus elimeius, Economidis, 1991

Common name: Μουστακάς

Description: A small size fish with a pair of quite long barbels, which can be recognized by its cylindrical to rocket shape body, covered by small but well observed scales, and its rather thin caudal peduncle. In the base of the caudal fin there are two symmetrical and yellowish fleshy areas. The color pattern is characterized by some dark bands in the sides of the body. Its body length is up to 10-11 cm.

Habitat: The species prefers the stony or sandy bottoms of large rivers with a rather fast current and clean water. During spawning season it can be observed in more shallow areas.

Distribution: An endemic subspecies in Thessalia: Pinios river, Makedonia: Aliakmon, Loudias and Axios rivers.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Thessalia	GR1420002	B	B	Aesthetic forest 24%, IBA, SPA 24%
		GR1440004	B	C	IBA

Status and reasons for decline: Decline is caused mainly by alteration of its habitats, provoked by engineering development, water intake and pollution.

Protective legislation: The species is included in the following lists: Directive 92/43/EEC, Convention on the conservation of European wildlife and natural habitats (Bern Convention), The Red Data Book of threatened vertebrates of Greece (1992).

Selected references:

Economidis, P.S. 1973. Catalogue des poissons de la Grèce. Hellenic Oceanology and Limnology 11: 421-598. (In Greek).

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211.

Kattoulas, M.E., A. Stephanidis and P.S. Economidis, 1973. The fish fauna of the Aliakmon River System (Makedonia, Greece). I. The species of the genus Gobio Cuvier, 1817 (Pisces, Cyprinidae). Biologia Gallo-Hellenica 4: 175-187.

Stephanidis, A. 1950. Contribution to the study of freshwater fish of Greece. Praktika of Academy of Athens, 18 (1943): 200-210. (In Greek).

Barbus plebejus (Valenciennes, 1842)

Order: Cypriniformes, Family: Cyprinidae

Related taxa in the country formerly under the above name (see Economidis, 1991):

Barbus euboicus Stephanidis, 1950
Barbus prespensis Karaman, 1924
Barbus cyclolepis sperchiensis Stephanidis, 1950
Barbus cyclolepis choloremáticus Stephanidis, 1971
Barbus cyclolepis strumicae Karaman, 1955
Barbus cyclolepis cyclolepis Heckel, 1840

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Anatoliki	GR1110005	B	C	IBA, SPA
	Makedonia, Thraki	GR1120004	A	C	Aesthetic Forest 100%, Game refuge 50%, IBA, SPA
		GR1130006	B	C	IBA, Game refuge 1%, Ramsar 25%
		GR1130007	B	C	Game refuge 2%, IBA, Ramsar 55%
		GR1140001	A	C	Game refuge 100%, IBA, Natural monument 55%, Biogenetic reserve 55%, SPA 55%
		GR1140002	B	C	
		GR1140003	B	C	
		GR1140005	B	C	
		GR1140006	B	C	
		GR1150010	B	C	Game refuge 45%, Ramsar, SPA, IBA, Game breeding station

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
	Kentriki Makedonia	GR1220001	C	C	Game refuge 10%, Ramsar, SPA, IBA
		GR1220003	B	C	IBA, Ramsar
		GR1220006	C	C	
		GR1230002	B	C	Natural monument 3%
		GR1260001	B	C	Game refuge 1%, Ramsar, SPA, IBA
		GR1260002	B	C	Game refuge 13%, IBA
		GR1260003	B	C	Game refuge 60%
		GR1270002	B	A	IBA
		GR1270003	B	A	World heritage site, IBA
		GR1270005	B	A	Game refuge 64%
	Dytiki Makedonia	GR1340001	B	A	Core strict 25%, Periph. zone 75%, Game refuge 18%, Ramsar 25%, SPA, IBA, Biogenetic reserve 1%
		GR1340003	B	A	
	Thessalia	GR1420001	B	A	Game refuge 6%, IBA
		GR1420002	B	C	Aesthetic forest 24%, IBA, SPA 24%
		GR1430002	C	A	Aesthetic forest 20%, IBA Biogenetic reserve 20%
Kentriki Ellada	Sterea Ellada	GR2420003	C	C	Game refuge 8%, IBA
		GR2420005	C	A	Game refuge 12%, IBA
		GR2440002	A	A	Game refuge 8%, IBA

Endangered taxa:
Barbus prespensis Karaman, 1924
Barbus cyclolepis choloremáticus Stephanidis, 1971
Barbus euboicus Stephanidis, 1950
Barbus prespensis Karaman, 1924

Barbus prespensis (Karaman, 1924)

Synonyms:
Barbus graecus var. prespensis Karaman, 1924
Barbus prespensis, Berg, 1933.- Economidis, 1989
Barbus plebejus prespensis, Karaman, 1971
Barbus cyclolepis prespensis, Almaça, 1984

Common name: Μπριάνα

Description: The species is a rather still water living fish characterized mainly by the weak ossification of the fourth ray of the dorsal fin, the medium size scales (in average 55-60 on lateral line) and by the more or less presence of speckles in the body. It can also frequent

streams, being the largest size species (up to 35 cm) among rheophilic ones. In this case it has the typical color pattern of similar species. The body is almost elongated, high, cylindrical in shape and a little compressed on the sides. The head profile is convex, more or less narrow and high having a shallow depression in the nose area. The mouth is inferior having thick lips and the eyes are small enough. The body length is up to 35 cm.

Habitat: This species occupies the basin of the lakes Mikri and Megali Prespa. The stream living population is strongly rheophilic, preferring better small pools with deeper water and gravel bottom. The lake living population is concentrated in places where bottom is sandy or gravely. Larger specimens are also observed to be hidden in holes among great stones.

Distribution: An endemic species in lakes Mikri and Megali Prespa.

Status and reasons for decline: Decline seems to be caused by engineering development and exploitation and mainly by alteration of spawning grounds.

Protective legislation: The species is included in the following lists: Directive 92/43/EEC, The Red Data Book of threatened vertebrates of Greece (1992), IUCN Red List of Threatened Animals.

Barbus cyclolepis cholorematicus Stephanidis, 1971

Synonyms:
Barbus plebejus cholorematicus, Economidis, 1973
Barbus cyclolepis, Economidis, 1989

Common name: Βιργιάνα

Description: This stream living fish differs from the nominal species (*Barbus cyclolepis*) and the other close related sub-species, by the more blunt and higher snout, especially in females. In addition there is a transversal groove before nostrils. The sub-species is also characterized by a quite thin lower lip, the short barbels and by the quite strong ossification of the fourth dorsal ray. The body color varies from brownish to dark with sides more light and belly almost white or a little yellowish. The back and the sides are covered by irregular speckles brown in color. Among speckles there are also many spots, sometimes darker. The dorsal and the caudal fins have dark spots arranged in lines. Same shape spots are often present in other fins. Maximum observed size 12 cm, but it can reach up to 20 cm.

Habitat: The species lives in a very small stream with large seasonal changes of water budget: much enough during raining season and almost dried up in summer. This fish has survived, together with the sympatric species *Leuciscus cephalus*, in few small pools preserving quite deep water. Sometimes, especially in winter and spring, these pools are jointed by a poor current, the streams bed being formed by gravel or sand. Normally in the river banks there are roots of trees, mainly those of planes which form refuges.

Distribution: An endemic Greek subspecies found in the small river Cholorema in Thessaly.

Status and reasons for decline: This typical stream living barbel has an apparent preference for clean and well oxygenated water. During the prolonged drought of Greek summer, the stream Cholorema keeps very few water in some deeper pools. Fish living there can just survive and in many cases they die. So, as the main reason for decline can be considered the fluctuations in the water volume and especially summer drought.

Protective legislation: The species is protected by the Presidential Decree 67/1981 of the Greek State.

Selected references:

Almaça, C. 1984. Notes on some species of western Palearctic *Barbus* (Cyprinidae, Pisces). Arq. Mus. Bocage (Série C) 2: 1-76.

Berg, L.S. 1933. Ubersicht der Verbreitung des Süsswasserfische Europas. Zoogeographica 1: 107-208

Economidis, P.S. 1973. Catalogue des poissons de la Grèce. Hellenic Oceanology and Limnology 11: 421-598. (In Greek).

Economidis, P.S. 1989. Distribution pattern of the genus *Barbus* (Pisces, Cyprinidae) in the freshwater of Greece. Trav. Mus. Hist. nat. "Grigore Antipa", Bucarest 30: 223-229.

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211.

Karaman, M.S. 1971. Süsswasserfische der Türkei. 8. Teil. Revision der Barben Europas, Vorderasiens und Nordafrikas. Mitt. Hamburg. Zool. Mus. Inst. 67 : 175-254.

Karaman, S.L. 1924. Pisces Makedoniae, Split. 90 p.

Stephanidis, A. 1950. Contribution to the study of freshwater fish of Greece. Praktika of Academy of Athens, 18 (1943): 200-210. (In Greek).

Stephanidis, A. 1971. On some freshwater fish of Greece. Biologia Gallo-Hellenica 3: 213-241. (In Greek).

Barbus euboicus Stephanidis, 1950

Synonyms:

Barbus euboicus Stephanidis, 1950, 1971.- Economidis, 1973, 1989.

Barbus plebejus euboicus, Karaman, 1971

Common name: Πετρόψαρο

Description: The species is a stream living fish characterized mainly by the weak ossification of the fourth ray of the dorsal fin, the rather large size scales (in average 48-56 on lateral line) and by the dense irregular speckles in the body and dots in all fins. The body is elongated, cylindrical in shape and a little compressed on the sides mainly behind dorsal fin. The snout is quite long with a more or less rounded tip, depending on the sex and the season The mouth is inferior having thick lips and two pairs of barbels. The free margin of dorsal fin is straight or slightly curved. The anal fin is rounded in two first rays but straight in the rest. The color of the body is generally brown, covered by almost same color speckles, irregular in shape and

distributed mainly in the back and in the sides. Among speckles there also are many spots, sometimes darker. All fins have gray or dark small spots arranged more or less in lines. The body length is up to 25 cm.

Habitat: This species is endemic in the island of Evvoia. Its typical habitat is the small stream Manikiotiko, flowing directly in the open Aegean Sea, which has locally gravely or sandy or even muddy bottom and great seasonal changes in water budget. Small pools preserving quite deep water are of special interest. These pools are formed in the stream bed in few distance each other, where there is little to scarce aquatic vegetation. However, in the river banks the roots of trees, mainly those of planes, form good refuges for fish. In the middle-stream, where a typical barbel zone can be recognized, there is a few and shallow water slowly running or lacking in summer. In these places, fish can be observed looking for food. Movements up or down stream are also observed especially when in danger.

Distribution: An endemic Greek species found in some streams of the island of Evvoia.

Status and reasons for decline: Decline seems to be caused by pollution, engineering developments, land use and water intake.

Protective legislation: The species is included in the following lists: Directive 92/43, Presidential Decree 67/1981 of the Greek State, The Red Data Book of threatened vertebrates of Greece (1992), IUCN Red List of threatened Animals.

Orthrias barbatulus (Linnaeus, 1758)

Order: Cypriniformes, Family: Cobitidae

Related taxa in the country formerly under the above name (see Economidis, 1991):
Orthrias barbatulus vardarensis (Karaman, 1928)

Endangered taxa:
Orthrias barbatulus vardarensis (Karaman, 1928)

Synonyms:
Noemacheilus barbatulus vardarensis, Economidis & Vogiatzis, 1985

Common name: Βίνος

Description: Small size fish, without spine under the eye, living in running water and recognized mainly by free margin of its caudal fin (not so forked), the size and shape of barbels and the color pattern (generally greeny-brown above with yellowish-brown blotches). Total length up to 10 cm.

Habitat: It is a typical rheophilic species, preferring clean and well oxygenated water of rivers and streams, in places with gravely or sandy bottoms. It is bottom living fish, hiding under stones or other objects. It is most active at night.

Distribution: An endemic subspecies in the Axios river system only.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Kentriki Makedonia	GR1220007	A	D	IBA, Ramsar

Status and reasons for decline: The main reason of its decline is the alteration of the above habitats by pollution, water intake and engineering development.

Protective legislation: The species is included in the list of The Red Data Book of threatened vertebrates of Greece (1992)

Selected references:

Economidis, P.S. and V. P. Vogiatzis. 1985. Les poissons des systèmes d' Axios-Doirani et de Gallikos (Macedoine, Grèce). Biologia Gallo-Hellenica 10: 89-93.

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Karaman, S.L. 1928. Beiträge zur Ichthyologie von Jugoslavien I. Bull. Soc. Sci. Skopje, Sect. Sci. Nat. 6: 147-176.

Cobitis taenia (Linnaeus, 1758)

Order: Cypriniformes, Family: Cobitidae

Related taxa in the country formerly under the above name (see Economidis, 1991):
Cobitis meridionalis Karaman, 1924
Cobitis vardarensis Karaman, 1928
Cobitis strumicae Karaman, 1955
Cobitis trichonica Stephanidis, 1974
Cobitis stephanidisi Economidis & Nalbant, 1997
Cobitis punctilineata Economidis & Nalbant, 1997
Cobitis hellenica Economidis & Nalbant, 1997
Cobitis arachthosensis Economidis & Nalbant, 1997

Endangered taxa:
Cobitis stephanidisi Economidis & Nalbant, 1997

Synonyms:
Cobitis taenia, Apostolidis, 1892, Panagiotopoulos, 1916

Common name: Φεροβελονίτσα

Description: The species, as the other of the genus *Cobitis*, has three pairs of barbels around mouth and a suborbital spine with two thorns. The males have one Canestrini's scale. Furthermore it is characterized by its long body, the continuous black or dark gray band along the lateral midline of the body, by the jet black dot at the upper base of the caudal fin, and by its scales which are nearly rectangular with rounded corners having a very small eccentric focal zone. The general ground colour is yellowish-white and the spots and dots dark-gray or

bluish- dark gray. Total body length up to 8 to 9 cm.

Habitat: It is a typical still water living species, frequenting all depths from very shallow to deeper places, especially where aquatic plants are present. From the general aspect of its type locality (Velestino spring) it can be assumed that the species does not avoid clean and slow running water. However, silty bottoms, into which it normally burrows, are the more favorite habitats.

Distribution: An endemic species living in the Kefalovrisso spring in the village of Velestino (Feres) in Thessaly.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110001	B	C	Game refuge 38%, Ramsar 100%, SPA, IBA
		GR1110005	B	C	IBA, SPA
		GR1120001	B	C	Game refuge 7%, Ramsar, SPA, IBA
		GR1120004	A	C	Aesthetic Forest 100%, Game refuge 50%, IBA, SPA 100%
		GR1130006	B	C	IBA, Game refuge 1%, Ramsar 25%
		GR1130007	B	C	Game refuge 2%, IBA, Ramsar 55%
		GR1130009	B	C	Game refuge 21%, Ramsar, SPA, IBA
		GR1140005	B	B	
		GR1140006	B	B	
		GR1150010	B	C	Game refuge 46%, Ramsar, SPA, IBA, Game breeding station
	Kentriki Makedonia	GR1220001	B	C	Game refuge 10%, Ramsar, SPA, IBA
		GR1220003	B	C	IBA, SPA
		GR1220007	B	B	IBA, Ramsar 12%
		GR1230002	B	C	Natural monument 3%
		GR1240005	B	C	IBA
		GR1260001	B	C	Game refuge 1%, Ramsar, SPA, IBA
		GR1260002	B	C	Game refuge 13%, IBA
	Dytiki Makedonia	GR1310001	A	B	-
		GR1340001	A	A	Core strict 25%, Periph. zone 75%, Game refuge 18%, Ramsar 25%, SPA, IBA, Biogenetic reserve 1%
	Thessalia	GR1420002	B	C	Aesthetic forest 24%, IBA, SPA 24%
		GR1420004	B	A	Game refuge 16%, IBA
Kentriki Ellada	Ipeiros, Dytiki Ellada	GR2110001	B	A	IBA, Ramsar 49%, Barcelona Convention 49%, SPA 49%

Status and reasons for decline: Decline should be attributed to the alteration of habitats, caused mainly by the devastation of the reproductive sites, the water intake and the pollution.

Protective legislation: The species is included in the following lists: Convention on the conservation of European wildlife and natural habitats (Bern Convention), Council of Europe, The Red Data Book of threatened vertebrates of Greece (1992)

Selected references:

Apostolidis, N. 1892. Les poissons d'eau douce de la Thessalie. Athène, 31 p. (In Greek).

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Economidis, P.S. and T.T. Nalbant. 1997. A study of the loches of the genera *Cobitis* and *Sabanejewia* (Pisces, Cobitidae) of Greece, with description of six new taxa. Trav. Mus. Hist. nat. "Grigore Antipa" (in press).

Panagiotopoulos, P. 1916. Catalogue of freshwater fish. In: Report on Hydrobiological Station: 575-576. (In Greek).

Pungitius hellenicus (Stephanidis, 1971)

Order: Gasterosteiformes, Family: Gasterosteidae

Related taxa in the country formerly under the above name (see Economidis, 1991):
Pungitius hellenicus Stephanidis, 1971

Endangered taxa:
Pungitius hellenicus Stephanidis, 1971

Synonyms:
Pygosteus pungitius, Stephanidis, 1950

Common name: Ελληνοπυγόστεος

Description: The species has some special features, lying mainly in the degraded weakness of ossification of its free dorsal rays and the pelvic zone and the very peculiar and varied color pattern.

Habitat: The proper habitat of the species is the clean, limpid and well oxygenated and cool water of springs, no more than 12^0 C of temperature in summer, with rich vegetation. Isolated individuals have been observed in the spring of Agia Paraskevi Lamias swimming in still water among aquatic plants, especially close to the surface under the emerged floating leaves, looking for small alive preys. When they fright they swam quickly and hid in holes among stones or roots of plants. However, specimens have also been caught some meters down in the side of the formed brook, among plants, where the current had a noticeable speed.

Distribution: An endemic Greek species found in river Sperchios drainage (Central Greece). The species now seems to be extinct from the dried springs Kombotades and Mexiates, which were its type locality, but has been found in another spring near the village Agia Paraskevi.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Kentriki Ellada	Sterea Ellada	GR2440002	A	B	Game refuge 8%, IBA

Status and reasons for decline: The type locality of the species, i.e. the springs in the village Kombotades Lamias, is now completely destroyed, dried up and cemented, and water is used for supplying houses. Therefore, the species should be considered as extinct from its type locality. The population of Agia Paraskevi spring is recently in good situation. However, the spring is lying just by the side of a national road and, consequently, vulnerable in many kind of annoyances and pollution by rubbish and washing.

Protective legislation: The species is included in the following lists: Presidential Decree 67/1981 of the Greek State, The Red Data Book of threatened vertebrates of Greece (1992), IUCN Red List of threatened Animals and also is protected by the an official decision of the Prefecture of Fthiotida.

Selected references:

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211.

Stephanidis, A. 1950. Contribution to the study of freshwater fish of Greece. Praktika of Academy of Athens, 18 (1943): 200-210 (In Greek).

Stephanidis, A. 1971. On some freshwater fish of Greece. Biologia Gallo-Hellenica 3: 213-241. (In Greek).

Valencia hispanica (Valenciennes, 1846)

Order: Atheriniformes, Family: Cyprinodontidae

Related taxa in the country formerly under the above name (see Economidis, 1991):
Valencia letourneuxi (Sauvage, 1880)

Endangered species:
Valencia letourneuxi (Sauvage, 1880)

Synonyms:
Valencia hispanica, Stephanidis, 1939, 1974

Common name: Ζουρνάς

Description: A small, slender fish, which the body, fully scaled, is distinctly broad at the head end but narrow towards the tail. Dorsal fin is well down the back and as all the other fins, is rounded. The body length reaches 5 cm max. The color is green-brown, darker on the back and pale yellowish-green ventrally.

Habitat: This species lives in marshes, drainage ditches, and stagnant waters from karstic regions with rich aquatic vegetation.

Distribution: An endemic species of West Greece and South Albania. In Greece it is found in rivers Louros, Aheron and Kalamas and also in some springs in Lefkas and Corfu islands (W. Greece). Also lives in rivers Pinios and Alfios of Peloponnisos (Bianco & Miller 1989).

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Kentriki Ellada	Ipeiros, Dytiki Ellada	GR2110001	B	A	IBA, Ramsar 49%, SPA 49% Barcelona Convention 49%
	Ipeiros	GR2120001	B	A	Game refuge 21%, IBA
		GR2140001	B	A	IBA
	Ionia Nisia	GR2230001	B	A	
		GR2230002	C	A	Game refuge 5%
	Dytiki Ellada	GR2320001	B	A	IBA, Ramsar 75%, SPA
		GR2330001	B	A	
		GR2330003	C	A	
		GR2330006	B	A	Ramsar, SPA, IBA

Status and reasons for decline: Decline seems to be caused by public works, pollution, water intake and the competition of the introduced *Gambusia affinis*.

Protective legislation: The species is included in the following lists: The Red Data Book of threatened vertebrates of Greece (1992), IUCN Red List of threatened Animals.

Selected references:

Das, J. 1983. *Valencia hispanica* (Valenciennes, 1846) in Aheron-Kokitos-Flusssystem in nordwestlichen Griechenland. DKG-Journal, Köln 17-24.

Das, J. 1984. Neu in unseren Aquarien- *Valencia letourneuxi*, der Korfukärpfling. TI-Internationa, Melle, FRG 65: 32.

Das, J. 1985. On the biology and ecology of *Valencia letourneuxi* (Sauvage, 1980) (Teleostei, Cyprinodontiformes) in the Acheron-Kokitos river drainage in northwestern Greece. Bonn. zool. Beitr. 36: 163-176.

Economidis, P.S. 1991. Check list of freshwater fishes of Greece (recent status of threats and protection). Hellenic Society for the Protection of Nature, (special publication) 48 p.

Economidis, P.S. 1992. Greek Freshwater Fishes. In: The Red Data Book of Threatened Vertebrates of Greece. 41-81 p.

Sauvage, H.E. 1880. Note sur quelques poissons recuillis par M. Letourneux en Epire, Corfou et dans le lac Maréotis. Bull. Soc. Philom. 4: 211-215.

Stephanidis, A. 1939. The freshwater fish of western Greece and Corfu. Doctoral dissetation, Univ. of Athens, 44 p. (In Greek).

Stephanidis, A. 1974. On some fish of the Ioniokorinthian region (W. Greece ect.) - A new genus of Cyprinidae: *Tropidophoxinellus* n. gen. Biologia Gallo-Hellenica 5: 235-257.

Villwock, W.A. A. Scholl and P. Labhart. 1982. Die Gattung *Valencia* Myers, 1928 (Pisces, Cyprinodontidae), ein Beitrag zur Verbreitung und Taxonomie. Mitt. Hamb. Zool. Mus. Inst. 79: 273-280.

Knipowitschia goerneri Ahnelt, 1991
Order: Perciformes, Family: Gobiidae

Related taxa in the country formerly under the above name (see Economidis, 1995):
Knipowitschia goerneri Ahnelt, 1991

Endangered taxa:
Knipowitschia goerneri Ahnelt, 1991

Common name: Κερκυρογωβιός

Description: The species is recognized by a combination of characters such as: the number of rays in dorsal (D1: 6, D2:1/8), anal (A: 1/8) and pectoral (P: 15-16) fins, the form and the number of squamation (L.l. 32-33), the cephalic lateral line system, and the color pattern. The species is known only by 5 specimens (18-22 mm) collected in the catchment of Korission lagoon (Corfu). Not known elsewhere.

Habitat: The habitat of this species is a freshwater spring SW of the lagoon Korission in Corfu. The spring forms a short brook which flows towards the nearby lagoon. The only vegetation in the well is algae.

Distribution: The species is living only in a small spring in the south-western part of the Korission lagoon (Corfu).

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	CONSERVATION	ISOLATION	DESIGNATION TYPE
Kentriki	Ionia Nisia	GR2230001	A	B	
Ellada		GR2230002	A	B	Game refuge 5%

Status and reasons for decline: Observations in the area around Korission lagoon during August 1986 (Economidis, unpubl. data) showed that many of freshwater wells and springs had few water or were dried up because of irrigation. The most important spring, those of Gardiki (northern of the lagoon), was completely cemented and its water was used for water supply of Kerkyra town. According to information taken in the area, Gardiki spring formed a very nice brook flowing into Korission lagoon. This spring perhaps was the most important habitat for such a species.

Protective legislation: The species is included in the following lists: The Red Data Book of threatened vertebrates of Greece (1992), IUCN Red List of threatened Animals.

Selected references:

Ahnelt, H. 1991. A new species of *Knipowitchia* (Teleostei: Gobiidae) from Corfu, Western Greece. Ichthyol. Explor. Freshwaters 2: 265-272.

Economidis, P.S. 1995. Endangered Freshwater Fishes of Greece. In: Crivelli, A.J. and P.S. Maitland (eds). Endemic Freshwater Fishes of N. Mediterranean Region. Tour de Valat Foundation. Biological Conservation 72: 201-211.

E.7. INVERTEBRATES

by Maria Lazaridou-Dimitriadou and A. Legakis

E.7.1. Introduction

The number of invertebrate species occurring in Greece is unknown today although it is estimated to be between 20 and 30 thousand. This is due to the fact that the fauna of Greece has been studied sporadically mainly by foreign researchers and also because the literature is scattered in different places.

The number of the invertebrate species of Greece is high in relation to its area. It is unknown though, how many and which invertebrate species of Greece are threatened with extinction. It is probable that at least 10% of the invertebrates of Greece, that is 2-3000 species, are in danger of extinction in the next few years if immediate measures for their protection are not taken.

Certain threatened invertebrates in Greece may have very limited distribution areas while others may have a wide distribution, outside the borders of Greece, but may occur in Greece in small and scattered populations. The habitats which host threatened species are numerous and have certainly not been studied sufficiently. Habitats with sensitive to threats invertebrate fauna are the caves which host very specialized species with small populations. Other habitats rich in invertebrate fauna are wetlands and fresh waters where elevated productivity supports high number of species. An example of threatened species in these areas are dragonflies. Other areas with fauna sensitive to threats are the sand dunes hosting representative species, and old forests that are burned or cut for exploitation hosting many central European or Mediterranean species such as the Coleoptera *Cerambyx cerdo, Rosalia alpina* and *Lucanus cervus* (Legakis 1989). Finally, areas where the traditional type of agricultural practice that was applied for many years has been replaced today by mechanization and the use of chemicals. The various butterfly species are characteristic examples of these areas (Heath 1981). *Turanena spp., Lysandra philippe* (which is endemic of Greece) and *Pseudochazara orestes* are few examples of the butterfly species considered as endangered. The marine habitats with hard substrate, have special interest since they host many invertebrates such as sponges, cnidozoans, polychetes, molluscs, crustaceans and echinoderms. The seabeds of the marine phanerogame *Posidonia oceanica* which is a habitat sensitive to pollution, also host a specialized invertebrate fauna which is continuously shrinking along with it.

The population status of threatened invertebrates is also very little known. For some narrow endemic species we know that only a few hundred individuals may exist. The knowledge on the populations of some other species, is restricted to the fact that they are continuously in decline. No data exist about many species for which we have to suppose that they are declining, based on their ecology and the threats they face.

The main threat of the invertebrate populations is the destruction of their habitats. Apart from the destruction of their natural environment, invertebrates suffer from the direct

interference of man. There are also many invertebrate species that are collected either for consumption or for trade.

The protection of the invertebrates in Greece may be considered insufficient. A number of invertebrates are protected by Presidential Decree 67/81. It is prohibited to collect, kill, harm, damage, own, preserve, buy, sell, transport or export these species. Moreover, the list of species protected by this Decree is unbalanced and incomplete.

Twenty four invertebrate species that have been recorded in Greece are included in the Bern Convention. Greece has also ratified the CITES that restricts trade of threatened species such as the butterfly *Parnassius apollo*. Finally, mention must be made to some seasonal restrictions of the Greek law to fishing or collection of invertebrates such as lobsters and snails.

The species that occur in National Parks and other protected areas are also protected. However, as they have not been inventoried there are no specific measures for their conservation.

The public is almost unaware of the significance of the invertebrates. Even school textbooks make little mention to invertebrates and there are people responsible for decision making not well informed. The public either consider them harmful or annoying (butterflies excepted) or their presence or the possibility of their extinction is indifferent to them.

E.7.2. General comments

The number of invertebrate species (including invertebrate chordates) recorded in the proposed Sites of Community Importance (SCI) is 969, 12 of which are listed in Annex II to the Habitat directive and 957 are recorded as Other Important Species in the database.

Only four taxonomic groups are included in Annex II to Directive 92/43/EEC. These are Mollusca Bivalvia (1 sp.), Odonata (2 spp.), Lepidoptera (4 spp.) and Coleoptera (5 spp.). Among them, 1 lepidopteran and 2 coleopteran species are priority species. The Annex II invertebrates have been recorded from 68 (25%) sites. The percentage of occurrence of each order in the NATURA 2000 sites is shown in figure E.23. None of the Annex II species is endemic to Greece. Most of the species (4 Coleoptera, 3 Lepidoptera and 2 Odonata) are protected by international conventions while one of the Coleoptera is protected by the national legislation. The mean number of the Annex II invertebrate species per site where they occur ranges from 1 to 2 (Fig. E.24).

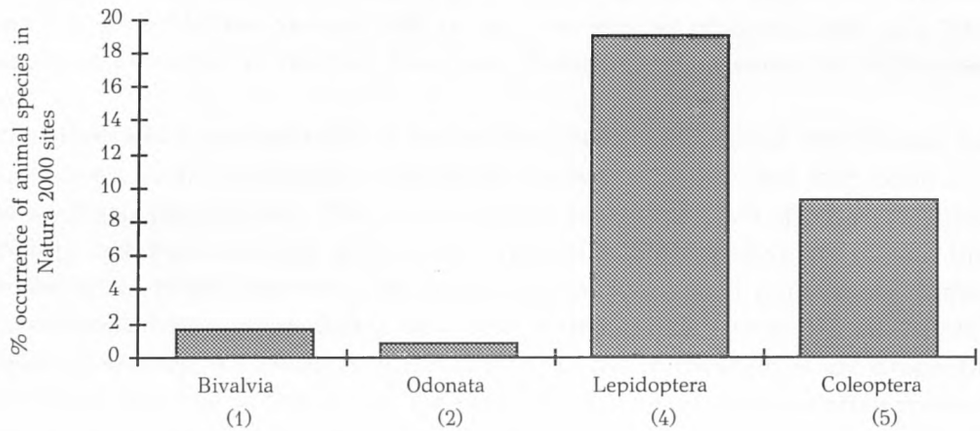


Fig. E.23. Percentage of occurrence of each invertebrate group of Annex II to Directive 92/43/EEC in the "Natura 2000" sites in Greece. The number of species belonging to each invertebrate group is indicated in brackets.

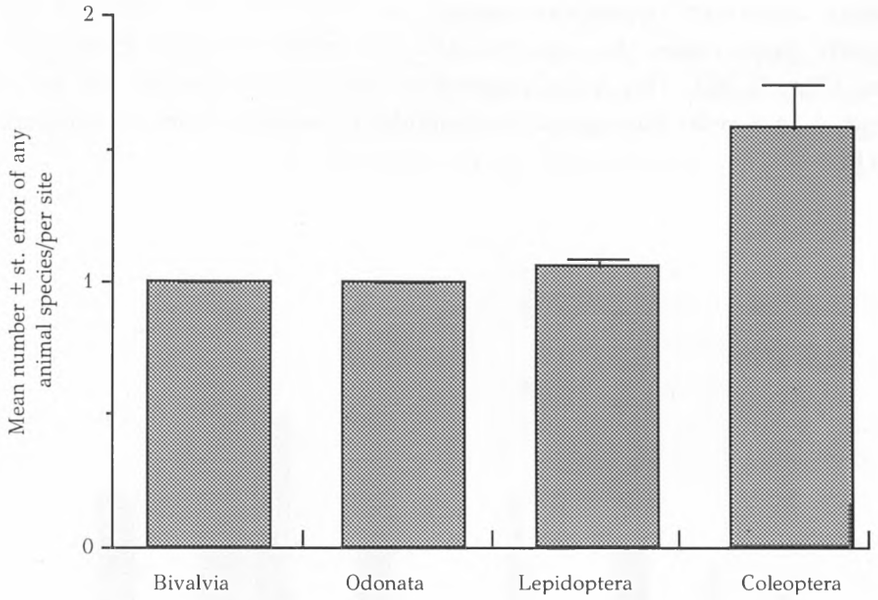


Fig. E.24. Mean number (ff st. error) of Annex II to Directive 92/43/EEC invertebrate species per site where they occur for each invertebrate group.

The other important invertebrates (including invertebrate chordates) are distributed in 7 phyla that include 14 classes with a total of 22 orders. The largest class, the insects, includes representatives of 7 orders. The majority of species belong to the orders of Coleoptera, Gastropoda, Lepidoptera, Orthoptera and Isopoda (Fig. E.25). These groups although are not necessarily the most abundant in species numbers in Greece, they comply with the criteria for inclusion of the species in the database (motivations A, B, C, and D)

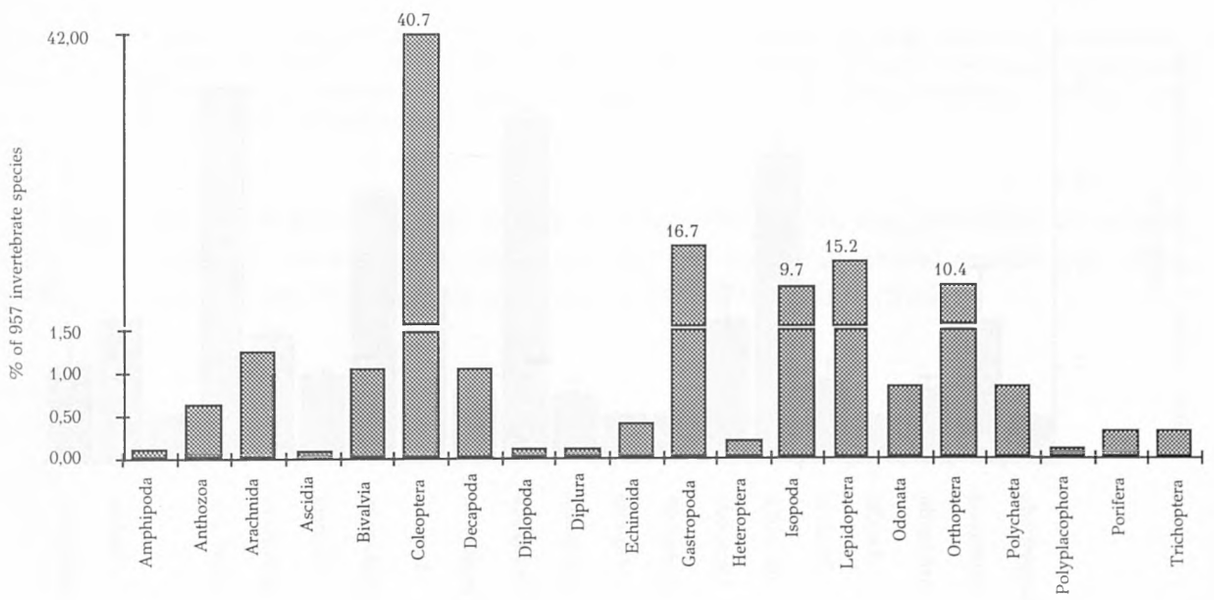


Fig. E.25. Percentage of each group of the other important invertebrate species (including invertebrate chordates) recorded in "Natura 2000" sites in Greece.

The 957 other important invertebrate species are found in 220 (80%) of the proposed Sites of Community Importance. As expected, the five most abundant groups are found in most of the sites (Fig. E.26). The mean number of invertebrate species per site where they occur, ranges from 1 to 8 with Polychaeta, Gastropoda, Coleoptera, and Lepidoptera being the most abundant (Fig. E.27).

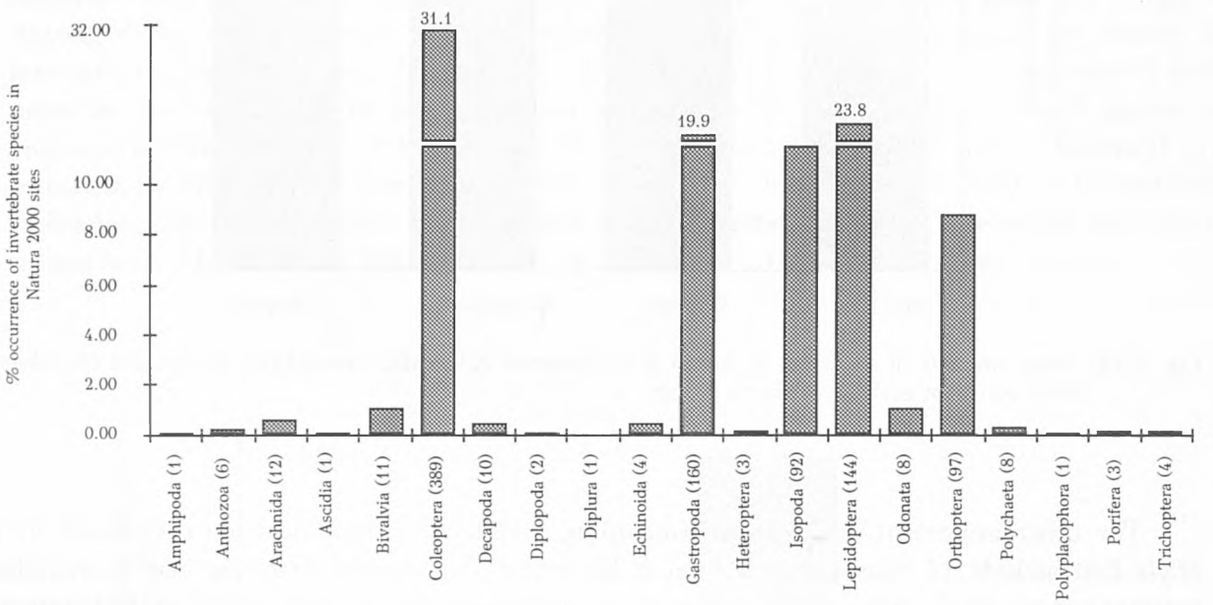


Fig. E.26. Percentage of occurrence of each group of the other important invertebrate species (including invertebrate chordates) in the "Natura 2000" sites in Greece.

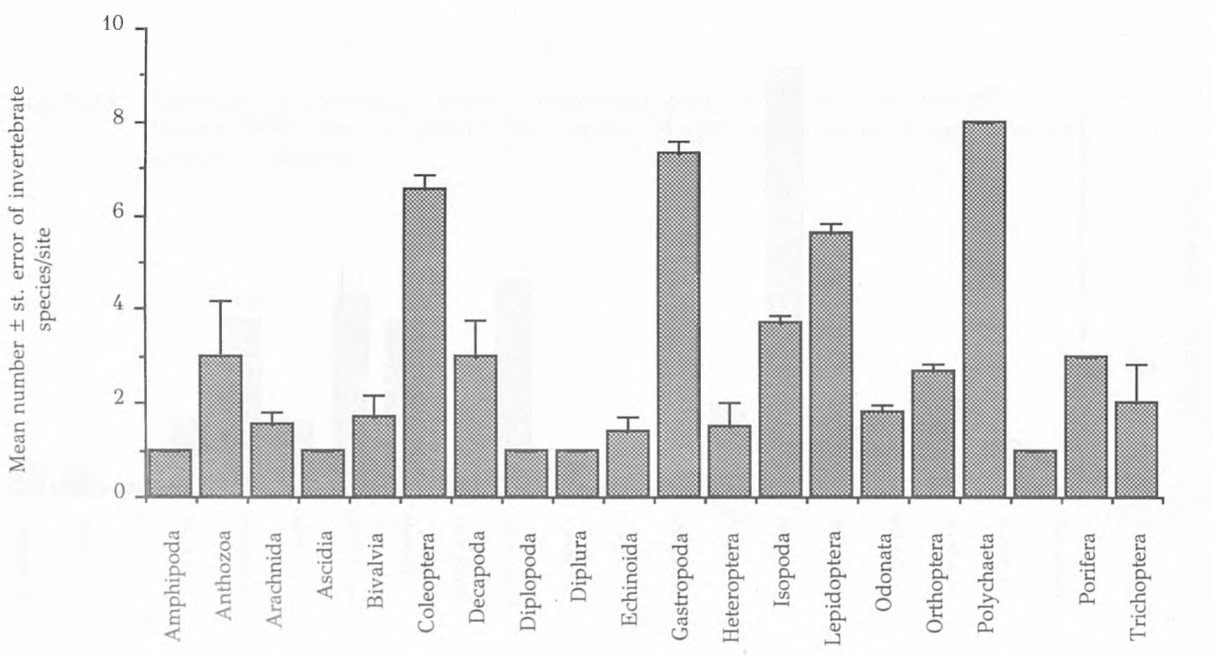


Fig. E.27. Mean number (± st. error) of each group of invertebrate species per site where they occur.

The majority of species (78.3%) are endemic to Greece. The order with most of the endemics is Coleoptera followed by Gastropoda, Orthoptera and Isopoda (Fig. E.28). The Lepidoptera do not have many endemic species but have many species that are considered as threatened at European level. The number of species protected by international and national legislation is very low. Only 1.6% are protected by international conventions and 6.7% by national legislation.

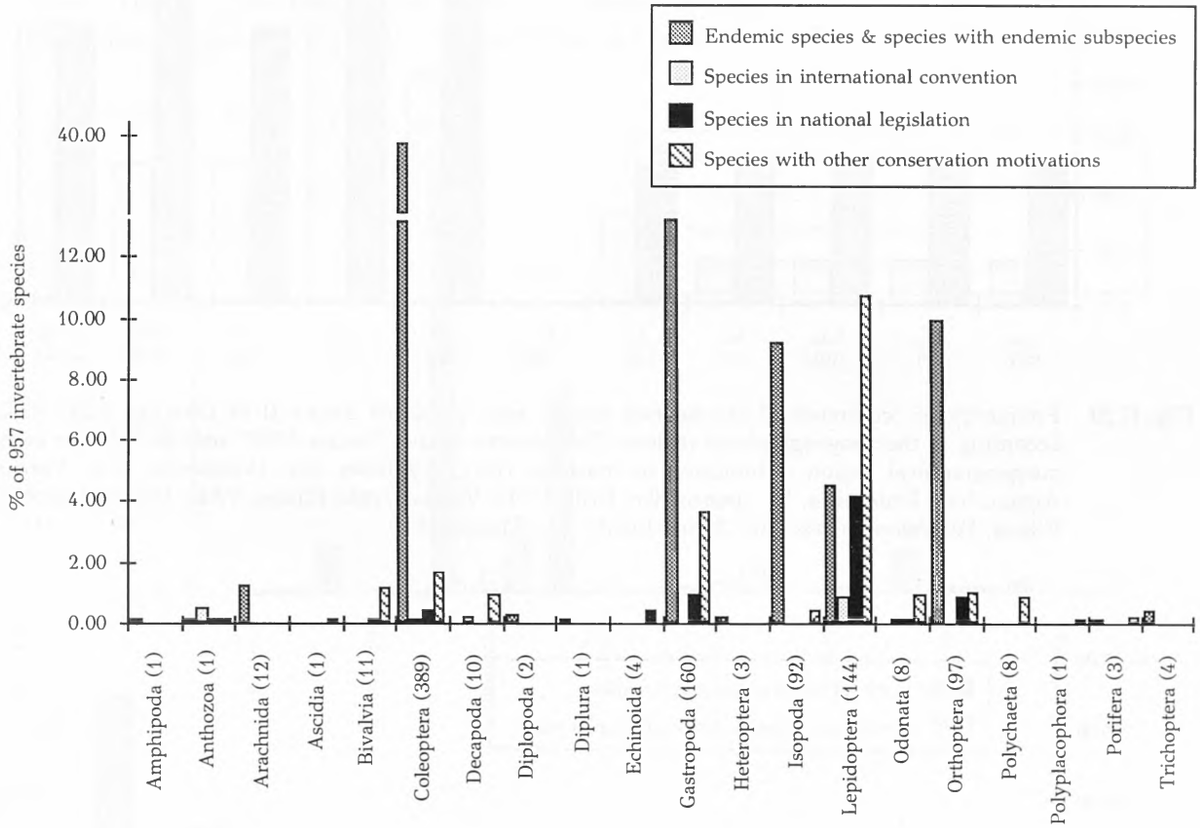


Fig. E.28. Percentage of each group of the other important invertebrate species (including invertebrate chordates) recorded in "Natura 2000" sites in Greece, according to their conservation motivation (Endemic species, species in international legislation, species in national legislation, species with other conservation motivations).

The number of investigated sites per zoogeographical region, the percentage of animal groups and species of Annex II per region and the percentage of animal groups and other important species per region are shown in figures E.29 and E.30 respectively.

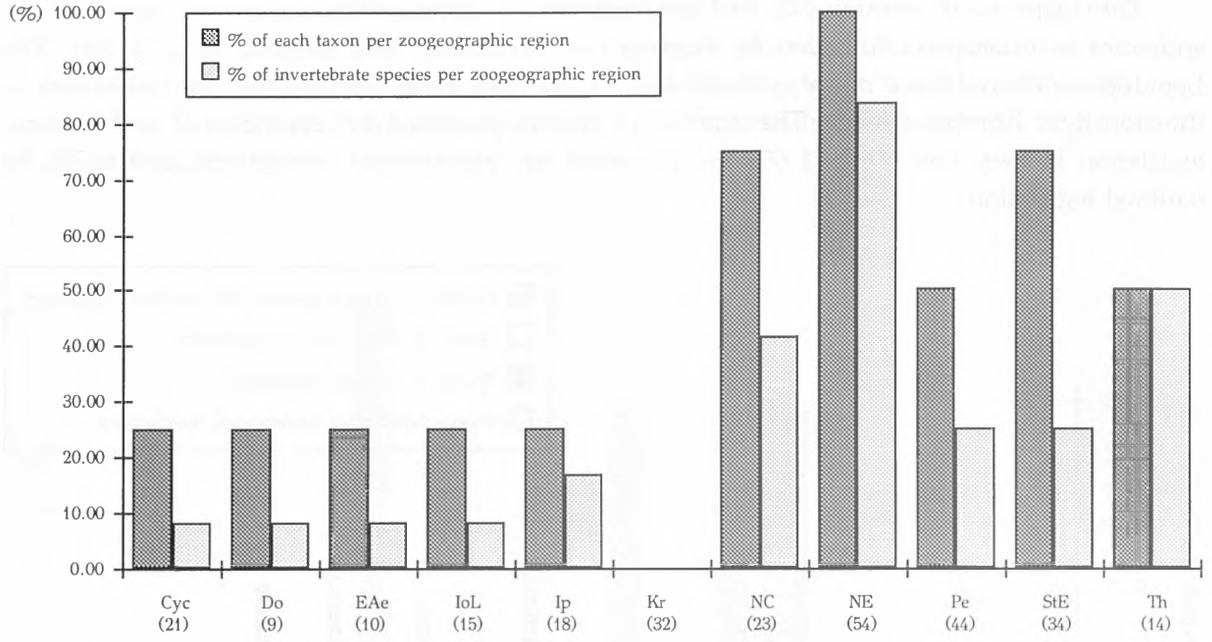


Fig. E.29. Frequency of occurrence of invertebrate groups and species of Annex II to Directive 92/43/EEC according to the zoogeographical regions. The number of the "Natura 2000" sites included in each zoogeographical region is indicated in brackets. (Kyk: Kyklades, Do: Dodekanisa, Vai: Voreio Aigaio, Ion: Ionia nisia, Ip: Ipeiros, Kr: Kriti, VDE: Voreia Dytiki Ellada, VAE: Voreia Anatoliki Ellada, Pe: Peloponnisos, StE: Sterea Ellada, Th: Thessalia)

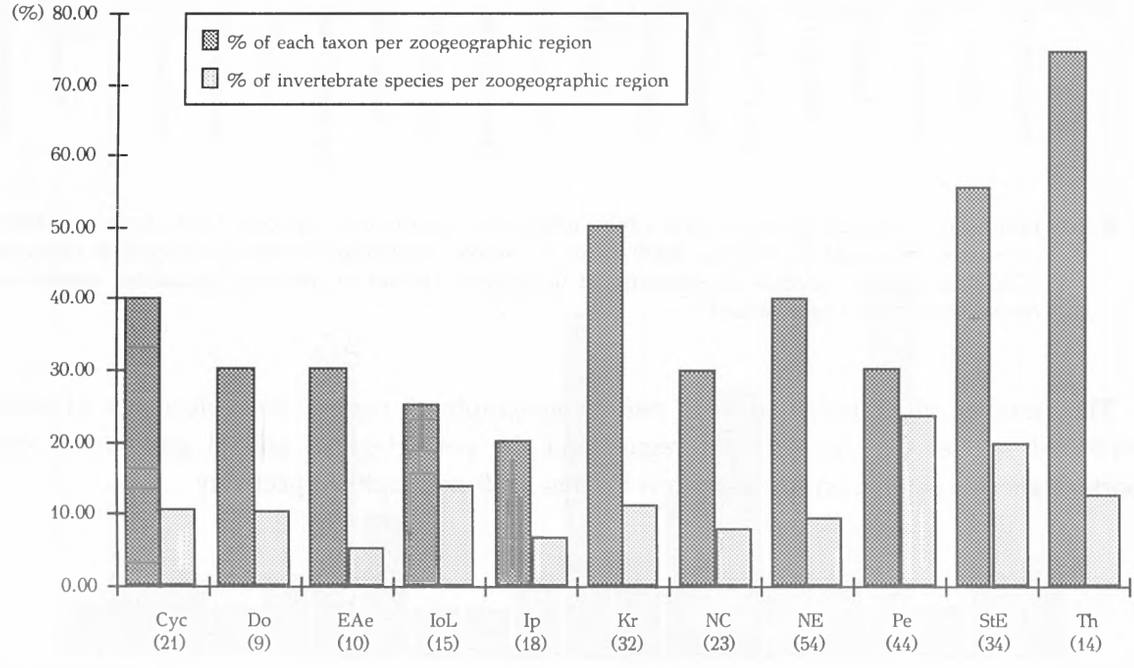
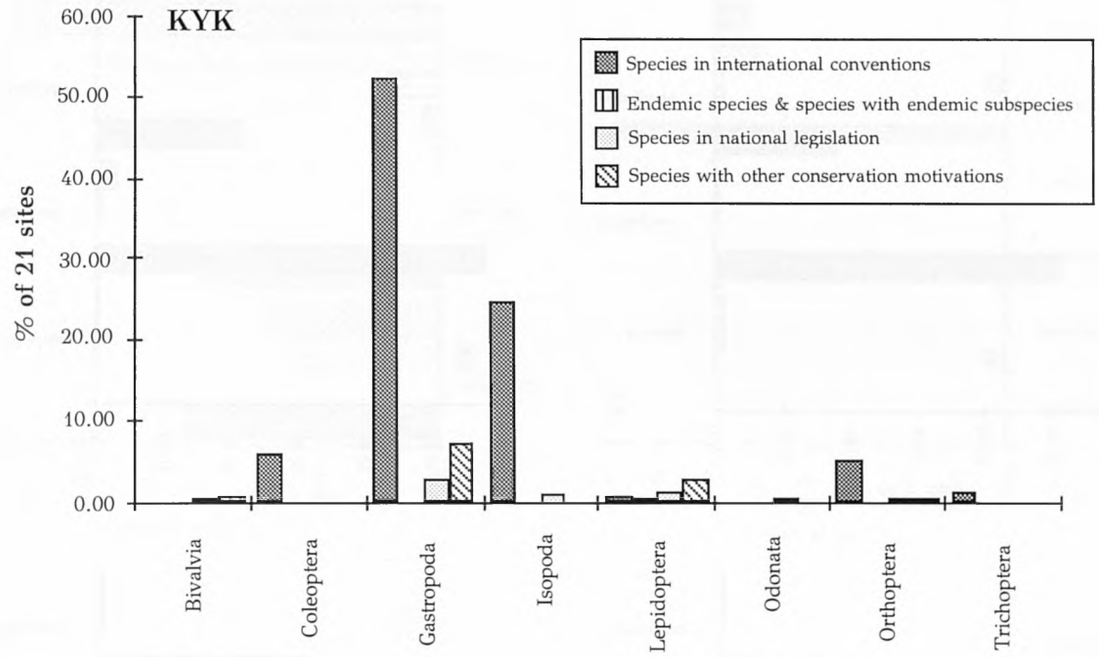
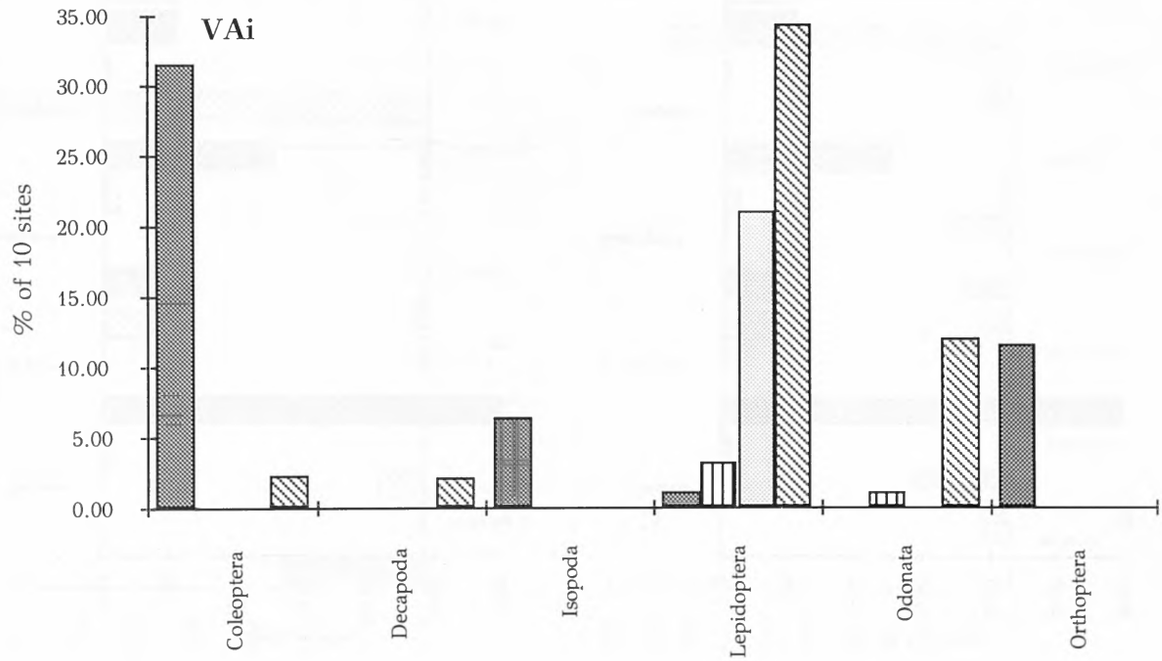
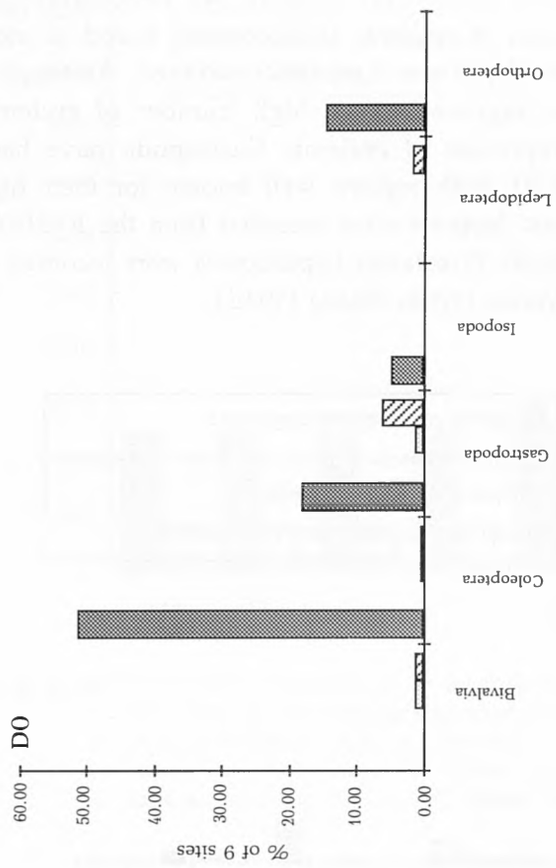


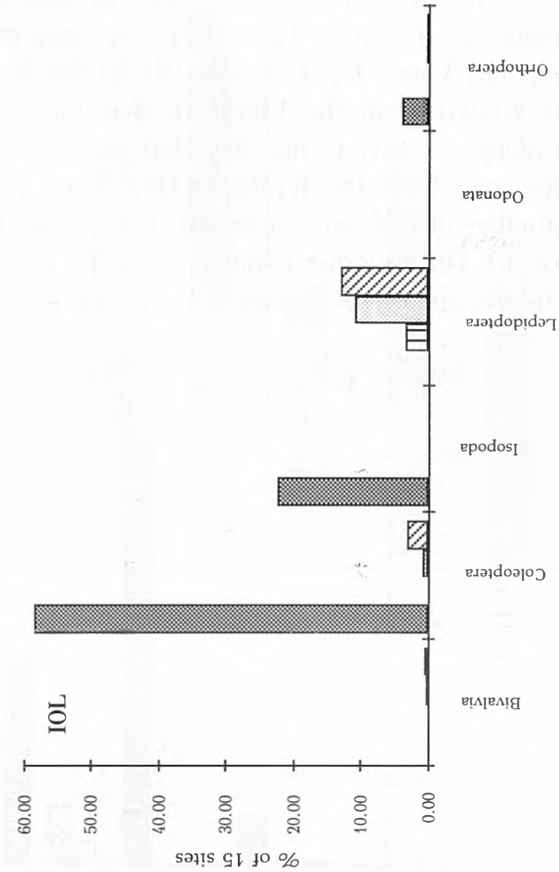
Fig. E.30. Frequency of occurrence of other important invertebrate groups and species according to the zoogeographical regions. The number of the "Natura 2000" sites included in each zoogeographical region is indicated in brackets.

The frequency of occurrence of each group by motivation category per zoogeographical region is shown in figure E.31. A large proportion of endemic Coleoptera is found in most regions, Voreia Dytiki Ellada (VDE), the Kyklades (Kyk) and Kriti (KR) excepted. Although it is known from the literature that the last two regions have a high number of endemic Coleoptera this is not depicted here. Large proportion of endemic Gastropoda have been recorded from the Kyklades (Kyk) and Kriti (KR), both regions well known for their high number of endemic terrestrial snails. Most endemic Isopoda were recorded from the Kyklades (Kyk). On the other hand, most of the internationally threatened Lepidoptera were recorded in the Voreio Aigaio islands (VAi), in the whole of Voreia Dytiki Ellada (VDE).

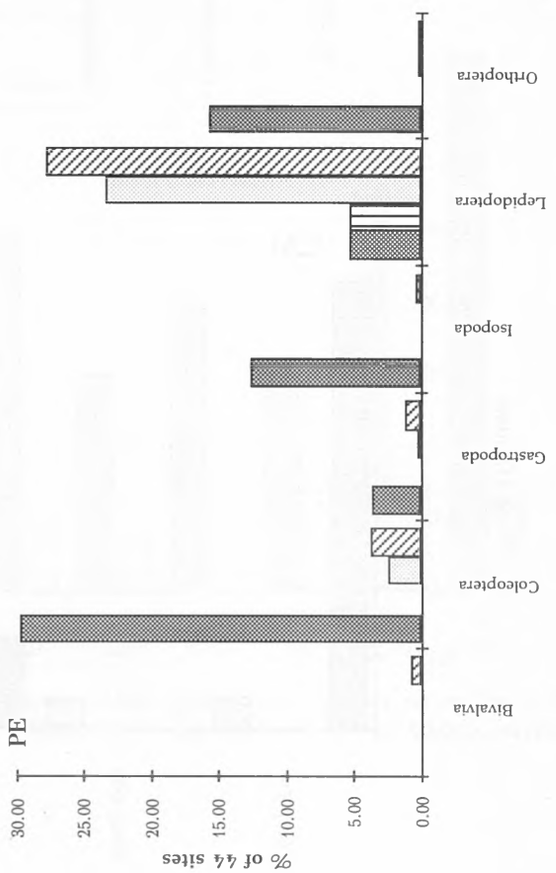


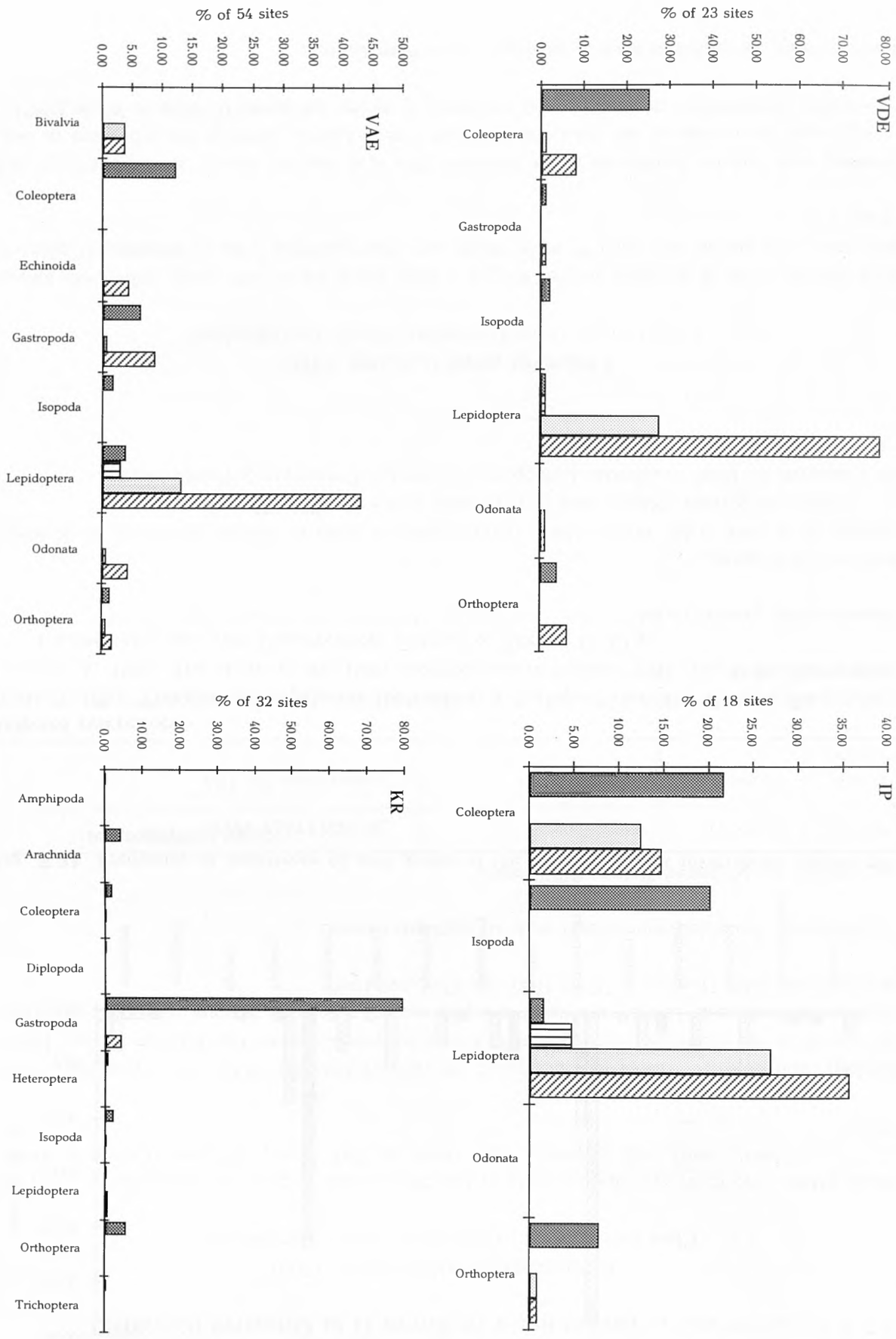



DO
Bivalvia
Coleoptera
Gastropoda
Isopoda
Lepidoptera
Orthoptera
0.00
10.00
20.00
30.00
40.00
50.00
60.00
% of 9 sites


IOL
Bivalvia
Coleoptera
Isopoda
Lepidoptera
Odonata
Orthoptera
0.00
10.00
20.00
30.00
40.00
50.00
60.00
% of 15 sites


PE
Bivalvia
Coleoptera
Gastropoda
Isopoda
Lepidoptera
Orthoptera
0.00
5.00
10.00
15.00
20.00
25.00
30.00
% of 44 sites


PE
Bivalvia
Coleoptera
Gastropoda
Isopoda
Lepidoptera
Orthoptera
0.00
5.00
10.00
15.00
20.00
25.00
30.00
% of 44 sites


% of 54 sites
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
40.00
45.00
50.00
VAE
Bivalvia
Coleoptera
Echinoida
Gastropoda
Isopoda
Lepidoptera
Odonata
Orthoptera
% of 23 sites
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
VDE
Coleoptera
Gastropoda
Isopoda
Lepidoptera
Odonata
Orthoptera
% of 32 sites
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
KR
Amphipoda
Arachnida
Coleoptera
Diplopoda
Gastropoda
Heteroptera
Isopoda
Lepidoptera
Orthoptera
Trichoptera
% of 18 sites
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
40.00
IP
Coleoptera
Isopoda
Lepidoptera
Odonata
Orthoptera

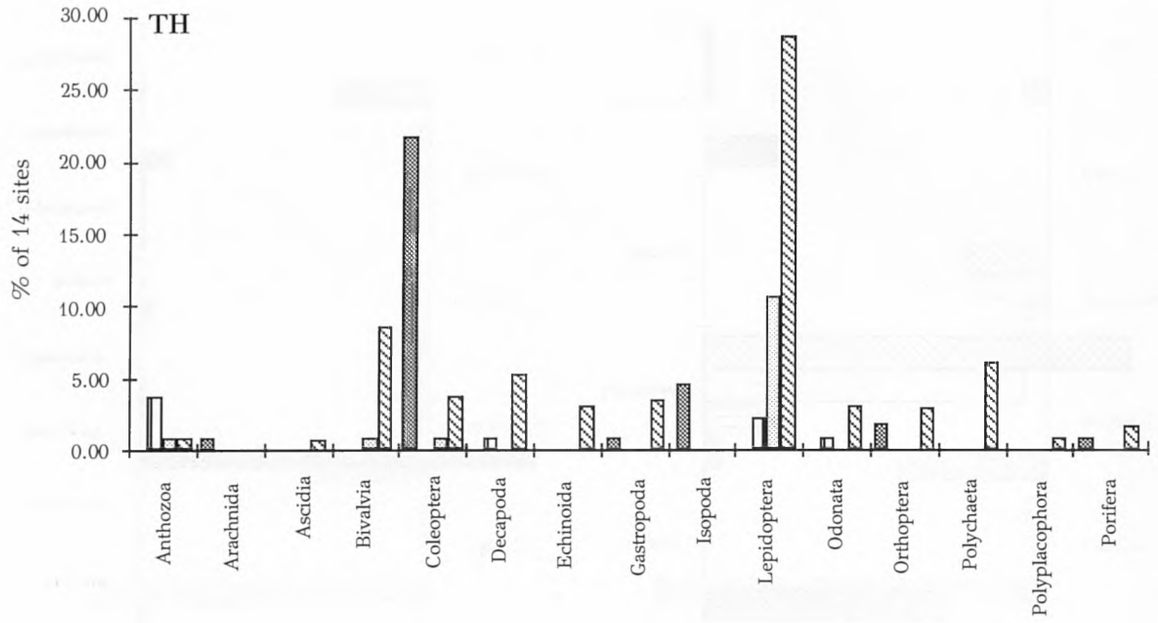


Fig. E.31. Frequency of occurrence of each group of the other important invertebrate species per zoogeographical region.

Selected references:

Heath, J. 1981. Threatened Rhopalocera (butterflies) in Europe. Council of Europe 158 p.

Legakis, A. 1989. The status of the Bern invertebrates in Greece. Coll. The Bern Convention Invertebrates and their Conservation. Council of Europe 17-19 p.

E.7.3. Invertebrates of Greece listed in Annex II to Directive 92/43/EEC

Osmoderma eremita (Scopoli, 1763)
Class Insecta, Order Coleoptera, Family Scarabaeidae

Description: The form, size and coloring of this beetle make it quite unmistakable. It is 24-30 mm long, heavily built with powerful legs, black or dark brown all over (Collins & Wells 1987).

Ecology and habits: Adults can be found on flowers between May and September. They usually fly in the evenings. Very localized. Adults supposedly smell like Russian leather, hence their scientific name. Larvae live in the wood mould of old deciduous trees. Development takes several years (Collins & Wells 1987, du Chatenet 1986).

Distribution: Recorded sporadically only in northern Greece.

Occurrence in proposed Natura 2000 sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Thessalia	GR1420001	Game Refuge 6%, IBA

Status and reasons for decline: *O. eremita* has suffered from the destruction or intensive management of ancient woodlands.

Conservation measures taken: It is protected by the Bern Convention (Appendix II).

Selected references:
Collins, N.M. and S.M. Wells. 1987. Invertebrates in need of special protection in Europe. Council of Europe, Nature and Environment Series No. 35. 162 p.
du Chatenet, G. 1986. Guide des Coleopteres d'Europe. Delachaux & Niestle. 480 p.

Cerambyx cerdo (Linnaeus, 1758)
Class Insecta, Order Coleoptera, Family Cerambycidae

Description: One of Europe's largest insects, adults being 24-53 mm long, with even longer antennae. The larvae can reach 8 cm in length and bear galleries 2 cm in diameter (Collins & Wells 1987).

Ecology and habits: Adults are active between May and August, mainly in the evenings and at night on the trunks of old oaks (rarely other trees). Larvae develop for 3-5 years in oak, where they penetrate to the heart-wood rendering it useless as timber (Collins & Wells 1987).

Distribution: Recorded in several localities of northern Greece.

Occurrence in proposed Natura 2000 sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Kentriki Makedonia	GR1220007	IBA, Ramsar 12%
	Thessalia	GR1410001 GR1420003	Controlled hunting area 80 %, Aesthetic Forest 100%, IBA

Selected references:

Collins, N.M. and S.M. Wells. 1987. Invertebrates in need of special protection in Europe. Council of Europe, Nature and Environment Series No. 35. 162 p.

Morimus funereus Mulsant, 1863

Class Insecta, Order Coleoptera, Family Cerambycidae

Description: A handsome species, robustly built, 20-38 mm long, grey-black with black spots on the elytra (Collins & Wells 1987).

Ecology and habits: Larvae feed on dead wood of a number of tree species including *Populus, Fagus, Quercus, Castanea* and occasionally *Abies* sp. Flightless adults found in May and June on tree stumps, trunks and old wood (Collins & Wells 1987).

Distribution: Recorded in several localities of northern Greece.

Occurrence in proposed Natura 2000 sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Kentriki Makedonia	GR1260001	Game refuge 1%, Ramsar 100%, IBA, SPA
		GR1210001	Game refuge 43%, Game breeding station 5%
		GR1220007	IBA, Ramsar 12%
	Dytiki Makedonia	GR1340001	Game refuge 18%, Core strict of National Park 25%, Perih. zone 75%, IBA, Ramsar 25% Biogenetic reserve 1%
	Thessalia	GR1420003	Controlled hunting area 80%, Aesthetic Forest 100%, IBA
		GR1420001	Game refuge 6%, IBA

Selected references:

Collins, N.M. and S.M. Wells. 1987. Invertebrates in need of special protection in Europe. Council of Europe, Nature and Environment Series No. 35. 162 p.

Rosalia alpina (L., 1758)

Class Insecta, Order Coleoptera, Family Cerambycidae

Description: A very attractive beetle with a distinctive light blue pubescence over a large part of its body and very long antennae (Collins & Wells 1987).

Ecology and habits: From June to September the beetles can be seen in the daytime on standing or felled beech trees, sometimes on flowers. Larvae develop in the wood of diseased beeches, but occasionally also in other deciduous trees such as maples (Collins & Wells 1987).

Distribution: Recorded from several localities in northern and central Greece.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Kentriki Makedonia	GR1210001	Game refuge 43%, Game breeding 5%
	Thessalia	GR1420003	Controlled hunting area 80%, Aesthetic Forest 100%, IBA
		GR1420001	Game refuge 6%, IBA

Selected references:

Collins, N.M. and S.M. Wells. 1987. Invertebrates in need of special protection in Europe. Council of Europe, Nature and Environment Series No. 35. 162 p.

Lucanus cervus (Linnaeus, 1758)

Class Insecta, Order Coleoptera, Family Lucanidae

Description: The male has characteristic huge mandibles which are used to fight rival males in the breeding season. Coloration black with brown mandibles, anterior margin of the head and elytra. Female similar, sometimes almost black. Size variable, 25-85 mm (Chinery 1986, du Chatenet 1986).

Ecology and habits: Found on trunks and branches in broad-leaved forests and parks with ancient trees from mid April till September. The adults fly well, usually in the evening feeding on sap oozing from trees. Larvae develop in cavities of dead wood of *Quercus, Fagus, Salix, Populus, Tilia, Aesculus* and fruit trees. Development lasts 4 or 5 years. (Koomen & van Helsdingen 1993, Chinery 1986, du Chatenet 1986).

Distribution: Recorded from many localities in northern, central and southern mainland Greece.

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1130009	Game refuge 21%, IBA, Ramsar, SPA
		GR1140001	Natural monument 55%, Game refuge 100%, IBA, SPA, Biogenetic reserve 55%
	Kentriki Makedonia	GR1260001	Game refuge 1%, Ramsar, IBA, SPA
		GR1270005	Game refuge 64%
		GR1270002	IBA
	Dytiki Makedonia	GR1340001	Core strict of National Park 25%, Game Refuge 18%, IBA, Periph. zone 75%, SPA, Ramsar, Biogenetic reserve 1%
	Thessalia	GR1420001	Game refuge 6%, IBA
		GR1430001	Game refuge 20%, IBA
		GR1410001	
Kentrki Ellada	Sterea Ellada	GR2450005	Aesthetic Forest 1%, Core strict of National Park 20%, Game refuge 58%, IBA, SPA 20%
		GR2420001	IBA
	Peloponnisos	GR2550006	Game refuge 3%, IBA
		GR2550002	
		GR2550001	

Selected references:

Chinery, M. 1986. Collins guide to the insects of Britain and western Europe. Collins. 320 p.
du Chatenet, G. 1986. Guide des Coleopteres d'Europe. Delachaux & Niestle. 480 p.
Koomen, P. and P.J. van Helsdingen. 1996. Listing of biotopes in Europe according to their significance for invertebrates. Council of Europe, Nature and Environment No 77, 74 p.

Callimorpha quadripunctaria (Poda, 1761)

Class Insecta, Order Lepidoptera, Family Arctiidae

Synonyms:

Euplagia quadripunctaria (Poda, 1761)
Panaxia quadripunctaria (Poda, 1761)
Callimorpha hera L., 1767

Infra-specific taxa:

Callimorpha quadripunctaria rhodosensis (Daniel, 1953)
Callimorpha quadripunctaria fulgida Oberthur, 1896

Description: The adult is brightly colored with striped black and cream white forewings and bright red to orange hindwings with black spots. The larva is black with a broad yellow stripe on the back and pale spots on the sides. (Chinery 1986).

Ecology and habits: Mainly in evergreen riparian forests and maquis. Found in narrow valleys with streams bordered by mountains or hills with steep sides and fully covered with trees and shrubs. All habitats are characterized by lower temperature and higher humidity compared to the conditions outside the valleys. During summer, the insects migrate to the most humid and cool valleys of the area where they aestivate. They disperse again in autumn to their original valleys for oviposition. During summer, the insects are found at high densities (up to 50-100 ind./sq.m.) on the trunks, branches and leaves of the trees and on humid rocks, migrating during the night towards higher positions on the canopy.

Oviposition occurs in the autumn, probably from late September till well into November at various suitable sites. The development of the eggs lasts from 8 to 15 days. The larval stage lasts 6 months. The pupal stage lasts about 1 month. The adults emerge around May and migrate until June to the most humid and cool site of the region where they aestivate without feeding. During September, they mate and then disperse to oviposit and then die.

The larvae feed on a variety of plants: Rosaceae, *Platanus orientalis, Vitis, Morus, Robinia, Castanea, Pisum sativum* and many others.

There are no significant predators of the adults due to the presence of repellent chemicals. There are no data on larval predation and mortality.

Distribution: In Greece the species has been recorded everywhere on the mainland and in all the island groups: Ionian, Aegean and Crete. On several sites there are no post-1950 records because of under-exploration. The subspecies *C. quadripunctaria rhodosensis* has been recorded only from the island of Rodos (Dodecanese islands Greece).

Occurrence in proposed "Natura 2000" sites:

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
Voreia Ellada	Anatoliki Makedonia, Thraki	GR1110004	
		GR1150003	Game refuge 20%
	Kentriki Makedonia	GR1240003	Game refuge 13%
Kentriki Ellada	Peloponnisos	GR2320003	Game refuge 27%, IBA
		GR2540001	Game refuge 13%, IBA
		GR2320008	Game refuge 5%, Game breeding station 1%
		GR2520001	Game refuge 2%
		GR2540003	IBA
		GR2520002	IBA
		GR2530003	
		GR2540004	IBA
		GR2510003	
		GR2550006	Game refuge 3%, IBA
	Ionia Nisia	GR2230002	Game refuge 5%
		GR2230003	
		GR2230001	
Nisia Aigaiou, Kriti	Voreio Aigaio	GR4120002	Game refuge 27%
		GR4120003	IBA
		GR4120004	IBA

NUTS I	NUTS II	SITE CODE	DESIGNATION TYPE
		GR4130001	Game refuge 8%
	Notio Aigaio	GR4220011	Game refuge 24%
		GR4220014	Game refuge 2%, IBA
		GR4220016	
		GR4220001	
		GR4210008	Game refuge 20%, IBA
		GR4210007	Game refuge 17%
		GR4210006	

Selected references:

Chinery, M. 1986. Collins guide to the insects of Britain and western Europe. Harper Collins Publ., 320 p.

Legakis, A. 1996. *Callimorpha quadripunctaria*. In: van Helsdingen P.J., L. Willemse and M.C.D. Speight (eds.). Background information on Invertebrates of the Habitat Directive and the Bern Convention Part I: Crustacea, Coleoptera and Lepidoptera. Council of Europe, Nature and Environment, No 79. 90-92 p.

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APPENDICES

APPENDIX 1: NATURA 2000, STANDARD DATA FORM

APPENDIX 2: NOMENCLATURE OF STATISTICAL TERRITORIAL UNITS (NUTS)

APPENDIX 3: IMPACTS AND ACTIVITIES

APPENDIX 4: DISTRIBUTION MAPS OF THE HABITAT TYPES AND FLORA AND FAUNA SPECIES IN THE PROPOSED NATURA 2000 SITES

APPENDIX 5: LIST OF "OTHER IMPORTANT PLANT SPECIES"

APPENDIX 6: LIST OF "OTHER IMPORTANT ANIMAL SPECIES"

APPENDIX 1
NATURA 2000, STANDARD DATA FORM

NATURA 2000
STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)

FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)

AND

FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. SITE IDENTIFICATION

1.1 TYPE

1.2 SITECODE GR0000000

1.3 COMPILATION DATE YYYYMM

1.4 UPDATE YYYYMM

1.5 RELATION WITH OTHER NATURA 2000 SITES:

NATURA 2000 SITE CODES

OTHER TYPE	OTHER SITE

1.6 RESPONDENT(S):

1.7 SITE NAME:

1.8 SITE INDICATION AND DESIGNATION/CLASSIFICATION DATES

DATE SITE PROPOSED AS ELIGIBLE AS SCI: YYYYMM

DATE CONFIRMED AS SCI: YYYYMM

DATE SITE CLASSIFIED AS SPA: YYYYMM

DATE SITE DESIGNATED AS SAC (to be filled later): YYYYMM

NATURA 2000 DATA FORM

1. SITE LOCATION

2.1 SITE CENTRE LOCATION

LONGITUDE E 0 0 0

LATITUDE 0 0 0

2.2 AREA (ha):

2.3 SITE LENGTH (Km)

2.4 ALTITUDE (m):

MIN

MAX

MEAN

2.5 ADMINISTRATIVE REGION:

NUTS CODE	REGION NAME	% COVER

2.6 BIOGEOGRAPHIC REGION:

ALPINE	ATLANTIC	BOREAL	CONTINENTAL	MACARONESIA	MEDITERRANEAN
☐	☐	☐	☐	☐	☒

3. ECOLOGICAL INFORMATION

SITE CODE GR0000000

3.1 HABITAT types present on the site and site asseement for them:

ANNEX I HABITAT TYPES:

CODE	P	DESCRIPTION	% COVER	REPRESENTATIVITY	RELATIVE SURFACE	CONSERVATION STATUS	CLOBAL ASSESSMENT

NATURA 2000 DATA FORM

3.2.a. BIRDS listed on Annex I of Council directive 79/409/EEC

SITE CODE GR0000000

CODE	NAME	POPULATION				SITE ASSESSMENT			
		RESIDENT	MIGRATORY			POPULATION	CONSERVATION	ISOLATION	GLOBAL
			BREEDING	WINTERING	STATING				

NATURA 2000 DATA FORM

3.2.b. Regularly occuring MIGRATORY BIRDS not listed on Annex I of Council directive 79/409/EEC

SITE CODE GR0000000

CODE	NAME	POPULATION				SITE ASSESSMENT			
		RESIDENT	MIGRATORY			POPULATION	CONSERVATION	ISOLATION	GLOBAL
			BREEDING	WINTERING	STATING				

NATURA 2000 DATA FORM

3.2.c. MAMMALS listed on Annex II of Council directive 92/43/EEC

SITE CODE GR0000000

CODE	NAME	ANNEX II	POPULATION				SITE ASSESSMENT			
			RESIDENT	MIGRATORY			POPULATION	CONSERVATION	ISOLATION	GLOBAL
				REPRODUC	WINTER	STAGE				

NATURA 2000 DATA FORM

3.2.d. AMPHIBIANS and REPTILES listed on Annex II of Council directive 92/43/EEC

SITE CODE GR0000000

CODE	NAME	ANNEX II	POPULATION				SITE ASSESSMENT			
			RESIDENT	MIGRATORY			POPULATION	CONSERVATION	ISOLATION	GLOBAL
				REPRODUC	WINTER	STAGE				

NATURA 2000 DATA FORM

3.2.e. FISHES listed on Annex II of Council directive 92/43/EEC

SITE CODE GR0000000

CODE	NAME	ANNEX II	POPULATION				SITE ASSESSMENT			
			RESIDENT	MIGRATORY			POPULATION	CONSERVATION	ISOLATION	GLOBAL
				REPRODUC	WINTER	STAGE				

NATURA 2000 DATA FORM

3.2.f. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC

SITE CODE GR0000000

CODE	NAME	ANNEX II	POPULATION				SITE ASSESSMENT			
			RESIDENT	MIGRATORY			POPULATION	CONSERVATION	ISOLATION	GLOBAL
				REPRODUC	WINTER	STAGE				

NATURA 2000 DATA FORM

3.2.g. PLANTS listed on Annex II of Council directive 92/43/EEC

SITE CODE GR0000000

CODE	NAME	POPULATION	SITE ASSESSMENT			
			POPULATION	CONSERVATION	ISOLATION	GLOBAL

3.3 Other Important Species of Flora and Fauna

SITE CODE GR0000000

GROUP	CODE	SCIENTIFIC NAME	POPULATION	MOTIVATION

3.4 Greek Important Species of Flora and Fauna

SITE CODE GR0000000

GROUP	CODE	SPECNAME	SYNONYMS	POPULATION	MOTIV.	2nd MOTIV.

4. SITE DESCRIPTION

SITE CODE GR0000000

4.1 GENERAL SITE CHARACTER:

Habitat classes

HAB_CODE	DESCRIPTION	% COVER
TOTAL HABITAT COVER		100

Other site characteristics:

4.2 QUALITY AND IMPORTANCE:

4.3 VULNERABILITY:

4.4 SITE DESIGNATION: (remarks concerning quantitative data below)

4.5 OWNERSHIP:

4.6 DOCUMENTATION:

4.7 HISTORY:

to be filled in by the Commission

5. SITE PROTECTION STATUS AND RELATION WITH CORINE Biotopes.

SITE CODE GR0000000

5.1 DESIGNATION TYPES at National and Regional level:

CODE	DESCRIPTION	% COVER

5.2 RELATION OF THE DESCRIBED SITE WITH OTHER SITES:

designated at National or Regional level:

CODE	DESCRIPTION	SITE NAME	OVERLAP TYPE	% COVER

designated at the International level:

CODE	DESCRIPTION	NAME of the Site	OVERLAP TYPE	% COVER

5.3 RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPES SITES:

CORINE SITE CODE	OVERLAP TYPE	% COVER

6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

6.1 GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE AREA OF THE SITE AFFECTED

IMPACTS AND ACTIVITIES WITHIN the site:

CODE	DESCRIPTION	INTENSITY	% OF SITE	INFLUENCE

IMPACTS AND ACTIVITIES AROUND the site:

CODE	DESCRIPTION	INTENSITY	% OF SITE	INFLUENCE

6.2 SITE MANAGEMENT

BODY RESPONSIBLE FOR THE SITE MANAGEMENT:

SITE MANAGEMENT AND PLANS:

7. MAP OF THE SITE

Physical map

NATIONAL MAP NUMBER	SCALE	PROJECTION

REFERENCE TO AVAILABILITY OF BOUNDARIES IN DIGITISED FORM

Map of designated sites described in 5:

Provide this information on a map with the same characteristics as above!

Aerial photograph(s) included:

8. SLIDES

APPENDIX 2

NOMENCLATURE OF STATISTICAL TERRITORIAL UNITS (NUTS)

Codes of the Administrative Regions of Greece, according to the Nomenclature of Territorial Units for Statictics (NUTS)

GR1	VOREIA ELLADA	GR11	ANATOLIKI MAKEDONIA THRAKI	GR111 GR112 GR113 GR114 GR115	Evros Xanthi Rodopi Drama Kavala
		GR12	KENTRIKI MAKEDONIA	GR121 GR122 GR123 GR124 GR125 GR126 GR127	Imathia Thessaloniki Kilkis Pella Pieria Serres Chalkidiki
		GR13	DYTIKI MAKEDONIA	GR131 GR132 GR133 GR134	Grevena Kastoria Kozani Florina
		GR14	THESSALIA	GR141 GR142 GR143 GR144	Karditsa Larisa Magnisia Trikala
GR2	KENTRIKI ELLADA	GR21	IPEIROS	GR211 GR212 GR213 GR214	Arta Thesprotia Ioannina Preveza
		GR22	IONIA NISIA	GR221 GR222 GR223 GR224	Zakynthos Kefallinia Kerkyra Lefkada
		GR23	DYTIKI ELLADA	GR231 GR232 GR233	Aitoloakarnania Achaia Ileia
		GR24	STEREA ELLADA	GR241 GR242 GR243 GR244 GR245	Voiotia Evvoia Evrytania Fthiotida Fokida
		GR25	PELOPONNISOS	GR251 GR252 GR253 GR254 GR255	Argolida Arkadia Korinthia Lakonia Messinia
GR3	ATTIKI				
GR4	NISIA AIGAIOU, KRITI	GR41	VOREIO AIGAIO	GR411 GR412 GR413	Lesvos Samos Chios
		GR42	NOTIO AIGAIO	GR421 GR422	Dodekanisos Kyklades
		GR43	KRITI	GR431 GR432 GR433 GR434	Irakleio Lasithi Rethymni Chania

APPENDIX 3
IMPACTS AND ACTIVITIES

Impacts and activities that may have an influence on the conservation and management of the sites

CODE	IMPACT / ACTIVITIES
100	Cultivation
101	Modification of cultivation practices
102	Mowing / cutting
110	Use of pesticides
120	Fertilisation
130	Irrigation
140	Grazing
141	Abandonment of pastoral systems
150	Restructuring agricultural land holding
151	Removal of hedges and copses
160	General Forestry management
161	Forest planting
162	Artificial planting
163	Forest replanting
164	Forestry clearance
165	Removal of forest undergrowth
166	Removal of dead and dying trees
167	Forest exploitation without replanting
170	Animal breeding
171	Stock feeding
180	Burning
190	Agriculture and forestry activities not referred to above
200	Fish and Shellfish Aquaculture
210	Professional fishing
211	Fixed location fishing
212	Trawling
213	Drift-net fishing
220	Leisure fishing
221	Bait digging
230	Hunting
240	Taking / Removal of fauna, general
241	Collection (insects, reptiles, amphibians.....)
242	Taking from nest (falcons)
243	Trapping, poisoning, poaching
244	Other forms of taking fauna
250	Taking / Removal of flora, general
251	Pillaging of floristic stations
290	Hunting, fishing or collecting activities not referred to above
300	Sand and gravel extraction
301	Quarries
302	Removal of beach materials
310	Peat extraction
311	Hand cutting of peat
312	Mechanical removal of peat
320	Exploration and extraction of oil or gas
330	Mines
331	Open cast mining
340	Salt works
390	Mining and extraction activities not referred to above

CODE	IMPACT / ACTIVITIES
400	Urbanised areas, human habitation
401	Continuous urbanisation
402	Discontinuous urbanisation
403	Dispersed habitation
409	Other patterns of habitation
410	Industrial or commercial areas
411	Factory
412	Industrial stockage
419	Other industrial / commercial areas
420	Discharges
421	Disposal of household waste
422	Disposal of industrial waste
423	Disposal of inert materials
424	Other discharges
430	Agricultural structures
440	Storage of materials
490	Other urbanisation, industrial and similar activities
500	Communication networks
501	Paths, tracks, cycling tracks
502	Roads, motorways
503	Railway lines, TGV
504	Port areas
505	Airport
506	Aerodrome, heliport
507	Bridge, viaduct
508	Tunnel
509	Other communication networks
510	Energy transport
511	Electricity lines
512	Pipe lines
513	Other forms of energy transport
520	Shipping
530	Improved access to site
590	Other forms of transportation and communication
600	Sport and leisure structures
601	Golf course
602	Skiing complex
603	Stadium
604	Circuit, track
605	Hippodrome
606	Attraction park
607	Sports pitch
608	Camping and caravans
609	Other sport / leisure complexes
610	Interpretative centres
620	Outdoor sports and leisure activities
621	Nautical sports
622	Walking, horseriding and non-motorised vehicles
623	Motorised vehicles
624	Mountaineering, rock climbing, speleology
625	Gliding, delta plane, paragliding, ballooning
626	Skiing, off-piste

CODE	IMPACT / ACTIVITIES
629	Other outdoor sports and leisure activities
690	Other leisure and tourism impacts not referred to above
700	Pollution
701	Water pollution
702	Air pollution
703	Soil pollution
709	Other forms or mixed forms of pollution
710	Noise nuisance
720	Trampling, overuse
730	Military manouvres
740	Vandalism
790	Other pollution or human impacts/activities
800	Landfill, land reclamation and drying out, general
801	Polderisation
802	Reclamation of land from sea, estuary or marsh
803	Infilling of ditches, dykes, ponds, pools, marshes or pits
810	Drainage
811	Management of aquatic and bank vegetation for drainage purposes
820	Removal of sediments (mud...)
830	Canalisation
840	Flooding
850	Modification of hydrographic functioning, general
851	Modification of marine currents
852	Modifying structures of inland water courses
853	Management of water levels
860	Dumping, depositing of dredged deposits
870	Dykes, embankments, artificial beaches, general
871	Sea defense or coast protection works
890	Other human induced changes in hydraulic conditions
900	Erosion
910	Silting up
920	Drying out
930	Submersion
940	Natural catastrophes
941	Inundation
942	Avalanche
943	Collapse of terrain, landslide
944	Storm, cyclone
945	Volcanic activity
946	Earthquake
947	Tidal wave
948	Fire (natural)
949	Other natural catastrophes
950	Biocenotic evolution
951	Drying out / accumulation of organic material
952	Eutrophication
953	Acidification
954	Invasion by a species
960	Interspecific faunal relations
961	Competition (example: gull/tern)
962	Parasitism
963	Introduction of disease

CODE	IMPACT / ACTIVITIES
964	Genetic pollution
965	Predation
966	Antagonism arising from introduction of species
967	Antagonism with domestic animals
969	Other forms or mixed forms of interspecific faunal competition
970	Interspecific floral relations
971	Competition
972	Parasitism
973	Introduction of disease
974	Genetic pollution
975	Lack of pollinating agents
976	Damage by game species
979	Other forms or mixed forms of interspecific floral competition
990	Other natural processes

APPENDIX 4

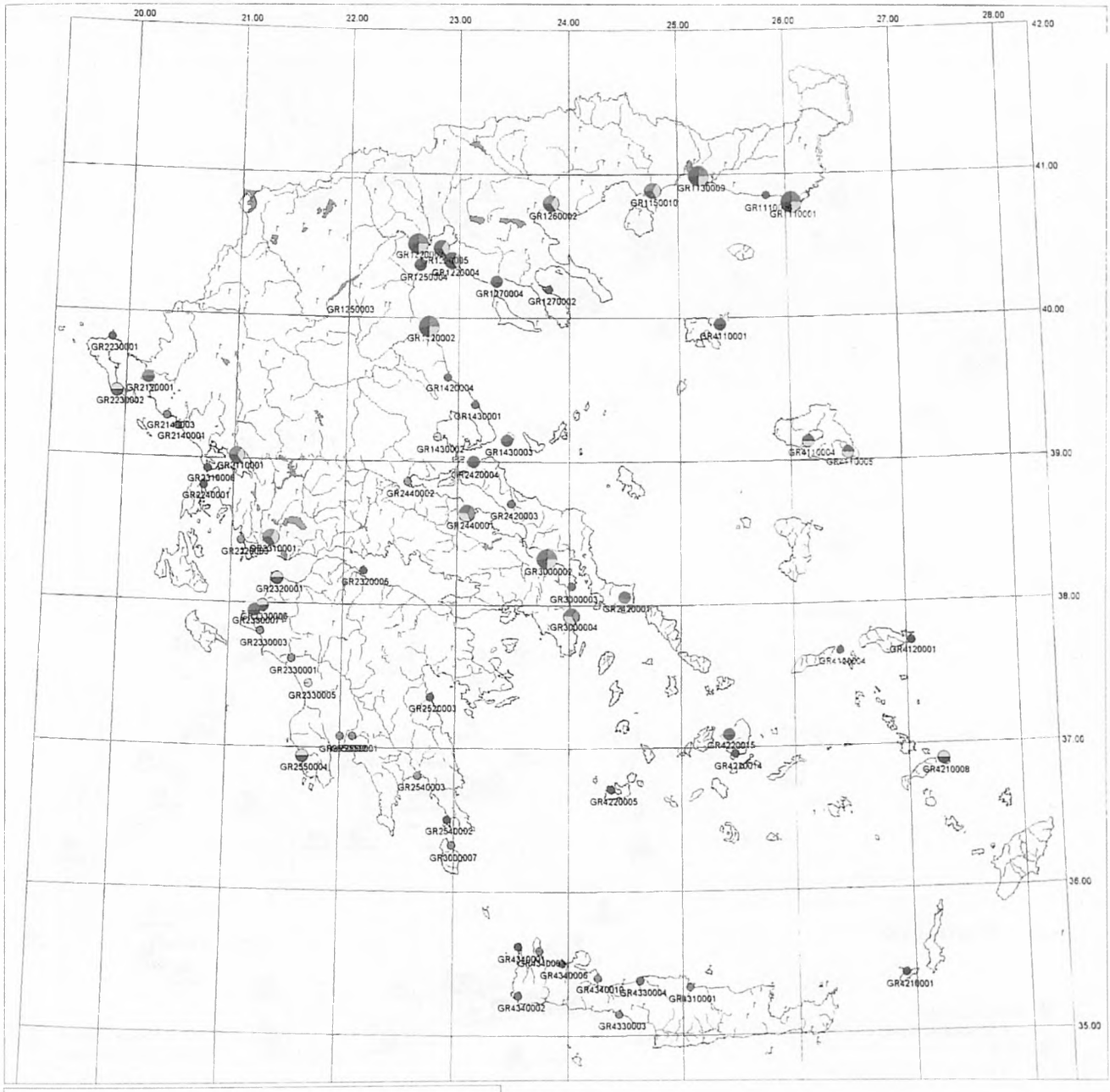
DISTRIBUTION MAPS OF THE HABITAT TYPES AND FLORA AND FAUNA SPECIES IN THE PROPOSED NATURA 2000 SITES

HABITAT TYPES

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL AND HALOPHYTIC HABITATS

Open sea and tidal areas



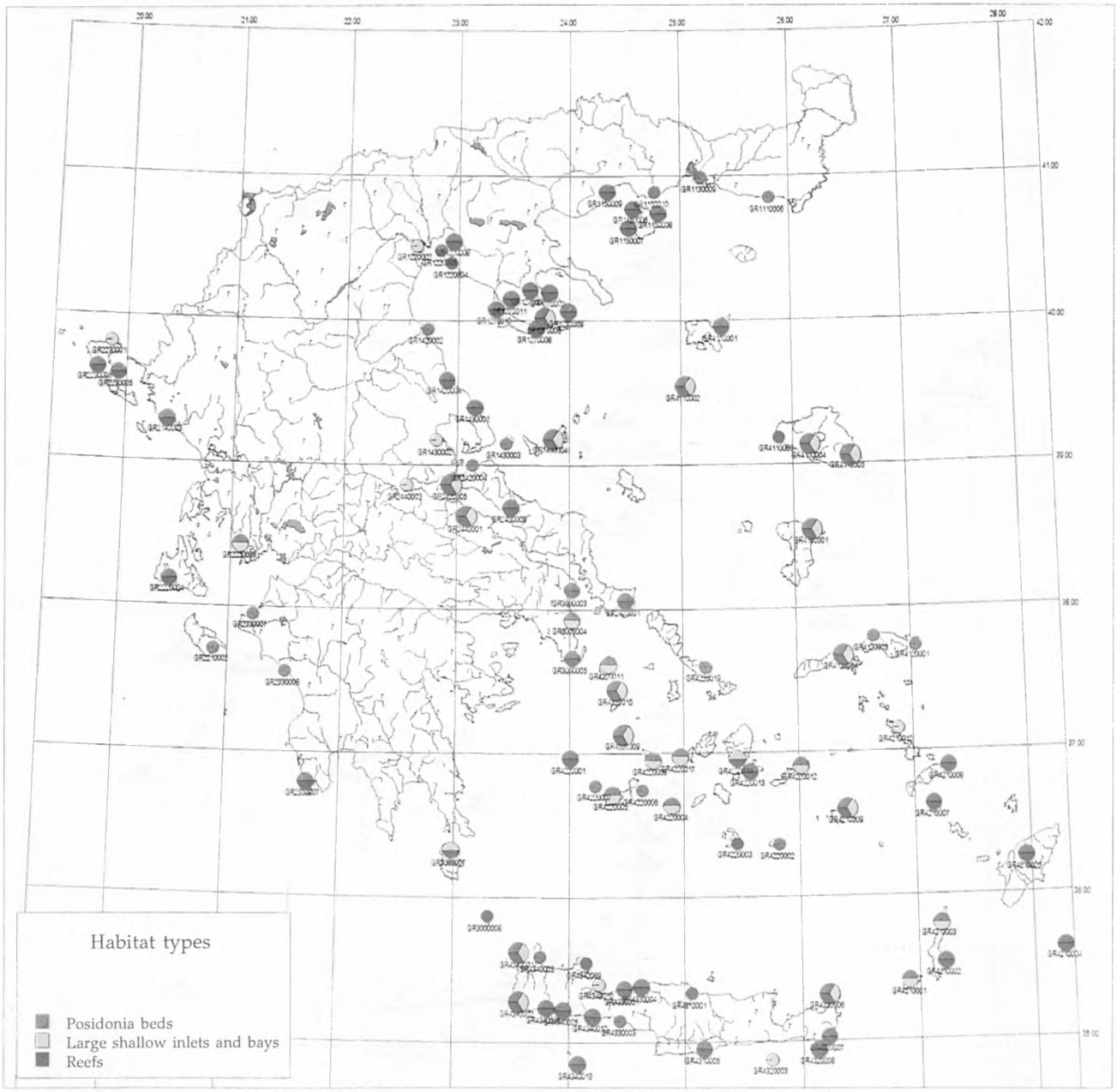
Habitat types

- Sandbanks slightly covered by sea water all the time
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Lagoons

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL AND HALOPHYTIC HABITATS

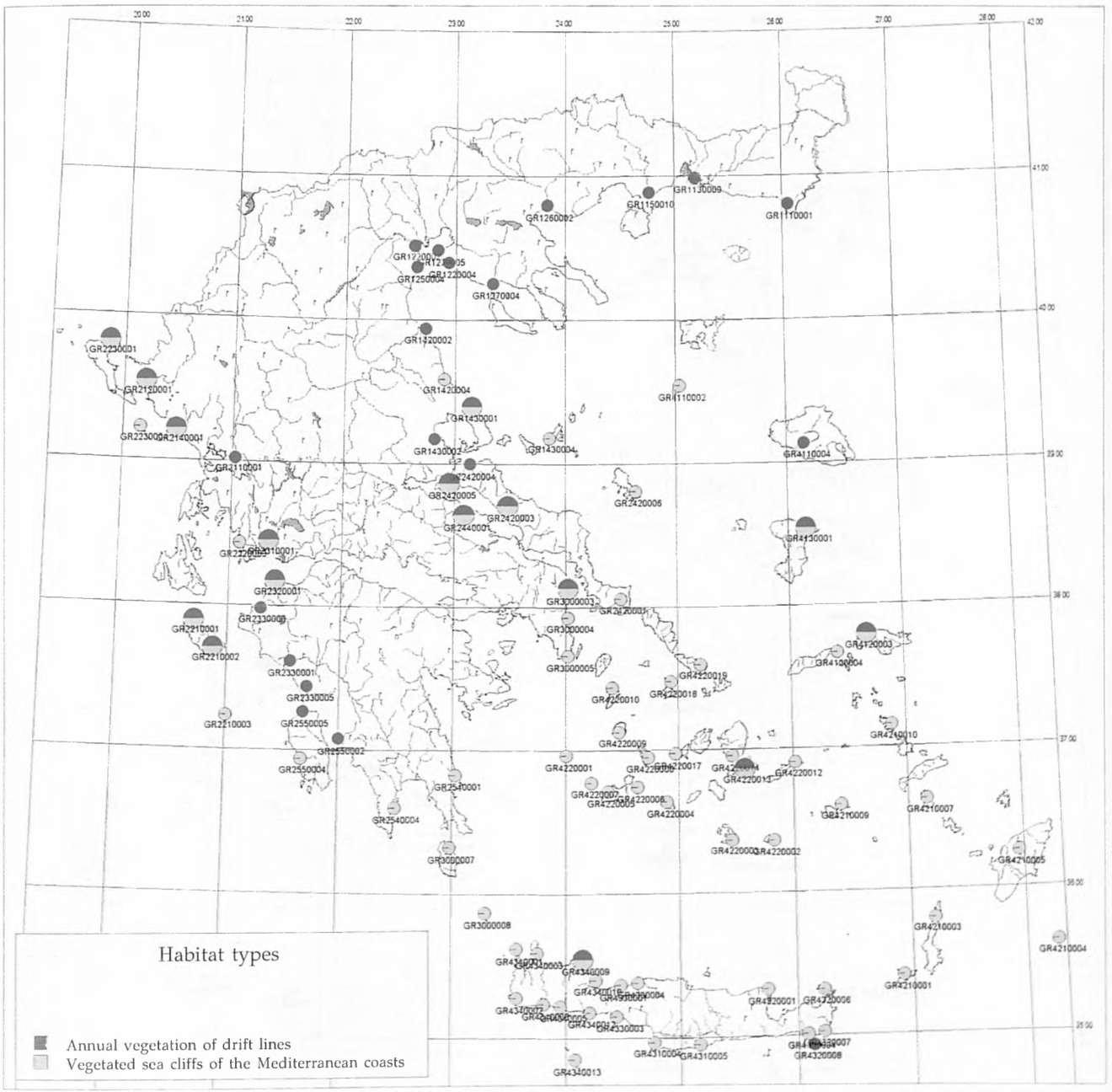
Open sea and tidal areas (cont.)



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL AND HALOPHYTIC HABITATS

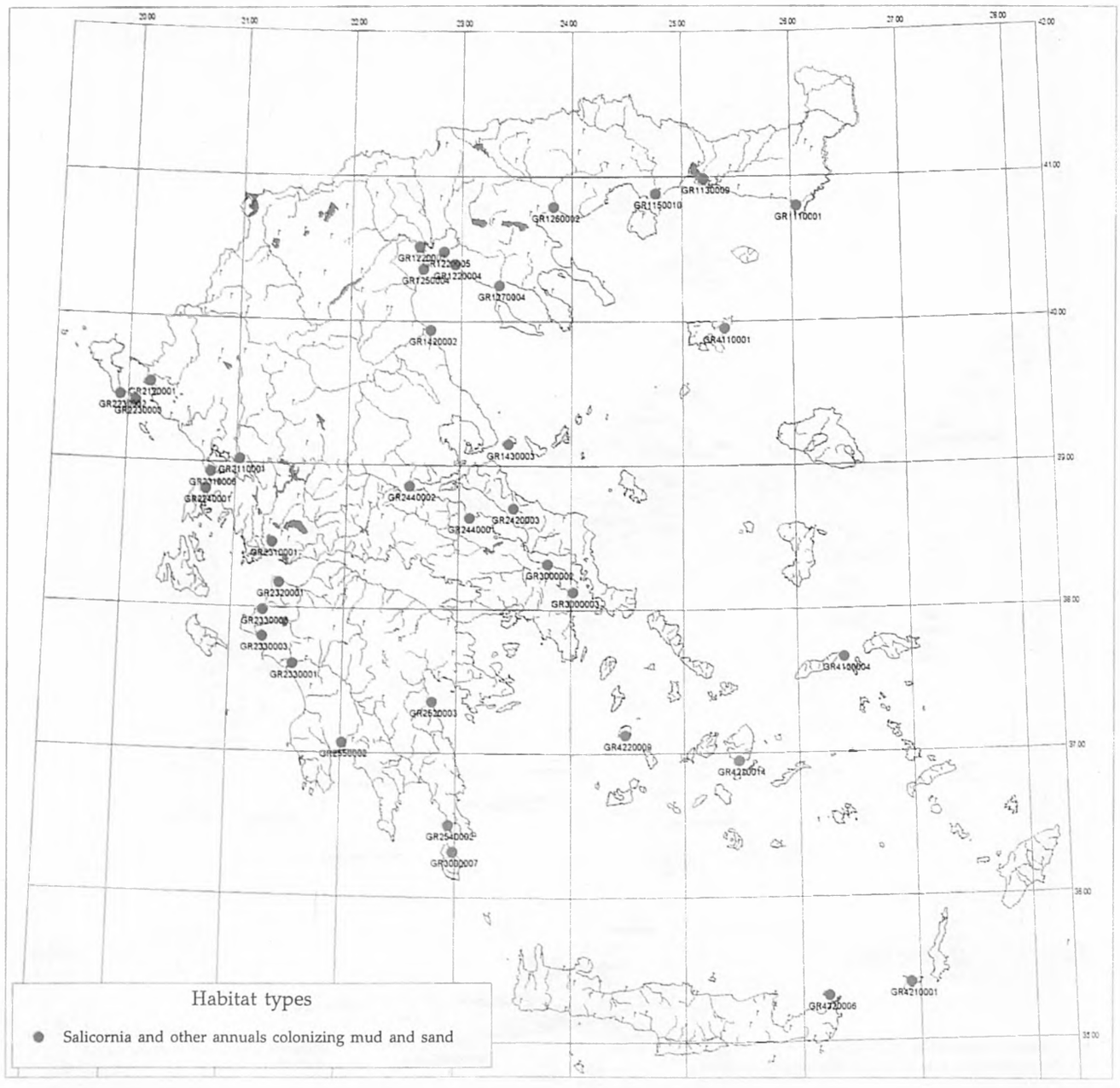
Sea cliffs and shingle or stony beaches



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL AND HALOPHYTIC HABITATS

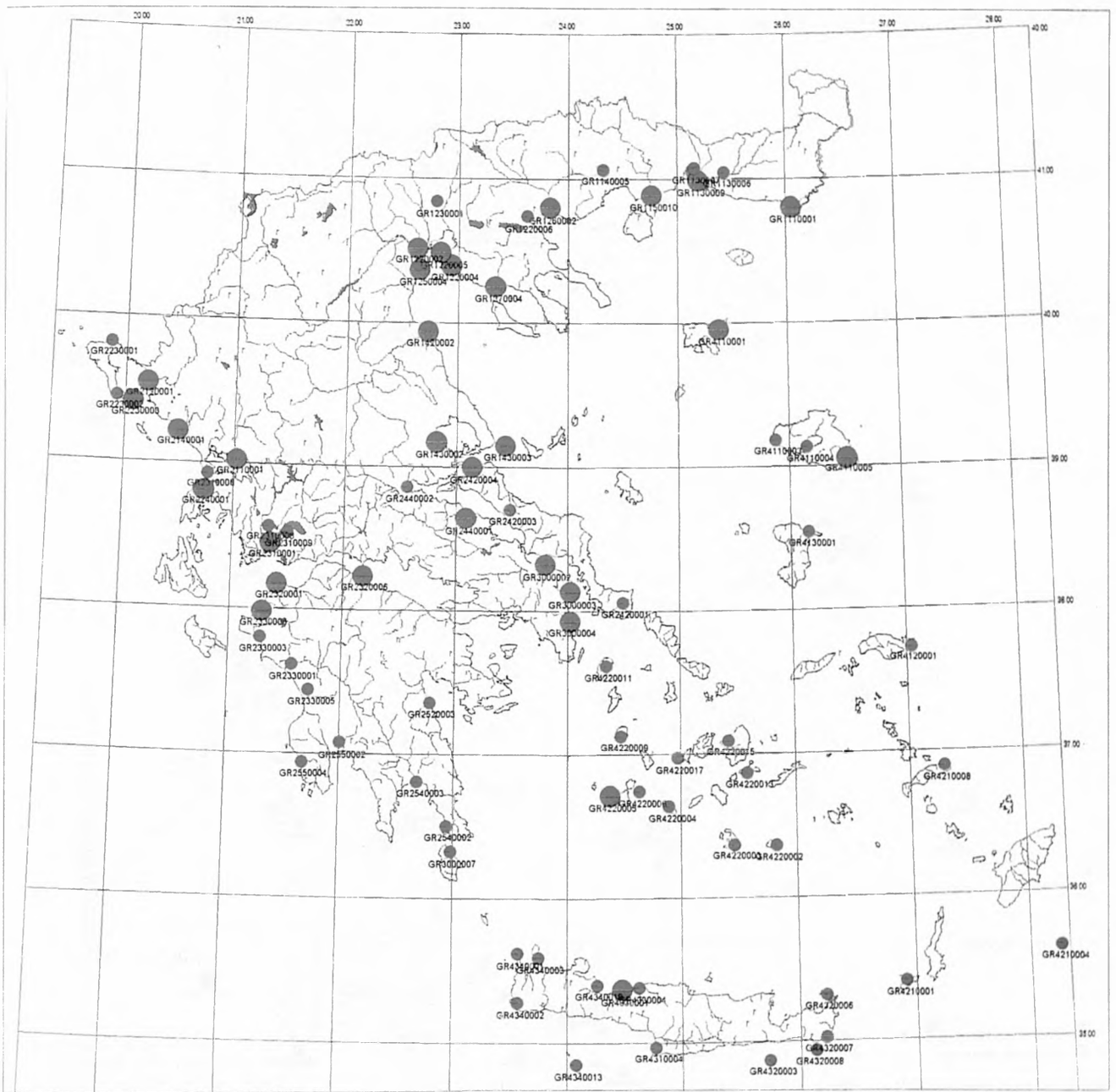
Atlantic and continental salt marshes and salt meadows



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL AND HALOPHYTIC HABITATS

Mediterranean and thermo-Atlantic salt marshes and salt meadows



Habitat types

- Mediterranean salt meadows
- Mediterranean and thermo-Atlantic halophilous scrubs

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL AND HALOPHYTIC HABITATS

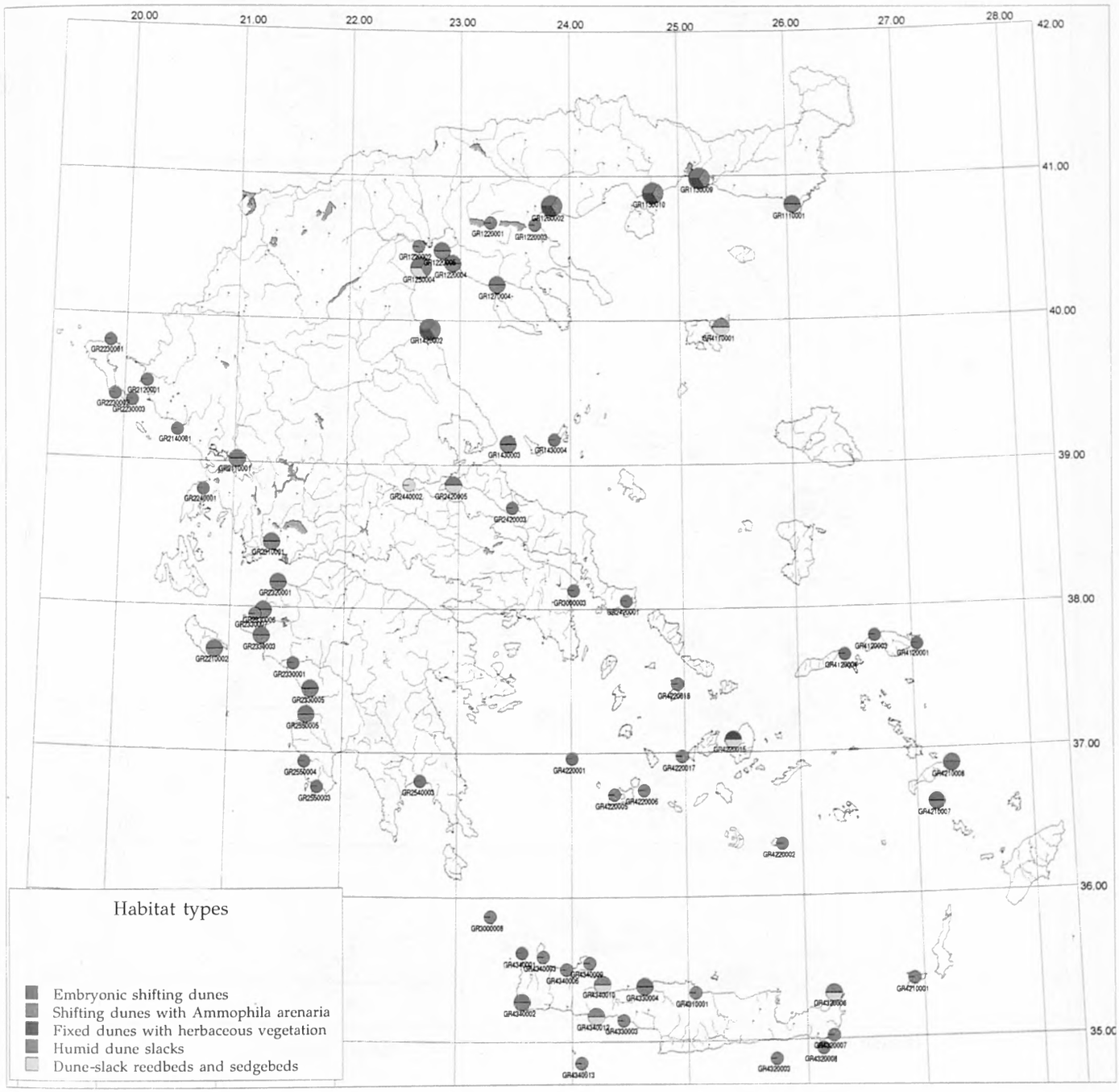
Salt and gypsum continental steppes



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL SAND DUNES AND CONTINENTAL DUNES

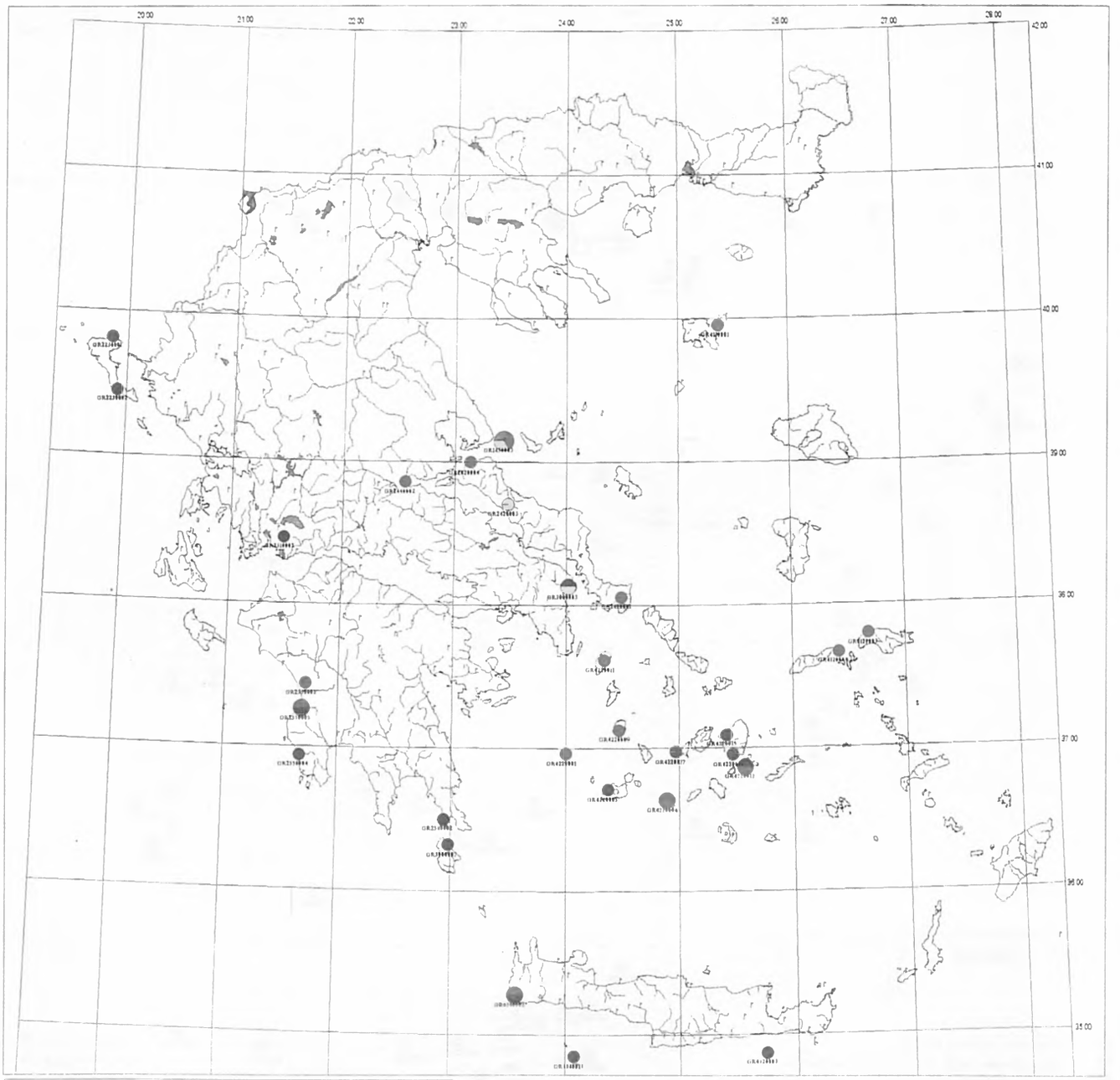
Sea dunes of the Atlantic, North Sea and Baltic coasts



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

COASTAL SAND DUNES AND CONTINENTAL DUNES

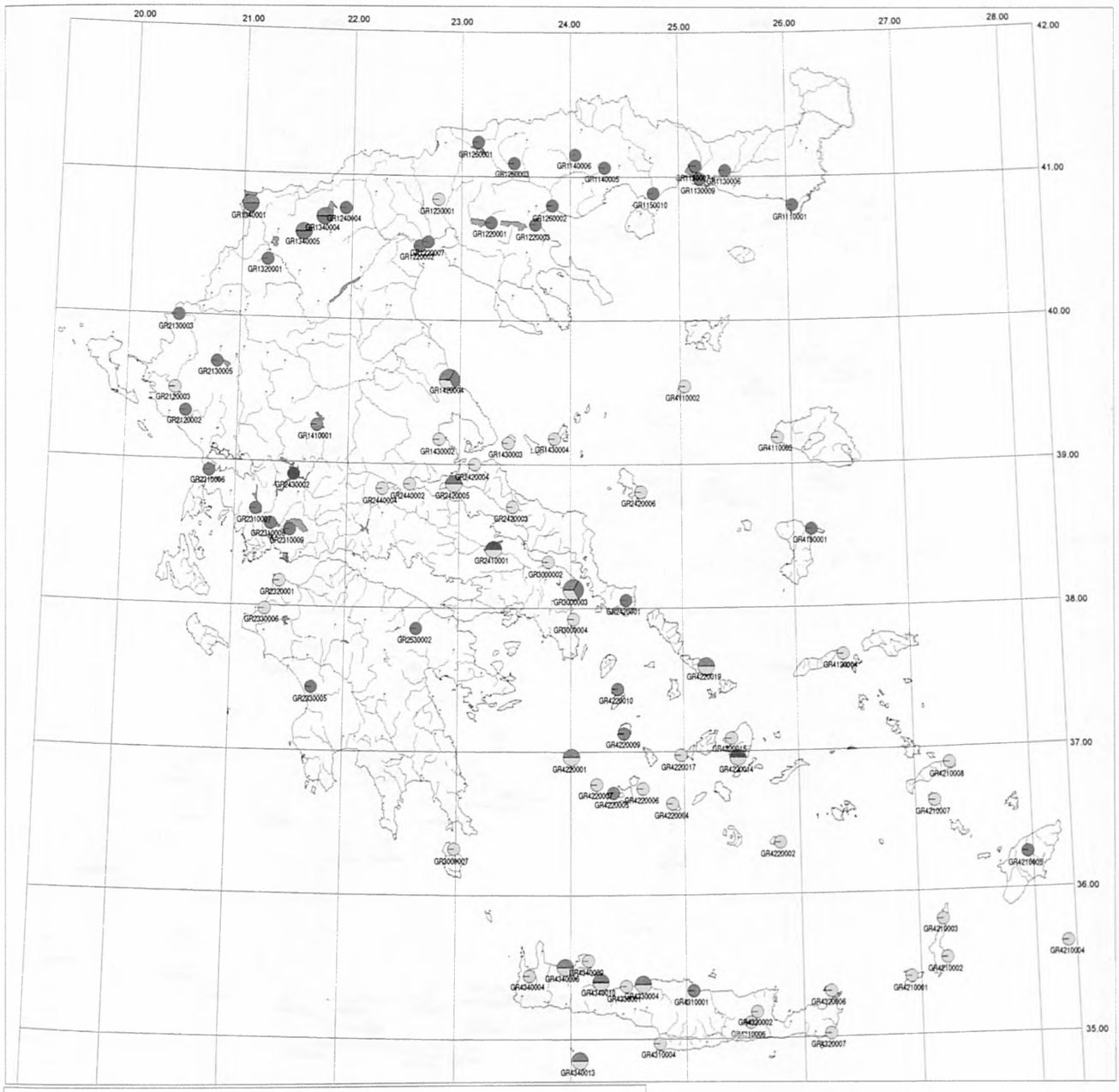
Sea dunes of the Mediterranean coasts



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FRESHWATER HABITATS

Standing water



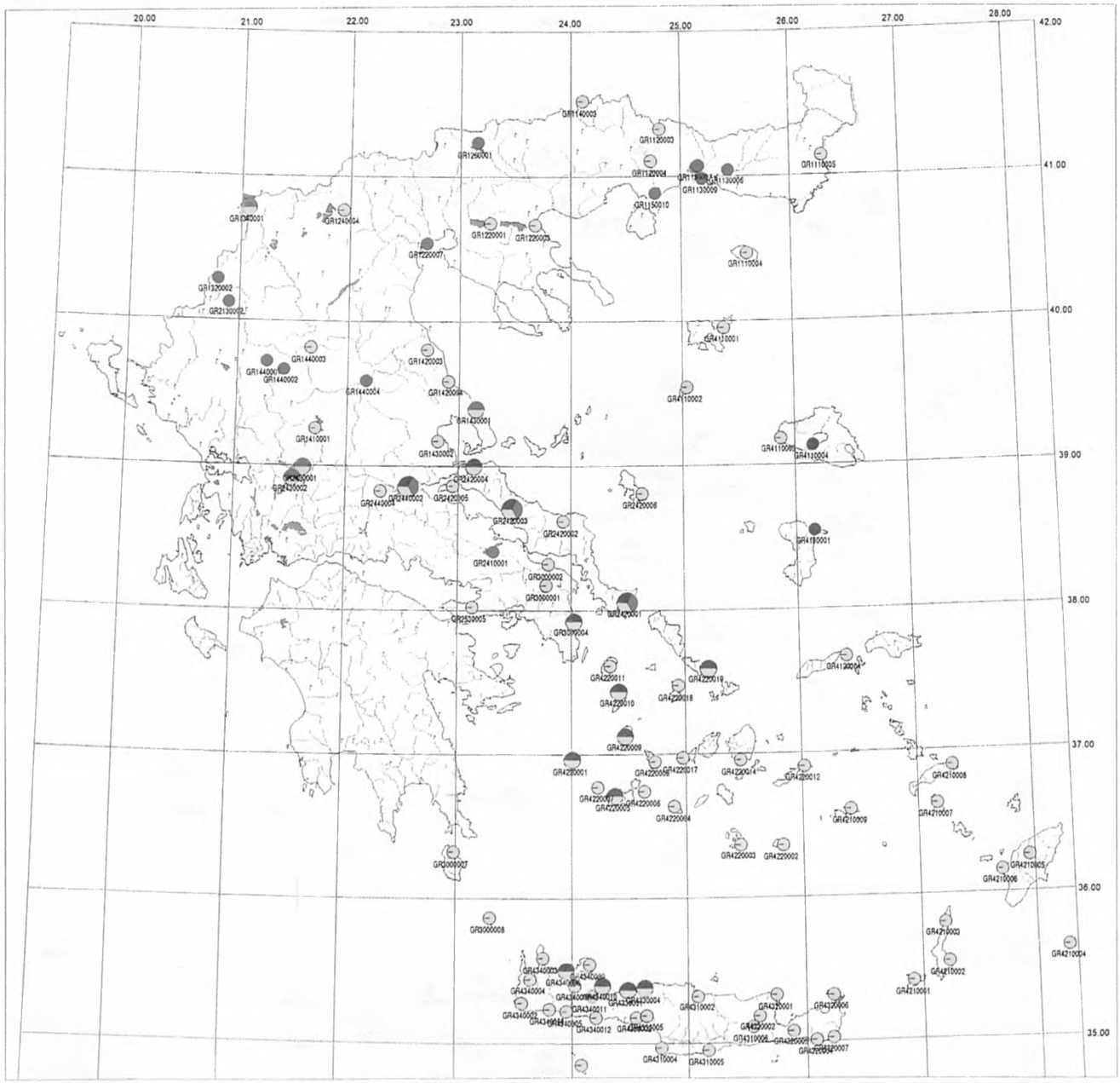
Habitat types

- Oligotrophic waters containing very few minerals of W. Mediterranean
- Hard oligo-mesotrophic waters with benthic vegetation of chara formations
- Natural eutrophic lakes with Magnopotamion or Hydrocharition- type vegetation
- Mediterranean temporary ponds

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

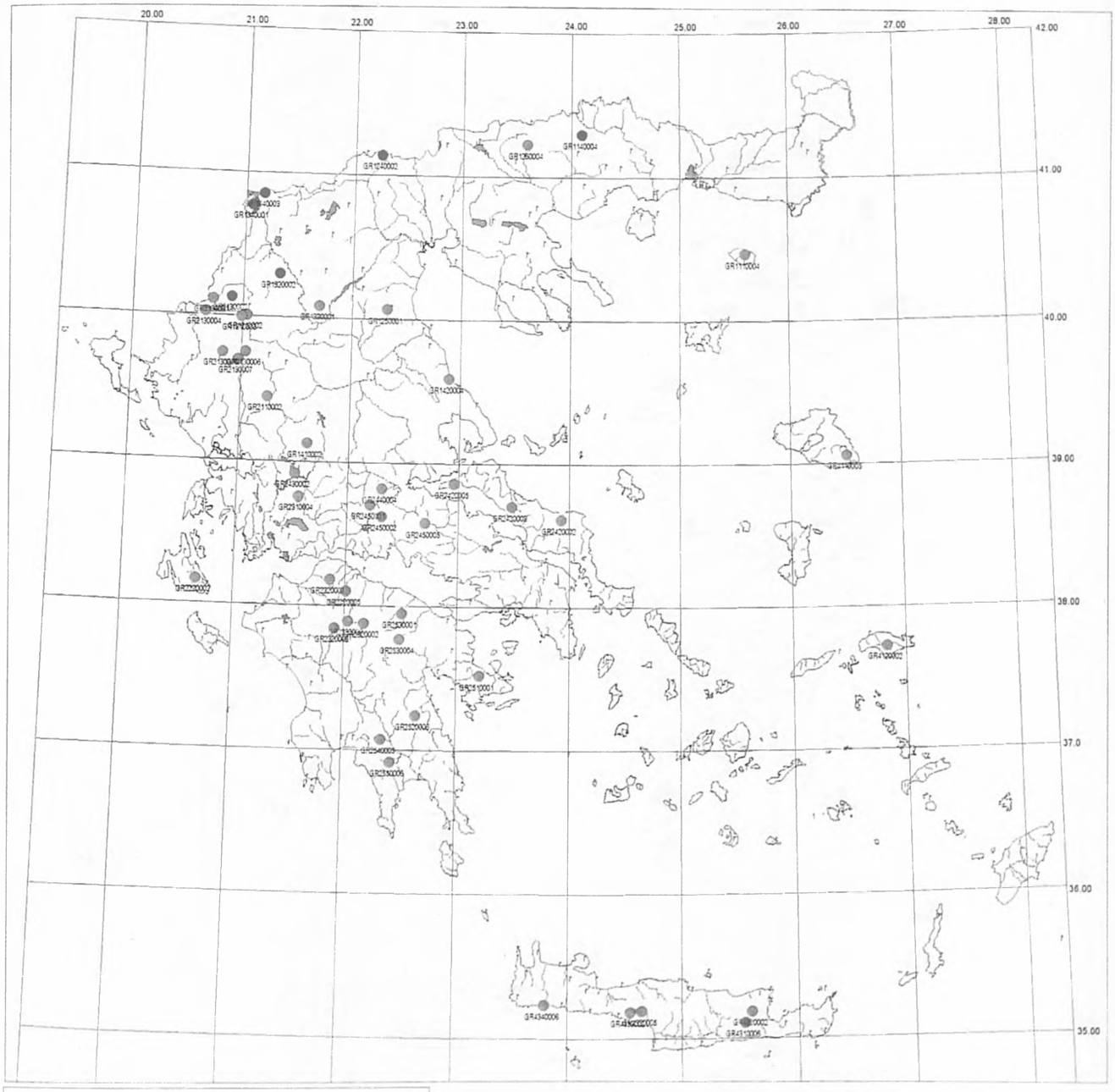
FRESHWATER HABITATS

Running water



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

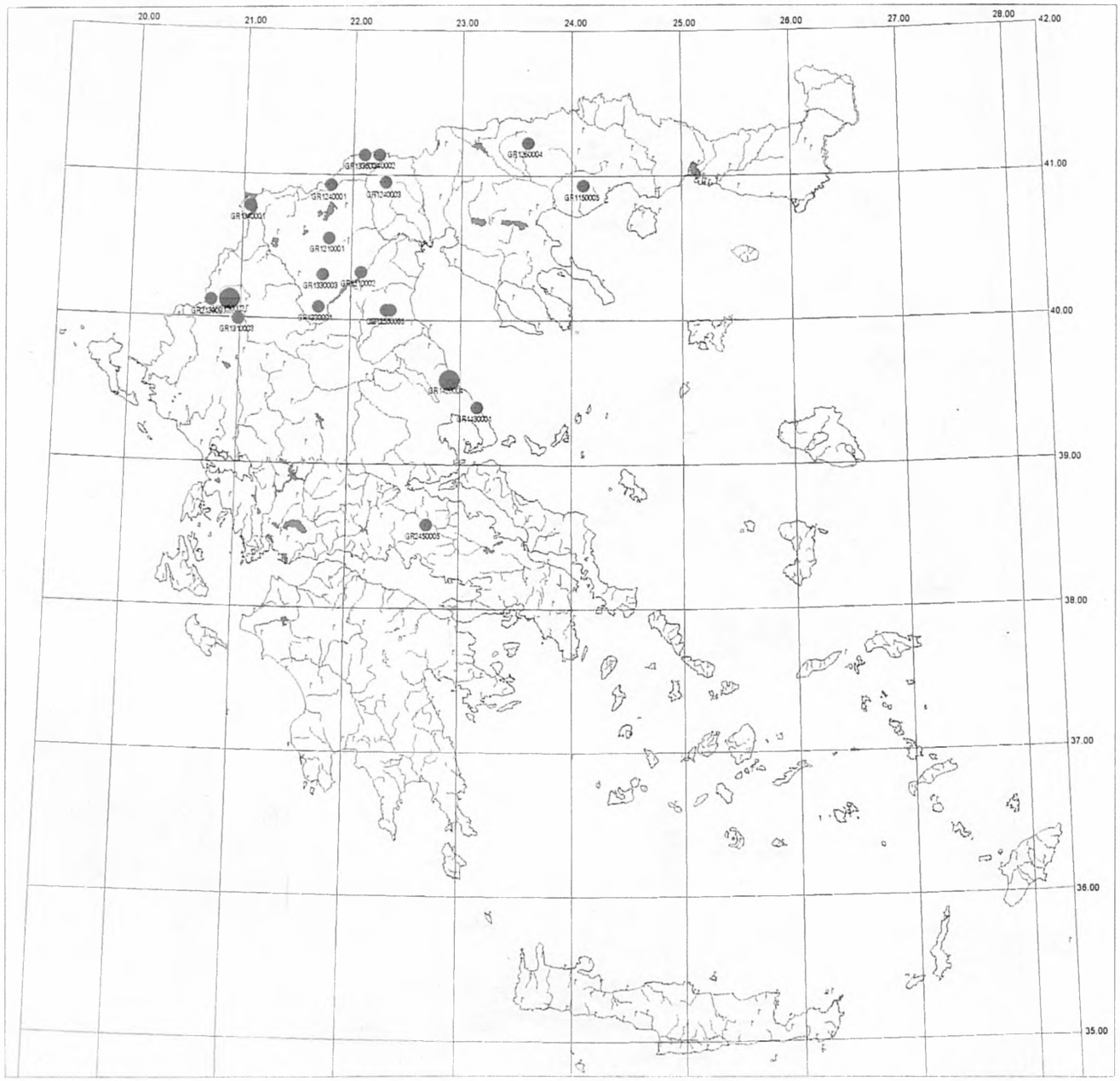
TEMPERATE HEATH AND SCRUB



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

SCLEROPHYLLOUS SCRUB (MATORRAL)

Sub-Mediterranean and temperate



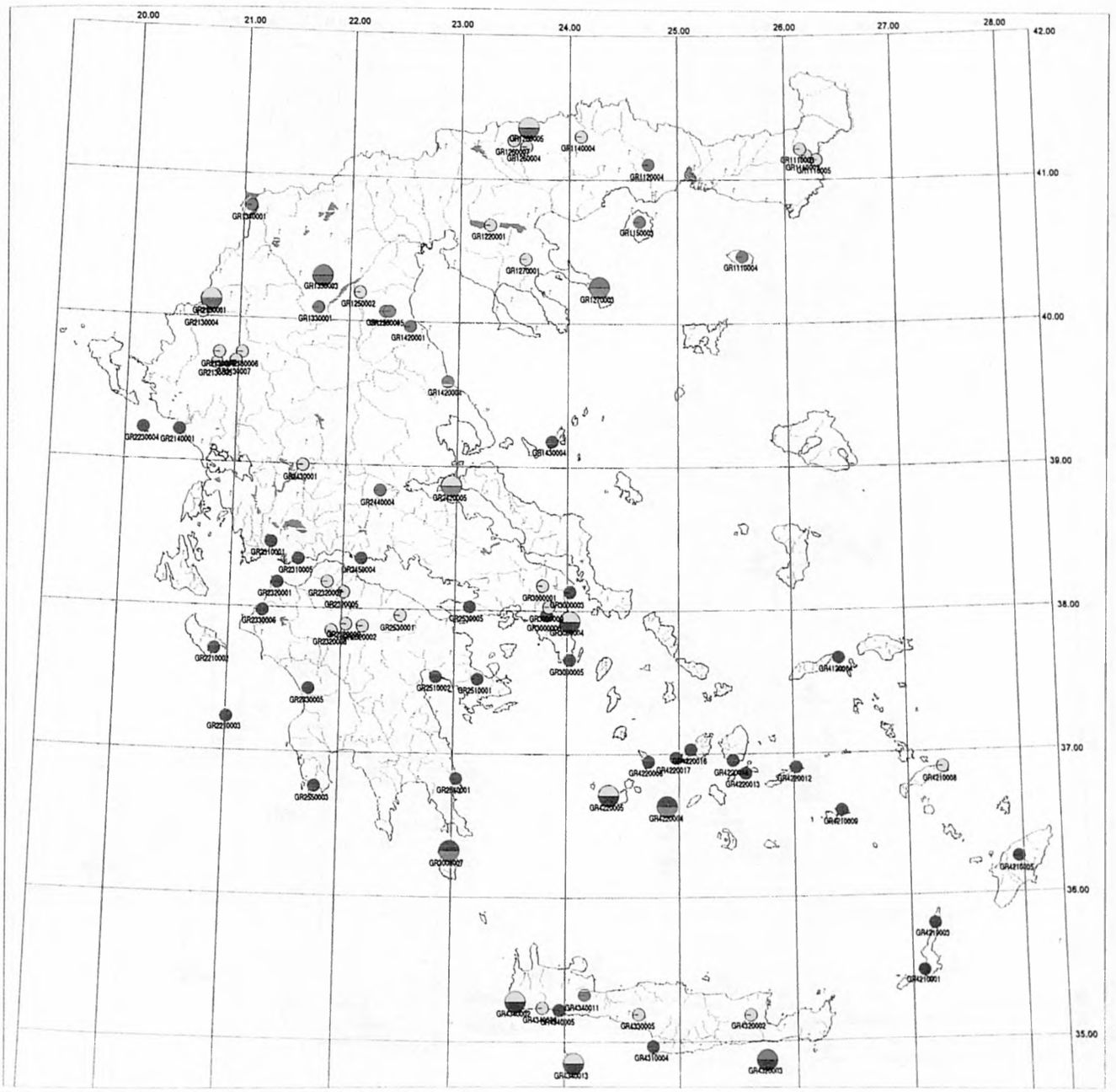
Habitat types

- Stable Buxus sempervirens formations on calcareous rock slopes
- Juniperus communis formations on calcareous heaths or grasslands

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

SCLEROPHYLLOUS SCRUB (MATORRAL)

Mediterranean arborescent matorral



Habitat types

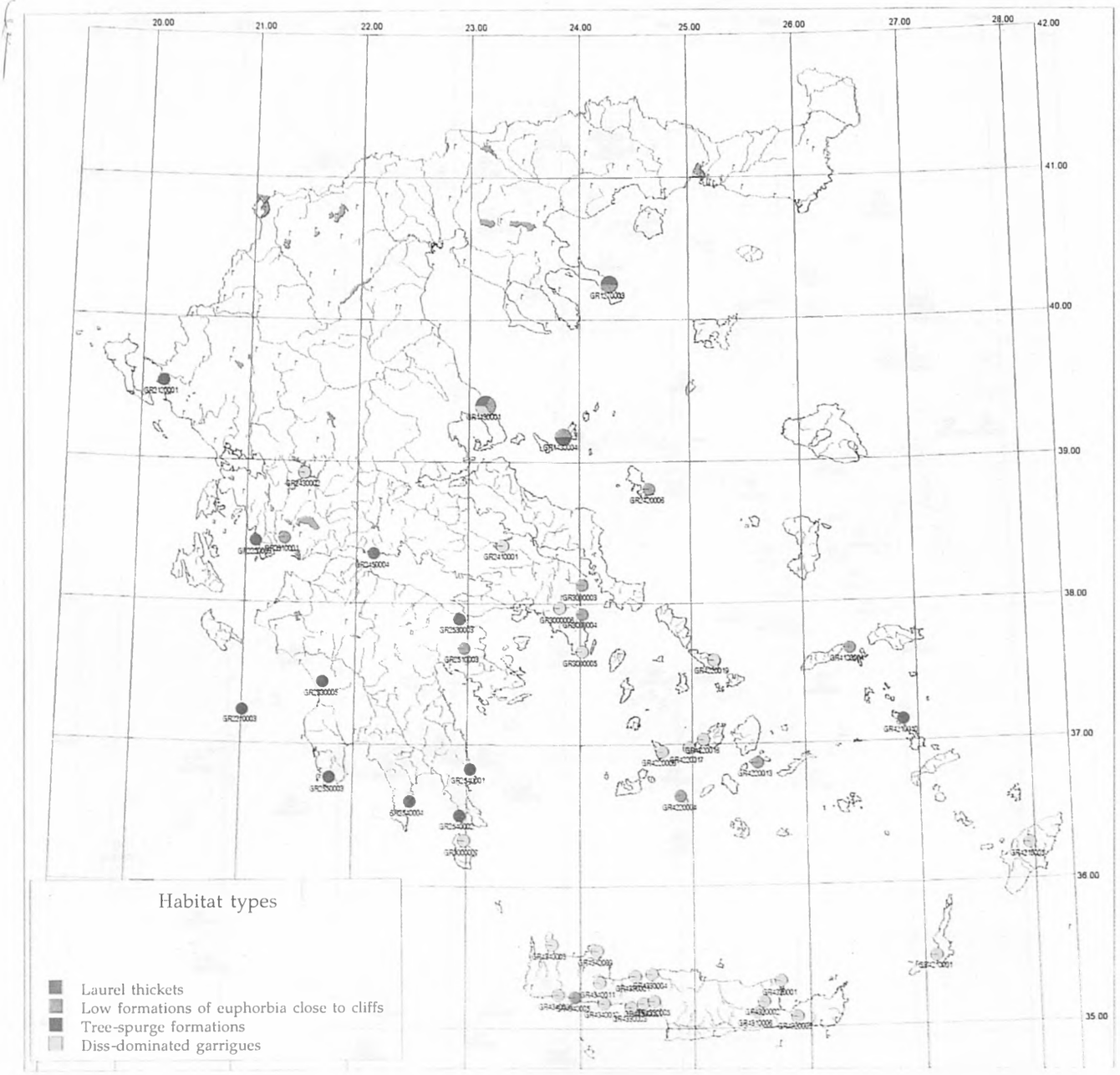
10
5
1

- Juniper formations
- Juniperus oxycedrus arborescent mattoral
- Juniperus phoenicea arborescent mattoral
- Juniperus excelsa and J. foetidissima arborescent mattoral
- Juniperus communis arborescent mattoral
- Matorral with Laurus nobilis

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

SCLEROPHYLLOUS SCRUB (MATORRAL)

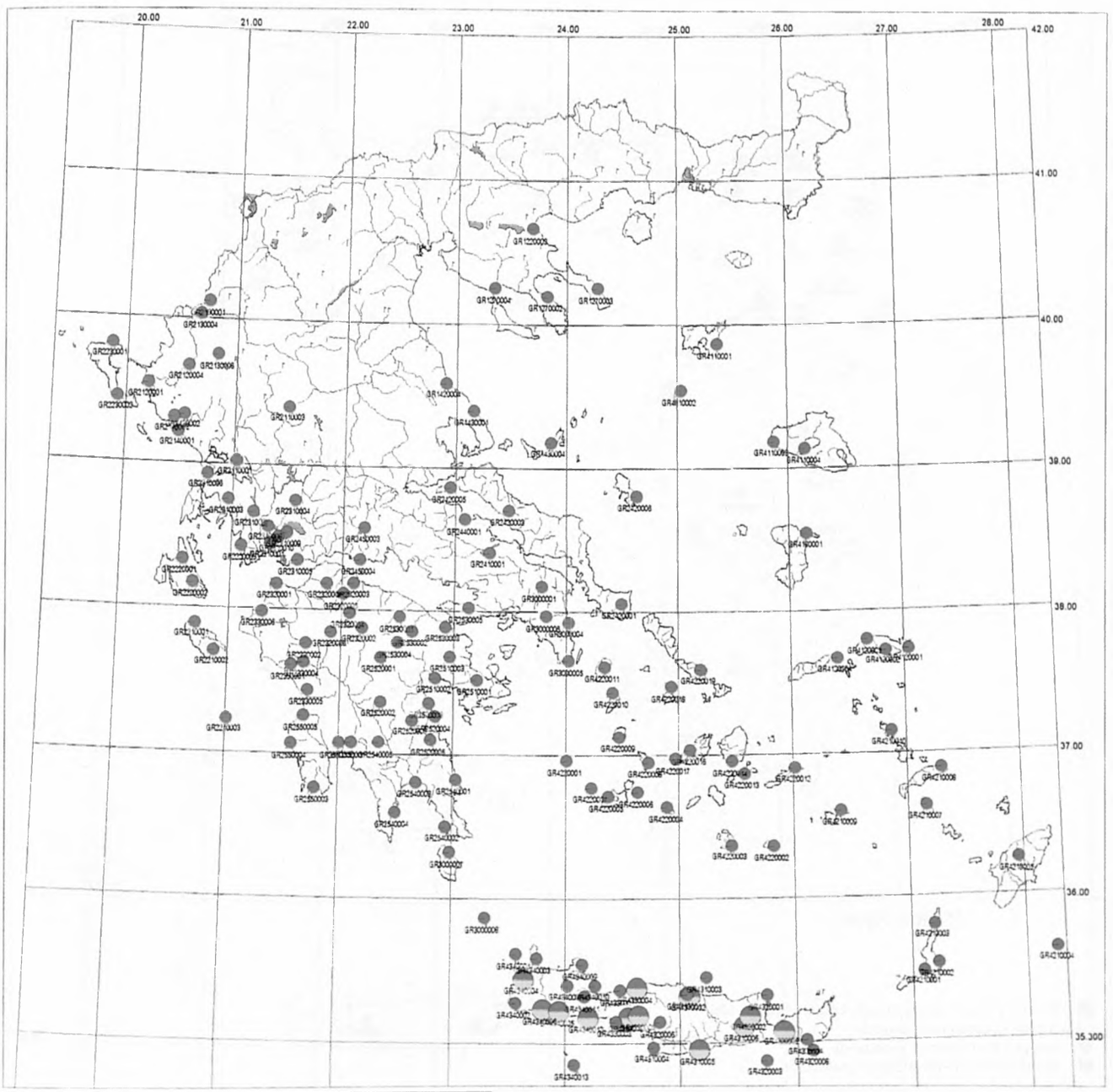
Thermo-Mediterranean and pre-steppe brush



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

SCLEROPHYLLOUS SCRUB (MATORRAL)

Phrygana



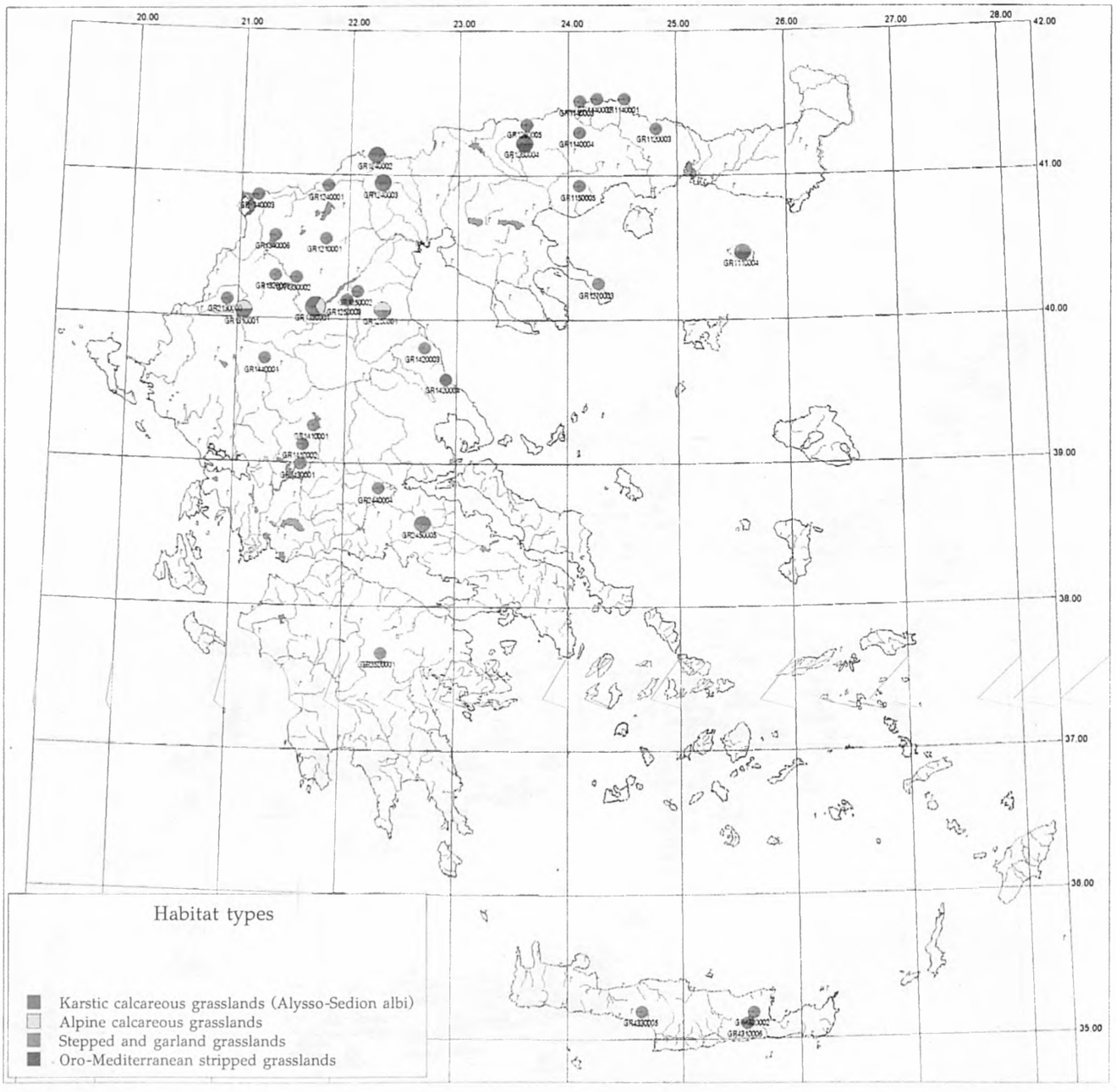
Habitat types

- Aegean phrygana (Sarcopoterium spinosum)
- Cretan, Sardinian, Italian and Balcanic phrygana formations

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

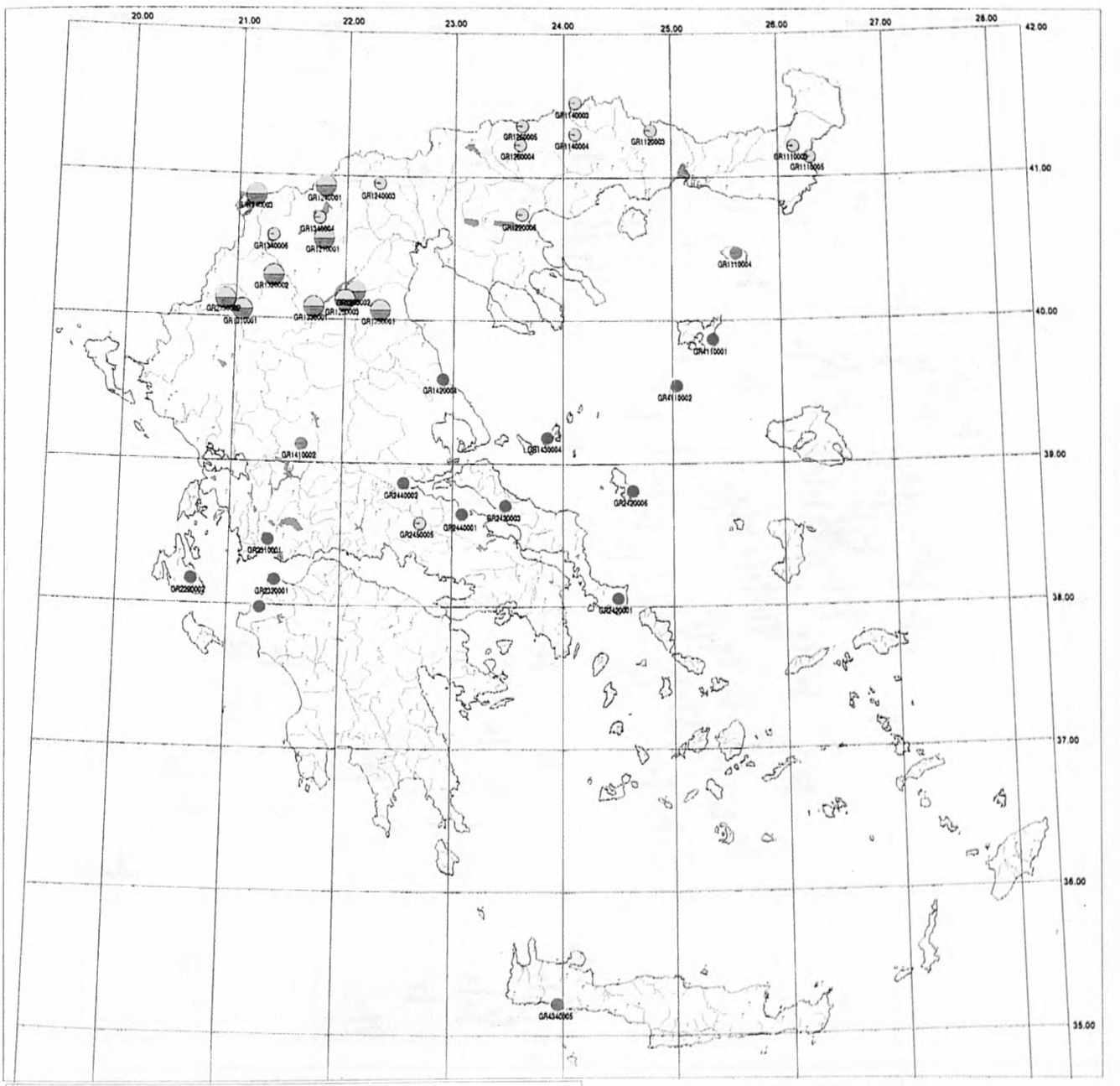
Natural grasslands



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

Semi-natural dry grasslands and scrubland facies



Habitat types

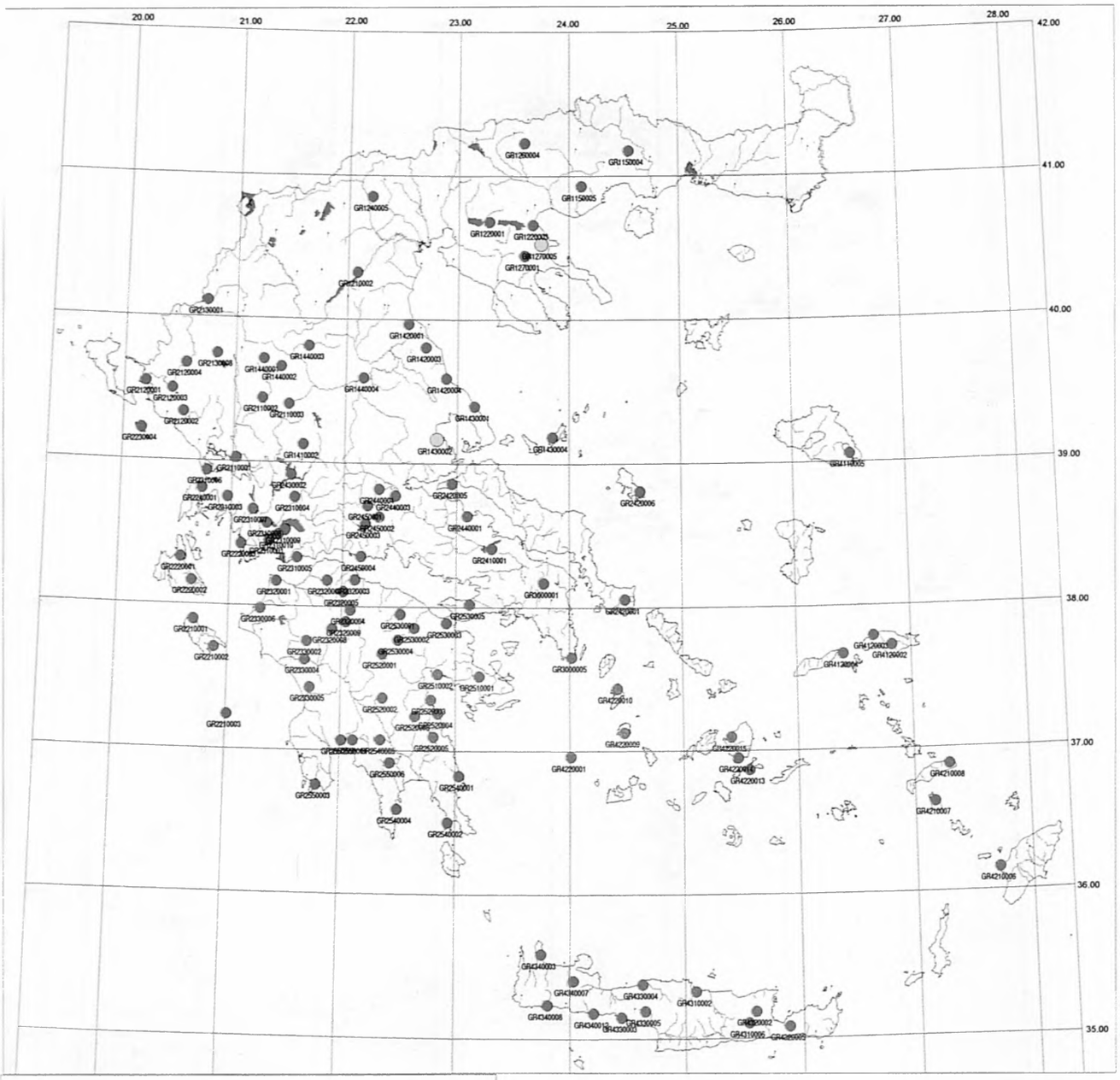
- Semi-natural dry grasslands on calcareous substrates
- Sub-continental steppic grasslands
- Pseudo-steppe with grasses and annuals
- Species-rich Nardus grasslands, on siliceous substrates in mountain areas

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

– Sclerophyllous grazed forests (dehesas)

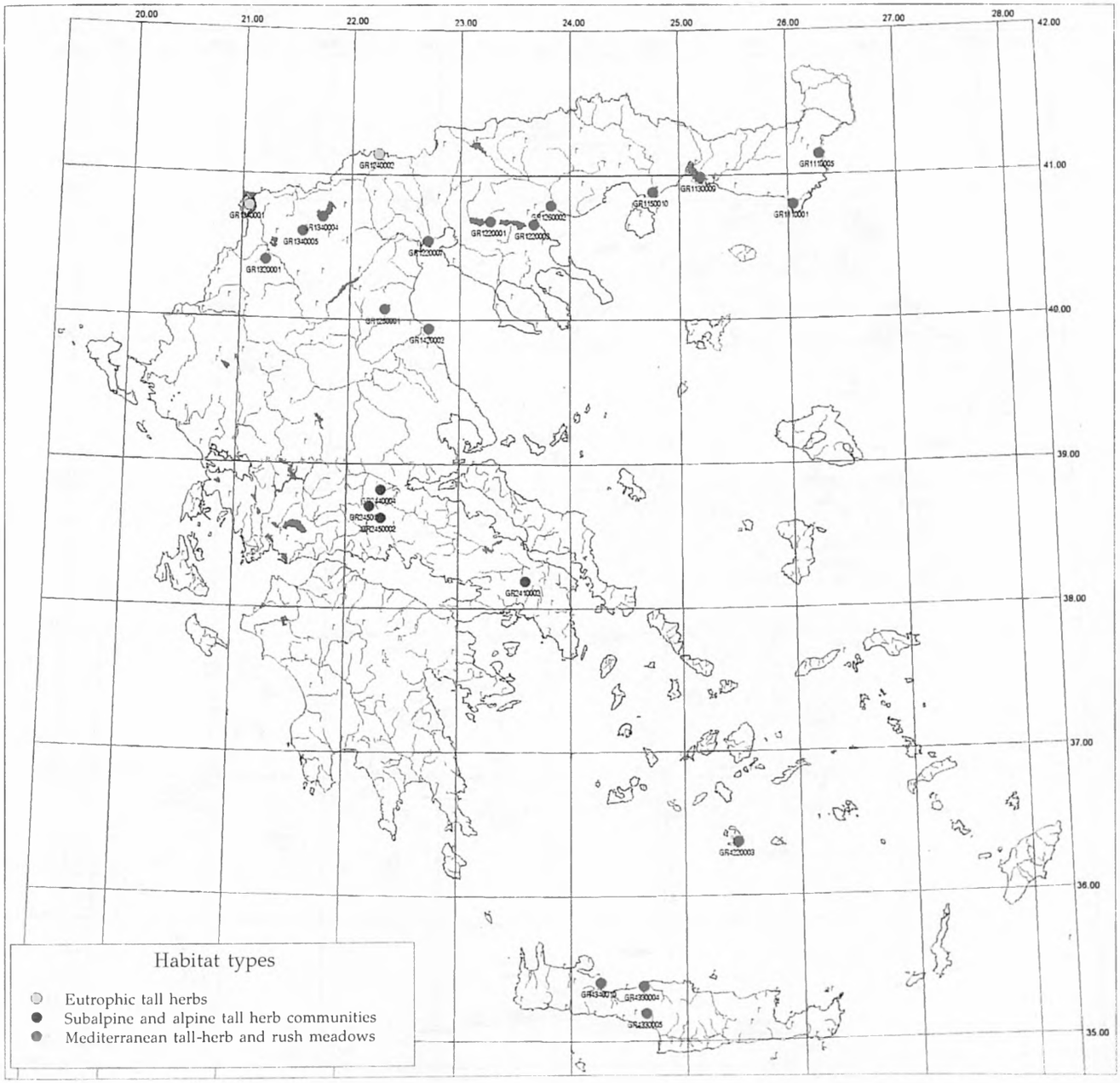
– Mesophile grasslands



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

Semi-natural tall-herb humid meadows

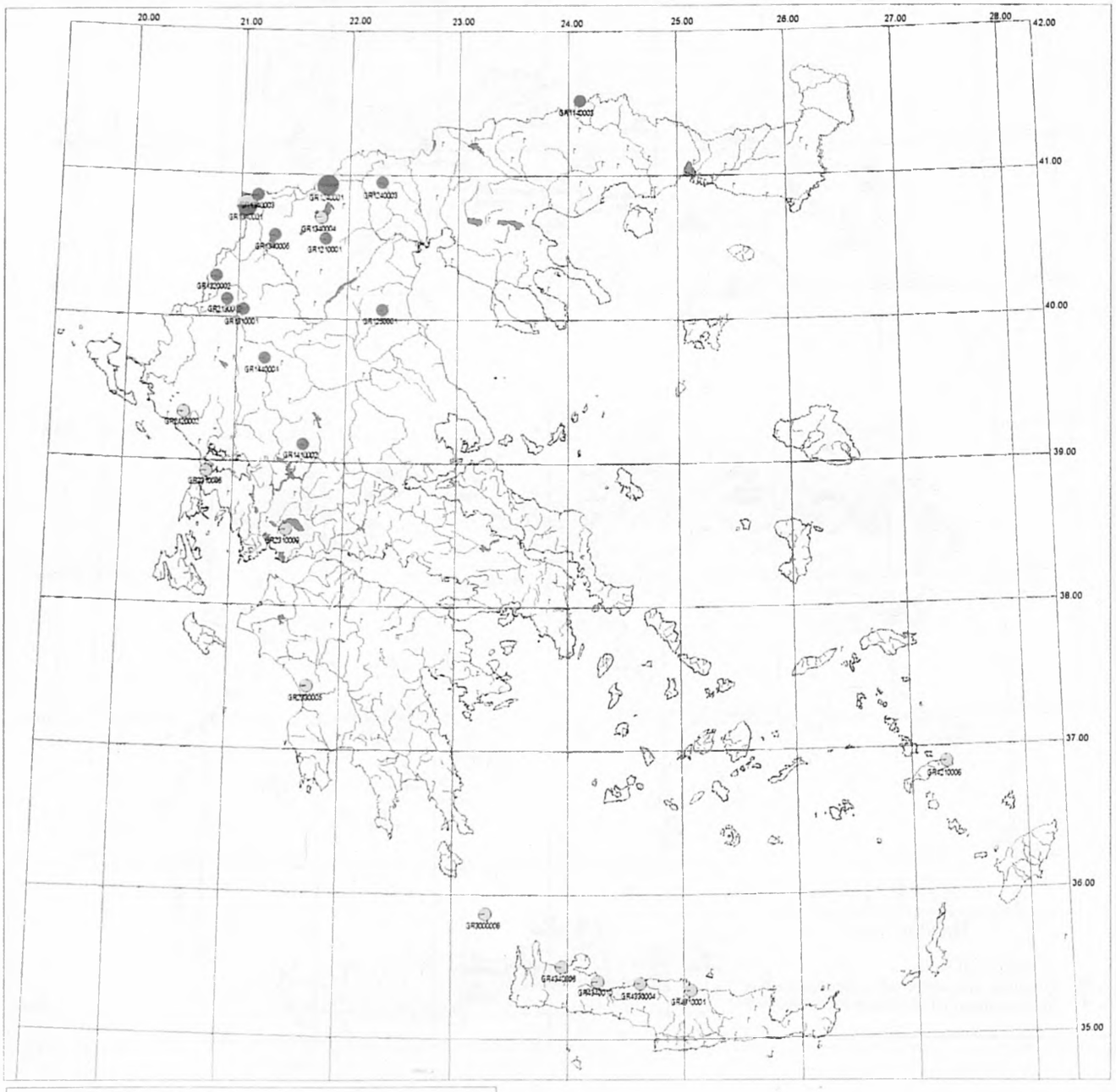


DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

RAISED BOGS AND MIRES AND FENS

– Sphagnum acid bogs

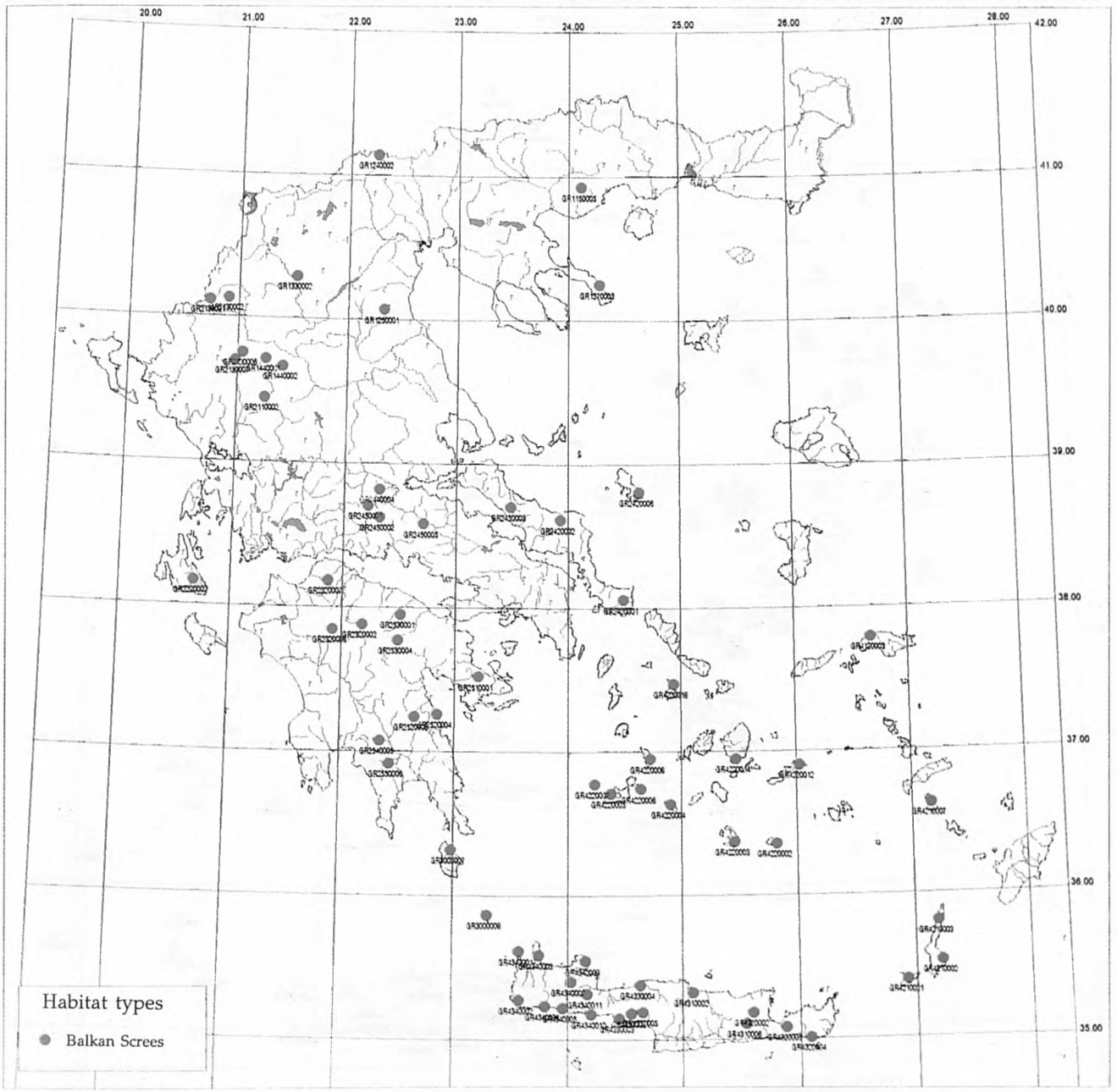
– Calcareous fens



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

ROCKY HABITATS AND CAVES

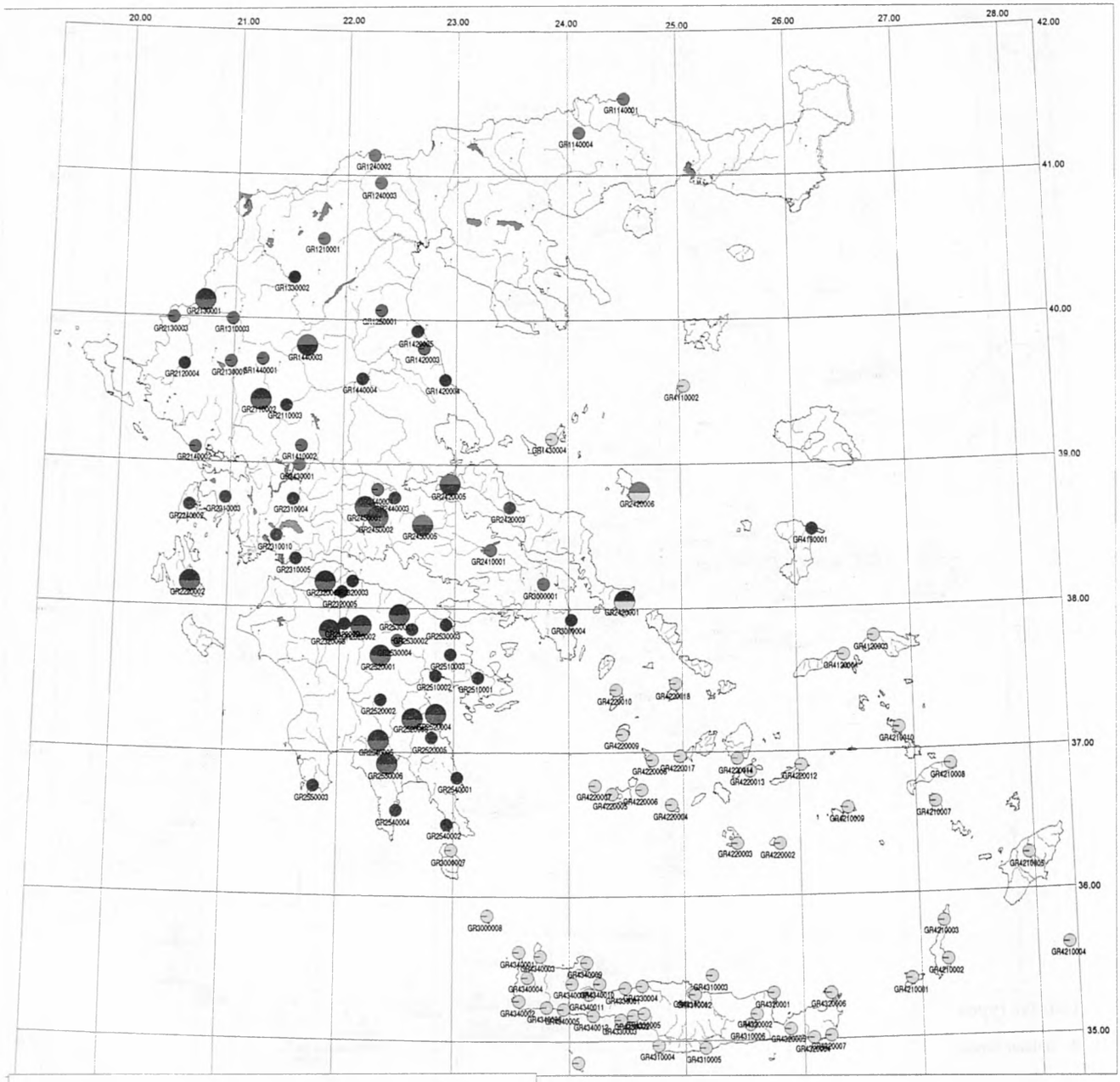
Scree



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

ROCKY HABITATS AND CAVES

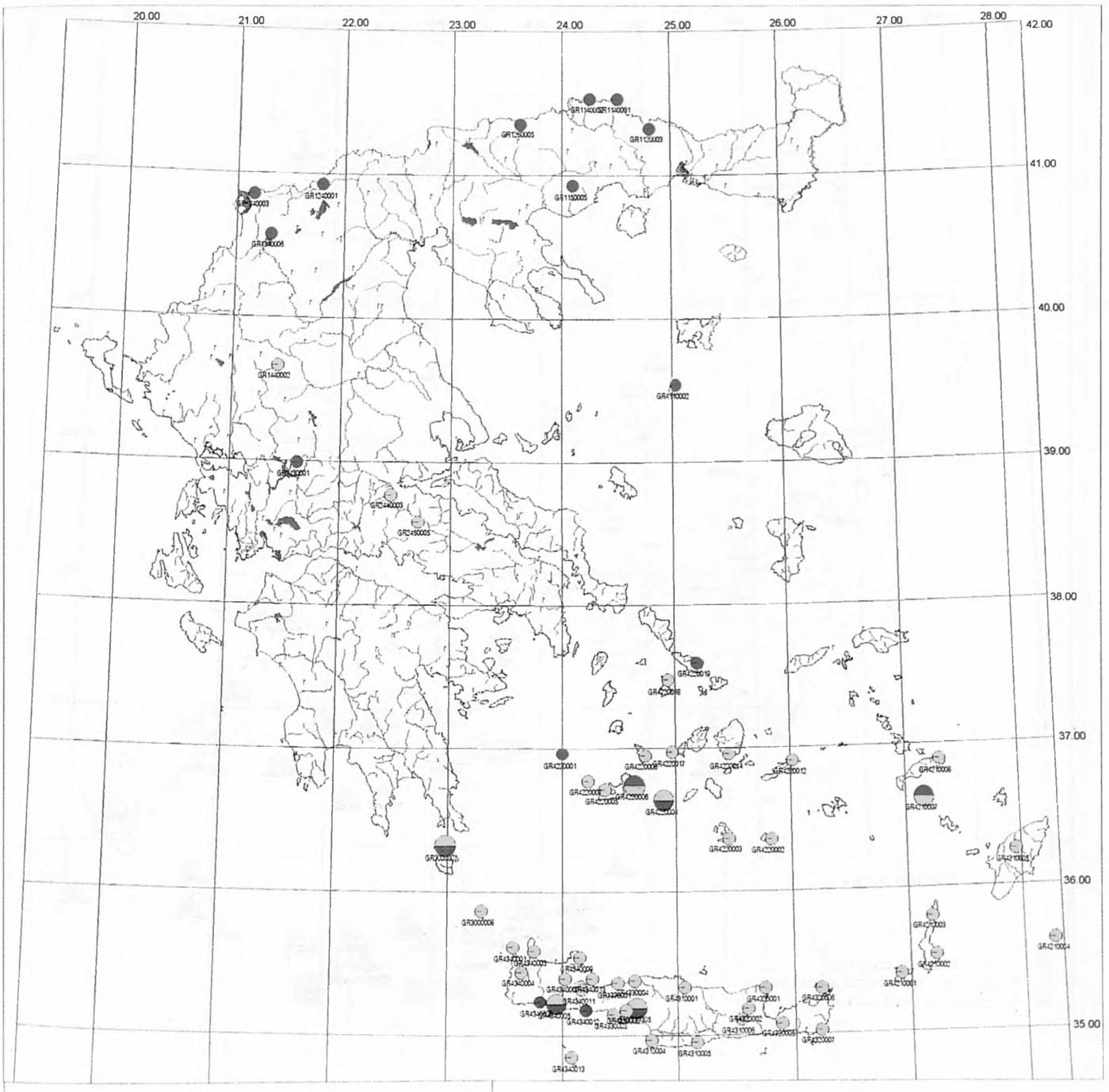
Chasmophytic vegetation on rocky slopes



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

ROCKY HABITATS AND CAVES

Chasmophytic vegetation on rocky slopes (cont.)



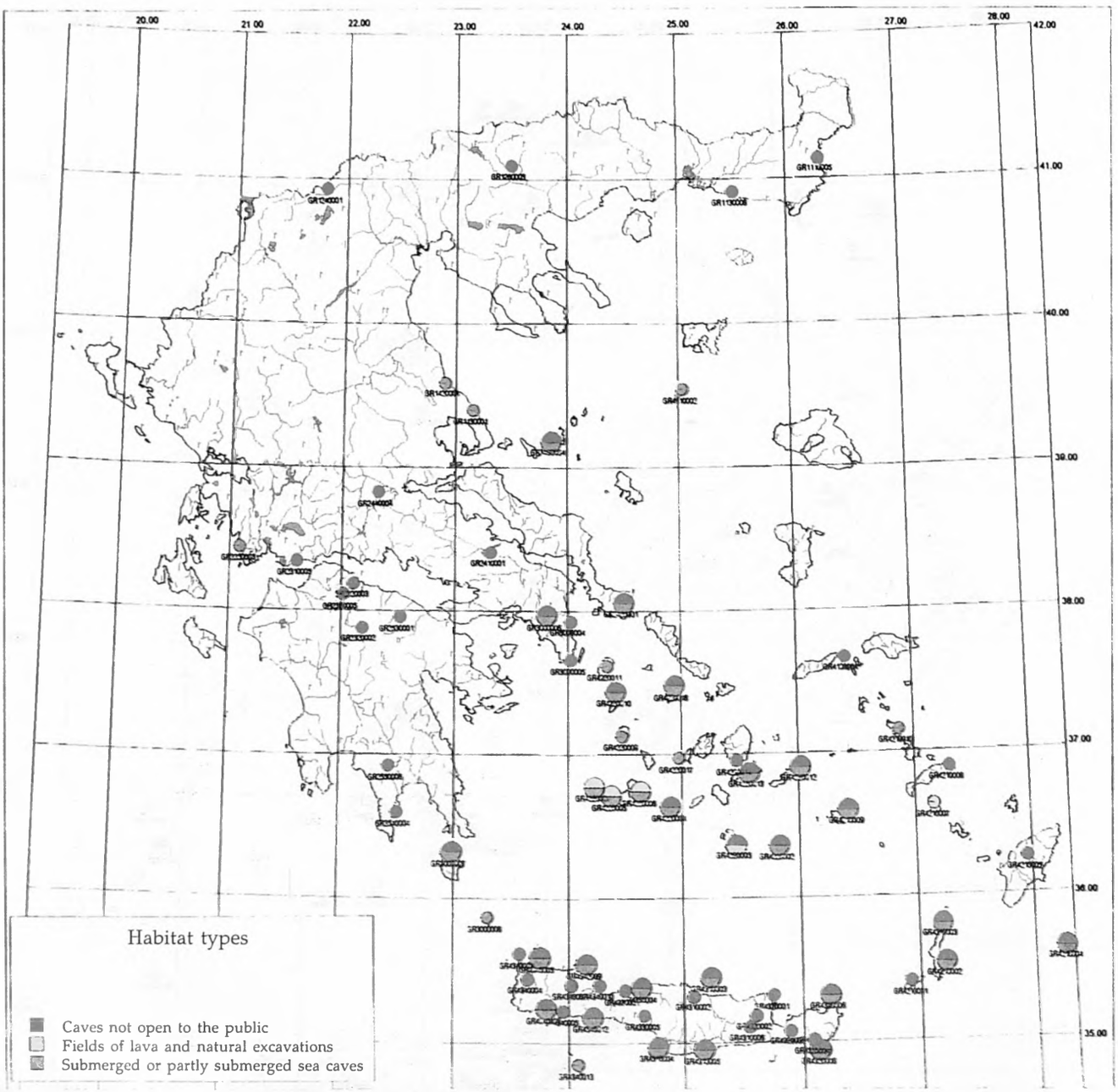
Habitat types

- Vegetated silicicolous inland cliffs with chasmophytic vegetation
- Pioneer vegetation of rock surfaces
- Limestone pavements

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

ROCKY HABITATS AND CAVES

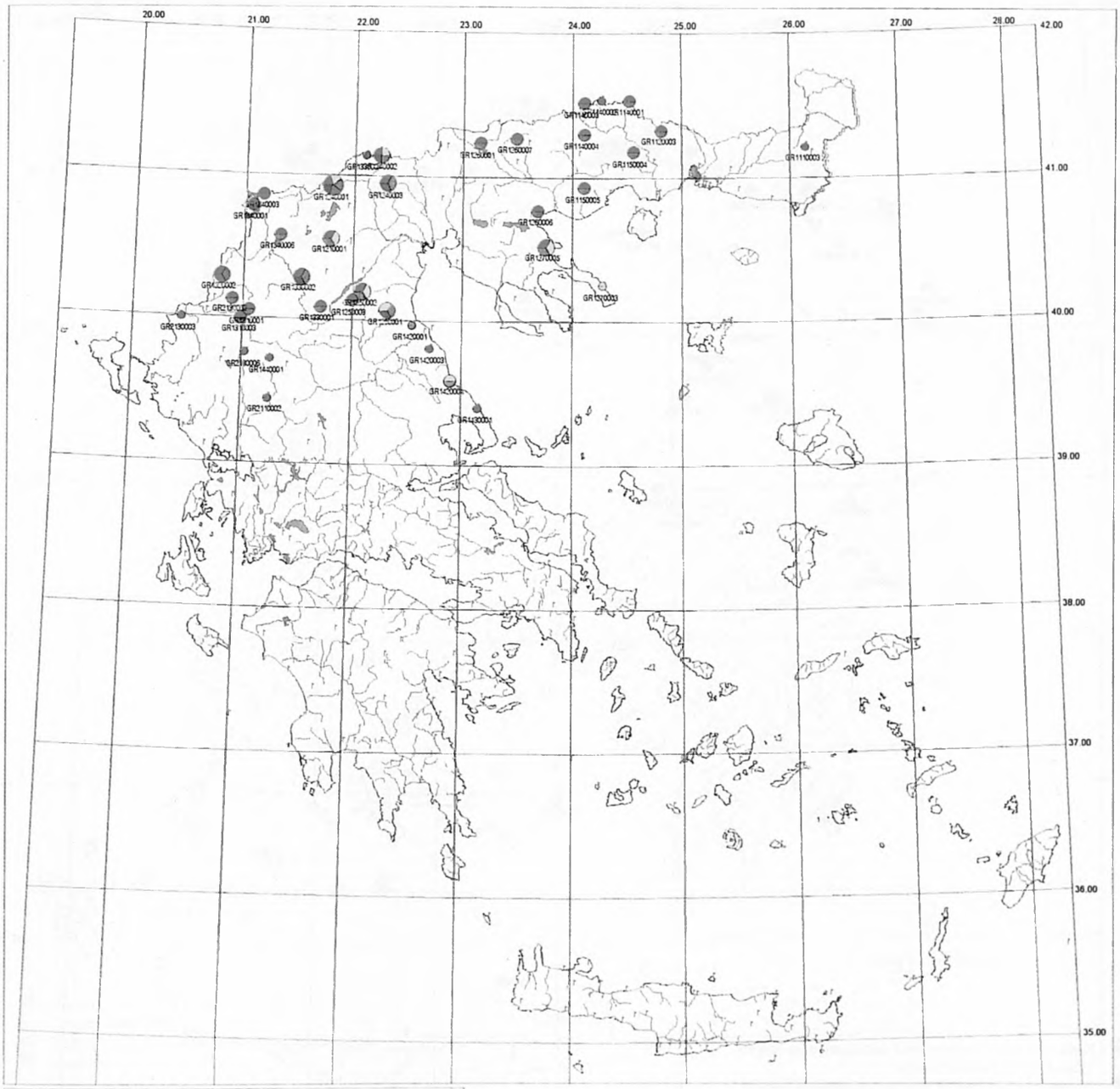
Other rocky habitats



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FORESTS

Forests of temperate Europe



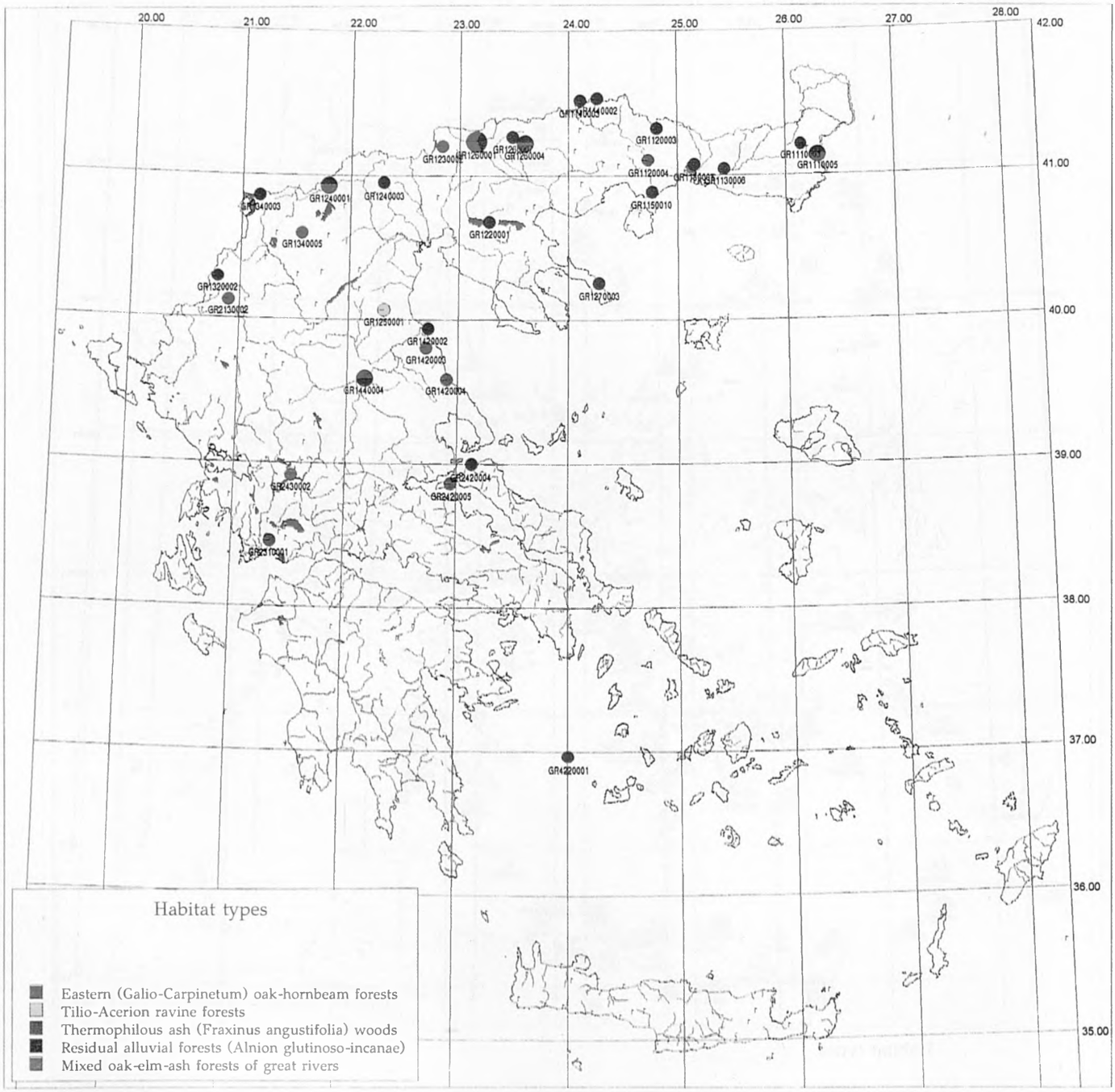
Habitat types

- Acidophilous (Luzulo-Fagetum) beech forests
- Beech forests with Ilex and Taxus, rich in epiphytes
- Neutrophilous (Asperulo-Fagetum) beech forests
- Subalpine beech woods with Acer and Rumex arifolius
- Calcareous beech forests (Cephalanthero-Fagion)

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FORESTS

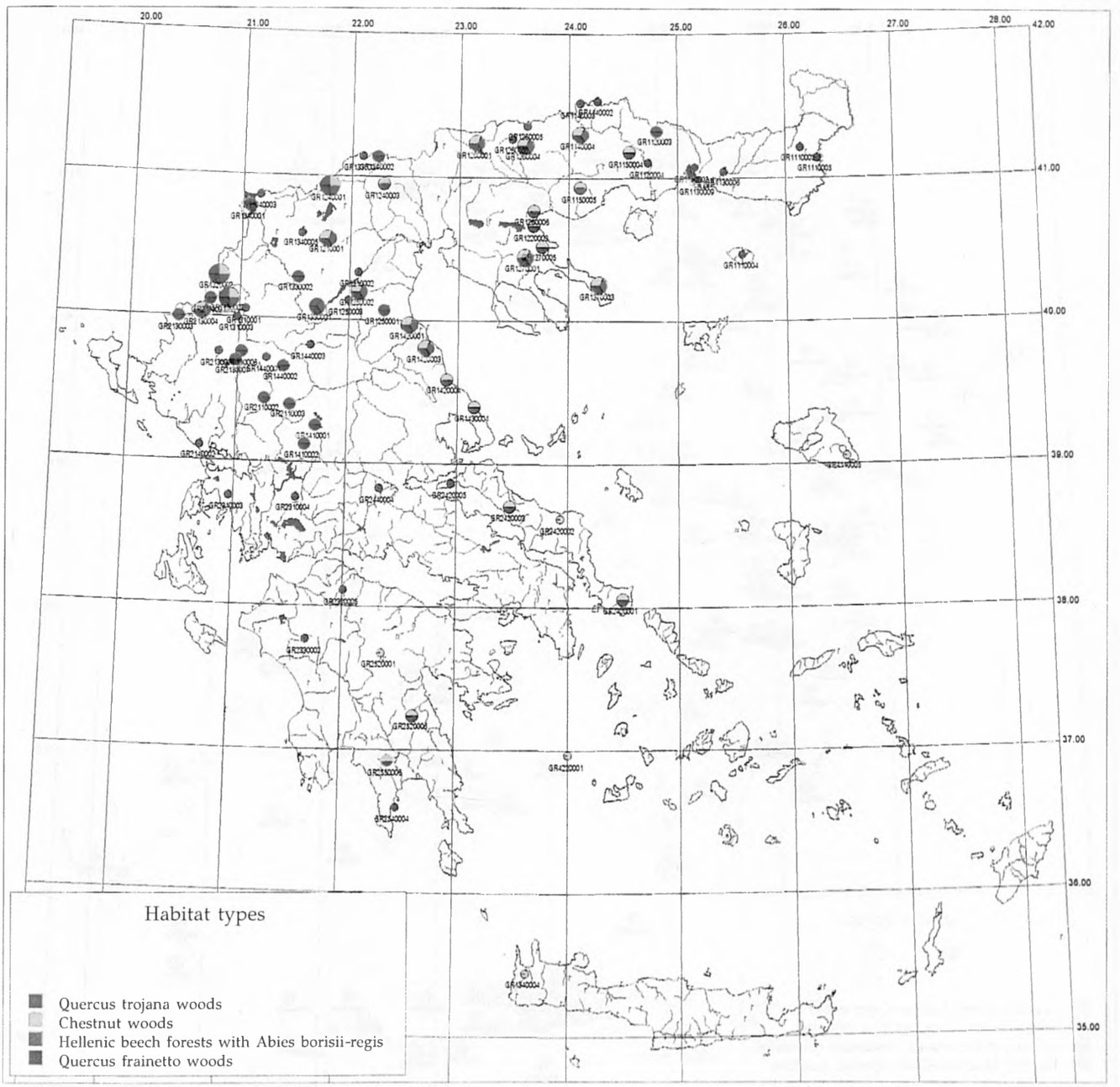
Forests of temperate Europe



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FORESTS

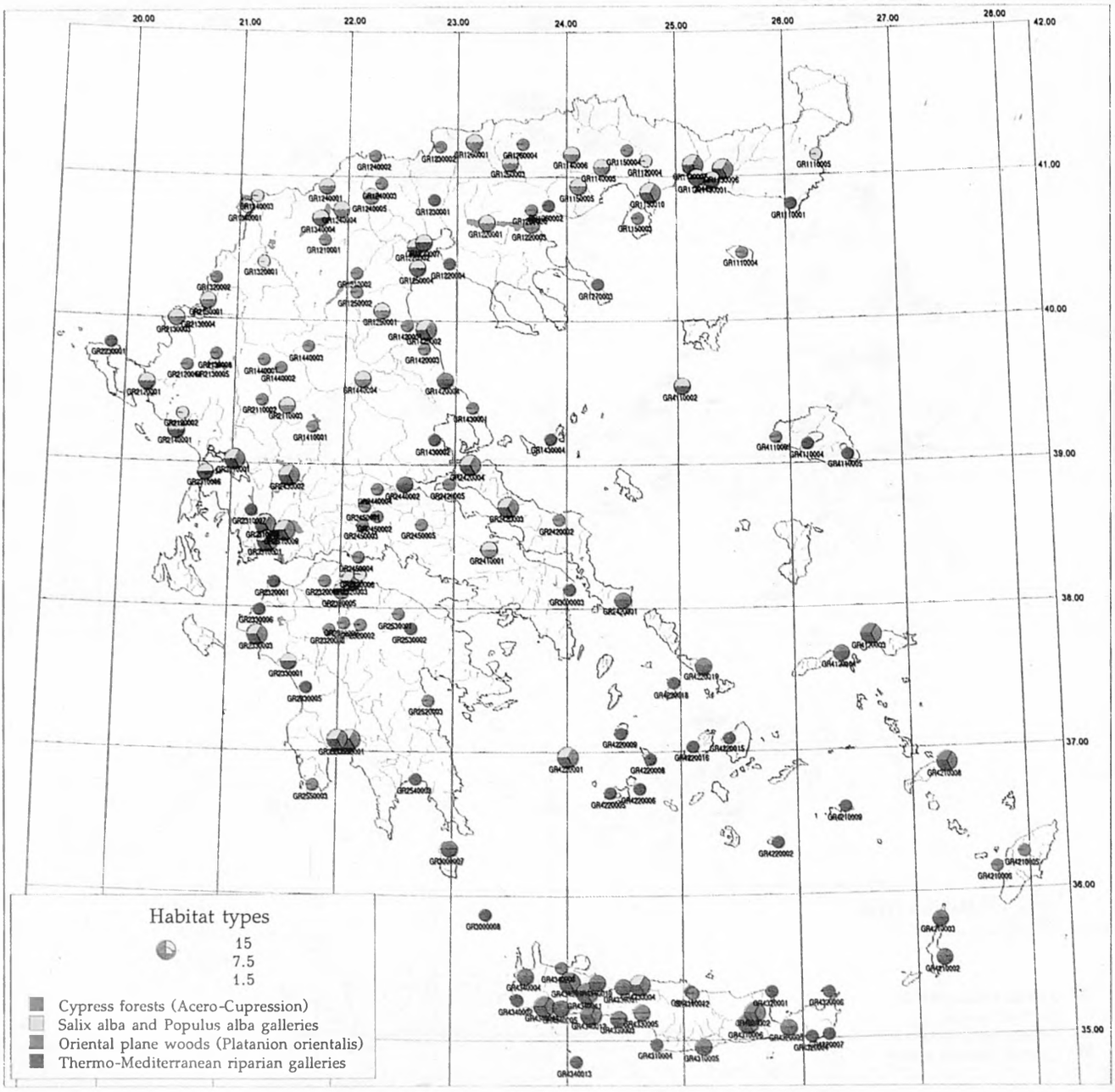
Mediterranean deciduous forests



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FORESTS

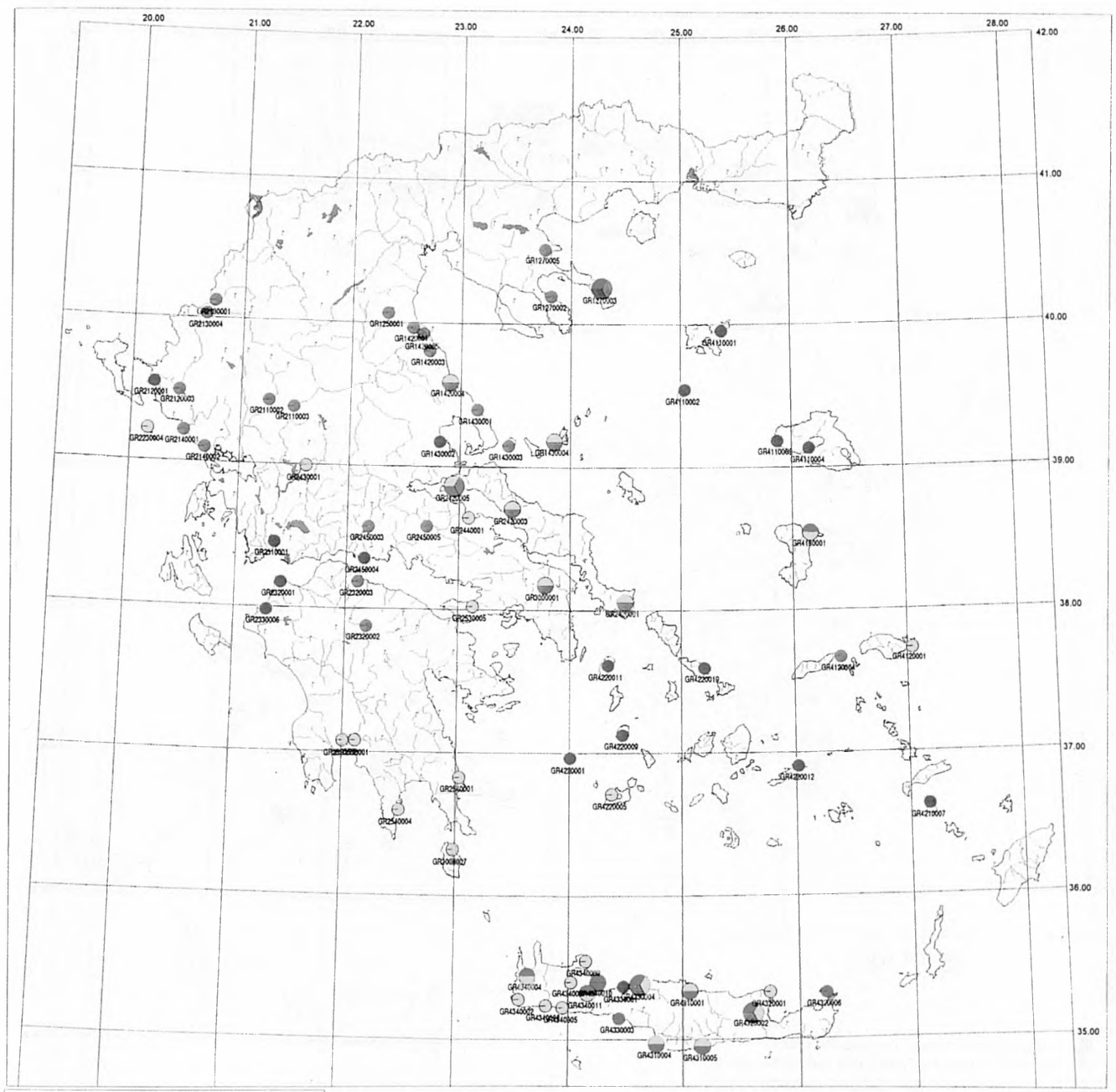
Mediterranean deciduous forests (cont.)



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FORESTS

Mediterranean sclerophyllous forests



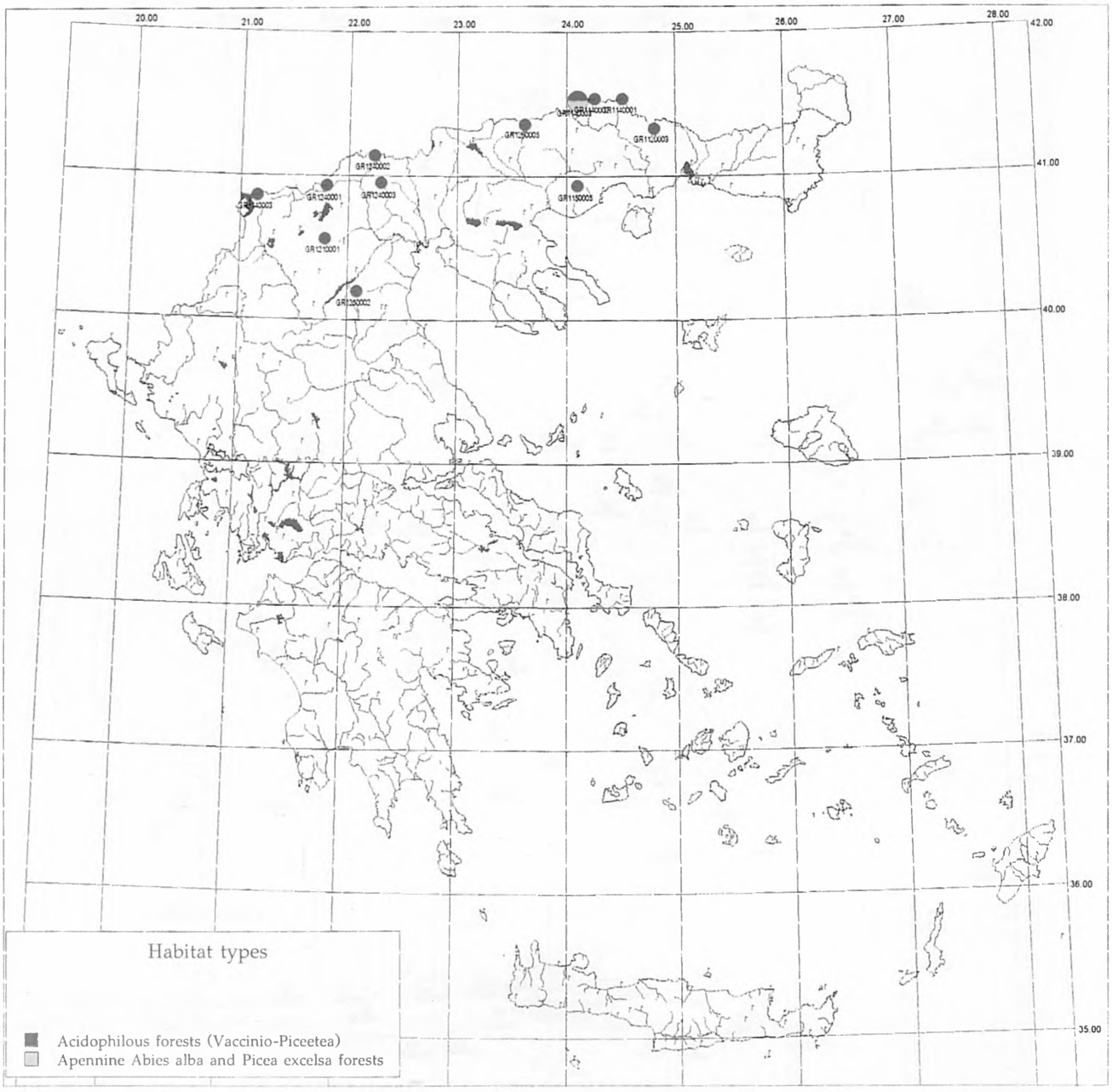
Habitat types

- Cretan Quercus brachyphylla forests
- Olea and Ceratonia forests
- Quercus ilex forests
- Quercus macrolepis forests
- Palm groves of Phoenix
- Forests of Ilex aquifolium

DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FORESTS

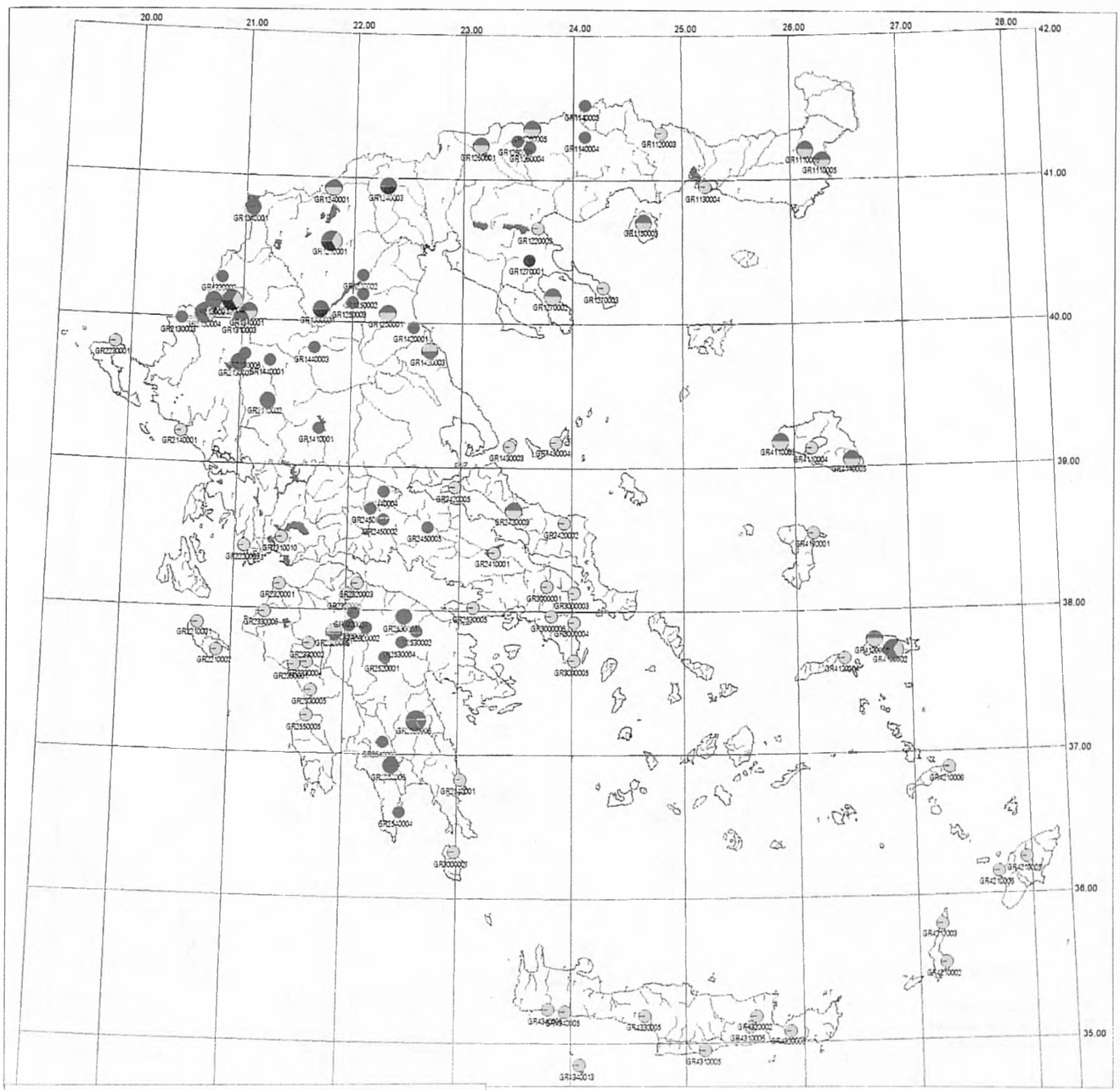
– Alpine and subalpine coniferous forests
– Mediterranean mountainous coniferous forests



DISTRIBUTION OF HABITAT TYPES IN PROPOSED "NATURA 2000" SITES

FORESTS

Mediterranean mountainous coniferous forests (cont.)



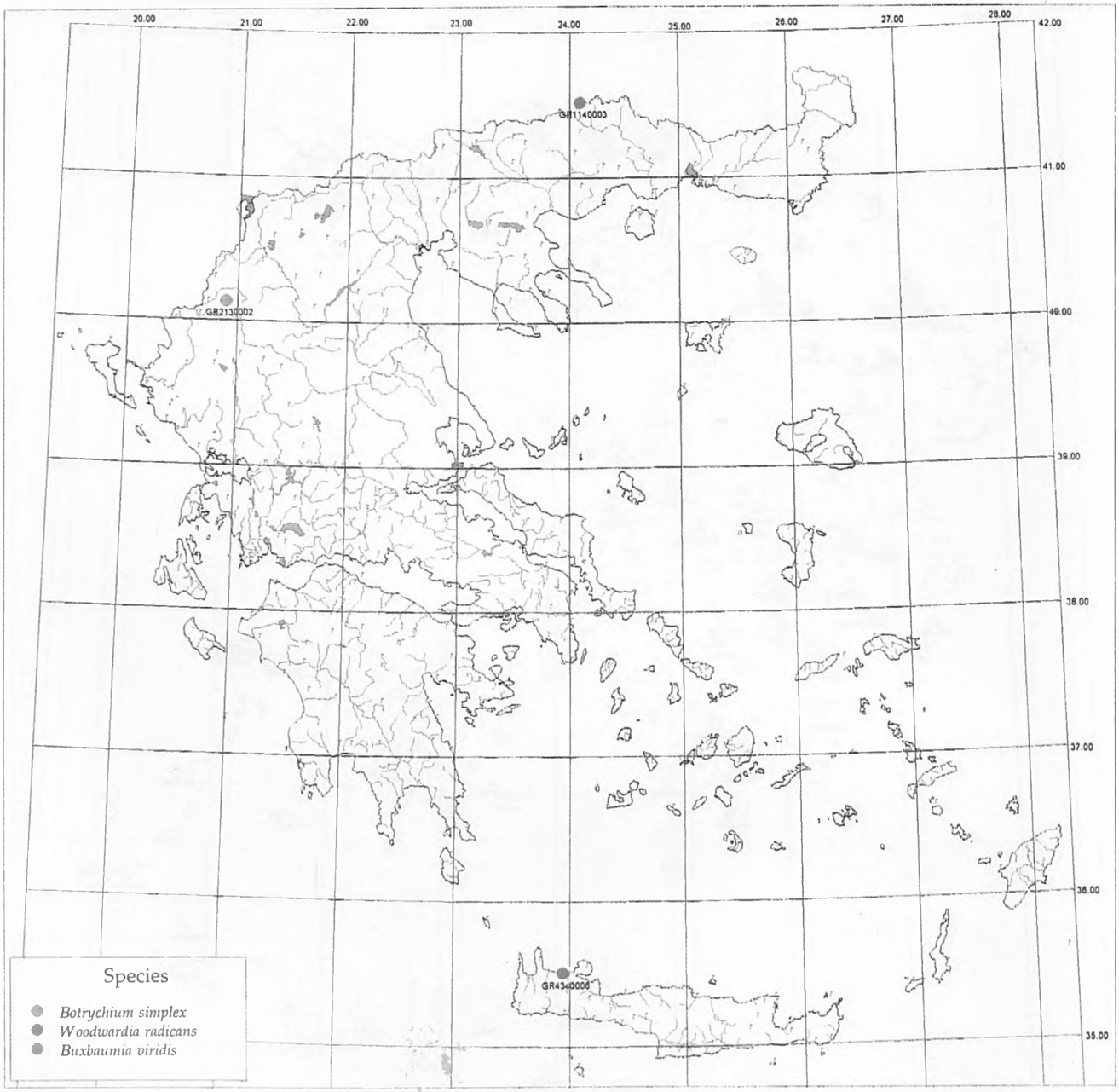
Habitat types

- Pallas's pine forests
- Mediterranean pine forests with endemic Mesogean pines
- Grecian juniper woods
- Stinking juniper (Juniperus foetidissima) woods
- Syrian juniper (Juniperus drupacea) woods
- Taxus baccata woods

PLANTS

DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

– PTERIDOPHYTA
– BRYOPHYTA

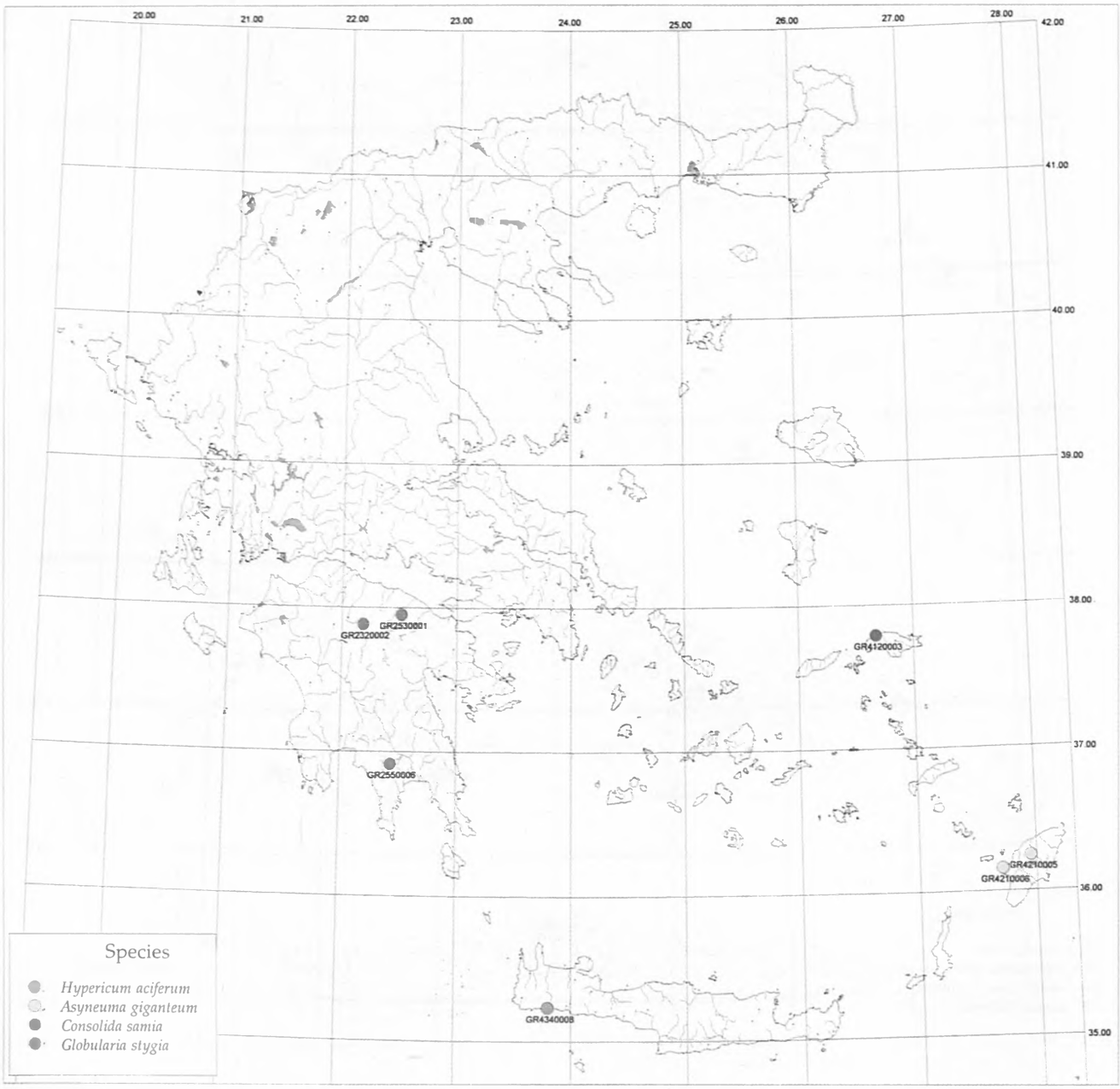


DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES
– SCROPHULARIACEAE
– BORAGINACEAE



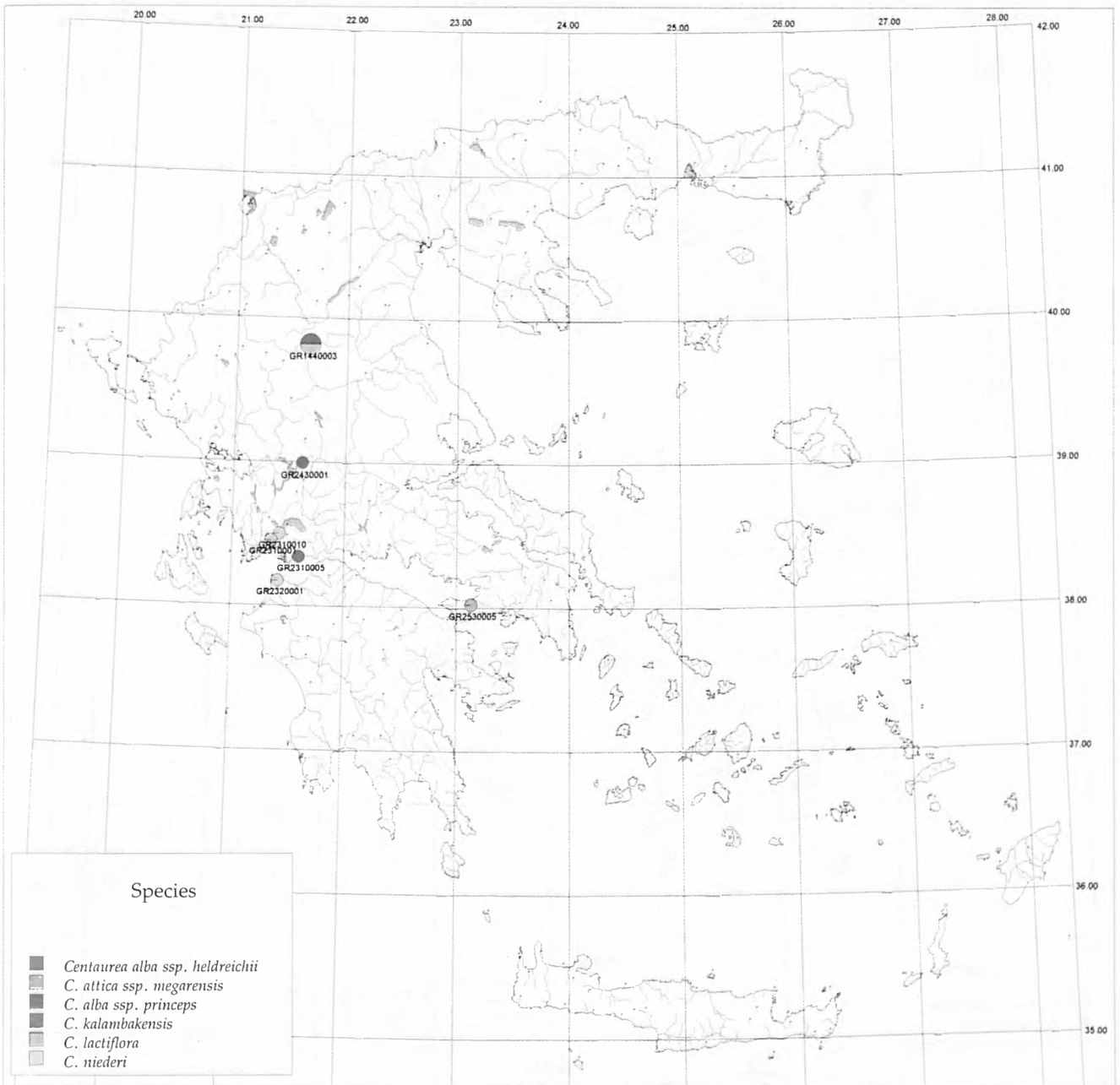
DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

– CAMPANULACEAE
– HYPERICACEAE
– RANUNCULACEAE
– SELAGINACEAE



DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

COMPOSITAE



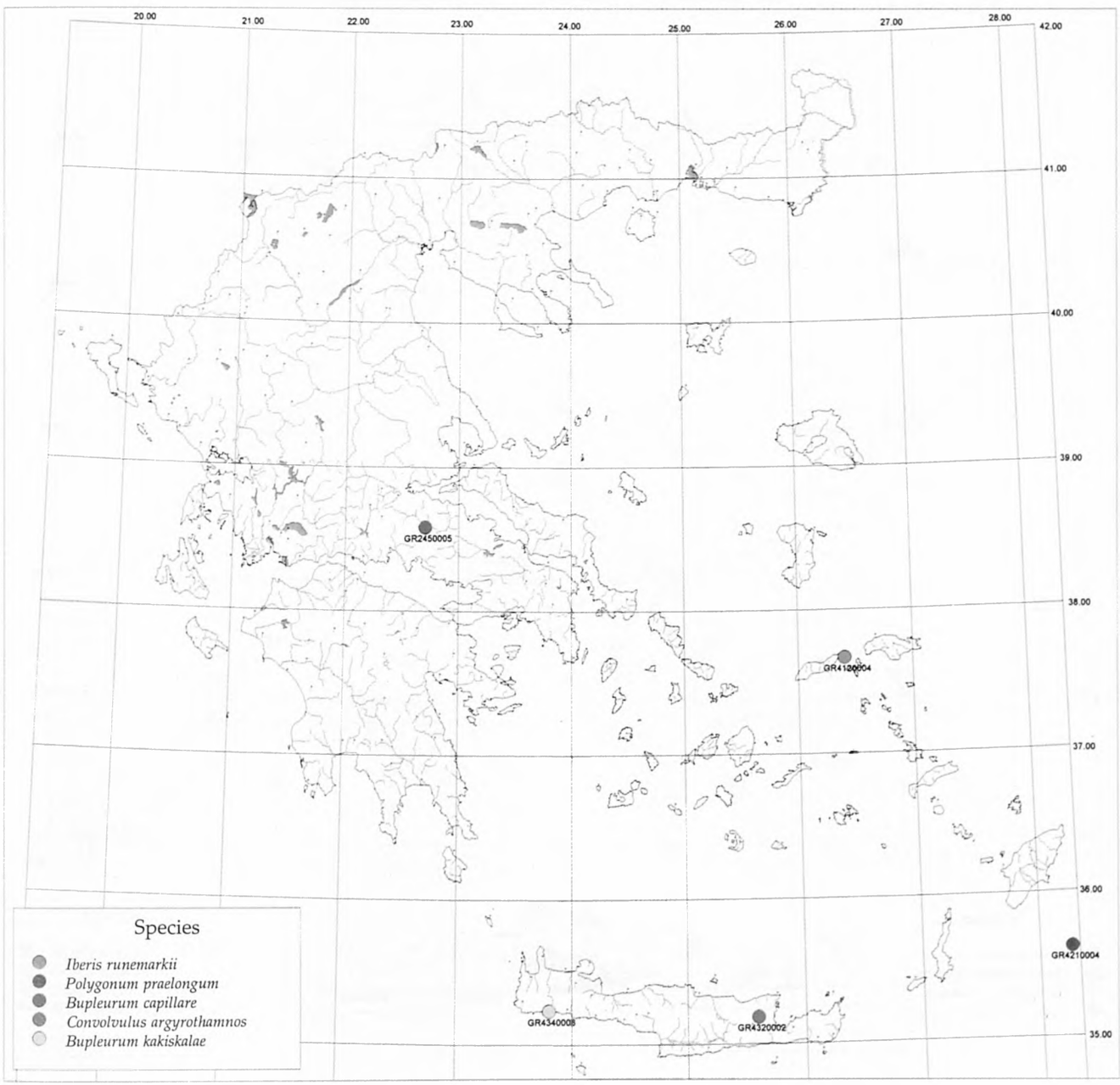
DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

COMPOSITAE (cont).



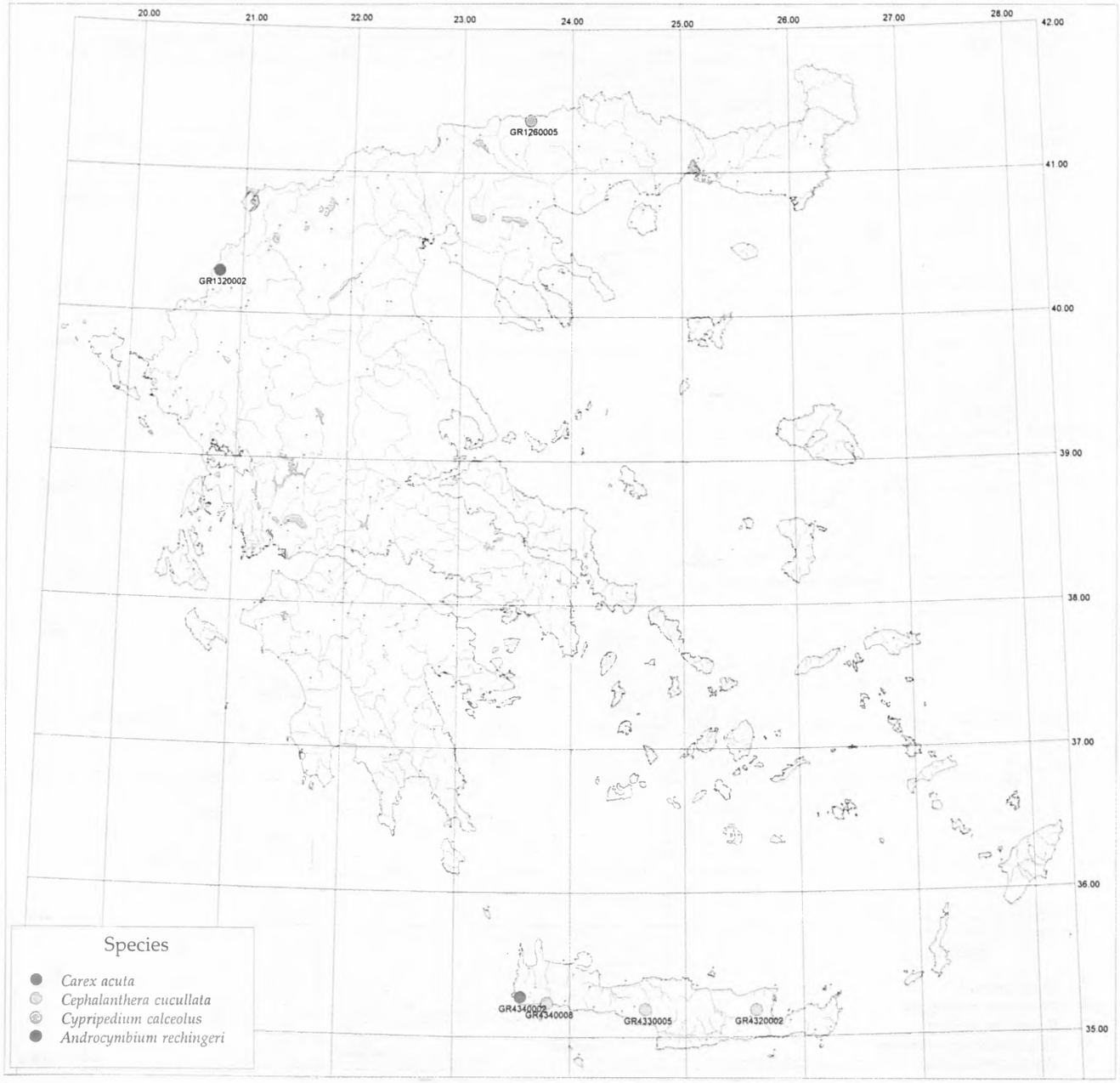
DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

– CONVOLVULACEAE
– CRUCIFERAE
– POLYGONACEAE
– UMBELLIFERAE



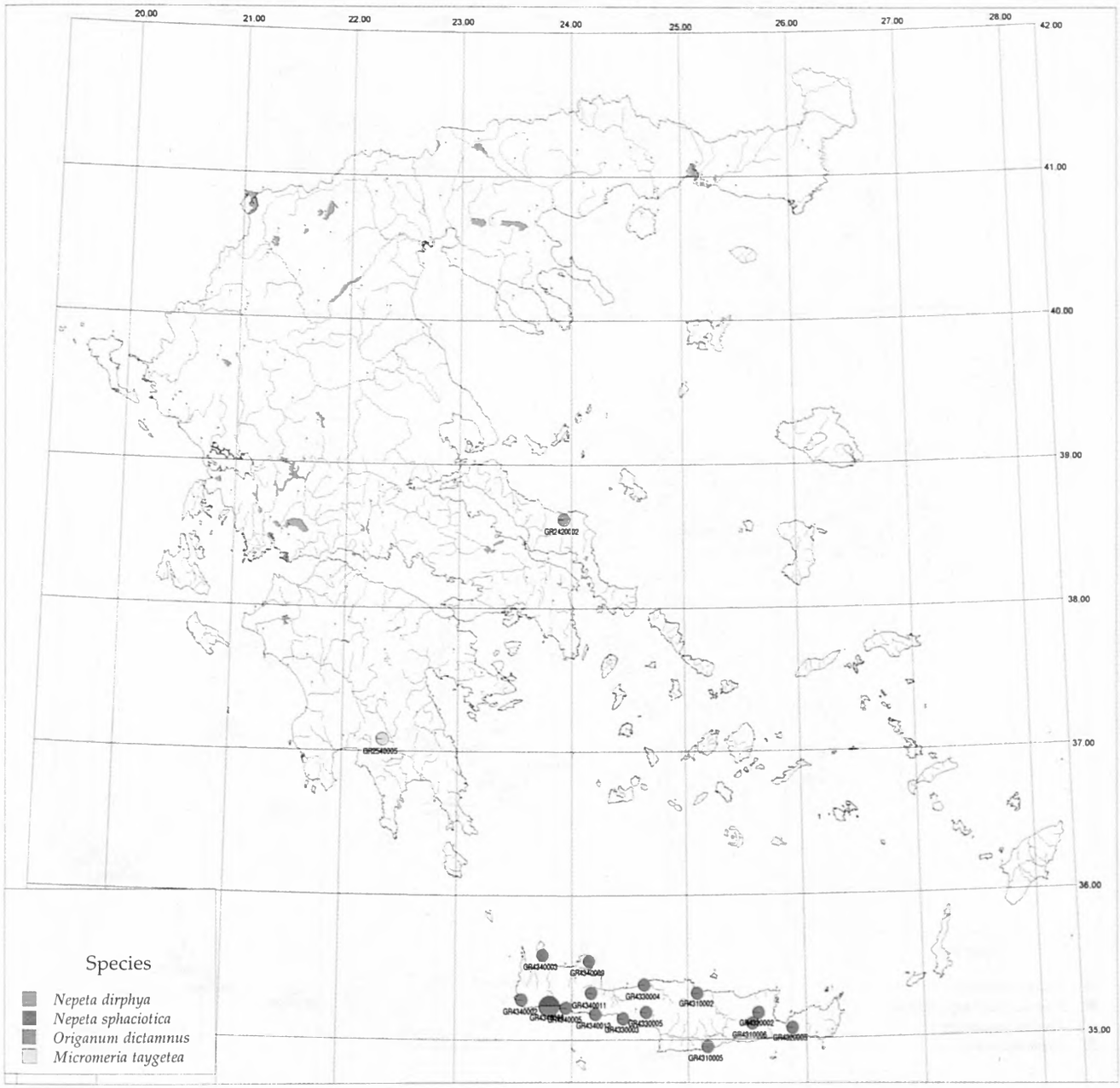
DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

– LILIACEAE
– ORCHIDACEAE
– CYPERACEAE

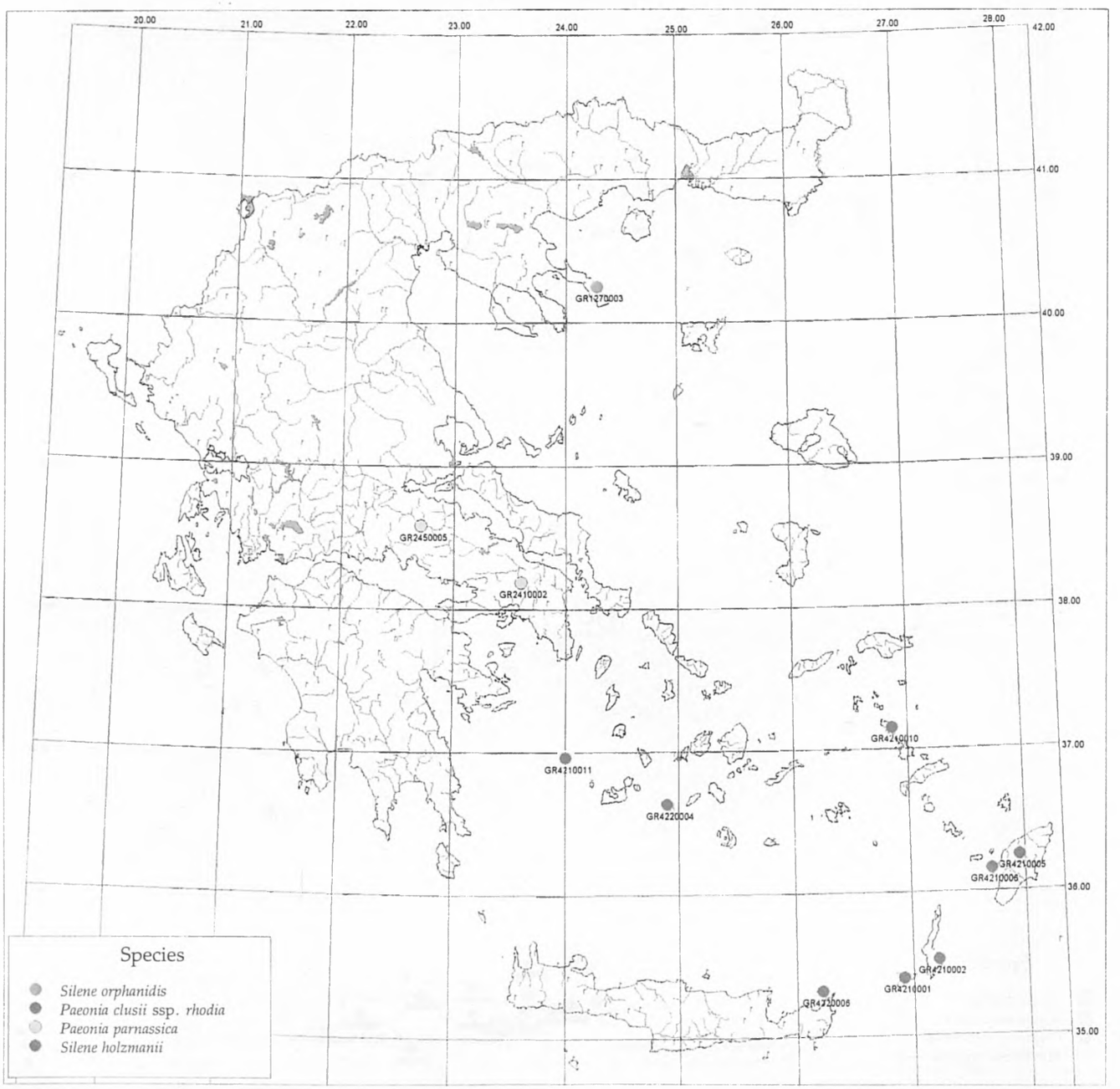


DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

LABIATAE

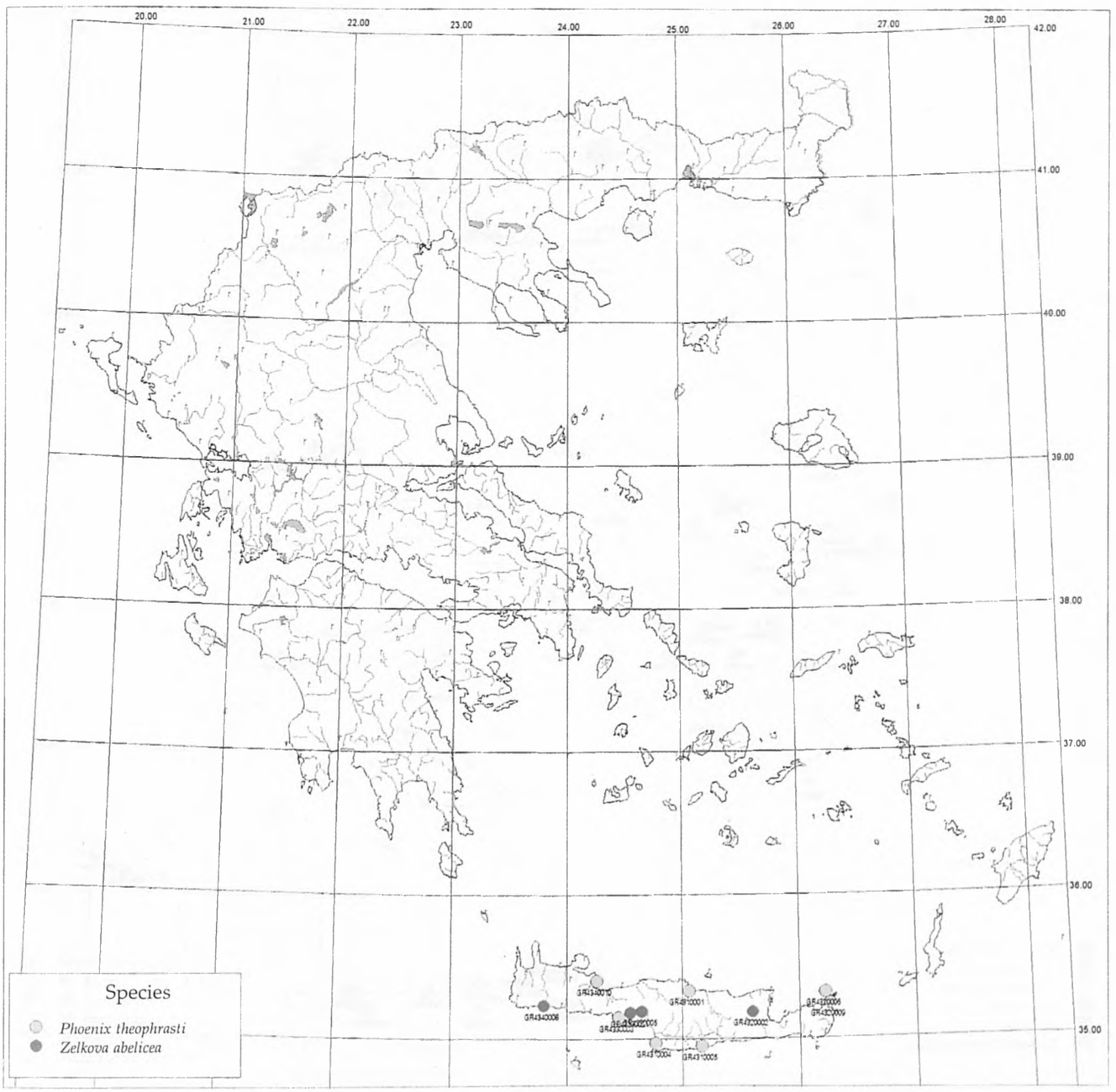


DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES
– CARYOPHYLACEAE
– PAEONIACEAE



DISTRIBUTION OF PLANT SPECIES IN PROPOSED "NATURA 2000" SITES

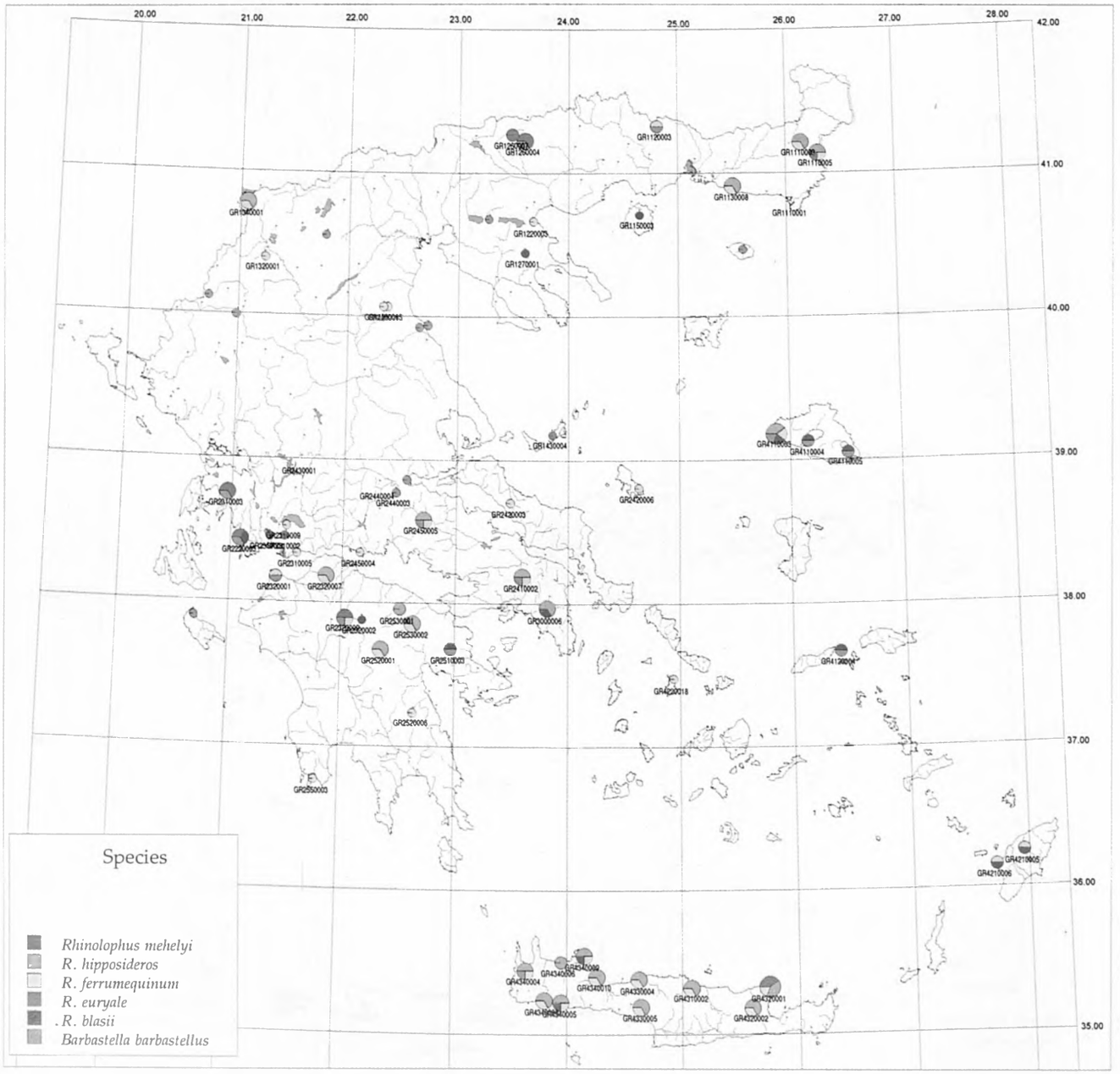
– PALMAE
– ULMACEAE



ANIMALS

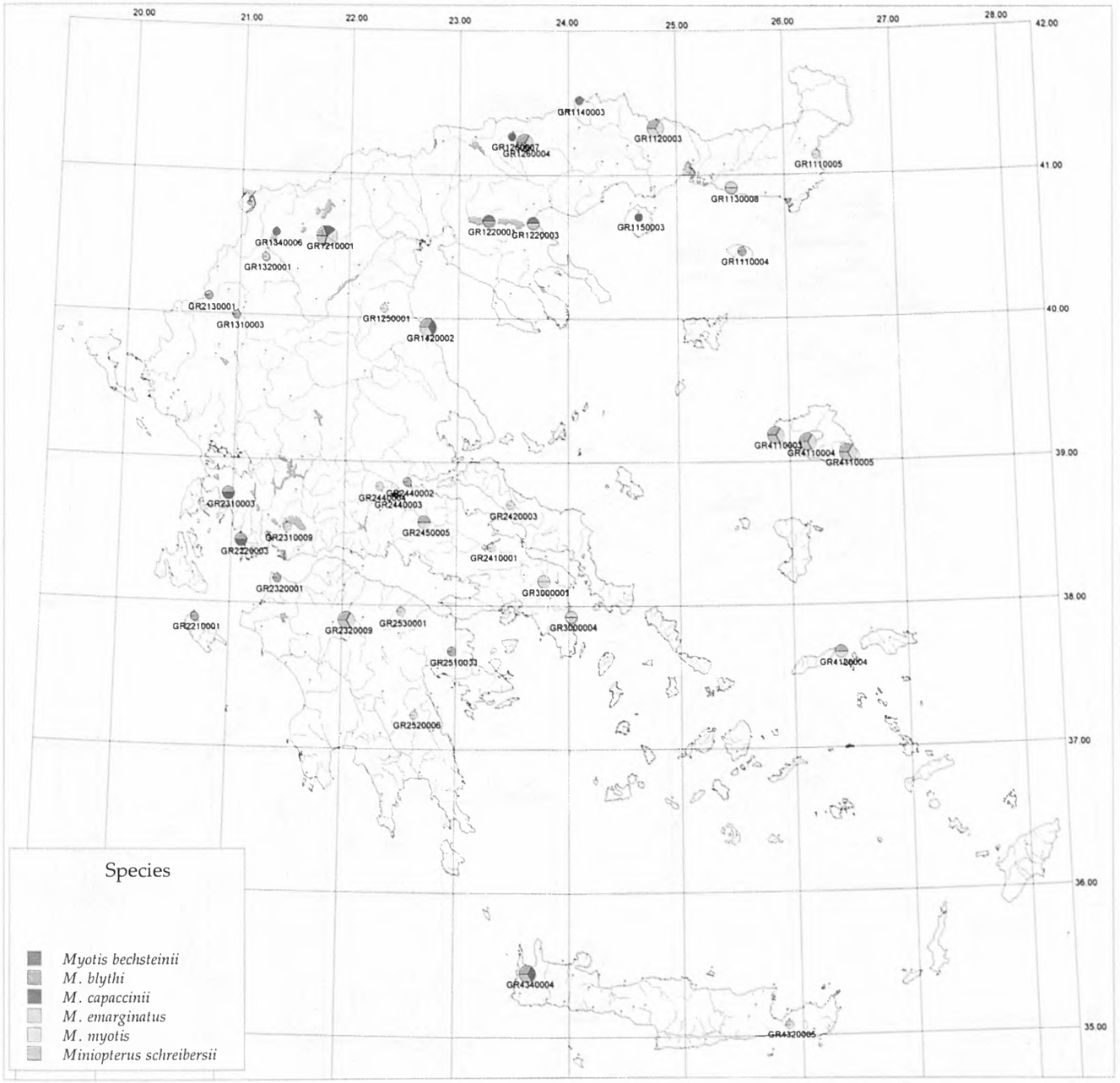
DISTRIBUTION OF MAMMAL SPECIES IN PROPOSED "NATURA 2000" SITES

CHIROPTERA



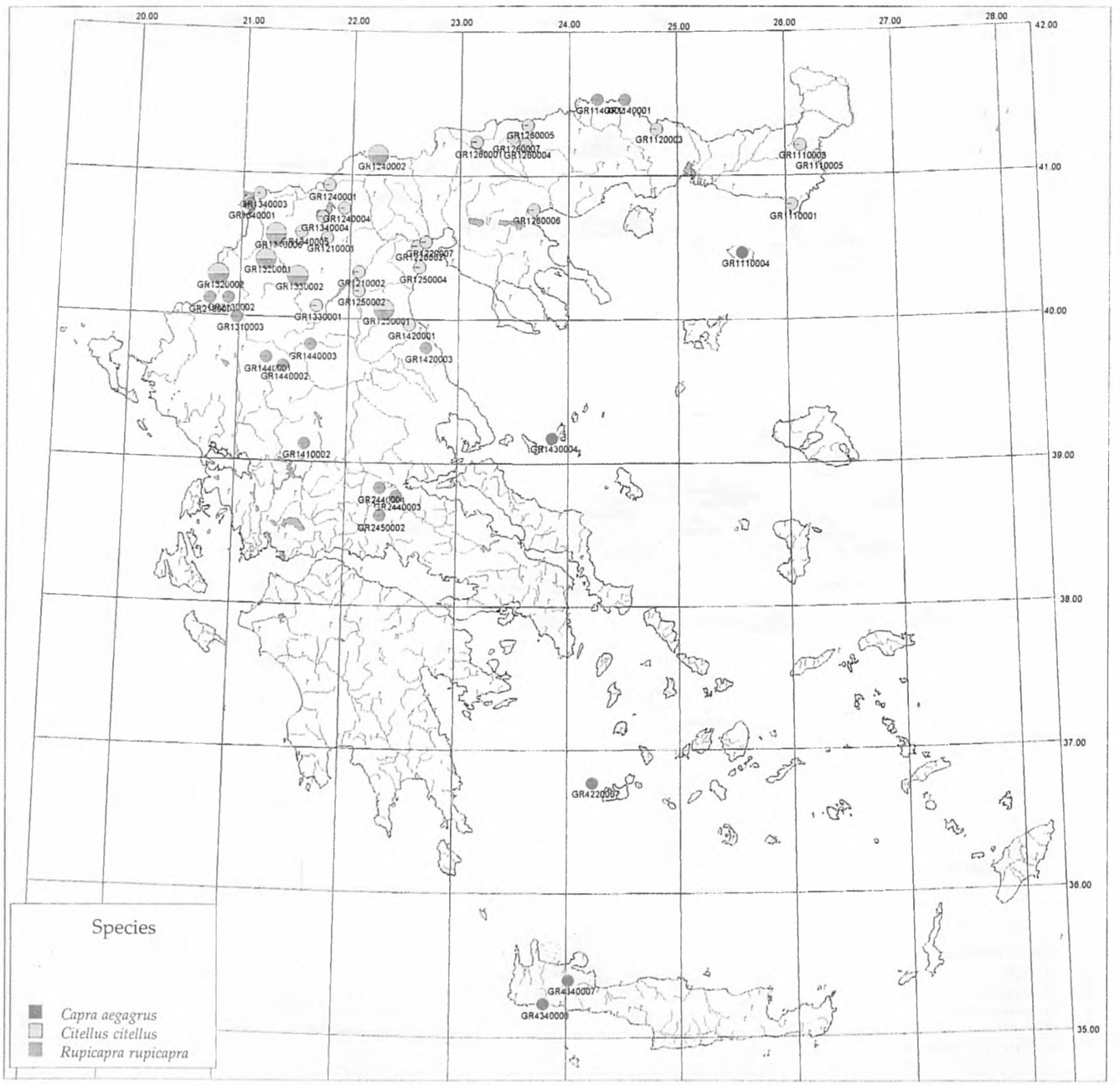
DISTRIBUTION OF MAMMAL SPECIES IN PROPOSED "NATURA 2000" SITES

CHIROPTERA (cont.)



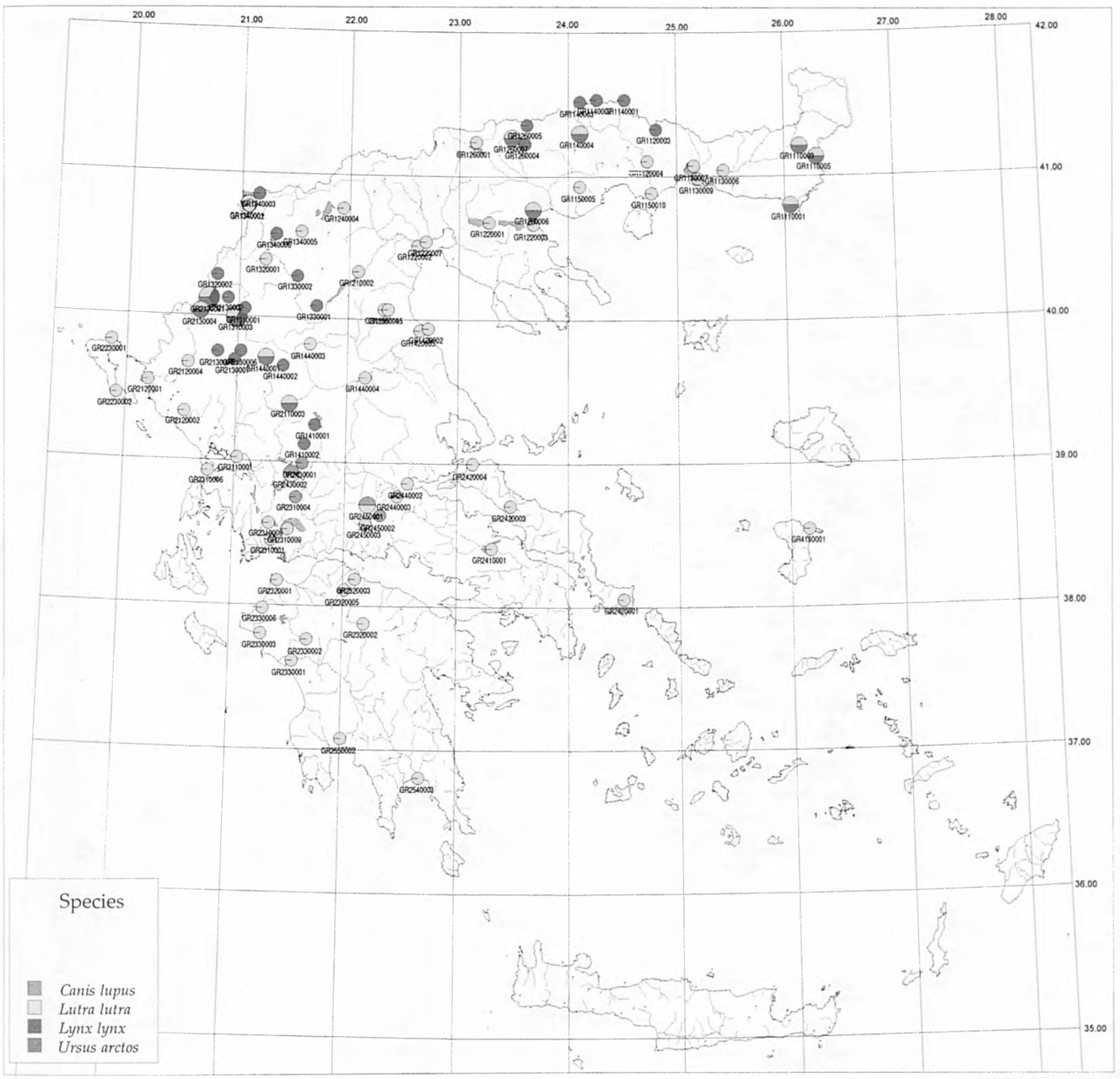
DISTRIBUTION OF MAMMAL SPECIES IN PROPOSED "NATURA 2000" SITES

– ARTIODACTYLA (Bovidae)
– RODENTIA (Sciuridae)

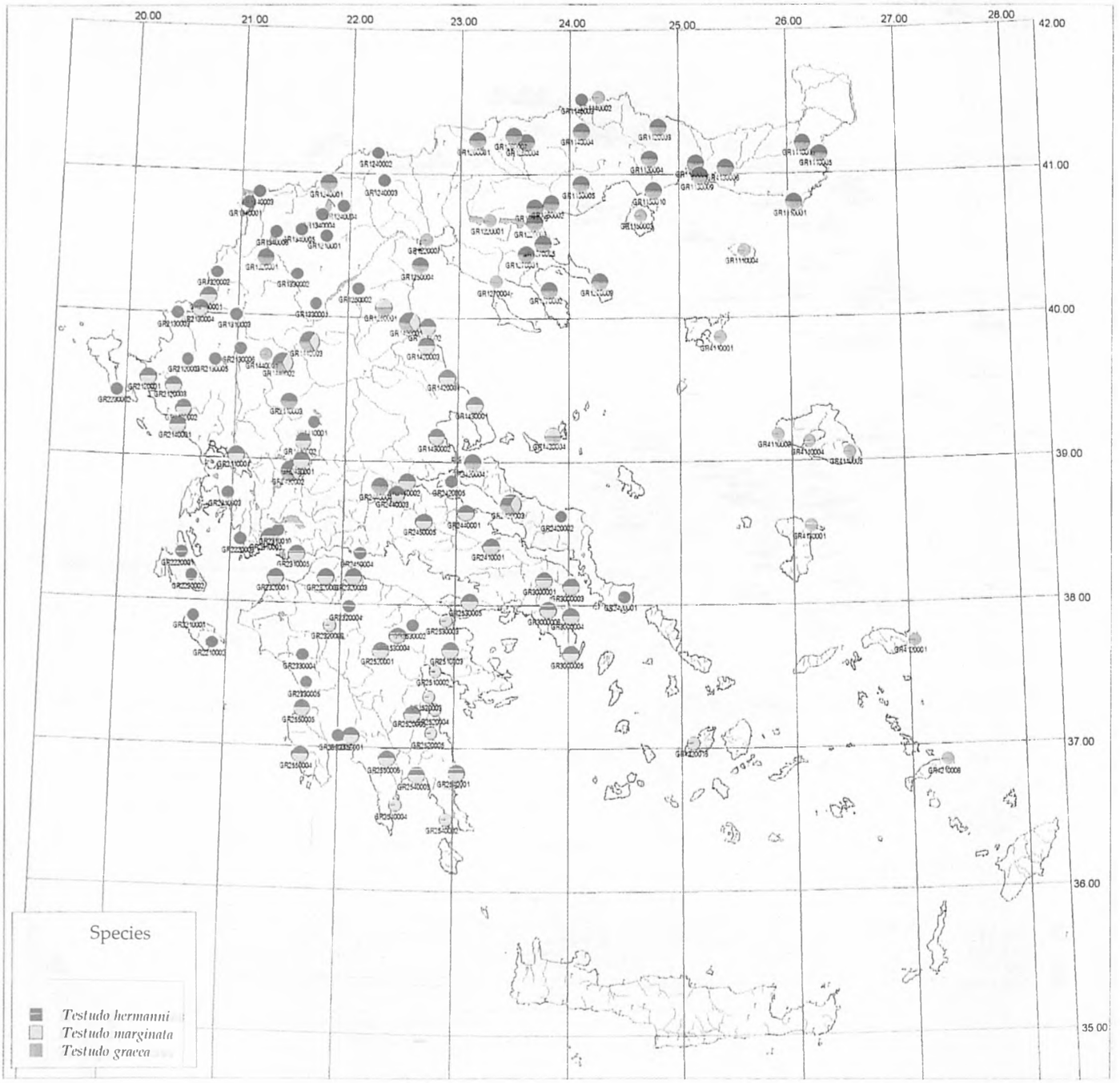


DISTRIBUTION OF MAMMAL SPECIES IN PROPOSED "NATURA 2000" SITES

CARNIVORA

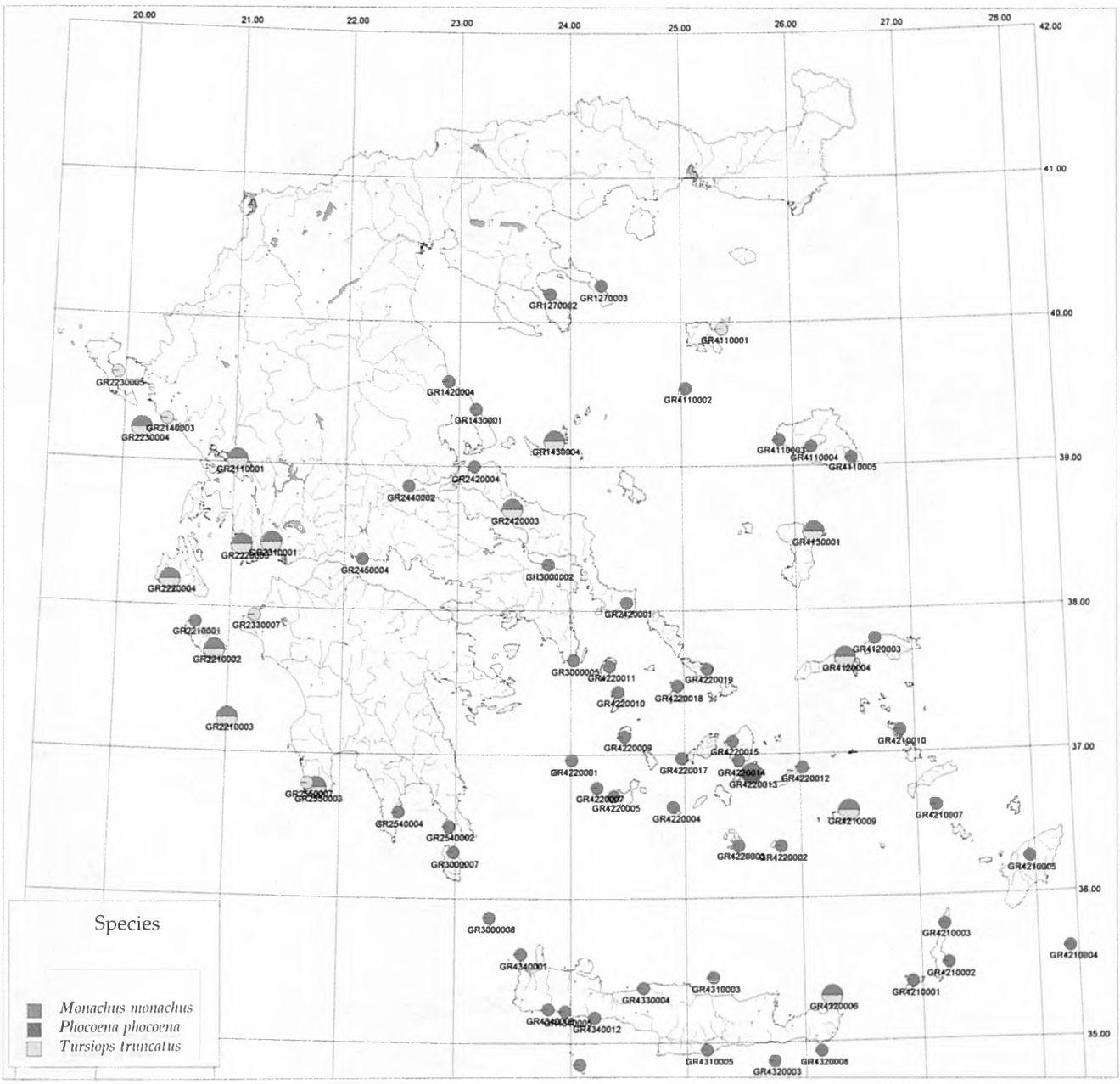


DISTRIBUTION OF REPTILE SPECIES IN PROPOSED "NATURA 2000" SITES
TESTUDINATA



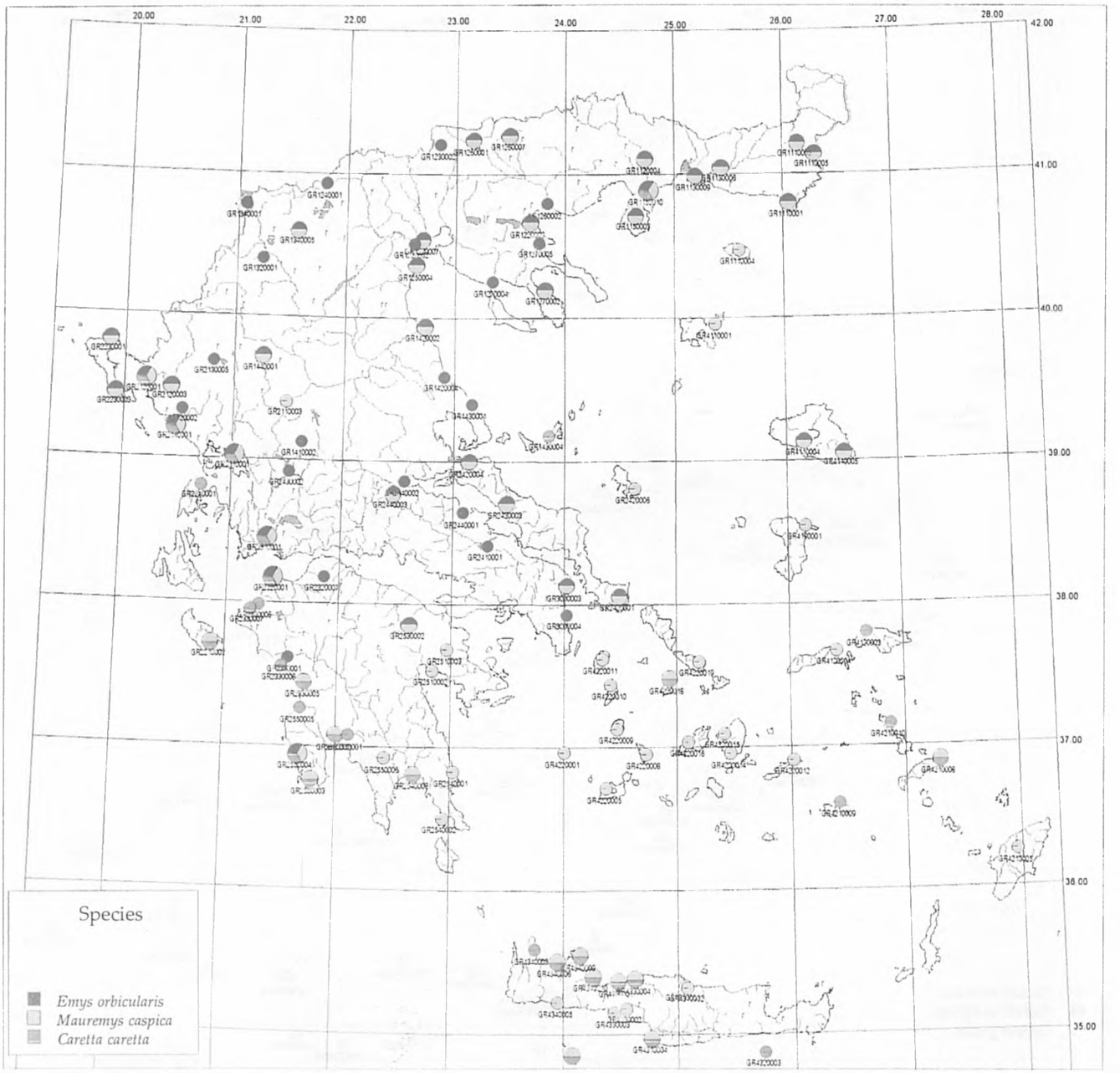
DISTRIBUTION OF MAMMAL SPECIES IN PROPOSED "NATURA 2000" SITES

– CARNIVORA (Phocidae)
– CETACEA



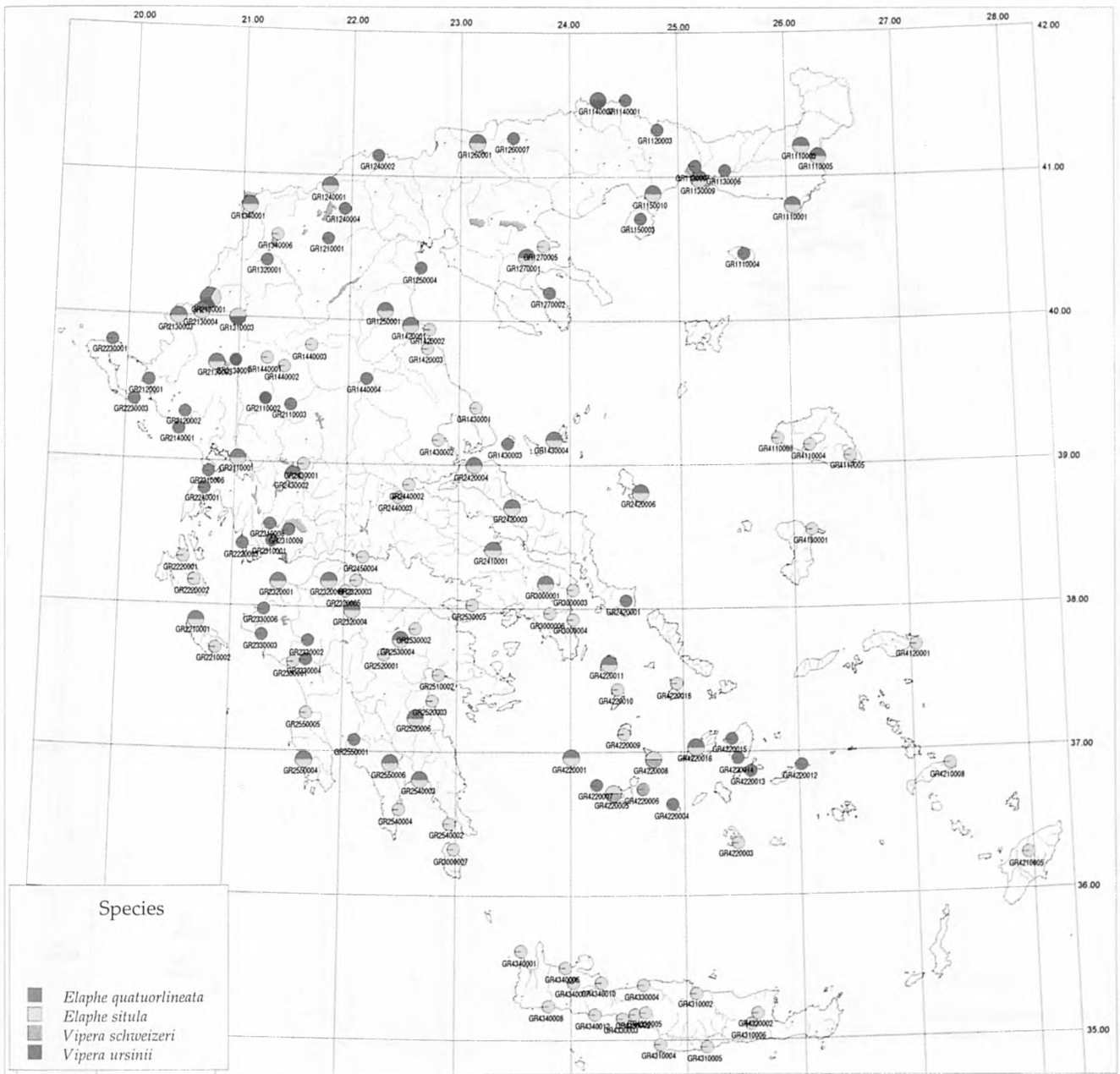
DISTRIBUTION OF REPTILE SPECIES IN PROPOSED "NATURA 2000" SITES

TESTUDINATA (cont.)



DISTRIBUTION OF REPTILE SPECIES IN PROPOSED "NATURA 2000" SITES

OPHIDIA



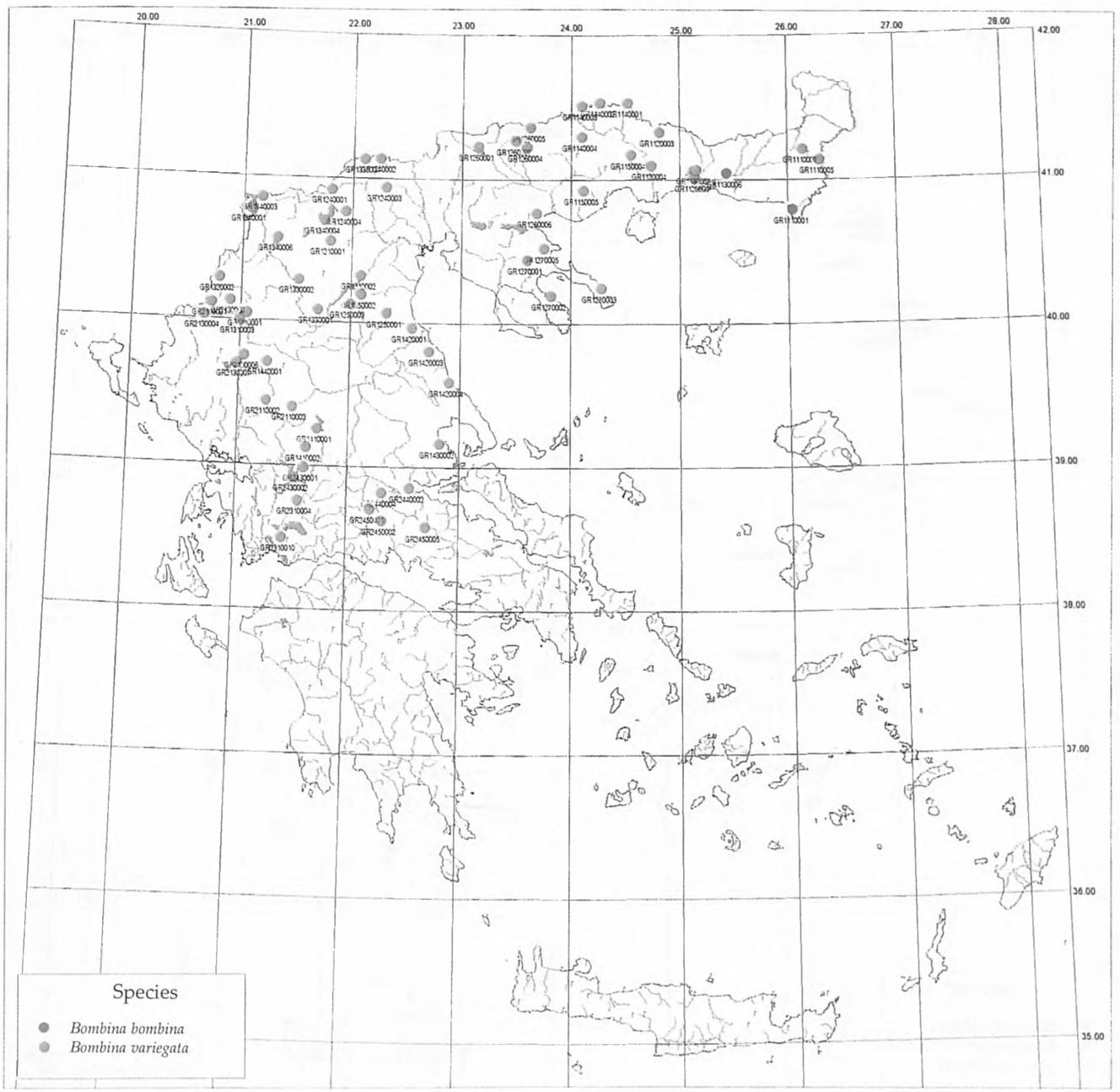
DISTRIBUTION OF AMPHIBIAN SPECIES IN PROPOSED "NATURA 2000" SITES

CAUDATA



DISTRIBUTION OF AMPHIBIAN SPECIES IN PROPOSED "NATURA 2000" SITES

ANURA



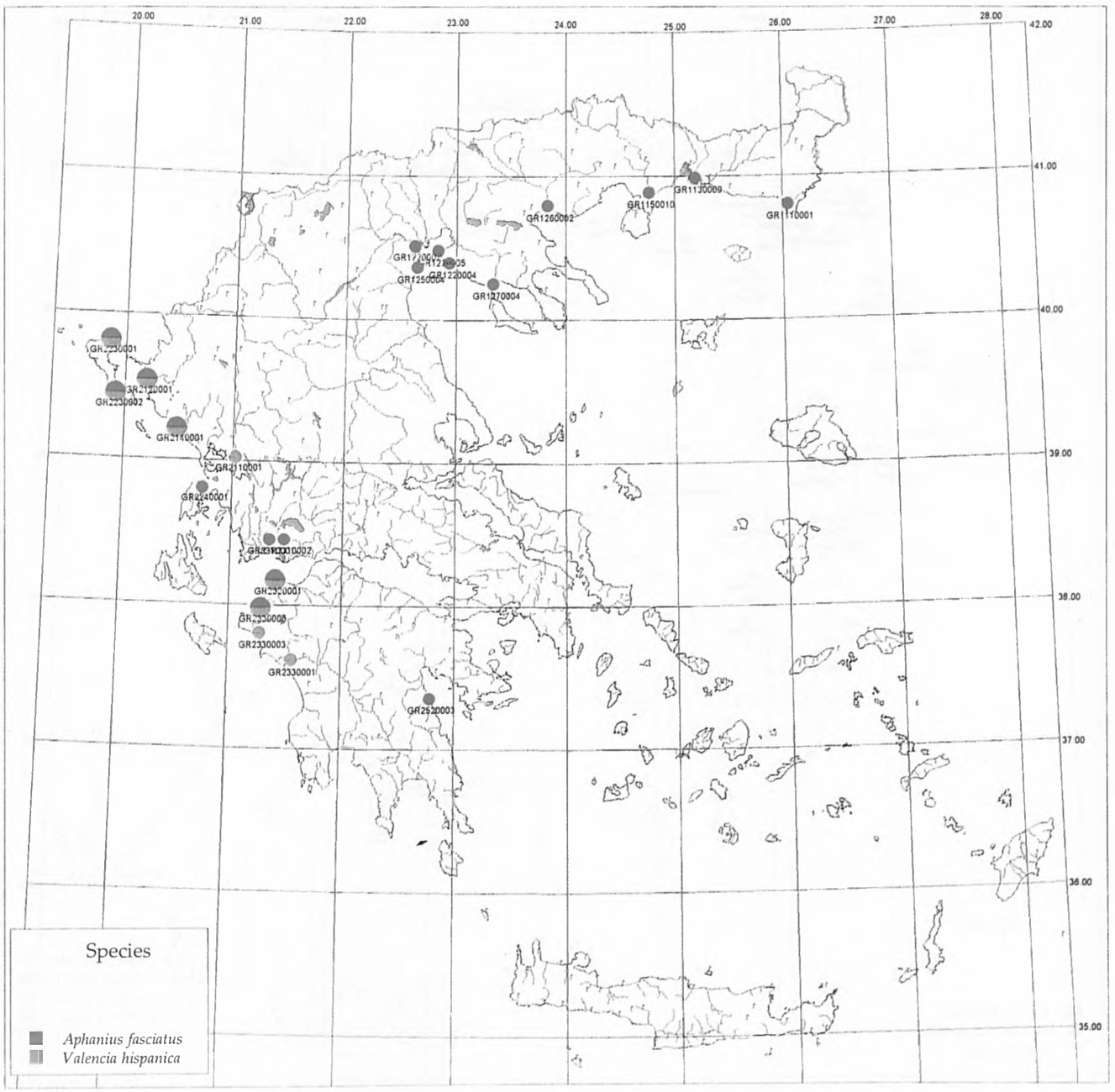
DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

– PETROMYZONIFORMES
– ACIPENSERIFORMES
– SALMONIFORMES



DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

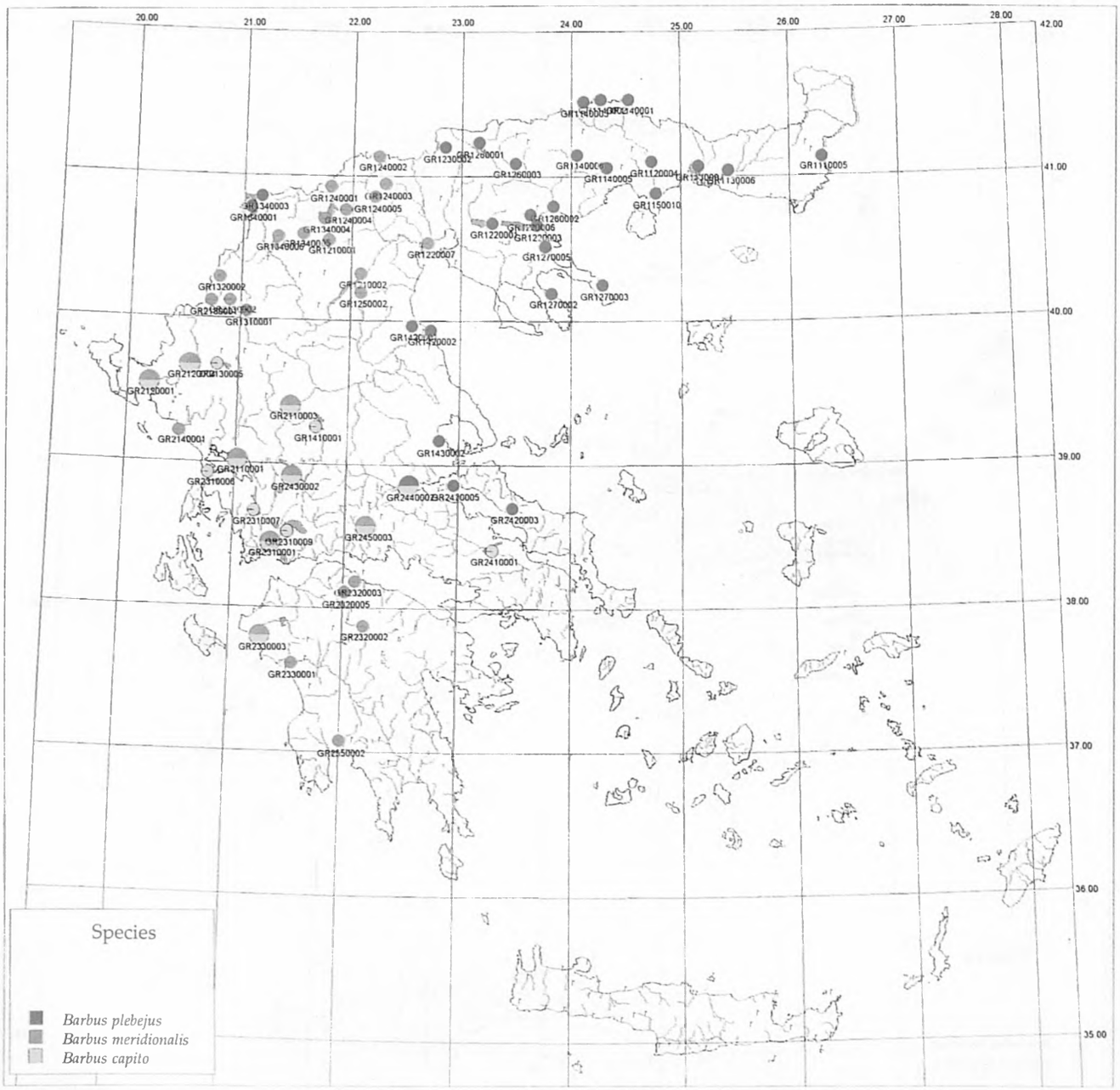
ATHERINIFORMES



DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

CYPRINIFORMES

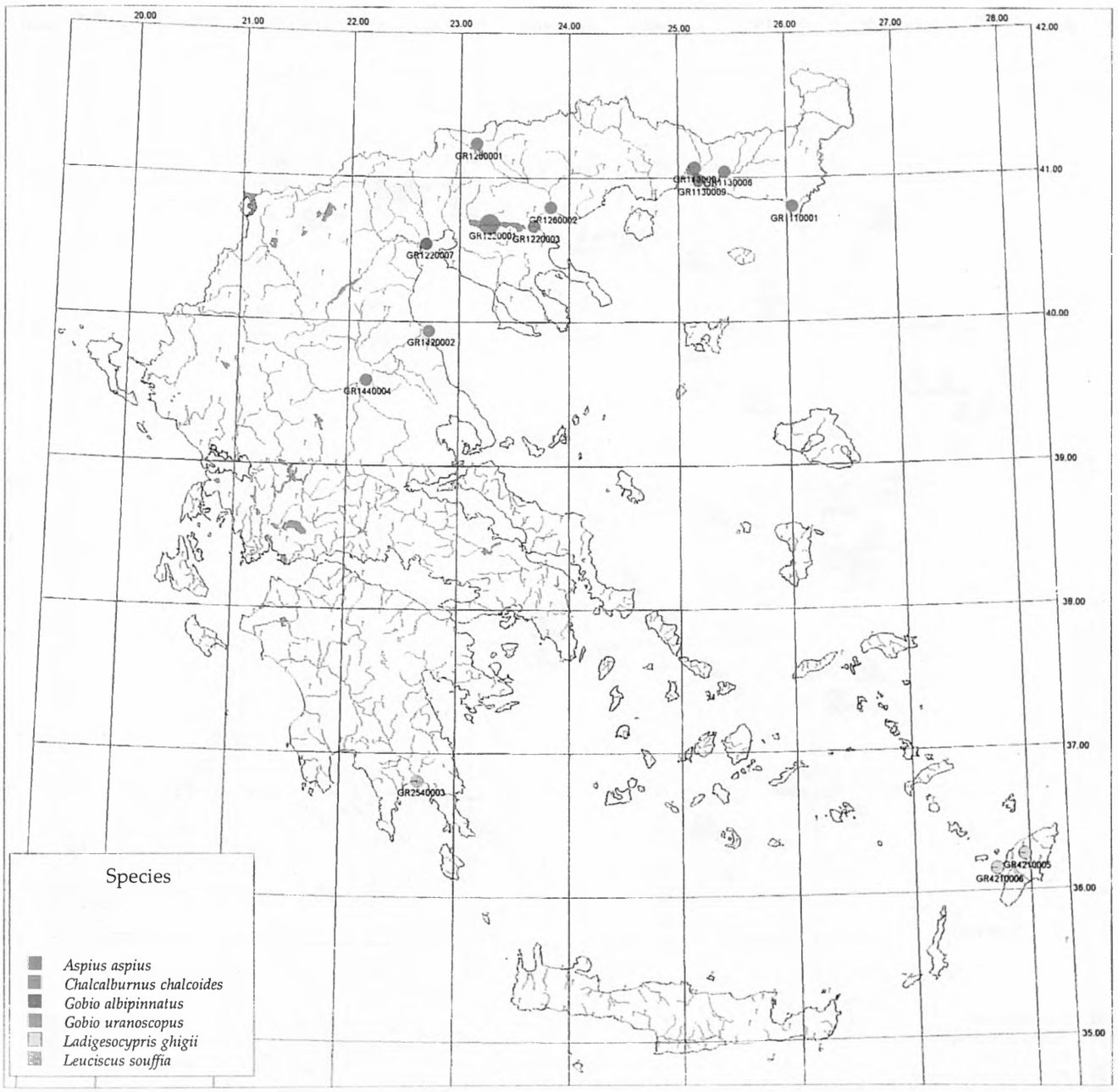
Cyprinidae



DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

CYPRINIFORMES

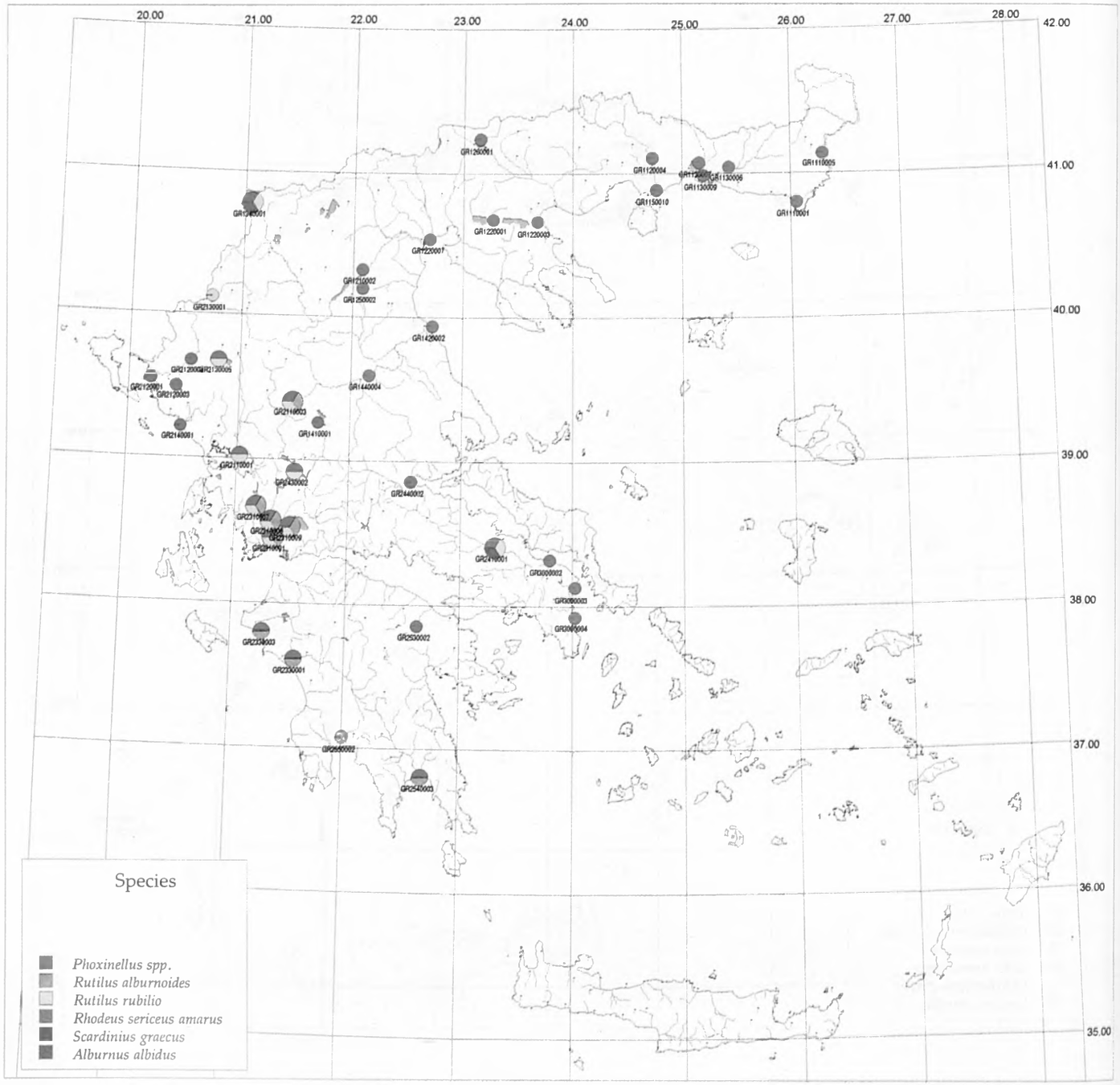
Cyprinidae (cont.)



DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

CYPRINIFORMES

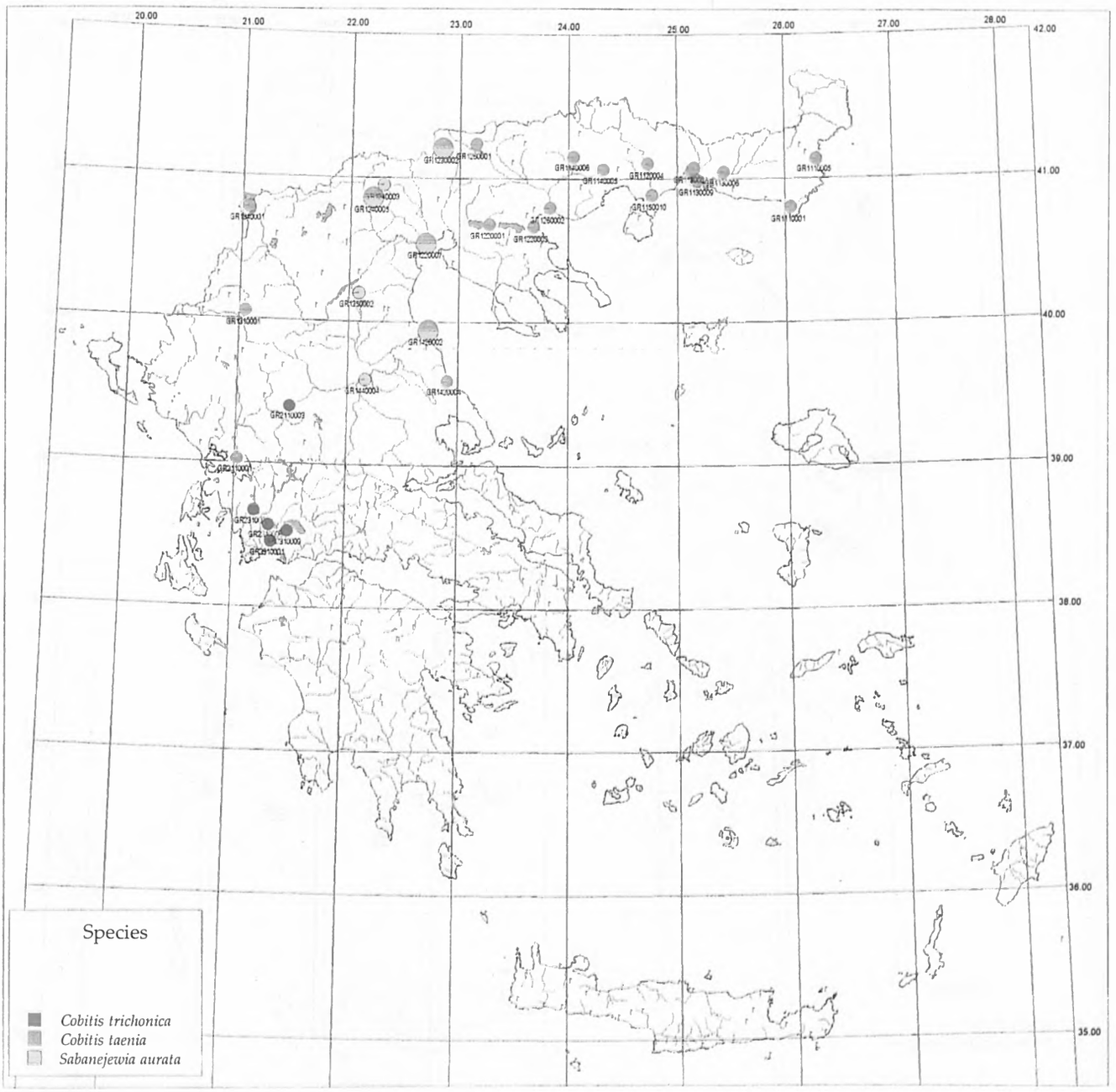
Cyprinidae (cont.)



DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

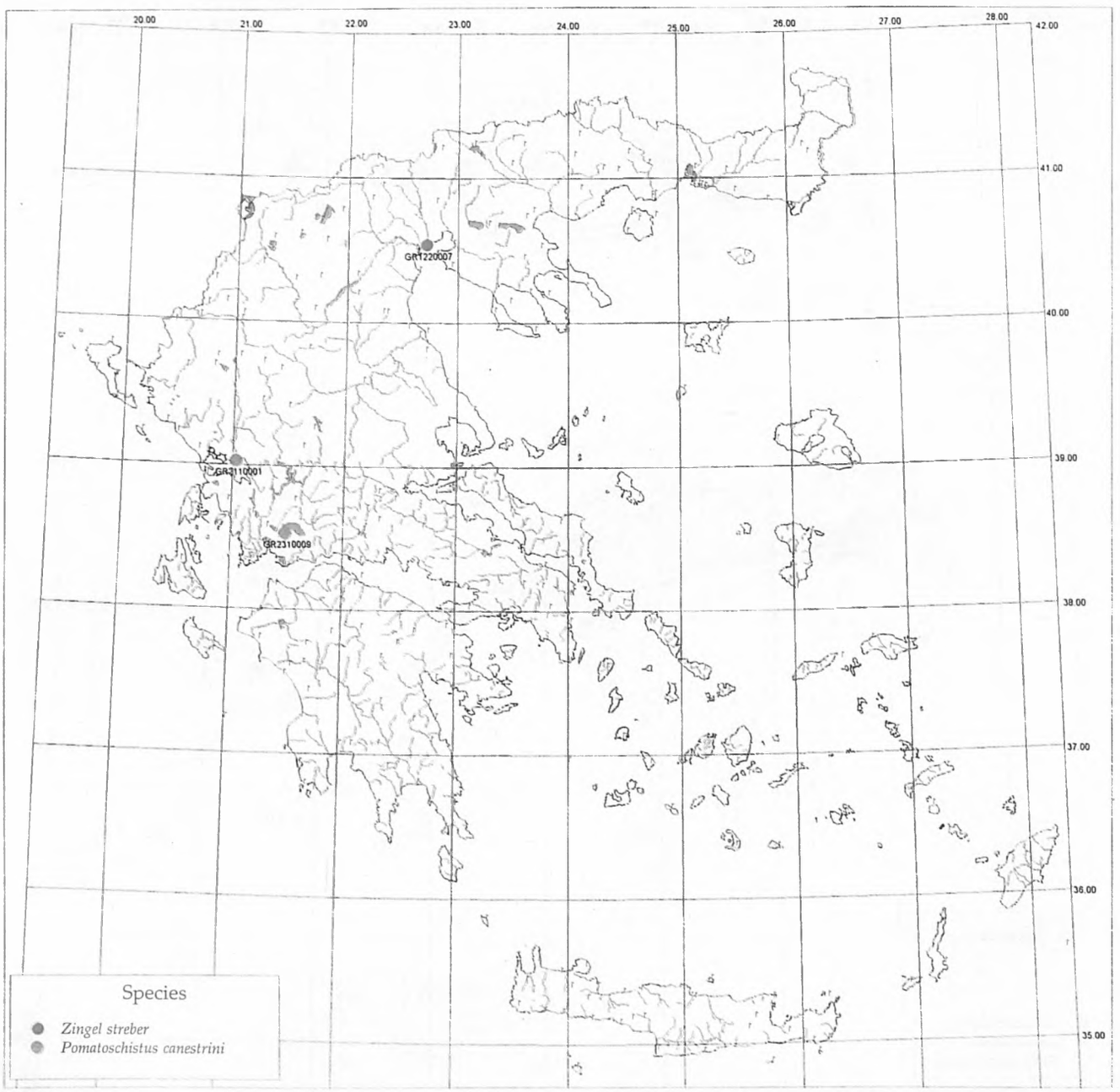
CYPRINIFORMES

Gobitidae



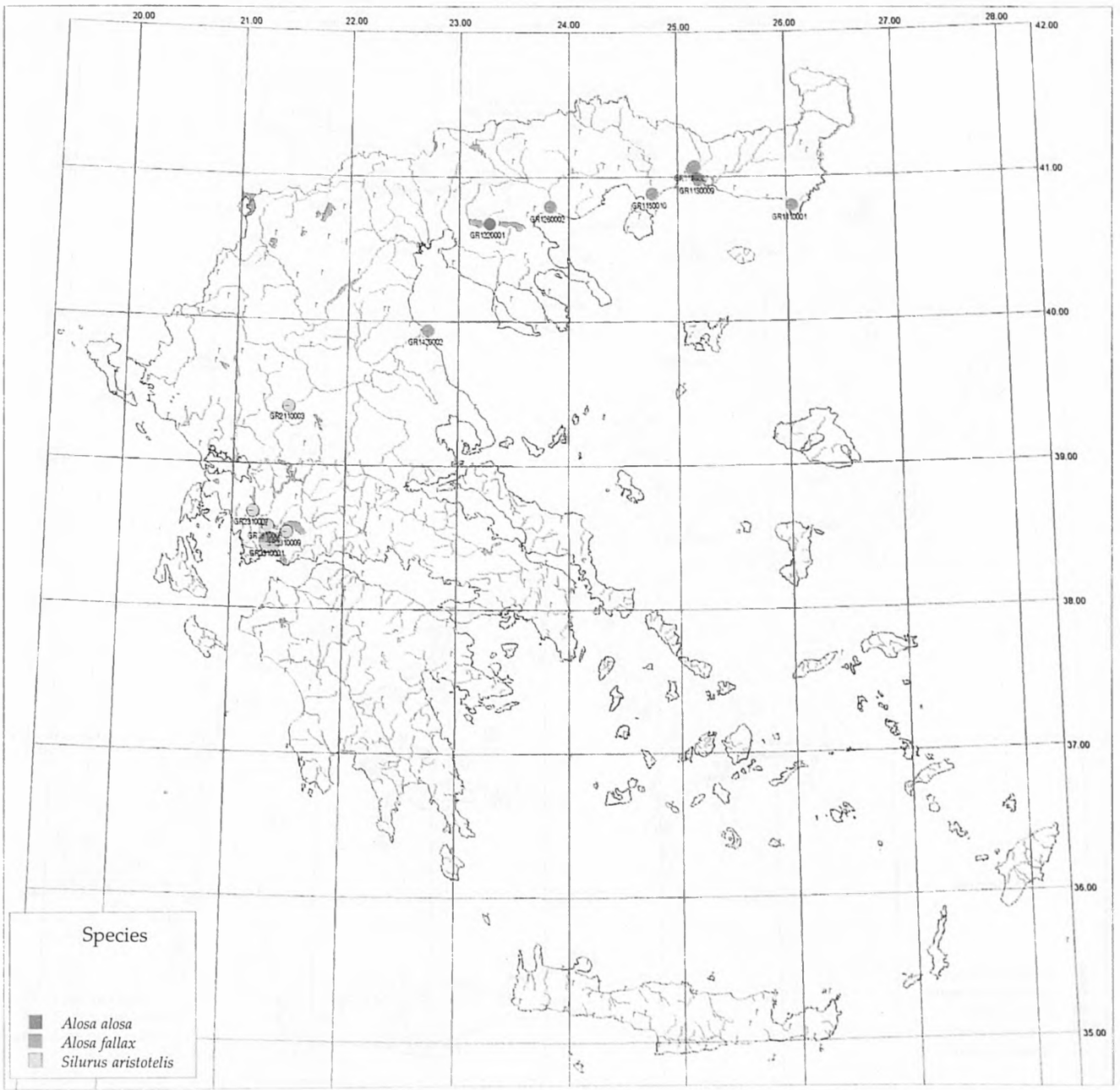
DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

PERCIFORMES



DISTRIBUTION OF FISH SPECIES IN PROPOSED "NATURA 2000" SITES

– CLUPEIFORMES
– SILURIFORMES



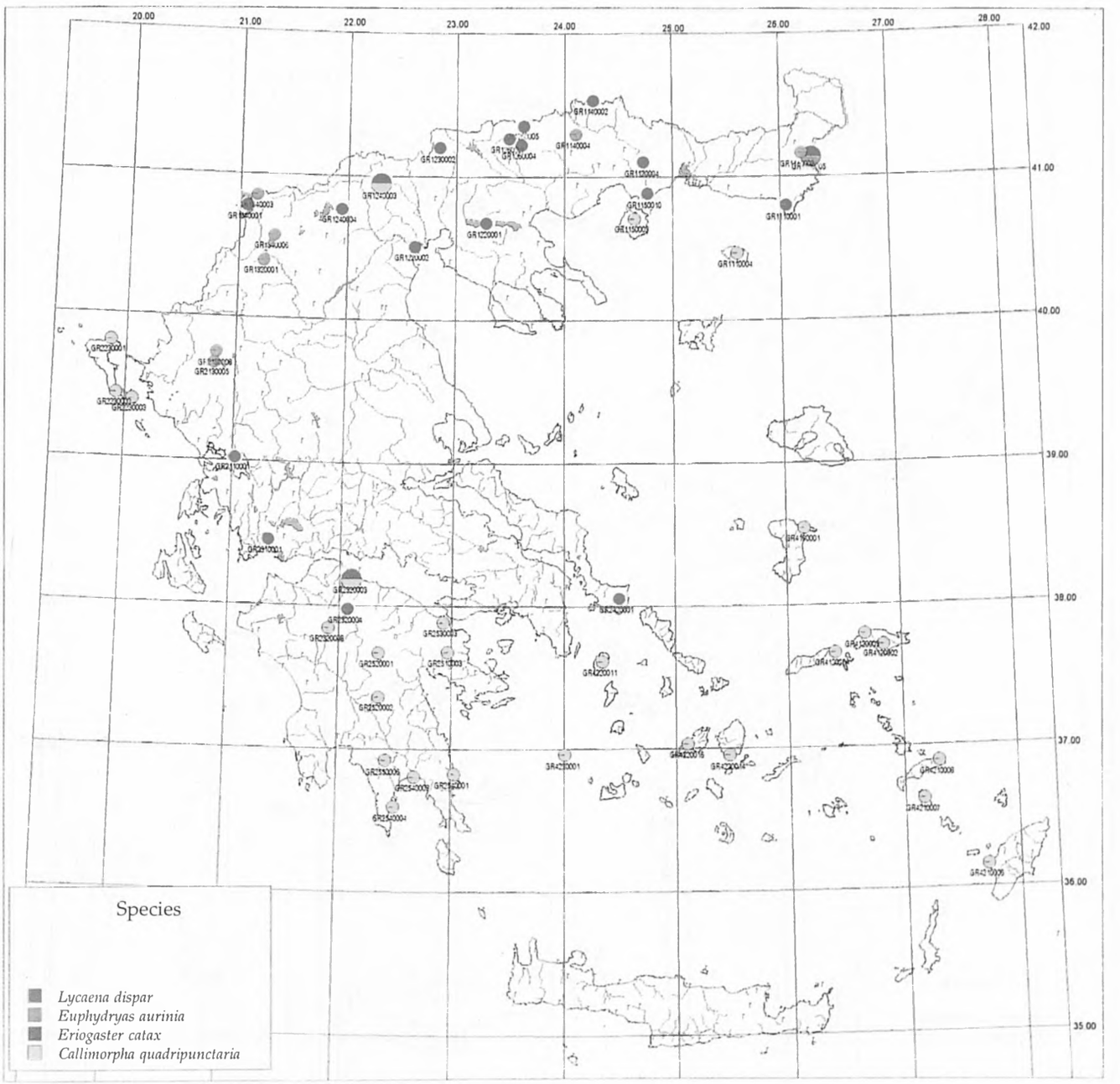
DISTRIBUTION OF INVERTEBRATE SPECIES IN PROPOSED "NATURA 2000" SITES

COLEOPTERA



DISTRIBUTION OF INVERTEBRATE SPECIES IN PROPOSED "NATURA 2000" SITES

LEPIDOPTERA



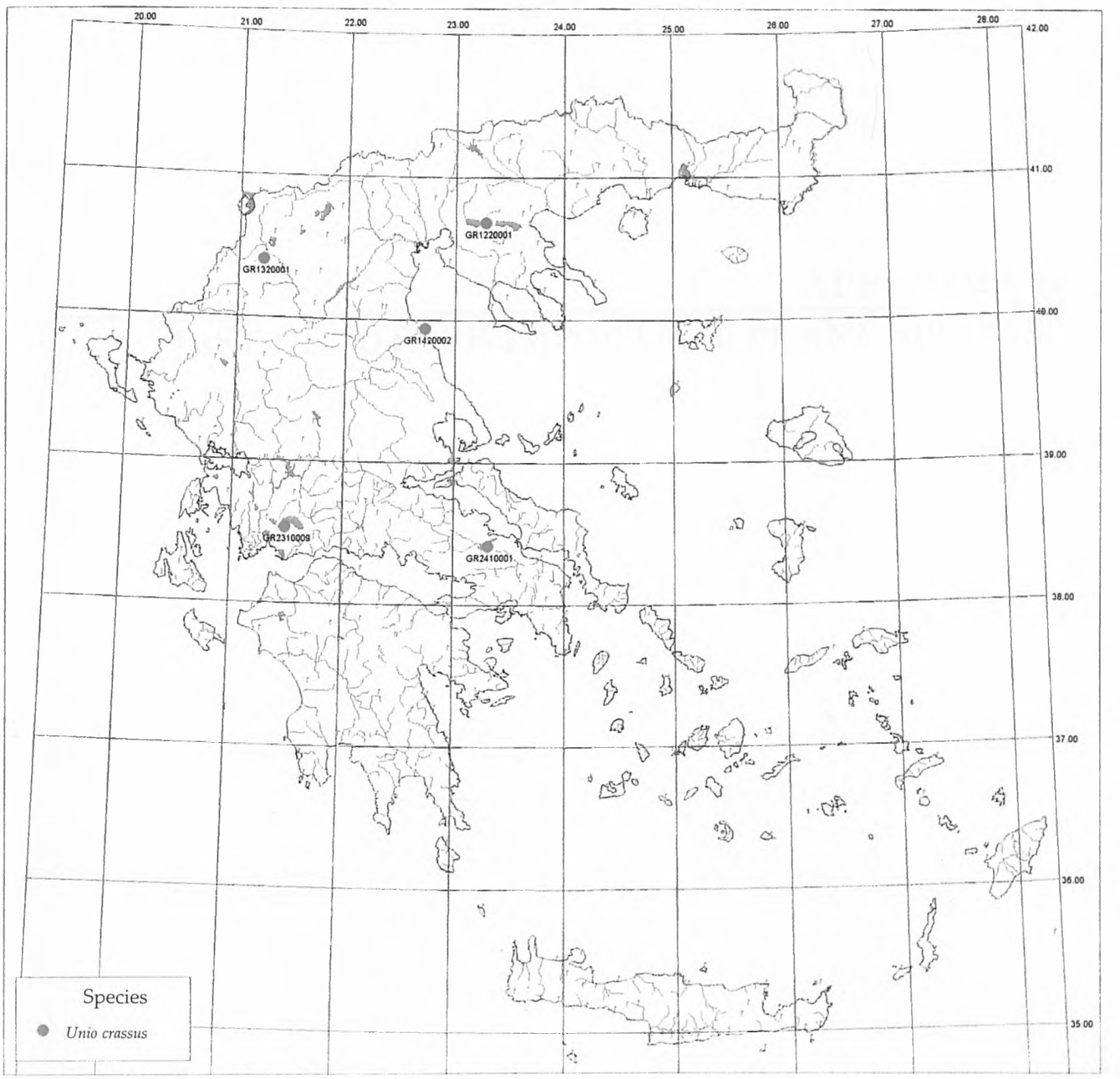
DISTRIBUTION OF INVERTEBRATE SPECIES IN PROPOSED "NATURA 2000" SITES

ODONATA



DISTRIBUTION OF INVERTEBRATE SPECIES IN PROPOSED "NATURA 2000" SITES

BIVALVIA



APPENDIX 5

LIST OF "OTHER IMPORTANT PLANT SPECIES"

OTHER IMPORTANT PLANT SPECIES

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Abies borisii-regis ssp. pseudolicica	1	+						
Abies borisii-regis	21							+
Abies cephalonica	34	+						
Acantholimon echinus ssp. creticum	2	+						
Acantholimon echinus ssp. echinus	10							+
Acantholimon echinus ssp. lycaonicum	5							+
Acer heldreichii	11							+
Acer opalus ssp. hyrcanum	6	+						
Aceras anthropophorum	1			+				
Acetabularia acetabulosum	1							+
Achillea abrotanoides	3							+
Achillea absinthoides	1	+						
Achillea ageratifolia ssp. ageratifolia	6							+
Achillea ageratifolia ssp. aizoon	4							+
Achillea ambrosiaca	2	+						
Achillea chrysocoma	11							+
Achillea clusiana	1							+
Achillea cretica	2							+
Achillea distans	2							+
Achillea fraasii	14							+
Achillea holosericea	23							+
Achillea lingulata	1							+
Achillea pindicola ssp. integrifolia	3	+						
Achillea pindicola ssp. pindicola	2	+						
Achillea taygetea	2	+						
Achillea umbellata	15	+						
Achillea umbellata ssp. monocephala	1	+						
Acinos alpinus ssp. nomismophyllus	3	+						
Acontium lamarkii	2							+
Adonis cyllenea	2	+						
Aesculus hippocastanum	7					+		+
Aethionema carlsbergi	1	+						
Aethionema cordatum	2				+	+	+	
Aethionema orbiculatum	1	+						
Aethionema retsina	1	+						
Aethionema saxatile ssp. creticum	6				+	+		
Aethionema saxatile ssp. graecum	6	+						
Aethionema saxatile ssp. oreophilum	26							+
Ajuga bombycina	1				+			
Ajuga orientalis ssp. aenesia	1	+						
Alchemilla aroanica	1	+						
Alchemilla bulgarica	1							+
Alchemilla gorcensis	1							+
Alchemilla gracilis	1							+
Alchemilla heterotricha	3							+
Alchemilla incisa	1							+
Alchemilla indivisa	5							+
Alchemilla lanuginosa	3							+
Alchemilla serbica	3							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Alchemilla viridiflora	2							+
Alkanna corcyrensis	1	+						
Alkanna graeca	1	+						
Alkanna graeca ssp. baeotica	2	+						
Alkanna graeca ssp. graeca	4	+						
Alkanna methanaea	2	+						
Alkanna noneiformis	2							+
Alkanna orientalis	3							+
Alkanna pelia	2	+						
Alkanna sieberi	3	+						
Allium achaium	11	+						
Allium bourgeaui ssp. bourgeaui	3	+						
Allium bourgeaui ssp. creticum	6	+						
Allium bourgeaui ssp. cycladicum	2	+						
Allium callimischon ssp. callimischon	6	+						
Allium callimischon ssp. haemostictum	3							+
Allium candargyi	1	+						
Allium chamaespathum	1					+		+
Allium circinnatum ssp. circinnatum	1	+						
Allium circinnatum ssp. peloponnesiacum	3	+						
Allium dilatatum	2	+						
Allium dodekanesi	1	+						
Allium frigidum	9				+	+	+	
Allium gomphrenoides	5	+						
Allium heldreichii	7	+						
Allium hymettium	2	+						
Allium ionicum	4	+						
Allium junceum ssp. junceum	2				+		+	
Allium lagarophyllum	1	+						
Allium longanum	2				+		+	
Allium luteolum	4	+						
Allium macedonicum	3	+						
Allium maniaticum	1	+						
Allium melanantherum	3							+
Allium meteoricum	1							+
Allium olympicum	1				+		+	
Allium parnassicum	3	+						
Allium phthioticum	13				+	+	+	
Allium pilosum	3	+						
Allium platakisii	1	+						
Allium proponticum	1							+
Allium rhodiacum	1	+						
Allium rubrovittatum	11	+						
Allium schoenoprasum	3							+
Allium sipyleum	2				+	+		
Allium staticiforme	6	+						
Allium tardans	11	+						
Alnus glutinosa	10							+
Alopecurus creticus	1							+
Alyssoides cretica	6	+						
Alyssum chalcidicum	1	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Alyssum chlorocarpum	5	+						
Alyssum degenianum	1	+						
Alyssum densistellatum	1	+						
Alyssum doerfleri	5				+	+	+	
Alyssum euboeum	1	+						
Alyssum fragillimum	1	+						
Alyssum gustavssonii	4	+						
Alyssum handelii	2	+						
Alyssum heldreichii	7	+			+	+	+	
Alyssum idaeum	2	+						
Alyssum lassiticum	1	+						
Alyssum lesbiacum	1	+						
Alyssum pichleri	1							+
Alyssum pulvinare	1							+
Alyssum samium	1	+						
Alyssum siculum	8							+
Alyssum smolikanum	4				+	+	+	
Alyssum sphacioticum	2	+						
Alyssum taygeteum	2	+						
Amelanchier chelmea	6	+						
Amelanchier cretica	7							+
Amelanchier ovalis ssp. cretica	4							+
Amelanchier ovalis ssp. integrifolia	1							+
Anacamptis pyramidalis	11			+				
Anchusa cespitosa	1	+						
Anchusa sartorii	2	+						
Anchusa spruneri	3	+						
Anchusa undulata ssp. undulata	2							+
Anchusa variegata	7	+						
Andrachne telephioides ssp. oreocretensis	6	+						
Androsace villosa	5					+		+
Anemone hortensis ssp. heldreichii	1	+						
Anthemis abrotanifolia	4	+						
Anthemis ammanthus	1	+						
Anthemis ammanthus ssp. ammanthus	5	+						
Anthemis ammanthus ssp. paleacea	2	+						
Anthemis arvensis ssp. cyllenea	12							+
Anthemis brachmannii	2	+						
Anthemis chia	1							+
Anthemis cretica ssp. columnae	8				+	+	+	
Anthemis cretica ssp. cretica	20				+	+	+	
Anthemis filicaulis	1	+						
Anthemis flexicaulis	1	+						
Anthemis laconica	3	+						
Anthemis peregrina ssp. guicciardii	1	+						
Anthemis rhodensis	2	+						
Anthemis rosea ssp. rosea	1	+						
Anthemis scopulorum	7	+						
Anthemis sibthorpii	1	+						
Anthemis spruneri	5	+						
Anthemis tinctoria ssp. parnassica	6							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Anthemis tomentella	3	+						
Anthemis werneri	2	+						
Anthemis werneri ssp. insularis	1	+						
Anthemis werneri ssp. werneri	3	+						
Anthyllis aegaea	4	+						
Anthyllis aurea	11							+
Anthyllis vulneraria ssp. bulgarica	21							+
Anthyllis vulneraria ssp. hispidissima	2							+
Anthyllis vulneraria ssp. pindicola	8							+
Apium inundatum	1							+
Aquilegia ottonis ssp. amaliae	3				+	+	+	
Aquilegia ottonis ssp. ottonis	4				+		+	
Aquilegia ottonis ssp. taygetea	1	+						
Aquilegia vulgaris	2						+	+
Arabis bryoides	18							+
Arabis cretica	2	+						
Arabis subflava	5	+						
Arctostaphylos uva-ursi	10					+		+
Arenaria aegaea	5	+						
Arenaria conferta ssp. conferta	8							+
Arenaria conferta ssp. serpentini	7							+
Arenaria cretica	11							+
Arenaria filicaulis ssp. graeca	10							+
Arenaria filicaulis ssp. teddii	1	+						
Arenaria fragillima	6	+						
Arenaria gionae	1	+						
Arenaria guicciardii	9	+						
Arenaria leucadia	1	+						
Arenaria litoralis	1	+						
Arenaria muralis	9	+						
Arenaria peloponnesiaca	3	+						
Arenaria phitosiana	1	+						
Arenaria saponarioides	1				+	+		
Aristolochia cretica	6	+						
Aristolochia microstoma	2	+						
Armeria cariensis	1				+	+		
Armeria johnsenii	1	+						
Armeria maritima ssp. smolikana	1	+						
Armeria sancta	1	+						
Arnebia densiflora	2				+	+	+	
Artemisia herba-alba	1							+
Arum creticum	8							+
Arum elongatum	1							+
Arum idaeum	4	+						
Arum purpureospathum	1	+						
Asperula abbreviata	2	+						
Asperula arcadiensis	5	+						
Asperula aristata ssp. condensata	7							+
Asperula aristata ssp. nestia	11							+
Asperula aristata ssp. thessala	20	+						
Asperula boissieri	6	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Asperula boryana	4	+						
Asperula crassula	1	+						
Asperula doerfleri	1							+
Asperula elonea	2	+						
Asperula idaea	3	+						
Asperula lilaciflora ssp. runemarkii	1	+						
Asperula lutea	6	+						
Asperula malevonensis	1	+						
Asperula mungieri	3	+						
Asperula muscosa	2	+						
Asperula oetaea	6	+						
Asperula pinifolia	6	+						
Asperula pubescens	7	+						
Asperula pulvinaris	3	+						
Asperula purpurea ssp. apiculata	7							+
Asperula rigida	10	+						
Asperula rigidula	2	+						
Asperula samia	1	+						
Asperula suberosa	1	+						
Asperula suffruticosa	1	+						
Asperula taygetea	9	+						
Asperula tournefortii	8	+						
Asphodeline taurica	2							+
Asplenium bourgaei	1				+	+		
Asplenium creticum	2	+						
Aster alpinus	9					+		+
Astracantha rumelica ssp. taygetea	1	+						
Astracantha thracica ssp. cyllenea	2	+						
Astragalus agraniotii	1	+						
Astragalus apollineus	3	+						
Astragalus austroaegaeus	3	+						
Astragalus creticus ssp. rumelicus	19							+
Astragalus drupaceus	2	+			+	+	+	
Astragalus hellenicus	8	+						
Astragalus idaeus	3	+						
Astragalus lacteus	12				+	+	+	
Astragalus mayeri	6							+
Astragalus nummularius	2	+						
Astragalus peregrinus ssp. peregrinus	2				+	+		
Astragalus ptilodes	3				+	+		
Astragalus pubiflorus	1							+
Astragalus sempervirens ssp. cephalonicus	8	+						
Astragalus spruneri	3							+
Astragalus taygeteus	1	+						
Astragalus thracicus ssp. monachorum	1	+						
Astragalus thracicus ssp. parnassi	8						+	
Athamanta albanica	1							+
Athamanta arachnoidea	4	+						
Athamanta densa	4				+	+	+	
Atraphaxis billardieri	2							+
Atriplex recurva	4	+						

Taxon	No sites	Motivation						
		B	C			D		
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Atropa bella-donna	10					+		+
Aubrieta thessala	3	+						
Aubrieta erubescens	1	+						
Aubrieta glabrescens	1	+						
Aubrieta gracilis	3	+						
Aubrieta scardica	8							+
Aubrieta scyria	1	+						
Aurinia corymbosa	7							+
Aurinia gionae	8	+						
Aurinia moreana	7	+						
Aurinia saxatilis	1							+
Aurinia saxatilis ssp. megalocarpa	2							+
Avenula cycladum	4	+						
Azolla filiculoides	2							+
Ballota grandulosissima	1							+
Ballota hispanica ssp. macedonica	7							+
Ballota pseudodictamnus ssp. pseudodictamnus	7	+						
Barbarea conferta	1	+						
Barbarea icarica	1	+						
Barbarea sicula	11				+	+	+	
Barlia robertiana	7			+				
Bellevalia brevipedicellata	2	+						
Bellevalia hyacinthoides	3	+						
Bellis longifolia	5	+						
Beta nana	10	+						
Biarum davisii ssp. davisii	6	+						
Biarum spruneri	5	+						
Biarum tenuifolium ssp. abbreviatum	2	+						
Biarum tenuifolium ssp. idomenaeum	4	+						
Bolanthus chelmicus	1	+						
Bolanthus creutzburgii	2	+						
Bolanthus fruticulosus	1	+						
Bolanthus graecus	2	+						
Bolanthus intermedius	1	+						
Bolanthus laconicus	4	+						
Bolanthus thessalus	4	+						
Bolanthus thymifolius	2	+						
Bongardia chrysogonum	1				+			
Bornmuellera baldaccii ssp. baldaccii	2							+
Bornmuellera baldaccii ssp. rechingeri	4	+						
Bornmuellera tymphaea	5	+						
Brachypodium sylvaticum ssp. creticum	1	+						
Brassica cretica ssp. aegaea	16							+
Brassica cretica ssp. cretica	9							+
Brassica cretica ssp. laconica	4	+						
Bromus cappadocicus ssp. lacmonicus	8							+
Bruckenthalia spiculifolia	9							+
Bufonia euboica	1	+						
Bufonia stricta	1	+						
Bufonia stricta ssp. cecconiana	2	+						
Bufonia stricta ssp. stricta	5	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Bunium tenerum	3	+						
Bupleurum aira	1	+						
Bupleurum gaudianum	1	+						
Bupleurum karglii	1							+
Calamintha cretica	1	+						
Callitriche brutia	2							+
Callitriche leniscula	1							+
Callitriche pulchra	1				+	+	+	
Campanula aizoon ssp. aizoides	3	+						
Campanula aizoon ssp. aizoon	1	+						
Campanula albanica ssp. sancta	1	+						
Campanula andrewsii ssp. andrewsii	2	+						
Campanula andrewsii ssp. hirsutula	1	+						
Campanula asperuloides ssp. asperuloides	1	+						
Campanula asperuloides ssp. taygetea	2	+						
Campanula calaminthifolia	2	+						
Campanula carpatha	3	+						
Campanula celsii	2	+						
Campanula celsii ssp. carystea	1	+						
Campanula celsii ssp. parnesia	2	+						
Campanula chalcidica	1							+
Campanula columnaris	1	+						
Campanula constantini	1	+						
Campanula cretica	2	+						
Campanula creutzburgii	6	+						
Campanula delicatula	3				+	+		
Campanula drabifolia	6	+						
Campanula euboica	1	+						
Campanula foliosa	5							+
Campanula formanekiana	3							+
Campanula garganica ssp. acarnanica	1	+						
Campanula garganica ssp. cephallenica	1	+						
Campanula goulimyi	1	+						
Campanula hagielia	5				+	+	+	
Campanula hawkinsiana	10							+
Campanula heterophylla	3	+						
Campanula hierapetrae	1	+						
Campanula incurva	2	+						
Campanula jacquinii	2	+						
Campanula laciniata	7	+						
Campanula lavrensis	2	+						
Campanula lyrata ssp. icarica	2	+						
Campanula lyrata ssp. lyrata	5							+
Campanula merxmuelleri	1	+						
Campanula nisyria	1	+						
Campanula oreadum	2	+						
Campanula orphanidea	5							+
Campanula papillosa	1	+						
Campanula pelviformis	6	+						
Campanula pinatzii	3	+						
Campanula radicosa	8	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Campanula rechingeri	1	+						
Campanula reiseri	1	+						
Campanula rhodensis	1							+
Campanula rupestris	11	+						
Campanula rupicola	4	+						
Campanula sartorii	1	+						
Campanula saxatilis ssp. cytherea	2	+						
Campanula saxatilis ssp. saxatilis	6	+						
Campanula scopelia	1	+						
Campanula spatulata ssp. filicaulis	5	+						
Campanula spatulata ssp. spatulata	31							+
Campanula spatulata ssp. spruneriana	1	+						
Campanula stenosiphon	2	+						
Campanula thessala	1	+						
Campanula topaliana ssp. cordifolia	6	+						
Campanula topaliana ssp. delphica	2	+						
Campanula topaliana ssp. topaliana	1	+						
Campanula trichocalycina	9							+
Campanula tubulosa	7	+						
Campanula tymphaea	10							+
Cardamine carnosa	3							+
Carduus macrocephalus ssp. sporadum	1	+						
Carex cretica	2	+						
Carex ferruginea	1							+
Carex idaea	1	+						
Carex kitaibeliana ssp. capillata	4	+						
Carex lasiocarpa	1							+
Carlina acaulis ssp. simplex	4							+
Carlina barnebiana	1	+						
Carlina corymbosa ssp. curetum	3	+						
Carlina diae	2	+						
Carlina frigida	18							+
Carlina sitiensis	2	+						
Carthamus leucocaulos	5	+						
Carthamus rechingeri	1	+						
Carthamus tenuis ssp. gracillimus	1	+						
Carum graecum ssp. graecum	25							+
Carum graecum ssp. serpentinicum	9							+
Carum heldreichii	6	+						
Carum rigidulum ssp. bulgaricum	1							+
Carum rigidulum ssp. palmatum	4							+
Carum rupestre	10							+
Carum strictum	10							+
Celtis tournefortii	1					+		+
Cenchrus incertus	1							+
Centaurea achaia ssp. achaia	2	+						
Centaurea aegialophila	2				+	+	+	
Centaurea aetolica	2	+						
Centaurea affinis ssp. affinis	9	+						
Centaurea affinis ssp. laconiae	6	+						
Centaurea affinis ssp. pallidior	9	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Centaurea alba ssp. subciliaris	1	+						
Centaurea albanica	1	+						
Centaurea amplifolia	1					+		+
Centaurea argentea	11	+						
Centaurea athoa ssp. athoa	1							+
Centaurea attica	1	+						
Centaurea attica ssp. asperula	1	+						
Centaurea attica ssp. drakiensis	1	+						
Centaurea attica ssp. pentelica	1	+						
Centaurea baldaccii	2	+						
Centaurea chalcidicaea	1	+						
Centaurea chrysocephala	1	+						
Centaurea cytherea	1	+						
Centaurea deustiformis	4							+
Centaurea ebenoides	1	+						
Centaurea epirota	5							+
Centaurea euboica ssp. euboica	1	+						
Centaurea euboica ssp. intermedia	1	+						
Centaurea grbavacensis	4				+		+	
Centaurea grisebachii ssp. occidentalis	6	+						
Centaurea grisebachii ssp. orientalis	1	+						
Centaurea huljakii	2	+						
Centaurea idaea	12	+						
Centaurea ipsaria	1	+						
Centaurea lacerata	8	+						
Centaurea laconica ssp. laconica	5	+						
Centaurea laconica ssp. lineariloba	1	+						
Centaurea lactucifolia	2	+						
Centaurea lancifolia	1	+						
Centaurea laureotica	1	+						
Centaurea litochorea	3	+						
Centaurea mantoudii	1	+						
Centaurea marmorea	2							+
Centaurea musarum	2	+						
Centaurea napulifera ssp. napulifera	7							+
Centaurea napulifera ssp. velenovskyi	6							+
Centaurea nervosa ssp. nervosa	3							+
Centaurea nervosa ssp. promota	3							+
Centaurea oliverana	3	+						
Centaurea orphanidea	1	+						
Centaurea ossaea	2	+						
Centaurea pangaea	1	+						
Centaurea pannosa	1	+						
Centaurea parilica	2							+
Centaurea pawlowskii	2				+	+	+	
Centaurea paxorum	1	+						
Centaurea pelia	2	+						
Centaurea pindicola	5							+
Centaurea poculatoris	1	+						
Centaurea prespana	1				+		+	
Centaurea psilacantha	2	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Centaurea ptarmicifolia	1	+						
Centaurea pumilio	2				+	+	+	
Centaurea raphanina ssp. mixta	31	+						
Centaurea raphanina ssp. raphanina	11	+						
Centaurea rechingeri	2	+						
Centaurea redempta	7	+						
Centaurea rupestris ssp. parnonia	1	+						
Centaurea sibthorpii	3	+						
Centaurea solstitialis ssp. schouwii	2							+
Centaurea spinosa	2	+						
Centaurea spinosa ssp. cycladum	4	+						
Centaurea spruneri	3				+		+	
Centaurea subciliaris	1	+						
Centaurea subciliaris ssp. acarnanica	1	+						
Centaurea triamularia	1	+						
Centaurea vlachorum	2	+						
Centaurea xylobasis	1	+						
Centaurium erythraea ssp. limoniiforme	1	+						
Centaurium illyricum ssp. brachiatum	1	+						
Centaurium maritimum	2							+
Centranthus junceus	2	+						
Centranthus sieberi	1	+						
Cephalanthera damasonium	7			+				
Cephalanthera epipactoides	4			+				
Cephalanthera longifolia	11			+				
Cephalaria flava ssp. flava	4							+
Cephalaria flava ssp. setulifera	5	+						
Cephalaria squamiflora	1	+						
Cephalaria squamiflora ssp. squamiflora	3	+						
Cephalaria tenuiloba	2	+						
Cerastium banaticum ssp. speciosum	18							+
Cerastium brachiatum	2	+						
Cerastium brachypetalum ssp. doerfleri	1	+						
Cerastium brachypetalum ssp. pindigenum	6	+						
Cerastium candidissimum	27	+						
Cerastium decalvans	24							+
Cerastium decrescens	1	+						
Cerastium illyricum ssp. brachiatum	3	+						
Cerastium illyricum ssp. decrescens	2	+						
Cerastium pedunculare	4	+						
Cerastium rectum	6							+
Cerastium runemarkii	2	+						
Cerastium scaposum	4	+						
Cerastium smolikanum	1	+						
Cerastium theophrasti	2	+						
Cerastium vourinense	4	+						
Chaenorhinum idaeum	3	+						
Chaerophyllum creticum	1	+						
Chaerophyllum heldreichii	3	+						
Chamaecytisus creticus	1	+						
Chenorhinum origanifolium	1							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Chlamydophora tridentata	1				+			
Chondilla urumoffii	3							+
Chondrilla ramosissima	3	+						
Christella dentata	1				+		+	
Cicer graecum	2	+						
Cirsium appendiculatum	14							+
Cirsium arvense ssp. vestitum	1							+
Cirsium creticum ssp. dictaeum	1	+						
Cirsium heldreichii	8	+						
Cirsium hypopsilum	4	+						
Cirsium mairei	4	+						
Cirsium morinifolium	2	+						
Cirsium tymphaeum	8							+
Cistanche phelypaea	2							+
Clematis elisabethae-carolae	1	+						
Coeloglossum viride	10							+
Coincya nivalis	2	+						
Colchicum boissieri	6	+						
Colchicum cousturieri	2	+						
Colchicum cretense	3	+						
Colchicum doerfleri	7							+
Colchicum graecum	13	+						
Colchicum macrophyllum	3					+		+
Colchicum parlatoris	3	+						
Colchicum parnassicum	3	+						
Colchicum pulchellum	2	+						
Colchicum sphicasianum	1	+						
Colchicum stevenii	1				+		+	
Colchicum triphyllum	1					+		+
Colutea insularis	1	+						
Comperia comperiana	2		+					
Consolida arenaria	1	+						
Consolida tenuissima	3	+						
Consolida tuntasiana	1	+						
Convallaria majalis	4							+
Convolvulus boissieri ssp. parnassicus	8							+
Convolvulus coelesyriacus	1				+			
Convolvulus libanoticus	3				+	+		
Convolvulus scammonia	2					+	+	
Convolvus boissieri ssp. suendermannii	1							+
Corallina elongata	3							+
Corallorhiza trifida	3							+
Coris monspeliensis	2							+
Corydalis integra	6				+	+		
Corydalis parnassica	10	+						
Corydalis rutifolia ssp. uniflora	2	+						
Corydalis thasia	1	+						
Corylus colurna	2							+
Cotoneaster nummularia	5				+	+	+	
Cotula coronopifolia	9							+
Crassula vaillantii	1				+			

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Crataegus heldreichii	7							+
Crataegus pycnoloba	4	+						
Crepis arcuata	1	+						
Crepis athoa	1	+						
Crepis auriculifolia	5	+						
Crepis baldaccii	2				+	+	+	
Crepis conyzifolia	3							+
Crepis cretica	10	+						
Crepis guioliana	4	+						
Crepis heldreichiana	2	+						
Crepis hellenica ssp. hellenica	8	+						
Crepis hellenica ssp. insularis	1	+						
Crepis incana	11	+						
Crepis pawlowskii	3				+		+	
Crepis pusilla	4				+	+		
Crepis sibthorpiana	2	+						
Crepis tybakiensis	11	+						
Crepis viscidula ssp. geracioides	7							+
Crocus biflorus	1	+						
Crocus biflorus ssp. melantherus	2	+						
Crocus biflorus ssp. nubigena	1							+
Crocus boryi	4	+						
Crocus cartwrightianus	1	+						
Crocus cvijicii	5							+
Crocus goulimyi	2	+						
Crocus hadriaticus	6	+						
Crocus laevigatus	8	+						
Crocus niveus	5	+						
Crocus olivieri	2							+
Crocus olivieri ssp. balsanae	1							+
Crocus oreocreticus	4	+						
Crocus pelistericus	1							+
Crocus sieberi	2							+
Crocus sieberi ssp. atticus	6	+						
Crocus sieberi ssp. nivalis	1	+						
Crocus sieberi ssp. sieberi	5	+						
Crocus sieberi ssp. sublimis	11							+
Crocus tournefortii	8	+						
Crocus veluchensis	17							+
Cruciata taurica ssp. euboea	1	+						
Cruciata taurica ssp. occidentalis	2							+
Crypsis aculeata	1							+
Cuscuta atrans	2	+						
Cyathophylla chlorifolia	1				+		+	
Cyclamen creticum	12	+						
Cyclamen persicum	3			+				
Cyclamen repandum ssp. peloponnesiacum	4	+						
Cymbalaria longipes	5	+						
Cymbalaria microcalyx ssp. dodekanesi	3	+						
Cymbalaria microcalyx ssp. microcalyx	7	+						
Cymbalaria microcalyx ssp. minor	2	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Cymodocea nodosa	6							+
Cynara cornigera	8							+
Cynoglossum graecum	1	+						
Cynoglossum sphacioticum	1	+						
Cynoglottis barrelieri ssp. phocidica	2	+						
Cynoglottis barrelieri ssp. serpentinicola	7				+	+	+	
Cyperus michelianus ssp. michelianus	1							+
Cyperus michelianus ssp. pygmaeus	2							+
Cystoseira barbata	5							+
Cystoseira crinata	8							+
Cystoseira discors	2							+
Cystoseira spinosa	2							+
Cytisus agnipilus	2							+
Dactylorhiza baumanniana	12	+						
Dactylorhiza cordigera	7							+
Dactylorhiza incarnata	1							+
Dactylorhiza kalopissii	9				+		+	
Dactylorhiza saccifera	9							+
Dactylorhiza sambucina	15							+
Dactylorhiza sulphurea ssp. pseudosambucina	6			+				
Damasonium alisma	2				+			
Daphne gnidioides	2							+
Daphne jasminea	5				+	+	+	
Dasycladus vermicularis	1							+
Dasypyrum hordeaceum	2							+
Datisca cannabina	2				+	+	+	
Daucus conchitae	1	+						
Delphinium albiflorum	1				+	+		
Delphinium hellenicum	1	+						
Delphinium hirschfeldianum	1	+						
Dianthus androsaceus	2	+						
Dianthus arpadianus	1				+	+		
Dianthus biflorus	18	+						
Dianthus cinnamoneus	3							+
Dianthus cruentus	15							+
Dianthus deltoides ssp. degenii	5							+
Dianthus elegans	1							+
Dianthus formanekii	1							+
Dianthus fruticosus	6	+						
Dianthus fruticosus ssp. amorginus	4	+						
Dianthus fruticosus ssp. carpathus	3	+						
Dianthus fruticosus ssp. creticus	9	+						
Dianthus fruticosus ssp. occidentalis	3	+						
Dianthus fruticosus ssp. rhodius	1	+						
Dianthus fruticosus ssp. sitiacus	2	+						
Dianthus gracilis ssp. drenowskianus	2							+
Dianthus gracilis ssp. gracilis	10							+
Dianthus haematocalyx ssp. haematocalyx	7							+
Dianthus haematocalyx ssp. pindicola	7							+
Dianthus haematocalyx ssp. pruinosus	1	+						
Dianthus haematocalyx ssp. ventricosus	5	+						

Taxon	No sites	Motivation						
		B	C			D		
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Dianthus integer ssp. minutiflorus	26							+
Dianthus juniperinus ssp. aciphyllus	2	+						
Dianthus juniperinus ssp. bauhinorum	1	+						
Dianthus juniperinus ssp. heldreichii	1	+						
Dianthus juniperinus ssp. idaeus	1	+						
Dianthus juniperinus ssp. juniperinus	1	+						
Dianthus juniperinus ssp. kavusicus	1	+						
Dianthus mercurii	2	+						
Dianthus myrtinervius ssp. caespitosus	1							+
Dianthus myrtinervius ssp. myrtinervius	3							+
Dianthus noeanus	1							+
Dianthus petraeus ssp. orbelicus	8					+		+
Dianthus pinifolius ssp. lilacinus	8							+
Dianthus pulviniformis	1	+						
Dianthus serratifolius ssp. abbreviatus	4	+						
Dianthus serratifolius ssp. serratifolius	4							+
Dianthus simulans	1	+						
Dianthus sphacioticus	1	+						
Dianthus stenopetalus	7							+
Dianthus tristis	3							+
Dianthus tymphresteus	7	+						
Dianthus viscidus	38							+
Didesmus aegyptius	5							+
Digitalis cariensis	1							+
Digitalis ferruginea ssp. ferruginea	10							+
Digitalis laevigata	4							+
Digitalis leucophaea	2	+						
Digitalis viridiflora	10							+
Draba cretica	6	+						
Draba heterocoma ssp. archipelagi	2				+		+	
Draba lacaitae	10	+						
Draba lasiocarpa ssp. dolichostyla	2							+
Draba parnassica	5	+						
Draba strasseri	2	+						
Ebenus cretica	15	+						
Ebenus sibthorpii	6	+						
Echinops graecus	2	+						
Echinops ritro ssp. sartorianus	2	+						
Echinops sphaerocephalus ssp. taygeteus	2	+						
Edraianthus parnassicus	7	+						
Elymus farctus ssp. rechingeri	5	+						
Elymus striatulus	1	+						
Ephedra major ssp. procera	1							+
Epilobium collinum	3							+
Epilobium palustre	3							+
Epilobium vernonicum	3	+						
Epipactis atrorubens	3			+				
Epipactis cretica	2	+						
Epipactis greuteri	1	+						
Epipactis helleborine	10			+				
Epipactis microphylla	5			+				

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Erigeron atticus	1							+
Erigeron epiroticus	8							+
Erodium chrysanthum	9	+						
Erodium crassifolium	1				+	+		
Erodium guicciardii	2				+	+	+	
Erodium sibthorpianum ssp. vetteri	2	+						
Eryngium amorginum	4	+						
Eryngium falcatum	1				+			
Eryngium ternatum	3	+						
Erysimum calcynum	1							+
Erysimum candicum ssp. candicum	7	+						
Erysimum candicum ssp. carpathum	1	+						
Erysimum cephalonicum	15							+
Erysimum corinthium	3	+						
Erysimum creticum	4	+						
Erysimum drenowskii	5							+
Erysimum graecum	3	+						
Erysimum horizontale	2							+
Erysimum microstylum	20							+
Erysimum mutabile	2	+						
Erysimum naxense	1	+						
Erysimum olympicum	2	+						
Erysimum parnassi	2	+						
Erysimum pectinatum	8	+						
Erysimum pusillum	4	+						
Erysimum pusillum ssp. hayekii	2	+						
Erysimum raulinii	2	+						
Erysimum rhodium	2				+	+	+	
Erysimum senoneri ssp. amorginum	1	+						
Erysimum senoneri ssp. icaricum	1	+						
Erysimum senoneri ssp. senoneri	6	+						
Euphorbia amygdaloides ssp. heldreichii	11							+
Euphorbia capitulata	4							+
Euphorbia dèflexa	20	+						
Euphorbia dimorphocaulon	3							+
Euphorbia glabriflora	11							+
Euphorbia hierosolymitana	1				+		+	
Euphorbia orphanidis	2	+						
Euphorbia rechingeri	1	+						
Euphorbia sultan-hassei	1	+						
Evax contracta	1							+
Fagonia cretica	1							+
Ferula tingitana	1							+
Ferulago serpentinica	1	+						
Ferulago thyrsiflora	8	+						
Festuca horvatiana	3							+
Festuca jeanpertii ssp. achaica	3	+						
Festuca koritnicensis	26				+		+	
Festuca olympica	2	+						
Festuca oviniformis	2	+						
Festuca peristerea	5							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Festuca pirinica	1							+
Festuca polita	19	+						
Festuca pseudosupina	1	+						
Festuca stygia	2	+						
Festucopsis sancta	5							+
Fibigia lunarioides	8	+						
Filago aegaea ssp. aegaea	3	+						
Filago aegaea ssp. aristata	7							+
Filago cretensis ssp. cretensis	5	+						
Filago cretensis ssp. cycladum	6	+						
Fraxinus angustifolia	6							+
Fritillaria bithynica	4				+	+	+	
Fritillaria carica	2				+		+	
Fritillaria davisii	2	+						
Fritillaria drenovskii	4		+					
Fritillaria ehrhartii	4	+						
Fritillaria elwesii	1				+		+	
Fritillaria epirotica	3	+						
Fritillaria euboeica	3	+						
Fritillaria graeca	18	+						
Fritillaria graeca ssp. guicciardii	1	+						
Fritillaria gussichiae	1		+					
Fritillaria mutabilis	12	+						
Fritillaria obliqua	4	+						
Fritillaria pontica	1					+		+
Fritillaria rhodia	2	+						
Fritillaria rhodocanakis ssp. argolica	1	+						
Fritillaria speciotica	2	+						
Fritillaria sporadum	1	+						
Fritillaria thessala ssp. ionica	12	+						
Fritillaria thessala ssp. reiseri	3	+						
Fritillaria thessala ssp. thessala	7	+						
Fritillaria tuntasia	1	+						
Fumana bonapartei	3							+
Fumana pinatzii	1	+						
Fumaria flabellata	1							+
Fumaria judaica ssp. amarysia	1	+						
Galanthus elwesii	4			+				
Galanthus ikariae ssp. ikariae	1	+						
Galanthus ikariae ssp. snogerupii	2			+				
Galanthus nivalis ssp. nivalis	1			+				
Galanthus reginae-olgae ssp. reginae-olgae	1	+						
Galium absurdum	3	+						
Galium advenum	4	+						
Galium aegaeum	5							+
Galium amorginum	5	+						
Galium anisophyllon ssp. plebeium	15							+
Galium asparagifolium	5				+			
Galium breviramosum	7							+
Galium canum ssp. ovatum	3							+
Galium capitatum	4	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Galium capreum	1	+						
Galium circae	5	+						
Galium citraceum	7	+						
Galium conforme	3	+						
Galium cyllenium	1	+						
Galium decorum	1	+						
Galium degenii	9				+	+	+	
Galium demissum	2							+
Galium dumosum	1				+	+		
Galium extensum	2	+						
Galium fruticosum	9	+						
Galium graecum ssp. graecum	1	+						
Galium graecum ssp. pseudocanum	2	+						
Galium hellenicum	17							+
Galium incanum ssp. creticum	1	+						
Galium incanum ssp. incanum	10							+
Galium incurvum	3	+						
Galium insulare	2	+						
Galium intricatum	11							+
Galium laconicum	2							+
Galium macedonicum	1							+
Galium melanantherum	7	+						
Galium monachinii	1	+						
Galium monasterium	2	+						
Galium ophioloticum	1	+						
Galium oreophilum	13							+
Galium parisiense	3							+
Galium pastorale	1	+						
Galium peloponnesiacum	11	+						
Galium pisoderium	6	+						
Galium pseudaristatum	1							+
Galium recurvum	3				+	+		
Galium reiseri	2	+						
Galium samium	3	+						
Galium samothracicum	5	+						
Galium speciosum	5							+
Galium taygeteum	8	+						
Galium thasium	1	+						
Galium thymifolium	14	+						
Galium violaceum	8	+						
Garidella nigellastrum	1				+		+	
Genista halacsyi	5	+						
Genista hassertiana	1							+
Genista millii	2	+						
Genista parnassica	4	+						
Genista sakellariadis	2	+						
Genista subcapitata	1							+
Genista tinctoria	6							+
Gentiana asclepiadea	9							+
Gentiana cruciata	10							+
Gentiana lutea	8					+		

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Gentiana punctata	3							+
Gentiana symphyandra	2							+
Gentiana verna ssp. balcanica	12							+
Gentianella bulgarica	6							+
Gentianella crispata	3							+
Geocaryum creticum	4	+						
Geocaryum divaricatum	2	+						
Geocaryum macrocarpum	1	+						
Geocaryum parnassicum	13	+						
Geocaryum peloponnesiacum	6	+						
Geocaryum pindicolum	15							+
Geocaryum pumilum	2	+						
Geocaryum taygeteum	1	+						
Geranium aristatum	5							+
Geranium humbertii	8					+		+
Geranium macrostylum	19							+
Geranium thessalum	1	+						
Geum coccineum	10							+
Geum montanum	3							+
Geum reptans	1							+
Gnaphalium hoppeanum ssp. magellense	7							+
Gnaphalium roeseri ssp. pichleri	3							+
Gnaphalium roeseri ssp. roeseri	5	+						
Groenlandia densa	2				+			
Gymnadenia frivaldii	4			+				
Gymnospermium altaicum ssp. odessanum	1				+			
Gynandriitis monophylla	1							+
Gypsophila nana	9	+						
Haberlea rhodopensis	3					+		+
Halascya sendtneri	1							+
Halimeda tuna	1							+
Halocnemum strobilaceum	3							+
Halophila stipulacea	1							+
Hammatolobium lotoides	1				+	+		
Haplophyllum balcanicum	4				+		+	
Haplophyllum boissieranum	1							+
Haplophyllum megalanthum	1							+
Helianthemum hymettium	8	+						
Helianthemum stipulatum	1				+	+	+	
Helichrysum amorginum	2	+						
Helichrysum doerfleri	1	+						
Helichrysum heldreichii	2	+						
Helichrysum orientale	7							+
Helichrysum sibthorpii	1	+						
Helichrysum taenari	1	+						
Helictotrichon aetolicum	16					+		+
Helictotrichon agropyroides	6	+						
Helictotrichon convolutum ssp. heldreichii	5	+						
Heliotropium curassavicum	1							+
Helleborus cyclophyllus	28							+
Heptaptera colladonioides	6	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Heracleum humile	1							+
Heracleum orphanidis	1							+
Herniaria degenii	1	+						
Herniaria nigrimontium	2							+
Herniaria parnassica ssp. cretica	3	+						
Herniaria parnassica ssp. parnassica	21							+
Hesperis rechingeri	1	+						
Hesperis verroiana	1	+						
Hieracium alpicola	3							+
Hieracium bonaquae	1	+						
Hieracium chalasinense	1	+						
Hieracium cylleneum	1	+						
Hieracium cymosum ssp. heldreichianum	23							+
Hieracium epirense	7	+						
Hieracium ferdinandi-coburgi	4	+						
Hieracium gaudryi	2	+						
Hieracium gracilifurcum	2	+						
Hieracium graecum	7	+						
Hieracium heldreichii	5	+						
Hieracium leithneri	16	+						
Hieracium leucocomum	2	+						
Hieracium naegelianiforme	2							+
Hieracium naegelianum	6							+
Hieracium parnassi	15							+
Hieracium pilosius	3							+
Hieracium psaridianum	1	+						
Hieracium sartorianum	5	+						
Hieracium scapigerum	10	+						
Hieracium scardicum	1							+
Hieracium szilyanum	2	+						
Hieracium trikalense	4	+						
Hieracium waldsteinii	4							+
Himantoglossum hircinum	6							+
Horstrissea dolinicola	1	+						
Hymenolobus procumbens	2				+		+	
Hymenonema graecum	4					+		+
Hymenonema laconicum	2	+						
Hyoseris radiata	1							+
Hypericum aegypticum	3							+
Hypericum amblycalyx	4	+						
Hypericum athoum	4	+						
Hypericum cuisinii	4	+						
Hypericum delphicum	1	+						
Hypericum elongatum	1						+	
Hypericum empetrifolium ssp. oliganthum	1	+						
Hypericum empetrifolium ssp. tortuosum	2	+						
Hypericum fragile	1	+						
Hypericum jovis	3	+						
Hypericum kelleri	3	+						
Hypericum rochelii	2							+
Hypericum rumeliacum ssp. apollinis	11							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Hypericum rumeliacum ssp. rumeliacum	11							+
Hypericum taygeteum	1	+						
Hypericum trichocaulon	4	+						
Hypericum vesiculosum	2	+						
Hypnea musciformis	1							+
Hypochoeris tenuiflora	2	+						
Ilex aquifolium	4							+
Inula candida ssp. candida	8	+						
Inula candida ssp. decalvans	2	+						
Inula candida ssp. limonella	1	+						
Inula ensifolia	7				+	+		
Inula subfloccosa	1	+						
Inula verbascifolia ssp. methanea	8	+						
Inula verbascifolia ssp. parnassica	5	+						
Ipomoea stolonifera	1				+	+	+	
Iris reichenbachii	5							+
Iris spuria ssp. ochroleuca	3					+		+
Iris unguicularis ssp. carica	3							+
Iris unguicularis ssp. cretensis	5	+						
Isatis lusitanica	1				+	+	+	
Isatis tinctoria ssp. athoa	1	+						
Isatis vermia	1	+						
Isoetes heldreichii	1	+						
Jankaea heldreichii	2	+						
Johrenia distans	3	+						
Jovibarba heuffelii	16							+
Juncus heldreichianus ssp. heldreichianus	1							+
Juncus trifidus	1							+
Jurinea taygetea	2	+						
Kernera saxatilis	2							+
Knautia macedonica	1							+
Knautia magnifica	4					+		+
Koeleria eriostachya	1							+
Lactuca acanthifolia	12							+
Lactuca intricata	8					+		+
Lactuca visianii	4							+
Lagurus ovatus ssp. vestitus	1	+						
Lamium bifidum ssp. balcanicum	14							+
Lamium garganicum ssp. garganicum	7							+
Lamium garganicum ssp. pictum	11	+						
Lamium garganicum ssp. striatum	12							+
Lamyropsis cynaroides	8				+			
Laserpitium pseudomeum	7	+						
Laserpitium siler ssp. laeve	8							+
Lathraea rhodopea	2				+		+	
Lathyrus neurolobus	2	+						
Laurencia obtusa	5							+
Laurencia papillosa	2							+
Leontice leontopetalum ssp. leontopetalum	4				+			
Leontodon graecus	6	+						
Leptoplax emarginata	7	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Leucojum aestivum	1							+
Leucojum valentinum	1							+
Leymus racemosus ssp. sabulosus	7							+
Ligusticum mutellina	1							+
Ligusticum olympicum	2	+						
Ligusticum rhizomaticum	1	+						
Lilium candidum	1					+		+
Lilium carniolicum ssp. albanicum	15					+		+
Lilium chalcedonicum	21					+		+
Lilium martagon	17					+		+
Lilium rhodopaeum	2				+	+	+	
Limodorum abortivum	14			+				
Limonium antipaxorum	1	+						
Limonium brevipetiolatum	4	+						
Limonium carpathum	1	+						
Limonium coronence	1	+						
Limonium creticum	1	+						
Limonium doerfleri	2	+						
Limonium frederici	6	+						
Limonium ocymifolium	4	+						
Limonium phitosianum	1	+						
Limonium pylium	2	+						
Limonium sitiacum	2	+						
Limonium zacynthium	1	+						
Limosella aquatica	2							+
Linaria alpina	2							+
Linum aroanium	7				+	+		
Linum flavum ssp. albanicum	9							+
Linum goulimyi	1	+						
Linum gyaricum	2	+						
Linum hellenicum	1	+						
Linum hirsutum ssp. spathulatum	3							+
Linum hologynum	7							+
Linum leucanthum	5	+						
Linum olympicum ssp. athoum	1	+						
Linum phitosianum	1	+						
Linum punctatum ssp. pycnophyllum	9							+
Lippia nodiflora	5							+
Liquidambar orientalis	1					+	+	
Listera ovata	7			+				
Lithodora hispidula ssp. hispidula	8							+
Lithodora zahnii	2	+						
Lithophyllum incrustans	2							+
Lithospermum goulandriorum	2	+						
Lomelosia hymettia	1	+						
Lomelosia polykratis	2				+	+		
Lonicera hellenica	1	+						
Lotus aduncus	1	+						
Ludwigia palustris	1							+
Lygeum spartum	3							+
Lysimachia serpyllifolia	9	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Lythrum borysthenicum	2							+
Lythrum thymifolia	1							+
Mabuya aurata	1		+					
Malcolmia flexuosa ssp. naxensis	4							+
Malcolmia graeca ssp. bicolor	8							+
Malcolmia graeca ssp. graeca	5	+						
Malcolmia hydraea	3	+						
Malcolmia macrocalyx	2	+						
Malcolmia nana	4							+
Malcolmia orsiniana ssp. angulifolia	11							+
Marrubium cylleneum	6	+						
Marrubium thessalum	5							+
Marrubium velutinum	15	+						
Matricaria macrotis	1				+	+		
Matricaria tempskyana	4	+						
Medicago heyniana	2				+	+	+	
Medicago strasseri	2	+						
Melampyrum ciliatum	2	+						
Melica rectiflora	14	+						
Melilotus elegans	1							+
Melilotus graecus	8	+						
Mentha suaveolens	1							+
Micromeria hispida	2	+						
Micromeria sphaciotica	1	+						
Microsciadium minutum	1							+
Minuartia baldaccii	4							+
Minuartia confusa	9	+						
Minuartia doerfleri	1							+
Minuartia eurytanica	1	+						
Minuartia favargeri	2	+						
Minuartia garckeana	3							+
Minuartia hirsuta ssp. eurytanica	4	+						
Minuartia juniperina	6							+
Minuartia pichleri	3	+						
Minuartia pseudosaxifraga	2	+						
Minuartia saxifraga	1				+			
Minuartia setacea ssp. stojanovii	3							+
Minuartia stellata	13							+
Minuartia verna	3	+						
Minuartia verna ssp. attica	1	+						
Minuartia wettsteinii	1	+						
Moltkia petraea	1							+
Muscari dionysicum	3	+						
Muscari kerkis	1	+						
Muscari macrocarpum	2				+	+	+	
Muscari pulchellum	1	+						
Muscari pulchellum ssp. clepsydroides	4	+						
Muscari pulchellum ssp. pulchellum	1	+						
Muscari spreitzenhoferi	10	+						
Myosotis alpestris ssp. suaveolens	23							+
Myosotis minutiflora	2							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Myosotis refracta ssp. paucipilosa	3							+
Myosotis solange	1	+						
Myosurus minimus	2							+
Myosurus sessilis	1					+		+
Narcissus poeticus ssp. radiiflorus	8							+
Narthecium scardicum	1				+		+	
Neotinea maculata	7			+				
Neottia nidus-avis	9			+				
Nepeta argolica ssp. argolica	5	+						
Nepeta argolica ssp. malacotrichos	3	+						
Nepeta argolica ssp. vourinensis	1	+						
Nepeta camphorata	1	+						
Nepeta melissifolia	8	+						
Nepeta orphanidea	1	+						
Nepeta parnassica	3	+						
Nepeta scordotis	1	+						
Nepeta spruneri	13							+
Nigella arvensis ssp. brevifolia	4	+						
Nigella arvensis ssp. glauca	2							+
Nigella carpatha	1	+						
Nigella degenii	4	+						
Nigella doerfleri	4	+						
Nigella fumariifolia	3				+	+		
Nigella icarica	1	+						
Nigella stricta	3	+						
Nigritella nigra	4							+
Noaea mucronata	1				+	+		
Nonea cesatiana	2	+						
Odontites glutinosa	2							+
Odontites linkii ssp. cretica	4	+						
Odontites linkii ssp. linkii	4	+						
Oenanthe tenuifolia	2				+	+	+	
Omphalodes luciliae ssp. scopulorum	8							+
Onobrychis alba ssp. calcarea	5							+
Onobrychis aliacmonia	1	+						
Onobrychis ebenoides	10	+						
Onobrychis montana ssp. macrocarpa	4	+						
Onobrychis montana ssp. scardica	11							+
Onobrychis sphaciotica	1	+						
Ononis spinosa ssp. diacantha	4	+						
Ononis verae	2	+						
Onopordum bracteatum ssp. bracteatum	1							+
Onopordum bracteatum ssp. creticum	1	+						
Onopordum bracteatum ssp. myriacanthum	2	+						
Onopordum laconicum	3	+						
Onopordum majorii	3	+						
Onopordum messeniacum	2	+						
Onopordum rhodense	1	+						
Onopordum sibthorpianum	2	+						
Onosma elegantissimum	1	+						
Onosma erecta ssp. erecta	9	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Onosma erecta ssp. malickyi	5	+						
Onosma euboica	1	+						
Onosma graeca	5							+
Onosma heterophylla	15				+	+	+	
Onosma kaheirei	4	+						
Onosma leptantha	1	+						
Onosma paradoxum	1	+						
Onosma pygmaeum	6	+						
Onosma sangiasence	1	+						
Onosma spruneri	1	+						
Onosma stellulata	2							+
Onosma visianii	3				+	+	+	
Ophioglossum vulgatum	6							+
Ophrys argolica	1	+						
Ophrys basilissa	3	+						
Ophrys bombyliflora	5			+				
Ophrys bucephala	2	+						
Ophrys candica	2			+				
Ophrys doerfleri	4	+						
Ophrys ferrum-equinum	3			+				
Ophrys ferrum-equinum ssp. ferrum-equinum	4			+				
Ophrys fusca	7			+				
Ophrys holosericea	1			+				
Ophrys insectifera	1			+				
Ophrys lesbis	1	+						
Ophrys lutea	3			+				
Ophrys lutea ssp. minor	3			+				
Ophrys minutula	2	+						
Ophrys reinholdii	4			+				
Ophrys scolopax	3			+				
Ophrys scolopax ssp. cornuta	3							+
Ophrys sitiaca	1	+						
Ophrys sphegodes ssp. cretensis	2	+						
Ophrys sphegodes ssp. hellenae	2	+						
Ophrys spruneri	2	+						
Ophrys tenthredinifera	4			+				
Ophrys umbilicata ssp. rhodia	2	+						
Orchis anatolica ssp. anatolica	3			+				
Orchis anatolica ssp. sitiaca	2	+						
Orchis collina	1			+				
Orchis coriophora	2			+				
Orchis coriophora ssp. fragrans	1			+				
Orchis italica	3			+				
Orchis laxiflora ssp. palustris	6							+
Orchis mascula	3			+				
Orchis morio	6			+				
Orchis pallens	10			+				
Orchis papilionacea	5			+				
Orchis papilionacea ssp. heroica	3			+				
Orchis prisca	3	+						
Orchis provincialis	5			+				

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Orchis quadripunctata	5			+				
Orchis sancta	7			+				
Orchis simia	5			+				
Orchis tridentata	4			+				
Orchis ustulata	4							+
Origanum lirium	1	+						
Origanum microphyllum	2	+						
Origanum scabrum	4	+						
Origanum tournefortii	4	+						
Origanum vetteri	1	+						
Orlaya daucorlaya	4							+
Ornithogalum atticum	2	+						
Ornithogalum brevistylum	1							+
Ornithogalum bucheanum	1							+
Ornithogalum collinum	1	+						
Ornithogalum creticum	12	+						
Ornithogalum fibriatum ssp. gracilipes	1	+						
Ornithogalum kochii	2							+
Ornithogalum oligophyllum	20							+
Ornithogalum prasinantherum	5	+						
Ornithogalum refractum	7							+
Ornithogalum sphaerolobum	1	+						
Orobanche baumanniorum	4	+						
Orobanche pancicii	1							+
Orobanche rechingeri	5					+		+
Osmunda regalis	2							+
Oxytropis prenjia	1							+
Oxytropis purpurea	4				+	+	+	
Padina pavonica	5							+
Paeonia clusii ssp. clusii	3	+						
Paeonia mascula ssp. hellenica	7	+						
Paeonia mascula ssp. icarica	1	+						
Paeonia mascula ssp. russi	2							+
Paeonia peregrina	1							+
Pancratium maritimum	34							+
Papaver gracile	1							+
Papaver nigrotinctum	4				+	+	+	
Paracaryum lithospermifolium ssp. cariense	1				+	+		
Parietaria cretica	5							+
Paronychia albanica ssp. albanica	1							+
Paronychia albanica ssp. graeca	10	+						
Paronychia macedonica	9							+
Paronychia polygonifolia	4							+
Paronychia rechingeri	6					+		+
Pedicularis brachyodonta ssp. grisebachii	1							+
Pedicularis brachyodonta ssp. moesiaca	5							+
Pedicularis friderici-augusti	3							+
Pedicularis graeca	12							+
Pedicularis leucodon ssp. leucodon	4							+
Pedicularis olympica	3				+		+	
Pedicularis orthantha	2							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Pedicularis petiolaris	2							+
Periploca angustifolia	2							+
Petromarula pinnata	22	+						
Petrorhagia armerioides	4							+
Petrorhagia candica	2	+						
Petrorhagia dianthoides	3	+						
Petrorhagia fasciculata	2	+						
Petrorhagia glumacea ssp. glumacea	3	+						
Petrorhagia glumacea ssp. orientalis	4	+						
Petrorhagia graminea	4	+						
Petrorhagia grandiflora	1	+						
Petrorhagia illyrica ssp. illyrica	1							+
Petrorhagia illyrica ssp. taygetea	4	+						
Petrorhagia obcordata ssp. epirotica	4							+
Petrorhagia obcordata ssp. obcordata	4	+						
Petrorhagia phthiotica	2	+						
Peucedanum achaicum	1	+						
Peucedanum aequiradium	1							+
Peucedanum lavrentiadis	1							+
Peucedanum longifolium	4							+
Peucedanum officinale	2							+
Peucedanum oligophyllum	5							+
Peucedanum stridii	5	+						
Peucedanum vourinense	1	+						
Phagnalon methaneum	1	+						
Phagnalon pygmaeum	2	+						
Phleum crypsoides ssp. crypsoides	3	+						
Phlomis floccosa	1				+	+		
Phlomis lanata	9	+						
Phlomis pichleri	2	+						
Picea abies ssp. abies	3					+		+
Pilularia minuta	2		+					
Pimpinella pretenderis	4	+						
Pimpinella saxifraga	1							+
Pimpinella tragium ssp. depressa	2	+						
Pimpinella tragium ssp. polyclada	8							+
Pinguicula balcanica ssp. balcanica	5							+
Pinguicula crystallina ssp. hirtiflora	21		+					
Pinus heldreichii	8							+
Pinus peuce	5					+		+
Pisum graecum	2	+						
Plantago atrata ssp. graeca	17	+						
Plantago bellardii ssp. deflexa	1	+						
Plantago cretica	1	+						
Plantago media ssp. pindica	9							+
Platanthera bifolia	5							+
Platanthera chlorantha	7							+
Poa cephalonica	1	+						
Poa dolosa	2				+		+	
Poa glauca ssp. frearitis	1	+						
Poa hybrida	1							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Poa media	5							+
Poa ophiolithica	4	+						
Poa pelasgis	2							+
Poa thessala	31					+		+
Poa trichophylla	5	+						
Polygala alpestris ssp. croatica	6							+
Polygala cristagalli	3	+						
Polygala helenae	1	+						
Polygala nicaeensis ssp. tomentella	4	+						
Polygala subuniflora	1	+						
Polygala venulosa	2							+
Polygonum icaricum	4	+						
Polygonum idaeum	3	+						
Posidonia oceanica	20							+
Potamogeton coloratus	1							+
Potentilla apennina ssp. stoianovii	1							+
Potentilla arcadiensis	1	+						
Potentilla aurea ssp. chrysocraspeda	3							+
Potentilla cinerea	2							+
Potentilla deorum	2	+						
Potentilla geoides ssp. geoides	3							+
Potentilla geoides ssp. halacsyana	1	+						
Potentilla geoides ssp. longisepala	1	+						
Procopiana cretica	1	+						
Prunella cretensis	2	+						
Pteris dentata	1				+	+	+	
Pteris vittata	3				+			
Pterocephalus brevis	1				+	+	+	
Pterocephalus perennis ssp. bellidifolius	4							+
Pterocephalus perennis ssp. perennis	21	+						
Pterocephalus pinardii	2				+	+		
Ptilostemon chamaepeuce	1	+						
Ptilostemon gnaphaloides ssp. pseudofruticosus	3	+						
Ptilotrichum cyclocarpum ssp. cyclocarpum	3							+
Ptilotrichum cyclocarpum ssp. pindicum	4							+
Puccinellia festuciformis ssp. convoluta	1							+
Quercus euboica	1	+						
Ramonda nathaliae	4					+	+	
Ramonda serbica	4				+	+	+	
Ranunculus asiaticus	3							+
Ranunculus baudotii	2							+
Ranunculus cacumunis	1	+						
Ranunculus creticus	5				+	+	+	
Ranunculus cupreus	3	+						
Ranunculus ficarioides	1				+	+	+	
Ranunculus fontanus	4		+					
Ranunculus incomparabilis	2							+
Ranunculus milii	3	+						
Ranunculus radinotrichus	1	+						
Ranunculus subhomophyllus	5	+						
Ranunculus thasius	3	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Ranunculus trichophyllus	1							+
Reseda tymphaea	1	+						
Rhamnus pumilus	1							+
Rhamnus saxatilis ssp. prunifolius	6							+
Rhamnus sibthorpianus	10	+						
Rhinanthus melampryoides	1							+
Rhinanthus minor	2							+
Rhinanthus pindicus	2				+	+	+	
Rhinanthus pubescens	12	+						
Rhinanthus sintenisii	3	+						
Rhododendron luteum	1					+		+
Ricotia cretica	6	+						
Ricotia isatoides	1	+						
Rindera graeca	11	+						
Romulea tempskyana	2				+	+	+	
Rorippa icarica	1	+						
Rosa arvensis	13				+			
Rumex balkanicus	1							+
Ruta chalepensis ssp. fumariifolia	2	+						
Ruta montana	1							+
Saccharum spontaneum	1							+
Salicornia patula	1							+
Salsola aegaea	10	+						
Salsola carpatha	3	+						
Salvia eichleriana	1	+						
Salvia pomifera ssp. pomifera	2	+						
Salvia teddii	2	+						
Salvinia natans	17				+	+		
Sambucus racemosa	2					+		+
Sanguisorba cretica	3	+						
Saponaria chlorifolia	1				+		+	
Saponaria jageli	1	+						
Saponaria sicula ssp. intermedia	1							+
Sargassum accinarium	1							+
Satureja horvatii ssp. macrophylla	6	+						
Satureja icarica	1	+						
Satureja montana ssp. macedonica	2	+						
Satureja parnassica ssp. athoa	1	+						
Satureja parnassica ssp. parnassica	9	+						
Satureja pilosa	3							+
Satureja spinosa	5							+
Satureja taygetea	1	+						
Saxifraga adscendens ssp. discolor	2							+
Saxifraga aizoides	1							+
Saxifraga ferdinandi-coburgi	4							+
Saxifraga glabella	3					+		+
Saxifraga juniperifolia ssp. sancta	2							+
Saxifraga marginata	1					+		+
Saxifraga pedemontana ssp. cymosa	2							+
Saxifraga porophylla ssp. frederici-augusti	3							+
Saxifraga porophylla ssp. grisebachii	6							+

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Saxifraga rotundifolia ssp. chrysospleniifolia	17							+
Saxifraga rotundifolia ssp. taygetea	12							+
Saxifraga sempervivum	17							+
Saxifraga sibthorpii	6							+
Saxifraga stellaris ssp. alpigena	2							+
Saxifraga stribrnyi	3							+
Scabiosa albocincta	5	+						
Scabiosa crenata ssp. breviscapa	2	+						
Scabiosa crenata ssp. dallaportae	1	+						
Scabiosa epirota	1				+	+		
Scabiosa graminifolia ssp. graminifolia	1							+
Scabiosa graminifolia ssp. rhodopensis	1							+
Scabiosa hymettia	2	+						
Scabiosa minoana ssp. asterusica	1	+						
Scabiosa minoana ssp. minoana	2	+						
Scabiosa sphaciotica	2	+						
Scabiosa taygetea ssp. portae	4							+
Scabiosa taygetea ssp. taygetea	11							+
Scabiosa tenuis	1							+
Scabiosa variifolia	3				+			
Scaligeria moreana	2	+						
Scariola alpestris	3	+						
Scilla messeniaca	2	+						
Scilla nana	2	+						
Scilla reuteri	4	+						
Scorzonera austriaca	1							+
Scorzonera cretica	8	+						
Scorzonera crocifolia	11	+						
Scorzonera doriae	3				+	+	+	
Scorzonera eximia	4	+						
Scorzonera idaea	2	+						
Scorzonera purpurea ssp. peristerica	8	+						
Scorzonera purpurea ssp. rosea	8							+
Scorzonera scyria	1	+						
Scorzonera serpentinica	1	+						
Scrophularia aestivalis	9							+
Scrophularia heterophylla	11							+
Scrophularia laciniata	21							+
Scrophularia myriophylla	4				+			
Scrophularia spinulescens	1	+						
Scrophularia taygetea	3	+						
Scutellaria albida ssp. vacillans	1	+						
Scutellaria goulimii	2	+						
Scutellaria hirta	2	+						
Scutellaria naxensis	1				+		+	
Scutellaria orientalis ssp. alpina	1							+
Scutellaria rubicunda ssp. cephalonica	1	+						
Scutellaria rubicunda ssp. icarica	3	+						
Scutellaria rubicunda ssp. rupestris	4	+						
Scutellaria rupestris ssp. adenotricha	9							+
Scutellaria rupestris ssp. olympica	2	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Scutellaria rupestris ssp. parnassica	10	+						
Scutellaria rupestris ssp. rechingeri	1	+						
Scutellaria sieberi	17	+						
Scutellaria sporadum	1	+						
Securigera globosa	10	+						
Sedum apoleipon	9	+						
Sedum atratum	2							+
Sedum creticum	8	+						
Sedum delicum	3	+						
Sedum hierapetrae	1	+						
Sedum praesidis	10	+						
Sedum stefco	2							+
Sedum tristriatum	2	+						
Sedum tuberiferum	2							+
Sedum tymphaeum	3	+						
Sempervivum ciliosum	2				+	+	+	
Sempervivum kindingeri	2				+	+	+	
Sempervivum marmoreum	20				+	+	+	
Sempervivum reginae-amaliae	6	+						
Senecio abrotanifolius ssp. carpathicus	2							+
Senecio bicolor	6							+
Senecio doronicum	1							+
Senecio eubaeus	2	+						
Senecio fruticulosus	3	+						
Senecio gnaphalodes	3	+						
Senecio scopolii	4							+
Senecio subalpinus	3							+
Senecio thapsoides	7							+
Senecio thapsoides ssp. thapsoides	1							+
Serapias cordigera	2			+				
Serapias lingua	4			+				
Serapias vomeracea ssp. laxiflora	3			+				
Serapias vomeracea ssp. orientalis	1			+				
Serapias vomeracea ssp. vomeracea	1			+				
Serratula cichoracea ssp. cretica	1	+						
Seseli aroanicum	1	+						
Seseli gummiferum ssp. crithmifolium	5	+						
Seseli libanotis ssp. libanotis	1							+
Seseli parnassicum	5	+						
Sesleria coerulans	2							+
Sesleria doerfleri	3	+						
Sesleria rigida ssp. achtarovii	4							+
Sesleria taygetea	2	+						
Sesleria tenerrima	17							+
Sesleria vaginalis	20	+						
Sideritis clandestina ssp. clandestina	2	+						
Sideritis clandestina ssp. cyllenea	6	+						
Sideritis clandestina ssp. peloponnesiaca	5	+						
Sideritis euboea	2	+						
Sideritis perfoliata ssp. athoa	2	+						
Sideritis perfoliata ssp. perfoliata	2				+	+	+	

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Sideritis raeseri ssp. attica	2	+						
Sideritis raeseri ssp. raeseri	15							+
Sideritis scardica	15							+
Sideritis sipylea	3							+
Sideritis syriaca ssp. syriaca	5	+						
Silene adelphiae	1	+						
Silene ammophila ssp. ammophila	1	+						
Silene ammophila ssp. carpathae	2	+						
Silene antri-jovis	4	+						
Silene asterias	5							+
Silene auriculata	8	+						
Silene auriculata ssp. auriculata	6	+						
Silene balcanica	5							+
Silene barbeyana	4	+						
Silene caesia	16							+
Silene cephalonica	1	+						
Silene chromodonta	3							+
Silene congesta ssp. moreana	7	+						
Silene conglomeratica	1	+						
Silene conica ssp. sartorii	2	+						
Silene corinthiaca	1	+						
Silene cythnia	4	+						
Silene damboldtiana	8	+						
Silene dionysii	2	+						
Silene dirphya	1	+						
Silene echinosperma	2	+						
Silene fabaria	6							+
Silene fabarioides	9							+
Silene goulimyi	1	+						
Silene haussknechtii	5	+						
Silene insularis	1	+						
Silene integripetala	4	+						
Silene integripetala ssp. greuteri	2	+						
Silene intonsa	1	+						
Silene ionica	2	+						
Silene laconica	1	+						
Silene leptoclada	1				+			
Silene linifolia ssp. sporadum	2	+						
Silene macrodonta	1				+	+		
Silene marschallii	2				+	+	+	
Silene multicaulis ssp. cretica	1	+						
Silene multicaulis ssp. genistifolia	10	+						
Silene oligantha	2	+						
Silene parnassica	8							+
Silene pindicola	9	+						
Silene pinetorum	2	+						
Silene radicosa ssp. radicosa	32							+
Silene radicosa ssp. rechingeri	6	+						
Silene roemeri	19							+
Silene salamandra	2	+						
Silene samia	1	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Silene saxifraga	3							+
Silene schwarzenbergeri	4				+		+	
Silene sieberi	4	+						
Silene spinescens	3	+						
Silene squamigera	2				+	+		
Silene succulenta ssp. succulenta	3				+	+		
Silene taygetea	1	+						
Silene thessalonica ssp. dictaea	1	+						
Silene thessalonica ssp. thessalonica	8	+						
Silene ungeri	7	+						
Silene urvillei	3				+	+		
Silene variegata	3	+						
Silene vulgaris ssp. suffrutescens	3	+						
Silene waldsteinii	9							+
Siphonostegia syriaca	1				+	+		
Smyrnium orphanidis	1	+						
Soldanella pelia	1	+						
Soldanella pindicola	7				+	+	+	
Solenanthus stamineus	3				+	+	+	
Solenopsis minuta ssp. annua	3	+						
Sorbus chamaemespilus	3							+
Sorghum bicolor	1							+
Spiranthes spiralis	1			+				
Spirodela polyrhiza	5							+
Stachys arvensis	1							+
Stachys balcanica	3							+
Stachys candida	3	+						
Stachys canescens	3	+						
Stachys chrysantha	6	+						
Stachys cretica ssp. cassia	6							+
Stachys cretica ssp. lesbiaca	1							+
Stachys cretica ssp. smyrnaea	1							+
Stachys euboica	1	+						
Stachys goulimyi	1	+						
Stachys ionica	1	+						
Stachys iva	3							+
Stachys leucoglossa	3							+
Stachys mucronata	4	+						
Stachys officinalis	4							+
Stachys pangaea	1	+						
Stachys parolinii	2	+						
Stachys plumosa	11							+
Stachys recta ssp. baldaccii	3							+
Stachys recta ssp. olympica	2	+						
Stachys recta ssp. recta	2							+
Stachys recta ssp. subcrenata	1							+
Stachys scardica	8							+
Stachys spinosa	6	+						
Stachys spinulosa	1							+
Stachys spreitzenhoferi ssp. spreitzenhoferi	2	+						
Stachys spreitzenhoferi ssp. virella	1	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Stachys spruneri	3	+						
Stachys swainsonii ssp. argolica	2	+						
Stachys swainsonii ssp. swainsonii	2	+						
Stachys tetragona	3	+						
Stachys thirkei	1							+
Stachys tournefortii	1				+	+	+	
Stachys virgata	1	+						
Staehelina fruticosa	11	+						
Staehelina petiolata	18	+						
Stellaria pallida	1							+
Stellaria uliginosa	3							+
Sternbergia greuteriana	3	+						
Stipa lesingiana ssp. cyllenaea	1	+						
Strangweia spicata	2	+						
Symphyandra samothracica	1	+						
Symphyandra sporadum	1	+						
Symphytum anatolicum	3							+
Symphytum creticum	8	+						
Symphytum davisii	2	+						
Symphytum icaricum	1	+						
Symphytum insulare	3	+						
Symphytum naxicola	1	+						
Tamarix smyrnensis	1							+
Taraxacum albomarginatum	3	+						
Taraxacum amborum	2	+						
Taraxacum aznavourii	1							+
Taraxacum copidophylloides	3	+						
Taraxacum cylleneum	5	+						
Taraxacum deorum	2	+						
Taraxacum fibratum	2	+						
Taraxacum fragosum	3	+						
Taraxacum gionense	3	+						
Taraxacum gracilens	7							+
Taraxacum graecofontanum	9	+						
Taraxacum molybdocephalum	8	+						
Taraxacum nudum	1	+						
Taraxacum pindicola	1							+
Taraxacum protervum	5	+						
Taraxacum thessalicum	2	+						
Telekia speciosa	1							+
Telephium imperati ssp. pauciflorum	5	+						
Teucrium microphyllum	1	+						
Teucrium alpestre	6	+						
Teucrium aroanium	4	+						
Teucrium brevifolium	9							+
Teucrium chamaedrys ssp. lydium	1							+
Teucrium chamaedrys ssp. olympicum	3	+						
Teucrium cuneifolium	3	+						
Teucrium divaricatum ssp. athoum	2	+						
Teucrium flavum	1							+
Teucrium francisci-werneri	3	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Teucrium gracile	3	+						
Teucrium halacsyanum	2	+						
Teucrium microphyllum	5	+						
Thalictrum lucidum	1							+
Thalictrum orientale	2				+	+	+	
Thamnosciadium junceum	7	+						
Thesium alpinum	2							+
Thesium brachyphyllum	2				+	+		
Thesium parnassi	16							+
Thesium vlachorum	1	+						
Thlaspi bulbosum	3	+						
Thlaspi creticum	3	+						
Thlaspi epirotum	3	+						
Thlaspi graecum	9	+						
Thlaspi kotschyanum	1							+
Thlaspi microphyllum	8							+
Thlaspi tymphaeum	7							+
Thlaspi zaffranii	1	+						
Thymbra calostachya	1	+						
Thymus boissieri	9							+
Thymus degenii	3							+
Thymus dolopicus	2	+						
Thymus holosericeus	2	+						
Thymus laconicus	1	+						
Thymus leucospermus	6	+						
Thymus leucotrichus	16							+
Thymus longicaulis ssp. chaubardii	22							+
Thymus rechingeri ssp. macrocalyx	1	+						
Thymus rechingeri ssp. rechingeri	3	+						
Thymus samius	3	+						
Thymus stojanovii	7							+
Thymus teucrioides ssp. alpinus	6							+
Thymus teucrioides ssp. candilicus	2	+						
Thymus thracicus	14							+
Tordylium aegaeum	4							+
Tordylium hirtocarpum	9					+		+
Trachelium jacquinii ssp. rumelianum	3							+
Tragopogon brevirostris	1	+						
Tragopogon brevirostris ssp. longifolius	1	+						
Tragopogon lassithicus	2	+						
Trapa natans	11				+	+	+	
Trifolium aurantiacum	3	+						
Trifolium badium	3							+
Trifolium barbeyi	1	+						
Trifolium dolopium	1	+						
Trifolium parnassi	22	+						
Trifolium pignantii	23							+
Trifolium pilczii	2							+
Trifolium praetermissum	1	+						
Trifolium spadiceum	2							+
Trigonella rechingeri	6	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Trigonella spinosa	2							+
Trinia frigida	12	+						
Trinia glauca ssp. pindica	12							+
Trinia guicciardii	3	+						
Trisetum flavescens ssp. tenue	8							+
Trisetum laconicum	1	+						
Triticum comosum ssp. heldreichii	1	+						
Trollius europaeus	2							+
Tulipa boeotica	1				+		+	
Tulipa cretica	7	+						
Tulipa doerfleri	1	+						
Tulipa goulimyi	4	+						
Tulipa orphanidea	6				+	+	+	
Tulipa saxatilis	7					+		+
Tulipa undulatifolia	1				+		+	
Tunica argentii	1	+						
Typha domingensis	1							+
Umbilicus albido-opacus	2	+						
Utricularia vulgaris	2							+
Valantia aprica	22							+
Valeriana alliariifolia	1				+	+	+	
Valeriana asarifolia	11	+						
Valeriana bertiscea	1				+	+	+	
Valeriana crinii ssp. crinii	1	+						
Valeriana crinii ssp. epirotica	2				+	+	+	
Valeriana montana	1							+
Valeriana officinalis ssp. collina	4							+
Valeriana olenaea	5	+						
Valeriana tripteris	1							+
Valerianella locusta	1							+
Verbascum acaule	2	+						
Verbascum adeliae	1	+						
Verbascum adenanthum	2				+	+	+	
Verbascum aphentulinum	1	+						
Verbascum arcturus	12	+						
Verbascum boissieri	2	+						
Verbascum cylindrocarpum	1	+						
Verbascum cylleneum	1	+						
Verbascum daenzeri	3	+						
Verbascum delphicum	4	+						
Verbascum epixanthinum	17	+						
Verbascum graecum	7							+
Verbascum humile ssp. humile	2							+
Verbascum ikaricum	3	+						
Verbascum levanticum	1				+			
Verbascum longifolium ssp. samaritani	2	+						
Verbascum nigrum ssp. abietinum	1							+
Verbascum orphanideum	1	+						
Verbascum pangaeum	2	+						
Verbascum reiseri	1	+						
Verbascum speciosum ssp. megaphlomos	10	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Verbascum spinosum	3	+						
Veronica argute-serrata	1							+
Veronica barrelieri	7							+
Veronica bellidioides	2							+
Veronica chamaedrys ssp. chamaedryoides	23	+						
Veronica erinoides	8	+						
Veronica glauca ssp. glauca	1							+
Veronica glauca ssp. peloponnesiaca	13							+
Veronica kavusica	5	+						
Veronica orsiniana ssp. teucrioides	5	+						
Veronica sartoriana	13	+						
Veronica stamatiadae	1				+		+	
Veronica thessalica	2							+
Veronica thymifolia	12	+						
Vicia pinetorum	4	+						
Vincetoxicum creticum	1	+						
Vincetoxicum funebre	1							+
Viola aetolica	13							+
Viola alba ssp. thessala	5							+
Viola albanica	6							+
Viola athois	2	+						
Viola brachyphylla	1	+						
Viola cephalonica	1	+						
Viola chelmea	9	+						
Viola cretica	5	+						
Viola delphinantha	6				+	+	+	
Viola dirphya	1	+						
Viola doerfleri	1							+
Viola dukadjinica	4							+
Viola epirota	9							+
Viola euboea	2	+						
Viola eximia	5				+		+	
Viola fragrans	5	+						
Viola frondosa	4							+
Viola graeca	10	+						
Viola grisebachiana	1							+
Viola heldreichiana	1				+	+		
Viola mercurii	4	+						
Viola oligyrtia	1	+						
Viola orphanidis	9							+
Viola palustris	1							+
Viola perinensis	3				+		+	
Viola phitosiana	5	+						
Viola poetica	6	+						
Viola pseudograeca	2	+						
Viola raulitiana	3							+
Viola rausii	2	+						
Viola scorpiuroides	4				+	+		
Viola sfikasiana	1	+						
Viola stojanowii	4				+	+	+	
Viola striis-notata	2	+						

Taxon	No sites	Motivation						
		B	C		D			
		Endemic	BERN	CITES	WCMC	PD	Lists	Other
Viola tricolor ssp. macedonica	25					+		+
Viola velutina	2							+
Viola voliotisii	1	+						
Viola vourinensis	2	+						
Zostera noltii	1							+
Zygophyllum album	5				+	+		

Bern= Bern Convention, 1992

CITES= Convention on the international trade in endangered species of wild fauna and flora Appendix BII or Annex C).

WCMC= Threteaned (Endangered, Vulnerable, Rare, or Indeterminate) according to the Conservation Status Listing of Plants of the Word Conservation Monitoring Centre).

PD= Presidential Decree of the Greek State published in Government Gazette 67/1981

Lists= Included in one or more of the following lists: European Red List of Globally Threatened Plants and Animals (1991), Corine Biotopes Checklist of threatened plants, The Botanic gardens list of rare and threatened plants of Europe (1984), Directive 92/43/EEC Appendix IV or Appendix V.

Other= Subendemic, species with restricted distribution, other rare species.

APPENDIX 6

LIST OF "OTHER IMPORTANT ANIMAL SPECIES"

OTHER IMPORTANT ANIMAL SPECIES

MAMMALS (58 spp., 22 ssp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Order Insectivora (11 spp., 2 ssp.)					
Fam. Erinaceidae					
Erinaceus concolor[1]	60				1,S
E. concolor nesiotes	6		+		1,
E. concolor rhodius	1				1,E,S
Fam. Talpidae					
Talpa caeca	9	K			1,S
Talpa europaea	3	K			1
Talpa stankovici [2]	4	K			1,E,S
Fam. Soricidae					
Crocidura lasia[3]	4	R		III	1,S,R
Crocidura leucodon	1			III	1
Crocidura suaveolens[4]	23			III	1
Crocidura zimmermanni[5]	2		+		2
Neomys anomalus	8	K		III	1,S
Sorex minutus	4			III	1,S
Suncus etruscus	6			III	1
Order Chiroptera (15 spp.)					
Fam. Vespertilionidae					
Eptesicus serotinus	7	E		II	1,3,4
Myotis daubentoni	4	E		II	3,4
Myotis mystacinus	1	E		II	1,3,4
Myotis nattereri	3	E		II	1,2,3,4
Nyctalus lasiopterus	8	E		II	1,2,3,4,S
Nyctalus leisleri	10	E		II	1,3,4,S
Nyctalus noctula	4	E		II	1,3,4
Pipistrellus kuhli	8	V		II	1,3,4,S
Pipistrellus nathusii	13	E		II	1,3,4,S
Pipistrellus pipistrellus	22	E		III	1,4
Pipistrellus savii	7	E		II	1,3,4,S
Plecotus auritus	4	E		II	1,2,3,4,S
Plecotus austriacus	2	E		II	1,3,4
Vespertilio murinus	7	E		II	1,3,4,S
Fam. Molossidae					
Tadarida teniotis	9	E		II	1,2,3,4,S
Order Lagomorpha (1 spp., 4 ssp.)					
Fam. Leporidae					
Lepus europaeus	38			III	X
L. europaeus creticus	5		+	III	X
L. europaeus ghigii	2		+	III	R
L. europaeus parnassius	1		+	III	X
Oryctolagus cuniculus cnossius	1	R	+		X
Order Rodentia (16 spp., 11 ssp.)					
Fam. Sciuridae					
Sciurus anomalus	3	V		II	1,3,4,R,S
Sciurus vulgaris	20			III	1,S

Taxa	No of sites	Motivation types			
		A	B	C	D
Fam. Gliridae					
Dryomys nitedula	6	R		III	1,4,S
D. nitedula wingei	8	R		III	1,4,E,S
Glis glis	9			III	1,S
G. glis argenteus	1	V	+	III	1
G. glis pindicus	13			III	1,E,S
Muscardinus avellanarius	2			III	1,2,4,S
M. avellanarius zeus	2		+	III	1,2,4,S
Fam. Capromyidae					
Myocastor coypus	4				P
Fam. Spalacidae					
Microspalax leucodon[6]	13	V			2
Fam. Cricetidae					
Cricetulus migratorius	5	E			1,S
Fam. Arvicolidae					
Clethrionomys glareolus makedonicus	1				E
Microtus epiroticus	5				S
Microtus felteni	1				E
Microtus nivalis	4			III	S
Microtus subterraneus	1				E,S
M. subterraneus dinaricus	1				E,S
Microtus thomasi	14				E,S
Fam. Muridae					
Acomys minous	4	R	+		
Apodemus flavicollis brauneri	10				E,S
Apodemus flavicollis dietzi	10		+		
A. mystacinus epimelas	15				E
Apodemus sylvaticus creticus[7]			+		
Micromys minutus brauneri	1				E,S
Mus macedonicus	2				S
Order Carnivora (9 spp., 5 ssp.)					
Fam. Canidae					
Canis aureus	40	V			4,P
Canis lupus	65	V		II,II	2,3,4,5
Vulpes vulpes hellenica	21		+		
Fam. Mustelidae					
Martes foina	100			III	S
M. foina bunites	13		+	III	
Martes martes	5			III	1,4
Meles meles	68			III	
M. meles arcalus	11	V	+	III	
Mustela nivalis	81			III	1
M. nivalis galinthias	8		+	III	1
Mustela putorius	2			III	1,4
Vormela peregusna	3	K		III	1,2,3,5,S
Fam. Felidae					
Felis silvestris	54			II,II	3,4
F. silvestris cretensis	3	E	+	II,II	3,4

Taxa	No of sites	Motivation types			
		A	B	C	D
Order Artiodactyla (4 spp.,1 ssp.)					
Fam. Suidae					
Sus scrofa	41				X
Fam. Cervidae					
Cervus elaphus	10	V		III	X
Dama dama	1	V		III	P,R,S
Fam. Bovidae					
Capra aegagrus cretica	2	E	+	II	3,4
Capreolus capreolus	44	V		III	X
Order Cetacea (3 spp.)					
Fam. Ziphiidae					
Ziphius cavirostris	1			II,II	4
Fam. Delphinidae					
Delphinus delphis	9	V		II,II	1,3,4
Stenella coeruleoalba	5	V		II,II	4

1 Formerly included in *E. europaeus* which is protected under the Bern Convention
2 Formerly belonged to *T. romana*
3 Includes East Aegean island populations recorded as *C. russula*
4 Includes mainland populations recorded as *C. russula*
5 Includes cretan populations recorded as *C. russula*
6 Formerly Spalax leucodon, also includes *S. microphthalmus graecus*
7 Recent reviews consider cretan populations as belonging to the nominal subspecies

BIRDS (5 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Order Falconiformes					
Fam. Falconidae					
Falco cherrug	3	I		II,II	
Order Galliformes					
Fam. Phasianidae					
Phasianus colchicus	1	V		III	1,4
Order Charadriiformes					
Fam. Laridae					
Larus cachinnans	2			III	
Order Passeriformes					
Fam. Sylviidae					
Cisticola juncidis	19	K		II	
Fam. Tichodromadidae					
Tichodroma muraria	3	R		III	

REPTILES (44 spp., 30 ssp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Order Testudines (1 sp.)					
Fam. Testudinidae					
Chelonia mydas	3	E		*II,I*	1,2,3,4,5
Order Squamata (43 spp., 30 ssp.)					
Suborder Sauria (25 spp., 26 ssp.)					
Fam. Gekkonidae					
Cyrtodactylus kotschyi	51			II	1,3
C. kotschyi bartoni	4		+	II	1,3
C. kotschyi bibroni	25			II	1,3,E,P,S
C. kotschyi kalypsae	1		+	II	1,3,R
C. kotschyi kotschyi	1		+	II	1,3,R
C. kotschyi oertzeni	1		+	II	1,3,R
C. kotschyi saronicus	1		+	II	1,3
C. kotschyi wettsteini	1		+	II	1,3,R
Hemidactylus turcicus	53			III	1
Tarentola mauritanica	6			III	1
T. mauritanica fascicularis	3			III	1,E,R,S
Fam. Agamidae					
Agama stellio	12			II	1,3,4,P,S
Fam. Chamaeleonidae					
Chamaeleo chamaeleon	4	R		II,II	1,3,4,P
Fam. Anguidae					
Anguis cephallonicus	20		+	III	
Anguis fragilis	25			III	1
Ophisaurus apodus	53			II	4
Fam. Scincidae					
Ablepharus kitaibelii	70			II	3,4
A. kitaibelii fabichi	1		+	II	3,4,R
Chalcides ocellatus	26			II	1,4
Ophiomorus punctatissimus	15			II	1,4,E,S
Fam. Lacertidae					
Algyroides moreoticus	21		+	II	1,4
Algyroides nigropunctatus	21			II	1,4,E,S
A. nigropunctatus kephallithacius	2		+	II	1,4,R
Lacerta agilis	5			II	3,4,P,S
Lacerta anatolica aegaea	3			III	E,R,S
Lacerta graeca	16		+	II	1,4
Lacerta oertzeni oertzeni	1		+	III	
Lacerta oertzeni pelasgiana	1			III	E,R,S
Lacerta praticola	1			III	R,S
Lacerta trilineata	108			II	1,4
L. trilineata polylepidota	14		+	II	1,4
Lacerta viridis	54			II	1,4
Ophisops elegans	18			II	1,4,S
Podarcis erhardii	41			II	1,4,E
P. erhardii amorgensis	2		+	II	1,4,R
P. erhardii cretensis	4		+	II	1,4
P. erhardii elaphonisii	1		+	II	1,4,R
P. erhardii kinarensis	1		+	II	1,4,R
P. erhardii leukaorii	1		+	II	1,4

Taxa	No of sites	Motivation types			
		A	B	C	D
P. erhardii levithensis	1		+	II	1,4,R
P. erhardii livadiaca	10		+	II	1,4
P. erhardii mykonensis	2		+	II	1,4
P. erhardii naxensis	1		+	II	1,4
P. erhardii schiebeli	1		+	II	1,4,R
Podarcis gaigeae	1		+	III	*R*
Podarcis milensis	4		+	II	1,4,R
Podarcis muralis	46			II	1,4
P. muralis albanica	1			II	1,4,E,S
Podarcis peloponnesiaca	28		+	II	1,4
Podarcis taurica	15			II	1,4,S
P. taurica ionica	38			II	1,4,E,S
Suborder Serpentes (18 spp., 4 ssp.)					
Fam. Typhlopidae					
Typhlops vermicularis	25			III	
Fam. Boidae					
Eryx jaculus	19			III,II	S
E. jaculus turcicus	1			III,II	S
Fam. Colubridae					
Coluber caspius	30			III	4,S
Coluber gemonensis	61			II	1,E,S
Coluber jugularis	4			II	1,4,S
Coluber najadum	53			II	1,4
Coluber nummifer	3			III	4,R,S
Coronella austriaca	29			II	1,3,4
Eirenis modestus	5			III	R,S
Elaphe longissima	21			II	1,3,4
Malpolon monspessulanus	62			III	1
Natrix natrix	70			II	1
Natrix tessellata	61			II	1,3,4
Telescopus fallax	43			II	1,4
T. fallax multisquamatus	1		+	II	1,4,R
T. fallax pallidus	16		+	II	1,4
T. fallax rhodicus	2		+	II	1,4,R
Fam. Viperidae					
Vipera ammodytes	114			II	4
Vipera berus	3			III	S
Vipera xanthina	7			II	3,4,S
Suborder Amphisbaenia (1 sp.)					
Fam. Amphisbaenidae					
Blanus strauchi	2	R		III	R,S

AMPHIBIANS (13 spp., 3 ssp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Order Urodela (3 spp., 2 ssp.)					
Fam. Salamandridae					
Salamandra salamandra	35			III	1
Triturus alpestris	15			III	1,P,S
T. alpestris veluchiensis	3		+	III	1,P
Triturus vulgaris	12			III	
T. vulgaris graecus	8			III	1,E,S
Order Anura (10 spp., 1 ssp.)					
Fam. Bufonidae					
Bufo bufo	47			III	1
Bufo viridis	94			II	1,3,4
Fam. Hylidae					
Hyla arborea	76			II	1,3,4
H. arborea cretensis	21		+	II	1,3,4
Fam. Pelobatidae					
Pelobates syriacus	11			II	1,3,4,P
Fam. Ranidae					
Rana balcanica	97				E,S
Rana dalmatina	33			II	1,3,4
Rana epeirotica	14			III	E,S
Rana graeca	41			III	1,4,E,S
Rana ridibunda	6			III	4,S
Rana temporaria	6			III	4,S

FISH (32 spp., 17 ssp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Chondrichthyes					
Order Hexanchiformes (2 spp.)					
Fam. Hexanchidae					
Heptranchias perlo	1				1
Hexanchus griseus	1				1
Order Torpediniformes (1 sp.)					
Fam. Torpedinidae					
Torpedo nobiliana	1				1
Order Myliobatiformes (1 sp.)					
Fam. Mobulidae					
Mobula mobular	2				1
Osteichthyes					
Order Salmoniformes (1 sp., 1 ssp.)					
Fam. Salmonidae					
Salmo trutta	1	R/V/E			3,X
S. trutta dentex	1	R/V/E			3,X
Order Cypriniformes (12 spp., 16 ssp.)					
Fam. Cyprinidae					
Alburnoides bipunctatus					
A. bipunctatus ohridanus	5			III	3
A. bipunctatus strymonicus	10			III	3 E
A bipunctatus thessalicus	6		+	III	3
Alburnus alburnus					
A. alburnus macedonicus	2	L/V			E
A. alburnus strumicae	3	L/V			E
A. alburnus thessalicus	3	L/V	+		
Barbus barbus					
B. barbus macedonicus	1	L/V			E
B. barbus thessalus	3	L/V	+		
Chondrostoma prespensis	1				E
Chondrostoma vardarensis	16	L/V			E
Gobio gobio					
G. gobio balcanicus	3				E
G. gobio bulgaricus	1				E
G. gobio feraensis	1		+		
Gobio kessleri banarescui	2	R/V		III	E
Leuciscus cephalus	15				
L. cephalus macedonicus	1	L/V			E
L. cephalus peloponnensis	6	L/V	+		
L. cephalus vardarensis	15	L/V			E
Leuciscus svallize	6			III	
Pachychilon macedonicus	6	L/V			E
Pachychilon pictus	4			III	E
Rutilus rutilus vegariticus	4		+		
Scardinius acarnanicus	6		+		
Vimba melanops	8	R/E			E

Taxa	No of sites	Motivation types			
		A	B	C	D
Fam. Cobitidae					
Orthrias barbatulus vardarensis	1	V	+		E
Orthrias brandti	8	L/V			E
Orthrias pindus	4		+		
Fam. Siluridae					
Silurus glanis	1			III	3
Order Lampridiformes (1 sp.)					
Fam. Trachipteridae					
Zu cristatus	1				1
Order Gasterosteiformes (3 spp.)					
Fam. Gasterosteidae					
Gasterosteus aculeatus	6				3
Pungitius hellenicus	1	E	+	III	1
Pungitius platygaster	1	R		III	1
Order Syngnathiformes (1 sp.)					
Fam. Syngnathidae					
Syngnathus abaster	26			III	
Order Perciformes (10 spp.)					
Fam. Blenniidae					
Salaria fluviatilis	16			III	3
Fam. Gobiidae					
Economidichthys trichonis	3	L/V	+		2
Knipowitschia goerneri	2	E	+		
Knipowitschia milleri	1	V	+		
Knipowitschia panizzae	1				P
Knipowitschia thessala	2	V	+	III	2
Proterorhinus marmoratus	3	L/E		III	1
Sparisoma cretense	1				1
Xyrichthys novacula	1				1
Zosterisessor ophiocephalus	2			III	

INVERTEBRATES

ASCIDIA (1 sp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Microcosmus sulcatus	1				6

ECHINODERMATA (4 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Arbacia lixula	1				6
Centrostephanus longispinus	1				4,7
Paracentrotus lividus	8				5,6,7
Sphaerechinus granularis	1				6

INSECTA (646 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Diplura (1 sp.)					
Troglojapyx hauseri	1		+		
Odonata (8 spp.)					
Anax imperator	2				1
Cordulegaster charpentieri	2				9
Cordulegaster heros	2				3,7,9
Epallage fatima	6				9
Gomphus vulgatissimus	2				3,7,9
Platycnemis pennipes	9				9
Pyrrhosoma nymphula	1				9
Stylurus flavipes	2			II	2,4,7,8,9
Orthoptera (97 spp.)					
Fam. Tettigoniidae					
Acrometopa cretensis	4		+		
Anadrymadusa brevipennis	5		+		
Anadrymadusa ornatipennis	1		+		
Conocephalus grebenchikovi	1		+		
Conocephalus harzi	1		+		
Drymadusa dorsalis	8		+		
Eupholidoptera astyla	1		+		
Eupholidoptera epirotica	3		+		
Eupholidoptera forcipata	1		+		
Eupholidoptera gemellata	1		+		
Eupholidoptera icariensis	1		+		
Eupholidoptera kinzelbachi	2		+		
Eupholidoptera leucasi	2		+		
Eupholidoptera spinigera	1		+		
Isophya lemnotica	1		+		
Metaplastes oertzeni	6		+		
Pholidoptera lucasi	1		+		
Platycleis chelmos	4		+		
Platycleis dirphys	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Platycleis ebneri	1				E
Platycleis fusca	1		+		
Platycleis gionica	1		+		
Platycleis menalon	1		+		
Platycleis panaetolikon	1		+		
Platycleis parnassica	2		+		
Platycleis parnon	1		+		
Platycleis tymphiensis	2		+		
Platycleis tymphrestos	2		+		
Poecilimon aegaeus	3		+		
Poecilimon beieri	2		+		
Poecilimon cretensis	2		+		
Poecilimon deplanatus	3		+		
Poecilimon hoelzeli	3				E
Poecilimon ikariensis	1		+		
Poecilimon mytilinensis	2		+		
Poecilimon nobilis	7		+		
Poecilimon obesus	9		+		
Poecilimon pindos	3		+		
Poecilimon propinquus	5		+		
Poecilimon tesselatus	7		+		
Poecilimon thessalicus	4				E
Poecilimon veluchianus	2		+		
Poecilimon werneri	2		+		
Poecilimon zimmeri	2		+		
Rhacocleis agiostratica	2		+		
Rhacocleis anatolica	1		+		
Rhacocleis distinguenda	1		+		
Rhacocleis edentata	2		+		
Rhacocleis graeca	7		+		
Rhacocleis insularis	2		+		
Rhacocleis silvestrii	6		+		
Rhacocleis trilobata	1		+		
Rhacocleis werneri	1		+		
Saga campbelli	1				E
Uvarovistia uvarovi	1		+		
Fam. Gryllidae					
Discoptila kinzelbachi	2		+		
Discoptila krueperi	1		+		
Discoptila lindbergi	3		+		
Discoptila newmanae	1		+		
Gryllomorpha guentheri	1		+		
Gryllomorpha pieperi	1		+		
Gryllomorpha wettsteini	2		+		
Mogoplistes kinzelbachi	1		+		
Myrmecophilus termitophilus	1		+		
Fam. Raphidophoridae					
Dolichopoda annae	1		+		
Dolichopoda cassagnaui	1		+		1
Dolichopoda graeca	1		+		1
Dolichopoda insignis	1		+		1
Dolichopoda matsakisi	2		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Dolichopoda naxia	1		+		1
Dolichopoda paraskevi	1		+		
Dolichopoda patrizii	1		+		1
Dolichopoda petrochilosi	3		+		1
Dolichopoda steriotisi	3		+		
Dolichopoda thasosensis	1		+		1
Dolichopoda vandeli	1		+		1
Troglophilus lagoi	2		+		
Troglophilus spinulosus	7		+		
Fam. Pamphagidae					
Orchamus raulinii	1		+		
Fam. Acrididae					
Chorthippus biroi	1		+		
Chorthippus dessyi	1		+		
Chorthippus lacustris	1		+		
Chorthippus pulloides	10		+		
Chorthippus sangiorgii	4		+		
Chorthippus willemsei	9		+		
Oedipoda venusta	1		+		
Oropodisma chelmosi	6		+		
Oropodisma erymanthosi	1		+		
Oropodisma kyllinii	1		+		
Oropodisma lagrecai	1		+		
Oropodisma parnassica	1		+		
Oropodisma taygetosi	1		+		
Oropodisma tymphrestosi	2		+		
Oropodisma willemsei	1		+		
Peripodisma tymphii	1		+		
Pezotettix lagoi	2		+		
Xerohippus solerii	3		+		
Heteroptera (3 spp.)					
Orthonotus creticus	1		+		
Phytocoris parvuloides	1		+		
Rhyparochromus creticus	1		+		
Trichoptera (4 spp.)					
Limnephilus minos	1		+		
Stactobia livadia	1		+		
Tinodes horstaspoecki	1		+		
Tinodes serifos	1		+		
Lepidoptera (144 spp.)					
Fam. Papilionidae					
Allancastria cerisyi	6				1,3,10
Archon apollinus	5				1,2,3,7,10
Papilio alexanor	27			II	1,2,3,4,7,10
Parnassius apollo	12			II,II	1,2,3,4,5,7,10
Parnassius mnemosyne	11			II	1,2,3,4,7
Zerynthia polyxena	20			II	1,2,3,4,7
Fam. Pieridae					
Anthocharis damone	10				1,10

Taxa	No of sites	Motivation types			
		A	B	C	D
Anthocharis gruneri	19				1
Colias alfacariensis	7				1
Colias aurorina	11				1
Colias balcanica	4				3,10
Colias hyale	2				1
Colias phicomone	1				1
Elphinstonia charlonia	2				3,7,10
Gonepteryx rhamni	31				1
Leptidea duponcheli	13				1
Pieris ergane	25				1,3,7
Pieris krueperi	20				1,10
Pontia chloridice	3				1,3,7,10
Fam. Nymphalidae					
Apatura ilia	2				1,3,7,10
Apatura iris	6				1,3,7
Apatura metis	2			II	2,3,4,7
Araschnia levana	4				S
Boloria graeca	3				1
Brenthis hecate	3				3,7
Charaxes jasius	14				1
Clossiana dia	3				1,10
Limenitis camilla	2				S
Limenitis populi	3				3,7,10,S
Melitaea arduina	2				10
Neptis rivularis	3				10,S
Neptis sappho	1				3,7,10
Nymphalis xanthomelas	2				10
Fam. Satyridae					
Coenonympha glycerion	2				S
Coenonympha leander	3				1,10
Coenonympha orientalis	1				10
Erebia aethiopella	1				S
Erebia aethiops	3				S
Erebia epiphron	1				S
Erebia euryale	1				10
Erebia ligea	6				1,10
Erebia melas	3				1
Erebia oeme	2				10
Erebia ottomana	3				1,2,5,7
Hipparchia aristaeus	25				1
Hipparchia cretica	1		+		
Hipparchia delattini	1				S
Kirinia climene	5				10
Lasiommata petropolitana	1				10
Maniola chia	1		+		
Melanargia russiae	1				1,10
Minois dryas	2				S
Proterebia phegea	1				10,S
Pseudochazara amymone	2		+		10
Pseudochazara cingovskii	3				10
Pseudochazara geyeri	2				S
Pseudochazara graeca	13				1

Taxa	No of sites	Motivation types			
		A	B	C	D
Pseudochazara mamurra	2				1
Pseudochazara orestes	1		+		
Ypthima asterope	1				F
Fam. Lycaenidae					
Agriades pyrenaicus	2				3,7,10,S
Agrodiaetus admetus	9				1
Agrodiaetus aroaniensis	3		+		
Agrodiaetus damon	3				10
Agrodiaetus nephohiptamenos	3				10
Agrodiaetus ripartii	4				1
Cyaniris helena	6				1
Eumedonia eumedon	1				10
Everes alcetas	3				10
Everes argiades	9				10
Everes decoloratus	2				10
Freyeria trochylus	5				1,10
Heodes alciphron	14				10
Heodes ottomanus	4				10
Iolana iolas	2				10
Kretania psylorita	1		+		1,10
Lycaeides argyrognomon	6				2,7,10
Lysandra philippi	1		+		10
Maculinea alcon	6				2,3,5,7,10
Maculinea arion	2			II	2,3,4,5,7,10
Palaeochrysophanus hippothoe	1				S
Plebejus pylaon	5				3,7,10
Plebejus sephirus	8				3,7,10
Polyommatus andronicus	3		+		
Pseudophilotes bavius	1				1,7,10
Scolitantides orion	2				3,7,10
Strymonidia pruni	2				1,10
Strymonidia w-album	3				10
Thecla betulae	5				10
Thersamonia thersamon	11				10
Thersamonia thetis	6				1
Fam. Hesperiidae					
Carcharodus flocciferus	9				10
Carterocephalus palaemon	3				2,3,5,7,10,S
Erynnis marloyi	7				10
Gegenes nostradamus	2				10
Pyrgus alveus	6				10
Pyrgus cinarae	1				1,10
Spialia phlomidis	12				1,10
Syrichtus tessellum	5				1,2,3,5,7,10
Thymelicus hyrax	1				S
Fam. Zygaenidae					
Adscita graeca	4		+		
Zygaena angelicae	1				P
Zygaena brisae	1				P
Zygaena ephialtes	1				P
Zygaena filipendulae	2				P
Zygaena lonicerae	2				P

Taxa	No of sites	Motivation types			
		A	B	C	D
Zygaena minos	1				P
Zygaena viciae	1				P
Fam. Sphingidae					
Hyles hippophaes	1			II	2,3,4,5,7,8
Proserpinus proserpina	1			II	2,3,4,5,7,8
Fam. Saturniidae					
Saturnia pyri	14				2,5,7
Fam. Psychidae					
Dahlica pseudoachajensis	1		+		
Loebelia crassicornis	1		+		
Pseudobankesia arahova	1		+		
Stichobasis helicinoides	1		+		
Fam. Tineidae					
Infurcitinea lakoniae	3		+		
Infurcitinea parnassiella	2		+		
Obesoceras moreae	1		+		
Fam. Lithocolletidae					
Phyllonorycter christenseni	1		+		
Fam. Noctuidae					
Aegle agatha	1		+		
Ammoconia reisseri	1		+		
Apamea baischi	1		+		
Cryphia amygdalina	3		+		
Cryphia strobinoi	1		+		
Stilbina olympica	1		+		
Fam. Crambidae					
Pseudeuchromius latus	1		+		
Fam. Pyraustidae					
Scoparia dicteella	1		+		
Fam. Tortricidae					
Cnephasia graecana	2		+		
Pelochrista duercki	1		+		
Fam. Coleophoridae					
Coleophora christenseni	1		+		
Coleophora laconiae	1		+		
Coleophora nikiella	2		+		
Coleophora patzaki	1		+		
Coleophora taygeti	1		+		
Fam. Scythridae					
Scythris cycladae	1		+		
Fam. Momphidae					
Tetanocentria gelechiella	3		+		
Fam. Stathmopodidae					
Tortilia graeca	1		+		
Fam. Pterophoridae					
Pterophorus lyrae	1		+		
Stenoptilia parnassia	1		+		
Fam. Symmocidae					
Aprominta pannosella	1		+		
Nomialyra goulandriorum	1		+		
Symmoca christenseni	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Fam. Axiidae					
Axia nesiota	1		+		
Fam. Chrysopeleiidae					
Sorhagenia reconditella	1		+		
Coleoptera (389 spp.)					
Fam. Carabidae					
Aptinus lugubris	4		+		
Bembidion pecoudi	1		+		
Calosoma sycophanta	1				2,3,5,7,8
Carabus adonis	1		+		
Carabus arcadicus (=C. intricatus)	9				2,3,5,7,8,11
Carabus intricatus	3				2,3,5,7,8,11
Carabus krueperi	1		+		
Corcyranillus abnormis	3		+		
Corcyranillus menozzii	2		+		
Duvalius boschi	1		+		
Duvalius diaphanus	1		+		
Duvalius genesti	1		+		
Duvalius kyllenicus	2		+		
Duvalius meschniggi	1		+		
Duvalius milenae	1		+		
Duvalius mixanigi	1		+		
Duvalius montisoetae	1		+		
Duvalius oertzeni	1		+		
Duvalius peristericus	1		+		
Duvalius roseni	1		+		
Duvalius sbordonii	1		+		
Duvalius vermionensis	1		+		
Duvalius weiratheri	1		+		
Duvalius wichmanni	1		+		
Duvalius zaimisi	1		+		
Harpalus krueperi	2		+		
Laemostemus thessalicus	1		+		
Laemostenus krueperi	2		+		
Laemostenus peloponnesiacus	5		+		
Laemostenus vignai	1		+		
Licinus oertzeni	2		+		
Microdaccus teodori	2		+		
Molops parnassicola	1		+		
Nebria aetolica	2		+		
Nebria heydeni	2		+		
Nebria taygetana	5		+		
Pachycarus cyaneus	2		+		
Pogonus reticulatus	3		+		
Scotodipnus arcadicus	1		+		
Scotodipnus weiratheri	1		+		
Singilis fuscipennis	1		+		
Speluncarius rumelicus	1		+		
Speluncarius seticeps	1		+		
Tapinopterus filigranus	1		+		
Tapinopterus hellenicus	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Tapinopterus insulicola	1		+		
Tapinopterus leonis	2		+		
Tapinopterus thessalicus	1		+		
Trechus epirotes	1		+		
Winklerites olympicus	1		+		
Zabrus aegaeus	6		+		
Zabrus brevicollis	2		+		
Zabrus chiosanus	2		+		
Zabrus hellenicus	1		+		
Zabrus peristericus	1		+		
Zabrus reflexus	1		+		
Zabrus robustus	1		+		
Zabrus tumidus	2		+		
Zabrus validus	1		+		
Fam. Rhysodidae					
Rhysodes sulcatus	1				7,11,12
Fam. Dytiscidae					
Agabus bipustulatus	22				1
Bidessus goudoti	3		+		
Deronectes sahlbergi	2		+		
Hydroporus collarti	8		+		
Limnebius crassipes	3		+		
Fam. Hydrophilidae					
Laccobius (Macrolaccobius) aegaeus	1		+		
Fam. Hydraenidae					
Hydraena armipes	2		+		
Hydraena cephalleniaca	2		+		
Hydraena dryops	1		+		
Hydraena epeirosi	1		+		
Hydraena filum	2		+		
Hydraena georgiadesi	1		+		
Hydraena graphica	1		+		
Hydraena gregalis	2		+		
Hydraena karinkulolae	2		+		
Hydraena kuehnelti	2		+		
Hydraena ludovicae	3		+		
Hydraena malickyi	1		+		
Hydraena meschniggi	1		+		
Hydraena myrmidon	1		+		
Hydraena rhodia	2		+		
Hydraena samia	2		+		
Hydraena subina	2		+		
Hydraena subinoides	1		+		
Hydraena subinura	1		+		
Hydraena subjuncta	4		+		
Hydraena vedrasi	5		+		
Ochthebius alpheius	2		+		
Ochthebius dilatatus	5		+		
Ochthebius olympicus	2		+		
Ochthebius peregrinus	3		+		
Ochthebius thermalis	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Fam. Catopidae					
Albaniola olympicola	1		+		
Albaniola thessalica	1		+		
Atticiella lindbergi	1		+		
Bathyscia thracica	1		+		
Catopomorphus clavalis	3		+		
Catopomorphus orientalis	1		+		
Catops neglectus	2		+		
Catops oertzeni	6		+		
Choleva cerrutii	1		+		
Choleva emgei	2		+		
Elladoherpon inopinatum	1		+		
Maroniella beroni	1		+		
Muelleriella bonzanoi	1		+		
Muelleriella moczarskii	1		+		
Muelleriella taygetana	1		+		
Namadeus pellitus	2		+		
Fam. Silphidae					
Anemadus nigropiceus	1		+		
Fam. Scydmaenidae					
Euconnus cephalonicus	2		+		
Euconnus dodecanicus	2		+		
Euconnus karamanae	1		+		
Euconnus leonhardi	5		+		
Euconnus marthae	5		+		
Euconnus parnassi	1		+		
Euconnus parvus	1		+		
Euconnus rhodensis	2		+		
Neuraphes alexandrisi	1		+		
Neuraphes rhodensis	2		+		
Fam. Pselaphidae					
Amauronyx coiffaiti	1		+		
Amaurops macedonica	1		+		
Batrisodes elysius	2		+		
Batrisodes pogonatus	2		+		
Batrisodes sulcaticeps	1				E
Bythinus icariensis	1		+		
Bythinus spartacus	2		+		
Faronus parnassius	1		+		
Meliceria acanthifera	3		+		
Minitiola eubeae	1		+		
Namunia cavernicola	2		+		
Pselaphogenius breiti	1		+		
Pselaphogenius zacynthius	2		+		
Trimium atticum	1		+		
Trimium graecum	1		+		
Trimium thessalicum	1		+		
Trissemus militaris	1		+		
Tychus cordiger	5		+		
Fam. Staphylinidae					
Achenium levantinum	7		+		
Aleochara nivalis	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Allotyphlus ambracicus	2		+		
Allotyphlus aspericeps	2		+		
Allotyphlus cephallenicus	2		+		
Allotyphlus corcyrius	3		+		
Allotyphlus moczarskii	2		+		
Atheta ampliventris	1		+		
Atheta beieri	2		+		
Atheta glaberrima	1		+		
Atheta glabriceps	1		+		
Atheta kraneana	2		+		
Atheta orosana	2		+		
Atheta rhodiensis	1		+		
Atheta schneideri	1		+		
Atheta voidiana	1		+		
Atheta weiratheri	4		+		
Baptolinus casalei	1		+		
Geomitopsis beieri	2		+		
Geostilba loebli	5		+		
Glyptotyphlus ionicus	3		+		
Hypomedon hellenicus	1		+		
Lathrimaeum kuehnelti	1		+		
Leptobium ionicum	6		+		
Leptotyphlopsis ionica	2		+		
Leptotyphlopsis kaligoniana	2		+		
Leptotyphlopsis leucadia	2		+		
Leptotyphlus aspericeps	2		+		
Leptotyphlus beieri	2		+		
Leptotyphlus micros	2		+		
Leptusa bozdaghensis	1		+		
Leptusa casalei	1		+		
Leptusa kuehnelti	1		+		
Leptusa vermiensis	1		+		
Leptusa wankai	1		+		
Leptusina kuehnelti	1		+		
Lesteva taygetana	1		+		
Medon petrochilosi	1		+		1
Micrillus corcyraeus	3		+		
Micrillus zacinthicus	2		+		
Ocyusa beieri	2		+		
Ocyusa cephallenica	2		+		
Ocyusa densepunctata	1		+		
Ocyusa keleczeryi	1		+		
Omalium peloponnesiacum	1		+		
Othius rhodicus	1		+		
Oxypoda japonica	1		+		
Oxypoda kuehnelti	1		+		
Oxypoda moreotica	1		+		
Oxytelus corcyranus	3		+		
Paederus pelikani	3		+		
Philonthus pindeus	1		+		
Philonthus thaseus	1		+		
Phloecharis beieri	2		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Quedius rhodicus	2		+		
Rhopalotyphlus beieri	2		+		
Scopaeus cerruti	4		+		
Scopaeus lemnicus	1		+		
Scopaeus schusteri	2		+		
Sipalia aculeata	1		+		
Sipalia armata	1		+		
Sipalia breiti	1		+		
Sipalia cassagnaui	1		+		
Sipalia cephallenica	2		+		
Sipalia cumaniensis	1		+		
Sipalia dirfysensis	1		+		
Sipalia franziana	1		+		
Sipalia hymetti	1		+		
Sipalia kanellidis	1		+		
Sipalia leucadiae	2		+		
Sipalia lichadensis	1		+		
Sipalia mandli	2		+		
Sipalia matsakisi	1		+		
Sipalia meschniggi	1		+		
Sipalia meschniggiana	2		+		
Sipalia moczarskii	1		+		
Sipalia oertzeni	2		+		
Sipalia pelionensis	1		+		
Sipalia peninsulaemagnesiae	1		+		
Sipalia scyriaca	1		+		
Sipalia strongylensis	1		+		
Sipalia taygetana	1		+		
Sipalia weiratheriana	1		+		
Sipalotricha leucadiae	2		+		
Spelaeobythus regularis	1		+		
Stenus ariadne	1		+		
Stenus beieri	1		+		
Stenus hummleri	2		+		
Stenus leucadiae	4		+		
Stenus monachus	2		+		
Stenus parnassianus	1		+		
Stenus weiratheri	2		+		
Tetracanthognathus kuehnelti	2		+		
Throbalium graecum	2		+		
Typhloiulopsis leucadiae	2		+		
Typhloiulopsis rudiana	2		+		
Fam. Scarabaeidae					
Amphicoma petrowitzi	1		+		
Anisoplia borchmanni	1		+		
Anisoplia lamiensis	1		+		
Anisoplia tritici	1		+		
Anoxia tethys	1		+		
Aphodius pittinoi	1		+		
Aphodius rhodiensis	2		+		
Cetonischema aeruginosa	1				11
Elaphocera denticornis	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Elaphocera erberi	1		+		
Haplidia graeca	6		+		
Haplidia schatzmayri	1		+		
Hellaserica elongata	1		+		
Homaloplia cerruttii	1		+		
Hoplia nigrina	1		+		
Hoplia uniformis	3		+		
Maladera graeca	3		+		
Maladera krueperi	1		+		
Mallosia graeca	2		+		
Monotropus jeannei	1		+		
Onthophagus furcatus	5				7
Polyphylla naxiaca	1		+		
Tanyproctus reichei	3		+		
Trichius sexualis	2				11
Fam. Lucanidae					
Aesalus scarabaeoides	1				7,11
Fam. Helodidae					
Helodes amicula	1		+		
Helodes nocturna	1		+		
Helodes sieberi	4		+		
Fam. Elmidae					
Riolus argolicus	1		+		
Fam. Buprestidae					
Acmaeodera cecropia	2		+		
Acmaeodera krueperi	2		+		
Anthaxia hladili	1		+		
Anthaxia sturanyi	1		+		
Anthaxia thessalica	3		+		
Scintillatrix achaica	1		+		
Sphenoptera chrysostoma	3		+		
Sphenoptera krueperi	1		+		
Sphenoptera parnassica	1		+		
Fam. Elateridae					
Adrastus sbordonii	1		+		
Ampedus vignai	1		+		
Athous bolognai	1		+		
Athous corcyraeus	4		+		
Athous kerkyranus	3		+		
Athous magnanii	1		+		
Athous osellai	1		+		
Athous pacei	1		+		
Athous settei	2		+		
Elathous chiarae	1		+		
Melanotus brignolii	1		+		
Fam. Drilidae					
Drilus attenuatus	2		+		
Drilus funebris	1		+		
Psilotrix latipennis	2		+		
Fam. Lampyridae					
Lampyris hellenica	1		+		
Nyctophila colorata	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Fam. Cantharidae					
Boveycantharis olympica	1		+		
Cantharis dahlgreni	2		+		
Cantharis parnassica	1		+		
Malthinus dimorphus	2		+		
Malthinus geniculatus	11		+		
Malthinus graecus	1		+		
Malthinus ionicus	8		+		
Malthinus laevicollis	5		+		
Malthinus malkini	2		+		
Malthinus olympiacus	1		+		
Malthinus parallelus	1		+		
Malthinus parnassicus	1		+		
Malthodes creticus	1		+		
Malthodes megesticus	1		+		
Metacantharis balcanograeca	3		+		
Metacantharis keiseri	2		+		
Metacantharis turcica	2		+		
Rhagonycha cruenata	1		+		
Rhagonycha kefallinica	2		+		
Fam. Anobiidae					
Ernobius kailidisi	2		+		
Fam. Cleridae					
Trichodes graecus	1		+		
Fam. Malachiidae					
Hypebaeus inapicalis	2		+		
Malachius casosensis	1		+		
Malachius graecus	4		+		
Troglops olympicus	2		+		
Fam. Mordellidae					
Mordellistena aegea	1		+		
Mordellistena peloponnesensis	8		+		
Mordellistena permira	2		+		
Mordellistena schatzmayri	1		+		
Stenalia gridelii	1		+		
Fam. Dasytidae					
Danacaea insularis	4		+		
Danacaea maculicornis	2		+		
Danacaea particularipennis	3		+		
Dasytes torretassoi	1		+		
Haplocnemus pertusus	2		+		
Trichoceble torretassoi	2		+		
Fam. Rhizophagidae					
Rhizophagus atticus	1		+		
Fam. Coccinelidae					
Lithophilus silvestrii	1		+		
Fam. Colydiidae					
Coxelus alinae	1		+		
Langelandia thessalica	1		+		
Langelandia zacynthia	2		+		
Philothermus hellenicus	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Fam. Tenebrionidae					
Asida cephallenica	1		+		
Belopus reitteri	2		+		
Cataphronetis reitteri	6		+		
Cephalostenus elegans	12		+		
Colpotus pectoralis	10		+		
Dailognatha cylindritarsis	1		+		
Dailognatha laticollis	9		+		
Dailognatha vicina	13		+		
Dendarus messenius	1				E
Euboeus mimonti	2		+		
Pedinus ionicus	4		+		
Pedinus oblongus	1		+		
Pedinus quadratus	2				E
Raiboscelis azureus	14				1
Raiboscelis foraminosus	1				E
Stenosis crivellarii	1		+		
Stenosis orientalis	12		+		
Stenosis rhodica	2		+		
Stenosis silvestrii	2		+		
Stenosis syrensis	1		+		
Tentyria rotundata	18		+		
Tentyria sporadica	1		+		
Fam. Alleculidae					
Gonodera bicolor	3		+		
Fam. Meloidae					
Mylabris neglecta	5		+		
Fam. Oedemeridae					
Oedemera rhodosica	2		+		
Fam. Anthicidae					
Anthicus angulapex	2		+		
Anthicus gigas	1		+		
Anthicus schmiedeknechti	1		+		
Microhoria schmiedeknechti	2		+		
Fam. Cerambycidae					
Anaglyptus moreanus	1		+		
Dorcadion mimarenarium	1		+		
Dorcadion wewalkai	1		+		
Grammoptera bipustulata	2		+		
Pedestredorcadion zanteanum	2		+		
Phytoecia inarmata	1		+		
Stenopterus similatus	1		+		
Vadonia aspoeckorum	1		+		
Fam. Chrysomelidae					
Chrysolina philotesia	1		+		
Chrysomela gypsophilae	4				1
Cyrtonastes seriatoporus	1		+		
Cyrtonastes weisei	3		+		
Cyrtonastes zacynthi	2		+		
Lachnaea orientalis	1		+		
Phyllobius montanus	2		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Fam. Curculionidae					
Amaurorrhinus hauseri	1		+		
Elytrodon dilaticolis	1		+		
Elytrodon platalea	2		+		
Miarus hellenicus	2		+		
Otiorrhynchus pindicus	1		+		
Otiorrhynchus teucrus	2		+		
Otiorrhynchus veluchianus	1		+		
Polydrosus angustus	3		+		
Polydrosus dodones	1		+		
Polydrosus elegans	2		+		
Polydrosus jucundus	2		+		
Polydrosus moricei	2		+		
Polydrosus pistaciae	1		+		
Polydrosus reitteri	3		+		
Ruffodytes nitidipennis	1		+		
Ubychia icari	1		+		

MYRIAPODA (2 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Diplopoda					
Amblyiulus creticus	1		+		
Serradium sbordonii	1		+		

CRUSTACEA (103 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Amphipoda (1 sp.)					
Niphargobates lefkodemonaki	1		+		
Isopoda (92 spp.)					
Alpioniscus giurensis	1		+		
Alpioniscus vejdovskyi	2		+		
Armadillidium ameglioi	1				E
Armadillidium arcadicum	1		+		
Armadillidium argolicum	2		+		
Armadillidium atticum	1		+		
Armadillidium beieri	1		+		
Armadillidium bicurvatum	1				E
Armadillidium corcyraeum	10		+		
Armadillidium cythereium	1		+		
Armadillidium epiroticum	1		+		
Armadillidium fossuligerum	1		+		
Armadillidium frontemarginatum	4		+		
Armadillidium hauseni	1		+		
Armadillidium humectum	7		+		
Armadillidium humile	2		+		
Armadillidium insulanum	8		+		
Armadillidium irmengardis	3		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Armadillidium janinense	8		+		
Armadillidium jonicum	5		+		
Armadillidium justi	3		+		
Armadillidium kalamatense	11		+		
Armadillidium kalamium	1		+		
Armadillidium lobocurvum	3		+		
Armadillidium marmoratum	5		+		
Armadillidium messenicum	2		+		
Armadillidium parvum	1		+		
Armadillidium peloponnesiacum	12		+		
Armadillidium tripolitzense	8		+		
Armadillidium werneri	5		+		
Armadillidium xerovunense	1		+		
Armadillidium zuellichi	2		+		
Armadillo tuberculatus	1				E
Armadilloniscus aegaeus	1		+		
Bathytropa dollfusi	2		+		
Buddelundiella sporadica	1		+		
Chaetophiloscia attica	1		+		
Chaetophiloscia leucadia	12		+		
Cordioniscus kithnosi	1		+		
Cretoniscellus dryopeorum	1		+		
Cretoniscellus strinatii	2		+		
Echinarmadillidium cycladicum	3		+		
Graeconiscus inexpectatus	1		+		
Graeconiscus liebegotti	1		+		
Graeconiscus tricornis	3		+		
Graeconiscus xerovunensis	1		+		
Ligidium cycladicum	4		+		
Ligidium euboicum	7		+		
Ligidium ghigii	1		+		
Ligidium werneri	1		+		
Minoscellus caecus	1		+		
Monocyphoniscus caniensis	1		+		
Nagurus aegaeus	5		+		
Orthometopon phaleronense	4		+		
Paraschizidium aegaeum	2		+		
Paraschizidium album	2		+		
Paraschizidium falkonerae	1		+		
Paraschizidium graecum	1		+		
Paraschizidium levithae	1		+		
Paxodillidium schawalleri	9		+		
Platyarthrus beieri	5		+		
Platyarthrus lindbergi	3		+		
Porcellio achilleionensis	7		+		
Porcellio epirensis	3		+		
Porcellio flavomarginatus	3		+		
Porcellio messenicus	11		+		
Porcellio nasutus	5		+		
Porcellio werneri	2		+		
Porcellium graecorum	1		+		
Proporcellio corticicolus	2		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Protracheoniscus kalymnius	3		+		
Rodoniscus anophthalmus	4		+		
Schizidium beroni	1		+		
Schizidium hybridum	2				E
Schizidium oertzeni	3		+		
Schizidium perplexum	1		+		
Stenophiloscia vandeli	6		+		
Tendosphaera graeca	2		+		
Trachelipus aegaeus	7		+		
Trachelipus palustris	13		+		
Trichodillidium malickyi	1		+		
Trichodillidium pubescens	5		+		
Trichoniscus chasmatophilus	2		+		
Trichoniscus corcyraeus	3		+		
Trichoniscus lindbergi	4		+		
Trichoniscus oedipus	1		+		
Trichoniscus rhodiensis	3		+		
Trichoniscus sp.	1		+		
Troglarmadillidium ariadni	2		+		
Troglarmadillidium gavdense	1		+		
Troglarmadillidium halophilum	1		+		
Xeroporcellio pandazisi	3		+		
Decapoda (10 spp.)					
Anapagurus breviaculeatus	1				F
Astacus astacus	1			III	2,3,4,5,7,8,X
Callianassa acanthura	1				F
Callianassa tyrrhena	2				K
Homarus gammarus	1				5,6,X
Palinurus vulgaris	1				6,X
Periclimenes scriptus	1				F
Pilumnus villosissimus	1				F
Scyllarides latus	1				4,7,X
Upogebia pusilla	2				K

CHELICERATA (12 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Arachnidia					
Order Pseudoscorpiones (2 spp.)					
Chthonius herbarii	1		+		
Roncus liebegotti	1		+		
Order Opiliones (2 spp.)					
Graecophalangium cretaeum	1		+		
Lacinius insularis	2		+		
Order Araneae (8 spp.)					
Hoplopholcus labyrinthi	2		+		
Leptyphantes kratochvilli	1		+		
Leptyphantes lindbergi	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Leptyphantes malickyi	2		+		
Leptyphantes obliquus	1		+		
Pholcus creticus	2		+		
Protoleptoneta kanellisi	1		+		
Sulcia cretica	1		+		

MOLLUSCA (172 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Polyplacophora (1 sp.)					
Leptochiton africans	1				F
Bivalvia (11 spp.)					
Arca barbata	1				6
Arca noae	1				6
Callista chionae	1				6
Chlamys varia	1				6
Lithophaga lithophaga	8				4,6,7
Loripinus fragilis	1				F
Musculus discors	1				F
Musculus niger	1				F
Ostrea edulis	1				6,X
Pinna nobilis	14				1,6,X
Venus verrucosa	1				6
Gastropoda (160 spp.) **Subclass Prosobranchia** (11 spp.)					
Bithynia graeca	1				S
Diodora italica	1				F
Gibbula guttadauri	1				K
Monodonta turbinata	1				6
Monophorus perversus	1				K
Pusillina philippi	1				K
Rissoa auriformis	1				K
Semisalsa maltzani	1		+		
Smaragdia viridis	1				K
Tricolia pullus	1				K
Vermetus triquetrus	1				K
Subclass Opisthobranchia (5 spp.)					
Aplysia parvula	1				F
Aplysiopsis elegans	1				E
Doris marmorata	1				E
Hypselodoris messinensis	1				F
Paradoris indecora	2				F
Subclass Pulmonata (144 spp.)					
Albinaria brevicollis	1		+		
Albinaria coerulea	8		+		
Albinaria compressa	1		+		
Albinaria cretensis	13		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Albinaria cristae	1		+		
Albinaria cytherae	1		+		
Albinaria discolor	2		+		
Albinaria eburnea	3		+		
Albinaria grayana	1		+		
Albinaria hippolyti	2		+		
Albinaria idaea	1		+		
Albinaria inflata	4		+		
Albinaria klemmi	1		+		
Albinaria lerosiensis	1				E
Albinaria praeclara	4		+		
Albinaria purpurea	1		+		
Albinaria rebeli	1		+		
Albinaria retusa	1		+		
Albinaria schuchii	1		+		
Albinaria spratti	1		+		
Albinaria sturanyi	1		+		
Albinaria sublamellosa	1		+		
Albinaria terebra	2		+		
Albinaria teres	6		+		
Albinaria torticollis	1		+		
Albinaria turrita	3		+		
Albinaria unicolor	1		+		
Albinaria wettsteini	1		+		
Albinaria xanthostoma	1		+		
Albinaria sp.	2		+		
Ancylus fluviatilis	1				1
Balcanodiscus carinatus	2		+		
Balcanodiscus cerberus	1		+		
Balcanodiscus difficilis	2		+		
Balcanodiscus magnus	1		+		
Bulgarica denticulata	1				E
Carychium hellenicum	1		+		
Cecilioides sp.	1		+		
Cecilioides sp.1	2		+		
Cecilioides sp.3	1		+		
Cernuella armillata	1		+		
Cernuella syrensis	7		+		
Cernuella sp.	3		+		
Chondrula bergeri	1				E
Cochlostoma cretense	4		+		
Deroceras cycladicum	4		+		
Deroceras gavdosensis	1		+		
Deroceras keaensis	2		+		
Deroceras kythirensis	1		+		
Deroceras lasithionensis	9		+		
Deroceras melinum	2		+		
Deroceras minoicum	1		+		
Deroceras neuteboomi	1		+		
Deroceras oertzeni	4		+		
Deroceras parium	4		+		
Deroceras parnassium	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Deroceras rethimnonensis	14		+		
Deroceras rhodensis	1		+		
Deroceras seriphium	2		+		
Deroceras thersites	4		+		
Eopolita protensa	1				E
Helicella sp.	1		+		
Helicigona cyclolabris	5		+		
Helicigona sphaeriostoma	7		+		
Helicopsis bathytera	12		+		
Helicopsis sp.	1		+		
Helicopsis sp. ("carpathou")	1		+		
Helix cincta	1				P
Helix godetiana	3		+		1,X
Helix nucula	3				P
Helix philibinensis	3				E
Hohenwartiana sp.	1		+		
Idyla bicristata	4		+		
Isabellaria confusa	1		+		
Limax conemenosi	1				E
Limax macedonicus	1				E
Lindbergia orbicularis	11		+		
Lindbergia pageti	3		+		
Lindbergia pseudoillyrica	11		+		
Lindbergia stylocamarae	1		+		
Lindholmiola barbata	11		+		
Mastus anaphiensis	1		+		
Mastus cretensis	8		+		
Mastus dirphicus	1		+		
Mastus ehrenbergi	1		+		
Mastus etuberculatus	11		+		
Mastus olivaceus	18		+		
Mastus pusio	4		+		
Mastus turgidus	10		+		
Metafruticicola andria	3		+		
Metafruticicola dictaea	1		+		
Metafruticicola graphicotera	2		+		
Metafruticicola lecta	12		+		
Metafruticicola noverca	16		+		
Metafruticicola pellita	10		+		
Metafruticicola proclivis	1				E
Metafruticicola westerlundi	1		+		
Milax gagates	2				E
Monacha rothi	17		+		
Monacha n. sp.	1		+		
Orculella critica	10				E
Orculella doliolum	1				E
Orculella sp.	1		+		
Oxychilus aegopinoides	2		+		
Oxychilus amalthae	1		+		
Oxychilus ionicus	2				E
Oxychilus minoicus	6		+		
Oxychilus pieperi	1		+		

Taxa	No of sites	Motivation types			
		A	B	C	D
Oxychilus spratti	11		+		
Oxychilus superfluus	11		+		
Oxychilus tomlini	1		+		
Pagodulina sparsa	11		+		
Pleurodiscus sudensis	7		+		
Pyramidula chorismenostoma	11				E
Pyramidula n.sp.	1		+		
Sphincterochila insularis	1		+		
Tandonia pageti	1		+		
Trochoidea didyma	4		+		
Trochoidea mesostena	17		+		
Trochoidea poecilodoma	1		+		
Trochoidea siphnicus	1		+		
Trochoidea sp.	5		+		
Turanena carpathia	2		+		
Turanena sp.	1		+		
Vitrea clessini	25		+		
Vitrea contracta	1				E
Vitrea demiolasensis	1		+		
Vitrea keana	1		+		
Vitrea olympica	1		+		
Vitrea pageti	1		+		
Vitrea pieperiana	1		+		
Vitrea riedeliana	1		+		
Vitrea schneideri	1		+		
Vitrea schuetti	1		+		
Vitrea sosselai	1		+		
Vitrea thasia	1		+		
Vitrina cerigottana	1		+		
Zebrina cosensis	1		+		
Zebrina stokesi	1		+		
Zonites anaphiensis	1		+		1
Zonites caricus	1				1,E
Zonites parnonensis	1		+		1
Zonites pergranulatus	2		+		1
Zonites sariae	1		+		1

ANNELIDA (8 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Polychaeta					
Amphitrite cirrata	1				F
Brachiosyllis exilis	1				F
Placostegus crystallinus	1				F
Policirrus pallidus	1				F
Policirrus tennuisetis	1				F
Procerrastea perrieri	1				F
Streptosyllis websteri	1				F
Syllis brevipennis	1				F

CNIDOZOA (6 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Ballanophylia europaea	1			-,II	
Caryophyllia smithi	1			-,II	
Cladocora cespitosa	1			-,II	
Corallium rubrum	1			-.II	1,4,5,6,7,X
Madracis pharensis	1			-,II	
Paranemonia vouliagmeniensis	1		+		

PORIFERA (3 spp.)

Taxa	No of sites	Motivation types			
		A	B	C	D
Coscinoderma sporadense	1		+		
Ircinia pausifilamentosa	1				F
Spongia virgultosa	1				F

Motivation types

A:

M. Karandinos (ed.). 1992.- The Red Data Book of Threatened Vertebrates of Greece. Hellenic Zoological Society-Hellenic Ornithological Society, 356 pp.

E: Endangered species

V: Vulnerable species

R: Rare species

I: Indeterminate species

K: Insufficiently known species

L: Locally threatened species

B: Species and subspecies (for vertebrates only) endemic to Greece.

C:

Council of Europe 1979.- Convention on the conservation of European wildlife and natural habitats (Bern Convention).

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973.

I: Annex I

II: Annex II

III: Annex III

D:

1. Presidential Decree 67/1981. "On the protection of wild flora and fauna and on the determination of procedures for the co-ordination and control of research".

2. Economic Commission for Europe (1991).- European Red List of Globally Threatened Animals and Plants. United Nations, 150 pp.
3. CORINE-Biotopes project. 1988.- Technical Handbook vol. 1.
4. Directive 92/43/EEC of 21.5.1992 on the conservation of natural habitats and of wild fauna and flora. Annexes IV and V.
5. Direvctive 79/409/EEC of 2.4.1979 on the conservation of wild birds. Non migratory species of Annexes II and III.
6. IUCN Conservation Monitoring Centre 1988.- 1988 IUCN Red List of Threatened Animals. IUCN, 154 pp.
7. Hunnam P.J. 1980.- Mediterranean marine species in possible need of protection. UNEP/IG.20/INF.6, 41 pp.
8. Koomen P., van Helsdingen P.J. 1993.- Listing of biotopes in Europe according to their significance for invertebrates. Council of Europe, T-PVS(93)43, 74 pp.
9. Collins N.M., Wells S.M. 1987.- Invertebrates in need of special protection in Europe. Council of Europe, Nature and Environment No 35, 162 pp.
10. van Tol J., Verdonk M.J. 1988.- The protection of dragonflies (Odonata) and their biotopes. Council of Europe, Nature and Environment No 38, 181 pp.
11. Heath J. 1981.- Threatened Rhopalocera (butterflies) of Europe. Council of Europe, Nature and Environment No 23, 157 pp.
12. Speight M.C.D. 1989.- Saproxylic invertebrates and their conservation. Council of Europe, Nature and Environment No 42, 72 pp.
13. European Invertebrate Survey 1991.- Proposed revised list of threatened invertebrates in need of protection of habitat in the community. Mscr., 7 pp.

E: Taxa endemic to Greece and adjacent countries

F: Rare taxa: Recent first reports in the Aegean, Greece or eastern Mediterranean.

K: Important and key species for the ecosystem.

P: Taxa with isolated populations.

R: Rare taxa: Localised within restricted geographical areas or habitats.

S: Taxa found in their southernmost, westernmost, northernmost or easternmost limit of distribution.

X: Exploited taxa in need of controlled management.

INDEX

INDEX OF HABITAT TYPES

1110 Sandbanks which are slightly covered by sea water all the time
58, 63, 64, 68, 76, 97, 99, 100, 116, 129, 155, 158, 161, 164, 208, 240, 244, 246, 247, 252, 294, 295, 297, 304, 308, 309, 314, 345, 368, 372, 392, 402, 404, 737

1120 Posidonia beds
63, 64, 65, 68, 69, 70, 71, 72, 76, 85, 89, 90, 91, 92, 93, 99, 100, 103, 127, 131, 132, 133, 134, 135, 136, 155, 158, 161, 164, 165, 191, 193, 197, 198, 203, 204, 240, 241, 244, 246, 247, 248, 252, 292, 295, 297, 298, 304, 306, 308, 309, 310, 312, 314, 316, 317, 319, 320, 321, 322, 324, 325, 326, 328, 330, 333, 334, 336, 337, 338, 339, 340, 341, 342, 343, 347, 349, 354, 361, 362, 363, 365, 367, 368, 371, 372, 374, 376, 379, 384, 385, 392, 403, 407, 427, 429, 738

1130 Estuaries
58, 64, 68, 76, 84, 93, 97, 119, 155, 171, 175, 177, 189, 191, 197, 207, 233, 235, 244, 252, 253, 281, 284, 286, 294, 297, 301, 350, 367, 374, 377, 382, 392, 402, 407, 737

1140 Mudflats and sandflats not covered by seawater at low tide
58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 97, 99, 100, 119, 155, 163, 171, 175, 200, 208, 209, 222, 237, 238, 252, 289, 294, 297, 308, 309, 325, 392, 402, 403, 407, 737

1150 Lagoons
58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 97, 99, 100, 116, 119, 127, 129, 155, 171, 175, 177, 199, 200, 208, 209, 214, 222, 228, 240, 247, 270, 280, 289, 294, 304, 310, 317, 325, 334, 344, 345, 371, 392, 402, 403, 407, 737

1160 Large shallow inlets and bays
97, 131, 163, 165, 197, 199, 248, 252, 253, 297, 301, 306, 308, 309, 314, 316, 317, 320, 326, 327, 328, 333, 334, 338, 339, 340, 341, 342, 344, 347, 358, 361, 371, 372, 382, 392, 402, 407, 738

1170 Reefs
89, 90, 91, 92, 103, 127, 131, 132, 133, 134, 135, 136, 158, 161, 165, 191, 198, 203, 204, 244, 246, 248, 252, 292, 295, 298, 301, 302, 304, 306, 307, 308, 309, 314, 316, 319, 321, 322, 324, 325, 326, 328, 330, 332, 339, 340, 343, 344, 350, 354, 361, 362, 363, 365, 368, 371, 372, 376, 379, 381, 384, 385, 392, 403, 407, 738

1210 Annual vegetation of drift lines [Cakiletea maritimae]
58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 97, 99, 100, 116, 119, 129, 155, 161, 163, 171, 175 177, 189, 192, 193, 199, 208, 209, 222, 233, 237, 238, 246, 247, 248, 252, 286, 290, 295, 308, 312, 316, 343, 363, 381, 386, 392, 403, 409, 739

1240 Vegetated sea cliffs of the Mediterranean coasts (with endemic *Limonium* spp.)
158, 161, 165, 177, 189, 192, 193, 194, 197, 199, 202, 208, 222, 244, 246, 248, 249, 252, 279, 282, 289, 295, 297, 298, 301, 302, 306, 312, 314, 316, 317, 321, 322, 324, 326, 327, 328, 330, 331, 332, 333, 334, 336, 337, 338, 339, 340, 342, 343, 344, 347, 348, 349, 353, 354, 356, 359,

361, 362, 365, 367, 368, 371, 372, 374, 376, 379, 381, 382, 384, 385, 392, 402, 403, 410, 739

1310 *Salicornia* and other annuals colonizing mud and sand
58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 97, 99, 100, 116, 119, 129, 155, 164, 171, 175, 177, 200, 201, 205, 208, 209, 214, 222, 233, 235, 238, 246, 252, 253, 270, 280, 286, 294, 295, 301, 304, 314, 317, 339, 344, 361, 392, 403, 408, 740

1410 Mediterranean salt meadows (Juncetalia maritimi)
58, 64, 65, 68, 69, 70, 71, 72, 73, 74, 76, 81, 84, 85, 93, 97, 99, 100, 101, 104, 116, 119, 129, 155, 163, 164, 171, 175, 177, 189, 199, 201, 205, 208, 209, 214, 217, 219, 222, 228, 233, 235, 237, 238, 244, 247, 252, 270, 280, 281, 286, 289, 294, 295, 297, 301, 304, 307, 308, 309, 310, 316, 325, 331, 333, 334, 336, 339, 341, 343, 345, 362, 365, 372, 392, 403, 408, 741

1420 Mediterranean and thermo-Atlantic halophilous scrubs (Arthrocnemetalia fructicosae)
58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 97, 98, 100, 116, 119, 129, 155, 163, 164, 171, 175, 177, 189, 200, 201, 205, 208, 209, 222, 228, 238, 246, 247, 252, 253, 294, 295, 297, 304, 309, 317, 321, 328, 332, 334, 347, 353, 358, 361, 363, 365, 368, 371, 374, 382, 385, 392,403, 408, 741

1510 Salt steppes (Limonietalia)
58, 205, 208, 209, 222, 228, 238, 304, 308, 317, 392, 403, 408, 432, 742

1520 Gypsum steppes (Gypsophiletalia)
317, 363, 372, 392, 402, 408, 742

2110 Embryonic shifting dunes
58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 99, 100, 116, 119, 129, 155, 164, 165, 171, 175, 177, 189, 193, 199, 200, 201, 205, 208, 209, 222, 233, 235, 237, 238, 244, 246, 248, 281, 288, 289, 290, 295, 310, 312, 314, 324, 330, 368, 371, 372, 393, 403, 408, 743

2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 99, 100, 116, 119, 129, 155, 164, 165, 171, 175, 177, 189, 193, 199, 200, 201, 205, 208, 209, 222, 233, 235, 237, 238, 244, 246, 248, 281, 288, 289, 290, 295, 310, 312, 314, 324, 330, 368, 371, 372, 393, 403, 408, 743

2130 Fixed dunes with herbaceous vegetation (grey dunes)
65, 69, 70, 71, 72, 84, 85, 93, 119, 155, 345, 393, 403, 409, 743

2190 Humid dune slacks
325, 393, 402, 743

2220 Dunes with *Euphorbia terracina*
237, 244, 247, 253, 290, 312, 314, 330, 333, 339, 341, 372, 393, 403, 409, 744

2230 Malcomietalia dune grasslands
393, 401, 409, 744

2250 Dune juniper thickets (*Juniperus* spp.)

199, 209, 280, 289, 290, 295, 301, 328, 334, 343, 345, 347, 358, 372, 385, 393, 403, 409, 431, 744

2260 Dune sclerophyllous scrubs (Cisto-Lavenduletalia)
164, 393, 403, 410, 744

2270 Wooded dunes with *Pinus pinea* and /or *Pinus pinaster*
164, 246, 295, 393, 403, 410, 414, 744

3120 Oligotrophic waters containing very few minerals of West Mediterranean sandy plains with Isoetes.
242, 251, 34, 394, 403, 410, 745

3140 Hard oligo-mesotrophic waters with benthic vegetation of chara formations
146, 147, 149, 150, 152, 158, 295, 322, 330, 334, 339, 340, 349, 350, 368, 377, 382, 385, 394, 403, 745

3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition- type vegetation
81, 82, 96, 98, 110, 146, 147, 149, 394, 403, 745

3170 Mediterranean temporary ponds
104, 158, 163, 164, 165, 179, 222, 238, 242, 246, 247, 248, 249, 253, 256, 294, 295, 297, 301, 306, 307, 314, 317, 319, 320, 321, 324, 325, 330, 331, 333, 336, 337, 344, 345, 347, 349, 353, 355, 357, 361, 362, 364, 365, 368, 375, 377, 381, 382, 384, 394, 403, 410, 433, 745

3220 Alpine rivers and the herbaceous vegetation along their banks
141, 182, 394, 403, 746

3240 Alpine rivers and their ligneous vegetation with *Salix eleagnos*
146, 394, 403, 746

3260 Floating vegetation of *Ranunculus* of plane, submountainous rivers
244, 246, 24, 253, 297, 308, 316, 330, 334, 339, 340, 349, 365, 368, 377, 382, 394, 403, 746

3280 Constantly flowing Mediterranean rivers: Paspalo-Agrostidion and hanging curtains of *Salix* and *Populus alba*.
73, 74, 76, 84, 93, 102, 118, 125, 161, 167, 168, 170, 242, 244, 246, 250, 251, 253, 394, 403, 746

3290 Intermittently flowing Mediterranean rivers
61, 62, 66, 67, 79, 96, 98, 110, 146, 152, 156, 158, 161, 163, 169, 244, 245, 246, 247, 248, 249, 250, 251, 253, 256, 278, 293, 294, 297, 301, 302, 303, 304, 306, 307, 314, 317, 319, 320, 321, 322, 323, 324, 325, 326, 328, 330, 331, 332, 333, 334, 336, 337, 338, 339, 340, 341, 342, 344, 347, 348, 349, 351, 353, 354, 355, 356, 357, 359, 360, 361, 362, 365, 366, 368, 370, 372, 374, 375, 376, 377, 378, 379, 381, 382, 383, 384, 385, 386, 394, 403, 746

4060 Alpine and subalpine heaths
80, 108, 141, 146, 148, 182, 395, 404, 428, 747

4090 Endemic oro-Mediterranean heaths with gorse
61, 112, 117, 121, 138, 139, 142, 153, 158, 173, 181, 184, 186, 187, 188, 196, 212, 224, 227, 228, 231, 232, 245, 246, 248, 251, 256, 258, 262, 264, 273, 274, 277, 283, 291, 309, 311, 355, 357, 366, 370, 379, 386, 395, 404, 428, 747

5110 Stable *Buxus sempervirens* formations on calcareous rock slopes (Berberidion p.).
94, 95, 112, 117, 138, 139, 142, 145, 146, 158, 181, 182, 395, 404, 411, 748

5130 *Juniperus communis* formations on calcareous heaths or grasslands
88, 106, 108, 109, 121, 144, 158, 161, 181, 182, 262, 395, 404, 411, 748

5210 Juniper formations
67, 146, 358, 395, 404, 749

5211 *Juniperus oxycedrus* arborescent mattoral
395, 404, 411, 749

5212 *Juniperus phoenicea* arborescent mattoral
395, 404, 749

5213 *Juniperus excelsa* and *J. foetidissima* arborescent mattorals
395, 404, 749

5214 *Juniperus communis* arborescent mattoral
395, 404, 749

5230 Matorral with *Laurus nobilis*
112, 117, 128, 158, 248, 301, 333, 383, 395, 404, 411, 412, 430, 749

5310 Laurel thickets
128, 161, 396, 404, 411, 750

5320 Low formations of euphorbia close to cliffs [Communities with *Euphorbia acanthocamnos*]
128, 161, 165, 208, 249, 267, 295, 297, 314, 333, 343, 376, 396, 404, 411, 750

5331 Tree-spurge formations [Communities with *Euphorbia dendroides*]
165, 177, 194, 197, 237, 261, 276, 280, 282, 288, 327, 396, 403, 411, 750

5332 Diss-dominated garrigues
161, 242, 251, 298, 300, 301, 317, 322, 338, 346, 347, 349, 355, 356, 357, 360, 365, 366, 367, 368, 370, 374, 379, 381, 383, 384, 386, 396, 404, 411, 750

5420 *Sarcopoterium spinosum* phrygana
98, 127, 128, 129, 158, 161, 165, 171, 174, 175, 177, 178, 180, 181, 184, 188, 189, 190, 192, 193, 194, 195, 196, 197, 199, 200, 208, 211, 212, 213, 214, 216, 217, 219, 221, 222, 224, 225, 226, 227, 229, 231, 233, 234, 236, 237, 238, 242, 244, 246, 248, 249, 252, 260, 261, 264, 265, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 288, 289, 290, 293, 297, 298, 300, 301, 302, 303, 304, 306, 307, 308, 310, 311, 312, 314, 316,

317, 319, 320, 321, 322, 324, 325, 326, 327, 328, 330, 331, 332, 333, 334, 336, 337, 338, 339, 340, 341, 342, 343, 344, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 363, 365, 366, 367, 368, 371, 372, 374, 375, 376, 378, 379, 381, 383, 385, 386, 396, 404, 411, 427, 751

5430 Cretan formations Euphorbieto-Verbascion
351, 354, 355, 357, 360, 366, 368, 375, 376, 379, 386, 396, 404, 411, 427, 751

6110 Karstic calcareous grasslands (Alysso-Sedion albi)
108, 109, 158, 262, 396, 404, 752

6170 Alpine calcareous grasslands
112, 117, 137, 142, 396, 404, 428, 752

6173 Stepped and garland grasslands
61, 66, 77, 78, 79, 80, 83, 88, 94, 106, 108, 109, 112, 114, 115, 117, 121, 122, 128, 137, 141, 142, 143, 148, 151, 152, 153, 156, 167, 182, 250, 256, 262, 268, 355, 357, 370, 396, 404, 428, 752

6175 Oro-Mediterranean stripped grasslands
61, 121, 396, 404, 428, 752

6210 Semi-natural dry grasslands on calcareous substrates (Festuco-Brometalia) (*important orchid sites)
396, 404, 753

6211 Sub-continental steppic grasslands
59, 60, 62, 66, 79, 80, 94, 101, 106, 108, 112, 114, 115, 121, 122, 137, 141, 142, 148, 149, 151, 182, 262, 396, 403, 404, 753

6220 Pseudo-steppe with grasses and annuals (Thero Brachypodietea)
158, 196, 222, 238, 244, 246, 249, 252, 253, 304, 306, 396, 404, 753

6230 Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in continental Europe)
61, 94, 106, 112, 114, 115, 117, 137, 141, 142, 148, 153, 182, 396, 404, 753

6310 Sclerophyllous grazed forests (dehesas) with *Quercus suber* and/or *Quercus ilex*
87, 88, 95, 96, 98, 111, 121, 126, 153, 154, 158, 161, 165, 167, 168, 169, 170, 171, 173, 174, 175, 177, 178, 179, 180, 181, 188, 192, 193, 194, 195, 196, 197, 202, 205, 208, 211, 212, 213, 214, 216, 217, 218, 221, 222, 225, 226, 227, 229, 231, 232, 234, 236, 237, 238, 242, 244, 248, 252, 255, 256, 258, 259, 260, 261, 264, 265, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 282, 283, 284, 286, 288, 291, 293, 298, 303, 309, 311, 312, 314, 323, 324, 325, 330, 339, 340, 343, 344, 345, 351, 355, 357, 360, 367, 368, 370, 374, 378, 379, 384, 386, 397, 404, 412, 416, 754

6420 Mediterranean tall-herb and rush meadows (Molinio- Holoschoenion)
58, 59, 62, 64, 68, 76, 84, 85, 93, 96, 98, 102, 112, 117, 119, 140, 149, 150, 155, 332, 368,

370, 382, 397, 404, 755

6430 Eutrophic tall herbs
108, 146, 397, 404, 755

6432 Subalpine and alpine tall herb communities
256, 258, 259, 397, 404, 755

6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)
130, 163, 397, 404, 754

7110 Active raised bogs
79, 106, 398, 403, 410, 756

7210 Calcareous fens with *Cladium mariscus* and *Carex davalliana*
146, 147, 149, 178, 214, 219, 237, 302, 325, 350, 368, 377, 382, 398, 403, 410, 432, 756

7230 Alkaline fens
106, 109, 112, 117, 137, 141, 146, 148, 151, 153, 167, 182, 398, 403, 410, 756

8140 Balkan Screes
88, 108, 112, 117, 128, 143, 167, 168, 173, 181, 182, 186, 187, 196, 224, 229, 231, 244, 245, 246, 249, 256, 258, 259, 262, 264, 270, 273, 274, 277, 283, 291, 301, 302, 312, 317, 319, 320, 324, 328, 331, 332, 333, 334, 336, 337, 338, 342, 344, 348, 351, 355, 357, 359, 360, 366, 367, 368, 370, 371, 372, 374, 376, 378, 379, 381, 383, 384, 386, 398, 405, 417, 757

8210 Vegetated calcareous inland cliffs with chasmophytic vegetation
169, 242, 248, 249, 250, 262, 293, 303, 398, 405, 417, 758

8216 Eu-mediterranean greek calcareous cliffs
143, 158, 160, 169, 170, 173, 174, 180, 181, 196, 206, 211, 212, 213, 221, 224, 225, 227, 229, 231, 232, 244, 246, 248, 255, 258, 259, 262, 264, 265, 267, 268, 269, 271, 272, 273, 274, 275, 276, 279, 280, 282, 283, 288, 291, 297, 316, 398, 405, 417, 758

8217 Aegean calcareous cliffs
165, 244, 249, 301, 302, 306, 312, 314, 317, 319, 320, 321, 322, 324, 325, 326, 327, 328, 331, 332, 333, 334, 336, 337, 338, 339, 340, 342, 343, 344, 347, 348, 350, 351, 352, 353, 354, 355, 356, 357, 359, 360, 361, 362, 365, 366, 367, 368, 370, 371, 372, 374, 375, 376, 378, 379, 381, 383, 384, 385, 398, 405, 417, 758

8218 Southern greek montane cliffs
196, 229, 231, 256, 258, 259, 268, 271, 273, 274, 277, 283, 291, 398, 405, 417, 758

8219 Central greek montane cliffs
112, 117, 138, 139, 153, 156, 167, 173, 181, 183, 187, 190, 399, 405, 417 , 758

8219A Northern greek calcareous cliffs
77, 80, 83, 94, 108, 109, 399, 405, 417, 758

8220 Vegetated silicicolous inland cliffs with chasmophytic vegetation
77, 106, 122, 148, 151, 306, 324, 330, 336, 349, 399, 405, 417, 759

8230 Pioneer vegetation of rock surfaces
168, 255, 262, 301, 302, 317, 319, 320, 321, 322, 324, 325, 331, 332, 333, 334, 336, 337, 338, 342, 344, 347, 348, 350, 353, 354, 355, 356, 357, 360, 361, 362, 365, 366, 367, 368, 370, 371, 374, 375, 376, 378, 381, 382, 383, 385, 386, 399, 405, 417, 759

8240 Limestone pavements
250, 301, 333, 370, 376, 379, 384, 399, 405, 417, 759

8310 Caves not open to the public
59, 62, 75, 106, 120, 165, 213, 224, 225, 227, 242, 244, 256, 274, 282, 291, 297, 298, 300, 301, 314, 317, 319, 320, 321, 322, 325, 326, 331, 332, 333, 340, 342, 343, 344, 348, 351, 352, 353, 354, 355, 356, 357, 359, 360, 361, 363, 365, 368, 370, 371, 374, 375, 376, 378, 379, 381, 382, 384, 386, 399, 405, 760

8320 Fields of lava and natural excavations
324, 332, 334, 336, 337, 399, 405, 417, 760

8330 Submerged or partly submerged sea caves
158, 161, 165, 197, 244, 300, 301, 302, 306, 319, 320, 321, 326, 327, 328, 331, 333, 334, 336, 337, 339, 340, 341, 342, 343, 347, 348, 352, 353, 354, 361, 363, 368, 374, 379, 381, 384, 385, 399, 402, 760

9110 Acidophilous (Luzulo-Fagetum) beech forests
60, 77, 78, 79, 80, 83, 87, 88, 94, 106, 108, 109, 114, 115, 118, 123, 124, 130, 137, 138, 139, 141, 142, 143, 148, 151, 156, 161, 167, 173, 182, 183, 186, 400, 405, 412, 761

9120 Beech forests with *Ilex* and *Taxus*, rich in epiphytes (Ilici-Fagion)
106, 108, 112, 114, 117, 128, 130, 158, 400, 405, 413, 761

9130 Neutrophilous (Asperulo-Fagetum) beech forests
66, 77, 79, 80, 83, 87, 88, 94, 106, 108, 109, 114, 115, 118, 123, 124, 130, 137, 138, 139, 141, 142, 143, 151, 154, 158, 400, 405, 413, 761

9140 Subalpine beech woods with *Acer* and *Rumex arifolius*
106, 141, 146, 148, 400, 405, 413, 761

9150 Calcareous beech forests (Cephalanthero-Fagion)
106, 108, 109, 112, 143, 145, 146, 400, 405, 413, 761

9170 Eastern (Galio-Carpinetum) oak-hornbeam forests
118, 156, 182, 400, 404, 413, 762

9180 Tilio-Acerion ravine forests
112, 400, 404, 413, 762

91B0 Thermophilous ash (*Fraxinus angustifolia*) woods
67, 158, 170, 208, 248, 400, 405, 762

91E0 Residual alluvial forests (Alnion glutinoso-incanae)
59, 60, 62, 66, 73, 74, 78, 79, 84, 93, 96, 106, 109, 118, 121, 124, 128, 141, 148, 155, 160, 170, 247, 330, 400, 403, 762

91F0 Mixed oak-elm-ash forests of great rivers
62, 105, 106, 118, 121, 150, 251, 400, 403, 762

9250 *Quercus trojana* woods (Italy and Greece)
106, 141, 142, 143, 146, 182,400, 405, 413, 763

9260 Chestnut woods
80, 87, 88, 94, 98, 106, 109, 114, 118, 121, 123, 126, 128, 130, 141, 154, 156, 158, 161, 182, 184, 244, 245, 246, 268, 273, 291, 309, 330, 375, 400, 405, 413, 763

9270 Hellenic beech forests with *Abies borisii-regis*
66, 80, 88, 94, 106, 108, 112, 114, 118, 122, 126, 128, 137, 138, 139, 141, 142, 148, 152, 153, 154, 156, 167, 168, 173, 181, 182, 183, 184, 186, 187, 188, 400, 405, 414, 763

9280 *Quercus frainetto* woods
59, 60, 61, 62, 65, 66, 67, 73, 74, 76, 78, 79, 80, 87, 94, 95, 98, 106, 108, 109, 112, 114, 115, 116, 118, 121, 123, 124, 126, 128, 130, 141, 142, 143, 145, 146, 150, 152, 153, 154, 156, 158, 161, 168, 169, 173, 174, 181, 182, 183, 184, 186, 187, 190, 211, 212, 227, 234, 244, 246, 248, 256, 273, 282, 291, 400, 405, 413, 763

9290 Cypress forests (Acero-Cupression)
322, 325, 357, 378, 379, 383, 386, 400, 405, 414, 764

92A0 *Salix alba* and *Populus alba* galleries
62, 64, 67, 68, 73, 74, 76, 81, 82, 84, 88, 93, 96, 97, 98, 102, 106, 110, 111, 112, 116, 118, 120, 125, 140, 146, 147, 148, 149, 155, 160, 170, 171, 174, 175, 177, 178, 181, 183, 184, 185, 189, 208, 214, 217, 220, 225, 227, 228, 233, 235, 242, 246, 247, 251, 284, 286, 306, 330, 368, 400, 403, 764

92C0 Oriental plane woods (Platanion orientalis)
61, 73, 74, 81, 82, 84, 86, 87, 88, 93, 94, 95, 96, 98, 105, 106, 108, 109, 110, 111, 112, 114, 118, 120, 121, 123, 141, 152, 154, 155, 156, 158, 160, 161, 167, 168, 169, 170, 171, 173, 174, 175, 180, 181, 183, 188, 208, 217, 220, 224, 225, 227, 229, 231, 232, 235, 242, 244, 245, 246, 247, 248, 251, 253, 256, 258, 259, 260, 261, 262, 270, 274, 284, 286, 288, 301, 307, 312, 314, 319, 320, 323, 325, 330, 349, 351, 355, 357, 360, 365, 367, 368, 375, 376, 377, 378, 379, 382, 383, 384, 386, 400, 403, 764

92D0 Thermo-Mediterranean riparian galleries (Nerio- Tamaricetea) and south-west Iberian Peninsula riparian galleries (Securinegion tinctoriae)
58, 64, 68, 73, 74, 76, 84, 85, 93, 97, 99, 102, 104, 116, 119, 128, 149, 155, 158, 163, 165, 171, 175, 177, 189, 199, 208, 209, 214, 216, 217, 220, 222, 225, 233, 235, 237, 238, 244, 246,

247, 251, 253, 275, 281, 284, 286, 295, 301, 302, 306, 308, 309, 312, 314, 319, 320, 325, 326, 330, 331, 334, 336, 338, 339, 345, 346, 348, 349, 350, 353, 354, 355, 356, 357, 359, 360, 361, 362, 365, 367, 368, 372, 375, 376, 378, 379, 382, 383, 384, 385, 386, 400, 403, 764

9310 Cretan *Quercus brachyphylla* forests [*Quercus pubescens* ssp. *brachyphylla*]
128, 316, 357, 368, 375, 382, 383, 401, 405, 413, 765

9320 *Olea* and *Ceratonia* forests [*Olea* and *Ceratonia* forests and matorrals]
158, 165, 202, 244, 246, 248, 250, 252, 278, 279, 282, 284, 286, 293, 301, 303, 310, 334, 350, 353, 354, 356, 357, 368, 372, 375, 376, 378, 379, 381, 383, 386, 401, 404, 412, 416, 765

9340 *Quercus ilex* forests
112, 127, 128, 130, 154, 156, 158, 160, 161, 164, 165, 173, 174, 175, 179, 181, 184, 189, 190, 224, 225, 244, 246, 248, 260, 262, 293, 303, 314, 357, 368, 401, 405, 416, 765

9350 *Quercus macrolepis* forests
128, 163, 177, 208, 222, 238, 261, 304, 306, 307, 308, 324, 330, 339, 341, 342, 349, 365, 401, 405, 413, 765

9370 Palm groves of *Phoenix*
350, 353, 354, 361, 364, 367, 382, 401, 405, 416, 765

9380 Forests of *Ilex aquifolium*
248, 401, 404, 765

9410 Acidophilous forests (Vaccinio-Piceetea)
77, 78, 79, 83, 88, 94, 106, 108, 114, 122, 148, 401, 405, 416, 766

9510 Apennine *Abies alba* and *Picea excelsa* forests
79, 401, 405, 416, 766

9536 Pallas's pine forests
59, 60, 62, 79, 80, 86, 94, 106, 108, 112, 114, 116, 118, 121, 122, 124, 127, 137, 138, 139, 141, 142, 152, 154, 167, 169, 173, 181, 182, 184, 186, 187, 224, 226, 232, 246, 256, 262, 268, 273, 274, 275, 282, 283, 291, 307, 309, 311, 312, 401, 405, 414, 431, 767

9540 Mediterranean pine forests with endemic Mesogean pines, including *Pinus mugo* and *Pinus leucodermis*
59, 60, 62, 66, 71, 86, 94, 98, 106, 112, 117, 118, 122, 126, 128, 137, 138, 139, 164, 165, 182, 184, 189, 192, 193, 197, 221, 222, 225, 227, 231, 233, 234, 236, 237, 238, 242, 245, 246, 248, 278, 279, 290, 293, 295, 297, 298, 300, 301, 303, 307, 308, 309, 311, 312, 314, 316, 319, 320, 322, 323, 325, 354, 355, 357, 360, 370, 376, 379, 385, 386, 401, 405, 410, 414, 427, 767

9562 Grecian juniper woods
146, 401, 405, 414, 767

9563 Stinking juniper (*Juniperus foetidissima*) woods
146, 156, 173, 181, 183, 184, 187, 231, 258, 259, 273, 274, 277, 291, 311, 401, 405, 414, 431,

767

9564 Syrian juniper (*Juniperus drupacea*) woods
273, 401, 405, 414, 767

9580 *Taxus baccata* woods
94, 108, 126, 142, 182, 401, 405, 414, 767

INDEX OF DIR 92/43/EEC SPECIES

Accipiter brevipes 500
gentilis 500
nisus 500
Acipenser sturio 170, 505, 609, 613, 788
Acrocephalus arundinaceus 503
melanopogon 503
paludicola 503
palustris 503
schoenobaenus 503
scirpaceus 503
Actitis hypoleucos 501
Aegolius funereus 502
Aegypius monachus 500, 562
Alauda arvensis 503
Alcedo atthis 503
Alosa alosa 64, 96, 505, 609, 614, 795
fallax 58, 64, 74, 76, 84, 93, 119, 155, 505, 609, 795
Anas acuta 499
clypeata 499
crecca 499
penelope 499
platyrhynchos 499
querquedula 499
strepera 499
Androcymbium rechingeri 372, 373, 442, 445, 774
Anser albifrons 499
anser 499
erythropus 500, 551
fabalis 500
Anthemis glaberrima 371, 441, 445, 772
Anthus campestris 503
cervinus 503
pratensis 503
spinoletta 503
trivialis 503
Aphanius fasciatus 58, 64, 65, 68, 69, 70, 71, 72, 76, 84, 85, 93, 97, 99, 100, 116, 119, 129, 177, 189, 199, 200, 205, 208, 209, 222, 238, 270, 505, 609, 789
Apus apus 503
melba 503
pallidus 503
Aquila chrysaetos 73, 375, 500
Aquila clanga 500
heliaca 500, 564
pomarina 73, 500
Ardea cinerea 68, 499
purpurea 68, 270, 499
Ardeola ralloides 499
Arenaria interpres 501
Asio flammeus 502
Aspius aspius 58, 96, 118, 119, 125, 505, 609, 791
Asyneuma giganteum 322, 323, 441, 444, 770
Aythya ferina 500
fuligula 500
marila 500
nyroca 500
Barbastella barbastellus 250, 255, 256, 498, 523, 778
Barbus capito 152, 170, 171, 174, 175, 177, 180, 185, 208, 214, 215, 216, 220, 235, 242, 248, 251, 254, 260, 505, 609, 790
meridionalis 94, 95, 102, 106, 108, 109, 110, 111, 114, 137, 141, 149, 150, 151, 171, 174, 175, 177, 180, 181, 182, 189, 208, 224, 225, 227, 233, 235, 251, 260, 286, 505, 609, 790
plebejus 59, 62, 67, 73, 74, 77, 78, 79, 81, 82, 83, 84, 93, 96, 98, 101, 105, 118, 119, 120, 125, 127, 128, 130, 146, 147, 148, 154, 155, 160, 163, 246, 254, 505, 609, 625, 626, 628, 790
Bombina bombina 505, 600, 601, 787
variegata 58, 59, 60, 62, 64, 66, 73, 77, 78, 79, 80, 83, 87, 88, 94, 95, 106, 108, 109, 110, 112, 114, 115, 117, 118, 121, 122, 123, 124, 125, 126, 127, 128, 130, 137, 138, 139, 141, 142, 143, 144, 146, 147, 148, 149, 151, 152, 153, 154, 156, 158, 163, 167, 173, 174, 181, 182, 184, 186, 187, 212, 221, 250, 251, 254, 256, 258, 259, 262, 505, 600, 601, 603, 787
Bonasa bonasia 501

Botaurus stellaris 499
Botrychium simplex 182, 441, 443, 768
Branta bernicla 500
ruficollis 500, 551
Bubo bubo 502
Bubulcus ibis 499
Bucephala clangula 500
Bupleurum capillare 262, 442, 447, 773
kakiskalae 379, 386, 442, 447, 773
Burhinus oedicnemus 119, 501
Buteo buteo 500, 552
lagopus 500
rufinus 500
Buxbaumia viridis 79, 441, 443, 768
Calandrella brachydactyla 503
Calidris alba 501
alpina 501
canutus 501
ferruginea 501
minuta 501
temminckii 501
Callimorpha quadripunctaria 61, 86, 109, 199, 200, 201, 225, 231, 267, 268, 269, 276, 279, 281, 282, 291, 311, 312, 314, 316, 323, 324, 325, 330, 341, 344, 346, 507, 650, 797
Calonectris diomedea 499
Canis lupus 212, 250, 251, 258, 259, 498, 515, 534, 781
Capra aegagrus 61, 165, 166, 252, 337, 352, 370, 378, 379, 386, 498, 543, 544, 545, 780
Caprimulgus europaeus 503, 552
Carduelis spinus 503
Caretta caretta 165, 171, 175, 189, 193, 208, 209, 222, 223, 237, 238, 240, 241, 281, 284, 288, 289, 290, 312, 313, 325, 326, 327, 348, 353, 367, 368, 369, 374, 377, 382, 385, 505, 568, 569, 582, 583, 584, 784
Carex acuta 141, 442, 448, 774
Centaurea heldreichii 213, 441, 448, 771
kalambakensis 169, 441, 449, 771
lactiflora 169, 441, 449, 771
megarensis 278, 441, 450, 771
niederi 208, 221, 222, 441, 451, 771
peucedanifolia 128, 442, 451, 771
princeps 250, 441, 452, 771
Cephalanthera cucullata 357, 370, 379, 386, 442, 452, 774
Cerambyx cerdo 102, 152, 156, 507, 636, 646, 796
Cercotrichas galactotes 503
Chalcalburnus belvica 505, 609
chalcoides 64, 68, 73, 74, 76, 96, 505, 604, 609, 791
Charadrius alexandrinus 501
dubius 501
hiaticula 501
morinellus 501
Chlidonias hybridus 68, 110, 501
leucopterus 501
niger 110, 501
Ciconia ciconia 119, 499
nigra 73, 499
Circaetus gallicus 500
Circus aeruginosus 119, 500
cyaneus 119, 500
macrourus 500
pygargus 500, 563
Citellus citellus 58, 59, 60, 62, 66, 94, 95, 97, 102, 106, 110, 112, 114, 116, 118, 121, 123, 124, 140, 141, 142, 143, 148, 149, 150, 151, 154, 498, 533, 780
Clamator glandarius 502
Clangula hyemalis 500
Cobitis taenia 58, 59, 62, 64, 67, 68, 73, 74, 76, 81, 82, 84, 93, 96, 98, 102, 105, 111, 118, 119, 125, 137, 146, 147, 155, 158, 160, 171, 175, 189, 506, 609, 630, 793
trichonica 154, 208, 216, 217, 218, 220, 506, 610, 630, 793
Coccothraustes coccothraustes 503
Columba oenas 502
palumbus 502
Consolida samia 312, 313, 442, 453, 770
Convolvulus argyrothamnos 357, 442, 454, 773
Coracias garrulus 503
Corvus frugilegus 503
Coturnix coturnix 501
Crepis crocifolia 291, 442, 454, 772
Crex crex 501
Cuculus canorus 502
Cygnus columbianus bewickii 500
cygnus 500

olor 500
Cypripedium calceolus 122, 442, 455, 774
Delichon urbica 503
Dendrocopos leucotos 503
medius 73, 503
yriacus 503
Dryocopus martius 503
Egretta alba 68, 119, 499
garzetta 499
Elaphe quatuorlineata 58, 59, 60, 61, 62, 64, 65, 66, 73, 74, 76, 77, 78, 83, 84, 86, 93, 94, 106, 108, 112, 116, 117, 118, 124, 126, 127, 140, 146, 154, 164, 165, 170, 171, 174, 175, 177, 178, 181, 183, 184, 185, 189, 192, 197, 199, 201, 205, 208, 214, 215, 217, 220, 222, 226, 229, 234, 235, 236, 238, 242, 244, 246, 247, 249, 251, 277, 281, 283, 284, 289, 291, 293, 303, 330, 333, 337, 341, 342, 343, 344, 345, 505, 584, *785*
situla 58, 59, 60, 62, 64, 65, 76, 84, 93, 106, 112, 117, 118, 126, 130, 138, 139, 146, 151, 154, 155, 156, 160, 161, 163, 165, 167, 168, 169, 171, 175, 181, 183, 184, 185, 192, 193, 195, 196, 222, 225, 226, 227, 229, 233, 242, 246, 247, 249, 250, 251, 254, 255, 261, 265, 268, 270, 272, 275, 277, 278, 280, 281, 282, 283, 289, 290, 291, 293, 295, 297, 300, 301, 303, 307, 308, 309, 310, 316, 322, 325, 330, 332, 334, 338, 339, 340, 341, 348, 351, 353, 354, 355, 357, 366, 367, 368, 370, 371, 377, 378, 379, 382, 384, 386, 505, 587, 785
Emberiza caesia 503
cineracea 503
citrinella 503
hortulana 503
melanocephala 503
pusilla 503
schoeniclus 503
Emys orbicularis 58, 59, 60, 62, 64, 67, 73, 76, 84, 86, 93, 97, 98, 102, 105, 106, 116, 118, 119, 124, 125, 127, 129, 130, 140, 146, 147, 150, 153, 155, 158, 160, 161, 167, 171, 175, 177, 178, 179, 185, 189, 199, 200, 208, 209, 222, 229, 233, 242, 244, 246, 247, 251, 252, 254, 255, 275, 289, 295, 297, 308, 309, 505, 577, 579, 580, 784
Eriogaster catax 225, 226, 507, 797
Erithacus rubecula 503, 552
Eudontomyzon spp. 81, 82, 120, 171, 506, 610, 612, 788
Euphydryas aurinia 59, 62, 80, 140, 148, 151, 188, 507, 797
Falco biarmicus 501
Falco columbarius 501
eleonorae 352, 375, 501
naumanni 305, 501
peregrinus 501, 552
subbuteo 501
vespertinus 501
Ficedula albicollis 503
hypoleuca 503
parva 504
semitorquata 504
Fringilla coelebs 504, 552
montifringilla 504
Fulica atra 501, 551
Gallinago gallinago 501
media 501
Gavia arctica 499
stellata 499
Gelochelidon nilotica 501, 566
Glareola pratincola 305, 501
Glaucidium passerinum 502
Globularia stygia 224, 271, 291, 442, 455
Gobio albipinnatus 102, 506, 610, 791
uranoscopus 155, 160, 170, 506, 610, 624, 791
Grus grus 501
Gypaetus barbatus 354, 366, 375, 500, 560
Gyps fulvus 73, 195, 227, 354, 357, 366, 375, 500
Haematopus ostralegus 501
Haliaeetus albicilla 119, 500, 559
Hieraaetus fasciatus 366, 500
pennatus 73, 500
Himantopus himantopus 119, 305, 501
Hippolais icterina 504
olivetorum 73, 504
pallida 504
Hirundo daurica 504

rustica 504, 552
Hoplopterus spinosus 501
Hydrobates pelagicus 499
Hypericum aciferum 379, 442, 456, 770
Iberis runemarkii 314, 442, 457, 773
Ixobrychus minutus 68, 499
Jynx torquilla 503
Ladigesocypris ghigii 322, 323, 506, 610, 621, 791
Lanius collurio 504, 552
excubitor 504
minor 504
Lanius nubicus 504
senator 504
Larus audouinii 501
canus 501
fuscus 501
genei 501
marinus 501
melanocephalus 119, 502
minutus 502
ridibundus 502
Leuciscus souffia 281, 506, 610, 791
Limicola falcinellus 502
Limosa lapponica 502
limosa 502
Linaria hellenica 280, 442, 457, 769
Lindenia tetraphylla 96, 507, 798
Locustella fluviatilis 504
luscinioides 504
naevia 504
Lucanus cervus 64, 76, 77, 83, 118, 125, 127, 130, 146, 147, 153, 154, 161, 162, 244, 262, 284, 286, 291, 507, 636, 649, 796
Lullula arborea 504
Luscinia luscinia 504
megarhynchos 504
svecica 504
Lutra lutra 58, 59, 60, 62, 64, 65, 67, 73, 74, 76, 80, 84, 88, 93, 95, 96, 97, 98, 102, 110, 112, 117, 118, 123, 124, 125, 138, 139, 140, 146, 147, 150, 155, 160, 167, 169, 170, 171, 174, 175, 176, 178, 180, 181, 184, 199, 200, 208, 214, 215, 216, 218, 220, 222, 224, 225, 227, 233, 234, 235, 238, 242, 244, 246, 247, 251, 254, 255, 258, 281, 286, 316, 498, 538, 781
Lycaena dispar 58, 62, 67, 78, 84, 93, 96, 97, 105, 109, 110, 121, 122, 124, 146, 147, 171, 175, 208, 244, 507, 797
Lymnocryptes minimus 502
Lynx lynx 138, 139, 181, 498, 542, 543, 781
Mauremys caspica 58, 59, 60, 61, 62, 64, 67, 73, 76, 84, 86, 93, 98, 102, 116, 118, 124, 125, 127, 150, 155, 160, 167, 171, 174, 175, 177, 179, 189, 193, 199, 200, 208, 209, 222, 237, 244, 246, 247, 249, 255, 265, 267, 275, 279, 280, 281, 286, 288, 289, 291, 295, 304, 308, 309, 314, 316, 325, 330, 334, 338, 339, 340, 341, 342, 345, 346, 348, 349, 350, 351, 353, 365, 366, 367, 368, 376, 377, 381, 382, 385, 505, 579, 580, 581, 784
Melanitta fusca 500
nigra 500
Melanocorypha calandra 504
Mergus albellus 500
merganser 500
serrator 500
Merops apiaster 503
Mertensiella luschani 317, 319, 320, 321, 505, 595, 597, 786
Micromeria taygetea 283, 442, 458, 775
Milvus migrans 500, 558
milvus 500
Miniopterus schreibersii 75, 94, 98, 121, 140, 232, 297, 307, 308, 309, 375, 498, 522, 524, 527, 779
Monachus monachus 127, 128, 158, 161, 165, 175, 192, 193, 194, 197, 198, 202, 224, 246, 247, 261, 280, 282, 288, 298, 301, 302, 306, 307, 308, 312, 313, 314, 315, 316, 317, 318, 320, 321, 322, 324, 326, 327, 328, 331, 332, 333, 334, 337, 339, 340, 341, 342, 343, 344, 345, 347, 348, 349, 352, 354, 358, 361, 363, 368, 369, 371, 376, 379, 384, 385, 498, 515, 545, 546, 547, 782
Monticola saxatilis 504
Morimus funereus 94, 102, 118, 146, 147, 154, 156, 507, 648, 796
Motacilla alba 504

cinerea 504
flava 504
Muscicapa striata 504
Myotis bechsteinii 79, 96, 98, 151, 498, 526, 779
blythi 61, 66, 94, 96, 121, 138, 139, 155, 160, 181, 192, 197, 211, 222, 232, 254, 255, 262, 267, 307, 308, 309, 314, 375, 498, 522, 527, 528, 529, 779
capaccinii 86, 94, 124, 155, 160, 197, 211, 375, 498, 528, 529, 779
emarginatus 62, 66, 94, 112, 117, 155, 160, 220, 246, 256, 273, 293, 303, 314, 498, 519, 530, 531, 779
myotis 66, 75, 94, 121, 232, 242, 262, 274, 293, 297, 303, 307, 308, 309, 360, 498, 521, 527, 529, 531, 532, 779
Neophron percnopterus 73, 169, 500
Nepeta argolica 245, 442, 458, 775
sphaciotica 379, 442, 459, 775
Netta rufina 110, 500
Numenius arquata 502, 564
phaeopus 502, 564
tenuirostris 502, 564
Nycticorax nycticorax 64, 499
Oenanthe hispanica 504
isabellina 504
oenanthe 504
Ophiogomphus cecilia 84, 93, 119, 507, 798
Origanum dictamnus 354, 355, 357, 360, 367, 368, 369, 374, 376, 379, 381, 384, 442, 460, 775
Oriolus oriolus 504
Osmoderma eremita 154, 507, 647, 796
Otus scops 502
Oxyura leucocephala 500
Paeonia clusii 322, 323, 442, 460, 776
parnassica 262, 442, 461, 776
Pandion haliaetus 500
Panurus biarmicus 504
Passer hispaniolensis 504
Pelecanus crispus 146, 147, 499, 551, 554
onocrotalus 146, 147, 499, 551, 553
Pernis apivorus 375, 500
Phalacrocorax aristotelis desmarestii 306, 499
carbo sinensis 499
pygmeus 499
Phalaropus lobatus 502
Philomachus pugnax 502
Phocoena phocoena 343, 498, 547, 548, 782
Phoenicopterus ruber 119, 499
Phoenicurus ochruros 504
phoenicurus 504
Phoenix theophrasti 350, 353, 354, 361, 364, 367, 382, 442, 462, 777
Phoxinellus spp. 146, 147, 153, 171, 174, 175, 177, 179, 180, 185, 189, 208, 216, 217, 220, 233, 235, 242, 251, 254, 275, 281, 294, 295, 506, 610, 618, 620, 792
Phylloscopus bonelli 504
collybita 504
sibilatrix 504
trochilus 504
Picoides tridactylus 503
Picus canus 503
Platalea leucorodia 68, 499, 551
Plegadis falcinellus 68, 499, 555
Pluvialis apricaria 502
squatarola 502
Podiceps auritus 499
cristatus 499
griseigena 499
nigricollis 499
Polygonum praelongum 321, 442, 462, 773
Pomatoschistus canestrini 171, 175, 220, 506, 604, 610, 794
Porzana parva 501
porzana 501
pusilla 501
Prunella modularis 504
Ptyonoprogne rupestris 504
Puffinus puffinus 306, 499
Pyrrhocorax pyrrhocorax 504
Recurvirostra avosetta 305, 502
Regulus regulus 504
Rhinolophus blasii 86, 126, 197, 224, 267, 300, 307, 308, 309, 314, 322, 323, 376, 381, 498, 516, 778
euryale 62, 165, 197, 208, 209, 498, 516, 517, 519, 778
ferrumequinum 59, 60, 62, 66, 75, 98, 112, 117, 140, 146, 213, 220, 222, 229, 232, 246, 249, 261, 262, 268, 273, 275, 288, 322, 323, 348, 356, 357, 368, 369, 375, 376, 379, 381,

382, 386, 498, 517, 518, 778
hipposideros 59, 60, 62, 75, 146, 229, 262, 268, 274, 275, 300, 356, 357, 368, 375, 376, 377, 379, 381, 382, 386, 498, 517, 520, 778
mehelyi 121, 124, 211, 232, 356, 498, 522, 778
Rhodeus sericeus amarus 58, 62, 64, 67, 68, 73, 74, 76, 84, 93, 94, 96, 98, 102, 114, 118, 125, 155, 160, 170, 506, 610, 792
Riparia riparia 504
Rosalia alpina 94, 154, 156, 507, 636, 649, 796
Rupicapra rupicapra balcanica 77, 83, 108, 112, 117, 138, 139, 140, 141, 142, 146, 151, 153, 167, 181, 182, 255, 256, 259, 498, 540, 541, 780
Rutilus alburnoides 174, 208, 216, 217, 220, 233, 235, 281, 286, 506, 610, 792
Rutilus rubilio 146, 147, 171, 174, 175, 181, 185, 208, 216, 217, 220, 242, 251, 506, 610, 792
Sabanejewia aurata 506, 610, 793
Salmo macrostigma 77, 78, 79, 83, 106, 107, 118, 125, 137, 138, 139, 141, 146, 148, 151, 174, 177, 180, 181, 182, 224, 251, 260, 506, 610, 615, 788
Saxicola ruberta 504
Scardinius graecus 242, 506, 610, 792
Scolopax rusticola 502
Silene holzmanii 441, 463, 776
orphanidis 128, 441, 462, 776
Silurus aristotelis 174, 208, 216, 217, 218, 220, 506, 610, 795
Sitta krueperi 504
Solenanthus albanicus 141, 173, 183, 441, 464, 769
Somateria mollissima 502
Stercorarius parasiticus 502
pomarinus 502
Sterna albifrons 502
caspia 502
hirundo 502
sandvicensis 502
Streptopelia turtur 502
Sturnus roseus 504
vulgaris 504
Sylvia atricapilla 504
borin 504
cantillans 504
communis 504
conspicillata 505
curruca 505
hortensis 505
nisoria 505
rueppelli 505
Symphytum davisii 333, 441, 465
Tachybaptus ruficollis 499
Tadorna ferruginea 500, 557
tadorna 500
Testudo graeca 58, 59, 60, 61, 62, 64, 65, 66, 67, 73, 74, 76, 78, 80, 84, 86, 88, 93, 96, 98, 102, 106, 112, 116, 117, 118, 119, 121, 123, 124, 126, 127, 128, 129, 130, 140, 154, 165, 167, 168, 169, 174, 182, 246, 247, 251, 256, 304, 307, 308, 309, 310, 316, 325, 505, 570, 571, 572, 574, 575, 783
Testudo hermanni 58, 59, 60, 62, 64, 65, 66, 67, 73, 74, 76, 79, 80, 84, 88, 93, 94, 98, 100, 106, 108, 109, 110, 114, 116, 118, 119, 121, 123, 124, 126, 127, 128, 130, 138, 139, 140, 141, 142, 143, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 158, 160, 161, 163, 168, 169, 171, 174, 175, 177, 178, 179, 180, 181, 183, 184, 185, 186, 189, 192, 193, 195, 196, 197, 200, 208, 211, 213, 221, 222, 225, 226, 229, 236, 237, 242, 244, 245, 246, 247, 248, 250, 251, 252, 254, 255, 256, 261, 262, 267, 268, 273, 275, 277, 278, 279, 281, 284, 286, 290, 291, 293, 295, 297, 298, 300, 303, 505, 570, 572, 574, 575, 783
marginata 112, 117, 153, 154, 155, 156, 158, 160, 161, 163, 165, 168, 169, 171, 175, 177, 178, 179, 181, 184, 189, 208, 213, 222, 225, 229, 231, 242, 246, 250, 251, 252, 254, 255, 262, 265, 267, 268, 270, 271, 272, 273, 276, 277, 278, 279, 280, 281, 282, 283, 284, 289, 290, 291, 293, 295, 297, 298, 300, 303, 505, 570, 575, 576, 783
Tetrao urogallus 501
Tetrax tetrax 501

Tringa erythropus 502
glareola 502
nebularia 502
ochropus 502
stagnatilis 502
totanus 502
Triturus cristatus 58, 59, 60, 62, 64, 66, 73, 76, 77, 78, 79, 80, 83, 87, 88, 94, 95, 98, 102, 105, 108, 109, 110, 112, 114, 115, 117, 118, 121, 124, 125, 128, 137, 141, 142, 143, 145, 148, 149, 150, 151, 153, 154, 181, 182, 262, 505, 594, 598, 599, 786
Turdus iliacus 505
philomelos 505
pilaris 505
torquatus 505
Tursiops truncatus 165, 171, 191, 193, 194, 197, 198, 202, 203, 208, 209, 240, 246, 288, 292, 304, 314, 315, 316, 326, 361, 498, 548, 782
Unio crassus 96, 140, 155, 220, 242, 507, 799
Upupa epops 503
Ursus arctos 66, 77, 78, 79, 80, 83, 121, 124, 137, 138, 139, 141, 142, 143, 146, 148, 151, 152, 153, 167, 168, 181, 182, 184, 186, 187, 188, 299, 498, 515, 536, 537, 781
Valencia hispanica 171, 175, 177, 189, 199, 200, 222, 233, 235, 238, 506, 604, 610, 633, 789
Vanellus vanellus 502
Veronica oetea 256, 442, 466, 769
Vipera schweizeri 334, 335, 336, 338, 505, 590, 785
ursinii 78, 138, 139, 173, 181, 187, 505, 568, 591, 785
Woodwardia radicans 377, 441, 444, 768
Xenus cinereus 502
Zelkova abelicea 357, 366, 379, 386, 442, 467, 777
Zingel streber 102, 506, 610, 794

Pg. 37:	Tabl inclu inclu
Pg. 443:	3rd l 4th l 6th l
Pg. 604:	6th line.
Pg. 622:	(Table): Vo
Pgs. 746, 749, 764:	Ignore bullets a



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