

**COUNCIL DIRECTIVE 97/62/EC****of 27 October 1997****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 Directive 92/43/EEC<sup>(1)</sup> 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.

*Article 2*

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

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

*Article 3*

This Directive shall enter into force on the 20th 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 Luxembourg, 27 October 1997.

*For the Council**The President*

R. GOEBBELS

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<sup>(1)</sup> OJ L 206, 22. 7. 1992, p. 7. Directive as amended by the 1994 Act of Accession.

## 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 Habitats" as approved by the committee set up in Article 20 ("Habitats Committee") and published by the European Commission (<sup>(1)</sup>).

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 maritimae*)
- 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*)

## 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

(<sup>(1)</sup>) "Interpretation manual of European Union habitats, version EUR 15" adopted by the Habitats Committee on 25 April 1996, European Commission, DG XI.

## 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 pinca* 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 Oligotrophic 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 *Callitriche-Batrachion* vegetation
- 3270 Rivers with muddy banks with *Chenopodium 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 *Alyso-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. Sclerophyllous 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 (*Thlaspietalia 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 Taiga
- 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 roburi-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 (*Ulmion 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 \* Apennine 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
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## 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 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 ruscicus*)  
*Spermophilus citellus* (*Citellus citellus*)

*Castoridae*

*Castor fiber* (except the Finnish and Swedish populations)

*Microtidae*

*Microtus cabrerai*  
\* *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**

- Phocoena phocoena*
- Tursiops truncatus*

**REPTILES****CHELONIA (TESTUDINES)***Testudinidae*

- Testudo graeca*
- Testudo hermanni*
- Testudo marginata*

*Cheloniidae*

- \* *Caretta caretta*

*Emydidae*

- Emys orbicularis*
- Mauremys caspica*
- Mauremys leprosa*

**SAURIA***Lacertidae*

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

*Scincidae*

*Chalcides somonyi* (*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*

\* *Alytes muletensis*

*Bombina bombina*

*Bombina variegata*

*Discoglossus galganoi* (including *Discoglossus "jeanneae"*)

*Discoglossus montalentii*

*Discoglossus sardus*

*Ranidae*

*Rana latastei*

*Pelobatidae*

\* *Pelobates fuscus insubricus*

## FISH

## PETROMYZONIFORMES

*Petromyzonidae*

*Eudontomyzon* spp. (o)

*Lampetra fluviatilis* (V) (except the Finnish and Swedish populations)

*Lampetra planeri* (o) (except the Finnish and Swedish populations)

*Lethenteron zanandreae* (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 macrostigma* (o)
- Salmo marmoratus* (o)
- Salmo salar* (only in fresh water) (V) (except the Finnish populations)

*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 comiza* (V)
- Barbus meridionalis* (V)
- Barbus plebejus* (V)
- Chondrostoma genei* (o)
- Chondrostoma lusitanicum* (o)
- Chondrostoma polylepis* (o) (including *C. willkommi*)
- Chalcalburnus chalcoides* (o)
- Chondrostoma soetta* (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)
- Rhodeus sericeus amarus* (o)
- Rutilus alburnoides* (o)
- Rutilus arcasii* (o)
- Rutilus frisii meidingeri* (o)
- Rutilus lemmingii* (o)
- Rutilus macrolepidotus* (o)
- Rutilus pigus* (o)
- Rutilus rubilio* (o)
- Scardinius graecus* (o)

*Cobitidae*

- Cobitis taenia* (o) (except the Finnish populations)
- Cobitis trichonica* (o)
- 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*

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

## SCORPANIFORMES

*Cottidae*

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

## INVERTEBRATES

## ARTHROPODS

## CRUSTACEA

*Decapoda*

- Austropotamobius pallipes (V)

## INSECTA

*Coleoptera*

- Agathidium pulchellum (o)
- Boros schneideri (o)
- Buprestis splendens
- \* Carabus menetriesi pacholei
- \* 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  
Leucorrhina 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 nicaense 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.
- Solananthus 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 cintronus* Boiss. & Reuter subsp. *cintronus* 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 lateriflora* (L.) Fenzl.
- Moehringia tommasinii* Marches.
- Petrocoptis grandiflora* Rothm.
- Petrocoptis montisicciana* 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 pyrenaicus* 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. Rodríguez
- \* *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 sculus* (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
- \* *Gonvolvulus 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* (Paul) Gomez-Campo
- \* *Diplotaxis siettiana* Maire
- Diplotaxis vincentina* (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
- Euphorbia transtagana Boiss.

## GENTIANACEAE

- \* Centaurium rigualii Esteve
- \* Centaurium somedanum Lainz
- Gentiana ligustica R. de Vilm. & Chopinet
- Gentianella anglica (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 dirphyia* (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 lepiccephalum* 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 radicum* 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
- Pulsatilla vulgaris* Hill. subsp. *gotlandica* (Johanss.) Zaemelis & Paegle
- Ranunculus lapponicus* L.
- \* *Ranunculus weyleri* Mares

## RESEDACEAE

- \* *Reseda decursiva* Forssk.

## ROSACEAE

- Agrimonia pilosa* Ledebour
- Potentilla delphinensis* Gren. & Godron
- Sorbus teodori* 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
- Chaenorhinum 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 coniioides* Lange
- Petagnia saniculifolia* Guss.
- Rouya polygama* (Desf.) Coincy
- \* *Seseli intricatum* Boiss.
- Thorella verticillatundata* (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 sueticum* (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* (L. 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 breidlerii* 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 thalassophyllum* (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 monogynum* Burt & Sund.
- Hypochoeris oligocephala* (Svent. & Bramw.) Lack
- \* *Lactuca watsoniana* Trel.
- \* *Onopordum nogalesii* Svent.
- \* *Onopordum carduelinum* Bolle
- \* *Pericallis hadrosoma* (Svent.) B. Nord
- 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)
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