COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 28.05.1997
COM(97) 195 final

Proposal for a

COUNCIL DIRECTIVE

adapting to technical and scientific

progress Directive 92/43/EEC on the conservation of natural habitats and of

wild fauna and flora

(presented by the Commission)

EXPLANATORY MEMORANDUM

Subject: **Proposal for a Council Directive (EC) adapting to technical and scientific progress Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora**

1. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive") provides for the creation, in several stages, of a network of protected natural habitats called Natura 2000.

2. Under the terms of Article 2(2) of Directive 92/43/EEC, measures taken pursuant to the Directive must be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.

3. Pursuant to Article 4 of Directive 92/43/EEC, each Member State is required, on the basis of the criteria set out in Annex III (Stage 1) and relevant scientific information, to propose a list of sites indicating which natural habitat types in Annex I and which species in Annex II that are native to its territory the sites host.

4. Annexes I and II to Directive 92/43/EEC may be amended in accordance with the first paragraph of Article 19. The amendments necessary for adaptation to technical and scientific progress must be adopted by the Council acting by qualified majority on a proposal from the Commission.

5. When Austria, Finland and Sweden acceded to the Union, Annexes I and II were amended (OJ No L1, 1.1.1995, p. 135).

6. However, several Member States and the Scientific Working Group set up by the "Habitats" Committee (established by the Directive) wanted Annexes I and II to Directive 92/43/EEC to be adapted to technical and scientific progress. Adaptation was requested to cover:

   - the description of the habitat types of Community interest in the Boreal region to better define the additions made to the original lists when Sweden and Finland acceded.

   - the scientific nomenclature of several species, which has changed since the original annexes were drawn up.

   All up-to-date scientific information on natural habitat types and the relevant species of Community interest indicates that it is necessary to adapt Annexes I and II.

   As regards Annex I, the process of updating the classification of European habitats, carried out on the basis of the Corine biotopes project,[1] led to the production of an Interpretation Manual of European Union Habitats. This Manual includes the new Natura 2000 codes which identify each natural habitat type. The first EUR 12 version of the Manual was published by the Commission in April 1995 and contained updated information for twelve Member States. A second EUR 15 version was published in April 1996, incorporating the new priority habitats of Community interest which were added when the three new Member States acceded.

---

1 Corine biotopes - Technical Handbook, Volume 1, pp. 73-109; Corine/Biotopes/89-2.2, 19 May 1988, partially updated 14 February 1989.

7. At the "Habitats" Committee meeting of 13 September 1996, Member States' delegates unanimously approved the following amendments:

* Annex I:

- to replace the reference to Corine biotopes for classifying habitat types with a reference to the new Interpretation Manual of European Union Habitats, EUR 15 version of April 1996;

- to replace the 1989 Corine code with the Natura 2000 code, now the standard scientific reference;

- to describe new types of Boreal habitats, including seven priority habitats, in line with the opinion of the Scientific Working Group of the Habitats Committee.

- to remove the habitat sub-types (e.g. "grey dunes") which are now described in the Interpretation Manual, EUR 15 version;

- to take account of the recent scientific identification of the habitat type Turloughs outside Ireland; to therefore delete the word "(Ireland)" from the habitat type "*Turloughs (Ireland)";

- to reclassify the habitat "**Taxus baccata* woods" in keeping with scientific advice so that formations in the British Isles will be placed in the sub-category "Forests of temperate Europe" rather than "Mediterranean mountainous forests";

- to replace a number of titles causing habitat types to be confused by more explicit titles from the Interpretation Manual, EUR 15 version;

- to replace the common names of species under each title by their Latin names, so as to conform to scientific usage.

* Annex II:

- to adapt the names of species not correctly identified when the Annexes were drawn up, to the taxonomy and nomenclature currently in force in the scientific community;

- to add certain Nordic species identified jointly by scientists in Sweden and Finland.

Member States are not expected to experience any additional difficulty in complying with the amendments to this Directive.

8. In conformity with the principle of subsidiarity and with the principle of proportionality it turns out to be necessary that the present proposal is carried out at the Community level because it concerns the simple adaptation to technical and scientific progress of a basic act which emanates from the Community.

***

The Commission proposes to the Council to adopt the attached proposal for a Council Directive.

Proposal for a Council Directive (EC) adapting to technical and scientific progress Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora,[1] and in particular the first paragraph of Article 19 thereof,

Having regard to the proposal from the Commission,

Whereas certain natural habitat types and species in Annexes I and II to Directive 92/43/EEC should be adapted to technical and scientific progress;

Whereas the Interpretation Manual of European Union Habitats (EUR 15 version of April 1996) includes the new Natura 2000 codes which identify each natural habitat type; whereas the reference to the Corine code in Annex I to Directive 92/43/EEC should be replaced by a reference to the Natura 2000 code;

HAS ADOPTED THIS DIRECTIVE:

Article 1

Annexes I and II to Directive 92/43/EEC shall be replaced by the text in the Annex to this Directive.

---

1 OJ No L 206, 22.7.1992, p. 7, amended by the Act of Accession of Austria, Finland and Sweden.

Article 2

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 1997. They shall forthwith inform the Commission thereof.

The provisions adopted pursuant to this paragraph shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such reference shall be adopted by the Member States.

Article 3

This Directive shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Communities.

Article 4

This Directive is addressed to the Member States.

Done at ..., ...

For the Council

The President

ANNEX

"ANNEX I

NATURAL HABITAT TYPES OF COMMUNITY INTEREST WHOSE CONSERVATION REQUIRES THE DESIGNATION OF SPECIAL AREAS OF CONSERVATION

Interpretation

Guidance on the interpretation of habitat types is given in the 'Interpretation Manual of European Union Habitats' as approved by the committee set up in Article 20 ('Habitats Committee') and published by the European Commission[1].
The code corresponds to the NATURA 2000 code.
The sign '*' indicates priority habitat types.

1. COASTAL AND HALOPHYTIC HABITATS

11. Open sea and tidal areas

1110 Sandbanks which are slightly covered by sea water all the time
1120 * *Posidonia* beds (*Posidonion oceanicae*)
1130 Estuaries
1140 Mudflats and sandflats not covered by seawater at low tide
1150 *Coastal lagoons
1160 Large shallow inlets and bays
1170 Reefs
1180 Submarine structures made by leaking gases

12. Sea cliffs and shingle or stony beaches

1210 Annual vegetation of drift lines
1220 Perennial vegetation of stony banks
1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts
1240 Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp.
1250 Vegetated sea cliffs with endemic flora of the Macaronesian coasts

13. Atlantic and continental salt marshes and salt meadows

1310 *Salicornia* and other annuals colonizing mud and sand
1320 *Spartina* swards (*Spartinion maritimi*)
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
1340 * Inland salt meadows

14. Mediterranean and thermo-Atlantic salt marshes and salt meadows

1410 Mediterranean salt meadows (*Juncetalia maritimi*)
1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)
1430 Halo-nitrophilous scrubs (*Pegano-Salsoletea*)

---

[1] "Interpretation manual of European Union habitats, version EUR15" adopted by the Habitats Committee on 25 April 1996, European Commission, DGXI.

15. Salt and gypsum inland steppes

1510 * Mediterranean salt steppes (*Limonietalia*)
1520 * Iberian gypsum vegetation (*Gypsophiletalia*)
1530 * Pannonic salt steppes and salt marshes

16. Boreal Baltic archipelago, coastal and landupheaval areas

1610 Baltic esker islands with sandy, rocky and shingle beach vegetation and sublittoral vegetation
1620 Boreal Baltic islets and small islands
1630 * Boreal Baltic coastal meadows
1640 Boreal Baltic sandy beaches with perennial vegetation
1650 Boreal Baltic narrow inlets

2. COASTAL SAND DUNES AND INLAND DUNES

21. Sea dunes of the Atlantic, North Sea and Baltic coasts

2110 Embryonic shifting dunes
2120 Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')
2130 * Fixed coastal dunes with herbaceous vegetation ('grey dunes')
2140 * Decalcified fixed dunes with *Empetrum nigrum*
2150 * Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)
2160 Dunes with *Hippophaë rhamnoides*
2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)
2180 Wooded dunes of the Atlantic, Continental and Boreal region
2190 Humid dune slacks
21A0 Machairs (* in Ireland)

22. Sea dunes of the Mediterranean coast

2210 *Crucianellion maritimae* fixed beach dunes
2220 Dunes with *Euphorbia terracina*
2230 *Malcolmietalia* dune grasslands
2240 *Brachypodietalia* dune grasslands with annuals
2250 * Coastal dunes with *Juniperus* spp.
2260 *Cisto-Lavenduletalia* dune sclerophyllous scrubs
2270 * Wooded dunes with *Pinus pinea* and/or *Pinus pinaster*

23. Inland dunes, old and decalcified

2310 Dry sand heaths with *Calluna* and *Genista*
2320 Dry sand heaths with *Calluna* and *Empetrum nigrum*
2330 Inland dunes with open *Corynephorus* and *Agrostis* grasslands
2340 * Pannonic inland dunes

3. FRESHWATER HABITATS

31. Standing water

3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)

3120 Oligothrophic waters containing very few minerals generally on sandy soils of the West Mediterranean, with *Isoetes* spp.

3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*

3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.

3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation

3160 Natural dystrophic lakes and ponds

3170 * Mediterranean temporary ponds

3180 * Turloughs

32. Running water - **sections of water courses with natural or semi-natural dynamics (minor, average and major beds) where the water quality shows no significant deterioration**

3210 Fennoscandian natural rivers

3220 Alpine rivers and the herbaceous vegetation along their banks

3230 Alpine rivers and their ligneous vegetation with *Myricaria germanica*

3240 Alpine rivers and their ligneous vegetation with *Salix elaeagnos*

3250 Constantly flowing Mediterranean rivers with *Glaucium flavum*

3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation

3270 Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation

3280 Constantly flowing Mediterranean rivers with *Paspalo-Agrostidion* species and hanging curtains of *Salix* and *Populus alba*

3290 Intermittently flowing Mediterranean rivers of the *Paspalo-Agrostidion*

4. TEMPERATE HEATH AND SCRUB

4010 Northern Atlantic wet heaths with *Erica tetralix*
4020 * Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*
4030 European dry heaths
4040 * Dry Atlantic coastal heaths with *Erica vagans*
4050 * Endemic macaronesian heaths
4060 Alpine and Boreal heaths
4070 * Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)
4080 Sub-Arctic *Salix* spp. scrub
4090 Endemic oro-Mediterranean heaths with gorse

5. SCLEROPHYLLOUS SCRUB (MATORRAL)

51. Sub-Mediterranean and temperate scrub

5110 Stable xerothermophilous formations with *Buxus sempervirens* on rock slopes (*Berberidion* p.p.)
5120 Mountain *Cytisus purgans* formations
5130 *Juniperus communis* formations on heaths or calcareous grasslands
5140 * *Cistus palhinhae* formations on maritime wet heaths

52. Mediterranean arborescent matorral

5210 Arborescent matorral with *Juniperus* spp.
5220 * Arborescent matorral with *Zyziphus*
5230 * Arborescent matorral with *Laurus nobilis*

53. Thermo-Mediterranean and pre-steppe brush

5310 *Laurus nobilis* thickets
5320 Low formations of Euphorbia close to cliffs
5330 Thermo-Mediterranean and pre-desert scrub

54. Phrygana

5410 West Mediterranean clifftop phryganas (*Astragalo-Plantaginetum subulatae*)
5420 *Sarcopoterium spinosum* phryganas
5430 Endemic phryganas of the *Euphorbio-Verbascion*

6. NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

61. Natural grasslands

6110 * Rupicolous calcareous or basophilic grasslands of the *Alysso-Sedion albi*
6120 * Xeric sand calcareous grasslands
6130 Calaminarian grasslands of the *Violetalia calaminariae*
6140 Siliceous Pyrenean *Festuca eskia* grasslands
6150 Siliceous alpine and boreal grasslands
6160 Oro-Iberian *Festuca indigesta* grasslands
6170 Alpine and subalpine calcareous grasslands
6180 Macaronesian mesophile grasslands

62. Semi-natural dry grasslands and scrubland facies

6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)
6220 * Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*
6230 * Species-rich *Nardus* grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)
6240 * Sub-Pannonic steppic grasslands
6250 * Pannonic loess steppic grasslands
6260 * Pannonic sand steppes
6270 * Fennoscandian lowland species-rich dry to mesic grasslands
6280 * Nordic alvar and precambrian calcareous flatrocks

63. Sclerophillous grazed forests (dehesas)

6310 Dehesas with evergreen *Quercus* spp.

64. Semi-natural tall-herb humid meadows

6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
6420 Mediterranean tall humid grasslands of the *Molinio-Holoschoenion*
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
6440 Alluvial meadows of river valleys of the *Cnidion dubii*
6450 Northern boreal alluvial meadows

65. Mesophile grasslands

6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)
6520 Mountain hay meadows
6530 * Fennoscandian wooded meadows

7. RAISED BOGS AND MIRES AND FENS

71. Sphagnum acid bogs

7110 * Active raised bogs
7120 Degraded raised bogs still capable of natural regeneration
7130 Blanket bogs (* if active bog)
7140 Transition mires and quaking bogs
7150 Depressions on peat substrates of the *Rhynchosporion*
7160 Fennoscandian mineral-rich springs and springfens

72. Calcareous fens

7210 * Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*
7220 * Petrifying springs with tufa formation (*Cratoneurion*)
7230 Alkaline fens
7240 * Alpine pioneer formations of the *Caricion bicoloris-atrofuscae*

73. Boreal mires

7310 * Aapa mires
7320 * Palsa mires

8. ROCKY HABITATS AND CAVES

81. Scree

8110 Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*)
8120 Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*)
8130 Western Mediterranean and thermophilous scree
8140 Eastern Mediterranean screes
8150 Medio-European upland siliceous screes
8160 * Medio-European calcareous scree of hill and montane levels

82. Rocky slopes with chasmophytic vegetation

8210 Calcareous rocky slopes with chasmophytic vegetation
8220 Siliceous rocky slopes with chasmophytic vegetation
8230 Siliceous rock with pioneer vegetation of the *Sedo-Scleranthion* or of the *Sedo albi-Veronicion dillenii*
8240 * Limestone pavements

83. Other rocky habitats

8310 Caves not open to the public
8320 Fields of lava and natural excavations
8330 Submerged or partially submerged sea caves
8340 Permanent glaciers

9. FORESTS

(Sub)natural woodland vegetation comprising native species forming forests of tall trees, with typical undergrowth, and meeting the following criteria: rare or residual, and/or hosting species of Community interest

90. Forests of Boreal Europe

9010	* Western Taïga
9020	* Fennoscandian hemiboreal natural old broad-leaved deciduous forests (*Quercus, Tilia, Acer, Fraxinus* or *Ulmus*) rich in epiphytes
9030	* Natural forests of primary succession stages of landupheaval coast
9040	Nordic subalpine/subarctic forests with *Betula pubescens* ssp. *czerepanovii*
9050	Fennoscandian herb-rich forests with *Picea abies*
9060	Coniferous forests on, or connected to, glaciofluvial eskers
9070	Fennoscandian wooded pastures
9080	* Fennoscandian deciduous swamp woods

91. Forests of Temperate Europe

9110	*Luzulo-Fagetum* beech forests
9120	Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)
9130	*Asperulo-Fagetum* beech forests
9140	Medio-European subalpine beech woods with *Acer* and *Rumex arifolius*
9150	Medio-European limestone beech forests of the *Cephalanthero-Fagion*
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*
9170	*Galio-Carpinetum* oak-hornbeam forests
9180	* *Tilio-Acerion* forests of slopes, screes and ravines
9190	Old acidophilous oak woods with *Quercus robur* on sandy plains
91A0	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
91B0	Thermophilous *Fraxinus angustifolia* woods
91C0	* Caledonian forest
91D0	* Bog woodland
91E0	* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)
91F0	Riparian mixed forests of *Quercus robur, Ulmus laevis* and *Ulmus minor, Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*)
91G0	* Pannonic woods with *Quercus petraea* and *Carpinus betulus*
91H0	* Pannonian woods with *Quercus pubescens*
91I0	* Euro-Siberian steppic woods with *Quercus* spp.
91J0	* *Taxus baccata* woods of the British Isles

92. Mediterranean deciduous forests

9210	* Apeninne beech forests with *Taxus* and *Ilex*
9220	* Apennine beech forests with *Abies alba* and beech forests with *Abies nebrodensis*
9230	Galicio-Portuguese oak woods with *Quercus robur* and *Quercus pyrenaica*
9240	*Quercus faginea* and *Quercus canariensis* Iberian woods
9250	*Quercus trojana* woods
9260	*Castanea sativa* woods
9270	Hellenic beech forests with *Abies borisii-regis*

9280 *Quercus frainetto* woods
9290 *Cupressus* forests (*Acero-Cupression*)
92A0 *Salix alba* and *Populus alba* galleries
92B0 Riparian formations on intermittent Mediterranean water courses with *Rhododendron ponticum*, *Salix* and others
92C0 *Platanus orientalis* and *Liquidambar orientalis* woods (*Platanion orientalis*)
92D0 Southern riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae*)

93. Mediterranean sclerophyllous forests

9310 Aegean *Quercus brachyphylla* woods
9320 *Olea* and *Ceratonia* forests
9330 *Quercus suber* forests
9340 *Quercus ilex* and *Quercus rotundifolia* forests
9350 *Quercus macrolepis* forests
9360 * Macaronesian laurel forests (*Laurus, Ocotea*)
9370 * Palm groves of *Phoenix*
9380 Forests of *Ilex aquifolium*

94. Temperate mountainous coniferous forests

9410 Acidophilous *Picea* forests of the montane to alpine levels (*Vaccinio-Piceetea*)
9420 Alpine *Larix decidua* and/or *Pinus cembra* forests
9430 Subalpine and montane *Pinus uncinata* forests (* if on gypsum or limestone)

95. Mediterranean and Macaronesian mountainous coniferous forests

9510 * Southern Apennine *Abies alba* forests
9520 *Abies pinsapo* forests
9530 * (Sub-) Mediterranean pine forests with endemic black pines
9540 Mediterranean pine forests with endemic Mesogean pines
9550 Canarian endemic pine forests
9560 * Endemic forests with *Juniperus* spp.
9570 * *Tetraclinis articulata* forests
9580 * Mediterranean *Taxus baccata* woods

ANNEX II

ANIMAL AND PLANT SPECIES OF COMMUNITY INTEREST WHOSE CONSERVATION REQUIRES THE DESIGNATION OF SPECIAL AREAS OF CONSERVATION

Interpretation

(a) Annex II follows on from Annex I for the establishment of a consistent network of special areas of conservation.

(b) The species listed in this Annex are indicated :
- by the name of the species or subspecies, or
- by the all the species belonging to a higher taxon or to a designated part of that taxon.

The abbreviation 'spp.' after the name of a family or genus designates all the species belonging to that family or genus.

(c) *Symbols*

An asterisk (*) before the name of a species indicates that it is a priority species.

Most species listed in this Annex are also listed in Annex IV.

Where a species appears in this Annex but does not appear in either Annex IV or Annex V, the species name is followed by the symbol (o); where a species which appears in this Annex also appears in Annex V but does not appear in Annex IV, its name is followed by the symbol (V).

(a) ANIMALS

VERTEBRATES

MAMMALS

INSECTIVORA

Talpidae

Galemys pyrenaicus

CHIROPTERA

Rhinolophidae

Rhinolophus blasii
Rhinolophus euryale
Rhinolophus ferrumequinum
Rhinolophus hipposideros
Rhinolophus mehelyi

Vespertilionidae

Barbastella barbastellus
Miniopterus schreibersi
Myotis bechsteini
Myotis blythii
Myotis capaccinii
Myotis dasycneme

Myotis emarginatus
Myotis myotis

RODENTIA

Sciuridae

* Pteromys volans (Sciuropterus russicus)
Spermophilus citellus (Citellus citellus)

Castoridae

Castor fiber (except the Finnish and Swedish populations)

Microtidae

Microtus cabrerae
* Microtus oeconomus arenicola

CARNIVORA

Canidae

* Alopex lagopus
* Canis lupus (Spanish populations: only those south of the Duero; Greek populations: only south of the 39th parallel; Finnish populations excepted).

Ursidae

* Ursus arctos (except the Finnish and Swedish populations)

Mustelidae

* Gulo gulo
Lutra lutra
Mustela lutreola

Felidae

Lynx lynx (except the Finnish populations)
* Lynx pardinus

Phocidae

Halichoerus grypus (V)
* Monachus monachus
Phoca hispida bottnica (o)
* Phoca hispida saimensis
Phoca vitulina (V)

ARTIODACTYLA

Cervidae

* Cervus elaphus corsicanus
Rangifer tarandus fennicus (o)

Bovidae

Capra aegagrus (natural populations)
* Capra pyrenaica pyrenaica
Ovis gmelini musimon (Ovis ammon musimon) (natural populations - Corsica and Sardinia)
* Rupicapra pyrenaica ornata (Rupicapra rupicapra ornata)
Rupicapra rupicapra balcanica

CETACEA

Tursiops truncatus
Phocoena phocoena

REPTILES

CHELONIA (TESTUDINES)

Testudinidae

Testudo hermanni
Testudo graeca
Testudo marginata

Cheloniidae

* Caretta caretta

Emydidae

Emys orbicularis
Mauremys caspica
Mauremys leprosa

SAURIA

Lacertidae

Lacerta bonnali (Lacerta monticola)
Lacerta monticola
Lacerta schreiberi
Gallotia galloti insulanagae
* Gallotia simonyi
Podarcis lilfordi
Podarcis pityusensis

Scincidae

Chalcides simonyi (Chalcides occidentalis)

Gekkonidae

Phyllodactylus europaeus

OPHIDIA (SERPENTES)

Colubridae

Elaphe quatuorlineata
Elaphe situla

Viperidae

* Macrovipera schweizeri (Vipera lebetina schweizeri)
Vipera ursinii

AMPHIBIANS

CAUDATA

Salamandridae

Chioglossa lusitanica
Mertensiella luschani (Salamandra luschani)
* Salamandra atra aurorae
Salamandrina terdigitata
Triturus carnifex (Triturus cristatus carnifex)
Triturus cristatus (Triturus cristatus cristatus)
Triturus dobrogicus (Triturus cristatus dobrogicus)
Triturus karelinii (Triturus cristatus karelinii)

Proteidae

Proteus anguinus

Plethodontidae

Hydromantes (Speleomantes) ambrosii
Hydromantes (Speleomantes) flavus

Hydromantes (Speleomantes) genei
Hydromantes (Speleomantes) imperialis
Hydromantes (Speleomantes) strinatii
Hydromantes (Speleomantes) supramontes

ANURA

Discoglossidae

Bombina bombina
Bombina variegata
Discoglossus galganoi (including Discoglossus "jeanneae")
Discoglossus montalentii
Discoglossus sardus
* Alytes muletensis

Ranidae

Rana latastei

Pelobatidae

* Pelobates fuscus insubricus

FISHES

PETROMYZONIFORMES

Petromyzonidae

Eudontomyzon spp. (o)
Lampetra fluviatilis (V) (except the Finnish and Swedish populations)
Lampetra planeri (o) (except the Finnish and Swedish populations)
Lethenteron zanandreai (V)
Petromyzon marinus (o) (except the Swedish populations)

ACIPENSERIFORMES

Acipenseridae

* Acipenser naccarii
* Acipenser sturio

CLUPEIFORMES

Clupeidae

Alosa spp. (V)

SALMONIFORMES

Salmonidae

Hucho hucho (natural populations) (V)
Salmo salar (only in fresh water) (V) (except the Finnish populations)
Salmo marmoratus (o)
Salmo macrostigma (o)

Coregonidae

* Coregonus oxyrhynchus (anadromous populations in certain sectors of the North Sea)

CYPRINIFORMES

Cyprinidae

Alburnus albidus (o) (Alburnus vulturius)
Anaecypris hispanica
Aspius aspius (o) (except the Finnish populations)
Barbus plebejus (V)
Barbus meridionalis (V)
Barbus comiza (V)

Chalcalburnus chalcoides (o)
Chondrostoma soetta (o)
Chondrostoma polylepis (o) (including C. willkommi)
Chondrostoma genei (o)
Chondrostoma lusitanicum (o)
Chondrostoma toxostoma (o)
Gobio albipinnatus (o)
Gobio uranoscopus (o)
Iberocypris palaciosi (o)
*Ladigesocypris ghigii (o)
Leuciscus lucumonis (o)
Leuciscus souffia (o)
Phoxinellus spp. (o)
Rutilus pigus (o)
Rutilus rubilio (o)
Rutilus arcasii (o)
Rutilus macrolepidotus (o)
Rutilus lemmingii (o)
Rutilus frisii meidingeri (o)
Rutilus alburnoides (o)
Rhodeus sericeus amarus (o)
Scardinius graecus (o)

Cobitidae

Cobitis trichonica (o)
Cobitis taenia (o) (except the Finnish populations)
Misgurnus fossilis (o)
Sabanejewia aurata (o)
Sabanejewia larvata (o) (Cobitis larvata and Cobitis conspersa)

SILURIFORMES

Siluridae

Silurus aristotelis (V)

ATHERINIFORMES

Cyprinodontidae

Aphanius iberus (o)
Aphanius fasciatus (o)
* Valencia hispanica
* Valencia letourneuxi (Valencia hispanica)

PERCIFORMES

Percidae

Gymnocephalus schraetzer (V)
Zingel spp. [(o) except Zingel asper and Zingel zingel (V)]

Gobiidae

Pomatoschistus canestrini (o)
Knipowitschia (Padogobius) panizzae (o)
Padogobius nigricans (o)

SCORPAENIFORMES

Cottidae

Cottus petiti (o)
Cottus gobio (o) (except the Finnish populations)

INVERTEBRATES

ARTHROPODS

CRUSTACEA

Decapoda

Austropotamobius pallipes (V)

INSECTA

Coleoptera

Agathidium pulchellum (o)
Boros schneideri (o)
Buprestis splendens
*Carabus menetriesi pacholei (o)
* Carabus olympiae
Cerambyx cerdo
Corticaria planula (o)
Cucujus cinnaberinus
Dytiscus latissimus
Graphoderus bilineatus
Limoniscus violaceus (o)
Lucanus cervus (o)
Macroplea pubipennis (o)
Mesosa myops (o)
Morimus funereus (o)
*Osmoderma eremita
Oxyporus mannerheimii (o)
Pytho kolwensis (o)
*Rosalia alpina
Stephanopachys linearis (o)
Stephanopachys substriatus (o)
Xyletinus tremulicola (o)

Hemiptera

Aradus angularis (o)

Lepidoptera

Agriades glandon aquilo (o)
*Callimorpha (Euplagia, Panaxia) quadripunctaria (o)
Clossiana improba (o)
Coenonympha oedippus
Erebia calcaria
Erebia christi
Erebia medusa polaris (o)
Eriogaster catax
Euphydryas (Eurodryas, Hypodryas) aurinia (o)
Graellsia isabellae (V)
Hesperia comma catena (o)
Hypodryas maturna
Lycaena dispar
Maculinea nausithous
Maculinea teleius

Melanargia arge
Papilio hospiton
Plebicula golgus
Xestia borealis (o)
Xestia brunneopicta (o)

Mantodea

Apteromantis aptera

Odonata

Coenagrion hylas (o)
Coenagrion mercuriale (o)
Cordulegaster trinacriae
Gomphus graslinii
Leucorrhinia pectoralis
Lindenia tetraphylla
Macromia splendens
Ophiogomphus cecilia
Oxygastra curtisii

Orthoptera

Baetica ustulata

ARACHNIDA

Pseudoscorpiones

Anthrenochernes stellae (o)

MOLLUSCS

GASTROPODA

Caseolus calculus
Caseolus commixta
Caseolus sphaerula
Discula leacockiana
Discula tabellata
Discus guerinianus
Elona quimperiana
Geomalacus maculosus
Geomitra moniziana
*Helicopsis striata austriaca (o)
Idiomela (Helix) subplicata
Leiostyla abbreviata
Leiostyla cassida
Leiostyla corneocostata
Leiostyla gibba
Leiostyla lamellosa
Vertigo angustior (o)
Vertigo genesii (o)
Vertigo geyeri (o)
Vertigo moulinsiana (o)

BIVALVIA

Unionoida

Margaritifera durrovensis (Margaritifera margaritifera) (V)
Margaritifera margaritifera (V)

Unio crassus

(b) PLANTS

PTERIDOPHYTA

ASPLENIACEAE

Asplenium jahandiezii (Litard.) Rouy

BLECHNACEAE

Woodwardia radicans (L.) Sm.

DICKSONIACEAE

Culcita macrocarpa C. Presl

DRYOPTERIDACEAE

Diplazium sibiricum (Turcz. ex Kunze) Kurata

* Dryopteris corleyi Fraser-Jenk.

Dryopteris fragans (L.) Schott

HYMENOPHYLLACEAE

Trichomanes speciosum Willd.

ISOETACEAE

Isoetes boryana Durieu

Isoetes malinverniana Ces. & De Not.

MARSILEACEAE

Marsilea batardae Launert

Marsilea quadrifolia L.

Marsilea strigosa Willd.

OPHIOGLOSSACEAE

Botrychium simplex Hitchc.

Ophioglossum polyphyllum A. Braun

GYMNOSPERMAE

PINACEAE

* Abies nebrodensis (Lojac.) Mattei

ANGIOSPERMAE

ALISMATACEAE

* Alisma wahlenbergii (Holmberg) Juz.

Caldesia parnassifolia (L.) Parl.

Luronium natans (L.) Raf.

AMARYLLIDACEAE

Leucojum nicaeense Ard.

Narcissus asturiensis (Jordan) Pugsley

Narcissus calcicola Mendonça

Narcissus cyclamineus DC.

Narcissus fernandesii G. Pedro

Narcissus humilis (Cav.) Traub

* Narcissus nevadensis Pugsley

Narcissus pseudonarcissus L. subsp. nobilis (Haw.) A. Fernandes

Narcissus scaberulus Henriq.

Narcissus triandrus L. subsp. capax (Salisb.) D. A. Webb.
Narcissus viridiflorus Schousboe

BORAGINACEAE

* Anchusa crispa Viv.
* Lithodora nitida (H. Ern) R. Fernandes
Myosotis lusitanica Schuster
Myosotis rehsteineri Wartm.
Myosotis retusifolia R. Afonso
Omphalodes kuzinskyanae Willk.
* Omphalodes littoralis Lehm.
Solenanthus albanicus (Degen & al.) Degen & Baldacci
* Symphytum cycladense Pawl.

CAMPANULACEAE

Asyneuma giganteum (Boiss.) Bornm.
* Campanula sabatia De Not.
Jasione crispa (Pourret) Samp. subsp. serpentinica Pinto da Silva
Jasione lusitanica A. DC.

CARYOPHYLLACEAE

Arenaria ciliata L. ssp. pseudofrigida Ostenf. & O.C. Dahl
Arenaria humifusa Wahlenberg
* Arenaria nevadensis Boiss. & Reuter
Arenaria provincialis Chater & Halliday
Dianthus arenarius L. subsp. arenarius
Dianthus cintranus Boiss. & Reuter subsp. cintranus Boiss. & Reuter
Dianthus marizii (Samp.) Samp.
Dianthus rupicola Biv.
* Gypsophila papillosa P. Porta
Herniaria algarvica Chaudhri
* Herniaria latifolia Lapeyr. subsp. litardierei Gamis
Herniaria lusitanica (Chaudhri) subsp. berlengiana Chaudhri
Herniaria maritima Link
Moehringia laterifolia (L.) Fenzl.
Moehringia tommasinii Marches.
Petrocoptis grandiflora Rothm.
Petrocoptis montsicciana O. Bolos & Rivas Mart.
Petrocoptis pseudoviscosa Fernandez Casas
Silene furcata Rafin. ssp. angustiflora (Rupr.) Walters
* Silene hicesiae Brullo & Signorello
Silene hifacensis Rouy ex Willk.
* Silene holzmanii Heldr. ex Boiss.
Silene longicilia (Brot.) Otth.
Silene mariana Pau
* Silene orphanidis Boiss.
* Silene rothmaleri Pinto da Silva
* Silene velutina Pourret ex Loisel.

CHENOPODIACEAE

* Bassia (Kochia) saxicola (Guss.) A. J. Scott
* Salicornia veneta Pignatti & Lausi

CISTACEAE

Cistus palhinhae Ingram
Halimium verticillatum (Brot.) Sennen
Helianthemum alypoides Losa & Rivas Goday
Helianthemum caput-felis Boiss.
* Tuberaria major (Willk.) Pinto da Silva & Rozeira

COMPOSITAE

* Anthemis glaberrima (Rech. f.) Greuter
Artemisia campestris L. subsp. bottnica A.N. Lundström ex Kindb.
* Artemisia granatensis Boiss.
* Artemisia laciniata Willd.
Artemisia oelandica (Besser) Komaror
* Artemisia pancicii (Janka) Ronn.
* Aster pyrenaeus Desf. ex DC
* Aster sorrentinii (Tod) Lojac.
* Carduus myriacanthus Salzm. ex DC.
* Centaurea alba L. subsp. heldreichii (Halacsy) Dostal
* Centaurea alba L. subsp. princeps (Boiss. & Heldr.) Gugler
* Centaurea attica Nyman subsp. megarensis (Halacsy & Hayek) Dostal
* Centaurea balearica J. D. Rodriguez
* Centaurea borjae Valdes-Berm. & Rivas Goday
* Centaurea citricolor Font Quer
Centaurea corymbosa Pourret
Centaurea gadorensis G. Blanca
* Centaurea horrida Badaro
* Centaurea kalambakensis Freyn & Sint.
Centaurea kartschiana Scop.
* Centaurea lactiflora Halacsy
Centaurea micrantha Hoffmanns. & Link subsp. herminii (Rouy) Dostál
* Centaurea niederi Heldr.
* Centaurea peucedanifolia Boiss. & Orph.
* Centaurea pinnata Pau
Centaurea pulvinata (G. Blanca) G. Blanca
Centaurea rothmalerana (Arènes) Dostál
Centaurea vicentina Mariz
* Crepis crocifolia Boiss. & Heldr.
Crepis granatensis (Willk.) B. Blanca & M. Cueto
Crepis tectorum L. subsp. nigrescens
Erigeron frigidus Boiss. ex DC.
Hymenostemma pseudanthemis (Kunze) Willd.
* Jurinea cyanoides (L.) Reichenb.
* Jurinea fontqueri Cuatrec.
* Lamyropsis microcephala (Moris) Dittrich & Greuter
Leontodon microcephalus (Boiss. ex DC.) Boiss.
Leontodon boryi Boiss.
* Leontodon siculus (Guss.) Finch & Sell
Leuzea longifolia Hoffmanns. & Link
Ligularia sibirica (L.) Cass.
Santolina impressa Hoffmanns. & Link

Santolina semidentata Hoffmanns. & Link
* Senecio elodes Boiss. ex DC.
Senecio jacobea L. subsp. gotlandicus (Neuman) Sterner
Senecio nevadensis Boiss. & Reuter

CONVOLVULACEAE

* Convolvulus argyrothamnus Greuter
* Convolvulus fernandesii Pinto da Silva & Teles

CRUCIFERAE

Alyssum pyrenaicum Lapeyr.
Arabis sadina (Samp.) P. Cout.
* Biscutella neustriaca Bonnet
Biscutella vincentina (Samp.) Rothm.
Boleum asperum (Pers.) Desvaux
Brassica glabrescens Poldini
Brassica insularis Moris
* Brassica macrocarpa Guss.
Braya linearis Rouy
* Coincya rupestris Rouy
* Coronopus navasii Pau
Diplotaxis ibicensis (Pau) Gomez-Campo
* Diplotaxis siettiana Maire
Diplotaxis vicentina (P. Cout.) Rothm.
Draba cacuminum Elis Ekman
Draba cinerea Adams
Erucastrum palustre (Pirona) Vis.
* Iberis arbuscula Runemark
Iberis procumbens Lange subsp. microcarpa Franco & Pinto da Silva
* Jonopsidium acaule (Desf.) Reichenb.
Jonopsidium savianum (Caruel) Ball ex Arcang.
Rhynchosinapis erucastrum (L.) Dandy ex Clapham subsp. cintrana (Coutinho) Franco & P. Silva (Coincya cintrana (P. Cout.) Pinto da Silva)
Sisymbrium cavanillesianum Valdes & Castroviejo
Sisymbrium supinum L.

CYPERACEAE

Carex holostoma Drejer
* Carex panormitana Guss.
Eleocharis carniolica Koch

DIOSCOREACEAE

* Borderea chouardii (Gaussen) Heslot

DROSERACEAE

Aldrovanda vesiculosa L.

EUPHORBIACEAE

* Euphorbia margalidiana Kuhbier & Lewejohann
Eurphorbia transtagana Boiss.

GENTIANACEAE

* Centaurium rigualii Esteve
* Centaurium somedanum Lainz
Gentiana ligustica R. de Vilm. & Chopinet
Gentianella angelica (Pugsley) E. F. Warburg

GERANIACEAE

* Erodium astragaloides Boiss. & Reuter
Erodium paularense Fernandez-Gonzalez & Izco
* Erodium rupicola Boiss.

GLOBULARIACEAE

*Globularia stygia Orph. ex Boiss.

GRAMINEAE

Arctagrostis latifolia (R. Br.) Griseb.
Arctophila fulva (Trin.) N. J. Anderson
Avenula hackelii (Henriq.) Holub
Bromus grossus Desf. ex DC.
Calamagrostis chalybaea (Laest.) Fries
Cinna latifolia (Trev.) Griseb.
Coleanthus subtilis (Tratt.) Seidl
Festuca brigantina (Markgr.-Dannenb.) Markgr.-Dannenb.
Festuca duriotagana Franco & R. Afonso
Festuca elegans Boiss.
Festuca henriquesii Hack.
Festuca summilusitanica Franco & R. Afonso
Gaudinia hispanica Stace & Tutin
Holcus setiglumis Boiss. & Reuter subsp. duriensis Pinto da Silva
Micropyropsis tuberosa Romero - Zarco & Cabezudo
Pseudarrhenatherum pallens (Link) J. Holub
Puccinellia phryganodes (Trin.) Scribner + Merr.
Puccinellia pungens (Pau) Paunero
* Stipa austroitalica Martinovsky
* Stipa bavarica Martinovsky & H. Scholz
* Stipa styriaca Martinovsky
* Stipa veneta Moraldo
Trisetum subalpestre (Hartman) Neuman

GROSSULARIACEAE

* Ribes sardoum Martelli

HIPPURIDACEAE

Hippuris tetraphylla L. Fil.

HYPERICACEAE

* Hypericum aciferum (Greuter) N.K.B. Robson

JUNCACEAE

Juncus valvatus Link
Luzula arctica Blytt

LABIATAE

Dracocephalum austriacum L.
* Micromeria taygetea P. H. Davis
Nepeta dirphya (Boiss.) Heldr. ex Halacsy
* Nepeta sphaciotica P. H. Davis
Origanum dictamnus L.
Sideritis incana subsp. glauca (Cav.) Malagarriga
Sideritis javalambrensis Pau
Sideritis serrata Cav. ex Lag.
Teucrium lepicephalum Pau

Teucrium turredanum Losa & Rivas Goday
* Thymus camphoratus Hoffmanns. & Link
Thymus carnosus Boiss.
* Thymus lotocephalus G. López & R. Morales (Thymus cephalotos L.)

LEGUMINOSAE

Anthyllis hystrix Cardona, Contandr. & E. Sierra
* Astragalus algarbiensis Coss. ex Bunge
* Astragalus aquilanus Anzalone
Astragalus centralpinus Braun-Blanquet
*Astragalus maritimus Moris
Astragalus tremolsianus Pau
*Astragalus verrucosus Moris
*Cytisus aeolicus Guss. ex Lindl.
Genista dorycnifolia Font Quer
Genista holopetala (Fleischm. ex Koch) Baldacci
Melilotus segetalis (Brot.) Ser. subsp. fallax Franco
*Ononis hackelii Lange
Trifolium saxatile All.
*Vicia bifoliolata J.D. Rodriguez

LENTIBULARIACEAE

Pinguicula nevadensis (Lindb.) Casper

LILIACEAE

Allium grosii Font Quer
*Androcymbium rechingeri Greuter
*Asphodelus bento-rainhae P. Silva
Hyacinthoides vicentina (Hoffmans. & Link) Rothm.
*Muscari gussonei (Parl.) Tod.

LINACEAE

*Linum muelleri Moris (Linum maritimum muelleri)

LYTHRACEAE

*Lythrum flexuosum Lag.

MALVACEAE

Kosteletzkya pentacarpos (L.) Ledeb.

NAJADACEAE

Najas flexilis (Willd.) Rostk. & W.L. Schmidt
Najas tenuissima (A. Braun) Magnus

ORCHIDACEAE

Calypso bulbosa L.
*Cephalanthera cucullata Boiss. & Heldr.
Cypripedium calceolus L.
Gymnigritella runei Teppner & Klein
Liparis loeselii (L.) Rich.
*Ophrys lunulata Parl.
Platanthera obtusata (Pursh) subsp. oligantha (Turez.) Hulten

PAEONIACEAE

Paeonia cambessedesii (Willk.) Willk.
Paeonia parnassica Tzanoudakis
Paeonia clusii F.C. Stern subsp. rhodia (Stearn) Tzanoudakis

PALMAE
Phoenix theophrasti Greuter
PAPAVERACEAE
Corydalis gotlandica Lidén
Papaver laestadianum (Nordh.) Nordh.
Papaver radicatum Rottb. subsp. hyperboreum Nordh.
PLANTAGINACEAE
Plantago algarbiensis Sampaio (Plantago bracteosa (Willk.) G. Sampaio)
Plantago almogravensis Franco
PLUMBAGINACEAE
Armeria berlengensis Daveau
*Armeria helodes Martini & Pold
Armeria neglecta Girard
Armeria pseudarmeria (Murray) Mansfeld
*Armeria rouyana Daveau
Armeria soleirolii (Duby) Godron
Armeria velutina Welw. ex Boiss. & Reuter
Limonium dodartii (Girard) O. Kuntze subsp. lusitanicum (Daveau) Franco
*Limonium insulare (Beg. & Landi) Arrig. & Diana
Limonium lanceolatum (Hoffmans. & Link) Franco
Limonium multiflorum Erben
*Limonium pseudolaetum Arrig. & Diana
* Limonium strictissimum (Salzmann) Arrig.
POLYGONACEAE
Persicaria foliosa (H. Lindb.) Kitag.
Polygonum praelongum Coode & Cullen
Rumex rupestris Le Gall
PRIMULACEAE
Androsace mathildae Levier
Androsace pyrenaica Lam.
*Primula apennina Widmer
Primula nutans Georgi
Primula palinuri Petagna
Primula scandinavica Bruun
Soldanella villosa Darracq.
RANUNCULACEAE
*Aconitum corsicum Gayer (Aconitum napellus subsp. corsicum)
Adonis distorta Ten.
Aquilegia bertolonii Schott
Aquilegia kitaibelii Schott
*Aquilegia pyrenaica D.C. subsp. cazorlensis (Heywood) Galiano
*Consolida samia P.H. Davis
Pulsatilla patens (L.) Miller
Ranunculus lapponicus L.
Pulsatilla vulgaris Hill. subsp. gotlandica (Johanss.) Zaemelis & Paegle
*Ranunculus weyleri Mares
RESEDACEAE
*Reseda decursiva Forssk.

ROSACEAE
Agrimonia pilosa Ledebour
Potentilla delphinensis Gren. & Godron
Sorbus teodorii Liljefors
RUBIACEAE
*Galium litorale Guss.
*Galium viridiflorum Boiss. & Reuter
SALICACEAE
Salix salvifolia Brot. subsp. australis Franco
SANTALACEAE
Thesium ebracteatum Hayne
SAXIFRAGACEAE
Saxifraga berica (Beguinot) D.A. Webb
Saxifraga florulenta Moretti
Saxifraga hirculus L.
Saxifraga osloënsis Knaben
Saxifraga tombeanensis Boiss. ex Engl.
SCROPHULARIACEAE
Antirrhinum charidemi Lange
Chaenorrhinum serpyllifolium (Lange) Lange
subsp. lusitanicum R. Fernandes
*Euphrasia genargentea (Feoli) Diana
Euphrasia marchesettii Wettst. ex Marches.
Linaria algarviana Chav.
Linaria coutinhoi Valdés
*Linaria ficalhoana Rouy
Linaria flava (Poiret) Desf.
*Linaria hellenica Turrill
*Linaria ricardoi Cout.
*Linaria tursica B. Valdes & Cabezudo
Linaria tonzigii Lona
Odontites granatensis Boiss.
Verbascum litigiosum Samp.
Veronica micrantha Hoffmanns. & Link
*Veronica oetaea L.-A. Gustavsson
SOLANACEAE
*Atropa baetica Willk.
THYMELAEACEAE
Daphne petraea Leybold
*Daphne rodriguezii Texidor
ULMACEAE
Zelkova abelicea (Lam.) Boiss.
UMBELLIFERAE
* Angelica heterocarpa Lloyd
Angelica palustris (Besser) Hoffm.
* Apium bermejoi Llorens
Apium repens (Jacq.) Lag.
Athamanta cortiana Ferrarini
* Bupleurum capillare Boiss. & Heldr.

* Bupleurum kakiskalae Greuter
Eryngium alpinum L.
* Eryngium viviparum Gay
* Laserpitium longiradium Boiss.
* Naufraga balearica Constans & Cannon
* Oenanthe conioides Lange
Petagnia saniculifolia Guss.
Rouya polygama (Desf.) Coincy
* Seseli intricatum Boiss.
Thorella verticillatinundata (Thore) Briq.

VALERIANACEAE

Centranthus trinervis (Viv.) Beguinot

VIOLACEAE

* Viola hispida Lam.
Viola jaubertiana Mares & Vigineix
Viola rupestris F.W. Schmidt
subsp. relicta Jalas

Lower plants

BRYOPHYTA

Bruchia vogesiaca Schwaegr. (o)
Bryhnia novae-angliae (Sull & Lesq.) Grout (o)
*Bryoerythrophyllum campylocarpum (C. Müll.) Crum. (Bryoerythrophyllum machadoanum (Sergio) M. O. Hill)) (o)
Buxbaumia viridis (Moug.) Moug. & Nestl. (o)
Cephalozia macounii (Aust.) Aust. (o)
Cynodontium suecicum (H. Arn. & C. Jens.) I. Hag. (o)
Dichelyma capillaceum (Dicks) Myr. (o)
Dicranum viride (Sull. & Lesq.) Lindb. (o)
Distichophyllum carinatum Dix. & Nich. (o)
Drepanocladus (Hamatocaulis) vernicosus (Mitt.) Warnst. (o)
Encalypta mutica (I. Hagen) (o)
Hamatocaulis lapponicus (Norrl.) Hedenäs (o)
Herzogiella turfacea (Lindb.) I. Wats. (o)
Hygrohypnum montanum (Lindb.) Broth. (o)
Jungermannia handelii (Schiffn.) Amak. (o)
Mannia triandra (Scop.) Grolle (o)
* Marsupella profunda Lindb. (o)
Meesia longiseta Hedw. (o)
Nothothylas orbicularis (Schwein.) Sull. (o)
Orthothecium lapponicum (Schimp.) C. Hartm. (o)
Orthotrichum rogeri Brid. (o)
Petalophyllum ralfsii (Wils.) Nees & Gott. (o)
Plagiomnium drummondii (Bruch & Schimp.) T. Kop. (o)
Riccia breidleri Jur. (o)
Riella helicophylla (Bory & Mont.) Mont. (o)
Scapania massolongi (K. Müll.) K. Müll. (o)
Sphagnum pylaisii Brid. (o)

Tayloria rudolphiana (Garov) B. & S. (o)
Tortella rigens (N. Alberts) (o)

SPECIES FOR MACARONESIA

PTERIDOPHYTA
HYMENOPHYLLACEAE
Hymenophyllum maderensis Gibby & Lovis
DRYOPTERIDACEAE
* Polystichum drepanum (Sw.) C. Presl.
ISOETACEAE
Isoetes azorica Durieu & Paiva ex Milde
MARSILEACEAE
* Marsilea azorica Launert & Paiva

ANGIOSPERMAE
ASCLEPIADACEAE
Caralluma burchardii N. E. Brown
*Ceropegia chrysantha Svent.
BORAGINACEAE
Echium candicans L. fil.
* Echium gentianoides Webb & Coincy
Myosotis azorica H. C. Watson
Myosotis maritima Hochst. in Seub.
CAMPANULACEAE
* Azorina vidalii (H. C. Watson) Feer
Musschia aurea (L. f.) DC.
* Musschia wollastonii Lowe
CAPRIFOLIACEAE
* Sambucus palmensis Link
CARYOPHYLLACEAE
Spergularia azorica (Kindb.) Lebel
CELASTRACEAE
Maytenus umbellata (R. Br.) Mabb.
CHENOPODIACEAE
Beta patula Ait.
CISTACEAE
Cistus chinamadensis Banares & Romero
* Helianthemum bystropogophyllum Svent.
COMPOSITAE
Andryala crithmifolia Ait.
* Argyranthemum lidii Humphries
Argyranthemum thalassophylum (Svent.) Hump.
Argyranthemum winterii (Svent.) Humphries
* Atractylis arbuscula Svent. & Michaelis
Atractylis preauxiana Schultz.
Calendula maderensis DC.
Cheirolophus duranii (Burchard) Holub

Cheirolophus ghomerytus (Svent.) Holub
Cheirolophus junonianus (Svent.) Holub
Cheirolophus massonianus (Lowe) Hansen & Sund.
Cirsium latifolium Lowe
Helichrysum gossypinum Webb
Helichrysum oligocephala (Svent. & Bzamw.)
* Lactuca watsoniana Trel.
* Onopordum nogalesii Svent.
* Onorpordum carduelinum Bolle
* Pericallis hadrosoma Svent.
Phagnalon benettii Lowe
Stemmacantha cynaroides (Chr. Son. in Buch) Ditt
Sventenia bupleuroides Font Quer
* Tanacetum ptarmiciflorum Webb & Berth

CONVOLVULACEAE

* Convolvulus caput-medusae Lowe
* Convolvulus lopez-socasii Svent.
* Convolvulus massonii A. Dietr.

CRASSULACEAE

Aeonium gomeraense Praeger
Aeonium saundersii Bolle
Aichryson dumosum (Lowe) Praeg.
Monanthes wildpretii Banares & Scholz
Sedum brissemoretii Raymond-Hamet

CRUCIFERAE

* Crambe arborea Webb ex Christ
Crambe laevigata DC. ex Christ
* Crambe sventenii R. Petters ex Bramwell & Sund.
* Parolinia schizogynoides Svent.
Sinapidendron rupestre (Ait.) Lowe

CYPERACEAE

Carex malato-belizii Raymond

DIPSACACEAE

Scabiosa nitens Roemer & J. A. Schultes

ERICACEAE

Erica scoparia L. subsp. azorica (Hochst.) D. A. Webb

EUPHORBIACEAE

* Euphorbia handiensis Burchard
Euphorbia lambii Svent.
Euphorbia stygiana H. C. Watson

GERANIACEAE

* Geranium maderense P. F. Yeo

GRAMINEAE

Deschampsia maderensis (Haeck. & Born.) Buschm.
Phalaris maderensis (Menezes) Menezes

GLOBULARIACEAE

* Globularia ascanii D. Bramwell & Kunkel
* Globularia sarcophylla Svent.

LABIATAE
* Sideritis cystosiphon Svent.
*Sideritis discolor (Webb ex de Noe) Bolle
Sideritis infernalis Bolle
Sideritis marmorea Bolle
Teucrium abutiloides L'Hér.
Teucrium betonicum L'Hér.
LEGUMINOSAE
* Anagyris latifolia Brouss. ex. Willd.
Anthyllis lemanniana Lowe
* Dorycnium spectabile Webb & Berthel
* Lotus azoricus P. W. Ball
Lotus callis-viridis D. Bramwell & D. H. Davis
* Lotus kunkelii (E. Chueca) D. Bramwell & al.
* Teline rosmarinifolia Webb & Berthel.
* Teline salsoloides Arco & Acebes.
Vicia dennesiana H. C. Watson
LILIACEAE
* Androcymbium psammophilum Svent.
Scilla maderensis Menezes
Semele maderensis Costa
LORANTHACEAE
Arceuthobium azoricum Wiens & Hawksw.
MYRICACEAE
* Myrica rivas-martinezii Santos.
OLEACEAE
Jasminum azoricum L.
Picconia azorica (Tutin) Knobl.
ORCHIDACEAE
Goodyera macrophylla Lowe
PITTOSPORACEAE
* Pittosporum coriaceum Dryand. ex. Ait.
PLANTAGINACEAE
Plantago malato-belizii Lawalree
PLUMBAGINACEAE
* Limonium arborescens (Brouss.) Kuntze
Limonium dendroides Svent.
* Limonium spectabile (Svent.) Kunkel & Sunding
* Limonium sventenii Santos & Fernandez Galvan
POLYGONACEAE
Rumex azoricus Rech. fil.
RHAMNACEAE
Frangula azorica Tutin
ROSACEAE
* Bencomia brachystachya Svent.
Bencomia sphaerocarpa Svent.
* Chamaemeles coriacea Lindl.
Dendriopoterium pulidoi Svent.
Marcetella maderensis (Born.) Svent.

Prunus lusitanica L.
subsp. azorica (Mouillef.) Franco
Sorbus maderensis (Lowe) Dode

SANTALACEAE

Kunkeliella subsucculenta Kammer

SCROPHULARIACEAE

* Euphrasia azorica H.C. Watson
Euphrasia grandiflora Hochst. in Seub.
* Isoplexis chalcantha Svent. & O'Shanahan
Isoplexis isabelliana (Webb & Berthel.) Masferrer
Odontites holliana (Lowe) Benth.
Sibthorpia peregrina L.

SOLANACEAE

* Solanum lidii Sunding

UMBELLIFERAE

Ammi trifoliatum (H. C. Watson) Trelease
Bupleurum handiense (Bolle) Kunkel
Chaerophyllum azoricum Trelease
Ferula latipinna Santos
Melanoselinum decipiens (Schrader & Wendl.) Hoffm.
Monizia edulis Lowe
Oenanthe divaricata (R. Br.) Mabb.
Sanicula azorica Guthnick ex Seub.

VIOLACEAE

Viola paradoxa Lowe

Lower plants

BRYOPHYTA

* Echinodium spinosum (Mitt.) Jur. (o)
* Thamnobryum fernandesii Sergio (o)

ISSN 0254-1475

COM(97) 195 final

DOCUMENTS

EN 14 15 03

Catalogue number : CB-CO-97-211-EN-C

ISBN 92-78-19665-7

Office for Official Publications of the European Communities

L-2985 Luxembourg