AN ENVIRONMENTAL PROFILE OF THE BLACK SEA COAST:

A Report for the United States Navy and PCCI Marine and Environmental Engineering

Compiled by the World Conservation Monitoring Centre

Edited by Dr Edmund Green

Prepared by : Lorraine Collins, Harriet Gillett, Edmund Green, Joanna Hugues, Igor Lysenko, Balzhan Zhimbiev

WORLD CONSERVATION MONITORING CENTRE

December 1997

A/N 14081 -2

The **World Conservation Monitoring Centre (WCMC)**, based in Cambridge, UK is a joint-venture between the three partners in the *World Conservation Strategy* and its successor *Caring For The Earth*: IUCN - The World Conservation Union, UNEP - United Nations Environment Programme, and WWF - World Wide Fund for Nature. WCMC provides information services on conservation and sustainable use the world's living resources, and helps others to develop information systems of their own.

Prepared for the United States Navy and PCCI Marine and Environmental Engineering

Acknowledgements

Victoria Freeman and Heather Cross

WORLD CONSERVATION
MONITORING CENTRE

Copyright: World Conservation Monitoring Centre, Cambridge, UK

Copyright release: Reproduction of this publication for educational or other non-commercial purposes is authorised without prior permission from the copyright holders.

Reproduction For resale or other commercial purpose is prohibited without the prior written permission of the copyright holders.

Disclaimer: The designations of geographical entities and the presentation of material in this report do not imply the expression of any opinion whatsoever by WCMC and its collaborators and other participating organisations, concerning the legal or constitutional status of any country, territory, or area or of its authorities; or concerning the delineation of its frontiers or boundaries.

Citation: WCMC, 1997. Environmental Profile of the Black Sea coast: a report for the United States Navy. Edited by E.P. Green.

Available From: World Conservation Monitoring Centre
219 Huntingdon Road, Cambridge CB3 0DL, UK
Tel: +44 1223 277314; Fax: +44 1223 277136
Email: info@wcmc.org.uk; URL: http://www.wcmc.org.uk
FTP: ftp://ftp.wcmc.org.uk

1. INTRODUCTION 6

1.1 The structure of this report 6

1.2 Project Team 6

1.3 Information Gaps and Recommendations for Improving the Focus of this Report 6

1.4 Map of the Black Sea Coast. 7

1.5 General Information on the Environmental Condition of the Black Sea. 7

2. IMPORTANT COASTAL WETLANDS OF THE BLACK SEA 9

2.1 Bulgaria 9

Lakes Durankulak (12) and Shabla (11) 9
Baltata (10) 10
Kamchia (9) 10
Pomorie Lake (8) 10
Atanassovsko Lake (7) 11
Burgas Lake (6) 11
Mandra Lake (5) 11
Ropotamo (4) 11
Stranga coast (3) 11

2.2 Georgia 12

Kolkheti Lowland : Tchuria (34), Nabada (35), Pichora-Paliastomi Marshes (36) 12

2.3 Romania 12

Danube Delta (16) 13
Lake Tasaul (15) 14
Lake Siutghiol (14) 14
Lake Techirghio (13) 14

2.4 Russia 14

The Don Delta (29) 14
Floodplain wetlands in the Lower Don (33) 15
The Manych system of reservoirs 15
Ust-Manych Reservoir 15
Vesselovskoye Reservoir 15
Proletarskoye and Gudilo Reservoir 16
Limans in the Sea of Azov (Jejskij: 30; Bejsugskij: 31) 16
Kuban delta (32) 16
Kiziltashski lagoon complex (41) 16
Turkey 17
Igneada Saka Longozu (2) 17
Terkos Cölü (1) 17
The Sakarya Delta (40) 17
Sarikum Gölü (39) 17
Kizilirmak Delta (38) 17

Yesilirmak Delta (37) 18

2.5 Ukraine 18

Danube Delta (16) 19
Dniestr Delta 19
Tiliguliski Liman (18) 19
Lower Dniepr, Golayal Pristan (20) 20
Tendrovski and Yagorlitski Bays (19) 20
Karkinitski Bay (22) 20
Sivash Lagoon (23) 20
Molochni Liman (24) 21
Obitochnaya (25), Berdyansk (26), Belosarayskaya (27) and Krivaya Peninsulas (28) 21

3 IMPORTANT BIRD AREAS ALONG THE BLACK SEA COAST. 22

3.1 Bulgaria 22

Lake Sharkovo Reservoir (Yambol) (6) 22
Lake Mandra (Burgas) (4) 22
Shabla-Ezeretz complex (Tolbukhin). (12) 22
Lake Burgas or Vaya (Burgas) (5) 23
Lake Durankulak (Tolbukhin) (13) 23
Atanasovko Ezero (Atanassovo Lake) (Burgas) (7) 23
Yatata Reservoir (Varna) (10) 23
Alepu Ezero (Buragas). (3) 24
Cape Kaliakra (Varan). (11) 24
Cape Emine (Burgas) (8) 24
Kamtchia Biosphere Reserve (Varna) (9) 24

3.2 Romania 24

Delta Dunarii (Danube Delta) (24) and Razelm-Sinoie complex (Tulcea Constanta) (23). 25
Rosca-buhaiova-Hrecisca Nature Reserve. (Tulcea). (27) 26
Perisor-Zatoane-Sacalin Nature Reserve (Tulcea) (22) 26
Periteasca-Leahova-Gura Portitei Nature Reserve. (Tulcea) (21) 26
Lacul Istria , Lacul Nuntasi and southern Lacul Sinoie (Constanta). (20) 26
Padurea letea (Letea Forest) (Tulcea). (26) 27
Padurea Niculitel-Badadag (Niculitel and Babadag Forest) (Tulcea). (25) 27
Lacul Tasaul (Constanta) (17) 27
Lacul Siutghiol (Constanta) (16) 28
Lacul Techirghiol (Constanta) (15) 28
Padurea Hagieni (Hagieni Forest) (Constanta) (14) 28
Canaraua Fetii (Constanta) (19) 28
Lacul Dunareni (Constanta) (18) 29

3.3 Turkey 29

Büyük Çekmece Gölü (Istanbul) 29
Bosphorus (Istanbul) (1) 30
Terkos Gölü (Durusu Gölü or Durugöl) (Istanbul) (2) 30
Çam Burnu (ordu) (56) 30
Kaçkar Daglari (Artvin, Erzurum, Rize) (55) 30
Kizilirnmak Deltasi (Samsun) (58) 31
North-East Turkey (Artvin, Rize) (54) 31
Yeniçaga Gölü (Bolu) (62) 32

Yesihrmak Deltasi (Samsun) (57) 32
Sarikum Gölü (Sinop) (59) 32

3.4 Russia and Ukraine 32

Ukrainian Steppe Reserve, Sumy, Donetsk, and Zaporozhe (Ukraina) (63) 33
Krivaya Kosa (Krivaya Peninsula), Novoazovsk Donetsk (Ukraine) (46) 33
Belosarayskaya Kosa (Belosarayskaya Peninsula), Volodarskoye, Donetsk (Ukraina) (45) 33
Berdyanskaya Kosa (Berdyansk Peninsula), Berdyansk, Zhdanov (Ukraina) (44) 33
Molochny Liman, Melitopol (Ukraine) (61) 33
Sivasj Zaliv, Azovskoye More (Sivash Bay, Sea of Azov) Ukraine (37) 33
Krymski (Crimean) Game Reserve, Krym (Ukraine) (41) 34
Karkinitsky Zaliv, Chernoye More (Karkinitsky Bay, Black Sea) (Ukraine) (38) 34
Yalta Mountain Forest, Bolshaya Yalta, Krym (Ukraina) (40) 35
Mys Martyan, Krym (Ukraine) (39) 35
Nizovya Dnepra (Lower Dnepr), Golaya Pristanm Kherson (Ukraine) (31) 35
Askania -Nova. Kherson (Ukraine) (36) 35
Dunay (Danube) and Yagorlytski and Tendrovski Zalivy (Yagorlystki and Tendra Bays) (Ukraina) Dunay (Danube) (29) 36
Yagorlytski and Tendrovski Zalivy (yagorlytski and Tendra Bays) (Ukraine) (29, 33) 36
Tiliguliski Liman (Tiligul Salt -Lake), Berezanka and Kominternovskoye (Ukraine) (32) 36
Nizovya Dnestra (Lower Dnestr), Belgorod-Dnestrovski and Ovidiopol (Ukraine) (31) 36
Karadag, Sudag, Krymskaya (Crimean) Oblast (Ukraine) (42) 37
Salt-Lakes (Limany) in the Primorsko-Akhtarsk/Grivenskaya area (including Akhtarski Liman and Liman Sladki) (Krasnodes Kray, RSFSR) (60) 37
Kavzkav (Caucasus) Biosphere Reserve, Sochi (Krasnodar Kray, RSFSR) (48) 37
Nizovya Reki Rioni, Ozero Paliastomi (lower Rioni, Lke Paliastomi) (Gruziya) (52) 37
Pskhuski, Abkhazskaya ASSR (Gruziya) (51) 38
Guminstin, Sukhumi, Abkhazaskaya ASSR (Gruziya) (50) 38
Ritsa, Gudauta, Abkhazskaya ASSR (Gruziya) (49) 38
Kintrishi, kobuleti, Adzharskaya ASSR (Gruziya) (53) 38

4. COASTAL PROTECTED AREAS OF THE BLACK SEA 39

4.1 Introduction 39

4.2 Information Gaps 39

Bulgaria 39
Georgia 40
Romania 40
Russia 40
Turkey 40
Ukraine 40

Nationally designated coastal protected areas 41

Bulgaria 41
Georgia 42
Romania 42
Russia 43
Turkey 44
Ukraine 44

4.4 Internationally designated coastal protected areas 47

Bulgaria 47

Georgia 47
Romania 47
Russia 48
Turkey 48
Ukraine 48

4.5 Site sheets for some protected areas 49

Bulgaria - Réserve Kamtchia 49
Bulgaria - Réserve Ouzounboudjak 50
Georgia - Kintrishskiy State Reserve 51
Romania - Danube Delta Biosphere Reserve 53
Russia - Kavkazskiy Zapovednik 61
Russia - Teberdinskiy State Reserve 63
Turkey - Haciosman Reserve 64
Turkey - Ilgaz Dagi National Park 65
Turkey - Yedigöller National Park 67
Ukraine - Askaniya-Nova Zapovednik 68
Ukraine - Tchernormorsky State Reserve 70

4.6 National Environmental Policy and Legislation 72

Bulgaria Country Profile 72
Georgia Country Profile 77
Romania Country Profile 77
Russia Country Profile 82
Turkey Country Profile 82
Ukraine Country Profile 89

5. ENDANGERED ANIMAL SPECIES OF BLACK SEA STATES .92

5.1 Introduction 92

5.2 Recommendations for further work on endangered Black Sea fauna 92

5.3 Guide to the IUCN (World Conservation Union) Red List Categories and Criteria 92

5.4 Guide to the interpretation of CMS Appendices 97

5.5 References 97

5.6 Summary table of species richness (fauna and vertebrates only) and regional endemism 98

5.7 List of species of fauna not globally threatened but of special concern in Europe 99

5.8 List of globally threatened vertebrates restricted to Europe 107

5.9 Summary table of all IUCN Red List species of fauna occurring in the Black Sea States 111

6. ENDANGERED PLANT SPECIES OF BLACK SEA STATES ..124

6.1 Globally threatened plants endemic to single countries bordering the Black Sea 124

6.2 Status of globally threatened plants occurring in five countries bordering the Black Sea 124

6.3 Globally threatened plants occurring in more than one country bordering the Black Sea 124

7. INTERNATIONAL CONVENTIONS AND AGREEMENTS COVERING THE BLACK SEA COAST.....125

STRATEGIC ACTION PLAN FOR THE REHABILITATION AND PROTECTION OF THE BLACK SEA 125

CONVENTION ON THE PROTECTION OF THE BLACK SEA AGAINST POLLUTION (21 Apr 1992) 136

CONVENTION CONCERNING FISHING IN THE BLACK SEA (Varna, 7 July 1959) 149

BIBLIOGRAPHY.....151

1. INTRODUCTION

1.1 The structure of this report

This report was prepared for the US Navy and PCCI Marine and Environmental who commissioned WCMC to compile environmental data on the Black Sea coastal zone for use in the planning of naval exercises. As such data pertaining to the Black Sea coastal zone (arbitrarily defined in this instance by the US Navy as 50 miles inland of the high water mark) of Turkey, Bulgaria, Romania, Ukraine, Russia and Georgia has been collated in one volume.

The information presented here comes from a wide range of different sources. This information, and considerable amounts of additional related data, are held at WCMC in Cambridge, UK. The quality of these data will vary and WCMC is very keen to hear from any national and regional experts and organisations in order to correct, update and improve its information holdings. This same information is also freely available to interested parties, and it is hoped that in some cases it might provide a useful starting point for bodies interested in establishing biodiversity data management systems at the national level.

The US Navy is interested in collecting data which may used to plan naval exercises in an environmentally informed manner. Data on endangered species, protected areas, important habitats, breeding areas and marine pollution are particularly useful in this regard. To achieve this purpose the report has been structured in six main sections:

1. Important coastal wetlands of the Black Sea
2. Coastal protected areas of the Black Sea
3. Endangered animal species of the Black Sea states
4. Endangered plant species of the Black Sea states
5. International conventions and agreements covering the Black Sea coast

1.2 Project Team

Edmund Green (Marine and Coastal) – project leader
Joanna Hugues (Marine and Coastal) – wetlands and important bird areas
Lorraine Collins (Trade and Environment)– endangered fauna
Harriet Gillett (Biodiversity Assessment) – endangered flora
Balzhan Zhimbiev (Protected Areas and Landscapes) – protected areas
Igor Lysenko (Geographic Information Systems technician) – map production

1.3 Information Gaps and Recommendations for Improving the Focus of this Report

This report is as extensive and complete as was possible given this time frame but inevitably there are some gaps in the information:

1. it was possible to gather good data on the wetland habitats of the Black Sea and the important bird areas but it was not possible to research some other important habitats (e.g. seagrass, sand dunes, beaches).
2. protected areas are listed by name, size and location, where possible. More detailed information (on management status, boundaries, national and international importance etc.) was available in some cases but not all.
3. it was possible to produce general lists of endangered species in the six Black Sea nations but it was not possible to separate coastal from non-coastal species.

Recommendations for improving the focus of this report are presented in the introduction to each section, along with the amount of time this would require. WCMC would be happy to undertake this work should it be deemed necessary.

1.4 Map of the Black Sea Coast.

A large format map of the Black Sea coast accompanies this report. This map includes important wetlands (numbered to refer to the text in Section 2), important bird areas (numbered to refer to the text in Section 3), protected areas (same, but not all, of the areas described in Section 4), infrastructure, political boundaries and bathymetry.

1.5 General Information on the Environmental Condition of the Black Sea.

An overview of the environmental condition of the Black sea taken from the Religion, Science and the Environment Symposium II: The Black Sea in Crisis 20-28 September 1997:

'The Black Sea is a unique environment, badly degraded. Similar in size to the North Sea or the Baltic, it is virtually landlocked, connected to the rest of the world's oceans through the Bosphorus Straits, the Sea of Marmara and the Dardenelles. The Bosphorus, in places only 700 metres wide and 70 metres deep, carries in its deep waters a reverse stream of seawater which gradually replenishes the salty bottom waters of the Black Sea with water from the Mediterranean. This replenishment is insufficient to cope with the demands of bacteria breaking down organic material falling from the fertile surface of the Black Sea and, below about 150 metres, the Black Sea is lifeless. The surface waters of the Black Sea are replenished from numerous rivers which drain an area covering major parts of seventeen countries spanning over one third of the area of Europe. These rivers, including the mighty Danube, Dnieper and Don, bring nitrogen, phosphorus and other minerals to the Sea and the influx of river water which keeps its salinity far below that of the neighbouring Mediterranean.

The Black Sea has long been a crossroads of civilisation. Its coasts are the territories of six countries – Bulgaria, Georgia, Romania, Russia, Turkey and Ukraine. Its physical beauty has long attracted millions of tourists, especially from Eastern Europe and the former Soviet Union. These coasts have also had to house cities, industries and major ports; human presence has often affected the fragile coastal ecosystems through unplanned development and competition for space. The recent political changes and the transition to market economies have also resulted in grave economic difficulties as people struggle to protect their welfare.

It is hardly surprising that the coastal environment has suffered badly. Sewage treatment, for example, is absent or deficient in most coastal cities and human health has suffered. Cholera outbreaks have occurred in some places. These problems have harmed the tourist industry upon which many coastal economies depend. Spiritual health has also suffered as people lose confidence or become more selfish in their struggle for survival. Despite these challenges, many people have not lost their sense of responsibility. They question and challenge each development project, whether a new port, industrial plant or oil terminal, out of concern for the impact on their lives and on the lives of future generations.

The Black Sea itself has been the victim of the changes in the economy and lifestyle of the 160 million people living in its basin, some in landlocked countries thousands of kilometres from the sea. Industrialisation and intensification of agriculture, coupled with the excessive or inappropriate use of agrochemicals, has led to the pollution of many rivers leading to the sea. The over-fertilisation of the sea itself fundamentally changed the nature of its ecosystems, particularly those of the shallow North-Western shelf where a key bed of red algae, as large in area as The Netherlands, was destroyed by eutrophication. This led to the loss of many other species including fish that depended on it for nursery grounds. In the past three decades, the healthy Black Sea ecosystem has become extremely sick.

Fishery resources, already suffering the impact of pollution and other changes, buckled under the stress of overfishing. Exacerbating this situation was the arrival of a new alien species of a gelatinous organism, *Mnemiopsis*, (a comb-jelly) inadvertently carried in the ballast water of ships from the Eastern American seaboard. With no natural enemies, this organism flourished until it dominated the entire Black Sea. Now, the peoples of the Black Sea are faced with a difficult choice, to give the sickened ecosystem a chance to

recover on its own, or to intervene, for example by harvesting *Mnemiopsis* directly or by introducing a predator.

There is reason for hope that the Black Sea can recover. The depression of industrial and agricultural production during the current economic transition has relieved the environment of the pressure of pollution. The ecosystem has started to recover. Some improvement has been registered in fish stocks. There is good reason for hope. A little time has been granted to develop and implement new policies and laws and to improve environmental awareness and education, vital tools for transition.

How long will this window of opportunity last? The Black Sea is facing new threats: continued sewage pollution, new pressure from developers of beachside residences, and use as a superhighway for oil transport from the Caspian oil fields. The vital Bosphorus winds its way through Istanbul, carrying hundreds of ships every day and represents a major flash point for environmental security. The last Black Sea monk seal may have already perished. Clearly, there is no time to lose. We must act now.'

2. IMPORTANT COASTAL WETLANDS OF THE BLACK SEA

Information for this section was taken largely from Provirof, L. 1994. Conservation of Black Sea wetlands: a review and preliminary action plan based on national reports by L. Provirof. {et al} compiled by A.M. Wilson and M.E. Moser for International Waterfowl and Wetlands Research Bureau. Slimbridge: International Waterfowl and Wetlands Research Bureau. IWRB publication; 33

Wetlands are particularly important habitats along the Black Sea coast, unsurprisingly given that its drainage basin comprises an area 17 times as large as the Sea itself, and spread over 17 different nations. They form the transitional zone between the terrestrial drainage basin and the marine environment of the Black Sea. Wetlands are typically dynamic and highly productive ecosystems which support a unique diversity of flora and fauna.

Black Sea wetlands include habitats such as reed dominated marshes, forested riverine flood plains, inland lakes and lagoons, limans (a coastal lagoon with a salinity gradient), deltas, coastal lagoons and bays and associated mud and sand flats, as well as artificial wetlands such as fish ponds, rice paddies and salt ponds. These wetlands have adapted to various hydrological, nutrient and salinity regimes influenced by the extensive catchment basin and semi-enclosed sea. They provide a variety of critical functions which sustain both the people and the biodiversity of the region.

Individual wetland areas are numbered on the Black Sea map. Numbers in brackets after the area names refer to this map.

2.1 Bulgaria

The total area of natural wetlands (lakes and marshes) in Bulgaria today amounts to nearly 11,000 ha, mostly along the Danube and the Black Sea Coast, as opposed 200,000 ha at the beginning of this century. This tenfold reduction came about through a short-sighted domestic policy between 1944 and 1989 which resulted in the drainage of large wet areas along the Danube and in the interior of the country to support agricultural development. The many large and small dams (totalling 2,200km^2) built during this time cannot replace the biodiversity and biophysical functions of intact natural wetlands such as Straldzha, Belene, Karaboaz and Svishtov marshes. The adjacent marine areas are experiencing loss of biodiversity due to eutrophication, over fishing and introduced species, such as jellyfish.

Many years of study have shown that 29 existing wetlands (natural and reservoirs) are of international importance according to the Ramsar Convention's criteria (as adopted by the Conference of the Contracting Parties in 1990). Their total area amounts to 18,000 ha which comprises about 0.2% of the surface area of Bulgaria. The internationally important wetlands are geographically distributed in the Black Sea Coastal area (16 sites 10,473 ha, 57.7%), the Danube plain (6 sites 3,205 ha, 17.7%) and the interior of southern Bulgaria (7 sites 4,470 ha, 24.6%). A comprehensive overview of Bulgaria's wetlands is found in the 1994 National Action Plan for the Conservation of the Most Important Wetlands in Bulgaria (Ministry of Environment ,1993).

Lakes Durankulak (12) and Shabla (11)

The wetland complexes of Shabla and Durankulak are considered to be of international importance. These are brackish to freshwater lakes with some reedbeds; the latter is separated from the sea by a sand bar. This area also supports extensive sand beaches and high dunes, which are at present minimally influenced by tourism. There is a unique hyper-saline marsh south east of Shabla. The area provides critical winter habitats for a majority of the world population of the red-breasted goose *Branta ruficollis*.

The following areas are protected: Durankulak Lake has been protected as a Natural Monument since 1980 (360 ha total, 250 ha is open water), and is also a Ramsar site; it is surrounded by a 500-m buffer zone in which hunting and pesticides on arable lands are prohibited. Shabla Lake has been a protected site since 1979 covering 300 ha with 150 ha as open water, and includes a 500-m buffer zone along the coast; fishing, hunting and pesticides are prohibited.

Although these areas are protected by decree of the Ministry of Environment, there is no other legislation or mechanism for regulation or administration of their management and protection. They are in urgent need of effective conservation measures and management plans.

The lakes and surrounding lands are municipal property in the process of privatisation. They are valuable for fishing, especially carp *Cyprinus* sp.. There are 3 towns, 10 villages, 4 campsites and 1 Club-Med resort, with the whole area receiving few visitors. If large-scale, mass tourism were encouraged, the resulting infrastructure for people and recreation could damage the currently intact natural habitats, especially the wetlands, dunes and steppe areas. Industry is minimal although international companies are now investigating the possibility of oil production from Bulgaria's sea shelf which could have negative impacts on the coastal and marine habitats, if not effectively controlled.

The main agricultural use of the north coast area is grain production and sheep and cattle grazing. There is concern that privatisation of the land may cause problems for the internationally important red-breasted goose populations that winter in the area. There is also an increasing potential for conflict between geese and farmers, concerning crop damage. The waterbirds of Shabla and Durankulak lakes are becoming increasingly popular for international hunting concerns. All these factors could negatively affect the international importance of these wetlands for red-breasted geese.

Baltata (10)

This is a small flooded forest next to the Albena tourism resort, north of Varna. While 200 ha is strictly protected and 160 ha is a buffer zone, management of the reserve does not capture potential ecotourism opportunities. A road to the north has cut off the natural flooding regime and is changing the forest composition.

Kamchia (9)

This is a remnant riverine, flooded forest at the mouth of the River Kamchia, which was regularly flooded 3 5 years ago. Irrigation projects since the 1 980s have negatively affected the area causing improper water flow and drainage; saltwater intrusion and lowering the water level has changed the forest composition. The area is still known for its liana ('longos') ecosystem. This and Baltata are the only large flooded forests left in Bulgaria. The remaining flooded forest and longos area is the 842 ha Kamchia Biosphere Reserve with a surrounding agricultural buffer zone. A management plan and staff are needed.

Pomorie Lake (8)

This is an important hypersaline, coastal lagoon (850 ha) with saltpans that is presently unprotected. There is salt extraction, an abandoned fish and mariculture factory and nearby health resort marketing the Pomorie muds for medicinal purposes. Pollution has impacted the fishing, the muds and the birds which relied on food in the mud. Salt production is active, but is changing the character of the area. The area needs to be designated as an education/nature reserve and managed accordingly. The area has a very diverse avifauna, particularly during the breeding season.

Atanassovsko Lake (7)

This is a 1050 ha hypersaline complex of salt ponds and reedbeds with smaller settling pools for extraction surrounded by a freshwater canal. This area is threatened by pollution from the canal, erosion and deterioration of the dykes. This area is a Ramsar site and nature reserve, with a buffer zone. Over 250 bird species are found in this area including 12 globally threatened species. It is especially important as a migration staging area. There is an Ecological Station of the Institute of Ecology, Sofia, with a staff of two biologists. The area has a management plan, but it needs further implementation.

Burgas Lake (6)

This is a 2800 ha shallow brackish to freshwater area with shoreline reed beds near the city. Over 230 bird species have been recorded in this area. It is connected to the Black Sea with a sluice, which has allowed agricultural pollution to reach the sea. Land-impacts include fishing, hunting, agriculture and grazing. The lake is polluted from oil derivatives requiring mitigating actions. Only a small 75 ha reserve on the NW side is protected. A management plan is required, including measures to reduce pollution and stimulate ecotourism.

Mandra Lake (5)

This is a 1000-ha brackish, coastal area surrounded by meadows and marshes which has been turned into a reservoir with a remnant coastal lagoon and sea outlet. Over 240 bird species have been observed. The lake is used for fishing, hunting and irrigation land is unprotected. An adjacent brackish lagoon, Poda, is protected and managed by the Bulgarian Society for the Protection of Birds (BSPB). A proposed steel plant could be detrimental to the ecological character of the site. The entire complex protection status, management plans and implementation.

Ropotamo (4)

This reserve of 1000-ha, is a Ramsar site, managed by the Committee of Forests and has excellent visitor facilities with ecotourism potential. It has a surrounding buffer zone of 770 ha. Inland, the area is largely flooded forest with extensive lianas (longos) and a small boardwalk for viewing the many species of forest trees. There are extensive and high dunes, marshes and rocky shores along the coast. It was one of the first strict reserves in Bulgaria, established in 1940 and enlarged in 1956. There are threats from adjacent holiday village development and hunting in the forests. A management plan is needed for the site, as well as staff to implement it.

Stranga coast (3)

This is a relatively undisturbed area near the Turkish border between the Veleka and Rezovska Rivers. The estuary between the rivers is the old border, and therefore undisturbed to date. The area has many endemic and Bulgarian Red Data Book species of both Mediterranean and Asian origin. The coast has extensive lagoons, marshes, dunes and beaches. It presently has low human population, but is being speculated for coastal development. This unique area warrants protection status.

2.2 Georgia

Kolkheti Lowland : Tchuria (34), Nabada (35), Pichora-Paliastomi Marshes (36)

The Kolkheti lowlands hold the only significant Black Sea basin wetlands in Georgia. On both sides of the river Rioni there are important wetlands, especially the Tchuria, Nabada and Pichora-Paliastomi marshes. These total about 42,500 ha.

The area demonstrates elements both of a subtropical and temperate climate, receiving humid air masses from the Black Sea, since the main Caucasian range protects the Kolkheti area from the invasion of cold Arctic air masses from the north. The lowest and wettest parts of the Kolkheti lowland border on the Black Sea. The surface of the Kolkheti lowland is dominated by alluvial, alluvial-lake-marsh, alluvial- marine and marine soils. There is almost no gradient along the axial river Rioni. Therefore, natural drainage is slow and the formation of wetlands is active. Some coastal areas even lie 0.3 - 0.8 m below sea level. An important factor in the formation of wetlands along the coast of the Kolkheti lowlands has been the drop in land elevation relative to sea level, due to subsidence. There are coastal peat deposits between the mouths of the Supsa, Rioni, Khobi and Inguri rivers. The peat bogs of Imnati, Schowzchala, Nabada and Tschuria have a depth of up to 11 m and play a critical role as natural filters preventing nutrients from agriculture and other upstream activities from entering the Black Sea.

The Kolkheti lowlands have an extensive river network with different types of water supply, basin morphology and capacity. The rivers originating from the Caucasus are fed by snow and glacial melt; they have a spring-summer flood, and winter low-water levels. Rivers which originate on the south slope of the Greater Caucasus spurs and on the north slope of the Meskheti mountain range are supplied by snow, rain and underground water; they are characterised by spring floods and high water levels also in the autumn. Small rivers originate within the Kolkheti lowlands or in the hilly foothills of the Greater Caucasus spurs and Meskheti range and are supplied by rain and underground water. The rivers are extremely important to the wetlands of the Kolkheti lowlands, but due to the very low gradients, drainage is poor and the water floods the surrounding areas. This is particularly acute after heavy rainfall or when the sea floods the coastal areas after storms.

There are about 40 lakes on the Kolkheti lowland, of which the biggest is Paliastomi. This used to be a freshwater lake, but is now saline and less productive due to human interventions. Other wetland habitats include lagoons, estuaries, lakes between dunes, and oxbow lakes, which are particularly abundant on the south side of the river Rioni. Alluvial swamp, silt-marsh and peat bog soils are widely spread in the marshy part of the Kolkheti lowlands, these include wooded areas and grasslands. Large areas of the coastal parts of the Kolkheti lowlands have aquatic and marsh vegetation. At present, the greater part of the Kolkheti lowlands, except for the lowest areas, is cultivated. The Kolkheti lowlands are an important refuge for local fauna, particularly migratory waterbirds and mammals. Large concentrations of ducks and birds of prey assemble at Paliastomi Lake and other wetlands.

Presently only 500 ha (including the Lower Rioni and Lake Paliastomi) of the lowland is protected including 340 ha of forests and 157 ha of marshes. As such, the protected area is too small to maintain the high diversity and ecological functioning of the area. Major causes of degradation include upstrearn deforestation, heavy peat extraction, drainage and overfishing.

2.3 Romania

The total area of wetlands in Romania exceeds 6.2% of the total land area. The wetlands consist of: flowing waters, (over 118,000 km, including the inland river flood plains, Danube and Danube Delta flood plains, approx. 5%); natural lakes (over 2300, approx. 0.9%); artificial lakes (over 1500, including the fishponds, approx. 0.3 %); and the Black Sea shore (245 km, approx. 0.05%). In recent decades, the surface area of wetlands in Romania has decreased because of hydrotechnical and drainage works, especially in the inland river floodplains and also in the Danube floodplain and in the Danube Delta. The drainage works began between the world wars through the dams on the Bega, Somes, Crisuri and Dunare. This was

intensified after 1950. The most extensive post-war drainage is along the Danube valleys (lakes and marshes in south Oltenia, south Muntenia, Balta Lalomitei, Balra Brailei), in large areas of the Danube Delta (Pardina) and also in the western part of the country (Tisa Plain). Between 1976 and 1980, 24,625 km^2 of wetlands were drained. As a result many of the natural lakes from the Danube Delta have been turned into agricultural polders affecting the habitats of a large number of wetland species. Many new artificial lakes and reservoirs were created on the Danube River, (Portile de Fier I and 11), and on some internal rivers, (Arges, Olt, Bistrita, Lotru, lalomir.l, Sadu, Uarz.lvl, Raul Marc, Crisuri, Prut, etc.). Many artificial ponds have also been created for fish rearing. However, these artificial wetlands do not compensate for the functions that have been lost through the conversion of natural wetlands.

Danube Delta (16)

The Danube Delta is the second largest relatively intact wetland complex in Europe (after the Volga Delta), covering about 565,000 ha, including 442,000 ha in Romania and the rest in Ukraine. It is an extensive network of river tributaries, canals, lakes and reed swamps, as well as high ground forests, meadows, sandy grasslands and dunes, which interact to form a complex and unique mosaic of terrestrial and aquatic habitats, each supporting a rich flora and fauna. These habitats provide a high degree of water regulation and cleansing functions that, if lost, could have an irreversibly deleterious effect on the Black Sea. The Delta exhibits classic triangular formation with branching distributaries of the Danube River extending out from an apex to nearly 100 km in length and width before discharging into the Black Sea. The Danube river branches into three main courses from north to south. These are the Chilia, Sulina and Sf. Gheorghe, discharging 60%, 21% and 19% respectively of the Danube water at low flow months, and 72%, 11% and 17% at high flow months. The Delta has a temperate to continental climate, with local influences from extensive water surfaces and marsh vegetation, as well as strong north-easterly winds from the Black Sea and Ukraine. The Delta acts as a large-scale filter between the Danube River and the Black Sea.

The lake complex Razim-Sinoie has a peculiar position within the Danube Delta. It consists of several extensive lakes (former lagoons) surrounded by marshes and sandy dunes. The lakes are separated from the Black Sea by sandy belts and dunes. The closing of the two communications between these basins and the sea has produced a decrease of water salinity with effects upon local flora and fauna.

In spite of intense pressure from grazing, silviculture, hydrological alteration and agriculture, the Danube Delta still supports diverse and large populations of fish, birds and rare mammals. There are over 75 species of fish, most of which are freshwater, but many Black Sea species rely on the Delta for breeding and survival of juveniles. Sturgeon *Acipenser sturio* formerly spawned in the Delta, but no longer do so. The Delta supports important breeding, migrating and wintering bird populations (about 275 species, of which 175 are breeding species), including several globally threatened species, such as red-breasted goose *Branta ruficollis*, pygmy cormorant *Phalacrocorax pygmeus* and five percent of the world population of Dalmatian pelican *Pelecanus crispus*. In addition, half of the Palaearctic breeding population of the white pelican *Pelecanus onocrotalus* occurs in the delta. The Delta is an important refuge for the European mink *Mustela hatreola*, the wild cat *Felis sylvestris* and the European otter *Lutra lutra*. The Delta's unique complex of terrestrial and aquatic habitats supports a diversity of vegetation that is both biologically and economically significant. White willow *Salix alba* hardwoods line the river tributaries, while the coastal dune systems support ash-oak forests (*Fraxinus - Quercus*). The extensive reedbeds in the Delta's lakes are harvested for export throughout Europe.

The first dikes in the Danube Delta were built in 1950 to reclaim some reedbed polders that have since been utilised for fishing and reed harvesting. After the period of fishery development (1965-1975), the government started to consider the development of intensive agriculture, forestry and fisheries, planning to drain more then 160,000 ha. In 1989, this programme stopped, but 103,000 ha were already transformed into agricultural polders (approx. 49.6%), fish ponds (approx. 44.2%), and forestry polders (6.2%). Many short canals were created in this period, mainly to facilitate transport, but disturbing the hydrological regime, affecting the natural sedimentation process and the quality of water.

Most of the Danube Delta has been designated as a Biosphere Reserve, World Heritage Site and Ramsar Site. The Global Environment Facility (GEF) is funding a comprehensive project to implement obligations arising from the above designations in both Romania and Ukraine. The project includes institutional strengthening, protection and restoration measures, building of public awareness, and assistance to coordination with Ukraine.

Lake Tasaul (15)

This is an unprotected, slightly brackish lake (1830 ha) near Constanta that is supplied by the River Casimcea. It has barren shores and marshes. Human activities include fishing and an industrial plant in the south-eastern section. The lake is an important roosting and feeding site for migratory birds in the spring and autumn, but there is little ornithological data. Breeding species include little bittern *Ixobrychus minutus* and ferruginous duck *Aythya nyroca*.

Lake Siutghiol (14)

This was a marine lagoon but is now a freshwater lake (2100 ha) separated from the sea by a narrow sandbank, with reedbeds and intermittent sandy shores. It is near Constanta and has no protected status. The lake is important for passage migrants and over summering immature birds, but freezes in winter. Nearly one-half of the coastal area is dominated by holiday resorts and light industry, which disturb the wildlife in the summer months.

Lake Techirghio (13)

This was a coastal bay (1170 ha), but is now separated from the sea by a sandbar, although it still functions as a saline lake and does not freeze in the winter. It has barren shores with some marsh vegetation near freshwater streams. The muds from the lake bottom are used by nearby health resorts. A decrease in salinity has occurred due to irrigation in the surrounding areas. It is an important area for migratory and wintering birds, particularly black-necked grebe *Podiceps nigricollis*, but is unprotected.

2.4 Russia

Russia has several significant areas for wetland biodiversity in the Black Sea coastal zone, primarily the vast wetland complexes of the eastern Sea of Azov, and the Kerch Straits at the opening of the Sea of Azov and the Black Sea. Coastal areas of the Sea of Azov have been subject to extensive economic development, in particular fishing, aquaculture and agriculture collectively affecting the quality of this unique shallow 'inland' sea. These have lead to many negative changes in the marine and coastal biodiversity, and fisheries reproduction. Nonetheless significant wetland areas still remain. These are briefly described below:

The Don Delta (29)

This has a total area of 54,800 ha of which 46,200 ha is occupied by wetland habitats, and includes a system of channels of varying size and character, and salt lakes. In the last decade a number of commercial fish farms have been built in the Delta (with an area of 10,000 ha). The flora of the Delta is varied and includes 419 species, belonging to 245 genera and 68 families. They are found not only in the wetlands but also in other sections of the Delta. The vegetation of the wetlands is more diverse than that of the reservoirs and floodplain but the dominant species are the same. The delta is an important breeding site for mallard *Anas platyrhynchos*, coot *Fulica arra*, cormorant *Phalacrocorax carbo*, and grey heron *Ardea cinerea*.

This is the most polluted section of the Don river with nitrogen, phenols and pesticides all violating norm standards, and affecting both wildlife and human health. The character of the delta has also been affected by upstream hydrological works.

Floodplain wetlands in the Lower Don (33)

The area of wetlands in the Lower Don floodplain during the natural regime of the river flow (up until 1952) reached 300,000-330,000 ha, with an average of 170,000 ha as a result of extensive floods (more than 8 km3) during April/May. Temporary water bodies formed practically everywhere and remained until the autumn, while marshy water bodies formed in low lying places. However, as a result of major regulation works during the last 50 years, the floodplain was completely flooded only in 1963, 1979, 1981 and 1994, and partially flooded another 6 times. The wetlands have become extremely limited in the period between flooding. They have the same vegetation as the reservoirs in the Manych system.

The Manych system of reservoirs

These wetlands cover 2000 km^2, and were formed between 1933 and 1941 when the left tributary of the Don, the River Manych, was closed off with a succession of dams. As a result, the small flat-bottomed valleys and floodplain were flooded. The resultant reservoirs have a sharply defined structure: open water surface (more than 2 m in depth) and a shallow area (less than 2 m in depth) with beds of vegetation. With the reservoirs are included a number of saline lakes, the biggest of which is Lake Gudilo. As a result the hydrochemical composition of the waters in these reservoirs varies considerably. Territorially the reservoirs are distributed within the Rostov Oblast and the Kalmykia Autonomous Republic. Their description is given below, from the mouth of the former River Manych to its source:

Ust-Manych Reservoir

This is the most westerly of the reservoirs, and has an area of 7300 ha, with 3500 ha of shallows. It is 60.5 km long, and its width fluctuates from 1 km to 3 km; its maximum depth is 7 m. More than 30% of the area of the reservoir is overgrown with aquatic macrophytes. Along the edges of the reservoir is a 10-100 m belt of vegetation, while growth in the inlets may reach 100% of the area. Dominant plants are *Scirpus*, *Typha*, *Phragmites*, *Straliola aloides*, *Ceratophyllum demersum*, *Lemna*, *Pozamogeton*, *Myriophyllum* and *Chara*.

Vesselovskoye Reservoir

This has an area of 30,000 ha (including 8000 ha of shallows), is 92.3 km long, 1.5- 3.5 km wide with a maximum depth of 8.4 m. After the reservoir was created (in 1933) there was a large fluctuation in salinity. Subsequently, fresh water was drawn into the reservoir at first from the Tsimlyanskoye Reservoir and then from the Kuban Delta.

As a result of the change in salinity of the water there was also a change in the flora, especially the composition of the dominant species. At present the composition of the dominant flora is identical to that of the Ust-Manych Reservoir, with an extensive littoral belt of reeds. The reservoir is an important breeding site for coot *Fulica atra*, mallard *Anas platyrhynchos*, red-crested pochard *Netta rufina*, spoonbill *Platalea leucorodia*, purple heron *Ardea purpurea*, and grey heron *Ardea cinerea*. It is an important staging area for white-fronted geese *Anser albifrons*, red-breasted goose *Branta ruficollis*, and dabbling ducks.

Proletarskoye and Gudilo Reservoir

This is situated in Rostov Oblast and Kalmykia. It is 81,000 ha in area and 190 km long. At its widest it is 13 km, with a maximum depth of 5.5 m. As regards its hydyrological and hydro- chemical characteristics it can be divided into 3 sections: freshwater (5000 ha in area), brackish (21,000 ha) and saline (55,000 ha). The latter includes Lake Gudilo and the salt lakes. The whole area is a state reserve.

Proletarskoye Reservoir has *the same vegetation as the other reservoirs in the system. However, Phragmites, Typha* and *Scirpus* do not exceed 5-7% of the vegetation, whereas the submerged aquatic vegetation, especially *Pommogeton*, develop practically over the whole water body. The vegetation in Lake Gudilo is especially poor. The area supports large numbers of breeding greater black-headed gull *Larus ichthyaetus*, herring gull *Lanes argentatus*, black-headed gull *Larus ridibundus*, spoonbill *Platalea leucorodia*, gadwall *Anas strepera*, red-crested pochard *Netta rufina*, Dalmatian pelican *Pelecanils crispus*, and white pelican *Pelecanus onocrotalus*.

Limans in the Sea of Azov (Jejskij: 30; Bejsugskij: 31)

The two main coastal lagoons (limans) in the Russian part of the Sea of Azov are Jejski; and Bejsugskij Limans. They are characterised by a changing salinity from fresh water where the rivers (with the same name) empty into them, to corresponding marine salinity (Jejski - 5-7‰, Bejsugskij - 13‰) in the channels which connect them to the sea. The change in salinity determines the composition of the flora and fauna of the limans. The fore delta sections of the lagoons have a typical floristic composition, while in the saline sections there is poor marine vegetation.

There are many wetlands on the floodplains inland of the two lagoons. Most
frequently they are low lying marshy areas largely overgrown with *Phragmites*, *Typha* and *Scirpus*. They differ considerably in size, from several hundred to several thousand hectares in area.

Kuban delta (32)

An extensive area of wetlands occurs here, including a system of fore delta, salt lakes, lakes and channels which covers the region from Primorsko-Achtarsk to the town of Tamryuka along the coast of the Sea of Azov and as far as the place where the Kuban's largest channel, the Protoki, divides from the river. All these wetlands are fed by water from the Kuban River. The different salt lake systems have different hydrological and hydrochemical characteristics depending on their water source, depth and link v. ith the sea. The area of the Delta salt lakes in the 1 930s was up to 300,000 ha; then, under the influence of economic activity, it decreased considerably (190 000 ha including 87,000 ha of fore delta zone in 1969; 157,600 ha including 7i,900 ha flood plain zone in the mid-1970s). As a result of the development of rice growing and massive irrigation schemes in the Kuban Delta a significant number of the salt lakes were opened up to rice cultivation, and water from the rice fields began to collect in some groups of salt lakes. The run-offs contained large quantities of fertilisers and harmful chemicals used in rice cultivation. This caused significant eutrophication and transformation of the salt lakes' ecological systems. Part of this area is protected by state sanctuaries (zapovedniks). The delta is extremely important for nesting waterbirds (e.g. herons, dabbling and diving ducks, Dalmatian pelican *Pelecanus crispus*, *spoonbill Platalea leucorodia*, glossy ibis *Plegadis falcinellus*, gulls etc.). It is also an important staging, moulting and wintering area for waterbirds, particularly ducks and white-fronted goose *Anser albifrons*. Up to 1,000,000 ducks occur during the moulting period.

Kiziltashski lagoon complex (41)

In the Black Sea basin in Russia, wetlands include the group of Kiziltashski Lagoons which include the Bugazski, Tsokur, Kiziltashski and Vityazyevski Lagoons. Their total area is 31,300 ha. These salt lakes are characterised by significant vegetation growth and high salinity (22-80 ‰).

Turkey

Turkey's Black Sea coast is ca 1,800 km long. Only six wetlands are found on this part of the Black Sea coast (from west to east): i) Igneada Saka Longozu, ii) Terkos Golu, iii) Sakarya Delta, iv) Sankum Golu, v) Kizilirmak Delta and vi) Yesilirmak Delta. Four of these sites (ii, iv, v, vi) are listed as Turkish Important Bird Areas and also occur in the Shadow List of Ramsar sites (ICBP/IWRB 1990).

Igneada Saka Longozu (2)

This is a very well preserved natural area near the Bulgarian border. It consists of extensive areas of flooded forests, several small lakes, a river delta and large intact dune systems. The site is a Nature Reserve and probably meets Turkish Important Bird Areas criteria. Animal husbandry Is the main human activity in the region. Long-term threats include tourist developments and the construction of a coastal highway right through the site.

Terkos Cölü (1)

This is an area of about 5850 ha, with a 2500 ha lagoon near Istanbul (12 million inhabitants). The lake was originally a Black Sea bay but is now connected only by a small channel; therefore the salinity is very low. There are some reedbeds around the shore. Large dunes are found between the lake and sea with some woodland scrub comprising an area of 3350 ha. The lake is one of the main water sources for Istanbul. The lake is filling up rapidly with sand that blows in from the sea, and urban pollution is probably a problem. Efforts to stop the infilling included dune reforestation. Thousands of birds pass over the area twice a year, as the site lies on a major migration route, especially for raptors and storks. Yet the ornithological importance of the site is known to have declined considerably in recent years (Osprey *Pandion haliaetus* used to breed until 1984), mainly due to increased disturbance. Hunting pressure is immense, due to its proximity to Istanbul. The area is unprotected.

The Sakarya Delta (40)

This wetland is formed by the second longest river in Turkey, and has apparently lost its importance for birds and other wildlife during the last 25 years. Current ornithological importance is unknown, but deemed to be little. Two main lakes remain: one lake (ca 1800 ha) is situated near the sea, whilst Akgol (ca 350 ha) lies 12 km inland. Akgol is a freshwater lake also formed by the river and holds small numbers of waterbirds in winter.

Sarikum Gölü (39)

This is a small 1000-ha lagoon with flooded forests and dunes in the surroundings; it is situated at the northernmost tip of Turkey, near Sinop. It is a Nature Reserve and faces no major threat. The area is not of major ornithological importance (the 100,000 waterbirds mentioned in the IBA inventory is now considered to be erroneous).

Kizilirmak Delta (38)

This 50,000 ha wetland is the most important and largest wetland on the Turkish Black Sea coast, and one of the most significant in Turkey. It comprises 8,000 ha of natural areas, consisting of lakes, lagoons, large reedbeds (*Phragmites* and *Scirpus*), wet meadows, flooded forests and dunes. Between the lakes and the sea is a coastal forest of 1400 ha that is an excellent breeding habitat for raptors. Over 310 bird species have

been recorded so far. Agriculture is practised throughout the delta, whereas fishery, animal husbandry and reed-cutting are important sources of income for the people living near the wetland itself. The delta is seriously threatened by large irrigation and drainage projects, tourist development and forest and dune destruction. The Turkish Society for the Protection of Nature (DHKD) has run a wetland conservation project in the delta since July 1992, and the Turkish Ministry of Environment started a similar project later. In April 1993 the Turkish Ministry of Environment and DHKD signed a protocol that formalises the cooperation of the two parties with regards to the conservation of the Kizilirmak Delta. About 3000 ha has been designated as a hunting reserve by the Ministry of Forestry.

Yesilirmak Delta (37)

This used to be the largest delta on the Black Sea coast of Turkey, covering 60,000 ha. It was a large alluvial plain of the River Yesilirmak with a series of lakes and coastal lagoons. The area has been largely drained and converted into agricultural land during the last two decades, resulting in a decrease in size of the delta as a functioning wetland. Only one lake remains today, of which the ornithological importance is unknown but assumed to be only a fraction of its former importance. A hunting reserve has been created at Simenlik Golu.

2.5 Ukraine

Ukraine stretches more than 1300 km from east to west and approximately 900 km from south to north. It occupies a territory of 604,000 km^2. The length of its borders is 6500 km including 1050 km of seashore. The country is rich in wetlands, including rivers, lakes, ponds, reservoirs, limans, saline lakes, marshes, peat bogs, flood plains and swamp forests. Approximately 5.3% of the whole territory is covered by wetlands, of which 3.8% is wet meadow. Lakes comprise 2.3 km^2 of freshwater, the marshes 30 km^2 and the saline lagoons 8.6 km^2.

There are 22,000 rivers with a total length of approximately 170,000 km. The majority of them belong to the Black Sea catchment. The Danube is the second largest river in the Mediterranean/Black Sea Basin after the Nile. Ukraine has only a small section of this river at the boundary with Romania. Annually, the Danube obtains 5.7 km^3 of water from its 64,000 km^2 Ukrainian catchment. The Dniestr has a catchment of 72,100 km^2 in Ukraine, is 1352 km long and brings 8.7 km^3 of freshwater every year to the Black Sea. The Dniepr has the largest catchment area in Ukraine and a length of 981 km. It is the third largest river in the Mediterranean/ Black Sea Basin, and supplies the Black Sea with 52.4 km^3 of fresh water from an area of 504,000 km^2 annually. Siverski Donets has a 54,900-km^2 catchment area in the Ukraine and collects 5.1 km^3 of freshwater annually. The South Bug collects 2.9 km^3 of water over an area of 63,700 km^2 in SW Ukraine. The West Bug is the only river that takes water to the Baltic Sea from a catchment area of 10,000 km^2 in Ukraine. More than 1000 reservoirs were built in order to regulate the flow of Ukrainian rivers. Six of the largest are on the Dniepr river: Kiev (922 km^2), Kanev (582 km^2), Kremenchuk (2252 km^2), Dniprodzerzhinsk (567 km^2), Dniprovske (410 km^2) and Kakhov (2155 km^2). The total water storage of these reservoirs is 55.1 km^3. In addition, nearly 28,000 ponds and 7 large canals have been built.

Along the Ukrainian coast of the Black Sea, there are three major river deltas and 14 bays and lagoons. These have undergone major transformations in recent decades due to large scale drainage works, improvement of irrigation schemes, diversion of water. Nevertheless, the region is still rich in wetlands with large natural areas which support many species. In the adjacent marine areas, the shallow bays have the highest biodiversity, especially the Sivash, Tendrovski, Dzharcylgach and Karkinitski Bays.

The following is a brief description of the main coastal wetlands in Ukraine, going from west to east and includes Crimea and the Sea of Azov:

Danube Delta (16)

This wetland is shared with Romania, and therefore part of the second largest (565,000 ha) relatively intact wetland complex in Europe (after the Volga Delta), including about 150,000 ha in Ukraine. It has alluvial islands which have dense reedheds and *Salix alba* woodland, as well as an extensive coastal zone on the Black Sea with shallow open bays that are separated from the sea by low sand-spits. The Ukrainian part of the delta contains several large lakes that are not found in the Romanian portion, and the delta estuary of the Kilia (also called Chilia) river is the main marine deltaic part of the entire Danube Delta, where new marsh areas and coastal dunes are being formed.
During this century, there has been intense pressure from grazing, silviculture, hydrological and navigational alteration, agriculture, fishing, hunting and trapping and upstream pollution, which has severely impacted the once diverse and large populations of fish and birds as well as rare mammals. Nevertheless, there are over 75 species offish belonging to 22 families, most of which are freshwater, but many Black Sea species rely on the Delta for breeding and survival of juveniles. Of the total of 410 bird species found in Ukraine, 280 live in the Delta at various times of the year. Together with the Romanian section, the Delta is visited by the majority of the world population of red breasted goose *Branta ruficollis*, pygmy cormorant *Phalacrocorax pygmeus*, half of the Palaearctic breeding population of the white pelican *Pelecanus onocrotalus*, 25 % of the Western Palearctic population of spoonbills *Platalea leucorodia*, and five percent of the world population of Dalmatian pelican *Pelecanus crispus*. From 50-100,000 waterbirds winter annually.

The Delta is an important refuge for the European mink *Mustela lutreola*, the wild cat *Felis sylvestris*, and the European otter *Lutra lutra*.

Only 14,851 ha has so far been given protected status; this area is called the Dounaiski Plavni Reserve. The Reserve Authority has very modest funds and staffing, and most activity has been devoted to research rather than management. Commercial fishing, the conversion of natural areas to rice fields, and pollution from Vilkovo are the main problems. It was a Ramsar site before Ukraine became independent, and may soon be designated as a Biosphere Reserve. It is proposed to enlarge the reserve substantially, including core and buffer areas. This wetland is now the subject of a US$ 1.5 million grant from the Global Environment Facility, which will finance institutional strengthening, protection, management and restoration initiatives, the building of public awareness, coordination with Romania, and the establishment of an Endowment.

Dniestr Delta

This wetland comprises the delta and coastal lakes, including salt-lakes, canals and reservoirs. The Dniestr Delta is 220km^2 and the lakes are 200,000 km^2 in area. A small area of 7620 ha is protected as a temporary wildlife reserve but the Delta has been proposed for a reserve establishment (co-signed by the Odessa authorities and local community members). Breeding bird species include up to 1500 pairs of glossy ibis *Plegadis falcinellus*, Shelduck *Tadorna tadorna*, cormorants, herons, mute swan *Cygnus olor*, greylag goose *Anser anser* and ducks. Although *Phragmites* and *Typha* dominate, more than 700 species of wetland plants have been recorded. Rare species include *Trapa natans*, *Salvi1lia natans* and *Nymphaea alba*. Threats include wetland drainage for agriculture, dam construction, sand extraction, urbanisation, overfishing and hunting, and pollution from the port of Belgorod-Dnestrovski. It is an important for wintering waterbirds, and meets the criteria for designation under the Ramsar Convention.

Tiliguliski Liman (18)

This is a shallow lagoon (12,000 ha) with reedbeds and sandy islands. Breeding species include avocet *Recurvirostra azvosetta* (200 pairs) and up to 80,000 wintering waterbirds. This area has been included in the Ramsar Shadow list, and 520 ha has been made a temporary reserve for breeding birds. Clay, extracted from the lagoon is used for mud baths. The main problems are summer house building and organic pollution.

Lower Dniepr, Golayal Pristan (20)

This region comprises extensive riverine and coastal channels including reedbeds and marshy islands. Breeding birds include hundreds of grebes and thousands of Ciconiiformes. It is a passage site for thousands of greylag geese *Anser anser* and dabbling ducks. It is unprotected, but is proposed for reserve status.

Tendrovski and Yagorlitski Bays (19)

These together comprise 113,200 ha and include island areas of the Black Sea Reserve (Chernormorski) and the protected islands and water area of Yagorlitski/ Tendrovksi totalling 39,748 ha. These large sea bays are separated from the sea by a narrow peninsula, resulting in islands with halophytic vegetation, small lakes and temporary water bodies. *Phragmites*, *Typha* and *Scirpus* typify the emergent lake vegetation, while the bays are surrounded by salt-meadow/steppe and forest steppe. The islands are important for breeding gulls and terns, and about 500,000 waterbirds use both lagoons. The hydrological balance has been changed due to the release of fresh water from irrigation and rice-growing, which has decreased the productivity of the ecosystem. Commercial fishing disturbs the waterbirds during the breeding season. These bays were designated as Ramsar sites before Ukraine became Independent, and have been State Reserves since 1927.
Dzharylgach Bay

This Black Sea bay includes numerous small islands and extensive coastal shallows. There is intense recreational tourism pressure on the islands and seasonal protection is needed. Breeding birds include hundreds of ducks and thousands of gulls. Hundreds of thousands of waterbirds occur during migration and include the red breased goose.

Karkinitski Bay (22)

This wetland comprises 37,300 ha and is part of the Crimea Reserve described below, with 27,646 ha. of land area protected, extending 1 km into the sea. The head of Karkinitski Bay has many sandy spits, shallow bays and salt lakes adjacent to virgin steppe and agricultural land. Vehicles are destroying the steppe habitats. There are small salt-marsh islands, some barren and others covered in reeds that are now declining in area due to erosion. The saltwater shallows have rich submerged vegetation, dominated by *Characeae* and *Zostera*, but their productivity has been adversely affected by freshwater inputs and pollution from fish farming and rice growing in the area. Bird species are declining due to intense hunting, agriculture, sheep grazing, tourism and changes in the macrophyte populations. This site was a Ramsar site before Ukraine became independent, but it is regarded as poorly protected with no control on poaching.

Sivash Lagoon (23)

The Sivash is the largest united lagoon system in Europe, covering about 2500 km2 of open water, mudflats and saltmarshes. The lagoons are non-tidal and not influenced by large river systems. Most are shallow and brackish with indented shoreline, spits and islands, including dominant habitats of saltmarsh and steppe with halophytic vegetation and extensive reedbeds. There is a gradual change in salinity from east (brackish) to west (hypersaline). The area is largely isolated from the Sea of Azov by a low spit, resulting in varying water levels and evaporation. Water flow is also altered by a dam and from agriculture development for rice and fish ponds, which have all increased the freshwater content. The economic activity is minimal except for industrial fishing, salt extraction and overfishing by recreation. The virgin steppe is often ploughed, used for hay and grazed by sheep. There are numerous species of breeding birds. In spring, the Bay is important for waterbirds, especially ducks red-breasted goose *Branta ruficollis* and waders (0.5 million including important populations of dunlin *Calidris alpina* and broad-billed sandpiper *Limicola falcinellus*). Part of the area is protected as the Azov-Sivash National Park (45,700 ha) with less than 1% having protection as a strict nature or hunting reserve. An important priority must be to extend these protected areas. This site was designated as a Ramsar site until Ukraine became independent.

Molochni Liman (24)

This is a salt lake protected as a hydrological temporary reserve. It is separated from the Sea of Azov by a narrow spit with extensive shallows and islands. The irregular water supply from a canal leads to seasonal salinity fluctuations which destroys the vegetation. The upper part of the lake is polluted from the nearby town of Melitopol. It is a breeding site for grebes, waders, gulls and terns, and a migration site for many waterbirds. This site meets the criteria of the Ramsar Convention. Part of the site (1900 ha) has been designated as a temporary reserve.

Obitochnaya (25), Berdyansk (26), Belosarayskaya (27) and Krivaya Peninsulas (28)

These are four small peninsulas in the Sea of Azov which each have associated bays, coastal shallows, and low bare islands. They are breeding sites for ducks, waders, gulls, terns and passage and wintering waterfowl. The Krivaya Peninsula has a 154 ha reserve but is experiencing intense recreational pressure and fishpond impacts. It has the largest colony of black-winged stilt *Himantopus*
Himantopus in Europe. Belosarayskaya is also considered to be a reserve of 616 ha. All four of these areas meet the criteria of the Ramsar Convention.

3 IMPORTANT BIRD AREAS ALONG THE BLACK SEA COAST.

Individual bird areas are numbered on the Black Sea map. Numbers in brackets after the area names refer to this map.

3.1 Bulgaria

The main wetlands lie along the Danube and Black Sea Coast. Many of Bulgaria's marshland and coastal lakes have been drained or modified since 19944; mainly for agriculture , but also because of development for tourism and industry. The north-eastern part of the Black Sea has some remnant steppe, and is similar to the adjacent Dobrogea of Romania. The remaining marshes and lakes along the Danube and the Black Sea coastal wetland are particularly important for breeding.

Lake Sharkovo Reservoir (Yambol) (6)

42°05' N, 26°50'E. 380 ha.

Unprotected, although proposed Natural Monument. A water-storage reservoir, surrounded by low hills with arable land (mainly winter wheat). Human activities include hunting and fishing. Wintering species include *Phalacrocorax pygmeus, Egretta alba*, and *Anser albifrons.*

Lake Mandra (Burgas) (4)

42°25'N, 27°28'E. 1000 ha.

Unprotected, although plans to protect southern and eastern parts. A brackish coastal lake which has been turned into a water reservoir (now fed only by inflowing rivers) with a remnant, brackish coastal lagoon (Uzun-geren) with an outlet to the sea; surrounded by wet meadows, marshes, and hills. The lake is used for fishing, hunting and irrigation. A steel-manufacturing plant, currently under construction, is likely to be detrimental to the site.
Breeding species include Phalacrocorax pygmeus, Nycticorax nycticorax, Ardeola ralloides, Egretta grazetta, E. alba (occasionally), *Ardea purpurea, Plegadis falcinellus*, *Platalea leucorodia* (10-35 points), *Himantopus himantopus*, *Recuvirostra avosetta*, *Sterna albifrons,* and *S. hirundo. Pelecanus onocrotalus* and *P. crispus* formerly bred. Wintering species include *Phalacrocorax pygmeus* (av. 180*), Pelecanus onocrotalus*, *P. crispus*, *Egretta alba* (av. 16), *Anser albifrons* (av.1250), and *Oxyura leucocephala* (av.5) (total figures for waterfowl: av.20,300).

Shabla-Ezeretz complex (Tolbukhin). (12)

43°30'N, 28°35'E 300ha.

Unprotected although hunting prohibited (403ha). Two lakes connected by an artificial canal and separated for the Black sea by a sandbar, both with indented shorelines covered with *Phragmites*. There is a hyper-saline lake (Shablenska tuzla:19 ha) just south of this complex. Hunting and fishing remain a problem at the site. Breeding species include *Tadorna ferruginea* (10 pairs) and *Aythya nyroca.* Very important for wintering waterfowl, with *Cygnus olor (av.110), Anser albifrons (av.30, 600), Branta ruficollis*(av. 7600, max 17,000+). Other wintering species include *Gavia artica*, *Phalacrocorax pygmeus*, *Egretta alba* and *Mergus albellus*.

Lake Burgas or Vaya (Burgas) (5)

42°30'N, 27°20'E. 2800ha.

Unprotected, except for Protected Landscape (70 ha). A brackish to freshwater lake situated close to Burgas, connected to the Black Sea by a canal with a sluice. There is a belt of reeds along the northern, western, and southern shores. Land-uses include intensive fishing and controlled hunting, with agriculture and stock-grazing in the surrounding area. The lake is polluted by oil derivatives. Breeding species include *Gavia artica*, *Phalacrocorax pygmeus*, *Nycticorax nycticorax*, *Ardeola ralloides*, *Egretta garsetta*, *Ardea purpurea*, *Plegadis falcinellys* (100-200 pairs), *Aythya nyroca*, ,*Himantopus himantopus*, *Recurvirostra avosetta*, *Glareola pratincola*, and *Sterna hirundo*. Wintering species include *Phalacrocorax pygmeus*, *Pelecanus crispus* (occasionally), and *Egretta alba*.

Lake Durankulak (Tolbukhin) (13)

43°38'N, 28°30'E 350 ha Ramsar site.

Protected landscape. A brackish to freshwater coastal lake with some reedbeds. Human activities are few. Breeding species include *Botaurus stellaris*, *Ixobrychus minutus*, Anser anser, *Circus areruginous*, and *Glareola pratincola*. Important for wintering *Branta rufisollis* (av. 400; max. 1710). Other wintering species include *Gavis arctica*, *Phalacrocorax pygmeus*, *Cygnus cygnus*, *Anser albifrons* (av. 17,000; max 890), and *Mergus albellus,* with and average of 27,000 wintering swans, geese and ducks.

Atanasovko Ezero (Atanassovo Lake) (Burgas) (7)

42°30'N, 27°30'E 1690 ha Ramsar Site (1050 ha).

A complex of saltpans with smaller settling pools for salt extraction, surrounded by a freshwater canal (which is wide in places) with reedbeds. There is salt extraction, but fishing and grazing are prohibited. The site is threatened by pollution of the canal (by industry to the north of the Reserve and by pig farms), erosion, and general deterioration of the dykes (on which many of the birds breed). The breeding colonies are also accessible to mammalian predators.
*Breeding species (breeding data mainly from 1*977) include Ixobrychus minitus (many pairs), Ardea purpurea (2+pairs), Anas acuta, Aythya nyroca (2+ pairs), *Circus aeruginosus* (3 pairs), *Himantopus* (22 pairs), *Recurvorostra avosetta (725 pairs), Burhinus oedicnemus, Glareola pratincola (5 pairs),* Gelochelidon nilotica (35 pairs; the only Bulgarian breeding locality), *Sterna sandvicensis*, *S.Hirundo* (90 pairs), *S. albifrons* (30+ pairs), and probably *Todorna ferugineam*, *Porzana prozana*, *P. parv*a, and *Chlidonias niger*. An extremely important bottleneck site for migratory birds (averages for seasonal counts over five autumns unless stated) with *Phalacroc*orax nigra (2860), *C.ciconia (135,800), Platalea leucorodia (autumn max 200), Pernis apivorus (3680), Circaetus gallicu*s (400), *Aquila pomarina* (5680), *Grus grus* (1790), *Recurvirostra avosetta* (autumn max, 7570), *Larus melanocephalus* (aut*umn max. 410000, L. genei (autumn max . 7570), Larus melanocephalus (autumn max. 4100),* L. genei (autumn max. 1385), and *Gelochelidon nilotica* (1390).

Yatata Reservoir (Varna) (10)

43°11'N, 27°42'E 154 ha

Natural Monument. A former sedimentation reservoir near to Beloslav now covered with *Typha latifolia* and other emergent vegetation, and with areas of open water. Formerly connected with the Varna-Devnya Canal, and a reconnection with the canal has been recommended. Breeding species include *Himantopus himantopus* (10pairs) and *Recurvorostra avosetta* (20 pairs). Consideration numbers of *Pelecanus onocrotalus* and *Cinonia spp.* Occur on spring and autumn passage. Other species include *Todorna*

ferruginea, *Pernis apivorus*, *Milcus migrans*, *Circeatus gallicus*, *Circus aeruginosus*, *C.cyaneus*, *C.pygargus*, *Aquila polorina*, and *Hieraetus pennatus*.

Alepu Ezero (Buragas). (3)

42°22'N, 27°43'E 14 ha

A brackish coastal marsh with *Phragmites* and *Typha* beds and two areas of open water, alongside a sandy beach o the Black Sea coast. There is the need for a buffer zone to separate a nearby tourist complex form the lake. *Breeding* species include *Ixobrychus minutus*, *Ardea purpurea, and Aythya nyroca.* During spring and autumn *Phalacrocorax pygmeus* (c.50), *Pelecanus onocrotalus* (thousands), and *P.Crispus* (a few) occur.

Cape Kaliakra (Varan). (11)

43°20'N, 23°60 'E 688 ha.

Nature Reserve. A coastal headland with vertical limestone cliffs and many caves, with relict steppe vegetation inland.Breeding species inlcude *Phalcrocorax aristotelis desmarestii* and *Oenathe pleschanka* and possibly *Neophron percnopterus* and *Bubo bubo*. The cape acts as a bottleneck for birds on autumn passage with many *Phalacrocorax pygmeus*, *Pelecanus onocrotalus*, *Ciconia nigra*, *C.cicnonia*, *Pernis apivorus*, *Milvus migrans*, *Circus aeruginosus, c. cyaneus, C. pygargus, Accipiter brevipes, Butep rufinus, Aquila pomarina, and Hieraaetus pennatus pygargus, Accipiter brevipes, Buteo rufinus, Aquila pomarina, and Hieraarus pennarus occuring.* Wintering species include *reficollis* (hundreds) and *Otis tarda*.(30+).

Cape Emine (Burgas) (8)

42°20'N, 27°54'E 100 ha

Unprotected. A coastal headland and the easternmost point of the Star Planina mountains. Rocky coast with vertical cliffs abd xerophytic vegetation and sparse stands of secondary *Quercus* Sp. A very important bottleneck site with very large numbers oaf birds occuring during autumn passage, including *Pelecanus onocrotalus* (c.10,000*), Ciconia* (c.1500), *C.ciconia* (100,000+), Pernis apivorus (c.2000), *Milvus migrans* (c.2000), *Circaetus gallicus* (c.3000, *C. aeruginosus* (1000, *Aquila pomarina* c.4000), and *Grus grus* (c.50000).

Kamtchia Biosphere Reserve (Varna) (9)

42°02'N, 27°50'E 842 ha

Nature Reserve. An area of remnant riverine forest at the mouth of the River Kamtchia, dominated by mature *Fraximus oxyphylla* and *Quercus pedunculiflora*, with marshes along the river bank. All economic activities are prohibited, but drainage and forestry plans have been proposed in the past. Breeding species include *Egretta garsetta* (a small colony), *Ciconia nigra*, and *Ficedula semitorquata.*

3.2 Romania

There are many wetlands along the Danube (Dunãrea), which forms the southern border of the country and then flows north entering the Black sea via a huge delta (one of the least-developed major deltas in Europe).

Extensive drainage has been carried our, mainly in the Danube valley, since 1945. For example the extensive area of lakes and marshes between Braila and Hirsova, and the string of lakes between Hirsoba and Calarasi have been drained and converted to farmland. Furthermore, drainage has significantly reduced the size of Lake Suhai (Balta Suhaia) and lake Brates (Lacul Brates) near Galati. Lake Greaca (balta Greaca) and Lake Potelu (Balta Potelu) have now disappeared, and Lake Calarasi (Lacul Calarasi)has been converted to fish-ponds. In addition, a major programme to develop the Danube Delta is currently being implemented which aims to reclaim c.97,000 ha of the Delta, mainly for agriculture. By 1987, some 50,000 ha of agriculture land had been created. The loss of such wetland habitats has been partly compensated for by the construction of water reservoirs and fish-ponds. Theses newly created areas are important for passage of migrants and winter visitors, but not as breeding habitats (although, owing to their silting and to the development of aquatic vegetation, several have become suitable for breeding birds).

Only a small portion of the (Danube) Delta is protected and much of it is threatened by a major reclamation programme. Of the other wetland sites included only two are protected. A number of lakes along the Danube, not listed in the inventory, are known to be ornithologically important including : Bistref, Suhaia, boianu, Calarasi, Bugeac (Girlita), Crapina, and Jijila.

Delta Dunarii (Danube Delta) (24) and Razelm-Sinoie complex (Tulcea Constanta) (23).

44°25'-45°28'N, 28°45'-29°40'E 442,000 ha

Biosphere Reserve (Rosca-Letea 18,145). Nature Reserves (Rosca-buhaiova-Hrecisca: 15,600 ha; Perisor-Zatoane-Sacalin: 15,400 ha; Periteasca-Gura Portitei:3900ha; Istria: 8000 ha; Popina: 90 ha; Saraturile:100 ha; Hasmacul Mare: 700 ha). The delta of the Danube (including Rivers Chilia, Sulina and Sfinty Gheorghe) and the Razelm-Sinoie complex (inlcuding Lakes Razelm, Sinoie, Zmeica, and Golovita). An extensive delta with numerous freshwater lakes interconnected by narrow channel with huge expanses of *Phragmites*, *Scirpus* and *Typha.*

Most of the reedbeds grow on a floating mass of decaying vegetation ('plaur'). Higher ground support stands of *Salix, Populus, Alnus, and Quercus.* The Razelm-Sinoie complex to the south consists of several large brackish lagoons separated from the sea by a sandbar. A major programme to develop the delta is currently being implemented. This involves the reclamation of c.97,000 ha of the Delta for irrigated agriculture crop of reed production , construction of fish-ponds and extension of forests. By 1987, some 50,000 ha of agricultural land had been created (with very poor agricultural production in places) and ecologically most important part of the delta (despite being considered totally unsuitable for agriculture by authorities both inside and outside Romania). Another project includes the re-routing of the River Sfintu-Gheorghe by cutting a straight canal through the numerous meanders, which will speed up the flow of water and radically alter the pattern of alluvial deposition.

Over 160 species of birds breed, the most important being (1986 population estimates):

Phalacrocoraz carbo sinensis (3000 pairs), *P. pygmeus* (2500 pairs; one of the most important sites in the world), *Pelecanus onocrotalus* (2500 pairs), *P. crispus* (estimated until recently at 150 pairs, perhaps now only 25-40 pairs), *Nycticorax nycticorax* (2100 pairs), *Cygnus olor* (500pairs), *Haliaeetus albicilla* (c.5pairs), *Circus aeruginosus* (300 + pairs), *Pandion halieatus* (3 pairs), *Falco cherrug* (1-2) pairs, *F. vespertinus* (150 pairs), *Sterna* and *vicensis* (1700 pairs*), S. hirundo* (20,000+ pairs), *Chlidonias hubridus* (20,000+ pairs), and *C. niger* (10,000-20,000 pairs). *Oxyura leucocephala* possibly still breeds. *Numenius tenuirostris* occurs on autumn passage (28 in 1971). In winter, huge numbers of *Anaridae* occur, including (counts from 191968 unless stated) *Anser albifrons* (500,000; 64,000-77,500 in1982), *A. Erythropus* (2 in 1982; other counts include max. 500), *Branta ruficollis* (25,000; 12,130 om 1982), Anas crecca (150,*000), A. platyrynchos 9200,000, A. nyroca 913,000), and Mergus albells (1500 in 1982). Haliaeetus* albicilla also occurs in winter (30-40 in 1969, but fewer since). Additional ornithological information is given for the following subsites.

Rosca-buhaiova-Hrecisca Nature Reserve. (Tulcea). (27)

45 22'N, 29°25'E. 15,600 ha.

Nature reserve and part of the Rosca-Letea Biosphere Reserve. Extensive reedbeds and marshes, several shallow lakes (Poliacova, Argintiu, and Rosca) and narrow channels bordered by Salix. Almost unaltered by man owing to shallow water which renders access difficult. Breeding species include *Phalacrocorax carbo sinensis*, *P. pygmeus*, *Pelecanus onocrotalus* (2500 pairs), *P. cripus* (c.25 pairs), *Botaurus stellaris*, *Ixobrychus minutus*, *Ardeola ralloides*, *Egretta alba*, *E. garzetta*, *A. purpurea*, *Plegadis falcinellus*, *Platalea leucorodia*, *Aythya nyroca*, *C. aeruginosus*, *porzana*, *P.parva*, *P.pusilla*, *Chlidonias hybridus*, *C. niger*, and *C.leucopterus*.

Perisor-Zatoane-Sacalin Nature Reserve (Tulcea) (22)

44 °50'N, 29°25'E 15,400 ha.

Nature Reserve. Lakes and ponds with wide reedbeds amongst parallel strips of sand dunes ('grinduri'). Sacalin Island is made up of alluvial deposits with sand dunes and small patches of reed and *Tamarix*. Sacalin Island id adversely affected by illegal grazing (with the animals destroying the eggs and chicks) and the basin between the island and the mainland is silting up. Breeding species are similar to *Rosca-Buhaiova-Hrecisca* (except *Pelecanus onocrotalus*) including *P.crispus* (0-20 pairs). Additional breeding species inlcude *Aquila pomarina*, *Grus grus*, (2-3 pairs), *Recurvirostra avosetta* (10-40 pairs), *Himantopus himantopus*, *Glareola pratincola*, *Tringa stagnatilis*, *Sterna sandviscensis* (1200-2500), *S. hirundo* (1000 pairs; 15,000 pairs in 1968-1970), and *S. albiforms* (100 pairs). Sacalin Island is an important site for passage migrants. *Haliaeetus albicilla* (2-6) occurs in winter.

Periteasca-Leahova-Gura Portitei Nature Reserve. (Tulcea) (21)

44°45'N; 29°05' E 3900 ha

Narrow sandy strips, reedbeds, marshes, ponds and shallow lakes, with an uninterrupted sandy strip along the coast . Fishing takes place, and there is a small tourist camp on the eastern edge. Breeding species are few, but include *Tadorna feruginea* (c.6 pairs on Popina Island) and several species of gulls and waders. An important feeding area for birds breeding in the delta and for migrants in spring and autumn. Large numbers f geese and ducks occur in autumn and winter (with important roosting and feeding areas near Sinoie and Sarinasuf villages) notably *Anser albifrons.(64,000-77,500), Branta ruficollis (max. 25,000).* And *Mergus albellus* (15,000).

Lacul Istria , Lacul Nuntasi and southern Lacul Sinoie (Constanta). (20)

44°33'N, 28°44'E. 8000ha

Unprotected except Istria Sanctuary. Three main lakes (and other small ponds) with mud and sand shores , surrounded by steppe and agricultural land. Istria has emergent freshwater vegetation including *Phragmites beds*, The surrounding land is used for farming and grazing , Istria is used as a fish-pond, and there is a small health resort on the western shore of Nuntasi. The intensification of grazing and the inflow of fresh water (form irrigation schemes) are adversely affecting the area.

Breeding species include *Botaurus stellaris* (6-8 pairs) *Ixobrychus minutus* (50-60 pairs), *Himantpus himantopus* (60 pairs), *Recurvirostra avosetta* (100 pairs). Important during spring and autumn passage with (seasonnal totals) *Pelecanus onocrotalus* (500 in spring; 2000 in autumn), *P. crispus* (320 in spring, 10 in autumn), *Egretta garzetta* (2000 in autumn), *Ciconia nigra* (10-15 in spring), *Plegadis falcinellus* (1000 in autumn), *Platalea leucorodia* (150 in spring; 300 in autumn), and *Aythys nyroca* (100 in spring).

Wintering species include *Gavia arctica* (50-100), *Cygnus cygnus* (2000), *Anser erythropus* (max. 500), *Branta ruficollis* (max. 5000), *Haliaeetus albicilla* (5-6) and *Falco peregrinus* (2-4 pairs).

Padurea letea (Letea Forest) (Tulcea). (26)

47°17'N, 29°33' E 5700 ha

Partly included in Rosca_Letea Biosphere Reserve. Partly a Nature Reserve (Hasmacul Mare: 700 ha) A forest consisting mainly of *Populus* and *Quercus* with many mature trees; belt of trees (2-10 km long and 300-500 wide) alternate with strips of steppe vegetation and sand dunes. Land-uses include agriculture, grazing, and forestry. Problems include the replacement of open areas by plantations. A detailed ornithological study is required.

Breeding species include *Pernis apivorus* (2-4 pairs), *Haliaeetys albicilla* (1 pair), *Circaetus gallicus* (1-2 pairs), *Falco cherrug* (1 pairs), Burhinus oedicnemus (4-6 pairs), Bubo Bubo (3-6 pairs), Caprimulgus europaeus (50 pairs), Coracias garrulus (20-30 pairs), Lanius collurio (150 pairs) and L. *minor* (120 pairs). Falco peregrinus (2-4) occurs in winter.

Padurea Niculitel-Badadag (Niculitel and Babadag Forest) (Tulcea). (25)

45°00'N, 28°25'E c. 10,000 ha

Unprotected. A hilly area (Niculitel Hills and Badadag Plateau) with deciduous woodland interspersed with grassland and steppe; the only forested area in the northern Dobrogea. There area extensive agricultural areas in the valleys, Land-uses include forestry, agriculture, grazing, and apiculture and there are some villages and roads. Forestry operations (felling and tree-planting) and cultivation of natural grasslands are having an adverse effect on the area.

Of particular importance for breeding raptors with *Circaetus gallicus* (8-12 pairs), *Accipiter brecipes*, *Buteo rufinus*, *Aquila heliaca* (4-6 pairs), although several species area declining and *Gyps fulvus* and Aegypius manchus no longer breed. There are isolated relict populations of *Dryocopus martius* and *Dendrocopos leucotos lilfordi*, whilst other breeding species include *Bubo bubo* (8--10 pairs), and Emberiza hortulana (c.1000 pairs). Aquila pomarina (200) occurs on autumn passage.

Lacul Tasaul (Constanta) (17)

44°21'N, 28°35'E 1830 ha

A large, slightly brackish lake, supplied by the river Casimcea with barren shores and some marshes in the north-western corner. Human activities include fishing. The south-eastern part of the lake if affected by the Navodari industrial plant.

There are little ornithological data and the breeding bird fauna has not been studied (but is likely to be poor). Breeding species documented in 1965 for roosting and feeding *Ixobrychus minutus* and *Aythya nyroca.* The lake is an important place for roosting and feeding passage migrants in spring and autumn. Passage species in autumn documented in 1970 included *Recurvirostra avosetta* (4-25), *Philomachus pugnax* (100-4000, Sterna caspia9220, *Chhlidonias niger* (35-130) and *C. leucopterus* (4-120. Wintering species area better known and counts have included *Branta reficolis* (4000), *Anser albifrons* (30000, and *Aythya ferina* (10,000).

Lacul Siutghiol (Constanta) (16)

44°16'N, 28°36'E 2100 ha

Unprotected. Formerly a marine lagoon now a freshwater lake separated from the sea by a narrow (200-500m) sandbank. The shore is float at the eastern edge abrupt at the western edge. There are narrow belts *of Phragmites*, interrupted by sandy shores. The water freezes in winter. About half of the shore-line is covered by villages and holiday resorts (included Marmaia holiday resort) and there is some industry. IN summer tourism and aquatic sports cause some disturbance.

Breeding species include *Ixobrychus minutus* and *Aythya nyroca*. The lake is particularly important for passage migrants and for oversummering immature birds. *Larus melanocephalus* (immatures) occur in summer, and passage species include *Egretta garzetta*, *Ciconia ciconia*, *Chlidonias hybridus*, *C. Noger*, and *C. leucpterus*. Wintering species include *Podiceps cristatus* (300), *P. nigricollis* (750, and *Aythya ferina* (2000).

Lacul Techirghiol (Constanta) (15)

44°01'N, 28°29'E 1170 ha.

Unprotected. Formerly a coastal bay, now separated form the sea by a 200m wide sandbar. A saline lake, not freezing in winter with abrupt and barren shores except for marsh vegetation in the vicinity of several freshwater streams. There are bathing resorts which use the mud from the lake bottom (for therapeutic purposes) on the northern and eastern shores, A decrease in salinity has been recorded at the lake in recent years because of irrigation in the surrounding areas.

Not important for breeding species except *Tadorna todorna* (6-8 pairs). Large numbers of *Podiceps nigicollis* (700-1000; max 5000-6000) and *Larus minutus* (1000-2000; max 21,000) occurin summer and early autumn. IN autumn an winter Oxyura leucocephala has been recorded (max. 218), together with many other migratory species.

Padurea Hagieni (Hagieni Forest) (Constanta) (14)

43°48'N,. 28°27'E 600ha.

Forest Reseve and Notures Reserve (208ha) The most important woodland area remaining in southern Dobrogea; mainly *Quercus* on undulating ground interspersed with numerous small clearings and patches of wet grassland. The replacement of open areas by plantation, introduction of feral *Phasianus chochicus* and irrigation of the surrounding land are adversely affecting the area. Particularly important for breeding and passage passerines, Breeding species *include Ixobrychus minutus* (6 pairs), *Aythya nyroca* (4 Pairs), *Pernis apicorus* (1 pair), *Circaetus gallicus* (1 pair), *Circus aeruginosus*, *Porzana porzana*, *P. pusilla, Crex crex* (4-6 pairs), *Bubo bubo*, *Caprimulgus europaeus* (15 pairs), *Coracia garrulus*, *Dendrocopos syriacus* (10 pairs), *D. medius* (5 pairs), *Sylvia nisoria* (8 pairs), *Ficedula albicollis (*8 pairs), *Lanius colurio* (50 pairs), *L.minor* (12 pairs), and *Emberiza hortulana* (30 pairs).

Canaraua Fetii (Constanta) (19)

44°05'N, 27°39'E. 550 ha

A canyon with abrupt barren slopes and deciduous woodland and luxuriant herbaceous vegetation in the valley bottom. Some agriculture and grazing takes place in the canyon; also reafforestation.

Breeding species include *Pernis apivorus* (4 pairs), *Neophron pernopterus* (1 pairs), *Circaettus gallicus* (3-4 pairs), *Buteo rufinus* (2-4pairs) *Aquila heliaca* (2 pairs), *Hieraaerus pennarus* (4-6 pairs), *Bubo bubo* (2 pairs), *Caprimulgus europaeus* (40 pairs), *Coraciasgarrulus* (15 pairs), *Dendrofoposmedius* (6-8 pairs), *Sylvia nisoria* (5 pairs), *Lanius collurio* (50 pairs), *L. minor*, and *Emberiza hortulana.*

Lacul Dunareni (Constanta) (18)

44°11'N, 27°46' E 600 ha

Unprotected. A large shallow lake in the Danube valley with reedbeds and a few *Salix* trees along the shore. There are villages and roads along the eastern and southern shores; vineyards, pastures and some agricultural land along the northern and western shores. Human activities include reed-cutting and private fishing. The lake holds the most important *Platalea leucorodia* colony in Romania (60 pairs). Other breeding species include *Ixobrychus minutus*, *Plegadis falcinellus*, *Aythya nyroca*, and *Chlidonias niger.*

3.3 Turkey

In the Black Sea coastal zone and along the southern coast of the Sea of Marmara, there are forests of *Quercus*, *Fagus*, and *Abies*. The region includes the flood plain and delta of the Meric and the lakes of Manyas and Apolyont.Many of Turkey's wetlands have been altered by drainage/irrigation programmes, Larges parts of the majors deltas (Buyuk Menderes, Seyham, Ceyham, Kizilirmakm and Yesilirmak), have been converted to agricultural land, as have parts of many of the important wetlands, such as Sultansazligi. Furthermore, some sites have been completely drained, such as Amik Golu (which was once one of the most important wetlands in Turkey with breeding *Anhinga melanogaster*, *Pelecanus onocrotalus*, and *Porphyrio porphyrio*), Karagol, Avlan Golum Sugla Golum and the Alanya wetlands.

The wetlands of Turkey are of global importance of *Phalacrocorax pygmeus*, *Pelecanus cripus* (at least five breeding sites; very important numbers occurring in winter), *Marmaronetta angustirostris*, and *Oxyura leucocephala* (180+ pairs; max. 8990 at Burdu Golu in winter, the largest wintering concentration in the world). Turkey has the largest breeding populations of these two Anatidae in Europe. Other wetland species, which are threatened in an European context and have significant breeding populations in Turkey, include several species of *Ardeidae*, *Plegadis falcinellus*, *Plataliea leucoradia*, *Phoenicopterus ruber* (max. 5000 pairs in 1970 at Tuz Golu), *Tadorna ferruginea*, *Pophyria porphyrio* (20+pairs), *Recurvirostra avosetta*, *Glareola pratincola*, *Hoplopterus spinosus*, *Larus genei*, *Gelochelifon nilotica*, *Sterna caspia*, *S. albifrons*, *Halcyon Smyrnensis*, and *Ceryle rudis*- the last two kingfishers occur nowhere else in Europe and are at the north-westernmost limits of their ranges.

Büyük Çekmece Gölü (Istanbul)

41°02'N, 28°323'E 1100ha

Unprotected. A slightly saline lagoon connected to the Sea of Marmama, with reedbeds along the northern and western edge. Much of the lake is surrounded by agricultural fields, industrial areas, and human settlements. The lagoon has been deepened and enlarged to provide drinking water for Istanbul. Hunting pressure is extremely high.

The lake holds large numbers of non-breeding waterfowl including *Podiceps cristatus* (max.880 ion March), *Anser albifrons* (max. 1000 in December), *Anax clypeata* (max. 980 in March), *Aythya ferina* (Max 2800 in Jan.), *A. fuligula* (max.2350 in March, and *Fulica atra* (max.24,000 in Oct). Large numbers of *Larus melanocephalus* (max. 3320) in autumn.

Bosphorus (Istanbul) (1)

41°00'N, 29°00'E

Unprotected. The Bosphorus is a classic bottleneck area for migrants passing form Europe to the Middle East. Büyük and Küçük Çamlica (two hills on the Asiatic side of the Bosphorus), Adalar (Prince Islands) in the Sea of Mamara, and Sanyer (the latter only during spring) are well-known observation points for migration, but principally all of the Bosphorus and its surroundings habe to be treated as past oaf the migration corridor. Bosphorus and its surroundings have to be treated aspast of ahte migraiton corridor. Studies covering the whole migrations season (or even a major part of it) are rare, so that data on phenology and population changes are only badly known. As the Bosphorus area is now more or less covered by the city of Istanbul, Hunting is no longer has probably affected the migration routes. The catching of birds of prey and passerines such as Carduelis carduelis is common in the surrounding countryside.

The main migrants are (the figures are the maximum numbers recorded of a single migration period since the beginning of the 1960s): *Ciconia nigra* (7200), *C. ciconia* (315,0000, *Pernis apivorus* (25,700) *Milvus migrans* (2600), *Neophron percnopterus* (550), *Circaetus gallicus* (2300), *Accipiter brevipes* (5300), *Aquila pomarina* (18,800), *Hieraatus pennatus* (520), and an impressive number of other rare species. Although exact figures area lacking, it has become evident that many species have decreased drastically, especially between 1870 and 1930.

Terkos Gölü (Durusu Gölü or Durugöl) (Istanbul) (2)

41°19'N, 28°32'E 5850 ha

A lake (2500 ha) of low salinity (originally a bay of the Black Sea, now connected only by a small channel), with some reedbeds along the shore. Between the lake and the seam large dunes with some woodland and scrub cover about 3350 ha. Prevailing winds blow sand into the lake (filing up 75,000-80,000 m^2 of the lake each year). The lake provides much of Istanbul's drinking water and efforts to prevent infilling include afforestation of the dunes. Hunting is a great problem for the waterfowl.

Pandion haliaetus, which bred at least in 1984, might still do so. Other species which are presumed to breed include *Botaurus stellaris*, *Ixobrychus minutus, Nycticorax nycticorax*, *Ardeola ralloidem, Ardea purpuream, Circus aeruginosus*, *Burhinus oedicnemus*, and *Chlidonias leucopterus*. There is no information on wintering geese and ducks. Situated north-west of the Bosphorus, Terkos Gölü lies on a major migration route for raptors and storks, and thousands of birds pas over twice a year and some stop over to feed.

Çam Burnu (ordu) (56)

41°07'N, 37°47'E. Less than 10 ha

Unprotected. Rocky cliff and small offshore islands along the Black Sea Coast. A breeding site for *Phlacrocorax* (20-25 pairs), *P. aristotlis* (2-4 pairs), and *Larus argentatus* (300 pairs in 1973).

Kaçkar Daglari (Artvin, Erzurum, Rize) (55)

40°35'-41°10'E, 40°42'-41°35'E c. 80,000

Partly a Hunting Reserve. A section of the eastern Black Sea mountain range, which includes the highest mountains of the Kaçkar massif: Demir Dagi(3354m), Kaçkar Dagi (3932m), and Gül Dagi (3131m); geologically and biogeographically linked to the Caucasus in the USSR. There are extensive forests mainly *of Abies nordmanni*, *Picea orientalis*, and *Fagus orientalis*, with large areas of *Rhododendron pontium* on

the forest zone and *R. caucasicum* above the treeline. Above the treeline there are also mountain pastures (which are used by semi-nomadic people) and rubble fields. The are is only thinly populated. The mountains also support populations of Brown Bear *Ursus oactos* , Wild Goat *Capra aegagrus* and Caucasian Chamois *Rupipra rupicapra.*

These mountains are the only known breeding area for *Tetrao mlokosiewiczi* in Europe outside the USSR. Its occurrence is known from at least two sites but it is presumably distributed over the whole mountain ridge. Other breeding species include *Gypaetus barbatusm Gyps fulvus, Neophron pernopterus, Accipiter gentilis, Aquila chrysaetos, Hieraaetus pennatus, Tetraogallus caspius,* and *Grus grus* (breeding at 2100m). *Aegypius monachus* and *Falco peregrinus* and presumed breeders. Other mountain species breeding *include Phylloscopus sindianus lorensii, Sitta krueperi, Serinus pussilus, Rhodopechys sanguinea and Pyrrhocorax pyrrhocorax.*

Kizilirnmak Deltasi (Samsun) (58)

41°40'N, 36°00'E 50,000ha (lakes and marshes: c.5000ha)

Hunting Reserve (Çeneck Gölü only); only a rather small and unimportant part of the area is protected form hunting. The largest wetland along the Turkish Black Sea coast. Most of the land is under agricultural use; however, there are several lakes situated along the coast in the eastern delta, the largest of which are Balik Gölü (2128 ha), Uzungöl (294 ha), Çeneck Gölü 9369 ha, and Liman Gölü (175 ha). Balik Gölü and Uzungöl have extensive reedbeds, and vast areas of the delta are covered by almost inaccessible *Scirpus* beds. Between the lakes and the sea, a forest of about 1400 ha provides an excellent breeding habitat, especially for raptors.

Breeding species include *Pelecanus crispus* (25 pairs in 1966, 60-70 pairs in 1970-1973; possibly now breeding only irregularly on smaller numbers), *Botaurus stellaris* (2-3+ pairs), *Ixobrychus minutus, Ardeola ralloides* (10+ pairs), Egretta garzetta (1230-150 pairs), *Cicornia nigra* (12-20 pairs), *C. ciconia* (30 pairs), *Haliaeetus albicilla* (2-4 pairs; but probalbly not breeding since 1977), Circus aeruginosus (30+ oaurs), *Aquila pomarina* (1 pairs presumed), *Pandion haliaetus, Falco subbutei* (12 p[airs), Anas querquedula (20 pairs), Aythya nyroca, Grus grus (10-15 pairs), *Himantpous jimantopus* 915 pair), *Burhinus oedicnemus* (8 pairs), *Glareola pratincola, Denfrocpos medius, Acrocephalus melannopogon,* and *Sylvia nisoria.* During autumn large numbers if *Tringa nebularia* (max.2000) and *Chlidonias leucopterus* (max. 200-300) have been recorded. In winter large numbers of waterfowl occur including *Gavia arctica* (max. 1500, but usually less than 100), *Podiceps nigricollis* (max. 6000, *Egretta alba* (max. 100-200), *Anser anser* (max.50000, *Anas strepera* (max.740), A.crecca (max.16,750), *A. platyrhynchos* (max. 59), and *Fulica atra* (max.15,300). Important also for wintering raptors especially *Aquila clanga* and *Circus aeruginosus* (max. 30-50).

North-East Turkey (Artvin, Rize) (54)

41°20N, 41°30'E c.100,000

Unprotected. North-east Turkey, especially the Black sea coastal region extending from Ardesen eastwards to the Soviet Border, is an area where huge numbers of raptors concentrate on migration, The main area is located on the northern side of the Kuseydogu Karadeniz Daglari (Pontic Mountains). The coastal strip is densely populated, with tea, corn, and hazelnuts being the main crops. Further inland the forests (both coniferous and deciduous) dominate and are considered to be amongst the most productive forest of Turkey. In the higher parts. Areas with alpine vegetation occur (cf. Kaçkar Daglan as a separate site). Of special importance for migrating raptors is the Çoruh Valley. Several other valleys extend from the Black Sea coast inland and cause considerable convergence of raptors. After raptors have passed the mountain range the migration front widens.

Yeniçaga Gölü (Bolu) (62)

40°47'N, 32°02'E 1800 ha

Unprotected. A freshwater lake with reedbeds which are dense in parts by almost absent along the southern shore, There are wet meadows to the east, northern and west of the lake which are flooded when the water-level is high and *Populus* plantation and *Salix* around the lake, The grazing of cattle in the marshes and pollution for the town of Yeniçaga (which discharges its sewage into the lake) are serious problems.

Breeding species include *Ixobrychus minutus* (1-5 pairs), *Ardea purpurea* (1-5 pairs), *Tadorna ferruginea* (5-10 pairs), *Circus aeryginosus* (1-2 pairs), and *Grus grus* (8 pairs). *Haliaeetus albicilla* and *Pandion haliaetus* presumably breed. During migration , the area is especially important for raptors which use the area for resting and feeding (as it lies on the migration route to and from the Bosphorus); 25 species of raptors have been recorded so far.

Yesihrmak Deltasi (Samsun) (57)

41°17'N, 36°50'E 60,000 ha

Hunting Reserve (Simenlik Gölü); a small area is a breeding station for *Phasianus colchicus.* A large alluvial plain of the River Yesihrmak with a series of small lakes and lagoons along the coast. Recently, large parts of the delta have been drained and the lakes have been reduced in size. Simenlik Gölü is the largest of the lakes (about 150 ha), has reedbeds, and its bordered by forest. *Populus* plantations and fields bordered by *Salix* characterise the delta.

A native population of *Phasianus colchichs* has survived in the delta and has been enlarged by releases form a breeding station which is situated in the delta. *Botaurus stellaris, Nycticorax nycticorax, Ardeola ralloides, Egretta grazett*a, Circus aeruginosus, *Grus grus*, Himantopus himantopusm, and *Locustella luscinioides* are presumed to breed. Winter counts (1967-1970) have included *Anas penelope* (max. 2200), *A.crecca* (max.2500*), A.platyrhynchos* (max.12,000), *A.acura* (max. 900), and *Aythya fuligula* (max.2000).

Sarikum Gölü (Sinop) (59)

42°01'N, 34°51'E 100 ha

Nature Reserve. A coastal lake, connected to the sea by a small river. On the south side of the lake there is a forest of *Fraximus excelsior* There is afforestation around the lake. The site is poorly known ornothologically. In Oct. 1987, c.100,000 birds were present at the lake including *Podiceps cristatus, Tachybaptus ruficollis*, *Phalacrocorax carbo*, *Ardea cinerea, Egretta garzetta*, *E.alba*, *Anser albifron*s, *A.anser*, *Anasplatyrhynchos*, *Netta rufina, Aythya ferina, A.nyroca, A.fuligula*, *Fulica atra*, and *Vanellus vanellus*.

3.4 Russia and Ukraine

The major wetlands along the Caspian and Blakc Sea coast support veryu important breeding populations of waterfowl with very large breeding colonies of *Ardeidae*, and *Laridae* including *Larus ichthyaetus*, *L.melanocephalus* (a majority of the world's population) and *L. genei*. Other breeding species include *Pelecanus crispus* and *Phalacrocorax pygneus*. These wetlands also hold some of the largest concentrations of passage and wintering waterfowl in Europe.

Ukrainian Steppe Reserve, Sumy, Donetsk, and Zaporozhe (Ukraina) (63)

C.47°30'N, 36°30'E 1634 ha

Zapovednik. Khomutoco steppe, 23 km north of the Sea of Azov (Azovskoye More); Kammenye mogili; Mikhaulovskaya tselina (virgin steppe). Species occurring include *Botaurus stellaris*, *Ixobrychus minutus*, *Ardea purpurea*, *Milvus migrans*, *Falco vespertinus*, *Anthropoides virgo, Capromulgus europaeus*, and *Melanocorypha calandra.*

Krivaya Kosa (Krivaya Peninsula), Novoazovsk Donetsk (Ukraine) (46)

47°10'N, 38°10'E 154 ha

Zapovednik. Peninsula in the Sea of Azov (Azovskoye More). Heavy recreational pressure and the planned building of fish-ponds may substantially affect the site. Breeding species include *Egretta alba* (max.10 pairs), *Ardea purpurea* (max. 10 palrs), *Himantopus himantopus* (50-80 pairs; the largest colony in the Ukraine), *Recurvorostra avosetta* (30-120 pairs), *S.hirundo* (1700-3000 pairs). Passage speices include *Ciconia nigra*, Branta ruficollis, *Haliaeetus albicilla*, *Aquila chrysaetos*, and *Pandion haliaeetus.*

Belosarayskaya Kosa (Belosarayskaya Peninsula), Volodarskoye, Donetsk (Ukraina) (45)

47°00'N, 37°18'E 616 ha

Zapvednik. Peninsula in the Sea of Azov (Azovskoye More) Breeding species include *Egretta alba* (8-20 pairs), *Recurvirostra avosetta* (12-35 pairs), *Sterna hirundo* (1600 pairs), and *S. albfrons* (500 pairs).

Berdyanskaya Kosa (Berdyansk Peninsula), Berdyansk, Zhdanov (Ukraina) (44)

46°50'N, 36°45'E

Unprotected. Peninsula in the Sea of Azov (Azovskoye More) including the coastal shallows, low shores, and small islands of Obitochny Bay. A site for *Egretta alba* (50 pairs) , breeding ducks, waders, gulls, terns, and passage and wintering waterfowl.

Molochny Liman, Melitopol (Ukraine) (61)

46°20'N, 35°20'E 22,450 ha

Zapovednick. A salt-lake (with fluctuating salinity) separated from the Sea of Azov (Azovskoye More) by a narrow spit, with extensive shallows and a group of islands. Irregular water supply via a canal leads to seasonal fluctuations in salinity (resulting in destruction of the water vegetation) and the upper part of the lake is greatly polluted with sewage from Melitopol. A breeding site of Grebes, waders, gulls, and terns. *Brabta ruficollis* and *Numenius tenuisrostris* occur on passage, as well as large numbers of commoner waterfowl (max.30,000).

Sivasj Zaliv, Azovskoye More (Sivash Bay, Sea of Azov) Ukraine (37)

46°09-46°12'N, 34°21'-34°50' E 45,000 ha

Ramsar Site. Part of Azovskoye-Sivash Zapovednik Hunting Reserve (22,389 ha), although important sites for birds remain unprotected, and some parts are not included in the Ramsar site. A shallow, saltwater bay

with an indented shoreline, numerous spits and islands, largely isolated form the Sea of Azov by a low-lying spit (Arabatskaya Strelka). The water-level fluctuates according to the meteorological conditions (with strong winds exposing or inundating large areas) and the extend of evaporation in hot weather. A dam at Chongar Peninsula 9Chongarski Poluostrov) also regulates the water allowed in from the Sea of Azov. The habitat is mainly saltmarshes, steppe and halophytic vegetation with extensive *Phragmites* beds. Agricultural development in the surrounding area, especially the creation of fish-ponds and rice-fields, has increased the area of freshwater . There is little economic exploitation except for industrial fishing and slat extraction in the eastern part, however excessive disturbance results from amateur fishing (up to 900-1200 boats per day) and recreation, and there is egg collecting. In addition, the ploughing of virgin steppe, and haymaking and sheep grazing on Kuyuk-Tuk Ostrov) are considered to be unfavourable factors.

Breeding birds include Ardeidae and Threskiornithidae (at least 10,000-11,000 pairs of *Nycticoraz nycticorax*, *Ardeola ralloides*, *Egretta garzetta*, *E. alba*, *Ardea purpurea*, and *Kuyuk-Tuk* and Churyuk islands, and additional pairs on the mainland), *Otis tarda* (2-3pairs), *Recurvirostra avosetta* (700 pairs), *Larus ichthyaetus* (96-168 pairs), *S. sandvicensis* (483-5463), *S. hirumdo* (97-1030) and *S. albifrons* (70-900 pairs). There are additional colonies of *Larus melanocephalus* , *L. genei*, *Gelochelidon nilotica*, *Sterna sandvicensis* with up to 20,000 pairs. In spring, up to 1000 Otis tarda (2-3pairs) occur on Kuyuk-Tuk. The bay serves as an important staging post for waterfowl, especially spring with up to 60,000-80,000 ducks (predominantly *Aythya fulifula, A. ferina*, *Tadorna tadorna*, and *Anas platurhynchos*) and *Fulica atra,* and hundreds of thousands of waders (predominantly *Philomachus pugnax, Cakidirs ferruginea*, *C.alpina*, and *Tringa totanus*) with the steppe parts of Churyuk and Kuyuk-Tuk islands used by *Charadrius morinellus*.

Krymski (Crimean) Game Reserve, Krym (Ukraine) (41)

44°50'N, 34°30'E 42,957 ha

Zapovednik (14,998 ha) The northern and southern slopes of the main Crimean range, including Quercus-Pinus-Fagus forest (27,957 ha), rivers (total area of open water approaches 10,000 ha), meadows (over2400 ha), and a coastal zone including the Lebyazhi Islands.

One hundred and eighty-five species occur (72 breeding), including *Gavia arctica*, *Egratta alba* (rare), *Ciconia nigra* (rare), *Aythya nyroca*, other *Anatidae*, *Haliaeetus albacilla*, *Neophron percnopterus*, *Gyps fulvus*, *Aegypius monachus*, *Circaetus gallicus*, and *Bubo bubo*.

Karkinitsky Zaliv, Chernoye More (Karkinitsky Bay, Black Sea) (Ukraine) (38)

45°30'N, 34°30'E 42, 957 ha

Zapovednik (14,998 ha) Part of Crimean Zapovednik.Hunting Reserve ; Karkinitski Zakaznik (27,646 ha); the sea around the islands is protected to a distance oaf 1km offshore.

The head of Karkinitski Bay with numerous spits, shallow bays and salt lakes adjoining areas of virgin steppe and agricultural land. There are some small; permanent islands (Lebyaszhim Ostrova) which are either vegetationless or covered by *Phragmites* beds and saltmarsh, although the total area of the islands has been reduced by erosion. The shallows are rich in submerged vegetaion primarily *Characeae* and *Zostera.* The development of fish-farming and rice-growing has resulted in the uncontrolled release of fresh water adversely affecting the productivity of the *Characeae* and *Zostera.* In addition, the shooting and scaring of fish-eating birds, rice growing , sheep-grazing, tourism (resulting in severe disturbance) are adversely affecting the wetland and its birds, and the movement of vehicles is destroying the remnant steppe. The site is regarded has inadequately protected with no control on poaching. As a results of these problems many species are declining.
Breeding species include *Phalacrocorax carbo* (500-600 pairs), *Ardeola ralloides* (max. 200 pairs), *Larus ichthyaetus* (120-130 pairs), L. argentatus (6800-10,000 pairs), *Gelochelifon nilotica* (800-900 pairs). Large numbers of *Cygnus olor* (4000-5000) moult. *Anatidae* occur during spring and autumn migration (max.

75,0000abd several hundred thousand *Philomachus pugnax* occur. In winter more than 20,000 duck may be present.

Yalta Mountain Forest, Bolshaya Yalta, Krym (Ukraina) (40)

44°30'N, 34°10'E 14,591ha

Zapovednik. A band of forest (1-8 km wide), with stands of *Pinus, Quercus, Fagus*, and *Carpinus* on the southern slopes of the Crimean range. Species occurring include *Gyps fulvus*.

Mys Martyan, Krym (Ukraine) (39)

44°30'N, 34°09'E 240 ha

Zapovednik. An area of *Quercus* and *Juniperus* forest on the southern slopes of the Crimean Mountain , on the Black Sea coast. One hundred and thirty five species occur, including *Phalacrocorax aristotelis*.
Chumaki Ostrova, Dzarylgachski Zaliv (Chumaki Islands, Dzharylgach Bay), Skadovsk and Kakanchak, Kherson (Ukraina) (35)

46°00'N, 32°55'E

Unprotected. Small islands and coastal shallows in a bay of the Black Sea (Chernoye More). The islands are experiencing excessive recreational pressure and it is necessary to establish a seasonal Zajaznik. Breeding birds include ducks (hundreds) and gulls (thousands). Hundreds of thousands of wildfowl occur during migration including *Branta ruficollis* (20,0000)

Nizovya Dnepra (Lower Dnepr), Golaya Pristanm Kherson (Ukraine) (31)

46°30'N, 32°20'E

Unprotected , proposed Zakaznik. Water channels, *Phragmites* beds, and marshy islands. Breeding birds include grebes (hundreds) and *Ciconiiformes* (thousands). A passage site for *Anser anser* (thousands) and dabbling ducks (thousands).

Askania -Nova. Kherson (Ukraine) (36)

46°27'N, '33°53'E 33,307 ha

Biosphere Reserve Zapovednik (only 1500ha under total protection) An area of arid (except for a few lakes) Festuca-Stipa steppe. The totally protected area has never been ploughed, whilst the remainder is used for grazing and Haymaking. Sixteen species breed in the virgin steppe area, including *Circus macrourus*, *Aquila rapax*, *nipalensis,*. *Anthropoides virgo*, *Tetrax tetrax*, *Oti tarda*, *Burhinus oedicnemus*, *Calandrella brachydactyla*, nad Anthus campestris. The lakes and pond are hold c.70 breeding species, including *Tadorna ferruginea*, *Circus macrourus*, and *Lanius minor*.

Dunay (Danube) and Yagorlytski and Tendrovski Zalivy (Yagorlystki and Tendra Bays) (Ukraina)
Dunay (Danube) (29)

45°25'-45°30'N, 29°32'-29°40'E 14,851 ha

The Soviet part of the Danube Delta with alluvial islands, numerous channels and a coastal zone (with shallow, open bays divided from the sea by low sand-spits or underwater bars). The islands are covered with dense *Phragmites* beds or with *Salix alba* woodland. At present there are no protected zones where human activities area completely prohibited, and the main problem is human disturbance since commercial fishing is permitted throughout the year and the best fishing areas are the same as the main breeding , feeding and resting sites for birds.

Breeding species include *Nycticorax nycticorax* (350 pairs), *Ardeola ralloides* (50 pairs), *Egretta garzetta* (150 pairs), *E. alba* (40 pairs), *Ardea purpurea* (400 pairs), *Plegadis falcinellus* (100 pairs), *Platalea leucorodia* (60 pairs), *Recurvirostra avosetta* (100 pairs), *Sterna sandvicensis* (2000 pairs) , *S. hirundo* (10,000-11,000 pairs), and *S.albifrons* (50 pairs). *Pelecanus onocrotalus* and *P. cripus* feed at the site breeding in the Romanian part of the delta. Non breeding *Philomachus pugnax* and *Limosa limosa* oversummer occurs on passage, the following being common; *Palacrocorax pygmeus*, *Branta ruficollis*, and *Sterna caspia*. Up to 50,000 waterfowl occur in winter including *Cygnus cygnus* (max. 1000). *Anser albifrons* (10,000) and *A. anser* (3000).

Yagorlytski and Tendrovski Zalivy (yagorlytski and Tendra Bays) (Ukraine) (29, 33)

46°07'-46°30'N, 31°49'-32°22"E 113,200 ha

Part of a Ramsar Site (with Dunay); Biosphere Reserve (87,348 ha) Includes land areas of Chernomorski (Black Sea) Xapovednik and Yaforlytski/Tendrovki Xalivi islands Zapovednik (total area: 10,448 ha); Yagorlytski (30,300 ha) Large sea bays (separated from the Black Sea by a narrow peninsula) with islands, adjoined by numerous small lakes and temporary waterbodies. Emergent vegetation is represented by beds of *Phragmites*, *Typha, and Scirpus*, with the bays surrounded by salt-meadow /steppe and forest-steppe. On the islands, halophytic vegetation is dominant. Since 1975, the hydrological balance has been upset affecting the productivity of the ecosystem) by the release of fresh water from irrigation and rice growing scheme, and saline water form a drainage system near Poliyevka. In addition , there is disturbance during the breeding seas on from commercial fishing.

Breeding species include *Podiceps grisegena, Botaurus stellaris* (common), *Ixobrychus minutus*, *Egrettaalba* (common).

Tiliguliski Liman (Tiligul Salt -Lake), Berezanka and Kominternovskoye (Ukraine) (32)

46°50'N, 31°00'E

Unprotected. Shallow salt-lake with *Phragmites* beds and sandy islands. Breeding species include R*ecurvirostra avosetta* (200 pairs). Up to 80,000 wintering waterfowl occur.

Nizovya Dnestra (Lower Dnestr), Belgorod-Dnestrovski and Ovidiopol (Ukraine) (31)

46°15'N, 30°20'E

Unprotected; proposed Zapovednik. Salt-lakes and *Phragmites* beds. Breeding birds include *Phalcrocoracidea* (220 pairs) , *Ciconiiformes* (3500 pairs), *Cygnus olor* (170 pairs), *Anser anser* 91600 pairs), and ducks (max. 10,000 pairs).

Coastal lakes between the Rivers Dnestr and Dunay (Danube), Kiliya, Tatartbunary, and Belgorog-Dnestrovski (Ukraine) (30) 45°40'N, 30°00'E 200,000 ha

Unprotected. Salt-lakes , canals, and reservoirs. It is necessary to determine the most important areas. Breeding species include *Tadorna tadorna* (500 pairs). Very important for winter waterfowl (500,000), including swans (10,000). Other wintering species include *Haliaeetus albicilla* (50).

Karadag, Sudag, Krymskaya (Crimean) Oblast (Ukraine) (42)

45°00'N,. 35°15 'E 1370 ha

Zapovendnik. Includes 188 ha of forest 300 ha of meadows, and 600 ha of adjacent sea. *One hundred and ten species occur, including Pernis apivorus, Aquila heliaca*, Falco cherrug, *F.peregrinus*, and *Alectoris chukar.*

Salt-Lakes (Limany) in the Primorsko-Akhtarsk/Grivenskaya area (including Akhtarski Liman and Liman Sladki) (Krasnodes Kray, RSFSR) (60)

46°00'N, 38°00'E 118,340 ha

Partly a Zakaznik. Shallow salt-lakes connected by a dense network of channels alongside the Sea of Azov (Azovskoye More), with extensive beds of emergent and submerged vegetation. The development of irrigated agriculture is reducing the area of the wetland and the lakes are becoming shallower and more saline,, whilst chemical run-off from farmland is causing eutrophication of the water bodies. If the degradation of the area is halted, It will be proposed for designation as a Ramsar site. A breeding site for pelicans, herons, and other waterfowl, with *Cygnus olor* 932000, *Anser anser* (5000), ducks (648,000), and *Fulica atra* (460,000) present after breeding. Important for moulting ducks (600,000-1,000,000) and wintering waterfowl (hundreds of thousands).

Kavzkav (Caucasus) Biosphere Reserve, Sochi (Krasnodar Kray, RSFSR) (48)

43°40'N, 40°30'E 266,000 ha Biosphere Reserve

Zapovednik. The western part of the Main Caucasian Ridge and Peredovoy Ridge, with forested (162,319 ha) mountainous terrain including many glacier-fed rivers and streams. Also includes the southeast slope of Boshoi Akhun Mountain. One hundred and ninety-two species occur (132 breeding), including *Gypaetus barbatus*, *Gyps fulvus*, *Aegyptius monachus*, *Aquila chrysaetos*, *Tetrao mlokosiewiczi*, and *Tetraogallus caucasicus*.

Nizovya Reki Rioni, Ozero Paliastomi (lower Rioni, Lke Paliastomi) (Gruziya) (52)

42°10'N, 41°40'E 500 ha

Zapovednik. Coastal marshes, channels, and lakes on the Black Sea (Chernoye More) coast. A site for passage and wintering Ciconiiformes, ducks, and waders. There is also a bottleneck site for raptors in this region.

Pskhuski, Abkhazskaya ASSR (Gruziya) (51)

43°25'N, 40°50'E 27,643 ha

Zapovednik. An area of the Bzybski range, between the Black Sea and the caucasus, with forest (12,600 ha). meadows 980 ha), sands (7 ha), steep slopes, screes, cliffs, and open water. The principal tree species are *Fagus, Castanea, Carpinus, Quercus, Abies*, and *Rhododendron*. Species occurring include *Gypaetus barbatus, Gyps fulvus, Aegypius monachus, Aquila chrysatos, Tetrao mlokosiewiczi*, and *Tetrogallus caucasicus*.

Guminstin, Sukhumi, Abkhazaskaya ASSR (Gruziya) (50)

43°20'N, 40°40'E 27, 643 ha

Zapovednik. An area of the Bzybki range, between the Black Sea and the Caucasus, with forest (12,600 ha), Meadow (80 ha), sands (7 ha), steep slopes, screes, cliffs, and open water. The principle tree species are *Fagus, Castanea, Carpinus, Quercus, Abies*, and *Rhododendron*. Species occurring include *Tetrao mlokosiewiczi*.

Ritsa, Gudauta, Abkhazskaya ASSR (Gruziya) (49)

43°28'N, 40°34'E 16,289 ha

Zapovenik. An area of *Abies* forest surrounding Lake Ritsa on the southern spurs of the main Caucasus range. Forest covers 14,922 ha. There are also small areas of meadows, and deep river gorges. Species occurring include *Gypaetus barbatus, Gyps fulvus, Aegypius monachus,* Aquila chrysaetos, *Tetrao mlokisiewiczi* and *Tetraogallus caucasicus*.

Kintrishi, kobuleti, Adzharskaya ASSR (Gruziya) (53)

41°45'N, 41°50'E 7166 ha

Zapovdnik. An are of the west and north-west slopes of the Meskletsk range, with over 6500 ha of forest, subalpine lakes, and the gorge of the River Kintrishi. Species include T*etraogallus causasicus*.

Key reference for this section:

International Council for Bird Preservation, 1989. Important Bird Areas of Europe. Compiled by R.F.A. Grimmett and T.A. Jones, 886pp.

4. COASTAL PROTECTED AREAS OF THE BLACK SEA

4.1 Introduction

Information on protected areas of the Black Sea was gathered from the six coastal countries: Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine. The main sources of information were the WCMC Protected Areas & Landscape Database (PAL), the WCMC Biodiversity Map Library (BML) and regional publications on protected areas held at WCMC.

This information has been arranged in four sections:

1. A list of nationally designated protected areas, by country, for those sites located within 50 miles of the coastline. Comments on idividual protected areas are provided.
2. A list of internationally designated sites (Ramsar Convention, World Heritage Convention, MAB/UNESCO Programme and others). Where there is overlap between nationally and internationally designated sites this is indicated.
3. Detailed descriptive information ('site sheets') on some protected areas, where this is available. The extent of the information available varies but may include IUCN management category, biogeographical province, geographical location, date and history of establishment, area, land tenure, altitude, physical features, climate, vegetation, management constraints, staff, budget, local addresses and references.
4. Information on existing national environmental legislation, designations of protected areas, system reviews and international cooperation presented in country profiles.

Some information on protected areas is stored electronically but was derived from published regional reports and maps held at WCMC For example, the information on protected areas in Ukraine and Russian *zakaznik* was gathered from a map of protected areas published in the Ukraine in 1977. The internet is another valuable source of information especially in the case of Georgia. It provides a very detailed information on all designations of protected areas in this country and internationally designated and proposed sites. Information about Russian *zakazniks* (nature sanctuaries[1]) was only available from a source published in 1985.

4.2 Information Gaps

Bulgaria

WCMC has information on the boundaries for less than half of. the protected areas in Bulgaria – the remainder are indicated only as dots. It may be possible to rectify this somewhat by referring to information on existing digital data in Bulgaria published in 1994 in the National Biological Diversity Conservation Strategy[2].

Site sheets should be compiled for the twelve national and five international reserves for which they are lacking: this would require approximately 2-3 person days per site or 50 days in total

[1] This designation has two levels of importancy: national and local. Last one may have a permanent status or may be protected for a limited period of 10, 25 years these terms are subjects to be prolonged if necessary. In fact this designation includes several types of protected areas deducated to protect landscapes, habitats of plants and animals, geological formations, hydrological objects, some times they have a status of hunting reserves.

[2] National Biological Diversity Conservation Strategy. Biodiversity Support Program, Washington, DC. 1994. P.39.

Georgia

All identified protected areas are in PAL and BML databases and on BML, but not as a polygonal data (ie they are entered as dots not polygons). Polygonal data exists on Georgian Web site and consists of very valuable and detailed information. It also includes data on important wetlands in this country[3]. It is unknown how many days will be needed to enter digital data for Georgia. Compiling site sheets for Georgian nature reserves would require 8-12 days for 4 protected areas.

It is unknown how many other designations occurred within the coastal line (e.g. National Parks, nature sanctuaries or former *zakazniks*) because of lack of information. A search for this information will probably require some 3 days of work with further compiling of site sheets.

Romania

Nature reserve is most important designation in terms of nature protection in Romania but site sheets are not completed for all of them. It will take up to 48-72 days to compile sheets for 24 nature reserves.

Russia

Identified protected areas located on territories of Krasnodar *Kray* (Territory), Kabardino-Balkar Republic, these are National Parks and Zapovedniks. Several *zakazniks* in these two administrative territories were identified through published sources. *Zakazniks* should be identified for Rostov *Oblast'* (Region) an administrative territory on shores of the Sea of Azov.

Turkey

It may take approximately 10-15 days to compile site sheets for 5 protected areas in Turkey although the lack of information on protected areas in Turkey may mean more time would be required.

Ukraine

Before data from the Ukraine can be included in maps it must be incorporated into the digital databases (BML): this would take about 5 days. Site sheets should be written for Nature Reserves (*Zapovedniks*), a major designation in this country. It will take approximately 12-18 days of work for 6 sites. WCMC do not have complete country profiles for Georgia and Russian Federation : it would take about 3 days for each country to compile these.

[3] See Web: http://www.grida.no/prog/cee/enrin/htmls/georgia/soegeor/english/wetlands/wetlands.htm

Nationally designated coastal protected areas

Country, designation and a site name	IUCN Category	Long/Lat	Area (ha)	Year of establishment
Bulgaria				
National Park				
Strandja**	V	42°03'N/27°38'E	116,260	1995
Zlatni pyassatsi**	IV	43°20'N/28°02'E	1,320	1943
Comment: Internationally important resort area.				
Protected Site				
Silistar*[4]	IV	?/?	773	?
Comment: Wetland of national importance at the mouth of the river Silistar. The number of species from the Red Data Book of Bulgaria reached 46.				
Ustie of Veleka*[5]	IV	?/?	1,511	?
Comment: Wetland of national importance at the mouth of the river Veleka. The number of species from the Red Data Book of Bulgaria reached 46.				
Veleka*[6]	IV	?/?	1,546	?
Comment: Wetland of national importance at the mouth of the river Veleka. The number of species from the Red Data Book of Bulgaria reached 46.				
Reserve				
Arkoutino*[7]	Ia	?/?	102	1975
Comment: Wetland of international importance, an important bird area in Europe (see below Bulgarian Ramsar sites: Arkoutino (Ropotamo).				
Amzovo*	Ia	?/?	1	1968
Atanasovsko ozero**	IV	42°33'N/27°32'E	1,650	1980
Comment: Wetland of international importance, an important bird area in Europe (see below Bulgarian Ramsar sites: Burgas Lakes).				

[4] Ministry of Environment of Bulgaria. National action plan for the conservation of the most important wetlands in Bulgaria. Sofia. 1995. P.8.

[5] Ministry of Environment of Bulgaria. National action plan for the conservation of the most important wetlands in Bulgaria. Sofia. 1995. P.8,54.

[6] Ministry of Environment of Bulgaria. National action plan for the conservation of the most important wetlands in Bulgaria. Sofia. 1995. P.8,54.

[7] Ministry of Environment of Bulgaria. National action plan for the conservation of the most important wetlands in Bulgaria. Sofia. 1995. P.8.

Baltata*	Ia	?/?	198	1962
Kaliakra*	Ia	?/?	53	1941
Kamtchia**[8]	IV	43°02'N/27°51'E	1,445	1951

Comment: The reserve includes the remains of forests which once covered a large area of 5,000ha. This flood forest dominated by *Fraxinus oxyphylla* and *Querces pedunculiflora*, etc. There are marshes and rushes along the river banks. There is a variety of terrestrial and aquatic animals. Mammals include deer *Capreolus capreolus*, wild boar *Sus scrofa*, pine marten *Martes martes* and fox *Vulpes vulpes*. Over 20 species of fish live in the river. This reserve is a part of UNESCO/Man and Biosphere Program area which cover also adjacent populated areas (see below the list of sites under UNESCO/MAB program in Bulgaria).

Morski Peline*	Ia	?/?	14	1962
Ouzounboudjak**[9]	Ia	41°59'N/27°54'E	2,575	1956

Comment: The reserve was set up to preserve the oak *Quercus polycarpa* and *Q. frainetto* and beech *Fagus orientalis* forests which are over 200 years old. This reserve is a part of UNESCO/Man and Biosphere Program area which cover also adjacent populated areas (see below the list of sites under UNESCO/MAB program in Bulgaria).

Piassatchnata Lilia*	Ia	?/?	1	1962
Ropotamo**	Ia	42°19'N/27°46'E	1,001	1992

Comment: Wetland of international importance, an important bird area in Europe (see below Bulgarian Ramsar sites: Arkoutino (Ropotamo).

Silikossa*	Ia	?/?	390	1931
Tissovitsa**	IV	42°06'N/27°46'E	749	1990
Vitanovo**	Ia	42°02'N/27°36'E	1,112	1982
Vodnite Lilii (Velkov Vir)*	Ia	?/?	14	1962
Zmiyskia Ostrov*	Ia	?/?	1	1962

Georgia

Nature Reserve

Bichvinta-Miusera**	Ia	43°11'N/40°25'E	3,645	1965
Kintrishi**	Ia	41°41'N/41°59'E	13,893	1959
Kolkheti**	Ia	42°10'N/41°48'E	500	1946
Pskhu-Gumista**	Ia	43°13'N/41°05'E	40,819	1976
Ritsa**	Ia	43°27'N/40°34'E	16,288	1957

Romania

Biosphere Reserve (National)

Danube Delta**	II	44°56'N/28°56'E	580,000	1991

[8] MAB Information System. Compilation 4, October 1986. IUCN. Pp.71-73.

[9] MAB Information System. Compilation 4, October 1986. IUCN. Pp.76-77.

Forest Reserve				
Letea**	IV	45°20'N/29°28'E	701	1938
Nature Reserve				
Capul Dolosman**	Ia	44°45'N/28°55'E	125	1990
Carorman**	Ia	45°04'N/29°24'E	2,250	1990
Erenciuc**	Ia	44°58'N/29°25'E	400	1990
Grindul Chituc**	Ia	44°33'N/28°54'E	2,300	1990
Grindul Lupilor**	Ia	44°40'N/28°55'E	2,075	1990
Istria-Sinoe**	Ia	44°31'N/28°46'E	350	1990
Letea**	Ia	45°19'N/29°31'E	2,825	1990
Luncavita Forest (Valea Fagilor)*	IV	45°30'N/28°06'E	154	?
Manusoaia-Chiciu Plopii**	IV	45°00'N/28°10'E	?	?
Murighiol**	IV	45°16'N/29°36'E	600	1961
Nebunu**	Ia	45°16'N/28°58'E	115	1990
Padurea-Letea**		45°20'N/29°32'E	5,212	1938
Perisor-Zatoane-Sacalin**		44°51'N/29°24'E	16,400	1961
Periteasca-Bisericuta-Portita**	Ia	44°43'N/29°01'E	4,125	1990
Periteasca-Gura Portita**		44°44'N/29°02'E	3,900	1961
Popina Is.**	Ia	44°58'N/28°58'E	98	1990
Raducu**	Ia	45°15'N/29°16'E	2,500	1990
Rosca-Buhaiova-Hrecisca**		45°22'N/29°25'E	14,600	1961
Rosca-Letea**		45°20'N/29°30'E	16,400	1961
Rotundu**	Ia	45°13'N/28°31'E	230	1990
Sahalin-Zatoane**	Ia	44°49'N/29°25'E	24,250	1990
Saraturi-Murighiol**	Ia	45°01'N/29°09'E	87	1990
Sfintu Gheorghe-Perisor-Palade**		44°50'N/29°20'E	15,000	?
Vatafu-Lungulet**	Ia	45°07'N/29°34'E	1,625	1990

Russia

National Park				
Sochinskiy **	II	43°35'N/40°10'E	189,600	1983
Zakaznik				
Golovinsky ***[10]	IV	?/?	50,000	1968

Comment: Protection of common deer, European roe deer, wild pig, chamois, brown bear, etc.

Priazovskiy ***[11]	IV	?/?	45,000	1958

Comment: Wild pig, American mink, badger, lynx, swans, great bustard.

Nature Reserve (Zapovednik)				
Kavkazskiy**	Ia	43°31'N/39°52'E	280,335	1924
Teberdinskiy**	Ia	43°21'N/41°42'E	84,996	1936

[10] Shalybkov, A., Storchevoy, K. Prirodnie zakazniki.Moscow. 1985.P.95.

[11] Shalybkov, A., Storchevoy, K. Prirodnie zakazniki.Moscow. 1985.P.95.

Turkey

National Park				
Ilgaz Dagi**	II	41°02'N/33°32'E	1,088	1976
Macka Altindere Vadisi**	II	40°50'N/39°43'E	4,800	1987
Yedigoller**	II	41°15'N/31°40'E	2,019	1965
Natural Monument				
Duzce-Samandere**	III	40°51'N/31°09'E	10	1988
Nature Park				
Uzungol**	V	40°56'N/38°00'E	1,625	1989
Nature Reserve				
Haciosman**	Ia	41°20'N/36°20'E	86	1987
Sarikum Golu**	Ia	42°01'N/34°51'E	785	1987
Protected Landscape				
Kackar Mountains**	?	41°00'N/41°30'E	4,142	?

Ukraine

Hunting Reserve				
Azovo-Sivashskoye**	IV	46°13'N/35°12'E	57,430	1957
Krymskoye**	IV	44°45'N/34°18'E	42,957	1957
Zalesskoye	IV	50°45'N/30°45'E	35,089	1957
National Biosphere Reserve				
Askaniya Nova**	Ia	45°32'N/33°57'E	33,307	1921
Chernomorskiy**	Ia	45°43'N/31°54'E	87,343	1927
National Nature Park				
Azovo-Sivashskiy*	II	46°13'N/35°12'E	52,154	1993
Natural Monument				
Agarmushskiy Les***[12]	III	?/?	40	1963
Balka Gor'kaya***[13]	III	?/?	4	1972
Belbekskiy Kanyon***[14]	III	?/?	100	1963
Dzhautepe Hill***[15]	III	?/?	10	1964
Gora Mangypkale***[16]	III	?/?	90	1963
Granitnie Skaly***[17]	III	?/?	15	1968
Kamennie Mogily***[18]	III	?/?	3	1968
Karadag***[19]	III	?/?	1,763	1964

[12] Map of Protected Areas of Ukraine, Kiev, 1977.

[13] Map of Protected Areas of Ukraine, Kiev, 1977.

[14] Map of Protected Areas of Ukraine, Kiev, 1977.

[15] Map of Protected Areas of Ukraine, Kiev, 1977.

[16] Map of Protected Areas of Ukraine, Kiev, 1977.

[17] Map of Protected Areas of Ukraine, Kiev, 1977.

[18] Map of Protected Areas of Ukraine, Kiev, 1977.

[19] Map of Protected Areas of Ukraine, Kiev, 1977.

Comment: Territory of volcanic eruptions of Jurassic period. There are a number of rare and endemic species of flora and fauna in the site.

Karauloba***[20]	III	?/?	100	1964
Krasnie Peshery***[21]	III	?/?	10	1947
Novokaterinovskoe Denudation***[22]	III	?/?	10	
Odesske katakombi***[23]	III	?/?	1	1963

Comment: The underground system of karst caves.

Soldatskaya Peshera***[24]	III	?/?	10	1963

Comment: Carst Cave

Styl'skoe Denudation***[25]	III	?/?	25	1972

Zakaznik				
Altagirskiy***	IV	?/?	1,100	1968
Astaninskie Plavni***[26]	IV	?/?	50	1964
Arabatskiy***[27]	IV	?/?	600	1964
Ayudag***[28]	IV	?/?	527	1964
Bakaiskiy***[29]	IV	?/?	420	1964
Bolshoy Kanyon of Crimea***[30]	IV	?/?	300	1947

Comment: Biggest canyon of the Crimea Peninsula with several waterfall and a relic plants listed in the Red Data Book of the former USSR.

Berdyanskiy***[31]	IV	?/?	413	1963
Berezovie Kolki***[32]	IV	?/?	1,312	1967
Chernaya Rechka***[33]	IV	?/?	150	1947
Dalnitskiy***[34]	IV	?/?	1,204	1970
Dzharylgachskiy***[35]	IV	?/?	300	1964

Comment: Area of a habitat of a rare crop plant *zolotoborodnik tsikadoviy*.

Kachinskiy Kanyon***[36]	IV	?/?	100	1964

[20] Map of Protected Areas of Ukraine, Kiev, 1977.
[21] Map of Protected Areas of Ukraine, Kiev, 1977.
[22] Map of Protected Areas of Ukraine, Kiev, 1977.
[23] Map of Protected Areas of Ukraine, Kiev, 1977.
[24] Map of Protected Areas of Ukraine, Kiev, 1977.
[25] Map of Protected Areas of Ukraine, Kiev, 1977.
[26] Map of Protected Areas of Ukraine, Kiev, 1977.
[27] Map of Protected Areas of Ukraine, Kiev, 1977.
[28] Map of Protected Areas of Ukraine, Kiev, 1977.
[29] Map of Protected Areas of Ukraine, Kiev, 1977.
[30] Map of Protected Areas of Ukraine, Kiev, 1977.
[31] Map of Protected Areas of Ukraine, Kiev, 1977.
[32] Map of Protected Areas of Ukraine, Kiev, 1977.
[33] Map of Protected Areas of Ukraine, Kiev, 1977.
[34] Map of Protected Areas of Ukraine, Kiev, 1977.
[35] Map of Protected Areas of Ukraine, Kiev, 1977.

Karabi-Yailinskaya Kotlovina***[37]		IV	?/?	32
Karasubashi***[38]	IV	?/?	24	1963
Khapkhalskiy***[39]	IV	?/?	250	1964

Comment: Khapkhalskiy Gorge with one of the biggest waterfalls in Crimea called Dzhurdzhur and old growth oak forest.

Kosaya Strelka***[40]	IV	?/?	144	1971
Molochniy Liman***[41]	IV	?/?`	19,000	1968
Noviy Svet***[42]	IV	?/?	470	1964

Comment: Coastal area with a relic species of Stankevich pine listed in the Red Data Book of the USSR.

Petrovskiy***[43]	IV	?/?	340	1960
Radivonovskiy***[44]	IV	?/?	400	1968
Razdol'nenskiy***[45]	IV	?/?	100	1972
Staroberdyanskiy***	IV	?/?	1,000	1968
Velikoanadol'skiy***[46]	IV	?/?	2,543	1960

Comment: Forest massif artificially planted in 1843.

Yagorlitskiy***[47]	IV	?/?	30,300	1972

Comment: Protection of wintering places of waterfowls, including swans in the Yagorlik Gulf.

Nature Reserve (Zapovednik)

Dunaiskie Plavni*	Ia	49°40'N/31°20'E	14,851	1981
Karadagskiy**	Ia	45°00'N/35°00'E	2,874	1979
Krimskiy**	Ia	44°28'N/34°10'E	44,175	1991
Mys Martiyan**[48]	Ia	43°30'N/34°16'E	240	1973

Comment: Marine-terrestrial area of the Black Sea with a relic forests of juniper trees of Mediterranean flora.

Ukrainskiy Stepnoy**	Ia	47°16'N/37°10'E	2,756	1961
Yaltinskiy Gorno-Lesnoy**[49]	Ia	44°20'N/34°10'E	14,521	1973

Comment: Territory of biological complexes of the Main Crimean Mountain ridge and many natural monuments.

---

[36] Map of Protected Areas of Ukraine, Kiev, 1977.
[37] Map of Protected Areas of Ukraine, Kiev, 1977.
[38] Map of Protected Areas of Ukraine, Kiev, 1977.
[39] Map of Protected Areas of Ukraine, Kiev, 1977.
[40] Map of Protected Areas of Ukraine, Kiev, 1977.
[41] Map of Protected Areas of Ukraine, Kiev, 1977.
[42] Map of Protected Areas of Ukraine, Kiev, 1977.
[43] Map of Protected Areas of Ukraine, Kiev, 1977.
[44] Map of Protected Areas of Ukraine, Kiev, 1977.
[45] Map of Protected Areas of Ukraine, Kiev, 1977.
[46] Map of Protected Areas of Ukraine, Kiev, 1977.
[47] Map of Protected Areas of Ukraine, Kiev, 1977.
[48] Map of Protected Areas of Ukraine, Kiev, 1977.
[49] Map of Protected Areas of Ukraine, Kiev, 1977.

4.4 Internationally designated coastal protected areas

Country, designation and site name	Long/Lat

Bulgaria

Ramsar (Wetlands) Convention

Arkoutino (Rapotamo)*[50] 42°18'N/27°45'E

Comment: Wetland of international importance, an important bird area in Europe. It is a territory of Rapotamo Nature reserve (see above) and one marsh from this complex is a reserve Arkoutino (see above).

Burgas Lakes*[51] 42°30'N/27°29'E

Comment: Wetland of international importance, an important bird area in Europe. One lake from this complex is a reserve Atanasovsko ozero (see above).

Durankulak and Shabla Lakes*[52] 43°42'N/28°30'E

Comment: Wetland of international importance and an important bird area in Europe. Globally threatened species: i. Breeding species: *Lutra lutra, Crex crex, Astacus astacus, Hirudo medicinalis*; ii. Migrating and wintering species: *Pelicanus crispus, Halietor pygmeus, Oxyura leucocephala, Anser erhythropus, Branta ruficollis*; European threatened species: *Aythya nyroca, Aythya ferina, Locustella lusciniodes.*

UNESCO-MAB Biosphere Reserves

Réserve Kamtchia* 43°02'N/27°50'E

Comment: See above details for Reserve Kamtchia.

Réserve Ouzounboudjak* 42°00'N/27°45'E

Comment: See above details for Réserve Ouzounboudjak.

Georgia

Ramsar (Wetlands) Convention

Wetlands of Central Kolkheti (Kolkheti Lowland)***[53] 42°12'N/41°42'E

Romania

[50] Ministry of Environment of Bulgaria. National action plan for the conservation of the most important wetlands in Bulgaria. Sofia. 1995. P.46-47.

[51] Ministry of Environment of Bulgaria. National action plan for the conservation of the most important wetlands in Bulgaria. Sofia. 1995. P.52-53.

[52] Ministry of Environment of Bulgaria. National action plan for the conservation of the most important wetlands in Bulgaria. Sofia. 1995. Pp.24,52.

[53] See Web: http://www.grida.no/prog/cee/enrin/htmls/georgia/soegeor/english/wetlands/wetlands.htm

Ramsar (Wetlands) Convention

Danube Delta*	45°10'N/29°15'E

UNESCO-MAB Biosphere Reserves

Danube Delta Biosphere Reserve*	44°50'N/29°00'E

World Heritage Convention

Danube Delta*	45°00'N/28°50'E

Russia

European Diploma Type 'A'

Teberda**	41°45'N/43°30'E

Ramsar (Wetlands) Convention

Akhtar-Griva system of limans (eastern sea of Azov)*	44°50'N/38°30'E
Limans between the River Kuban and the River Protoka*	45°30'N/37°48'E

UNESCO-MAB Biosphere Reserves

Kavkazskiy Reserve*	40°15'N/43°47'E

Turkey

There are no internationally designated coastal sites.

Ukraine

Ramsar (Wetlands) Convention

Dunai Plavni*	42°28'N/29°36'E
Karkinitski Bay*	45°51'N/33°33'E
Sivash Bay*	46°09'N/34°21'E
Yagorlits & Tendrov Bays*	46°20'N/31°50'E

UNESCO-MAB Biosphere Reserves

Askaniya-Nova Reserve*	46°27'N/33°53'E
Chernomorskiy Reserve*	46°12'N/32°00'E

4.5 Site sheets for some protected areas

Bulgaria - Réserve Kamtchia

IUCN Management Category I and IX (Strict Nature Reserve and Biosphere Reserve)

Biogeographical Province 2.33.12 (Balkan Highlands)

Geographical Location At the mouth of the Kamtchia river on the Black Sea, south of the city of Varna, 43°02'N, 27°50'E.

Date and History of Establishment The reserve was established in 1951. The Union for Nature Protection set up in 1928 was responsible for setting up many reserves. These are now protected under the 1967 Law on Nature Protection. It was accepted in January 1977 as a Biosphere Reserve.

Area The original reserve covered 525ha but the Biosphere Reserve includes 842ha.

Land Tenure Government

Altitude 0-4m

Physical Features The reserve is on the floodplain of the River Kamtchia, at its mouth. Soils are formed predominantly of alluvium, and are flooded twice a year by the river's spring and autumn flood.

Climate No information

Vegetation The reserve includes the remains of forests which once covered over 5,000ha. This flood forest is dominated by *Fraxinus oxyphylla* and *Quercus pedunculiflora* with Crataegus monogyna among the understorey plants. Many of the trees are over 35m in height and are about 120 years old. Climbing plants are common, including Similax excelsa, Periploca graeca, Vitis silvestris, Hedera helix and Clematis vitalba. Along the river banks there are marshes and rushes.

Fauna There is a variety of terrestrial and aquatic animals. Mammals include roe deer Capreolus capreolus, wild boar Sus scrofa, pine marten Martes martes and fox Vulpes vulpes. There are many reptiles and amphibians, including European mud turtle Emys orbicularis, tessellated water snake Natrix tessellata and alligator lizard Ophisaurus apodus. Birds include a small colony of little egrets Egretta garzetta and the rare half-collared flycatcher Ficedula albicollis semitorquata. Many waterbirds nest along the river banks. Over 20 species of fish live in the river.

Cultural Heritage The area has been subject to cutting and drainage attempts.

Local Human Population There is a small village at the mouth of the river but the floodplains are fairly populated.

Visitors and Visitor Facilities Boats may be hired from fishermen at the mouth of the river, but access is limited.

Scientific Research and Facilities Comprehensive ecological studies and permanent research into the effects of human activity are indispensable. This is the only flood forest area in Bulgaria where such research can conveniently be carried out, and probably one of the few in Europe. There is no scientific research station.

Conservation Value No information

Conservation Management Total

The reserve is strictly protected and all economic activities prohibited. Access by visitors has been controlled by fencing the most vulnerable side.

There is a buffer zone. From north to west stretch forests and tillable lands, while to the east a ribbon of coastal sand and biocenoses of Paliurus aculeatus have not been developed as tourist resorts.

Management Constraints Before the reserve was created there was selective cutting and also all the trees of Ulmus campestris, which had been struck by Graphium ulmi (1930-35), were cut down. An embankment was partially built on the right bank of the Kamtchia River which narrowed the front of the flood-rise as it entered the reserve, and it is thought that this caused some disturbance to the forest's hydrological regime. The fact that the area is now a strict reserve is helping the flood forest to recover its original character.

Staff One full-time forest guard

Budget No information

Local Addresses

Economie forestière, Staro Oryakhovo, Département de Varna.

References

Stoilov, D., Noshtev, V., Gerasimov, S. and Velev, V. (1981). Protected Natural Sites in the People's Republic of Bulgaria. Balkan State Printing House: Sofia.

Date Revised August 1986

Bulgaria - Réserve Ouzounboudjak

IUCN Management Category I and IX (Strict Nature Reserve and Biosphere Reserve)

Biogeographical Province 2.33.12 (Balkan Highlands)

Geographical Location On the Turkish border in the Strandzha Planina, on the Rezvaya River, south of the village of Kosti, 42°00'N, 27°45'E.

Date and History of Establishment The reserve was established in 1956. The Union for Nature Protection set up in 1928 was responsible for setting up many reserves. These are now protected under the 1967 Law on Nature Protection. It was accepted in January 1977 as a Biosphere Reserve.

Area The original reserve had an area of 2,529ha but the Biosphere Reserve encloses 2,575ha.

Land Tenure Government

Altitude 150-200m

Physical Features The reserve is on the left bank of the River Resvaja, which forms the boundary on two sides. The terrain is hilly and the climate has marked maritime influences, being only about 20km from the sea.

Climate No information

Vegetation The reserve was set up to preserve the oak Quercus polycarpa and Q. frainetto and beech Fagus orientalis forests which are over 200 years old. The understorey includes Rhododendron ponticum, Daphne ponticum, Vaccinium arctostaphylos and Mespilus germanica, some of which only grow naturally in Europe in

the Strandzha. It is in the Bulgarian Floristic Region of Strandzha and part of the Balkan sclerophyll biotic province.

Fauna This is rich and varied and includes wild boar Sus scrofa, roe deer Capreolus capreolus, wild cat Felis silvestris, badger Meles meles, red fox Vulpes vulpes and pine marten Martes martes while wolf Canis lupus occasionally come from Turkey.

Cultural Heritage The reserve is on the Turkish border, and is remote. Part of the area was selectively logged, but man has affected it very little.

Local Human Population This border zone is very sparsely populated; there is a village at the mouth of the Resvaja River.

Visitors and Visitor Facilities Access for tourism is prohibited. The area is remote, in a border region and there are no facilities.

Scientific Research and Facilities There has been little scientific research and there are no special facilities.

Conservation Value No information

Conservation Management Total

The reserve is strictly protected and all economic and tourist activities prohibited.

A buffer zone is projected

Management Constraints Before the reserve was created there was successive selective cutting over a third of the area. Strandzha has seen the disappearance of Ursus arctos, Lynx lynx, Gypaetus barbatus and other fauna.

Staff One permanent member of staff

Budget No information

Local Addresses

Economie forestière, Kosti, Département de Bourgas.

References

No information

Date Revised August 1986

Georgia - Kintrishskiy State Reserve

IUCN Management Category I

Biogeographical Province 2.34.12

Geographical Location South of the Rioni valley, on the slopes of the Meskhet range, about 20-30km from Batumi, Black Sea region.

42°N LONGITUDE 42°E

Date and History of Establishment 1959

Area Previously 6,943ha; now 7,166ha

Land Tenure State lands by law

Altitude No information

Physical Features The reserve lies on the western slopes of the Meskhet range, a southern spur of the main Caucasus range, to the south of the Kolkhida or Colchis lowlands around the Riono valley. It is an area of mountainous relief with deeply entrenched gorges. Soils are zheltozems, krasnozems (red earths) mountain forest brown earths and sub-alpine meadow type. Mean temperatures range from 20°in July to 3-4° with a total annual rainfall of 1,000-2,000mm. Altitude ranges from 450-2,600m.

Climate No information

Vegetation This is zoned with altitude and includes broadleaf deciduous forests (1.2.5.1.) including Kolkhida oakwoods Quercus pontica, Medviediev's birch Beitula medwedewii, sweet chestnut Castanea sativa and beech Fagus spp. Sub-alpine evergreen shrubs include Rhododendron ponticus. The bay Laurus nobilis is also present, as are a number of relict species of botanical interest.

Fauna Larger mammals are fairly scarce but include a representative Caucasian forest fauna. Species reported from the area include wild pig Sus scrofa, red deer Cervus elaphus and pheasants.

Cultural Heritage No information

Local Human Population No information

Visitors and Visitor Facilities No information

Scientific Research and Facilities Studies into the biology of woody plants are undertaken in the area. There room for laboratory.

Conservation Value No information

Conservation Management Tot al

Nature Reserve

Management Constraints None reported.

Staff No information

Budget No information

Local Addresses

Georgian SSR, Kobuleti post office, Leselidze Street 4.

References

Anon. (1966) Caucasus, publ. Nauka, Moscow

Bannikov, A. G. (1969) Reserves of the USSR. Publishing House Kolos, Moscow. 552 pp.

Date No information

Romania - Danube Delta Biosphere Reserve

IUCN Management Category IV (Nature Reserve)

Biogeographical Province 2.29.11. (Pontian Steppe)

Geographical Location Lies on the coast of the Black Sea in the eastern part of the country in Tulcea County, and encompasses the area between the branch rivers Chilia, Sulina and Sfintu Gheorghe, the former creating the boundary between Romania and the Ukrainian SSR. The site also includes the Razelm-Sinoie complex of lakes Razelm, Sinoie, Zmeica and Golovita to the immediate south of the delta. 44°25'-45°28'N, 29°42'-28°45'E

Date and History of Establishment In 1938 the Council of Ministers passed Decision No 645 declaring 'Letea Forest' as a nature reserve. In 1961 it passed Decision No 891 declaring Rosca-Buhaiova (14,600ha), St George-Perisor -Zatoane (16,400ha), Periteasca-Gura Portitei (3,900ha) and Popina Island (98ha) as nature reserves. In 1971 the Management of Forestry declared the Caraorman Forest (840ha) and Erenciuc Forest (41ha). In 1975 the Council of Ministers passed the Decision No. 524 extending the Danube Delta protected areas to cover 41,500ha. In 1979 an area of 18,145ha combining Rosca-Buhaiova Reserve and Letea Forest was designated as Rosca-Letea Biosphere Reserve.

An area of 500,000ha including all previous designations was declared a biosphere reserve under National Decree No. 983 with supporting Articles 5, and 6 on 27 August 1990. Further legislation is under preparation. This area was further enlarged in early 1991 to cover 547,000ha. International recognition is imminent with submissions in May 1991 to Unesco for biosphere reserve nomination and to the Ramsar Bureau for nomination as a Ramsar site.

The latest legislation gives patrimony of the biosphere reserve to the Delta Authority. Decree 264/91 passed on 12 April 1991 places all institute, agency and inspectorate staff under the administration of the biosphere reserve. The environment agency for Tulcea Judet is also subordinate. All public domain and aquatic and natural resources generated are the ownership of the biosphere reserve authority. Further legislation will significantly strengthen the administration of the site.

Area 679,222ha, including 103,000ha marine. The entire delta region comprises 799,000ha of which 679,000ha are in Romania and 120,000ha in the Ukrainian SSR. The Razelm-Sinoie lagoon complex adds a further 88,000ha. The exact boundary of the site put forward for nomination has been altered to exclude less natural areas such as the Pardina polder and the fish ponds in the south-west (Vadineanu, pers. comm., 1991).

Land Tenure The State owns over 90% with the rest in private hands. The latter was only recently granted.

Altitude 0-15m

Physical Features The origin of the Delta can be traced to the Ice Age 'Wurm 3'. The present geomorphological form has evolved in historical times. The northern part of the Delta is slowly sinking, resulting in measurable water flow increase in the Chilia arm of the Danube. Only 9% of the area is permanently above water (EEN, 1990). The Delta is extensive in European terms (some 12 times the size of Cota Donana Reserve on the Guadalquivir Delta, Spain) with numerous freshwater lakes interconnected by narrow channels with huge expanses of aquatic vegetation. The Razelm-Sinoie complex to the south consists of several large brackish lagoons separated from the sea by a sandbar (Grimmett and Jones, 1989). Every year thousands of tons of alluvial deposits are carried into the Delta by the Danube resulting in a constant reshaping of the river banks and sandbars.

The overall basic hydrological and ecological systems of the Delta, although strongly degraded, are considered intact (Pons and Pons-Ghitulescu, 1990). Rosca-Buhaiova-Hrecisca Nature Reserve (part of Rosca-Letea Biosphere Reserve) is considered almost unaltered by man due to the shallow water level making access almost impossible. Perisor-Zatoane-Sacalin Nature Reserve is a mosaic of lakes and ponds and reedbeds with parallel strips of sand dunes ('grinduri'). Sacalin Island is made up of alluvial deposits with sand dunes and Tamarix.

The Delta has been classified into 12 habitat types as follows: aquatic habitats - lakes (0.80m - 2.50m depth) covered with flooded reedbeds; 'plaur' - flooded islets; flooded reeds and willows; riverine forest of willows and poplars; cane-fields; sandy and muddy beaches; wet meadows; dry meadows (arid); human settlements; sandy and rocky areas; steep banks; and forests on high ground (Ciochia, n.d.).

Climate The prevailing continental climate, with only 450mm of annual rainfall, is temporarily influenced by proximity to the sea and the humidity rising from countless inland lakes and small waterways (Anon., 1990).

Vegetation This is the largest continuous marshland in Europe which includes the greatest stretch of reedbeds probably in the world. The marsh vegetation is dominated by reeds Phragmites australis which form floating or fixed islands of decaying vegetation ('plaur') with some Typha angustifolia and Scirpus sp. Reeds cover some 1,700 sq. km and 'plaur' 1,000 sq. km, whilst the total area not included is only 148 sq. km (Ciochia, n.d.). There are also water lilies Nymphaea alba and Nuphar luteus and Stratiodes alloides. The higher ground supports stands of Salix, Populus, Alnus and Quercus. Sandy areas are covered with feather grass Stipa sp. and other steppe species. Forest elements are best observed in Letea Forest, occurring in a series of bands along dunes up to 250m long and 10m wide, where trees reach 35m in height. The species present are Quercus robur, Q. pedunculiflora, Populus alba, P.nigra, Fraxinus ornus, F. angustifolia, F. palisae, Pyrus pyraster, Tilia tomentosa, Ulmus sp., and the occasional Alnus glutinosa. Among the shrubs are Crataegus monogyna, Euonimus europea, Cornus mas, C. sanguinea, Rhamnus frangula, R. catharctica, Viburnum opulus, Berberis vulgaris, Hippophae rhamnoides, Tamarix spp. and occasional Corylus avellana. The distinctive feature of the forest is the abundance of climbing plants including Periploca graeca, Clematis vitalba, Vitis sylvestris and Humulus lupus. In spring, the ground is carpeted with Convallaria majalis. Particularly rare and threatened plants include Convolvulus persica, Ephedra distachya, Merendera sobolifera, Plantago coronopus and Petunia parviflora (IUCN, 1986).

Fauna Over 300 species of bird have been recorded, of which over 176 species breed (Radu, 1979), the most important being: cormorant Phalacrocorax carbo sinensis (3,000 pairs), pygmy cormorant P. pygmeus (K) (2,500 pairs comprising 61% of the world's population), white pelican Pelecanus onocrotalus (2,500 pairs comprising 50% of the Palaearctic breeding population), Dalmatian pelican P. crispus (E) (estimated at 150 pairs, perhaps now only 25-40 pairs, on the floating islands on lake Hrecisca, which represents 5% of the world population), night heron Nycticorax nycticorax (2,100 pairs), squacco heron Ardeola ralloides (2,150 pairs), great white heron Egretta alba (700 pairs), little egret E. garzetta (1,400 pairs), purple heron Ardea purpurea (1,250 pairs), glossy ibis Plegadis falcinellus (1,500 pairs), white stork Ciconia ciconia (many), mute swan Cygnus olor (500 pairs), white-tailed eagle Haliaeetus albicilla (V) (8 pairs), marsh harrier Circus aeruginous (300+ pairs), osprey Pandion haliaetus (3 pairs), Saker falcon Falco cherrug (1-2 pairs), red-footed falcon F. vespertinus (150 pairs), Sandwich tern Sterna sandvicensis (1,700 pairs), common tern S. hirundo (20,000+ pairs), whiskered tern Chlidonias hybridus (20,000+), and black tern C. niger (10,000-20,000 pairs). White-headed duck Oxyura leucocephala possibly still breeds. Slender-billed curlew Numenius tenuirostris (K) has occurred on passage (28 in 1971 and one or two in 1989). The Delta holds huge numbers of Anatidae in the winter with counts of 500,000 white-fronted goose Anser albifrons (but only 64,000-77,500 in 1982), up to 500 lesser white-fronted goose A. erythropus, 45,000 red-breasted goose Branta ruficollis (a globally threatened species with almost 95% of the world wintering population present here), 150,000 teal Anas crecca, 200,000 mallard A. platyrhynchos, 14,000 pintail A. acuta, 40,000 shovelor A. clypeata, 32,400 red-crested pochard Netta rufina, 970,000 pochard A. ferina, 13,000 ferruginous duck A. nyroca, and 1,500 red-breasted merganser Mergus albellus. In winter there is a concentration of some 30-40 Haliaeetus albicilla (R) (Grimmett and Jones, 1989; Green, 1990).

The Delta is very important for fish with 45 fresh water species present including threatened representatives of the Acipensenidae (Anon., 1990).

Otter Lutra lutra (V), Mustela erminea, and European mink Mustela lutreola (V), as well as wild cat Felis sylvestris are to be found on the floating islands (Anon., 1990). It appears that little work has been done on mammals since 1970 largely as a result of lack of funding, but the mink population, although its size is unknown, is apparently significant in European terms.

The forest areas contain several rare reptiles, including Vipera ursini, Elaphe longissiuma, and Eremias arguta deserti (IUCN, 1986).

Cultural Heritage The very long history of trading along the Danube is evident from remains of Greek and Roman settlements (including a lighthouse). Villages surrounding the Delta show a Turkish influence.

Local Human Population Estimated at between 12,000 and 16,000 (most of Ukrainian orthodox Lipki descent), depending on the definition of the area covered and residence status (EEN, 1990; IUCN-EEP, 1991). The lower figure is considered to be 50% less than 50 years ago (Pons and Pons-Ghitulescu, 1990). The population is distributed along the three main waterways, Chilia, Sulina and Sfintu Gheorghe, the main source of drinking water. Cases of cholera have been reported (EEN, 1990), the latest in August 1990 when 66 cases were diagnosed in the Tulcea region (Anon., 1990a). Most of the younger generation has left the Delta and old fishing villages of reed huts have been replaced by concrete structures, although individual fishing huts are retained. Some villages (e.g. Gorgova) have no electricity. Social problems are exacerbated by low incomes due to set prices for fish (500 lei per 1,000 kg of fish; 1989 figures). Conditions for the workers on state farms (on the newly-created polders) are reported to be extremely bad (attempts to introduce eco-farming in the near future)(IUCN-EEP, 1991); they lack basic infrastructures and the work is unpopular. It is reported that the state farms were used as prison camps (Pons and Pons-Ghitulescu, 1990). Some constructions are inappropriate to the region such as the blocks of flats and large commercial complex at Sfintu Gheorghe which remain empty (Pons and Pons-Ghitulescu, 1990).

The local population has been involved in small-scale, low-intensity use of natural resources supplemented by outside interests, such as fishing (10,000 boats are registered, cattle grazing and beekeeping, thought on the whole to be integrated to preservation of natural heritage.

The centre of commercial activitiy in the Delta is the freeport of Sulina. In the late 1980s the town underwent rapid expansion with 500 new dwellings being built, an hotel and a shipping centre to handle 3,500 ships annually (Anon., 1987). Other urban developments have taken place at Chilia Veche, Sfintu Gheorghe, 1 Mai, Unirea and Independenta (Anon., 1987).

Visitors and Visitor Facilities Under the previous regime parts of the Delta were heavily used for tourism (EEN, 1990), with up to 100,000 visitors annually, mostly concentrated at two hotels along the Sulina channel, although many camp along major channels in the summer (IUCN-EEP, 1991). Permission is needed to visit the nature reserves which are closed during the bird breeding season (IUCN, 1986). Away from the three main channels the areas are rarely frequented with very few visitors (IUCN-EEP, 1991). Nature tourism, however, has been greatly neglected, with, for example, a detailed plan prepared in 1982 by the Institute for Research on Ecology for Tourism of the Ministry of Tourism (together with the National Council for Scientific and Technical Research and the Academy of Sciences in Agriculture and Forestry) being ignored. General tourism development was encouraged, however, on the coast (Pons and Pons-Ghitulescu, 1990). More recently the beginnings of indiscriminate tourism organised by numerous tourist agencies is evident (Roman, 1990), with 40 private agencies springing up in Tulcea (IUCN-EEP, 1991).

Scientific Research and Facilities Ecological studies on the river and the Delta conducted by Grigore Antipa began at the beginning of the century (Pons and Pons-Ghitulescu, 1990). In the past two decades research on the delta was carried out in a number of phases (Vadineanu, 1990): between 1974 and 1978 an intensive programme of investigations on Rosu-Puiu complex of lakes (SE area of delta) covered morphometric measurements, physico-chemical measurements, structure and dynamics of communities, biomass, production measurements (primary and secondary), field and laboratory experiments for oxygen consumption, filtration rates, energy expenditure on anaerobic pathways and the relationship between phytoplankton and submerged macrophytes, and on energy flows; between 1979 and 1981 investigations were carried out on Matita-Merhei lakes (north-east area of delta). Measurements as above were carried out; between 1980 and 1982 an extensive programme of investigations throughout the whole delta identified eight distinct aquatic ecosystems. From each of these groups one lake was selected as being characteristic; and since 1982 investigations have concentrated on eight characteristic ecosystems and since 1987 two lakes from the Razelm-Sinoie complex have been added.

Overall scientific data on the delta is being collected by a national group formed from members of the disbanded parliamentary Committee for Ecology. The Ministry of Environment has provided funds to a number of bodies to prepare research reports on past uses of the Delta and future developments (IUCN-EEP, 1990). A research programme for the Delta, the Black Sea and the Danube has been started in co-operation with the USSR. This

envisages investigations on the cycling of nitrogen, phosphorous, heavy metals and pesticides, the effects of the above on the biodiversity and biological productivity, as well as the role of ecotones in controlling the density of flow of chemical compounds (IUCN-EEP, 1990).

In 1991, seven research groups have been established within a three-year programme.

Faunal and floral surveys have been carried out (IUCN, 1986) but these have been limited and an overall species survey and long-term studies, especially for migratory waders on the eastern European/East African flyway (Harengerd et al., 1990) are lacking. It has been suggested that, due to the vast area of the Delta, aerial surveys are the only effective way of conducting surveys (Green, 1990). The national biodiversity survey of Romania includes the Delta where a biodiversity research group is preparing a detailed inventory. Over 70 scientists and 11 institutes are involved.

Conservation Value The Delta is the meeting point of Palaearctic and Mediterranean biogeographic zones and represents an unique dynamic wetland ecosystem in Europe (the second largest delta) containing a rich biodiversity of wetland habitats. The site is internationally significant for birds, both breeding and migratory, including a number of globally-threatened species. It is also a vitally important buffer system between the hydrographical basin of the River Danube and the Black Sea.

Conservation Management The area was previously managed by a Central Deltei, a central office set up in 1970 and abolished in August 1990 upon the creation of the biosphere reserve. The 1983 Decree for the Economic Development of the Delta gave responsibility for this work to the Central Deltei and until recently it had 2,000 employees with a budget of 5M lei (IUCN-EEP, 1991). It was reported that the Ministries of Agriculture and Industry were asked to compensate for the loss of employment in the delta as a result of the reclamation ban and the creation of the biosphere reserve (Schneider, 1990). A number of hydrological engineers are already unemployed as a result of the passage of Decree 103 (IUCN-EEP, 1990). Many of the staff have formed economic societies; six fishing and five agricultural (IUCN-EEP, 1991).

Within the 'Delta' biosphere reserve (covering some 679,222ha) 18,145ha are included in a separate biosphere designation (the core zone covers two-thirds of the area, the peripheral areas forming the buffer zone) and 43,790ha in seven nature reserves (two of which overlap with the biosphere reserve). The 18,145ha Rosca-Letea was declared a biosphere reserve in 1979 (the Rosca area has been protected since 1961 and Letea Forest since 1978); the nature reserves are:- Rosca-Buhaiova-Hrecisca (15,600ha but including part of the biosphere reserve), Perisor-Zatoane-Sacalin (15,400ha), Istria (8,000ha), Periteasca-Leahova-Gura Portitei (3,900ha), Popina (90ha), Saraturile (100ha) and Hasmacul Mare (700ha). These existing nature reserves are considered to be undisturbed zones which are totally protected. The biosphere reserve enabling legislation prohibits damaging and potentially damaging activities (Decree 983, 27.9.90) and controls intensive land use incompatible with the maintenance of the wetland ecosystem. At present there are 52,980ha of core zone, at 16 separate sites, 25,500ha of restoration zone, 230,200ha of buffer zone and 267,542ha of transition zone.

A priority action programme is being prepared as part of the Danube Delta Strategy and Management Plan. The most fully developed is the research programme, consisting of seven task forces with a detailed three-year plan (IUCN-EEP, 1991). The enabling agency is the Department of Environment; the responsible agency the Danube Delta Biosphere Reserve Authority. The plan will be a "statutory plan" legally binding for all national agencies, answerable to the Ministry of Environment. The Province of Tulcea will have local representation on the Danube Delta Authority. In this context a major input is being made by the international mission led by IUCN's East European Programme and including representatives from Unesco, WWF-International, ICBP, IWRB and Ramsar Secretariat. The mission visited the Delta in September 1990 and a strategy for international conservation assistance is due to be formalised in May 1991. This is likely to take the form of an integrated management plan for the biosphere reserve together with immediate urgent practical conservation action by the individual agencies co-ordinated by the Romanian authorities. In the historical context, this is not new. A report 'The conservation situation in the Danube Delta, Rumania during the period 1963-1969', recommending a long-term conservation plan, resulted from a second visit (the first was in 1963) to the Delta in June/July 1969 by a consultant on behalf of IUCN, WWF, ICBP and IWRB (Curry-Lindahl, 1969). A parliamentary commission of enquiry visited the Delta in late 1990.

Decree No. 103 entitled 'Decree concerning the abolition of the reclamation works in the Danube Delta', appearing in the Official Publication of Romania No. 22 on 7 February 1990, halted the major development projects in the delta. However, the Decree allowed 'strictly necessary works' to be completed or continued. These are listed as: maintenance of flood defences; completion of the regulation of the Sf Gheorghe branch; completion of the works to protect the coastline in the zone of Sinoe; completion of the works to protect the coastline in the zone of Portita-Sf Georghe-Sulina; navigation and bank protection of the Sulina branch; and maintenance of existing reclamations at Pardina, Sireasa, Fortuna, Rusco, Grindul Island, Chilia and Sulina. The completion of reclamation work at Pardina and Sireasca were allowed under Decree 103 on the understanding that no chemicals were to be applied (Carauscu, 1990). Previous work along the Sf Gheorghe (a relatively untouched river landscape) led to the bypassing of river meanders and the reduction in use of lateral channels, as well as the increase in pollution load deposition (Anon., 1990; Pons and Pons-Ghitulescu, 1990). The maintenance of agricultural activities in the polder areas is likely to result in soil degradation. It has been reported that many of these 'necessary works' have also subsequently been halted (Hopkins, 1990a).

The embankment and canalisation have increased the rate of desiccation of the lakes in the delta (Busila, 1990) as well as resulting in the drying up of the depressions between the dunes in Letea Forest, where the water table has dropped by 50 to 60cm below summer levels. Saplings have died and older trees stunted, soil erosion has increased and trees have been attacked by parasites (Kiss, 1990). Water quality in the Delta is very much determined by the water flowing down the Danube. This was previously filtered by a network of wet grasslands along the lower Danube. Some 435,000ha, or four-fifths of the total, have now been lost (Schneider, 1990).

The Decree required the Minister of Water, Forestry and Environment together with the Minister of Agriculture and Food Industry to prepare a study detailing the future economic uses of the Delta by 31 December 1990 (Pons and Pons-Ghitulescu, 1990). A report for Decree 103 was produced in May 1991 and provided guidelines by sector (e.g. forestry, agriculture, fisheries, tourism etc.) for the future use of the Delta Authority (IUCN-EEP, 1991). This has been accepted by the Minister of Environment. Exceptions to the activities mentioned in the decree are thought to have come about as a result of pressure from the Centrala Deltei Dunarii, the Institute of Study and Design for Land Reclamation (ISPIF) and the Soil Research Institute (ICPA), fearing the loss of employment by staff if all previous activities were to cease immediately. They have argued that abandoning all activities would result in squandering the investment of over 16 Billion lei (the equivalent of US$ 1 billion)(Pons and Pons-Ghitulescu, 1990). To counter this, it is estimated that direct annual losses due to agricultural operations in the Delta amount to 18 million lei (Roman, 1990), in addition to which the engineering institutes had invested 5B lei in infrastructures (IUCN-EEP, 1991). Overall economic losses were estimated at 300 million lei per annum (IUCN-EEP, 1990).

In 1990 the authorities invited the International Bank for Reconstruction and Development (World Bank) to assist them in the restructuring of 3.5 million ha of agricultural land in the delta and the lower Danube. It is likely that the first stage of the programme will be an environmental assessment plan for the area to be carried out in 1991. This programme may provide the opportunity to restore previous wetland areas in the delta and the lower Danube. Some measures are already being taken to restore seriously degraded sites in the empoldered areas including flooding to restore a water regime with a low intensity fishing regime.

A number of authorities are having an input to the preparation of the management programme. These include: Ministry of Environment, Ministry of Agriculture, Ministry of Tourism and Commerce, Ministry of Education and Science, Romanian Academy (NGO), Ecological Society of Romania (NGO), Braila Institute (Romanian Academy of Sciences), Iasi University, Institute of Tourism Research.

Management Constraints Degradation was reaching serious proportions through engineering works and inappropriate land uses. These have now been stopped. A very detailed summary of the history of the reclamation and water engineering works in the Delta is given by Pons and Pons-Ghitulescu (1990).

The previous regime had decided to use the area to economic advantage and in 1983 it was decided that agriculture should become the "principal economic activity" with plans to triple productivity by 1990. In total, 97,000ha were earmarked for agriculture (with some 50,000ha converted to irrigated croplands by 1987 by the construction of polders)(Grimmett and Jones, 1989). Of an area of 42,000ha cultivated with maize, only 17,000ha were considered productive with yields of between 500-800kg/ha. By the end of 1987, cereals covered 24,120ha, other crops 650ha, and vegetables 200ha, with 300ha planned as orchards and 280ha as

vineyards. Further plans envisaged ground nut production (Anon., 1987). A particularly damaging construction was the Sireasa polder covering 7,500ha, which destroyed the eastern levees and riverine forest areas (Pons and Pons-Ghitulescu, 1990). A further 32,469ha were to be devoted to fish farming (although some reports gave the final area of the fish-farms to be 244,000ha, of which 63,000ha had been created (Anon., 1990)). A total of 12,838 ha was given over to forestry (replacement of native species with hybrid poplars and cypresses), but here again production was less than expected due to the salination of groundwater (Pons and Pons-Ghitulescu, 1990). Increased reed production (for the paper industry which has exploited the area since 1956) has been tried, as well as rice cultivation in former salt-marshes (Anon., 1990). Reed production fell catastrophically from 200-300,000 tons per annum in 1960 to less than 50,000 tons per annum in the late 1980s (Pons and Pons-Ghitulescu, 1990). The reeds were harvested by heavy mechanised caterpillar equipment and processed at a cellulose factory specially constructed at Tulcea (Schneider, 1990). In 1990 only 8% of the total reed surface was harvested (IUCN-EEP, 1991). The burning of reed beds is also practised (Green, 1990). The additional 47,000ha was still to be reclaimed, much of it from the central, most ecologically and most important parts of the delta. This was to have been the 23,000ha Uzlina-Gorgova polder (Pons and Pons-Ghitulescu, 1990). In total, almost one third of the Delta was to be transformed. By December 1989 one third of the targets had been achieved. A further 66,185 ha in the northern parts bordering onto the USSR had become damaged by inefficient clearing of reeds (apparently by hard labour prisoners in the 1950s). Past drainage has caused the loss of much wetland and, although some of the damage has been compensated by the creation of fish ponds, these are not suitable for breeding species (Langeveld and Grimmett, 1990). Reed exploitation, water regulation and drainage have been linked to the population decreases in 20 bird species over the past decades (Schneider, 1990). The deliberate destruction of colonially-nesting birds which has occurred in the past is now thought to be uncommon (Garnett, n.d.). Certain species (pelican and birds of prey) are at risk from collision with the many kilometres of electricity power lines present in the delta. The wintering Branta ruficollis is dependent on the agricultural lands to the immediate south of the delta and changing practices may be important for their future (Green, 1990).

Other projects included the re-routing of the River Sfintu-Gheorghe by cutting a straight canal through the numerous meanders, which would speed up the flow of water and radically alter the pattern of alluvial deposition (Grimmett and Jones, 1989), and the exploitation of quartziferous sand from the sand dunes in particular on the Grindul-Caraorman barrier and exploitation of zircon and titan at Grindul Saraturile (Pons and Pons-Ghitulescu, 1990). The latter never came to fruition and lies abandoned. The site is due to reconstruction according to the biosphere reserve management plan (IUCN-EEP, 1991). Several new roads were to be built, seven industrial plants, a new harbour and a marked development of the tourism industry (4,000 beds, hydro-buses and pleasure boats)(Anon., 1990). There is some evidence that illegal hunting expeditions were organised by an Italian company (EEN, 1990). Others have noted the increase in intensive hunting tourism (Roman, 1990). A pig farm (for 25,000 animals) with slaughter facilities was apparently constructed and plans were put forward for airport construction (Schneider, 1990).

The local fishing industry has also suffered with catches halved since 1980. Extensive fish farming using Chinese carp has resulted in the virtual extinction of wild carp. In 1984 the number of indigenous fish caught fell by two-thirds, the farmed fish catches doubled. The increase in fish farming activities has caused some conflict with bird colonies, especially of pelicans and cormorants (e.g. at Maliuc on the Sulina waterway). Reports suggest that fish production in the fish ponds is very low (Pons and Pons-Ghitulescu, 1990). There is a thriving poaching industry based on the Delta villages, which tends to make some official fish catch figures inaccurate (IUCN-EEP, 1991).

Pollution carried downstream in the Danube is a greater threat with high levels of toxic pesticides (including DDT), herbicides and fertilisers. The resulting algal blooms threaten fish life (EEN, 1990). The polluted waters have apparently drastically reduced the numbers of migratory fish (sturgeons, hausen, ship sturgeon, and Russian sturgeon). The salt content has increased from 150mg/l to 350 mg/l and locally to 800mg/l. Nitrogen, potassium and chlorine contents are increasing strongly. Downstream of Tulcea, the water contains high concentrations of Hg and heavy metals (Pons and Pons-Ghitulescu, 1990). The connecting of Lake Razelm with the Danube has resulted in the pollution of the lake waters with a centimetre thick algal layer on the surface in the summer (Pons and Pons-Ghitulescu, 1990). Channels cut from Lake Fortunato to the main Sulina waterway caused the water level in the lake to fall from 2.5m to 1m. This apparently caused the pelican colony to be abandoned (EEN, 1990). Other sources of pollution include a bauxite smelter and ferrous metals plant at Tulcea (Rank, 1990), and a sulphur factory in the Soviet border town of Izmail (Rank, 1990a). In 1988 a political

scandal broke with the reporting of the dumping of 4,000 tons of toxic waste (including dioxine) at Sulina (Anon., 1988).

Heavy erosion of the littoral and the river banks of the Danube, caused by the construction of the Iron Gates hydroelectric facility on the Romanian-Yugoslavian border, has resulted in "the coastline regressing between 20 and 30m a year, and in some cases even 70m a year" (Pons and Pons-Ghitulescu, 1990). Of a total Romanian coastline of 288km, some 100km are showing active erosion. Of these, 70km are situated in the Delta. The worst affected sections lie between Sulina and Sf Gheorghe and Sf Gheorghe and Partita and also along the Sinoe Lake area (Anon., 1990d). The coastline has been strengthened and protected in part, and further construction aimed at reducing erosion includes the building of a 32km canal (35m wide and 6-7m deep, with a dam at its eastern end to stop sea surges) connecting Sulina and Sf Gheorghe which will transport delta water into the sea at Cherhana Rosulet (Arhire, 1990). Some degradation can be attributed to water regulation through canal, dyke and channel realignment and agricultural intensification within empoldered areas. Nearly 80% of the lower Danube flood plain has been drained and converted to agricultural land resulting in the virtual elimination of floods within the delta itself (Anon., 1990).

Threats to the nature reserves include illegal grazing (vegetation has been eliminated on Popina Island due to uncontrolled animal grazing) (Green, 1990), small-scale tourism, hunting and inflow of fresh water from irrigation schemes and the replacement of native woodland by plantations (Grimmett and Jones, 1989). Intensive grazing takes place at the biosphere reserve at Letea and at Histria and Murighiol (Anon., 1990c; Kiss, 1990). It is estimated that 5,500 head of cattle, some wild, are present in the Delta (IUCN-EEP, 1991).

Some 20% of the Danube Delta lies within the Ukrainian SSR and to be fully protected this component needs to be included. There is a 14,851ha zapovednik Dunajskii Plavina, situated between the Chilia River (national border) and the Black Sea.

The Danube Drainage Basin has an important influence on the Delta with a high percentage of pollution originating outside the country.

Staff Total staff of biosphere reserve authority is 470; 100 in enforcement services. Administration is likely to number 50.

Budget Total c. 100M lei, comprising biosphere reserve authority 65M lei; enforcement services 8.5M lei; administration 14M lei; monitoring agency 10M lei. In addition, the hydrological programme has received 300M lei over three years. It is suggested that the costs to the government of the management of the Delta will probably triple in the short-term, but in the long-term these costs may be recouped through income from tourism (IUCN-EEP, 1990).

Local Addresses

The Danube Delta Biosphere Reserve Authority (Governor), The Department of Environment, The Ministry of Environment, R-Bucharest, Artera Nova N-5, Tronson 5-6, Sector 5

Previously the biosphere reserve was administered by the Academia Republicii Socialiste Romania, MAB National Committee of Romania, 71102 Calea Victoriei nr. 125, Bucaresti

References

Anon. (1987). Agrepress. 24 June.

Anon. (1988). The Times.

Anon. (1990a). Cholera breaks out in Romania. The European. 17-19 August. P. 2

Anon. (1990). Okologische Bausteine fur unser gemeinsames Haus Europa = Ecological Bricks for a Common Europe. München, Verlag für Politische Okologie.

Anon. (1990c). Eco 15.

Anon. (1990d). Tulcea Libera 156. 7 August.

Arhire, -. (1990). Tulcea Libera 156. 7 August.

Busila, S.A. (1990). Tulcea Eco 9. 15 April.

Carauscu, A. (1990). Eco 17. 8 June.

Ciochia, V. (n.d.). Overview on structure and dynamics of the avifauna of the Danube Delta and neighbouring area. Unpublished notes.

Curry-Lindahl, K. (1969). Conservation in the Danube Delta in Rumania. WWF Year Book 1969. P. 20 & Pp. 272-276.

EEN (1990). Romania - The Delta. Eastern Europe Newsletter 4(22).

Garnett, M.C. (n.d.). Preliminary Solutions for the Coexistence of fisheries and pelicans in the Danube Delta. Preliminary Report IUCN/WWF Project No. 3139.

Green, R. (1990). The ornithological importance of the Danube Delta and Lake Razelm-Sinoie. Draft prepared for international mission 1990.

Grimmett, R.F.A. and Jones, T.A. (1989). Important Bird Areas in Europe. International Council for Bird Preservation, Cambridge, UK.

Harengerd, M., Melter, J., and Reinke, E. (1990). Ornithological observations in Romania. Biologische Station Munster.

IUCN Conservation Monitoring Centre (1986). MAB Information System Biosphere Reserves Compilation 4, October 1986. Prepared for Unesco.

IUCN-EEP (1990). Report of Second Meeting and Follow-up Meeting Conservation Activities on Romanian Sections of the Danube. 29 June 1990 Montreux, Switzerland. 2 July 1990, Moscow. International Union for Conservation of Nature, Gland, Switzerland.

IUCN-EEP (1991). Unpublished notes of mission to Delta 25 May-4 June 1991. International Union for Conservation of Nature-East European Programme.

Kiss, J.B. (1990). Romania Pitoreasca 7 (223).

Langeveld, M.J. and Grimmett, R.F.A. (Eds). (1990). Important Bird Areas in Europe Wetlands for the Shadow List of Ramsar Sites. International Council for Bird Preservation, International Waterfowl and Wetlands Research Bureau, Cambridge, UK.

Pons, L. J. and Pons-Ghitulescu, M.N. (1990). The recent developments around the Danube.

Pons, L.J. (1987). Recent information about the present ecological state of the Danube Delta and future threats by agricultural developments. Report.

Pons, L.J. (1988). Report about a visit to the Danube Delta (19th -22nd October 1988).

Radu, D. (1979). Pasarile din Delta Dunari. Academiei Republicii Socialiste Romania.

Rank, M. (1990). Little Bitterness after Romanian Revolution in Danube Delta. Reuters, 4 February.

Rank, M. (1990). Wild Danube saved by Ceasescu Overthrow. Reuters, 19 February.

Roman, R.A. (1990). "S.O.S. Danube Delta! An Open letter to Prime Minister Petre Roman". 22 June, 1990.

Roman, R.A. (1990). Romania Libera. 1 August.

Schneider, E. (1990). The Wet Grasslands in the Catchment Area of the Lower Danube. International Wet-Pasture Symposium, Rastatt, 1988.

Wirth, H. (1979). Nature Reserves in Europe. Edition Leipzig.

Vadineanu, A. (1990). Data available on the Danube Delta. Unpublished note 14 February.

Date March 1991

Russia - Kavkazskiy Zapovednik

IUCN Management Category I and IX (Strict Nature Reserve and Biosphere Reserve)

Biogeographical Province 2.34.12 (Caucaso-Iranian Highlands)

Geographical Location In the western part of the Caucasian range, split between Adygeyskaya Autonomous Oblast', in Krasnodarskiy Kray and the Karachaevo-Cherkesrkaya Autonomous Oblast' of the Stabropol'skiy Kray of the RSFSR, the majority lying in the former. The reserve has 21km forest of Sochi. Separate from the main territory of the reserve is the Khost yew-box forest (Khost region, near Sochi) and the Sochi zoo-forest park. 43°46'N, 40°21E.

Date and History of Establishment Reserve established in 1924 and approved as a Biosphere Reserve in 1978.

Area The reserve covers an area of 263,477ha

Land Tenure State property, under the administration of the Ministry of Agriculture of the USSR.

Altitude 0-3,360m

Physical Features The territory of the reserve represents a typical mountainous landscape, with steep mountain forests, river valleys and alpine tundra along two very large elevations: the main Caucasian range and the forward range situated to the north of the main range. Glaciers and firns feed numerous watercourses; two large rivers, the Bol'shaya Laba and the Belaya, and their tributaries (Malaya Laba and Kisha) dissect the northern slope of the main range into spurs. The rivers of the southern slope - Mzymta, Sochi, Golovinska (Shakhe) - flow into the Black Sea. Between the main and the forward range lies the southern depression, parallel to which run the valleys of the rivers Zakan, Umpyrki, Achipsty, Alous and Aspidnoi. The climate varies, with the Caucasian Range acting as a barrier separating the wet and hot Black Sea region from the drier and colder districts of Transkuban and Near Caspian. The heaviest rainfall occurs on the southern slopes of the main range, with an annual precipitation sometimes exceeding 3000mm at 1800-2500m. To the east, the rainfall decreases, and in the basins of the Malaya Laba and Bol'shaya Laba is only 700-900mm a year.

Climate No information

Vegetation The reserve consists of 162,319ha of forest cover and 1,994ha of water areas. The vegetation of the reserve reflects the complex history of the existing surface of the West Caucasus initially selected to represent the Black Sea-Ghirkan province of broad leaved mountainous forests, the heavy ruggedness of its relief and the variety of climate. Over 1,500 species of higher plants are present, increasing to 3,000 if we include the diversity of mosses, fungi, lichens and algae, 20% of which are endemic. Of interest are the large number of

tree-shrub species, 165 in all. In the reserve, Tertiary relict plants have been preserved - representatives of the ancient pre-glacial flora of the Caucasus: Caucasian fir Abies nordmanniana, oriental beech Fagus orientalis, chestnut Castanea sativa, oriental spruce Picea orientalis, Iberian oak Quercus iberica, sycamore maple Acer pseudoplatanus, Caucasian lime Tilia caucasia etc. A large part of the reserve is covered by forests. In the mountain belt, broadleaved forests grow to 1,200-1,300m, with oak forests on the light southern slopes at 800-900m. Beech forests are widespread, often covering the whole southern slope of the main range from 500m to the upper forest boundary, but firs predominate, accounting for about two-thirds of all the forest area. From 2,300-2,500m, vegetation of the subalpine meadows gives way to vegetation of the alpine belt extending up to 2,800-2,900m.

Fauna The number of mammalian species recorded is 59. There are 192 species of birds, over 132 of which breed including lammergeier Gypaetus barbatus, griffon vulture Gyps fulvus, black vulture Aegypius monachus and golden eagle Aquila chrysactos. The West Caucasian fauna is most widely represented with large numbers of wild goat Capra caucasica, champi Rupicapra rupicapra and wild boar Sus scrofa; roe deer Capreolus capreolus are seen in the strip of broadleaved forests. In 1940 bison Bison bonasus were reintroduced into the Caucasus, and now number 900 in the Caucasus Reserve and the adjoining territories.

Cultural Heritage No information

Local Human Population No settlements within the reserve

Visitors and Visitor Facilities No information

Scientific Research and Facilities Since the reserve was established, an inventory has been taken of the flora and fauna, and the biology and ecology of individual (particularly rare) species are being studied. In 1976, a comprehensive programme was initiated to study the structure and dynamics of the main ecosystems of the north-west Caucasus. The effects of fire and logging on the ecosystem are also being monitored. The territory is accessible for research, both of an expeditionary and stationary character.

Conservation Value No information

Conservation Management Total. The Reserve was set up by Decree of the Council of People's Commissars of the RSFSR in 1924. In accordance with the Basic Principles of Land Legislation of the USSR and the Union Republics, any activity disturbing the natural complexes of reserves or threatening the conservation of natural objects of special scientific or cultural value is forbidden both in the territory of a reserve and in the protected zones set up around reserves.

The Decree setting up the Caucasian State Reserve specifies the entire area as a single territory.

The reserve is in two sections. The main mountainous sector and the Khostin yew-box forest covering 301ha and a buffer zone is being set up around the reserve.

Management Constraints The natural complex of the Caucasus Reserve has been very little modified by human activity; most of it has never been subjected to tree-felling and a large part of the alpine meadows has never been grazed by domestic cattle.

Staff 180 permanent staff

Budget No information

Local Addresses

Caucasian Reserve, Sukhumskoe Shosse, 7a, Sochi X-67 Krasnodar Territory, RSFSR, 354067, USSR.

References

Bannikov, A.G., Golgofskaya, J. Yu., Kotov, V.A. (1967). The Caucasian Reserve. "Znaniye" Publishing House.

Borodin, A.M. and Syroechkovski, E.E. (1983). Zapovedniki SSSR Moskva, 'Lesnaya Promyshlennost'.

Research Publication of the Caucasus Reserve. Vol. I-II. Publication of the Caucasus Reserve.

Sokolov, V. (1985). The System of Biosphere Reserves in the USSR. PARKS, 10(3): 8-9.

Date Revised September 1986

Russia - Teberdinskiy State Reserve

IUCN Management Category I

Biogeographical Province .2.34.12

Geographical Location On the upper reaches of the Teberda River, with a minor part of the reserve in the valley of the Kizgigh River, on north slopes of the Bolshoi Caucasus.

43°N LONGITUDE 42°E

Date and History of Establishment 1936

Area Previously 83,122ha; now 84,996

Land Tenure State land by law

Altitude No information

Physical Features The reserve lies on the north-western slopes of the eastern Caucasus. The mountainous landscape is formed from rocks of Precambrian age, including granites, gneisses, amphibolites and schists. A major portion lies within a granitic mass. Features of the landscape include 100 glaciers, 100 mountain lakes of glacial origin and many waterfalls. The reserve is divided into two subsections in the Teberda and Kizgich valleys. The climate is temperate with 150 days above 0°C, a mean July temperature of 16°C and a mean January temperature of -8°C with 800mm annual rainfall. Soils are of brown mountain/forest type.

Climate No information

Vegetation Three major vegetation zones are represented. Forests are present from the valley floor to 2,400m with Pinus hamata, Abies nordmaniana, Picea orientalis, Taxus baccata, and deciduous trees including Acer, Carinus, Fagus, Malus, Pyrus, Prunus and others (1.2.5.1; 1.2.4.1; 1.9.2; 1.1.9.3.). Between 2,500m and 2,600m lie alpine meadows (5.3.2.) and above this lie alpine communities. The herbaceous flora of such zones is very rich in species.

Fauna Mammals present include the European hare Lepus europaeus, wolf Canis lupus (V), red fox Vulpes vulpes, brown bear Ursus arctos, stoat Mustela erminea, weasel M. nivalis, stone marten Martes foina, otter Lutra lutra, leopard cat Felis bengalensis, lynx F. lynx, wild pig Sus scrofa, maral Cervus elaphus maral, chamois Rupicapra rupicapra and Caucasion tur Capra sibirica caucasica. Frequent birds include bearded vulture Gypaetus barbatus, golden eagle Aquila chrysaetos, Caucasian blackcock Lyrurus mlokosiewiezi, Caucasian snowcock Tetraogallus caucasicus and partridge Alectoris kakelik.

Cultural Heritage No information

Local Human Population No information

Visitors and Visitor Facilities No information

Scientific Research and Facilities Studies of rational use of mountain ecosystems for watershed and soil protection, as a health resort etc., together with research on valuable game animals. There are rooms, laboratories, scientific equipment, a natural history museum, a breeding area for wild animals, plantations of ginseng Panax shinseng.

Conservation Value No information

Conservation Management Total

There is no zoning; this is a Strict Nature Reserve.

Management Constraints Forest fires, felling of trees, excessive pasturage by cattle before establishment of the reserve.

Staff No information

Budget No information

Local Addresses

Teberda town, Stavropol territory, Russia SFSR.

References

Bannikov, A. G. (1969) Reserves of the USSR. Publishing House Kolos, Moscow. 552 pp.

Bronner, (1934) Teberda, a guidebook published by House of Scientists Moscow

Knuzer, V. (1951) The Teberda State Rezserve Tecknick da Stroma publ. Tbilisi

Knuzer, V. (1951) Reserves of the USSR Vol.1, Geographio, Moscow.

Knuzer, V. (1957/67) Works of the Teberda State Reserve, Stavropol

Knuzer, V. (1958) Teberda: essays on the Teberda Reserve, Stavropol

Date No information

Turkey - Haciosman Reserve

Management Category I (Strict Nature Reserve)

Biogeographical Province 2.11.05 (Middle European Forest)

Geographical Location Situated near Haciosman by Samsun on the Black Sea coast. Represents part of the Yesilirmak delta. 41°20'N, 36°20'E.

Date And History Of Establishment Designated under national legislation as a strict nature reserve in June 1987 along with four other new sites.

Area 86ha

Land Tenure State ownership (State forest)

Altitude Approximately sea-level

Physical Features Alluvial deposits of the Yesilirmak delta (Karakurum, pers. comm. 1987).

Climate Mild continental Black Sea climate

Vegetation Coastal alluvial forest composed of temperate European types species such as black poplar Populus nigra, ash Fraxinus spp., oak Quercus spp., willow Salix spp., alder Alnus glutinosa and elm Ulmus spp. (Karakurum, pers. comm. 1987).

Fauna No information

Cultural Heritage No information

Local Human Population No inhabitants within the reserve.

Visitors And Visitor Facilities Access restricted.

Scientific Research And Facilities Limited botanical and faunal surveys undertaken by the National Park Team of the Orman Genel Mudürlügü, Ankara and the Istanbul forestry institutes (Karakurum, pers. comm. 1988).

Conservation Management The area was established in order to protect one of the few remaining primaeval alluvial forests on the Black Sea coast (Karakurum, pers. comm. 1988).

Normal forestry management policies are being followed and conservation master plans are being considered for future preparation. Management is currently restricted to prohibiting domestic livestock grazing and commercial timber extraction (Karakurum, pers. comm. 1988).

Management Problems No information

Staff Wardens

Budget No information

Local Administration Sinop Orman Mudürlügü, Sinop.

References

Carp, E. (1980). A Directory of Western Palearctic Wetlands. IUCN/UNEP, Gland, Switzerland.
Grimmett, R. (1986). Preliminary inventory of important bird areas in Turkey. International Council for Bird Preservation, Cambridge, England.

Date January 1988
1543V

Turkey - Ilgaz Dagi National Park

Management Category II (National Park)

Biogeographical Province 2.11.05 (Middle European Forest)

Geographical Location The park is located in the Black Sea region, midway between Kastamonu (45km) and Cankiri (60km), 200km north of Ankara. The park is located 5-6km north of the town of Ilgaz on the slopes of Avlagin Tepe, Kastamonu province. 40°55'N, 33°37'E

Date And History Of Establishment Established in 1976 as a national park.

Area 1,088ha

Land Tenure State ownership

Altitude ranges from 1,300-1,600m

Physical Features Situated in the Ilgaz Daglari massif in a transition zone between central and northern Anatolia. The longest and more active fault line, the northern Anatolian Fault, passes through the northern slopes of the Ilgaz mountains. The bedrock consists of volcanic rocks, serpentine and schists. The topography is represented by steep mountain slopes culminating in crests at 1,600m.

Climate Located in the climatic transitional zone between Black Sea and Central Anatolia regions. There is a Black Sea climate with characteristic high humidity and cool temperatures.

Vegetation Altitudinal zonation results in gradually changing vegetation ranging from pine woods in the foothills to alpine steppe (General Directorate of National Parks and Wildlife, 1980). Pine forests are dominated by Scots pine Pinus sylvestris, black pine Pinus nigra and juniper Juniperus communis (General Directorate of National Parks and Wildlife, 1980). Highest elevations are dominated by alpine scrub and herbaceous vegetation.

Fauna The rich woodland fauna includes roe deer Capreolus capreolus, boar Sus scrofra, brown bear Ursus arctos, wolf Canis lupus and fox Vulpes vulpes (General Directorate of National Parks and Wildlife, 1980).

Cultural Heritage No information

Local Human Population No information

Visitors And Visitor Facilities Currently there are few facilities for visitors. A trout hatchery and fishing lake are available for sports fishing. Future projects include promotion of the park for recreation. Near the Catmali Pinar post a 1250 bed capacity accommodation is being planned as are camping and day-use facilities. After completion of these facilities a winter sports centre is to be developed (General Directorate of National Parks and Wildlife, 1980; Karakurum, pers comm, 1987).

Scientific Research And Facilities A multi-purpose building is under construction (Kettaneh, 1980).

Conservation Management The park was established with the aim of preserving the natural and recreational value of the region.

Master plans have yet to be completed but it is proposed to include a protection zone and development and skiing zone (General Directorate of National Parks and Wildlife, 1980).

Management Problems Future plans include the development of a number of zones for winter sport and tourist recreation, the result of which is likely to seriously affect the delicate montane ecosystem (Drucker, pers. comm. 1987).

Staff One manager, one ranger, two wardens and one guard (Kettaneh, 1980).

Budget 6,500,000TL (Kettaneh, 1980)

Local Administration Ilgazdagi Milli Park Mudürlügü, Kastamonu.

References
General Directorate of National Parks and Wildlife. (1980). National Parks of Turkey. Ministry of Forestry, General Directorate of National Parks and Wildlife, Ankara.
Kettaneh, M.S. (1980). Protected area information sheet. IUCN, Gland, Switzerland.

Date January 1988

Turkey - Yedigöller National Park

Management Category II (National park)

Biogeographical Province 2.11.05 (Middle European Forest)

Geographical Location Situated in the Black Sea region, 40km to the north of the town of Bolu and near to the town of Dirgine. 40°45'N, 31°40'E.

Date And History Of Establishment Established as a national park on 24 April 1965.

Area 2,019ha

Land Tenure State ownership

Altitude ranges from 700-1,600m

Physical Features The park consists of part of the northern slopes of the Bolu massif (1954m), with steep slopes often susceptible to landslides. The bedrock tends to be derived from serpentine schists, limestones and volcanic materials. There are seven lakes (turkish: 'Yedi' seven and 'goller' lakes) which were formed as natural dams, after soil landslides blocked the mountain valleys. The lakes tend to be acidic and vary in altitude between 870m and 740m and in some cases are interconnected below ground.

Climate Temperate climate equivalent to Balkan montane areas.

Vegetation Mixed forest vegetation of western Black Sea region type, typified at lowest altitudes by species such as beech Fagus orientalis, oak Quercus cerris, black pine Pinus nigra and Scots pine P. sylvestris, fir Abies cilicica, elm Ulmus spp., hornbeam Carpinus spp. and sycamore Acer spp. The willow Salix spp., sycamore Acer spp. and alder Alnus glutinosa are most frequently found along the streams, and lime Tilia spp. on the hill slopes. In the upper regions the composition of the forest changes and poplar Populus spp, yew Taxus baccata, Scots pine P. sylvestris and fir Abies cilicica replace the beech dominant woodland (Drucker, pers comm, 1987). The ground and shrub vegetation includes rhododendron Rhododendron spp., hazel Corylus spp., bramble Rubus spp., bracken Pteridium aquilinum, Cyclamen spp. Sambucus spp., Crataegus laciniata, Crocus spp., Daphne gnidium, Urtica spp. and Geranium spp. (Drucker, pers. obs. 1987).

Fauna Larger mammals in the reserve tend to be rare yet there are records of roe deer Capreolus capreolus, wild boar Sus scrofa, fox Vulpes vulpes, bear Ursus arctos, wolf Canis lupus, jackal C. aureus, wild cat Felis sylvestris, otter Lutra lutra and badger Meles meles. Birds include dipper Cinclus cinclus, long-eared owl Asio otus and eagle owl Bubo bubo. Introduced trout are also recorded from the lakes (Aktar, 1984). Red deer Cervus elaphus have been introduced into enclosures in the centre of the park (Drucker, pers. obs. 1987).

Cultural Heritage Traditional forms of transport including the use of oxen are still to be found in the area (Drucker, pers comm, 1987).

Local Human Population No inhabitants within the park. There are small village communities in the area.

Visitors And Visitor Facilities Even though the site is relatively remote there are high visitor attendance figures (coach excursions from Istanbul and Ankara are common), and national park wardens are available to

assist in supplying information. Facilities and activities include sports fishing, camping, picnic sites, nature walks, cafes and simple bungalow accommodation.

Scientific Research And Facilities Behavioural studies are being undertaken on the red deer Cervus elaphus, in a 26ha enclosure near the centre of the park. A local university college of science has been carrying out research on the zoology, botany and geomorphology of the park (Aktar, 1984). Studies are proceeding towards a request for the award of the European Diploma of the Council of Europe.

Conservation Management The site has been designated to ensure the protection of the Yedigoller watershed, restore the balance of nature and act as a recreational area. Regulations exist which prohibit hunting, restrict fishing (1 May to 30 September) and prevent commercial timber extraction. A system of zonation results in areas being specifically set aside for tourism and recreation, for wildlife protection and for re-introduction of deer. The boundary of the park is fenced and there is a further enclosure for captive bred deer. There is a tariff for entry into the park and fees for hunting and fishing permits (Drucker, pers. comm. 1987).

Management Problems Tourist pressure is high around the lakes, leading to widespread destruction of the natural ground vegetation and disturbance to any lake fauna (Drucker, pers. comm. 1987). Excessive hunting in the past has caused great damage to the wildlife populations in the area. Disturbance to the lake ecosystem has been caused by the repeated re-introduction of trout from an associated fish hatchery.

Staff One manager, one ranger one zoologist, one warden and 10 guards (1980)

Budget 6,000,000TL (1980)

Local Administration Yedigöller Milli Park müdürlügü, Bolu.

References

Aktar, O. (1984). Yedigöller Milli Park. Ilgi 39: 2-6.
Darkot, D. (1975). Göllerimiz. Redhouse Yayonevi, Istanbul.
General Directorate of National Parks and Wildlife (1980). National Parks of Turkey. Ministry of Forestry, General Directorate of National Parks and Wildlife, Ankara.
Gürpiner T. (1981). The Seven Lakes. Naturopa No.38

Date December 1987

Ukraine - Askaniya-Nova Zapovednik

IUCN Management Category I and IX (Strict Nature Reserve and Biosphere Reserve)

Biogeographical Province 2.29.11 (Pontian Steppe)

Geographical Location It is located in the southern Ukraine in the south-eastern part of the Prichernomorsky lowlands in the Chaplinski rayon of the Khersonski Oblast', 25km north of the Sivash lagoon and 50km south-east of Novaya Kakhovka. 46°28'N, 33°55'E.

Date and History of Establishment The first 'partially' protected reserve in Russia created in 1878 (for the acclimatisation of domesticated stock) and declared a reserve in 1921 with its present boundaries established in 1956. It was approved as a Biosphere Reserve in 1984.

Area The biosphere reserve covers 33,307ha of which 11,054ha is declared a zapovednik.

Land Tenure State owned

Altitude Almost perfectly flat, with maximum drop (over 2,000ha) of 8m the rest being 30m above sea level.

Physical Features The plain in which the Reserve is situated slopes gently to the south and southwest, maximum difference of altitude being no more than a few metres. Of the numerous depressions known as 'pods' (2-8m in diameter and 10-20cm deep), the largest named Bol'shoy Chaplinskiy of 2,000ha, is periodically flooded in spring. Most of these pods are enclosed by hardly noticeable shallow channels whilst the larger ones have radial water collecting ditches 1-2m deep and 8-10m in width. Soils are a mixture of solonetz, southern chernozems and dark chestnut with scattered solonchak types. Rivers are absent and the water table is at 19-20m, although clay loess linings to the pods tend to retain accumulated water, sometimes into summer. The climate is dry with hot summers and short, cloudy and sometimes cold winters. The temperature range from -3.6°C in January to 23.4°C in July with annual mean of 9.4°C and an annual rainfall of only 380mm. Dry winds and dust storms occur in spring with wind speeds of 25 miles per second with frosts in October, snow cover is present from mid-December to March, with a thickness of 10cm.

Climate No information

Vegetation The feather grass steppe, the protection of which was a principal objective of this reserve, is dominated by the feather grasses Stipa lessingiana, S. ucrainica and S. capillata, together with fescue Festuca sulcata and crested hair grass Koeleria cristata. Herbaceous plants include abundant Pyrethrum millefoliatiatum, Galatella villosa, and Artemisia austriaca. Other typical species are Tulipa schrenkii and T. biebersteiniana, purple mullein Verbascum phoeniceum, Iris pumila, the plumbago Goniolimon tataricum and summer cypress Kochia prostrata. The swampy 'pods' have fox-tail Alopecurus pratensis, couch-grass Agropyrum pseudacaesum, sedge Carex praecox and in flooded places flowering rush Butomus umbettalus and Scirpus supinus. Over 4,117 steppe plant species have been recorded, dominated by the grasses, with 40 species endemic to the southern Ukraine, 56 species classified are rare in the 'Red Book SSSR' and a further ten as threatened. The total number of all plant species and subspecies is estimated as 3,378.

Fauna The mammals of the steppe include European suslik Citellus citellus, hamster Cricetus cricetus, social vole Microtus socialis and a distinct subspecies of mouse Mus tataricus as well as polecat Putorius putorius. In total 18 mammals, six reptiles (Vipera ursini) and one amphibia have been recorded. Of the birds recorded, 16 are breeding and include the only site in the Ukraine for steppe eagle Aquila rapax as well as common species such as grey partridge Perdix perdix, stone curlew Burhinus oedicnemus, and short-toed lark Calandrella cinerea. During migration periods rarer species such as black stork Ciconia nigra, crane Grus grus, great bustard Otis tarda, demoiselle crane Anthropoides virgo, white-tailed eagle Haliaeetus albicilla and peregrine falcon Falco peregrinus are present and waterfowl such as whooper swan Cygnus cygnus and white-fronted goose Anser albifrons.

Cultural Heritage The reserve has some archaeological and historical interest.

Local Human Population No information

Visitors and Visitor Facilities Tourism is restricted but recognised as one of the aims of the reserve.

Scientific Research and Facilities The objective is to undertake long-term studies on the dynamics of the grazed steppe ecosystem and monitoring any changes due to human activities. Study of vegetation dynamics, and population dynamics and ecology of wild species of grazers and browsers, with special reference to developing methods of protecting the rarer species in the wild and improved acclimatisation to new localities, hybridisation and breeding of animals in semi-natural environments. Special attention will be given to geosystem monitoring similar to that being carried out at the Central Chernozem State Reserve. There are fully equipped laboratories, a museum, botanic and zoological gardens, breeding paddocks and a scientific library.

Conservation Value No information

Conservation Management Total protection afforded to zapovednik area.

The strict nature reserve status is modified over certain areas by the introduction and acclimatisation of ungulates (such as Przewalski's horse, hartebeest, and gnu) and birds of the ostrich family under a paddock system and in conjunction with domestic stock. This area, the experimental stock-breeding zone, is managed by the Askania Nova Institute for steppe stock-breeding. At present, only 1,560ha is totally protected, the

remainder being set aside for pasture, hay, an arboretum of nearly 400 species and a zoo in which introduced species such as zebra Equus grevyi, E. zebra Przewalski's horse E. przewalskii, eland Taurotragus oryx, hartebeest Alcelaphus buselaphus, gnu Connachaetes gnou and saiga Saiga tatarica are reared with considerable success. In addition to ostrich, the Ratite birds in the collection include the lesser rhea Pterocnemia pennata and emu Dromais novaehollandiae.

Total biosphere reserve covers 33,307ha which zoned into a strict protection area (the zapovednik) of 11,054ha, contains the only remaining unploughed pristine feather-grass steppe in Europe covering 1,500ha. There is also an experimental stock-breeding area of 17,453ha and an outer buffer zone 1km wide covering another 4,800ha.

Management Constraints The reserve suffered damage during the war.

Staff Fifty-eight of which 19 are researchers

Budget 240,000 roubles

Local Addresses

326332, Khersonskaya oblast', Chaplinskiy rayon, ngt. Askaniya-Nova, Ukrainkaya SSR.

References

Babich, A. D. (1960). Ascania Nova steppe oasis. Kharkov.

Bannikov, A. G. (1969) Reserves of the USSR. Publishing House Kolos, Moscow. 552 pp.

Bannilov, A. G. (1974) Around the reserves of the USSR. 2nd Ed. Publishing House, Mysyl, Moscow.

Borodin, A.M. and Syroechkovski, E.E. (1983). Zapovedniki SSSR Moskva, 'Lesnaya Promyshlennost".

Date August 1986

Ukraine - Tchernormorsky State Reserve

IUCN Management Category I (Strict Nature Reserve)

Biogeographical Province 2.29.11 (Pontian Steppe)

Geographical Location On the Black Sea coast, due east of Odessa, from the Dniepr-Bug estuary to Karkinitsky bay.

46°20'-47°N LONGITUDE 32°30'-33°E

Date and History of Establishment 1927

Area Previously 36,600ha (of which 9,500ha comprised the terrestrial area); now 71,889ha.

Land Tenure State lands by law

Altitude No information

Physical Features The reserve includes several separate areas along the Black Sea coast, together with some islands in the Black Sea. The area is mainly flat-lying, formed from alluvial sediments and includes areas of standing water, both fresh and salt, sandspits and other coastal features. Mean temperatures range from -3.6°C (January) to 30°C (July) with 60 days below 0°C. Total rainfall is estimated at 350mm. Soils are sandy and saline.

Climate No information

Vegetation This is of Ukrainian-Kazakh steppe type with sandy areas having associations of Festuca beckeri, Calamagrostis epigeios, wormwood Artemisia arenaria and Thymus sp. (5.2.2). More saline areas have steppe of Artemisia maritima, Suada maritima, Kochia prostrata and Festuca sulcata. Standing water and coastal zones have reeds Phragmites communis (5.6.2). Woody species include alder Alnus glutinosa and Quercus robur together with birch Betula and aspen Populus tremula forming "kolkis" association (1.2.5.1 and 1.2.5.2). The ground cover here includes lily of the valley Convalaria majalis and Solomon's seal Polygonatum officinale.

Fauna Mammals include brown hare Lepus europaeus (capens), common vole Microtus arvalis, the thick-tailed 3-toed jerboa Styloiputelum and the red fox Vulpes vulpes. The reserve has outstanding numbers of migrating and over wintering birds. 260 species have been recorded. These include the great egret Egretta alba, whooper swan Cygnus cygnus, mute swan C. olor, shelduck Tadorna tadorna, gadwall Anas strepera, red-breasted merganser Meirgus serrator, the only breeding place in the USSR of the Mediterranean gull Larus melanocephalus, slender billed gull L. genei, great bustard Otis tarda, little bustard, O. tetrax, long-eared owl, Asio otis and golden oriole Oriolus oriolus. 40 fish species are also present including mullets Mugil sp., and others.

Cultural Heritage No information

Local Human Population No information

Visitors and Visitor Facilities No reports of tourism although earlier references cite availability of guided visits to the reserve.

Scientific Research and Facilities Ecological studies of coastal ecosystems, steppe areas and bird ecology have been made. There are laboratories and facilities for sea transport.

Conservation Value No information

Conservation Management Total

There is no zoning; this is a Strict Nature Reserve.

Management Constraints Introduced species include the racoon dog Nyctereutes procyanoides and the Japanese sika deer Cervus nippon.

Staff No information

Budget No information

Local Addresses Ukrainian SSR, Kherson regin, Golaya Prustan, Dneprovskaja Street No.1.

References Works on the reserve are published periodically.

Bannikov, A. G. (1969) Reserves of the USSR. Publishing House Kolos, Moscow. 552 pp.

Bannilov, A. G. (1974) Around the reserves of the USSR. 2nd Ed. Publishing House, Mysyl, Moscow.

4.6 National Environmental Policy and Legislation

Bulgaria Country Profile

Area 110,911 sq. km

Population 9,000,000 (mid-1989 estimate)
Natural increase: 0.1% per annum

Economic Indicators
GDP: No information
GNP: US$ 7,129 per capita (Anon., 1990)

Policy and Legislation On 5 October 1908 Bulgaria declared its independence from Turkey and in September 1946 a People's Republic was proclaimed. The Constitution refers to nature conservation under Article No. 31 (1971). In Articles 22 and 23, proposals for designation of protected natural sites can be submitted by enterprises, institutions, organizations and by individuals. The new Constitution, enacted in 1991, treats the matter of the environment in a single text – Article 15 (Spiridonov *et al.*, 1991).

Countryside protection dates from 1928 (Carter, 1977), when a "union for nature protection", the Council for the Protection of the Countryside, was formed. The first Conservation of Nature Act was issued in 1936 (Decree on protection of native nature) (Cerovsky, 1986; Spiridonov *et al.*, 1991). It established four categories of protected area and introduced species protection measures (Spiridonov *et al.*, 1991). Little more was achieved during the war of 1939-45 nor in the ten years that followed. A nature protection decree was formulated on 27 August 1960 and brought into force by rules published on 5 June 1961, with the legislation applying equally to reserves and national parks (Article 7 of the Rules) (IUCN, 1971).

The 1967 Law on Nature Protection covers the preservation, restoration, rational use of nature and natural resources, monuments, historical sites, development of science and scientific research. This Law, and the 1969 Regulations for the Administration of the Law of Nature Protection, effectively repealed the Ordinance related to the protection of nature, and the Decree of 1960 (Spiridonov, 1991). According to the 1967 Law, there are five categories of protected area: nature reserve, national park, nature sanctuary, protected site and historical site. Buffer zones are managed according to Directive No. 4 (1980) of the Committee on Environmental Protection on the Council of Ministry (now the Ministry of Environment). Suggestions for establishment of protected areas can be made both by private bodies and by state organisations. The law determines the temporary protective status, defines the bodies responsible, research programmes and public support (Spiridonov *et al.*, 1991).

The duties of all organisations and agencies in the field of flora, fauna and habitat protection are further defined in a number of acts, including the Law on Protection of Air, Water and Soil against Pollution (1963), Nature Protection Law (1967), Water Law (1969), Law on protection of Cultivated Lands and Pastures (1973) Territorial and Settlement Organisation Law (1973), Hunting Enterprise Law (1982) and Fishing Enterprise Law (1982) (Spiridonov *et al.*, 1991). Some other acts may also include relevant sections (ECE, 1986).

The *Komitet za opazvane na prirodnata sreda* (KOPS) (Committee for Environmental Protection) of the Council of Ministers was established under state legislation in 1976. KOPS declares a locality or an object under protection, by order of the Committee's President, after consultation with the Academy of Science's Institute of Ecology and interested departments on whose territory the objects are located. These orders are published in the *State Gazette.*

In 1977, a new document entitled "Guidelines for the Protection and Reproduction of the Environment in the People's Republic of Bulgaria" was approved by State Council (Cerovsky, 1986). This document covers environmental preservation, restoration and management policies and now plays a central role in formulating state environmental policy (Stoilov *et al.*, 1981). Another major policy document written in the early 1980s was the General Plan of the People's Republic of Bulgaria. This treats the environment as a complex integrated

system. In particular, the sections dealing with "Recreation" and "Standard Regional Planning Measures" refer to the important role played by legally protected areas (Mladenova and Paychev, 1985). Resources needed for protection measures are provided for in five-year and annual plans adopted by the government and People's Assembly (parliament) (ECE, 1986).

All land is state-owned and reserve boundaries are marked with symbols and occasionally fenced. Existing legislation in the field of nature protection is felt to be inadequate and inefficient. A draft Protected Area Act 1991 has been prepared and submitted by the Green Party (G. Spiridonov and L. Mileva, *in litt.*, 1991). Other legislation at the discussion stage includes the Ecological Policy Law, Control of Pollution Law and two bills on Forestry Law (Spiridonov *et al.*, 1991). A Natural Heritage Charter has also been prepared and submitted by the Green Party (G. Spiridonov and L. Mileva, *in litt.*, 1991).

International Activities The Convention concerning the World Natural and Cultural Heritage (World Heritage Convention) was signed on 7 March 1974 and two natural sites inscribed in 1983. The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) was signed on 24 September 1975 and the Paris Protocol instrument was signed on 27 February 1986; four Ramsar sites have been designated. Seventeen sites, covering 25,201ha, were accepted in 1977 as biosphere reserves under the UNESCO Man and the Biosphere Programme. The Berne Convention was ratified in 1991 principally as an instrument to conserve populations in protected areas (Spiridonov *et al.*, 1991). The Institute of Ecology is active in international environmental conservation activities organised by Unesco, UNEP, FAO and CMEA.

Progress is reported to have been made on the preparation of a Treaty for Environmental Protection of the Balkans (IUCN, 1991) and the first international meeting on the biodiversity of the Balkans Massif is to be held in 1992 (IUCN-EEP, *in litt.*, 1991).

Administration and Management In 1971 the Ministry of Forests and Environmental Protection was established; it largely concentrated its attention on natural sites, establishing new reserves and improving those already in existence (Stoilov *et al.*, 1981). In 1972 the Research and Coordination Centre for Preservation and Restoration of Environment of the Bulgarian Academy of Sciences was established (Cerovsky, 1986)(see Annex).

KOPS is the main governmental, inter-departmental coordinating and controlling body, the President is of ministerial rank and the Committee has 16 regional inspectorates and one scientific centre (Cerovsky, 1986). It had a staff of 400 and operated on one-year and five-year plans with a budget of 4,120 billion leva (1971-1981) with 500 million leva in 1989 destined specifically for nature protection (IUCN, 1991a). It had the task of controlling, coordinating and implementing the policy and decisions of the Central Committee of the Bulgarian Communist Party, the National Assembly, the State Council and the Council of Ministers on questions of environmental protection and restoration and water resource utilisation. The committee elaborates state plans on nature protection, as well as plans for research and development (ECE, 1986). The committee was also directed to establish a system to provide scientific data for matters relating to environmental protection. The Unified National System for Observation and Information on the State of the Environment was set up, which includes a subsystem of "Protected Natural Sites and Objects". A card index on protected natural sites has been prepared by the committee, as well as sets of methods for a comprehensive study of protected natural sites and objects (Stoilov *et al.*, 1981).

In December 1986 a ministerial council was set up at the Council of Agriculture, but abolished in 1987 when the Ministry of Agriculture and Forests was created (Ashley, 1988). At the party congress of April 1986, the Bulgarian Communist Party committed itself to a new "National Programme for Environmental Protection to the Year 2000 and Afterwards", a long-term ecological programme which largely concentrated on the control and reduction of pollution control. In May 1988 a Politburo decision recommended that KOPS be merged with the Ministry of Agriculture and Forests to create the new Ministry of the Land, Forests and Environmental Protection (Ashley, 1988).

At the beginning of 1990, the Committee of Environmental Protection was replaced by the new Ministry of Environment (IUCN, 1991). Local elections and the general election of October 1991 will allow radical restructuring of administration, with the subsequent preparation of framework laws on environmental policy and protected areas (introducing IUCN categories into national legislation) (IUCN, 1991). The Institute of Ecology,

formerly known as the "Research and Coordination Centre for the Conservation and Renewal of the Environment" (NKCOVOS), at the Academy of Sciences, has worked alongside KOPS in designating protected areas. It is a research institute with a staff of 60 which coordinates ecological research within the Academy of Sciences and with other scientific research establishments and universities (Cerovsky, 1986). It is also active in international environmental conservation activities. It maintains lists and data describing protected areas (Fisher, 1990), and has prepared a programme on the scientific base and development of the protected areas system which proposed two-thirds of the existing reserves and two new national parks (Spiridonov *et al.*, 1991). An Environmental Commission within parliament also deals with protected areas (Spiridonov *et al.*, 1991).

Direct administration of protected areas falls to a number of bodies with varying levels of responsibility. Foremost is the Ministry of the Environment which carries out research, elaborates proposals and declares new protected areas, including document preparation, category assignment, boundary definition, financing basic and restoration research. The management body on "Conservation of Forestry and protected natural sites" is a department within the Ministry (Spiridonov *et al.*, 1991). An Environmental Monitoring Centre is responsible for the control of regulations and coordination of management plans, through 16 regional inspectorates for environmental protection (Spiridonov, 1991). Others include Ministry of Forests and Forest Industry, Ministry of Architecture and Works, Balkan Tourist, Academy of Sciences, Nature Protection Commission, Ministry of Education, Committee of Arts and Culture, Academy of Agricultural Sciences and the Union of Hunters and Fishermen. The Committee of Forestry, municipal councils, agricultural and other authorities also are engaged in the direct management and protection of protected areas working closely with the land owners (Spiridonov, 1991). On-the-ground supervision of reserves is the responsibility of the Committee for Forestry and is carried out on a part-time basis by forest rangers. The local state forestry administration maintains individual protected areas, while large national parks have directorates. Over 90% of protected areas are managed by the Forestry Committee. These areas in the agricultural fund are entrusted to local municipalities and research institutes (Spiridonov *et al.*, 1991).

The control of reserves has been improved. Over 1,200 checks were carried out in 1977 and 160 violations were notified, falling in 1978 to 1,121 checks and 144 violations (Stoilov *et al.*, 1981). Vertebrate fauna, threatened and rare species have been studied in 12% of nature reserves and in almost all national parks. Special attention has been given to research on wetland bird fauna and of higher plants on the Balkan Range reserves, under a joint ten-year programme by the Bulgarian Academy of Sciences and the Polish Academy of Sciences (IUCN, 1991a). Research stations have been established at Srebarna and Atanasovsko reserves (IUCN, 1991a).

Until 1990, voluntary environmental conservation groups were organised in the framework of the Patriotic Front, through a system of Committees for Nature Conservation at the Patriotic Front Councils on all levels. These were centralised in the All-National Committee for Nature Conservation at the National Council of the Patriotic Front, *Obshchenarodniya Komitet za zashchita na prirodata*, which promoted environmental awareness.

The Union of Hunters and Fisherman was active in the field of conservation, while the Hiker's Union publicises natural sites within the country and promotes their care (Stoilov *et al.*, 1981). "Ecoglasnost", a non-governmental organisation set up in early 1989 with a particular interest in ecological problems, has most recently transformed itself into a political forum, the Green Party (IUCN, 1991). It was a very influential movement involving a number of anti-pollution campaigns. In its "Charter '89", Ecoglasnost devotes considerable space to its policies on protected areas, which it suggests should be greatly expanded, with numerous new areas being designated in all biogeographical regions. Ecoglasnost is made up of local groups, about 50 in Sofia and 30 in the rest of the country. There is a possibility that it will become more involved in party politics in the future (Fisher, 1990). Recently, the Wilderness Fund, another non-governmental organisation, was set up. It aims to further the conservation of natural areas and to facilitate the self-recovery of areas that have suffered human alteration (Ivanov, 1989). Groups concerned with specific areas, such as the Rhodope Mountains, have also been created (IUCN-EEP, *in litt.*, 1991). Other prominent non-governmental organisations included the Bulgarian Society for the Protection of Birds, the Union for Nature Protection, the Association of Bulgarian Ecologists, Association Ecoforum, the Green Society Foundation, the National Ecological Club, the Ecos Foundation, the Ecoforum for Peace and the Scout Organisation of Bulgaria.

Systems Reviews The country straddles the boundary between Continental and Mediterranean climates. It can be divided approximately into five regions: the fertile Danube plain in the north running along the border with

Romania; the Stara Planina Mountains, a large 600km mountain chain running east-west, dividing the country; the central plain and valleys of the River Maritsa immediately south of the Stara Planina; the mountains of the Rila Planina, Pirin Planina and Rodopi Planina in the south-west; and the relatively flat areas along the Black Sea coast (Grimmett and Jones, 1989). These approximate to the five recognised phyto-geographic regions of the country, namely the European broad-leaved forest region (Balkan province, Euxinian province, and Macedonian province), the Euro-Asian steppe and forest steppe provinces and the Mediterranean sclerophyll region (IUCN, 1991a). Lowlands (0-200m) cover 31% of the total surface area of the country; hills (200-600m) cover 41%; highlands (600-1,600m) cover 25% and mountains (over 1,600m) cover 3%. The climax vegetation is *Quercus* up to 1,000m, *Fagus* between 1,000m and 1,500m and coniferous woodland up to 2,200m, with some especially well-developed stands of *Pinus peuce* in the Rila, Pirin and Rodopi mountains.

Under the initiative of the 1928 Council for the Protection of the Countryside, a number of bills and decrees were published and the first reserve was established in 1933, followed by the first national park, Mount Vitosha, in 1934. After this date few new areas were established until the 1960s. The total number of protected sites has risen from 50 in 1940 to about 130 in 1973 and to 3,922 in 1989. Most reserves (covering 33,000ha in total) were created between 1978 and 1985 on the recommendation of the Ecological and Environmental Centre of the Academy of Sciences, whilst three-quarters of the national parks were established in the period 1974 to 1988 (IUCN, 1991a). Three quarters of the reserves are over 1,000ha, with buffer zones. Some 82% of reserves and 89% of national parks are in mountainous areas (IUCN, 1991a). In 1989 these areas covered 195,155ha, or nearly 2% of the country (Anon., 1989), of which 30% are strict nature reserves (65,000ha) (IUCN, 1991). It was planned to increase this figure to 3% by the year 2000 (ECE, 1986), although current thinking is for an increase closer to 8% (IUCN, 1991). On 30 July 1991, there were 10 national parks (105,000ha), 96 reserves (66,500ha), 2,135 natural monuments (23,250ha), 79 protected areas (17,150ha), 973 historical places covering 12,200ha, giving a total of 224,000ha (Spiridonov *et al.*, 1991). Zoogeographically, 77% of reserves belong to the Balkan and the Rila-Rhodopi Range. An inventory has been carried out of representative ecosystems covering areas over 1,000ha in separate reserves – over 20 forest formations have been catalogued. In 1982 forests covered 38,590 sq. km (35% of the land surface). More than 25% of forests are under special protection (ECE, 1986). More recent figures show that 34% of the country is under forests (35% conifers) in two categories, 71% commercial and 29% protection forests (IUCN, 1991a).

The main wetlands lie along the Danube and the Black Sea coast. Many of the marshes and coastal lakes have been drained, largely for agriculture, and the remainder are particularly important for migratory bird species. The north-eastern part of the Black Sea coast has some remnant steppe areas. The lowlands have largely been converted to agricultural land, and in the uplands large areas have been devastated by grazing, mostly by sheep. Tourism and especially skiing are a potential threat to the remaining, less disturbed upland areas (Grimmett and Jones, 1989). In certain regions (sea coasts and mountains) the number of visitors to protected areas has grown as a result of urbanisation, road construction and the increase in motor traffic and access to sites. Nature trails are popular and are being constructed first of all in protected areas. Threats arise partly from the lack of sufficiently severe penalties, and from the non-application of governmental decrees. Cattle grazing is still allowed in some nature reserves, and poaching (hunting/fishing) continues to be prevalent in others. The major problems include: outdated legislation (new draft of protected areas law has been prepared, sponsored by the Green Party), inadequate administration, lack of qualified staff, insufficient funds for management and research: lack of a database, lack of training, and public education programmes. The future development of a protected areas system depends on the adoption of a law on protected areas, creation of an Agency for Management of Protected Areas, associated with the Ministry, the establishment of a Nature Conservation Fund and the creation of training and education programmes (Spiridonov, 1991).

Addresses

Ministry of the Environment, "William Gladstone" str. No. 67, SOFIA 1000 (Tel: 876151; FAX: 521634; Tlx: 22145 KOPS)

Institute of Ecology, Academy of Science, Department of Protected Areas and Genetic Pool, ul. Gagarin 2, 1113 SOFIA (Tel: 720459; FAX: 705498)

Committee of Forestry, Ar. No 17, Sofia Wilderness Fund, c/o Institute of Ecology, Academy of Science, Department of Protected Areas and Genetic Pool, ul Gagarin 2, 1113 SOFIA (Tel: 720459; FAX: 705498)

Society for the Conservation of the Rhodopi Mountains, 2 Gagarin St, SOFIA 1113

References

Anon. (1989). Protected natural sites: invaluable national heritage. Committee for the Protection of the Environment with the Council of Ministers of the People's Republic of Bulgaria. *ECO facts and figures*. Sofia Press, Bulgaria.

Anon. (1990). *PC Globe Inc.*. Tempe, Arizona, USA.

Ashley, S. (1988). Politburo Announces "New" Ecological Policy. *Radio Free Europe* 13(21): 9-13.

Carter, F.W. (1978). Nature reserves and national parks in Bulgaria. *L'Espace Géographique* 1: 69-72.

Cerovsky, J. (1986). *Nature Conservation in the Socialist Countries of East Europe*. East-Europe Committee, IUCN Commission on Education. Administration of the Krkonose (Giant Mountains) National Park, Vrchlabi.

Cerovsky, J. (1988). *Nature conservation in the Socialist countries of East Europe*. East-Europe Committee, IUCN Commission on Education. Ministry of Culture of the Czech Socialist Republic, Prague.

ECE (1986). Meeting Finland 25-29 August. ENV/SEM. 16/R.1.

Fisher, D. (1990). Environmental Politics in Bulgaria. Report on a visit to Bulgaria 24-28 February 1990. Ecological Studies Institute, London.

IUCN (1971). *United Nations list of national parks and equivalent reserves* 2nd Ed. Hayez, Brussels.

IUCN (1991). *The environment in Eastern Europe: 1990*. Environmental Research Series 3. IUCN East European Programme, Cambridge, UK.

IUCN (1991a). *Environmental Status Report: 1990. Volume Two: Albania, Bulgaria, Romania, Yugoslavia*. IUCN East European Programme, Cambridge, UK.

Ivanov, L. (1989). Memorandum of Association of the Wilderness Fund. Sofia, Bulgaria. Unpublished.

Johnson, H. and J.M. (1977). *Environmental policies in developing countries*. Erich Schmidt Verlag.

Mladenova, M. and Peychev, V. (1985). Concept of the General Plan of the Peoples Republic of Bulgaria on Legally Protected Areas. In: Nedialkov, S. (Ed.), International Symposium "Conservation of Natural Areas and of the Genetic Material They Contain". Project 8, MAB-Unesco 23-28 September. Blagoevgrad, Bulgaria. Collection of reports. Three volumes. Jurautor, Sofia.

Profirov, L. (1989). Internationally recognised nature reserves. In: Gerassimov, P. and Staleva, M. (Eds), *Bulgaria, Special Issue*. Sofia Press, Bulgaria.

Spiridonov, J. (1977). *Oazisi na divata priroda*. Zemizdat, Sofia. (In Bulgarian)

Spiridonov, J. and Juras, A. (1991). Nature Conservation in Bulgaria. In: *Nature conservation in Europe*. European Parliament Directorate-General for Research, Environment, Public Health and Consumer Protection Series 17. EN-9-1991.

Stoilov, D., Noshtev, V., Gerasimov, S., Velev, V. (1981). *Protected natural sites in the People's Republic of Bulgaria*. Jurautor, Sofia.

Definitions of protected area designations, as legislated, together with authorities responsible for their administration

Title: The Law of Nature Protection; The regulations for the Administration of the Law of Nature Protection

Date: 1967, 1969 (regulations)

Brief description: Provides the legal regulation of protected areas and defines them

Administrative authority: Komitet za opazvane na prirodnata sreda (KOPS) (Committee for Environmental Protection) (Ministry of the Environment)

Designations:

Rezervat (Strict nature reserve) Strictly protected areas containing rare plant and animal communities, threatened by depletion or extinction and used for scientific research.

Economic exploitation, including any agricultural and industrial activities, is prohibited. Admittance to, and movement in reserves are restricted to defined roads and paths.

A special directive was adopted designating the creation of buffer zones around reserves. In exceptional circumstances clear felling is allowed for forest protection reasons.

Naroden park (National park) Includes natural parks, which are comparatively large areas suitable for short-term recreation and tourism and for research. Other categories of protected areas may be included within the boundaries of national parks.

Tourism development is encouraged especially by state enterprises such as Balkan Tourist. Entry is free and unrestricted. Tourism may be well developed in the form of road networks, tourist chalets, resthouses, restaurants, cable cars and camping sites. These areas have general protection throughout, with no settlement or exploitation allowed; hunting, fishing and flower-picking is forbidden.

Some are zoned into a scientific zone (no exploration, visitors restricted to certain paths), a tourist zone (accommodation, tree-felling and afforestation) and a commercial forest zone.

Natural monument Specific natural formation protected for its aesthetic and scientific significance, preserved for public interest due to national, geographic or scientific values as well as phenomena of aesthetic, natural or historical value, which includes single items, such as trees and rocks.

Protected site Specific location with picturesque landscapes or characteristic habitats suitable for recreation.

Historic site Site of major historical event, or historical monument or grave, as well as protected specific natural feature of the landscape, and their surrounding area. Certain sites are protected jointly by KOPS and the Committee for Culture and the Institute for the Monuments of Culture.

Sources: IUCN, 1971; Stoilov *et al.*, 1981

Georgia Country Profile

Country profile is not completed for Georgia

Romania Country Profile

Area 237,500 sq. km

Population 23,200,000 (1989) Natural increase: 0.5% per annum

Economic Indicators
GDP: No information
GNP: US$ 6,453 per capita (Anon., 1990)

Policy and Legislation Proposals for the protection of the landscape and natural monuments date back to 1907. The first Nature Protection Act came into force on 7 July 1930. A new Act passed in October 1950 (No. 237) on the Protection of Natural Monuments was complemented by Order of Council No. 518 of 1954. In the same year an Environment Protection Law was introduced, to be replaced by the Environmental Law passed in 1973 (No. 9/1973). Section VI, Article 29 of this Law specifies the official concept governing a national park, the legislative framework and the procedure for creating such protected areas (Oarcea, 1984).

Protected areas are classified into: science reserve or nature reserve (rezervat natural), parcul natural (nature park), parcul national (national park) (see Annex).

Forests are protected by the 1954 Forest Code and the subsequent 1962 Forest Code. In 1976, a national programme to protect and develop forest resources was initiated. Full protection is afforded to about 14% of

forest cover (Pop *et al.*, 1965), with a further 36% of forests classified as "protective forest", where restrictions on forest operations, in some cases, result in complete protection. The scientific research category was one established (until 1990) by either the Commission for the Protection of Natural Monuments of the Academy of Sciences or by the Ministry of Forest Economy, whilst areas under the soil conservation category (on slopes over 35°) were subject to total protection, operated jointly by the Commission and the Ministry.

In April 1991, Decree No. 264 established a new ministerial structure consisting of six departments (IUCN, 1991b). The government has also passed a number of decrees (Decree No. 983, 27 August 1990) which created the Danube Delta Biosphere Reserve (of 674,000ha) (IUCN unpublished reports, 1991).

Law No. 9/1980, although not yet mandatory, deals with the preparation of feasibility studies for all projects likely to have an effect on "the preservation of the genetic stock". Approval is given by the Commission for Monuments of Nature of the Romanian Academy.

A new law for environmental protection is drafted. Articles 38, 41, 48 and 49 define the preservation of specific biological diversity through the declaration of nature reserves; the creation of a national network of protected natural areas and monuments of nature; defines biosphere reserves, national parks, nature reserves and natural monuments; the preparation and updating of a catalogue of protected areas and a Red Data Book of plants and animal species; and describes the creation of additional types of protected areas for species protection and use of gene banks (Negoita *et al.*, 1991).

International Activities Romania has been involved in the Unesco Man and the Biosphere (MAB) programme (three areas were declared as biosphere reserves in 1979, with a fourth site added in 1990), and accepted the Convention concerning the World Natural and Cultural Heritage (World Heritage Convention) on 16 May 1990, proposing one site for listing. Romania acceded to the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) in 1991 with one site listed on accession.

Administration and Management In 1930, as a consequence of the Nature Protection Act, a Commission for Natural Monuments was established within the Ministry of Agriculture and Landed Estates. In 1950, a new Commission, the Commission for Natural Monuments of the Romanian Academy of Sciences (Comisia pentru Ocrotirea Monumentelor Naturii Academii Republici Socialiste Romania) was created, consisting of a Chairman and eight members. The Commission acted as the main coordinator of research and nature conservation activities, with field projects and monitoring carried out by university biology and geography departments and by other academic institutes. A scientific research base was established at Timisoara.

Up until 1989, the supreme authority for environmental matters was the National Council for Environment Protection (Consiliul National pentru Conservarea Mediului) at the Council of Ministers which came under the National Council for Science and Technology (Consiliul National pentru Stiinta si Tehnologie). It was, however, ineffectual, because it had no budget and relied upon volunteers (IUCN, 1991a). Another influential body was the Academy of Agricultural and Forestry Sciences (Academia de Stiinte Agricole si Silvice) (Cerovsky, 1986).

The nature conservation administration was organised on a regional basis with the three constituent territories of Transylvania, Moldavia and Walachia divided into 40 regions, Bucharest making 41. The Commission parallels this structure with sub-commissions for the Protection of Natural Monuments in Cluj-Napoca (set up in 1933), in Craiova (set up in 1936) and in Iasi (set up in 1938). At the lower administrative level, each region had a local committee (responsible to the People's Council), in charge of wildlife conservation with representatives from forestry, hunting, fishing, agriculture, and education (Cerovsky, 1986; Kirby and Heap, 1984). These were often quite efficient with regard to maintenance and conservation of sites (IUCN, 1991a).

The Commission has a staff of specialists (biologists, forest engineers) and administrative personnel. Its main responsibility is to designate new science reserves (for which proposals are prepared) and to administer reserve areas (including national parks), although it carries out only limited management work. It has the right to intervene in all questions concerning road construction, siting of industrial developments and tourist camps, and any activity which is liable to deteriorate the reserves or degrade the landscape. The regional offices have staffs of approximately 200. Due to the fact that the statutes regulating the organisation and functioning of the park do not provide management guidelines to appropriate authorities, the national park lacks proper administration (IUCN, 1991a).

Each science reserve has at least one warden (guardian), who regulates access and controls grazing rights as well as preventing illegal entry, fishing, and hunting. The reserve guardian may be an employee of the national forest service and as such is often responsible for economic forest land in addition to his duties on the reserve (Kirby and Heap, 1984). Reserves located outside forest lands are administered by the former town and county halls (county popular councils). Often they are poorly protected and have been converted to agriculture on industrial uses (IUCN, 1991a).

Since mid 1990, a new Ministry of Water Management, Forests and the Environment has been set up, which operates through the existing 41 regional offices, namely, survey and environmental protection agencies (Negoita *et al.*, 1991). The national park comes under the administration of the Commission, a function soon to be given to The Ministry's Department of the Environment (Vadineau, pers. comm., 1990). Within the Ministry of Environment, there are departments for water and forests. In April 1991, Decree No. 264 established a new ministerial structure consisting of six departments: departments of Biodiversity and Nature Conservation; Integrated Monitoring; Systems of Research and Impact Assessment; Forestry and Water; Enforcement and Public Relations, and Risk Assessment in Nuclear Plants (IUCN, 1991b). A Commission for the Environment and Ecological Balance was established at the level of the legislative and is attached to the House of Deputies. Its members are all deputies, and it has the support of a team of technical experts in environment. Its primary role is in environmental legislation. Similarly, Commissions for the Protection of the Environment have been formed in the regional town and county halls, consisting of one or two permanent councillors and staffed, at present, by volunteers. These local commissions await confirmation in national laws. There is also a board of inspectors for the environment for each county and a County Agency for the Protection of the Environment (IUCN, 1991a).

The Society for Tourism and Nature Protection was created in 1920, followed in 1922 by another voluntary body, the Mountain Brotherhood (Cerovsky, 1988). Groups formed more recently include the Ecological Movement of Romania (Miscarea Ecologista Din Romana) (MER), which at one time consisted of 112 local groups, had 100,000 members and 29 specialist working parties. It seems to have largely disappeared following the general elections in May 1990 (IUCN, 1991b), the Romanian Ornithological Society (Societatea Ornithologica Romana) and the Ecological-Cultural Party. Each has a general interest in protected areas (Fisher, 1990). In the last year or so, several new several new non-governmental organisations concerned with nature conservation have emerged, such as the Danube Delta Society, which is a nationwide grouping created to support environmental protection throughout the country. It has a staff of 5 to 10 with offices in Bucharest. The other new non-governmental conservation body is "Unesco" Ecological Club, based at the University of Bucharest, with a sub-office in Iasi and is expected to operate as clubs within universities for promotion of environmental education (Vadineanu, pers. comm., 1991).

Systems Reviews The country is divisible into lowlands less than 200m (33%), hills and highlands between 200m and 300m (36%) and mountains averaging 800m (31%). Forests cover between 20% and 27% (Kirby and Heap, 1984; Cerovsky, 1986). There are three main vegetation zones; steppe in the south-east (largely under agriculture), forest-steppe in the centre of the country and montane forests in the Carpathians (Davis *et al.*, 1986). The lowlands are intensively cultivated, as is most of the Danube valley, with nearly all natural and semi-natural vegetation restricted to the mountains where most of the forests are also to be found (IUCN, 1991a). Many of the natural forest stands have been destroyed over the last 300 years with oak woodlands reduced from the original 10 million ha to 1.2 million ha. Some 27.6% of the country is forested with 10% in the lowlands (below 150m), 70% on hill districts (150m-170m) and 60% is the mountain (700m and above). The dominant species is beech (30% of total deciduous cover which amounts to 69%). Of the conifers, 22% of the total is spruce (IUCN, 1991).

Proposals for the protection of the landscape and natural monuments date back to 1907. In the 1980s, the Commission for Protection of Natural Monuments, in collaboration with the General State Forest Management Inspectorate, constructed a concept for the elaboration of a national park system, consisting of at least 12 parks. The study dealt with establishment criteria, organisation and management and preparatory studies covering four new national parks. In the early 1980s there were between 300 and 310 nature reserves covering 0.5% of the country (Alexandrowicz, 1982; Ionescu *et al.*, 1985). By 1986 this had risen to 420 nature reserves and one national park (Cerovsky, 1986) covering 222,545ha (Boscaiu, 1985).

Up to the end of 1989, there was only one designated national park with a further 11 in preparation (Cerovsky, 1988). In 1990, these 11 national parks were declared by forest authorities, but awaits formal recognition, and one further national park, Dracea, has been proposed. Together, those areas cover 664,057ha (2.79% of the country), which includes buffer and pre-park zones and also the proposed extensions to Retezat National Park. By 1991, one national park (21,000ha) and almost 400 science reserves (107,900ha) as well as a further 31 sites (364ha) classified as "monuments of nature" had been designated (IUCN, 1991a). This, however, covers only 0.42% of the country's area. Most recently, the government passed a number of decrees (Decree No. 983, 27 August 1990) which created the Danube Delta Biosphere Reserve (of 674,000ha) (IUCN unpublished reports, 1991). Once declared, all the national parks will cover 154,057ha, and all protected areas 664,057ha which will be 2.74% of the country. The aim is to designate 5% of the country's surface on protected areas (Hopkins, *in litt.*, 1991).

The natural environment is presently threatened by a combination of factors such as industrial pollution, intensification of agriculture (with 30% of arable land affected by soil erosion (IUCN 1991b) and tourism. For example, Rosca-Letea Biosphere Reserve has until recently been threatened by agricultural development plans, which have now been halted. However, the affects from upstream pollution sources are still a threat. Due to excessive felling and inadequate afforestation, young woodlands predominate. Acid rain has changed 5.5% of the forests (IUCN, 1991a).

Addresses

Department of the Environment, Ministry of Water Management, Forests and the Environment, R-Bucharest-Artera Noüa N-S, Tronson 5-6, Sector 5, BUCHAREST (Tel: 316044; Tlx: 10455/10435; FAX: 316199)

References

Alexandrowicz, Z. (1982). Wielkoprzestrzenne obszary rezerwatowe Rumunii. *Chronmy Przyrode Ojczysta* 38(6): 134-137.

Boscaiu, N. (1985). Le dévéloppement d'un système de réserves pour la protection de la flore de Roumanie. In: Nedialkov, S. *et al.* (Eds.) *International Symposium "Conservation of Natural Areas and the Genetic Material they Contain".* Project 8 on the Programme "Man and the Biosphere" (MAB) of Unesco, 23-28.09.1985, Blagoevgrad, Bulgaria. Vol II, BAN, Sofia. Pp. 171-178.

Cerovsky, J. (1986) (Ed.). *Nature conservation in the Socialist countries of East-Europe.* East-Europe Committee, IUCN Commission on Education, Administration of Krkonose National Park, Vrchlubi.

Cerovsky, J. (1988) (Ed.). *Nature conservation in the Socialist countries of East-Europe.* East-Europe Committee, IUCN Commission on Education, Ministry of Culture of the Czech Socialist Republic, Prague.

Davis, S.D., Droop, S.J.M., Gregerson, P., Henson, L., Leon, C.J., Lamlein Villa-Lobos, J., Synge, H., and Zantovska, J. (1986). *Plants in danger: what do we know?* Threatened Plants Unit. IUCN, Gland, Switzerland, and Cambridge, UK. 461 pp.

Fisher, D. (1990). *Developments within the environment movement.* Romania. 10-12 March 1990, 28 March-8 April 1990. Unpublished report.

Horeau, C. and Cogran, I. (1981). *Rezervatii naturale si monumenti ale naturii din judentul Vaslui* (nature reserves and natural monuments). (Unseen)

Ionescu, M. and Condurateanu-Fesci, S. (1985). *Parcuri si Rezervatii Naturale Pe Glob.* Colectia Cristal, Bucuresti.

IUCN (1971). *United National List of National Parks and Equivalent Reserves 2nd Edition.* Hayez, Brussels.

IUCN (1991a). *Environmental Status Reports: 1990 Volume Two: Albania, Bulgaria, Romania, Yugoslavia.* IUCN East European Programme.

IUCN (1991b). *The Environment in Eastern Europe: 1990. Environmental Research Series 3.* IUCN East European Programme.

Kirby, K.J. and Heap, J.R. (1984). Forestry and Nature Conservation in Romania. *Quarterly Journal of Forestry* 78(3): 145-155.

Negoita, R.T. and Juras, A. (1991). Nature Conservation in Romania. In: *Nature Conservation in Austria, Finland, Norway, Sweden, Switzerland, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Yugoslavia and the Soviet Union.* European Parliament Directorate-General for Research. Environment, Public Health and Consumer Protection, Series 17. EN-9-91. (90% of material straight copy of IUCN, 1991a).

Oarcea, Z. (1984). The evolution of the conception and the principles governing the creation and the setting up of the Retezat National Park. In: Pascu, S. *et al.* (Eds.), *Recherches écologiques dans le Parc National de Rétézat.* Travaux du Symposium du 13 avril 1984. Cluj-Napoca. Pp. 27-31.

Pop, E. and Salageanu, N. (1965). *Nature reserves in Romania.* Meridiane Publishing House, Bucharest.

Resmerita, I. (1983). *Conservarea dinamica a naturii.* Edit Stiinfica si encicilopedica Bucuresti. (Unseen)

Seghedin, T.G. (1983). *Rezervatiile naturale din Bucovina.* Nature reserves in Bukovina. Edit Sport-turism, Bucuresti. (Unseen)

Definitions of protected area designations, as legislated, together with authorities responsible for their administration

Title: Environmental Law (No. 9/1973)

Date: 1973

Brief description: Section VI, Article 29 provides the official concept governing national parks and the legislative framework and procedure for creation of protected areas

Administrative authority: Department of the Environment in the Ministry of Water Management, Forests and the Environment

Designations:

Protected areas are classified into national park, nature park and nature reserve categories:

Science or nature reserve (Rezervat natural) Divided into seven categories classified as mixed forest, botanical, zoological, geological, morphological, palaeontological and speleological. Ecosystems within nature reserves are under complete protection, and access is subject to special authorization, with tourists allowed to enter by special permit only. Several have strictly defined protected areas or scientific research zones, where, house construction and quarrying is not allowed without authorisation.

Nature park (Parcul natural) Would protect large areas of the landscape. These are still at a planning stage and lacking legal guidelines.

National park (Parcul national) Category has three basic functions: scientific, socio-educational and economic, and is divided into two sectors; a strictly protected zone and a protected zone. The strictly protected zone has complete protection with no permanent residence allowed, no pasturing but some biological control of insect pests is permitted. In the protected zone, hunting is forbidden, but fishing is allowed in some lakes, subject to fish stocks. Grazing of domestic stock is also permitted in July and August, and tourism is encouraged (Retezat National Park).

Sources: Alexandrowicz, 1982; Cerovsky, 1988; IUCN, 1971; Oarcea, 1984

Title: Forest Code

Date: 1962 (revision of 1954)

Brief description: Defines types of protection and lays down restrictions on forest operations

Administrative authority: Ministry of Water Management, Forests and the Environment

Designations:

Five categories are defined:

Soil conservation and the reduction of avalanches; the protection of water supplies; the use of forests for recreation; for landscape protection specifically surrounding urban, industrial, tourist and health zones; and as scientific research areas protecting rare fauna, geological and speleological formations.

Source: Kirby and Heap, 1984

Russia Country Profile

Russia Country Profile is not yet completed.

Turkey Country Profile

Area 778,000 sq. km

Population 55,868,000 (1990)
Natural increase: 1.95% per annum

Economic Indicators
GDP: US$ 1,295 per capita (1987)
GNP: US$ 1,200 per capita (1987)

Policy and Legislation In 2 October 1923 the National Assembly declared Turkey a republic, effectively dissolving the former Ottoman Empire. The present Constitution dates from 7 November 1982.

Asia Minor was the cradle for one of the great ancient civilisations of the Mediterranean and has over the millennia been settled by ancient Egyptians, Phoenicians, Carthaginians, Romans, Byzantines and more recently by the Selcuk and other eastern dynasties. A detailed understanding of the environment was well known 5,000 years ago and the ancient Egyptians and subsequent civilisations carefully protected mountain forest resources as valuable timber reserves, imperative for constructing their vast navies. Between 370 and 285BC Theophrastus of Erosos was the first great botanical writer of classical antiquity and his works on botany, plant ecology and the environment were known throughout Asia Minor. Pedanios Dioscorides of the first century AD, a native of Cilicia near present day Adana, was renowned for his work on botany. The Byzantine emperors inherited and developed the agricultural and environmental practices developed throughout the Roman Empire, almost certainly maintaining forest administration structures and wardening systems right up till the Mediaeval period (Drucker, *in litt*., 1985; Mallatt, *in litt*., 1991). Traditional forms of protection continue to include a limited number of "sacred groves" and trees which are still protected in Turkey, including at Harbiya near Antakya, and traditional forms of rangeland protection which were prevalent amongst the nomadic steppe and mountain tribes (cf the Mahmeya of Syria and the Hema protection of the Arabian Peninsula) (Drucker, *in litt*., 1991; Khatib *in litt*., 1991).

Under Ottoman law, forests came under the jurisdiction of a forest administration. Forest legislation was primarily concerned with controlling tree felling by the issue of permits, and the transportation of wood for local industry and export to neighbouring countries. Environmental legislation was covered under the Ottoman civil code (Mejellah), within the body of Islamic law. Under Article 1243 it was defined that land and the associated trees growing wild in mountains could not be possessed and should remain ownerless. Under Article 1244 cutting wood on private forests was not permitted without authorisation, infringement resulting in payment for damage caused. The Land Law was enacted in 1856, and the Forest Regulations in 1869. These laws have been incorporated into Forest Law No. 3116 and Hunting Law No. 3167,which came into force in 1937 (General Directorate of Forestry, 1987; Drucker, *in litt*., 1985).

The modern concept of the protected nature conservation area was introduced in 1949, with legal establishment of national parks coming into being on 5 September 1956, under Forest Law No. 6831. The law categorised forest ownership into state forest, forests of public institutes and private forests; being further sub-divided into protection forests, national parks and production forests. Articles 3, 23 and 25 gave the Ministry of Forestry the

authority to designate areas as national parks and national forests, as well as to provide for the inclusion of privately-owned lands (the Forest Law was amended in 1983 Act No. 2896 with sole emphasis on forests).

Protected area designations include national park (milli park), nature park (tabiat parklari), natural monument (tabiat aniti), natural reserve area (tabiati korum alani) and special protected area, in addition to game breeding and protection area, game breeding station, game reintroduction area, biogenetic or nature conservation area (Forestry Defence Property) and recreation area (see Annex).

In 1983 the Ministry of Agriculture, Forestry and Rural Affairs (Tarim Orman ve Koyisleri Bakanligi) enacted the current National Park Law No. 2873 in order to establish the principles governing the selection and designation of national parks, natural monuments and nature reserve areas; a law concerned with the protection, development and management of such protected areas without spoiling their natural characteristics. In the same year the Environment Law No. 2872/1983, with prime objectives of general protection of the environment and the prevention of pollution, enacted by the Ministry of Environment. Under this Law zones of special protection of the environment, special protected areas, can be declared. An enabling act of 19 October 1989 provided for protected zonation within these areas (see Annex).

The purposes of the present National Park Law are: a) to establish the principles governing the selection and designation of protected areas of national and international value; and b) ensure protection, development and management of such places without spoiling their natural characteristics. There are 25 articles cited in the Law: Article 2 defines the four main protected area categories; Article 5 specifies that land can be nationalised in accordance with the Law on Expropriation No. 6830; Article 7 states that permissions for all activities are granted through the Ministry of Agriculture and Forestry, except for historic and archaeological sites (which come under the jurisdiction of the Ministry of Culture and Tourism); Article 8 concerns land-lease permits which expire after 49 years, after which time all facilities should be transferred to the Treasury. It is possible to extend the lease of land to 99 years; however, Article 10 states that no land-use permission may be granted in areas of national monuments and nature reserve areas; Article 16 refers to protection services and prosecution by forest guards in accordance with Forest Law No. 6831. Articles 17, 18 and 19 deal with the national park fund (see below). Penalties are dealt with in Articles 20-23 (see Annex).

National forests (state forests) are established to preserve nature and some urban and/or agricultural land from erosion. Many types of management are prohibited according to Item 23 of the Forest Law. Forest recreation areas are established for touristic, cultural and public recreational purposes (General Directorate of Forestry, 1987).

In addition to the protected areas governed by the National Park Law, a series of game forest sites is established on state forest and notified under Hunting Law No. 3167, 1937: game breeding and protection areas, game breeding stations, game reintroduction areas and biogenetic or nature conservation areas (General Directorate of Forestry, 1987) (see Annex).

Additional laws relating to protected areas include Law No. 1380, 1971 for the protection of water resources, management and improvement; Culture and Natural Resources Protection Law No. 2863, 1983 for the protection of natural and cultural sites and resources (administered by the Ministry of Culture and Tourism). In 18 November 1988 the Law of the Bosphorus was enacted in order to protect the cultural, historic and scenic beauty of the Bosphorus region. In 1990 a coastal law was adopted which would delimit the coastal zone and prohibit building within this area.

International Activities At the international level, Turkey has entered a number of cooperative agreements and legal obligations. Turkey is party to the Convention concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention), which was ratified on 16 March 1983. One natural site and one mixed cultural and natural site have been inscribed on the World Heritage list. In 1989 Turkey has gave its intention that it will sign the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention). The Convention for the Protection of the Mediterranean Sea against Pollution, usually known as the Barcelona Convention, has been formally adopted by Turkey. The contracting parties to the Convention adopted the Protocol concerning Mediterranean Specially Protected Areas on 2 April 1982, which entered into force on 23 March 1986. By 1989 three sites had been listed as representative of the Mediterranean network.

Although Turkey is not a member state of the European Community and not party to the 1979 EC Wild Birds Directive, 79 important bird areas (cf EC special protection areas) have been identified (Grimmett and Jones, 1989). Turkey is a member of the Council of Europe: two sites have been designated as biogenetic reserves and one site has been awarded the Council of Europe European Diploma. In 1976 Bird Paradise (Kuscenetti) National Park was awarded the European Diploma Site award; the diploma was renewed in 1981, 1986 and 1991. Turkey ratified the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) in 1984.

Under the Mediterranean Environmental Technical Assistance Programme (CY90-92 METAP) of the World Bank, European Investment Bank, United Nations Development Programme and Commission of the European Communities, representatives from Turkey attended the first meeting of the Mediterranean Protected Areas Network (MEDPAN) meeting on 5-6 October 1990 in Monaco (Anon., 1990). Assistance has come through the Global Environment Facility (GEF) fund, METAP financing for project preparation and GEF financing for investment of the Menderes Wetland programme (Anon., 1990).

There is one transboundary park: Gala Golu Proposed Reserve and Evros Delta Reserve in Greece, but there is little or no interaction or cooperation between the countries in either of these areas. An initiative where Turkey is taking the lead is towards the development of an UNEP-sponsored regional seas programme for the Black Sea, for which Turkey has already sponsored a technical meeting with the other circum-Black Sea countries, the USSR, Romania and Bulgaria (Jeudy de Grissac, *in litt.*, 1991).

Administration and Management Responsibility for the main protected areas lies with the Ministry of Agriculture, Forestry and Rural Affairs (Tarim Orman ve Koyisleri Bakanligi), General Directorate of Forestry (Orman Genel Müdürlügü). It is headed by a Director General and four assistant general directors. Of the eight main service units, those that deal directly with protected areas are the Department of National Parks (Milli Parklar Dairesi Baskanligi), the departments of Forest Protection and Fire Control and the Department of Forest Management and Planning. The duties of the Department of National Parks include: a) to select, protect, plan, develop, administer and operate the various categories of protected area indicated in the National Parks Law, as well as to undertake work relating to the National Park Fund; b) to conserve and develop wildlife and game resources, to manage hunting, and to undertake work relating to undertaking inventories, project preparation, planning and application (General Directorate of Forestry, 1991).

The General Forest Directorate is divided into a provincial organisational network, with regional national park directorate offices either based within the provincial forest establishments, such as at Antalya Bolge, or as separate entities such as at Dilek Milli Park. These can be further subdivided into chief offices for each national park (General Directorate of Forestry, 1987).

Research activities are undertaken primarily by the Forestry Research Institute at Ankara and the Forestry School at Istanbul, which are involved in projects throughout Turkey. An investigation and survey team has been set up by the National Park Office at Ankara to investigate new proposed protected areas. Subsequent work is to prepare management plans for each nature reserve once established. All proposed reserves are on state forest property (Karakurum, pers. comm., 1987).

The National Parks Fund has been established under the authority of the Ministry of Agriculture and Forestry, to meet the expenditures incurred in the protection, repair, maintenance, publicity and operation of the facilities located in areas covered by the National Park Law, 1983. In 1985 approximately TL 300 million was expended on park management (General Directorate of Forestry, 1987). The National Park Fund consists of: allocations made from the budget of the Ministry of Agriculture and Forestry; proceeds obtained from the use and operation of areas covered by the Law; as well as entrance fees and revenues obtained from the sale of all kinds of publications. The Fund has been granted an annual budget (see National Park Law No. 2873, Articles 17-19). In National Park Law No. 2873 the views of the Ministry of Culture and Tourism and the Defence Ministry must be taken into account (Article 4). The ministries of Education, Tourism and Information and State Planning Organisation are also given some responsibilities, both directly and indirectly, for management of national parks.

Master management plans for two major national parks were drawn up with the assistance of the US National Park Service in the 1960s and early 1970s. These plans are still used and tend to concentrate on recreation management with a limited amount of information about fauna and flora or habitat conservation and management (General Directorate of Forestry, 1987).

From early 1988 the Authority for the Protection of Special Areas (Özel Çevre Koruma Kurumu Baskanligi) of the Ministry of Environment (Çevre Bakanligi) has had jurisdiction over the newly-created designation of special protected area, based on the orders within the Environment Law (Vurdu, *in litt.*, 1991).

There are approximately one million registered hunters, providing up to TL 200 million in revenue each year (Karakurum, pers. comm., 1987).

The principal active non-governmental conservation organisations include the Society for the Protection of Wildlife (Dogal Hayati Koruma Dernegi) (DHKD) and the Environmental Problems Foundation of Turkey (Türkiye Çevre Sorunlari Vakfi). The former, funded partly by the International Council for Bird Preservation (ICBP), is largely involved with conservational education, and the latter with environmental issues and legislation. Other smaller organisations include the Environment and Woodlands Protection Society (Çevre Koruma ve Yesillendirme Dernegi) and the Turkish Association for Conservation of Nature and Natural Resources (Türkiye Tobiatini Koruma Dernegi).

The greatest management constraints have included the lack of adequate nature conservation skills and technical support within the General Directorate of Forestry. Although the major national parks have master management plans, they tend to be inadequate as they were drawn up in the 1960s, with an emphasis on tourism rather than nature protection. Lack of coordination between government agencies and of cooperation of government bodies with NGO groups tends to be a major problem.

Systems Reviews Consisting of Turkey in Europe (western Thrace and Istanbul) and Turkey in Asia (comprising the whole of Asia minor or Anatolia), the country extends from Greece and Bulgaria in the west, across the Aegean Sea to the western frontiers of Iran, Soviet Armenia and Georgia and from the Black Sea to the Mediterranean and the northern boundaries of Syria and Iraq.

Turkey is renowned as an important centre of floristic diversity. There are up to 2,400 endemic plant species in a country which is the meeting point of three phytogeographical regions: Euro-Siberian, Mediterranean and Irano-Turanian elements. There are also Balkan and Alpine elements in the flora. Endemism is lowest in Turkey in Europe where endemic species are almost absent. Endemism is highest in the Irano-Turanian region, especially near Erzincan, Erzurum, the mountains south of Lake Van and on gypsacaceous chalk near Cankiri and Sivas; also the Lycian and Cilician Taurus in the Mediterranean region. Boreal and Tertiary relicts are abundant east of the Melet River in the north-east. The three regions consist of a) the Irano-Turanian, which comprises two sub- phytogeographical areas; degraded sub-Mediterranean scrub and forest and a treeless steppe in central Anatolia and an *Artemisia* steppe which gives way to black pine forest and cistus scrub; b) Euro-Siberian or Euxine, a northern belt of broad-leaved deciduous forest of oriental beech and oak extending at greater altitudes into fir and scots pine forest, ranging from the Black sea to above 1,500m; and c) Mediterranean, consisting of maquis, degraded maquis (phrygana), through cedar forest to spiny cushion communities above 1,000m in the Taurus mountains and Aegean coast (Davis *et al.*, 1986; Green and Drucker, 1990).

Wetlands are an important feature. Approximately 60% are freshwater (1,343 million ha). The most important sites include Meric tributary, Gala Lake, Manyas Lake, Apolyont Lake, Sultansazligi marshland, Eber Lake, Aksehir Lake, Karamuk Lake, Beysehir Lake, Egridir Lake, Menderes, Tuz golu, Seyfe Lake, Akyatan Lagoon, Yumurtalik Lagoon, Goksu, Bafra and Homtamis Lake (Grimmett, 1986; Karakurum, pers. comm., 1988).

Land-use is divided into forests with a total of 20.2 million ha (25.9%), meadows and pasture 25 million ha (32.2%) and wetlands 1.3 million (1.7%). Agricultural areas represent 27,699,000ha (35%) of the country (General Directorate of Forestry, 1986). The total area of forest is divided into 8.9 million ha (44%) of productive forest and 11.3 million ha (56%) of low grade or no yield status (General Directorate of Forestry, 1987).

An investigation and survey team has been set up by the National Park Office at Ankara to investigate new proposed protected areas (Karakurum, pers. comm., 1988). Emphasis is on establishing nature reserve areas, on state forest land, from an original short list of approximately 90 proposed sites (Karakurum, pers. comm., 1987). A total of 81 proposed nature reserves was identified by 1987, with the intention of designating sites over forthcoming years at a rate of approximately seven sites per year (Orman Genel Baskanligi, 1987; *Official Gazette* No. 18132; Karakurum, pers. comm., 1987).

Studies on the selection and establishment of nature protection areas began in 1956, and by 1987 eleven natural, one historic, two landscape, one reserve and one natural monument were set aside as national parks covering a total of over 250,000ha. This rose to a total of 21 national parks in 1990 with a total area of 263,575ha. By autumn 1987 five natural reserve area sites had been designated and a further two were in the process of being approved by the Ministry. This had risen to 18 sites totalling 25,492 ha in 1991. In 1988 the first two special protected areas were declared, rising to 11 by 1991. In 1981 at least 295,759ha were protected in 36 national forests (Orman Genel Baskanligi, 1987; *Official Gazette* No. 18132; Karakurum, pers. comm., 1987).

In 1990, in addition to the protected areas governed by the National Park Law, there were 83 game breeding and protection areas totalling 1.1 million ha; 27 game breeding stations; 20 game reintroduction areas; seven biogenetic or nature conservation areas set up on Forestry Defence Property (General Directorate of Forestry, 1987). Approximately 180 recreation areas were established between 1956-68 and 1968-1979. By the late 1980s there was a total of 260 recreation areas (General Directorate of Forestry, 1987).

Environmental problems include a lack of legal regulations relating to effective conservation in national parks. There has been no monitoring of the protection status of game reserves or breeding stations (General Directorate of Forestry, 1986). The prime management and environmental problems in Turkey are believed to be: a) "improved" agriculture and the resultant loss of wetland ecosystems and former grazing land; b) pollution from pesticides and fertilisers; c) building development, especially due to the manifold increase in tourism since the early 1980s along the entire Mediterranean coastline; and d) hunting of threatened species such as ibex, brown bear, wolf and some of the large cats, even though hunting is regulated and their status is largely unknown (Grimmett and Jones, 1989).

Other Relevant Information In the 1960s the numbers of visitors to national parks approached 500,000. In 1985 about 10 million visitors made use of the national parks. Forest recreation areas are established for touristic, cultural and public recreational purposes and by 1987 there had been 30 million visitors to these areas (General Directorate of Forestry, 1987, 1991).

Addresses

Milli Parklar Dairesi (National Parks Department), Orman Genel Müdürlügü, (General Directorate of Forestry), Tarim Orman ve Koyisleri Bakanligi (Ministry of Agriculture, Forestry and Rural Affairs), 11 No. lu Bina, Gazi, ANKARA (Tel: 4 212 6300; FAX: 4 222 5140)

Kultur ve tabiat varliklanni Koruma Genel Müdürlügü (General Directorate for Preservation of Natural and Cultural Heritage), Kultur Bakanligi (Ministry of Culture), II TBMM Ulus, ANKARA (Tel: 4 310 6338/324 3049; FAX: 4 310 9112)

Özel Çevre Koruma Kurumu Baskanligi (The Authority for the Protection of Special Areas), Çevre Bakanligi (Ministry of Environment), Koza Sokak 32, GOP 06700, ANKARA (Tel: 4 140 6919/140 855152; FAX: 4 140 8553/6914)

Dogal Hayati Koruma Dernegi (DHKD) (Society for the protection of wildlife), PK 18, Bebek 80812, ISTANBUL (Tel: 1 163 6324; FAX: 1 163 6324; Tlx: 26534 rada tr)

The Environmental Problems Foundation of Turkey (EPFT), Kennedy Cad 33/3, Kavaklidere, 06660 ANKARA (Tel: 4 1 255508; FAX: 4 118 5118)

Turkiye Tabiatini Koruma Dernegi (TTKD) (Turkish Society for the Protection of Nature and its Resources), Menekse Sokak No 29/4, Kizilay, ANKARA

References

Anon. (1970-71). National park concept in Turkey and its development. Miméo. 17 pp.

Anon. (1991). Mediterranean Environmental Technical Assistance Program, activity report Spring, 1991. World Bank, European Investment Bank, United Nations Development Programme and Commission of the European Communities. 24 pp.

Bayer, Z. (1970). Nature Conservation and National Parks in Turkey. *Natur- und Nationalparke* 8(29): 33-35.
Bayer, Z. (n.d.). Turkey. Unpublished report. 7 pp.
Canakeioglu, H. (1987). Effects of pesticides on bird populations. *Uluslararasi Simpozyum – Turkiye ve Balkan Ulkelerinde Yaban Hayati* 16-20 September.
Environmental Problems Foundation of Turkey (1987). *Environmental law and its application in Turkey*. EPFT, Ankara.
General Directorate of Forestry (1980). *Forest recreation areas of Turkey*. General Directorate of National Parks and Wildlife, Ministry of Forestry, Ankara.
General Directorate of Forestry (1986). *Hunting and wildlife in Turkey* (*Turkiye'de av ve yaban hayati*). Tarim Orman ve Koyisleri Bakanligi (Forest and Village Affairs), Orman Genel Müdürlügü, Ankara.
General Directorate of Forestry (1987). *Forestry in Turkey*. General Directorate of Forestry, Ministry of Agriculture, Forest and Rural Affairs, Ankara.
General Directorate of Forestry (1980). The protected areas situation in Turkey. General Directorate of National Parks and Wildlife, Ministry of Forestry, Ankara. Paper prepared by M. Savas for presentation to the Third Man and Biosphere Meeting on Mediterranean Biosphere Reserves and the First IUCN-CNPPA meeting for the Middle East and North Africa, 14-19 October 1991, Tunis. 3 pp.
Green, M.J.B. and Drucker, G.R.F. (1990). *Current status of protected areas and threatened mammal species in the Sahara-Gobian Region.* World Conservation Monitoring Centre, Cambridge, UK. 50 pp.
Grimmett, R. (1986). *Preliminary inventory of important bird areas in Turkey*. International Council for Bird Preservation, Cambridge, UK. 888 pp.
Grimmett, R.F.A. and Jones, T.A. (1989). *Important bird areas of Europe*. International Council for Bird Preservation, Cambridge, UK.
Hunter, B. (Ed.) (1991). *The Statesman's Year Book 1991-92*. The Macmillan Press Ltd, London and Basingstoke, UK. 1692 pp.
Istanbullu, T. (1976). Some aspects of national parks as a result of Nature Conservation in Turkey. *Natur-und Nationalparke* 15(52): 31-32.
Kettaneh, M. and Ozbaykal, N. (1980). National parks and protected areas of Turkey. Report prepared for the 17th meeting of IUCN Commission on National Parks and Protected Areas. Garoua, Cameroon, 17-23 November 1980.
Mursaloglu, B. (1987). The effects of pesticides and fertilizers on wildlife in Turkey. *Uluslararasi Simpozyum – Turkiye ve Balkan Ulkelerinde Yaban Hayati*. 16-20 September.
Official Gazette (1983). Milli Parklar Kanunu. *Official Gazette,* 11 August 1983, No. 18132.
Orman Genel Müdürlügü (1987). *Milli Parklar Kanunu*. Tarim Orman ve Koyisleri Bakanligi, Milli Parklar Dairesi Baskanligi, Orman Genel Müdürlügü, Ankara, Turkey.
Orman Genel Müdürlügü (1987). *Av Mevsimi Merkez Av Komisyonu Karari, 1987-1988*. Tarim Orman ve Koyisleri Bakanligi, Orman Genel Müdürlügü, Ankara, Turkey.
Packard, F.M. (1958). Report on a survey of potential national parks and recreational areas in Turkey. IUCN, Morges, Switzerland.
Turan, S. (1987). The works of animal protection propagation and management of hunting. *Uluslararasi Simpozyum – Turkiye ve Balkan Ulkelerinde Yaban Hayati.* 16-20 September 1987.
Zengingonul, I. (1987). Tourism and hunting in Turkey. *Uluslararasi Simpozyum – Turkiye ve Balkan Ulkelerinde Yaban Hayati*. 16-20 September 1987.

Definitions of protected area designations, as legislated, together with authorities responsible for their administration

Title: National Park Law No. 2873

Date: 11 August 1983; 5 September 1956 (Forest Law No. 6831)

Brief description: Also concerned with the protection, development and management of such protected areas without spoiling their natural characteristics.

Administrative authority: General Directorate of Forestry (Orman Genel Müdürlügü)

Designations:

National park (Milli park) By definition, a national park is principally state-owned land of at least 500ha that carries high natural, historical, archaeological, recreational, scientific and aesthetic values and in which wood gathering, timber cutting, mining, and hunting is prohibited. Zonation within the parks include: 1) protection zone, where at least one third of the total land is protected against all usage except for scientific research; 2) buffer zone, areas adjacent to the protection zone which can be used for touristic and/or recreational purposes (up to one third of total land); and 3) settlement zone, areas where settlement may take place if the existence of such constructions improves the park's characteristics or, at least, does not destroy them.

Article 13 states that the following activities shall not be permitted: a) the spoiling of the natural and ecological equilibrium; b) the destruction of wildlife; c) interference of any kind which would cause change of natural character or appearance of the park (or pollute soil, water or air or cause other similar environmental problems); d) extraction of forest products, hunting, grazing which will spoil the natural equilibrium may not be carried out; e) except for facilities specified in approved plans or for the requirements of the Turkish General Defence Staff, no facilities may be built.

Article 4 concerns the preparation of a development plan for each site and its implementation by the Ministry of Agriculture and Forestry;

Article 5 specifies that land can be nationalised in accordance with the Law on Expropriation No. 6830 and Article 6 concerns expropriation of governmental land or acquisition of Ministry of National Defence land;

Article 7 states that permissions for all activities are granted through the Ministry of Agriculture and Forestry, except for historic and archaeological sites (which come under the jurisdiction of the Ministry of Culture and Tourism); Article 8 concerns permission required to build touristic complexes in national parks and nature parks. Article 11 is concerned with exploration for oil and minerals; Article 13 concerns management to ensure continuation of multi-purpose usage: production, hunting and domestic livestock grazing may be permitted in certain areas; Article 14 identifies prohibited activities (see Annex). Article 15 concerns the occupation and utilisation of property belonging to public administration and public institutions. Article 16 refers to protection services and prosecution by forest guards in accordance with Forest Law No. 6831. Articles 17, 18 and 19 deal with the national park fund (see below). Penalties are dealt with in Articles 20-23.

Nature Park (Tabiat parklari) Natural area containing characteristic vegetation and wildlife features, and is also suitable for recreational activities. Two sites have been designated, those of Corum city-Catak and Olüdeniz-Kidrak. In both cases special tourist facilities but no other buildings are permitted.

Natural monument (Tabiat aniti) Natural area of scientific value, which was created by nature or natural phenomena and now protected within the framework of the principles on national parks. Article 10 states that no land-use permission may be granted in areas of monuments and nature reserve areas (see provisions of Law No. 2863 for the protection of cultural and natural assets); there have not yet been any specific studies on this class of protected area.

Natural reserve area (Tabiati korum alani) Natural area designated for use only for scientific and educational purposes, containing rare, threatened or endangered ecosystems and/or species and outstanding natural landscape or geological features. Article 10 states that no land-use permission may be granted in areas of monuments and nature reserve areas (see provisions of Law No. 2863 for the protection of cultural and natural assets);

Sources: Original legislation; Karakurum, pers. comm., 1987

Title: Environment Law No. 2872/1983

Date: 9 August 1983; enabling decree of 19 October 1989

Brief description: Also concerned with the protection, development and management of such protected areas without spoiling their natural characteristics.

Administrative authority: Özel Çevre Koruma Kurumu Baskanligi (The Authority for the Protection of Special Areas), Çevre Bakanligi (Ministry of Environment)

Designations:

Specially protected area Declared with the objective of protecting the environment, with its rich diversity of natural and historic variety as well as for the protection of flora and fauna of national importance. Regulations ensure that development projects including tourist activities, are stopped pending re-evaluation by environmental impact assessments. These sites are selected to include only those which are of international importance. The 1989 decree ensures the designation of zonation within these areas.

Source: Özel Çevre Koruma Kurumu Baskanligi, *in litt.*, 1991

Title: Hunting Law No. 3167

Date: 1937

Brief description: Also concerned with hunting and the protection, development and management of areas for hunting and breeding of game on state forest-land

Administrative authority: Orman Genel Müdürlügü

Designations:

Game breeding and protection areas Areas for the protection of game and endangered species

Game breeding stations Areas for the purpose of breeding game and wild animals

Game reintroduction areas Areas where game has been reintroduced into habitats where the species has disappeared or has a very small population

Biogenetic or nature conservation areas Areas established for protection of endemic, endangered or internationally important fauna and flora on Forestry Defence Property

Source: General Directorate of Forestry, 1987

Ukraine Country Profile

Area 603,700 sq. km (Hunter, 1991)

Population 51,704,000 (Hunter, 1991)
Natural increase: no information

Economic Indicators
GDP: No information
GNP: No information

Policy and Legislation The Ukraine was one of the founding sovereign nations signing the United Nations Charter on 26 June 1945. In July 1990 parliament made a declaration of sovereignty, and on 5 December 1991

the Ukraine officially declared itself no longer part of the Soviet Union, following the referendum vote for independence on the 1 December.

In the 1978 Constitution of the Ukrainian Soviet Socialist Republic general provisions for nature protection were included in Article 65 "citizens ... are obliged to protect nature and to conserve its riches". The unified Environmental Code is specified in the Ukrainian Law on the Protection of Nature of 1960 .

Specific provisions on the protection of flora, fauna and their habitats were made in the Ukrainian Law on the Protection and use of Wildlife of 1981 and the Ukrainian Forest Code of 1979 (Anon., 1986a). The Status of State Nature Reserves enacted by the Council of Ministers of the USSR on 27 November 1951, together with the relevant regulations of the Republics, has been revised in the 1981 Act. The Supreme Soviet Law (also of 1981) includes regulations on protected natural areas and measures to ensure wildlife protection (Articles 21-26). The legislative status of state nature reserves (zapovedniki) is based on Article 21 (Section 6 on creating preserves and reserves) and Article 25 (on protection of animals in preserves, reserves and other protected areas) (see the annex in USSR text).

Some of the first protected areas were set up as Imperial hunting reserves, such as the Crimean State Forest and Hunting preserve in 1913, the same site becoming the first zapovednik of the Soviet State in 1923. Zapovedniki are defined as tracts of land containing natural resources, withdrawn from their original landowner, administered as permanent nature preserves by a state or republic level ministry, for the purpose of preserving floral and faunal resources in their natural habitats (Newcombe, 1985; see legislation text for the USSR).

International Activities A network of wetlands of international importance has been established under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention), which was ratified by the USSR on 11 October 1976.

The former Ukrainian SSR was actively involved in developing a network of biosphere reserves under the Unesco MAB programme, two sites having been established in 1984 and 1985, respectively. The USSR signed the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention) on 12 October 1990 but no sites are situated in the Ukraine.

Administration and Management In 1985, as with the whole of the USSR at the time, state protected areas were under the jurisdiction of all-union ministries (see text for the USSR). The Ukrainian SSR Ministry of Forestry governed the main protected areas (Newcombe, 1985). In 1986 a state committee of the Ukrainian SSR on nature protection was formed in the Republic to manage environmental policy and to coordinate activities of other bodies, *inter alia*, for the protection of flora, fauna and their habitats (Anon., 1986).

Systems Reviews The Ukraine, formerly in south-west European USSR, borders Poland, Romania, Czechoslovakia, Hungary, Byelorussia and the Russian Republic. The region largely consists of open plains with low hills, the Carpathian mountains lie in the south-west of the country and the River Dnieper passes through the territory. Steppes and primary forests still occur in many parts of the country, such as in the Carpathians mountains. The Crimea has developed an unique flora and fauna, with over 2,400 plant species, which include numerous endemic species dating back to the Tertiary period. There are important wetlands on the Black Sea coast (Newcombe, 1985; Davis *et al.*, 1986; Cerovsky, *in litt.*, 1991).

Up to 480,000 sq. km of the country is under cultivation.

In 1976 a book of rare and endangered animals and plant species, *A Red Data Book of the Ukraine,* was published; listed organisms include 18 species of insect, four species of amphibian, six species of reptile, 28 species of bird, 29 species of mammal and 151 species of vascular plant (Anon., 1986a). Protected areas in the 1980s included 5,000 sites under special protection totalling 8% of the Ukraine; this included two national parks totaling 170,694ha, 13 state zapovedniki totaling 159,000ha and 202 hunting reserves (four alone covering over 173,000ha). There are two biosphere reserves representing 121,000ha. Wetlands and important bird sites are protected by 200,000ha of Ramsar wetlands of international importance and 24 important bird areas recognized to be of European regional importance by IWRB and ICBP (Grimmett and Jones, 1989). Among the state nature reserves being set up are new landscape, forest and general zoological subcategories, including the Zhukov Ostrov Forest Area, Turye-Polyansky and Rechansky in the trans-Carpathian region. A proposed national park

is located at Dnepro-Desnyanskiy and Verchnednepproskiy; a national park in the Chernobyl fallout zone was being considered in 1988 (Anon., 1986a, 1986b; Gensiruk, 1985: Milne, 1988).

Environmental constraints are varied, ranging from extremely high levels of atmospheric pollution, from coal, chemical, and ore industrial centres, to loss of wetlands (figures indicate a total wetland loss of up to 2.2 million ha); to large scale excavation operations (Hunter, 1991). Dneprovsko-Teterevskoe State Hunting Reserve lies partly within Zone A (total evacuation area) of the Chernobyl reactor accident site and extensive nuclear contaminants have inevitably been recorded here and elsewhere within the region (Anon., 1986b).

Other Relevant Information The southern Black Sea coast of the Crimean Peninsula prior to independence was one of the busiest resort areas in the Soviet Union.

Addresses

Former State Committee of the Ukrainian SSR on Nature Protection, KIEV

References

Anon. (1986a). Organisation of the preserved territories network in Ukrainian SSR. International Symposium "Protection of Natural Areas and the Genetic Fund they Contain" Project No. 8 on the Programme Man and Biosphere (MAB) of Unesco, 23-28 September 1985, Blavoevgrad, Bulgaria. Pp. 11-17

Anon. (1986b). What reserves were affected by the Chernobyl accident? *Commission on National Parks and Protected Areas Newsletter* 36: 1.

Bannikov, A.G. (1969). (Ed.). *Zapovedniki Sovetskogo Soyuza.* Kolos, Moscow. 552 pp.

Braden, K. (1986). Wildlife reserves in the USSR. *Oryx* 20: 165-169.

Davis, S. D., Droop, S. J. M., Gregerson, P., Henson, L., Leon,C. J., Lamlein Villa-Lobos, J., Synge, H., and Zantovska, J. (1986). *Plants in danger: what do we know?* Threatened Plants Unit. IUCN, Gland, Switzerland and Cambridge, UK. 461 pp.

Hunter, B. (Ed.) (1991). The Statesman's Year Book 1991-92. The Macmillan Press Ltd, London and Basingstoke, UK. 1692 pp.

Knystautas, A. (1987). *The natural history of the USSR.* Century, London. 224 pp.

Milne, R. (1988). Chernobyl disaster zone to become national park. *New Scientist.* 15 September 1988. P. 34

Newcombe, L.F. (1985). Protected natural territories in the Crimea, USSR. *Environmental Conservation* 12(2): 147-155.

Sokolov, V.Y. and Syroechkovskogo, Y.Y. (Eds). (1985). *Zapovedniki SSSR.* 11 volumes. Mysl, Moscow.

Weisenburger, U. (1991). Nature conservation in the Soviet Union. In: European Parliament Director-General for Research *Nature Conservation.* Environment, Public Health and Consumer Protection Series 17. IN-9-1991. Pp. 140-149.

* This information is correct at the time of going to press, but is likely to be overtaken by events which could alter the legislative, administrative and management structure of protected areas throughout the region. As of September 1991 the constituent republics of the former Soviet Union included: Armenia, Azerbaijan, Belorussia (Bielorussia or Belarus), Georgia, Kazakhstan, Kirgizia, Moldavia (Moldova), the Russian Republic (RSFSR) and its Baltic enclave of Kalingrad, Tadzhikistan, Turkmenistan, Ukraine and Uzbekistan.

5. ENDANGERED ANIMAL SPECIES OF BLACK SEA STATES

5.1 Introduction

This species review contains the following information:

- Guide to the IUCN (World Conservation Union) Red List Categories and Criteria
- Guide to the interpretation of CITES Appendices
- Guide to the interpretation of CMS Appendices
- Summary table of species richness (fauna and vertebrates only) and regional endemism
- List of species of fauna not globally threatened but of special concern in Europe
- List of globally threatened vertebrates restricted to Europe
- Summary table of all IUCN Red List species of fauna occuring in the Black Sea range States
- Globally threatened plants endemic to one country bordering the Black Sea
- Globally threatened plants occurring in more than one country bordering the Black Sea

This report is a preliminary review of species of conservation concern occuring in and around the Black Sea. This information is presented in two ways: 1) Species of global conservation concern, and 2) species, which are not globally threatened but are of conservation concern in Europe.

5.2 Recommendations for further work on endangered Black Sea fauna

In order to assess the priority species for conservation occurring in and around the Black Sea it would be necessary to analyse:

1. Those national endemic species with a predominantly Black Sea coastal distribution
2. The national conservation status of coastal species occurring in the Black Sea Range States
3. The globally and nationally threatened species with a Black Sea Coastal distribution
4. The important breeding areas for national endemics, globally and nationally threatened species with a Black Sea Coastal distribution (c. 4 days)
5. Discussion, priorities and recommendations (c.2-3 days)

Activities 1-3 would cost between 5-10 days. The cost of activity 4 would be dependent on the map scale and number of species determined in activities 1-3, but at a first estimate this would take approximately four days. Activity 5 would cost between 2-3 days. Total: 8-16 days.

5.3 Guide to the IUCN (World Conservation Union) Red List Categories and Criteria

The international threat (Red List) category given to the fauna was derived from the application of the new IUCN (1994) criteria. Since not all plants have been re-evaluated using the new criteria, the old IUCN Red List Categories are still operative for flora. The category of threat provides an assessment of the likelihood of extinction under current circumstances. IUCN is in the process of developing guidelines for the use of national red list categories.

IUCN (the World Conservation Union) established a system to categorise species and subspecies according to estimated risk of extinction. The system and categories used (Endangered, Vulnerable, Rare etc.) became widely used. The new IUCN Red List category (November 1994) was designed to be more objective and repeatable. There are eight IUCN categories:

Extinct	(EX)	
Extinct in the Wild	(EW)	
Critically Endangered	(CR)	(threatened)*
Endangered	(EN)	" "

Vulnerable	(VU)	" "
Lower Risk	(LR)	
Data Deficient	(DD)	
Not Evaluated	(NE)	

Note: *All taxa listed as Critically Endangered qualify for Vulnerable and Endangered, and all listed as Endangered qualify for Vulnerable. Together these categories are described as 'threatened'.

Listing in the categories of Not Evaluated and Data Deficient indicates that no assessment of extinction risk has been made, though for different reasons. Until an assessment is made, species listed in these categories should not be treated as if they were non-threatened, and it may be appropriate (especially for Data Deficient forms) to give them the same degree of protection as threatened taxa, at least until their status can be evaluated (IUCN, 1996).

The Criteria for the Categories of Threat

The three categories of threat described above are determined by quantitative criteria. There are five criteria in all (A-E), which are based on variables associated with extinction risk. The criteria A-D also have subcriteria that are used to justify the listing of the species under a given category and which provide further information to support the listing under a certain category.

A Declining Population
B Small Distribution and Decline or Fluctuation
C Small Population Size
D Very Small Population Size and Decline
E Quantitative Analysis (e.g., Population Viability Analysis)

The Criteria for Critically Endangered, Endangered and Vulnerable

Prepared by the IUCN Species Survival Commission
As approved by the 40th meeting of the IUCN Council, Gland, Switzerland
30 November 1994

Critically Endangered (CR)

A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the following criteria (A to E):

A Population reduction in the form of either of the following:

1.An observed, estimated, inferred or suspected reduction of at least 80% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:

a direct observation
b an index of abundance appropriate for the taxon
c a decline in area of occupancy, extent of occurrence and/or quality of habitat
d actual or potential levels of exploitation
e the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.

2.A reduction of at least 80%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.

B Extent of occurrence estimated to be less than 100 km2 or area of occupancy estimated to be less than 10 km2, and estimates indicating any two of the following:

1.Severely fragmented or known to exist at only a single location.

2.Continuing decline, observed, inferred or projected, in any of the following:

a extent of occurrence
b area of occupancy
c area, extent and/or quality of habitat
d number of locations or subpopulations
e number of mature individuals

3.Extreme fluctuations in any of the following:

a extent of occurrence
b area of occupancy
c number of locations or subpopulations
d number of mature individuals

C Population estimated to number less than 250 mature individuals and either:

1.An estimated continuing decline of at least 25% within 3 years or one generation, whichever is longer or

2.A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:

a severely fragmented (i.e. no subpopulation estimated to contain more than 50 mature individuals)
b all individuals are in a single subpopulation.

D Population estimated to number less than 50 mature individuals.

E Quantitative analysis showing the probability of extinction in the wild is at least 50% within 10 years or 3 generations, whichever is the longer.

Endangered (EN)

A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the following criteria (A to E):

A Population reduction in the form of either of the following:

1.An observed, estimated, inferred or suspected reduction of at least 50% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:

a direct observation
b an index of abundance appropriate for the taxon
c a decline in area of occupancy, extent of occurrence and/or quality of habitat
d actual or potential levels of exploitation
e the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites

2.A reduction of at least 50%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d), or (e) above.

B Extent of occurrence estimated to be less than 5000 km2 or area of occupancy estimated to be less than 500 km2, and estimates indicating any two of the following:

1.Severely fragmented or known to exist at no more than five locations.

2.Continuing decline, inferred, observed or projected, in any of the following:

a extent of occurrence
b area of occupancy
c area, extent and/or quality of habitat
d number of locations or subpopulations
e number of mature individuals

3.Extreme fluctuations in any of the following:

a extent of occurrence
b area of occupancy
c number of locations or subpopulations
d number of mature individuals

C Population estimated to number less than 2500 mature individuals and either:

1.An estimated continuing decline of at least 20% within 5 years or 2 generations, whichever is longer, or

2.A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:

a severely fragmented (i.e. no subpopulation estimated to contain more than 250 mature individuals)
b all individuals are in a single subpopulation

D Population estimated to number less than 250 mature individuals.

E Quantitative analysis showing the probability of extinction in the wild is at least 20% within 20 years or 5 generations, whichever is the longer.

Vulnerable (VU)

A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined by any of the following criteria (A to E):

A Population reduction in the form of either of the following:

1.An observed, estimated, inferred or suspected reduction of at least 20% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:

a direct observation
b an index of abundance appropriate for the taxon
c a decline in area of occupancy, extent of occurrence and/or quality of habitat
d actual or potential levels of exploitation
e the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites

2.A reduction of at least 20%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.

B Extent of occurrence estimated to be less than 20,000 km2 or area of occupancy estimated to be less than 2000 km2, and estimates indicating any two of the following:

1.Severely fragmented or known to exist at no more than ten locations.

2.Continuing decline, inferred, observed or projected, in any of the following:

a extent of occurrence
b area of occupancy
c area, extent and/or quality of habitat
d number of locations or subpopulations
e number of mature individuals

3.Extreme fluctuations in any of the following:

a extent of occurrence
b area of occupancy
c number of locations or subpopulations
d number of mature individuals

C Population estimated to number less than 10,000 mature individuals and either:

1.An estimated continuing decline of at least 10% within 10 years or 3 generations, whichever is longer, or

2.A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:

a severely fragmented (i.e. no subpopulation estimated to contain more than 1000 mature individuals)
b all individuals are in a single subpopulation.

D Population very small or restricted in the form of either of the following:

1. Population estimated to number less than 1000 mature individuals.

2. Population is characterised by an acute restriction in its area of occupancy (typically less than 100 km2) or in the number of locations (typically less than 5). Such a taxon would thus be prone to the effects of human activities (or stochastic events whose impact is increased by human activities) within a very short period of time in an unforeseeable future, and is thus capable of becoming Critically Endangered or even Extinct in a very short period.

E Quantitative analysis showing the probability of extinction in the wild is at least 10% within100 years.

Guide to the interpretation of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendices

Table 2, which describes all Red List Species occurring in the Black Sea Range Sates, contains two columns, one with the heading CITES species listing and the other with CMS. The roman numerals represent the Appendices in which the relevant species are listed.

CITES has established a world-wide system of controls on international trade in threatened wildlife and wildlife and wildlife products by stipulating that government permits are required for such trade. Protection is provided for species in two main categories:

The most endangered species

- Appendix I: Includes all species threatened with extinction, which are or may be affected by trade.

Other species at serious risk

- Appendix II: a) Includes all species which although not necessarily currently threatened with extinction may become so unless trade is subject to strict regulation; and b) Other species which must be subject to regulation in order that trade in certain specimens of species referred to in sub- paragraph (a) above may be brought under effective control, i.e, species similar in appearance. Regulation of trade in Appendix II species.

- Appendix III: All species which any Party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation. The co-operation of other Parties, is therefore, needed. Regulation of trade in Appendix III species.

5.4 Guide to the interpretation of CMS Appendices

The Convention in the conservation of Migratory Species of Wild Animals (CMS or the Bonn Convention) aims to conserve terrestrial, marine and avian migratory species throughout their range. The CMS Appendices are as follows:

- Appendix I: Migratory species which are endangered

- Appendix II: Migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international co-operation that could be achieved by an international agreement

5.5 References

WCMC, 1997 (in Prep). Red Data Book of European Vertebrates. A contribution to Action Theme No. 11 (European Action Programme for Threatened Species) of the Pan-European Biological and Landscape Diversity Strategy. (Bird data provided by Birdlife International). WCMC, Cambridge, United Kingdom.

The WCMC Animals Database

5.6 Summary table of species richness (fauna and vertebrates only) and regional endemism

Table 1 Number of vertebrate species endemic to Europe, which occur in the Black Sea coastal states.

Country	Total no. of species	Species endemic to Europe/percentage of total number of species occurring in Country	Endemic European Mammal Species	Total Mammal Species	Endemic European Bird Species	Total bird Species	Endemic European Reptile Species	Total Reptile species	Endemic European Amphibian Species	Total Amphibian Species	Endemic European Fish Species	Total fish Species
Bulgaria	454	72 (16%)	14	86	2	204	8	32	10	17	38	79
Georgia	213	61 (29%)	20	89	?	?	18	50	4	14	19	60
Romania	467	81 (17%)	19	90	3	247	6	23	12	20	41	87
Russia*	668	90 (13%)	123	217	6	362	8	47	8	20	14	116
Turkey	707	124 (17%)	18	114	3	302	31	103	11	20	61	168
Ukraine	493	84 (17%)	17	97	4	263	6	24	14	21	43	88

Source: WCMC in Prep, 1997
Note * indicates that estimate refers only to part of the country (east to 50 degrees longitude)
Fish estimates provisional for countries in the far east of the region, cetaceans excluded, marine turtles included where nesting, marine fish species excluded

5.7 List of species of fauna not globally threatened but of special concern in Europe

The species outlined below are not currently regarded as globally threatened, but are of special concern at the European level. This information has been derived from the Red Data Book of European Vertebrates (WCMC, in prep. 1997) The countries of occurrence listed include only the European part of the range where the species occurred in one or more of the Black Sea Range States. For birds, only breeding ranges are given.

For mammals, reptiles, amphibians and fishes, "special concern" is estimated by the extent to which the species have been categorised as threatened in relevant national Red Data Books.

MAMMALS

Order INSECTIVORA	
Family ERINACEIDAE	
Hemiechinus auritus	Georgia Russia Ukraine
Order CHIROPTERA	
Family PTEROPODIDAE	
Rousettus aegyptiacus	Turkey
Family RHINOLOPHIDAE	
Rhinolophus blasii	Georgia Romania Russia Turkey Ukraine
Rhinolophus ferrumequinum	Bulgaria Georgia Romania Russia Turkey Ukraine
Family VESPERTILIONIDAE	
Barbastella leucomelas	Russia
Eptesicus bottae	Turkey
Miniopterus schreibersi	Bulgaria Georgia Romania Russia Turkey Ukraine
Otonycteris hemprichi	Turkey
Pipistrellus kuhli	Turkey Ukraine
Order CARNIVORA	
Family CANIDAE	
Alopex lagopus	Russia
Canis aureus	Bulgaria Georgia Romania Turkey
Canis lupus	Bulgaria Georgia Romania Russia Turkey Ukraine
Family FELIDAE	
Caracal caracal	Turkey
Lynx lynx	Bulgaria Georgia Romania Russia Turkey Ukraine
Felis silvestris	Bulgaria Georgia Romania Russia Turkey Ukraine
Panthera pardus	Georgia Russia Turkey
Family HERPESTIDAE	

Herpestes ichneumon	Turkey
Family HYAENIDAE	
Hyaena hyaena	Georgia Turkey
Family MUSTELIDAE	
Lutra lutra	Bulgaria Georgia Romania Russia Turkey Ukraine
Mustela eversmanni	Bulgaria Romania Russia Ukraine
Vormela peregusna	Bulgaria Georgia Romania Russia Turkey Ukraine
Family PHOCIDAE	
Phoca hispida	Russia
Family URSIDAE	
Ursus arctos	Bulgaria Georgia Romania Russia Turkey Ukraine
Order CETACEA	
Family BALAENIDAE	
Order ARTIODACTYLA	
Family BOVIDAE	
Gazella dorcas	Turkey
Gazella subgutturosa	Georgia Turkey
Order RODENTIA	
Family SCIURIDAE	
Sciurus anomalus	Georgia Turkey
Pteromys volans	Russia
Family MYOXIDAE	
Myoxus glis	Bulgaria Georgia Romania Russia Turkey Ukraine
Family DIPODIDAE	
Sicista subtilis	Bulgaria Russia Ukraine
Family HYSTRICIDAE	
Hystrix indica	Georgia Turkey

BIRDS

Order GAVIIFORMES	
Family GAVIIDAE	
Gavia stellata	Russia
Gavia arctica	Russia
Order PROCELLARIFORMES	
Order PELECANIFORMES	
Family PELECANIDAE	

Pelecanus onocrotalus	Romania Russia Turkey
Family PHALACROCORACIDAE	
Phalacrocorax pygmeus	Bulgaria Romania Russia Turkey Ukraine
Order CICONIIFORMES	
Family ARDEIDAE	
Botaurus stellaris	Bulgaria Romania Russia Turkey Ukraine
Ixobrychus minutus	Bulgaria Romania Russia Turkey Ukraine
Nycticorax nycticorax	Bulgaria Romania Russia Turkey Ukraine
Ardeola ralloides	Bulgaria Romania Russia Turkey Ukraine
Ardea purpurea	Bulgaria Romania Russia Turkey Ukraine
Family CICONIIDAE	
Ciconia nigra	Bulgaria Romania Russia Turkey Ukraine
Ciconia ciconia	Bulgaria Romania Russia Turkey Ukraine
Family THRESKIORNITHIDAE	
Plegadis falcinellus	Bulgaria Romania Russia Turkey Ukraine
Platalea leucorodia	Bulgaria Romania Russia Turkey Ukraine
Family PHOENICOPTERIDAE	
Phoenicopterus ruber	Turkey
Order ANSERIFORMES	
Family ANATIDAE	
Branta bernicla	Russia
Tadorna ferruginea	Bulgaria Romania Russia Turkey Ukraine
Anas strepera	Bulgaria Romania Russia Turkey Ukraine
Anas acuta	Bulgaria Romania Russia Turkey Ukraine
Anas querquedula	Bulgaria Romania Russia Turkey Ukraine
Netta rufina	Bulgaria Romania Russia Turkey Ukraine
Mergus albellus	Russia
Order FALCONIFORMES	
Family ACCIPITRIDAE	
Milvus migrans	Bulgaria Romania Russia Turkey Ukraine
Haliaeetus albicilla	Bulgaria Romania Russia Turkey Ukraine
Gypaetus barbatus	Russia Turkey
Neophron percnopterus	Bulgaria Romania Russia Turkey Ukraine
Gyps fulvus	Bulgaria Russia Turkey Ukraine
Aegypius monachus	Russia Turkey Ukraine
Circaetus gallicus	Bulgaria Romania Russia Turkey Ukraine
Circus cyaneus	Russia Ukraine
Circus macrourus	Romania Russia Ukraine
Accipiter brevipes	Bulgaria Romania Russia Turkey Ukraine
Buteo rufinus	Bulgaria Russia Turkey Ukraine
Aquila pomarina	Bulgaria Romania Russia Turkey Ukraine
Aquila nipalensis	Russia Turkey Ukraine
Aquila chrysaetos	Bulgaria Romania Russia Turkey Ukraine
Hieraaetus pennatus	Bulgaria Romania Russia Turkey Ukraine
Hieraaetus fasciatus	Turkey
Family PANDIONIDAE	
Pandion haliaetus	Bulgaria Russia Turkey Ukraine
Family FALCONIDAE	

Falco tinnunculus	Bulgaria Romania Russia Turkey Ukraine
Falco vespertinus	Bulgaria Romania Russia Ukraine
Falco eleonorae	Turkey
Falco biarmicus	Turkey
Falco cherrug	Bulgaria Romania Russia Turkey Ukraine
Falco rusticolus	Russia
Falco peregrinus	Bulgaria Romania Russia Turkey Ukraine
Order GALLIFORMES	
Family PHASIANIDAE	
Tetrao tetrix	Romania Russia Ukraine
Tetrao mlokosiewiczi	Russia Turkey
Tetraogallus caspius	Turkey
Alectoris chukar	Bulgaria Russia Turkey
Alectoris graeca	Bulgaria Romania
Francolinus francolinus	Turkey
Perdix perdix	Bulgaria Romania Russia Turkey Ukraine
Coturnix coturnix	Bulgaria Romania Russia Turkey Ukraine
Family TURNICIDAE	
Family GRUIDAE	
Grus grus	Romania Russia Turkey Ukraine
Family RALLIDAE	
Porzana pusilla	Bulgaria Romania Russia Turkey Ukraine
Porphyrio porphyrio	Russia Turkey
Family OTIDAE	
Tetrax tetrax	Russia Turkey Ukraine
Order CHARADRIIFORMES	
Family BURHINIDAE	
Burhinus oedicnemus	Bulgaria Romania Russia Turkey Ukraine
Family GLAREOLIDAE	
Cursorius cursor	Turkey
Glareola pratincola	Bulgaria Romania Russia Turkey Ukraine
Glareola nordmanni	Romania Russia Ukraine
Family CHARADRIIDAE	
Charadrius alexandrinus	Bulgaria Romania Russia Turkey Ukraine
Charadrius asiaticus	Russia
Hoplopterus spinosus	Turkey
Family SCOLOPACIDAE	
Limicola falcinellus	Russia
Gallinago media	Russia Ukraine
Limosa limosa	Romania Russia Ukraine
Tringa totanus	Bulgaria Romania Russia Turkey Ukraine
Tringa glareola	Russia Ukraine
Family LARIDAE	
Larus minutus	Romania Russia Ukraine
Larus audouinii	Turkey
Larus canus	Russia
Pagophila eburnea	Russia

Gelochelidon nilotica	Bulgaria Romania Russia Turkey Ukraine
Sterna caspia	Russia Turkey Ukraine
Sterna sandvicensis	Bulgaria Romania Russia Ukraine
Sterna albifrons	Bulgaria Romania Russia Turkey Ukraine
Chlidonias hybridus	Bulgaria Romania Russia Turkey Ukraine
Chlidonias niger	Bulgaria Romania Russia Turkey Ukraine
Family ALCIDAE	
Cepphus grylle	Russia
Fratercula arctica	Russia
Family PTEROCLIDIDAE	
Pterocles orientalis	Russia Turkey
Pterocles alchata	Turkey
Family COLUMBIDAE	
Streptopelia turtur	Bulgaria Romania Russia Turkey Ukraine
Order STRIGIFORMES	
Family TYTONIDAE	
Tyto alba	Bulgaria Romania Turkey Ukraine
Family STRIGIDAE	
Otus scops	Bulgaria Romania Russia Turkey Ukraine
Bubo bubo	Bulgaria Romania Russia Turkey Ukraine
Nyctea scandiaca	Russia
Athene noctua	Bulgaria Romania Russia Turkey Ukraine
Asio flammeus	Romania Russia Turkey Ukraine
Order CAPRIMULGIFORMES	
Family CAPRIMULGIDAE	
Caprimulgus europaeus	Bulgaria Romania Russia Turkey Ukraine
Order CORACIIFORMES	
Family ALCEDINIDAE	
Alcedo atthis	Bulgaria Romania Russia Turkey Ukraine
Family MEROPIDAE	
Merops apiaster	Bulgaria Romania Russia Turkey Ukraine
Family CORACIIDAE	
Coracias garrulus	Bulgaria Romania Russia Turkey Ukraine
Order PICIFORMES	
Family PICIDAE	
Jynx torquilla	Bulgaria Romania Russia Turkey Ukraine
Picus canus	Bulgaria Romania Russia Turkey Ukraine
Picus viridis	Bulgaria Romania Russia Turkey Ukraine
Picoides tridactylus	Bulgaria Romania Russia Ukraine
Order PASSERIFORMES	
Family ALAUDIDAE	
Melanocorypha calandra	Bulgaria Romania Russia Turkey Ukraine
Melanocorypha yeltoniensis	Russia
Calandrella brachydactyla	Bulgaria Romania Russia Turkey Ukraine

Calandrella rufescens	Russia Turkey Ukraine
Galerida cristata	Bulgaria Romania Russia Turkey Ukraine
Lullula arborea	Bulgaria Romania Russia Turkey Ukraine
Alauda arvensis	Bulgaria Romania Russia Turkey Ukraine
Family HIRUNDINIDAE	
Riparia riparia	Bulgaria Romania Russia Turkey Ukraine
Hirundo rustica	Bulgaria Romania Russia Turkey Ukraine
Family MOTACILLIDAE	
Anthus campestris	Bulgaria Romania Russia Turkey Ukraine
Family LANIIDAE	
Lanius collurio	Bulgaria Romania Russia Turkey Ukraine
Lanius minor	Bulgaria Romania Russia Turkey Ukraine
Lanius excubitor	Romania Russia Ukraine
Lanius senator	Bulgaria Romania Turkey Ukraine
Lanius nubicus	Bulgaria Turkey
Family PRUNELLIDAE	
Prunella ocularis	Turkey
Prunella atrogularis	Russia
Family MUSCICAPIDAE	
Phoenicurus phoenicurus	Bulgaria Romania Russia Turkey Ukraine
Saxicola torquata	Bulgaria Romania Russia Turkey Ukraine
Oenanthe hispanica	Bulgaria Romania Turkey
Monticola saxatilis	Bulgaria Romania Turkey Ukraine
Monticola solitarius	Bulgaria Turkey
Hippolais pallida	Bulgaria Romania Turkey
Hippolais olivetorum	Bulgaria Turkey
Sylvia hortensis	Bulgaria Turkey
Muscicapa striata	Bulgaria Romania Russia Turkey Ukraine
Ficedula semitorquata	Bulgaria Russia Turkey
Family EMBERIZIDAE	
Emberiza cia	Bulgaria Romania Turkey Ukraine
Emberiza cineracea	Turkey
Emberiza hortulana	Bulgaria Romania Russia Turkey Ukraine
Emberiza melanocephala	Bulgaria Romania Russia Turkey Ukraine
Family FRINGILLIDAE	
Bucanetes githagineus	Turkey
Family CORVIDAE	
Perisoreus infaustus	Russia
Pyrrhocorax pyrrhocorax	Turkey

REPTILES

Order SAURIA
Family CHAMAELEONIDAE

Chamaeleo chamaeleon	Turkey
Family LACERTIDAE	
Lacerta laevis	Turkey

Order SERPENTES
Family COLUBRIDAE

Coluber algirus

Coluber rubriceps Bulgaria Turkey

Elaphe longissima Bulgaria Georgia Romania Russia Turkey Ukraine

Rhynchocalamus satunini Turkey

Order TESTUDINES
Family TRIONYCHIDAE

Trionyx triunguis Turkey

AMPHIBIANS

Order ANURA
Family PELOBATIDAE

Pelobates syriacus Bulgaria Georgia Romania Turkey
Order CAUDATA
Family SALAMANDRIDAE

Neurergus crocatus Turkey

FISHES

Order PETROMYZONTIFORMES
Family PETROMYZONTIDAE

Caspiomyzon wagneri Russia

Order PERCIFORMES
Family BLENNIIDAE

Blennius fluviatilis Turkey
Family CICHLIDAE

Tristamalla simonis Turkey

Order CYPRINIFORMES
Family CYPRINIDAE

Alburnus coeruleus Turkey

Alburnus kotschyi Turkey

Carassius carassius Bulgaria Georgia Romania Russia Turkey Ukraine

Cyprinus carpio Bulgaria Georgia Romania Russia Turkey Ukraine

Hemigrammocapoeta sauvagei Turkey

Kosswigobarbus kosswigi	Turkey
Pararhodeus kervillei	Turkey
Pararhodeus meandrii	Turkey
Tylognathus caudomaculatus	Turkey
Order CYPRINODONTIFORMES Order SALMONIFORMES Family SALMONIDAE	
Coregonus autumnalis	Russia
Salmo salar	Russia
Salmo trutta	Bulgaria Georgia Romania Russia Turkey Ukraine
Order SILURIFORMES Family SILURIDAE	
Silurus triostegus	Turkey
Family SISSORIDAE	
Glyptothorax steindachneri	Turkey
Order SYNBRANCHIFORMES Family MASTACEMBELIDAE	
Mastacembelus simack	Turkey

5.8 List of globally threatened vertebrates restricted to Europe

The list covers terrestrial and freshwater species. Only species which occur in one of the Black Sea Range States are included.

Names and taxonomic details appear in the left-hand column; the 1996 IUCN global status category is shown in the next column; followed by the criteria cited, and the countries in which the species occurs. In the case of birds, this last column shows the breeding range only.

MAMMALS	**IUCN Category**	**IUCN Criteria**	Distribution
Order CARNIVORA Family FELIDAE			
Mustela lutreola European Mink	EN	A1ace	Georgia Romania Russia
Order ARTIODACTYLA Family BOVIDAE			
Bison bonasus European Bison	EN	A2ce, C2a	Russia Ukraine
Capra caucasica West Caucasian Tur	EN	A1d+2cde	Georgia Russia
Capra cylindricornis East Caucasian Tur	VU	A1d+2de, C1	Georgia Russia
Order RODENTIA Family SCIURIDAE			
Spermophilus citellus European Squirrel	VU	A1c	Bulgaria Romania Turkey Ukraine
Spermophilus suslicus Spotted Souslik	VU	A1c	Romania Russia Ukraine
Family DIPODIDAE			
Sicista armenica Family MURIDAE	CR	A1c, C1	Georgia
Acomys cilicicus	CR	C2b	Turkey
Mesocricetus newtoni **Romania** n Hamster	VU	D2	Bulgaria Romania
Nannospalax leucodon	VU	D2	Bulgaria Romania Turkey Ukraine
Spalax arenarius	VU	A1c, B1+2c	Ukraine
Spalax graecus Greater Mole Rat	VU	D2	Romania Ukraine
Spalax microphthalmus Family MYOXIDAE	VU	D2	Russia Ukraine
Eliomys quercinus Garden Dormouse	VU	A1c	Romania Ukraine
Myomimus roachi Mouse-tailed Dormouse	VU	D2	Turkey

MAMMALS	**IUCN Category**	**IUCN Criteria**	Distribution
BIRDS			
Order ANSERIFORMES Family ANATIDAE			
Branta ruficollis Red-breasted Goose	VU	A2cd, B1+2cd	Russia
Order COLUMBIFORMES Family COLUMBIDAE			
Order PASSERIFORMES Family MUSCICAPIDAE			
Acrocephalus paludicola Aquatic Warbler	VU	A2c	Russia Ukraine
REPTILES			
Order SAURIA Family LACERTIDAE			
Lacerta clarkorum Order SERPENTES Family COLUBRIDAE	EN	C2a	Georgia Turkey
Natrix megalocephala Large-headed Water Snake	VU	A1d, C1	Georgia Russia Turkey
Family VIPERIDAE			
Vipera albizona	EN	B1+2e, C2a	Turkey
Vipera bulgardaghica	CR	B1+2e, C2a	Turkey
Vipera darevskii	CR	C2b	Georgia
Vipera dinniki	VU	C1+2a	Georgia Russia
Vipera kaznakovi Caucasian Viper	EN	A1cd+2cd	Georgia Russia Turkey
Vipera pontica	CR	C2ab, D1	Georgia Turkey
Vipera ursinii	EN	A1c+2c	Romania Turkey Ukraine
AMPHIBIANS			
Family RANIDAE			
Rana holtzi Family SALAMANDRIDAE	EN	B1+2bc+3, E	Turkey
Mertensella luschani Lycian Salamander	VU	B1+2cde	Turkey
FISHES			
Order CLUPEIFORMES			

MAMMALS	IUCN Category	IUCN Criteria	Distribution
Alosa macedonia Liparia	VU	D2	
Order CYPRINIFORMES Family CYPRINIDAE			
Alburnus akili Gokce Baligi	VU	A2de	Turkey
Alburnus albidus Italian Bleak	VU	A1ace	Turkey
Barbus guiraonis	VU	A2ce	
Barbus haasi Barbo de Cola Roja	VU	A2ce	
Barbus microcephalus	VU	A2ce	
Chondrostoma holmwoodii	VU	A2e	Turkey
Gobio hettitorum Dere Kayasi	VU	D2	Turkey
Ladigesocypris ghigii Ghizáni	VU	A2ce	Turkey
Paraphoxinus alepidotus	VU	A2ce	
Paraphoxinus croaticus	VU	A2ce	
Paraphoxinus ghetaldi	VU	A2ce	
Paraphoxinus metohiensis	VU	A2ce	
Phoxinellus anatolicus	EN	A2e	Turkey
Phoxinellus egridiri	CR	A1e	Turkey
Phoxinellus handlirschi Ciçek	CR	A1e	Turkey
Family BALITORIDAE			
Nemacheilus tschaiyssuensis Order SALMINIFORMES Family UMBRIDAE	VU	D2	Turkey
Umbra krameri European Mud-minnow Family SALMONIDAE	VU	A1ace	Bulgaria Romania Ukraine
Hucho hucho Huchen	EN	A2bcde, B1+2bce	Romania Ukraine
Salmo carpio Carpione del Garda	VU	A1acde	
Salmo platycephalus Ala Balik	CR	B1+2abc	Turkey
Order CYPRINODONTIFORMES			

MAMMALS	**IUCN Category**	**IUCN Criteria**	Distribution
Family CYPRINODONTIDAE			
Aphanius anatoliae Dislisazancik Baligi	EN	A2ce, B1+2abcd	Turkey
Aphanius burduricus	EN	A2e	Turkey
Aphanius splendens	CR	A1ac, B1+2abce	Turkey
Aphanius sureyanus	CR	B1+2bc	Turkey
Aphanius transgrediens	CR	B1+2bcd	Turkey
Order GASTEROSTEIFORMES			
Family GASTEROSTEIDAE			
Order PERCIFORMES			
Family PERCIDAE			
Gymnocephalus schraetzer Striped Ruffe	VU	A1ace	Bulgaria Romania Ukraine
Percarina demidoff	VU	D2	Russia Ukraine
Zingel streber Streber	VU	A1ce+2ce	Bulgaria Ukraine
Zingel zingel Zingel	VU	A1ce+2ce	Bulgaria Romania Ukraine

5.9 Summary table of all IUCN Red List species of fauna occurring in the Black Sea States

Where a Red List species occurs in a country this has been indicated by the symbol Y. Some species, i.e. the Sturgeon have been accessed by individual population, thus there are multiple entries. Species assessed as threatened , critically endangered, extinct in the wild and extinct have these have been highlighted in bold.

Table 2

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Mammals												
Sorex leucogaster	**Paramushir Shrew**	**VU**	**B1+2c**							**Y**		
Desmana moschata	**Russian Desman**	**VU**	**B1+2c**							**Y**		**Y**
Rhinolophus blasii	Blasius' Horseshoe Bat	LR/nt		II			Y		Y		Y	
Rhinolophus euryale	**Mediterranean Horseshoe Bat**	**VU**	**A2c**	**II**			**Y**	**Y**	**Y**		**Y**	**Y**
Rhinolophus ferrumequinum	Greater Horseshoe Bat	LR/cd		II			Y	Y	Y	Y	Y	Y
Rhinolophus hipposideros	**Lesser Horseshoe Bat**	**VU**	**A2c**	**II**			**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Rhinolophus mehelyi	**Mehely's Horseshoe Bat**	**VU**	**A2c**	**II**			**Y**	**Y**	**Y**	**Y**	**Y**	
Barbastella barbastellus	**Western Barbastelle**	**VU**	**A2c**	**II**			**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Eptesicus serotinus	Serotine	LR/lc		II			Y		Y	Y	Y	
Miniopterus schreibersi		LR/nt					Y		Y		Y	Y
Murina ussuriensis		**EN**	**A2c**							**Y**		
Myotis abei		DD								Y		
Myotis bechsteini	**Bechstein's Bat**	**VU**	**A2c**	**II**			**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Myotis blythii	Lesser Mouse-eared Bat	LR/lc		II			Y	Y	Y	Y		
Myotis bombinus		LR/nt								Y		
Myotis brandti	Brandt's Bat	LR/lc		II			Y		Y	Y	Y	
Myotis capaccinii	**Long-fingered Bat**	**VU**	**A2c**	**II**			**Y**		**Y**		**Y**	
Myotis dasycneme	**Pond Bat**	**VU**	**A2c**	**II**						**Y**		**Y**
Myotis daubentoni	Daubenton's Bat	LR/lc		II					Y	Y	Y	
Myotis emarginatus	**Geoffroy's Bat**	**VU**	**A2c**	**II**			**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Myotis frater		LR/nt								Y		
Myotis macrodactylus		LR/nt								Y		
Myotis myotis	Large Mouse-eared Bat	LR/nt		II			Y		Y		Y	Y
Myotis mystacinus	Whiskered Bat	LR/lc		II			Y			Y	Y	
Myotis nattereri	Natterer's Bat	LR/lc		II			Y	Y	Y	Y	Y	Y
Nyctalus lasiopterus	Giant Noctule	LR/nt		II			Y	Y	Y	Y	Y	Y
Nyctalus leiseri	Lesser Noctule	LR/nt		II			Y	Y	Y	Y	Y	Y

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Nyctalus noctula	Noctula	LR/lc		II			Y		Y	Y	Y	
Pipistrellus kuhlii	Kuhl's Pipistrelle	LR/lc		II				Y			Y	Y
Pipistrellus nathusii	Nathusius' Pipistrelle	LR/lc		II			Y	Y	Y	Y	Y	
Pipistrellus pipistrellus	Common Pipistrelle	LR/lc		II				Y	Y		Y	
Pipistrellus savii	Savi's Pipistrelle	LR/lc		II			Y	Y			Y	Y
Plecotus auritus	Brown Long-eared Bat	LR/lc		II			Y	Y	Y	Y	Y	Y
Plecotus austriacus	Grey Long-eared Bat	LR/lc		II			Y	Y	Y		Y	Y
Vespertilio murinus	Particoloured Bat	LR/lc		II			Y			Y	Y	
Tadarida teniotis	European Free-tailed Bat	LR/lc		II			Y			Y	Y	Y
Canis aureus	Golden Jackal	LR/lc			III		Y	Y	Y		Y	
Canis lupus	Timber Wolf	LR/lc			I		Y	Y	Y	Y	Y	Y
Cuon alpinus	**Indian Wild Dog**	**VU**	**C2a**		**II**					**Y**	**Y**	
Vulpes corsac	Corsac Fox	DD								Y		
Caracal caracal	Asian Caracal	LR/lc			I						Y	
Felis chaus	Reed Cat	LR/lc			II					Y	Y	
Felis silvestris	Wild Cat	LR/lc			II		Y	Y	Y	Y	Y	Y
Lynx lynx	Eurasian Lynx	LR/lc			II		ex	Y	Y	Y	Y	
Otocolobus manul	Pallas's Cat	LR/lc			II					Y		
Panthera pardus	Leopard	LR/lc			I			Y		Y	Y	
Panthera tigris	**Tiger**	**EN**	**A2cd**		**I**					**Y**	**ex?**	
Prionailurus bengalensis	Leopard Cat	LR/lc			II					Y		
Uncia uncia	**Ounce**	**EN**	**C2a**	**I**	**I**					**Y**		
Gulo gulo	**Wolverine**	**VU**	**A2c**							**Y**		
Mustela lutreola	**European Mink**	**EN**	**A1ace**				**Y**	**Y**	**Y**	**Y**		
Odobenus rosmarus	Walrus	LR/lc			III					Y		
Callorhinus ursinus	**Northern Fur Seal**	**VU**	**A1b**							**Y**		
Eumetopias jubatus	**Steller's Sealion**	**EN**	**A1b**							**Y**		
Halichoerus grypus	Grey Seal	LR/lc		II						Y		
Monachus monachus	**Mediterranean Monk Seal**	**CR**	**C2a**	**I**	**I**		**Y**	**ex?**	**Y**	**Y**	**Y**	**ex?**
Phoca caspica	**Caspian Seal**	**VU**	**B1+2e**							**Y**		
Phoca groenlandica	Greenland Seal	LR/lc								Y		
Phoca hispida	Ringed Seal	LR/lc								Y		
Phoca sibirica	Baikal Seal	LR/nt								Y		
Phoca vitulina	Common Seal	LR/lc		II						Y		
Ursus maritimus	Polar Bear	LR/cd			II					Y		
Ursus thibetanus	**Himalayan Black Bear**	**VU**	**A1cd**		**I**					**Y**		
Balaena mysticetus	Greenland Right Whale	LR/cd		I	I					Y		
Eubalaena glacialis	**Right Whale**	**EN**	**"C1, D1"**	**I**	**I**					**Y**		
Balaenoptera acutorostrata	Little Piked Whale	LR/nt			I					Y		
Balaenoptera borealis	**Coalfish Whale**	**EN**	**A1abd**		**I**					**Y**		
Balaenoptera musculus	**Sibbald's Rorqual**	**EN**	**A1abd**	**I**	**I**					**Y**		

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Balaenoptera physalus	**Fin-backed Whale**	**EN**	**A1abd**		**I**					**Y**		
Megaptera novaeangliae	**Hunchbacked Whale**	**VU**	**A1ad**	**I**	**I**					**Y**		
Eschrichtius robustus	Rip Sack	LR/cd			I					Y		
Delphinus delphis	Saddle-backed Dolphin	LR/lc		II	II		Y	Y	Y	Y	Y	Y
Grampus griseus	Grey Dolphin	DD		II	II			Y		Y		Y
Lagenorhynchus acutus	Atlantic White-sided Dolphin	LR/lc		II	II					Y		
Lagenorhynchus albirostris	White-beaked Dolphin	LR/lc		II	II					Y	Y	
Lagenorhynchus obliquidens	Pacific White-sided Dolphin	LR/lc			II					Y		
Lissodelphis borealis	Northern Right Whale Dolphin	LR/lc			II					Y		
Orcinus orca	Orca	LR/cd		II	II					Y		
Pseudorca crassidens	False Killer Whale	LR/lc			II					Y		
Stenella coeruleoalba	Euphrosyne Dolphin	LR/cd		II	II					Y		
Tursiops truncatus	Bottle-nosed Dolphin	DD		II	II		Y	Y	Y	Y	Y	Y
Delphinapterus leucas	**Beluga**	**VU**	**A1abd**	**II**	**II**					**Y**		
Monodon monoceros	Unicorn Whale	DD		II	II					Y		
Phocoena phocoena	**Harbour Porpoise**	**VU**	**A1cd**	**II**	**II**		**Y**					
Phocoena phocoena	**Harbour Porpoise**	**VU**	**"A1c, C1+2b"**					**Y**				
Phocoena phocoena	**Harbour Porpoise**	**VU**	**A1cd**	**II**	**II**				**Y**			
Phocoena phocoena	**Harbour Porpoise**	**VU**	**"A1c, C1+2b"**							**Y**		
Phocoena phocoena	**Harbour Porpoise**	**VU**	**A1cd**	**II**	**II**						**Y**	
Phocoena phocoena	**Harbour Porpoise**	**VU**	**"A1c, C1+2b"**									**Y**
Phocoenoides dalli	White-flanked Porpoise	LR/cd		II	II					Y		
Berardius bairdii	Giant Bottle-nosed Whale	LR/cd		II	I					Y		
Hyperoodon ampullatus	Bottlehead	LR/cd		II	I					Y		
Mesoplodon stejnegeri	Stejneger's Beaked Whale	DD			II					Y		
Ziphius cavirostris	Goose-beaked Whale	DD			II					Y		
Hydrodamalis gigas	**Steller's Sea Cow**	**EX**								**Y**		
Moschus moschiferus	**Siberian Musk Deer**	**VU**	**A1acd**		**I**					**Y**		
Bison bonasus	**Wisent**	**EN**	**"A2ce, C2a"**						**Y**	**Y**		**Y**
Capra aegagrus	**Wild Goat**	**VU**	**A2cde**					**Y**		**Y**	**Y**	
Capra caucasica	**West Caucasian Tur**	**EN**	**A1d+2cde**					**Y**		**Y**		
Capra cylindricornis	**East Caucasian Tur**	**VU**	**"A1d+2de, C1"**					**Y**		**Y**		
Gazella subgutturosa	Goitred Gazelle; Sand Gazelle	LR/nt						ex			Y	
Naemorhedus caudatus	**Chinese Goral**	**VU**	**A2cd**		**I**					**Y**		
Ovis ammon	**Asian Wild Sheep**	**VU**	**A2cde**		**II**			**Y**		**Y**		
Ovis nivicola	Snow Sheep	LR/cd								Y		
Ovis orientalis	**"Mouflon, Urial"**	**VU**	**A2cde**								**Y**	
Procapra gutturosa	Mongolian Gazelle	LR/nt								Y		

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Saiga tatarica	**Saiga Antelope**	**VU**	**A1a**		**II**					**Y**		
Marmota bobak		LR/cd								Y		Y
Marmota marmota	Alpine Marmot	LR/lc							Y			
Pteromys volans	Russian Flying Squirrel	LR/nt								Y		
Sciurus anomalus	Persian Squirrel	LR/nt						Y			Y	
Sciurus vulgaris	Red Squirrel	LR/nt					Y		Y			
Spermophilus citellus	**European Souslik**	**VU**	**A1c**				**Y**		**Y**		**Y**	**Y**
Spermophilus major		LR/nt								Y		
Spermophilus suslicus	**Spotted Souslik**	**VU**	**A1c**						**Y**	**Y**		**Y**
Castor fiber	Eurasian Beaver	LR/nt					Y			Y	Y	Y
Allactaga euphratica		LR/nt									Y	
Allactaga major		LR/lc								Y		
Salpingotus heptneri		LR/nt								Y		
Sicista armenica		**CR**	**"A1c, C1"**					**Y**				
Sicista betulina	Northern Birch Mouse	LR/nt						Y	Y	Y		Y
Sicista caudata		**EN**	**B1+2c**							**Y**		
Sicista kazbegica		DD						Y		Y		
Sicista kluchorica		DD								Y		
Sicista pseudonapaea		DD								Y		
Sicista subtilis	Southern Birch Mouse	LR/nt					Y			Y		Y
Acomys cilicicus		**CR**	**C2b**								**Y**	
Apodemus hyrcanicus		DD								Y		
Chionomys gud		LR/nt						Y		Y	Y	
Chionomys nivalis	Snow Vole	LR/nt					Y	Y	Y		Y	Y
Chionomys roberti		LR/nt						Y		Y	Y	
Clethrionomys sikotanensis		LR/nt								Y		
Cricetulus migratorius	Grey Hamster	LR/nt					Y		Y	Y	Y	Y
Cricetus cricetus	Common Hamster	LR/lc					Y	Y	Y	Y	Y	
Dicrostonyx vinogradovi		**CR**	**"B1+2c, C2b"**							**Y**		
Mesocricetus newtoni	**Romania n Hamster**	**VU**	**D2**				**Y**		**Y**			
Micromys minutus	Harvest Mouse	LR/nt					Y	Y	Y	Y	Y	Y
Microtus evoronensis		**CR**	**"B1+2c, C2b"**							**Y**		
Microtus guentheri		LR/nt					Y				Y	
Microtus mujanensis		**CR**	**"B1+2c, C2b"**							**Y**		
Microtus nasarovi		LR/nt								Y		
Microtus oeconomus	Root Vole	LR/nt								Y		Y
Microtus sachalinensis		LR/nt								Y		
Microtus tatricus	Tatra Vole	LR/nt							Y			Y
Mus spicilegus	Steppe Mouse	LR/nt					Y		Y			Y
Myopus schisticolor		LR/nt								Y		
Myospalax epsilanus		LR/nt								Y		
Nannospalax leucodon		**VU**	**D2**				**Y**		**Y**		**Y**	**Y**
Spalax arenarius		**VU**	**"A1c, B1+2c"**									**Y**

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Spalax giganteus		**VU**	**"A1c, B1+2c"**							**Y**		
Spalax graecus	**Greater Mole Rat**	**VU**	**D2**						**Y**			**Y**
Spalax leucodon	**Lesser Mole Rat**	**VU**	**D2**				**Y**		**Y**		**Y**	**Y**
Spalax microphthalmus		**VU**	**D2**							**Y**		**Y**
Dryomys laniger		LR/nt									Y	
Dryomys nitedula	Forest Dormouse	LR/nt					Y	Y	Y	Y	Y	Y
Eliomys melanurus		LR/nt									Y	
Eliomys quercinus	**Garden Dormouse**	**VU**	**A1c**						**Y**			**Y**
Muscardinus avellanarius	Hazel Dormouse	LR/nt					Y		Y	Y	Y	Y
Myomimus roachi	**Mouse-tailed Dormouse**	**VU**	**D2**				**Y**				**Y**	
Myoxus glis	Fat Dormouse	LR/nt					Y	Y	Y	Y	Y	Y
Hystrix cristata	North African Crested Porcupine	LR/nt			III						Y	
Ochotona pusilla	**Steppe Pika**	**VU**	**"A1cd, C2a"**							**Y**		
Birds												
Diomedea albatrus	**Steller's Albatross**	**EN**	**C1**	**I**	**I**	**X**				**Y**		
Pelecanus crispus	**Dalmatian Pelican**	**VU**	**C2a**	**I**	**I**		**Y**		**Y**	**Y**	**Y**	**Y**
Phalacrocorax perspicillatus	**Pallas's Cormorant**	**EX**				**X**				**Y**		
Phalacrocorax pygmeus	Pygmy Cormorant	LR/nt					Y	Y	Y	Y	Y	
Egretta eulophotes	**Chinese Egret**	**EN**	**C1**	**I**		**X**				**Y**		
Gorsachius goisagi	**Japanese Night-Heron**	**VU**	**C1+2a**			**X**				**Y**		
Ixobrychus eurhythmus	Schrenck's Bittern	LR/nt				X				Y		
Ciconia boyciana	**Japanese White Stork**	**EN**	**C1**	**I**	**I**	**X**				**Y**		
Geronticus eremita	**Hermit Ibis**	**CR**	**C2a**	**I**	**I**						**ex**	
Nipponia nippon	**Japanese Crested Ibis**	**CR**	**"C2b, D1"**		**I**	**X**				**ex**		
Aix galericulata	Mandarin Duck	LR/nt				X				Y		
Anas formosa	**Baikal Teal**	**VU**	**"A1ade, D2"**		**II**	**X**				**Y**		
Anser cygnoides	**Swan Goose**	**VU**	**A1cd+2cd**			**X**				**Y**		
Anser erythropus	**Lesser White-fronted Goose**	**VU**	**A1acd**	**II**			**Y**		**Y**	**Y**	**Y**	**Y**
Aythya baeri	**Baer's Pochard**	**VU**	**"A1ac, C1"**			**X**				**Y**		
Aythya nyroca	**White-eyed Pochard**	**VU**	**A1acd**	**II**	**III**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Branta ruficollis	**Red-breasted Goose**	**VU**	**"A2cd, B1+2cd"**	**II**	**II**		**Y**		**Y**	**Y**	**Y**	**Y**
Marmaronetta angustirostris	**Marbled Duck**	**VU**	**A2c**	**II**				**Y**		**Y**	**Y**	
Mergus squamatus	**Chinese Merganser**	**VU**	**C1+2a**			**X**				**Y**		
Oxyura leucocephala	**White-headed Duck**	**VU**	**A2e**	**I**	**II**		**Y**		**Y**	**Y**	**Y**	**Y**
Polysticta stelleri	**Steller's Eider**	**VU**	**A1a**	**II**		**X**				**Y**		
Somateria fischeri	**Spectacled Eider**	**VU**	**A1a**			**X**				**Y**		
Tadorna cristata	Crested Shelduck	CR	D1			X				Y		
Aegypius monachus	Black Vulture	LR/nt		II	II		Y	Y		Y	Y	
Aquila clanga	**Spotted Eagle**	**VU**	**C2a**	**II**	**II**		**Y**		**Y**	**Y**	**Y**	**Y**
Aquila heliaca	**Imperial Eagle**	**VU**	**C2a**	**II**	**I**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Circus macrourus	Pale Harrier	LR/nt		II	II		Y	Y	Y	Y	Y	Y
Haliaeetus albicilla	Grey Sea Eagle	LR/nt		I	I	X	Y	Y	Y	Y	Y	Y
Haliaeetus leucoryphus	**Band-tailed Fish-Eagle**	**VU**	**C1+2b**	**II**	**II**	**X**				**Y**		
Haliaeetus pelagicus	**Steller's Sea-Eagle**	**VU**	**C1+2b**	**I**	**II**					**Y**		
Milvus milvus	Red Kite	LR/lc		II	II		Y	Y	Y	Y	Y	Y
Falco naumanni	**Lesser Kestrel**	**VU**	**A1ace**	**II**	**II**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Dendragapus falcipennis	Siberian Grouse	LR/nt				X				Y		
Tetrao mlokosiewiczi	Caucasian Black Grouse	LR/nt						Y		Y	Y	
Grus japonensis	**Manchurian Crane**	**VU**	**C1+2a**	**I**	**I**	**X**				**Y**		
Grus leucogeranus	**Snow Crane**	**EN**	**A2cd**	**I**	**I**	**X**				**Y**		
Grus monacha	Hooded Crane	LR/cd			I	X				Y		
Grus vipio	**White-naped Crane**	**VU**	**C1**		**I**	**X**				**Y**		
Coturnicops exquisitus	**Asian Yellow Rail**	**VU**	**C1+2a**			**X**				**Y**		
Crex crex	**Corn Crake**	**VU**	**A1ac**	**II**			**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Porzana paykullii	Band-bellied Crake	LR/nt				X				Y		
Chlamydotis undulata	Houbara Bustard	LR/lc		I	I					Y		
Otis tarda	**Great Bustard**	**VU**	**A2c**	**I**	**II**		**ex**		**Y**	**Y**	**Y**	**Y**
Tetrax tetrax	Little Bustard	LR/nt			II		ex	Y	ex	Y	Y	Y
Glareola nordmanni	Black-winged Pratincole	LR/nt		II					Y	Y	Y	Y
Charadrius placidus	Long-billed Plover	LR/nt				X				Y		
Vanellus gregarius	**Sociable Plover**	**VU**	**"A1ac, C1+2a"**	**II**						**Y**	**Y**	
Eurynorhynchus pygmeus	**Spoonbill Sandpiper**	**VU**	**C1+2b**			**X**				**Y**		
Gallinago media	Great Snipe	LR/nt		II			Y		Y	Y	Y	Y
Limnodromus semipalmatus	Asiatic Dowitcher	LR/nt				X				Y		
Numenius madagascariensis	Far Eastern Curlew	LR/nt				X				Y		
Numenius tenuirostris	**Slender-billed Curlew**	**CR**	**C2b**	**I**	**I**				**Y**	**Y**	**Y**	
Tringa guttifer	**Spotted Greenshank**	**EN**	**C1**		**I**	**X**				**Y**		
Larus audouinii	Audouin's Gull	LR/cd		I		Y					Y	
Larus relictus	Relict Gull	LR/nt		I	I	X				Y		
Rissa brevirostris	**Red-legged Kittiwake**	**VU**	**A1a**			**X**				**Y**		
Alca impennis	**Great Auk**	**EX**				**X**				**Y**		
Brachyramphus marmoratus	Marbled Murrelet	LR/nt				X				Y		
Synthliboramphus wumizusume	**Crested Murrelet**	**VU**	**C1**	**I**		**X**				**Y**		
Ketupa blakistoni	**Blakiston's Fish-Owl**	**EN**	**C1+2a**		**II**	**X**				**Y**		
Bombycilla japonica	Japanese Waxwing	LR/nt				X				Y		
Acrocephalus paludicola	**Aquatic Warbler**	**VU**	**A2c**	**I**						**Y**		**Y**
Paradoxornis heudei	Reed Parrotbill	LR/nt				X				Y		
Saxicola insignis	**Hodgson's Bushchat**	**VU**	**C1+2a**			**X**				**Y**		
Emberiza cineracea	Cinereous Bunting	LR/nt									Y	
Emberiza jankowskii	**Rufous-backed Bunting**	**VU**	**C1+2a**			**X**				**Y**		

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Emberiza yessoensis	Ochre-rumped Bunting	LR/nt				X				Y		
Loxia scotica	Scottish Crossbill	DD				X			Y			
Sturnus philippensis	Chestnut-cheeked Starling	LR/nt				X				Y		
Reptiles												
Lacerta alpina		DD						Y		Y		
Lacerta clarkorum		**EN**	**C2a**					**Y**			**Y**	
Elaphe situla	Leopard Snake	DD					Y	Y			Y	Y
Natrix megalocephala	**Large-headed Water Snake**	**VU**	**"A1d, C1"**					**Y**		**Y**	**Y**	
Vipera albizona	**Mountain Viper**	**EN**	**"B1+2e, C2a"**								**Y**	
Vipera bulgardaghica	**Mount Bulgar Viper**	**CR**	**"B1+2e, C2a"**								**Y**	
Vipera darevskii		**CR**	**C2b**					**Y**				
Vipera dinniki		**VU**	**C1+2a**					**Y**		**Y**		
Vipera kaznakovi	**Caucasian Viper**	**EN**	**A1cd+2cd**					**Y**		**Y**	**Y**	
Vipera pontica		**CR**	**"C2ab, D1"**					**Y**			**Y**	
Vipera raddei	Armenian Viper	LR/lc									Y	
Vipera ursinii	**Meadow Viper**	**EN**	**A1c+2c**		**I**		**Y**		**Y**		**Y**	**Y**
Vipera wagneri	**Wagner's Viper**	**EN**	**"A1d+2d, B1+2e, C1"**		**II**						**Y**	
Caretta caretta	**Loggerhead**	**EN**	**A1abd**	**I**	**I**						**Y**	
Chelonia mydas	**Green Turtle**	**EN**	**A1abd**	**I**	**I**						**Y**	
Emys orbicularis	European Pond Turtle	LR/nt					Y	Y	Y	Y	Y	Y
Testudo graeca	**Moorish Tortoise**	**VU**	**A1cd**		**II**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Testudo hermanni	Hermann's Tortoise	LR/nt			II		Y		Y		Y	
Testudo horsfieldii	Four-toed Tortoise	VU	A2d		II					Y		
Rafetus euphraticus	**Euphrates Softshell Turtle**	**EN**	**A1ac+2c**								**Y**	
Trionyx triunguis	**African Softshell Turtle**	**CR**	**C2a**								**Y**	
Amphibians												
Bombina bombina	European Fire-bellied Toad	LR/cd					Y		Y	Y	Y	Y
Hyla arborea	European Common Tree Frog	LR/nt					Y	Y	Y	Y	Y	Y
Pelobates fuscus	Common Spadefoot	LR/lc							Y	Y		Y
Rana holtzi		**EN**	**"B1+2bc+3d, E"**								**Y**	
Mertensiella caucasica	Caucasian Salamander	LR/nt						Y			Y	
Mertensiella luschani	**Lycian Salamander**	**VU**	**B1+2cde**								**Y**	
Neurergus crocatus		DD									Y	
Neurergus strauchi		DD									Y	
Triturus cristatus	Warty Newt	LR/cd					Y	Y	Y	Y	Y	Y
Triturus dobrogicus		DD					Y		Y	Y		Y

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Fish- CEPHALASPIDOMORPHI												
Eudontomyzon danfordi	Carpathian Brook Lamprey	LR/nt					Y		Y			Y
Eudontomyzon mariae	Ukranian Brook Lamprey	DD					Y	Y	Y	Y	Y	Y
Eudontomyzon vladykovi	Vladykov's Lamprey	LR/nt					Y		Y			
Fish- ACTINOPTERYGII												
Lampetra fluviatilis	River Lamprey	LR/nt								Y		
Lampetra planeri	Brook Lamprey	LR/nt					Y			Y		
Acipenser baerii	**Siberian Sturgeon**	**VU**	**A2d**		**II**					**Y**		
Acipenser gueldenstaedti	**Russian Sturgeon**	**EN**	**A1acde**						**Y**			
Acipenser gueldenstaedti	**Russian Sturgeon**	**EN**	**A2d**		**II**					**Y**		
Acipenser gueldenstaedti	**Russian Sturgeon**	**EN**	**A1acde**									**Y**
Acipenser guldenstaedti**	**Russian Sturgeon**	**EN**	**A2d (see note)**				**Y**		**Y**	**Y**	**Y**	**Y**
Acipenser mikadoi	**Sakhalin Sturgeon**	**EN**	**C1**		**II**					**Y**		
Acipenser nudiventris	**Ship Sturgeon**	**EN**	**A1acde+2d**		**II**		**Y**		**Y**			
Acipenser nudiventris	**Ship Sturgeon**	**EN**	**A1acde+2d**							**Y**		
Acipenser nudiventris	**Ship Sturgeon**	**EN**	**A1acde+2d**		**II**						**Y**	**Y**
Acipenser persicus	**Persian Sturgeon**	**EN**	**A1ac**					**Y**				
Acipenser persicus	**Persian Sturgeon**	**EN**	**A2d**		**II**					**Y**		
Acipenser persicus	**Persian Sturgeon**	**EN**	**A1ac**								**Y**	
Acipenser ruthenus	**Sterlet**	**VU**	**A1c+2d**		**II**		**Y**	**Y**	**Y**			
Acipenser ruthenus	**Sterlet**	**VU**	**A1cd**							**Y**		
Acipenser ruthenus	**Sterlet**	**VU**	**A1c+2d**		**II**							**Y**
Acipenser schrencki	**Amur Sturgeon**	**EN**	**A1acd+2d**		**II**					**Y**		
Acipenser stellatus	**Star Sturgeon**	**EN**	**A2d**		**II**		**Y**	**Y**	**Y**			
Acipenser stellatus	**Stellate Sturgeon**	**VU**	**A1acde+2d**							**Y**		
Acipenser stellatus	**Star Sturgeon**	**EN**	**A2d**		**II**						**Y**	**Y**
Acipenser sturio	**Baltic Sturgeon**	**CR**	**A2d**		**I**		**ex**	**Y**	**EX?**	**ex?**	**Y**	**ex?**
Huso dauricus	**Kaluga**	**EN**	**A1acde+2d**		**II**					**Y**		
Huso huso	**Giant Sturgeon**	**EN**	**A2d**		**II**		**Y**	**Y**	**Y**			
Huso huso	**Beluga**	**CR**	**A1acde+2d**							**Y**		
Huso huso	**Giant Sturgeon**	**EN**	**A2d**		**II**						**Y**	**Y**
Alosa alosa	Allis Shad	DD					Y				Y	
Alosa fallax	Twait Shad	DD								Y	Y	
Alosa maeotica		DD					Y	Y	Y	Y	Y	Y
Alosa pontica		DD					Y	Y	Y	Y	Y	Y
Clupeonella abrau		DD								Y	Y	
Clupeonella cultriventris		DD					Y	Y	Y	Y	Y	Y
Acanthorutilus meandricus		DD									Y	
Alburnus akili	Gokce Baligi	VU	A2de								Y	
Alburnus albidus	Italian Bleak	VU	A1ace								Y	
Alburnus heckeli		DD									Y	
Aspius aspius	Asp	DD					Y	Y	Y		Y	Y
Barbus barbus	Barbel	LR/lc					Y		Y	Y		

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Barbus cyclolepis		DD						Y		Y	Y	Y
Barbus meridionalis	Mediterranean Barbel	LR/lc					Y		Y			
Barbus plebejus	Italian Barbel	LR/nt					Y			Y	Y	Y
Capoeta antalyensis		DD									Y	
Capoeta pestai	Siraz Baligi	LR/nt									Y	
Carassius carassius	Crucian Carp	LR/nt					Y		Y	Y	Y	Y
Chalcalburnus chalcoides	Danube Bleak	DD					Y		Y			
Chalcalburnus tarichi	Incikefali Baligi	DD									Y	
Chondrostoma holmwoodii		**VU**	**A2e**								**Y**	
Cyprinus carpio	**Wild Common Carp**	**CR**	**A2ce**				**Y**		**Y**			
Cyprinus carpio	Wild Common Carp	DD								Y		Y
Gobio albipinnatus	White-finned Gudgeon	DD					Y		Y	Y		Y
Gobio hettitorum	**Dere Kayasi**	**VU**	**D2**								**Y**	
Gobio kessleri	Kessler's Gudgeon	DD					Y		Y			Y
Gobio uranoscopus	Danube Gudgeon	DD					Y		Y			Y
Hemigrammocapoeta kemali		LR/lc									Y	
Ladigesocypris ghigii	**Ghizßni**	**VU**	**A2ce**								**Y**	
Leucaspius irideus		DD									Y	
Leuciscus borysthenicus	Black Sea Chub	DD					Y	Y	Y	Y	Y	Y
Leuciscus cephaloides		DD									Y	
Pelecus cultratus	Ziege	DD					Y	Y	Y	Y	Y	Y
Phoxinellus anatolicus	**Yag Baligi**	**EN**	**A2e**								**Y**	
Phoxinellus crassus		DD									Y	
Phoxinellus egridiri	**Yag Baligi**	**CR**	**A1e**								**Y**	
Phoxinellus handlirschi	**Ciþek**	**CR**	**A1e**								**Y**	
Phoxinellus zeregii		LR/nt									Y	
Phoxinus percnurus	Swamp Minnow	DD								Y		Y
Pseudophoxinus irideus		DD									Y	
Rhodeus sericeus	Bitterling	LR/lc					Y		Y	Y	Y	
Rutilus frisii	Black Sea Roach	DD					Y	Y	Y	Y	Y	Y
Rutilus pigus	Danube Roach	DD					Y		Y			Y
Scardinius racovitzai		DD									Y	
Tylognathus klatti	Saz Baligi	DD									Y	
Cobitis elongata	Balkan Loach	DD					Y		Y		Y	
Cobitis megaspila		DD					Y		Y			
Cobitis romanica	Romania n Loach	DD					Y		Y			
Misgurnis fossilis	Weatherfish	LR/nt					Y		Y	Y		Y
Sabanjewia aurata	Goldside Loach	DD					Y		Y	Y	Y	Y
Barbatula brandti		DD						Y			Y	
Barbatula bureschi		DD									Y	
Barbatula pulsiz		DD									Y	
Nemacheilus angorae		DD									Y	
Nemacheilus lendi		DD									Y	
Nemacheilus tschaiyssuensis		**VU**	**D2**								**Y**	
Turcinemacheilus kosswigi		DD									Y	

Scientific name	Common name	IUCN Category	IUCN Criteria	CMS	CITES species listing	Black Sea Region(checked if annotated)	Bulgaria	Georgia	Romania	Russia	Turkey	Ukraine
Umbra krameri	**European Mud-minnow**	**VU**	**A1ace**				**Y**		**Y**			**Y**
Osmerus eperlanus	Smelt	DD								Y		
Coregonus albula	White Fish	DD								Y		
Coregonus autumnalis	Pollan	LR/lc								Y		
Coregonus baunti		DD							Y	Y		
Coregonus lavaretus	Lavaret	DD								Y		Y
Coregonus nasus	Large Bottom Whitefish	DD								Y		
Coregonus oxyrinchus	Houting	DD								Y		
Coregonus peled	Northern Whitefish	DD								Y		
Coregonus pidschian	Bottom Whitefish	DD								Y		
Hucho hucho	**Danube Salmon**	**EN**	**"A2bcde, B1+2bce"**						**Y**			**Y**
Salmo platycephalus	**Ala Balik**	**CR**	**B1+2abc**								**Y**	
Salvethymus svetovidovi		**VU**	**D2**							**Y**		
Stenodus leucichthys		DD								Y		
Thymallus thymallus	Grayling	LR/lc								Y		
Atherina boyeri		DD									Y	
Aphanius anatoliae	**Dislisazancik Baligi**	**EN**	**"A2ce, B1+2abcd"**								**Y**	
Aphanius burduricus		**EN**	**A2e**								**Y**	
Aphanius chantrei	Dislisazancik Baligi	LR/lc									Y	
Aphanius fasciatus	South European Toothcarp	DD									Y	
Aphanius splendens		**CR**	**"A1ac, B1+2abce"**								**Y**	
Aphanius sureyanus		**CR**	**B1+2bc**								**Y**	
Aphanius transgrediens		**CR**	**B1+2bcd**								**Y**	
Kosswigichthys asquamatus	Scaleless Killifish	DD									Y	
Syngnathus abaster		DD									Y	
Syngnathus nigrolineatus		DD					Y	Y	Y	Y	Y	Y
Myoxocephalus quadricornis	Fourhorn Sculpin	LR/lc								Y		
Gymnocephalus acerina		DD								Y		Y
Gymnocephalus baloni	Balon's Ruffe	DD					Y		Y			
Gymnocephalus schraetzer	**Schraetzer**	**VU**	**A1ace**				**Y**		**Y**			**Y**
Percarina demidoff		**VU**	**D2**							**Y**		**Y**
Romanichthys valsanicola	**Asprete**	**CR**	**"A1ace+2ce, B1+2abcde"**						**Y**			
Stizostedion marinum		DD					Y		Y	Y		Y
Stizostedion volgensis	Volga Zander	DD					Y		Y	Y		Y
Zingel streber	**Streber**	**VU**	**A1ce+2ce**				**Y**					**Y**
Zingel zingel	**Zingel**	**VU**	**A1ce+2ce**				**Y**		**Y**			**Y**
Benthophiloides braunei		DD					Y		Y	Y		Y
Mesogobius batrachocephalus		DD					Y	Y	Y	Y	Y	Y
Neogobius fluviatilis		DD					Y		Y	Y	Y	Y

Neogobius gymnotrachelus		Y	DD					Y		Y	Y	Y	Y
Neogobius kessleri	Kessler's Goby	Y	DD							Y		Y	Y
Neogobius melanostomus		Y	DD					Y	Y	Y	Y	Y	Y
Neogobius syrman		Y	DD					Y		Y	Y		Y
Zosterisessor opiocephalus		Y	DD										Y
Invertebrates													
Dolomedes plantarius	**Great Raft Spider**		**VU**	**A1ace+2ce**					**Y**	**Y**	**Y**		
Niphargus hrabei		**Y**	**VU**	**B1+2bcde**						**Y**	**Y**		**Y**
Niphargus valachicus		**Y**	**VU**	**B1+2bcde**				**Y**		**Y**			
Arctodiaptomus burduricus		**Y**	**VU**	**D2**								**Y**	
Arctodiaptomus kamtschaticus		**Y**	**VU**	**D2**							**Y**		
Hemidiaptomus kummerloewei		Y	DD									Y	
Epischura baikalensis		**Y**	**VU**	**D2**							**Y**		
Astacus astacus	**Noble Crayfish**	**Y**	**VU**	**B2bce+3bcd**				**Y**		**Y**	**Y**		**Y**
Troglocaris anophthalmus		**Y**	**VU**	**B1+2cde**				**Y**					
Buprestis splendens	**Goldstreifiger**		**VU**	**A1c**							**Y**		
Carabus intricatus	Blue Ground Beetle		LR/nt					Y		Y			
Cerambyx cerdo	**Cerambyx Longicorn**		**VU**	**A1c+2c**					**Y**			**Y**	**Y**
Morimus funereus			**VU**	**A1c**						**Y**			**Y**
Rosalia alpina	**Rosalia Longicorn**		**VU**	**A1c**				**Y**	**Y**	**Y**	**Y**		**Y**
Cucujus cinnaberinus			**VU**	**A1c**						**Y**	**Y**		
Agabus clypealis		**Y**	**EN**	**B1+2b**							**Y**		
Dytiscus latissimus		**Y**	**VU**	**"A2c, B1+2a"**						**EX?**	**Y**		**Y**
Graphoderus bilineatus		**Y**	**VU**	**B1+2ac**							**Y**		**Y**
Rhantus fennicus		**Y**	**VU**	**B1+2b**							**Y**		
Osmoderma eremita	**Hermit Beetle**		**VU**	**A1c**							**Y**		**Y**
Chalepoxenus tauricus			**VU**	**D2**									**Y**
Epimyrma goridaghini			**VU**	**D2**							**Y**		
Epimyrma tamarae			**VU**	**D2**					**Y**				
Formica aquilonia			LR/nt					Y			Y		
Formica lugubris			LR/nt					Y		Y	Y		
Formica polyctena	European Red Wood Ant		LR/nt					Y		Y	Y		Y
Formica pratensis/nigricans	European Red Wood Ant		LR/nt					Y	Y	Y	Y	Y	Y
Formica rufa	Red Wood Ant		LR/nt					Y		Y	Y	Y	Y
Formica uralensis			LR/nt								Y		Y
Formicoxenus sibiricus			**VU**	**D2**							**Y**		
Myrmecoxenus gordiagini			**VU**	**D2**							**Y**		
Plagiolepis regis			**VU**	**D2**							**Y**		
Polyergus nigerrimus			**VU**	**D2**							**Y**		

Rossomyrmex proformicarum			**VU**	**D2**							**Y**		
Strongylognathus arnoldii			**VU**	**D2**							**Y**		
Strongylognathus chelifer			**VU**	**D2**							**Y**		
Strongylognathus christophi			**VU**	**D2**							**Y**		
Strongylognathus karawajevi			**VU**	**D2**									**Y**
Strongylognathus kervillei			**VU**	**D2**								**Y**	
Strongylognathus rehbinderi			**VU**	**D2**					**Y**				
Strongylognathus ruzskyi			**VU**	**D2**							**Y**		
Syrichtus cribrellum	Spinose Skipper		NE						Y	Y	Y		Y
Syrichtus tessellum	Tessellated Skipper		NE					Y	Y	Y	Y	Y	Y
Eriogaster catax			DD					Y					
Phyllodesma ilicifolia	**Small Lappet Moth**		**VU**	**A1c**						**Y**	**Y**		**Y**
Lycaena dispar	Large Copper		LR/nt					Y	Y	Y	Y	Y	Y
Maculinea alcon	Alcon Large Blue		LR/nt					Y		Y	Y	Y	Y
Maculinea arion	Large Blue		LR/nt					Y	Y	Y	Y	Y	Y
Maculinea arionides	Greater Large Blue		LR/nt								Y		
Maculinea nausithous	Dusky Large Blue		LR/nt					Y	Y	Y	Y		Y
Maculinea teleius	Scarce Large Blue		LR/nt						Y		Y		Y
Hypodryas maturna	Scarce Fritillary		DD							Y	Y		
Archon apollinaris			LR/nt					Y		Y		Y	
Parnassius apollo	**Apollo Butterfly**		**VU**	**A1cde**		**II**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Coenonympha oedippus	False Ringlet		LR/nt								Y		Y
Erebia ottomana	Ottoman Brassy Ringlet		NE					Y				Y	
Erebia sudetica	Sudeten Ringlet		NE							Y			
Hyles hippophaes			DD						Y	Y		Y	
Proserpinus proserpina	none known		DD					Y				Y	
Aeshna viridis		Y	LR/nt								Y		
Calopteryx syriaca		**Y**	**EN**	**A2c**								**Y**	
Coenagrion mercuriale	**Southern Damselfly**	**Y**	**VU**	**A2c**				**Y**		**Y**			**Y**
Cordulegaster mzymtae		**Y**	**VU**	**B1+2c**					**Y**		**Y**	**Y**	
Onychogomphus assimilis		**Y**	**VU**	**B1+2c**					**Y**			**Y**	
Onychogomphus macrodon		**Y**	**EN**	**B1+2c**								**Y**	
Ophiogomphus cecilia	Grune Keiljungter	Y	LR/lc					Y		Y	Y	Y	Y
Brachythemis fuscopalliata		**Y**	**VU**	**B1+2c**								**Y**	
Leucorrhinia albifrons		Y	LR/lc								Y		Y
Leucorrhinia caudalis		Y	LR/lc								Y		Y
Chortippus acroleucus			**VU**	**B1+2bd**						**Y**			
Miramella irena			**VU**	**B1+2d**						**Y**			
Odontopodisma montana			**VU**	**B1+2d**						**Y**			

Podismopsis transsylvanica			NE							Y			
Stenobothrodes eurasius			**VU**	**B1+2d**						**Y**			
Zubovskia banatica			**VU**	**B1+2d**						**Y**			
Bienkotetrix transsylvanicus			**VU**	**B1+2d**						**Y**			
Isophya harzi			**VU**	**B1+2bd**						**Y**			
Metrioptera domogledi			**VU**	**B1+2bd**						**Y**			
Onconotus servillei			**VU**	**B2d+3b**						**Y**			
Saga pedo	**Predatory Bush Cricket**		**VU**	**B1+2bd**				**Y**	**Y**	**Y**	**Y**		**Y**
Hirudo medicinalis	Medicinal Leech		LR/nt			II		Y	Y	Y	Y	Y	Y
Margaritifera margaritifera	Freshwater Pearl Mussel	Y	EN	A1ce+2c							Y		
Pseudanodonta complanata		Y	LR/nt					Y		Y	Y		Y
Unio crassus		Y	LR/nt					Y		Y	Y		Y
Theodoxus transversalis			DD					Y		Y			Y
Myxas glutinosa	Glutinous Snail		DD								Y		Y
Platyla microspira			DD							Y			
Platyla orthostoma			DD					Y					
Fagotia esperi			DD										Y
Viviparus acerosus		Y	LR/nt					Y		Y			
Cochlicopa nitens			LR/lc					Y	Y	Y	Y		Y
Vallonia enniensis			DD							Y	Y		Y
Vertigo angustior	Narrow-mouthed Whorl Snail		LR/cd						Y	Y	Y		Y
Vertigo genesii	Round-mouthed Whorl Snail		LR/cd							Y	Y		
Vertigo moulinsiana	Des Moulin's Snail		LR/cd						Y	Y	Y		Y

Note: X= No, Y= Yes

** For the Russian Sturgeon (*Acipenser gueldenstaedti*) no individual stock assessments were undertaken for Bulgaria and Turkey. The overall category of threat assigned to this species is Endangered (EN) with the Criteria A2d.

6. ENDANGERED PLANT SPECIES OF BLACK SEA STATES

It has not been possible, within the resources assigned to this project, to sort the plant data by region. Therefore the lists in Annex 1 and 2 are endangered plants from the six Black Sea nations but their habitat ranges do not necessarily occur along the Black Sea Coast. This will be most serious for Russia – some of the more obvious species (e.g. those in Siberia) have been removed but it was not possible to devote additional time to sorting the data more thoroughly. This would have to be carefully co-ordinated with regional taxonomic experts and would take between 10 and 15 days.

6.1 Globally threatened plants endemic to single countries bordering the Black Sea

A list of globally threatened plants endemic to single countries bordering the Black Sea is given in Annex 1 at the back of this report.

6.2 Status of globally threatened plants occurring in five countries bordering the Black Sea

Table 3

Country	Ex	Ex/E	E	V	R	I	Total
Bulgaria	0	1	1	14	44	3	63
Georgia	0	0	0	0	0	12	12
Russia	6	1	17	26	157	51	258
Turkey	10	1	47	168	1667	54	1947
Ukraine	0	1	7	1	2	13	24
Total (1)	16	4	72	209	1870	133	2304

Data are given for the original IUCN threat categories:

Ex = Extinct
Ex/E = Extinct/endangered (suspected to be extinct)
E = Endangered
V = Vulnerable
R = Rare
I = Indeterminate (belonging to one of the classes above, but insufficient detail to determine which one)

Notes on the data

Data for Russia are limited. Some records have been resolved to areas local to the Black Sea, i.e. North Caucasus, but many records relate to former USSR or "former European USSR". Records clearly relating to areas of Russia away from the Black Sea have been omitted. High numbers of threatened plants for Turkey reflect the enormous importance of this country as a Centre of Plant Diversity.

6.3 Globally threatened plants occurring in more than one country bordering the Black Sea

A list of globally threatened plants endemic occurring in more than one country bordering the Black Sea is given in Annex 2 at the back of this report.

7. INTERNATIONAL CONVENTIONS AND AGREEMENTS COVERING THE BLACK SEA COAST

STRATEGIC ACTION PLAN FOR THE REHABILITATION AND PROTECTION OF THE BLACK SEA

Desiring to rehabilitate and protect the Black Sea the Governments of:

Bulgaria
Georgia
Romania
the Russian Federation
Turkey and
Ukraine

Reaffirming their commitment to the rehabilitation and protection of the Black Sea ecosystem and the sustainable development of its resources as expressed, in particular, in the Bucharest Convention and the Odesa Declaration; Continuing in the spirit of the United Nations Declaration on Environment and Development (Rio Declaration) and Agenda 21; Appreciating the progress that has been made towards attaining sustainable development in the Black Sea region through, amongst other things, the actions taken within the Black Sea Environmental Programme (BSEP) in support of the implementation of the Bucharest Convention and the Odesa Declaration; Welcoming the international initiatives undertaken to rehabilitate and protect the waters of the rivers flowing into the Black Sea, in particular, the Danube, Dnipro (Dnieper) and Don; Welcoming also, the national initiatives taken to ratify or accede to international conventions relevant to attaining the rehabilitation and protection of the Black Sea ; Noting the work undertaken towards the adoption of the Convention for Fisheries and Conservation of Living Resources of the Black Sea; Conscious of the importance of the initiatives taken by non-governmental organisations towards attaining the rehabilitation and protection of the Black Sea; Nevertheless remain concerned about the state of the Black Sea ecosystem and the limited recovery of its resources; Convinced of the pressing need to take further concrete actions, individually and collectively, at national and regional levels in order to ensure the rehabilitation and protection of the Black Sea ecosystem and the sustainable use of its resources; Recalling that the preparation of a strategic action plan was called for in Resolution 3, adopted at the Diplomatic Conference on the Protection of the Black Sea, Bucharest, April 21-22, 1992 and in the Final Act of the Ministerial Meeting on the Declaration on the Protection of the Black Sea, Odesa, April 6-7,1993; Decide to agree on the following principles, policies and actions:

I. The Challenge: The State of the Black Sea Environment

The state of the Black Sea environment continues to be a matter of concern due to the ongoing degradation of its ecosystem and the unsustainable use of its natural resources. The Transboundary Diagnostic Analysis (TDA), which is a technical annex to this Strategic Action Plan, leads to the following conclusions.

I. The Black Sea ecosystem continues to be threatened by inputs of certain pollutants, notably nutrients. Nutrients enter the Black Sea from land based sources, and in particular through rivers. The Danube river accounts for well over half of the nutrient input to the Black Sea. Eutrophication is a phenomenon which occurs over wide areas of the Black Sea and should be of concern to the countries of the Black Sea basin.

II. Inputs of insufficiently treated sewage result in the presence of microbiological contaminants, which constitute a threat to public health and in some cases pose a barrier to the development of sustainable tourism and aquaculture.

III. In addition, inputs of other harmful substances, and especially oil, continue to threaten the Black Sea ecosystem. Oil enters the environment as a result of accidental and operational discharges from vessels, as well as through land based sources. Almost half of the inputs of oil from land based activities are brought to the Black Sea via the Danube river.

IV. Moreover, the past introduction of exotic species, through the deballasting of vessels, has seriously damaged the Black Sea ecosystem and constitutes a threat to the adjacent Mediterranean and Caspian Seas.

V. Inadequate resources management and, in particular, inadequate policies with respect to fisheries and coastal zone management continue to impede the sustainable development of the Black Sea region. Most fish stocks in the Black Sea, already stressed as a consequence of pollution, have been over exploited or are threatened by over exploitation; many coastal areas have deteriorated as a result of erosion and uncontrolled urban and industrial development, including the resultant construction activities. Consequently, there is a serious risk of losing valuable habitats and landscape and ultimately, the biological diversity and productivity of the Black Sea ecosystem.

VI. The above considerations led to suggestions that the process of degradation of the Black Sea is irreversible. However, environmental monitoring, conducted over the past 4-5 years, reflects perceptible and continued improvements in the state of, some localised components of the Black Sea ecosystem. These improvements appear to be the indirect result of reduced economic activity in the region, and to a certain degree of protective measures taken by governments. The challenge which the region now faces is to secure a healthy Black Sea environment at a time when economic recovery and further development are also being pursued.

VII. This Strategic Action Plan is a step in the process towards attaining sustainable development in the Black Sea region. Its overall aims are to enable the population of the Black Sea region to enjoy a healthy living environment in both urban and rural areas, and to attain a biologically diverse Black Sea ecosystem with viable natural populations of higher organisms, including marine mammals and sturgeons, and which will support livelihoods based on sustainable activities such as fishing, aquaculture and tourism in all Black Sea countries.

The Basis for Co-operative Action Principles

I. The concept of sustainable development shall be applied, by virtue of which the carrying capacity of the Black Sea ecosystem is not exceeded nor the interests of future generations prejudiced.

II. The precautionary principle shall be applied, by virtue of which preventative measures are to be taken when there are reasonable grounds for concern that an activity may increase the risk of presenting hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship between the activity and the effects and by virtue of which greater caution is required when information is uncertain, unreliable or inadequate.

III. Anticipatory actions, such as contingency planning, environmental impact assessment and strategic environmental assessment (involving the assessment of the environmental consequences of governmental policies, programmes and plans), shall be taken.

IV. The use of clean technologies shall be stimulated, which require the replacement or phasing-out of high waste and waste generating technologies that remain in use.

V. The use of economic instruments that foster sustainable development shall be promoted through, amongst other things, the implementation of economic incentives for introducing environmentally friendly technologies and activities; the phasing-out of subsidies which encourage the continuation of non-environmentally friendly technologies and activities; the introduction of user fees and the polluter pays principle; as well as the application of natural resources and environmental accounting.

VI. Environmental and health considerations shall be included into all relevant policies and sectoral plans, such as those concerning tourism, urban planning, agriculture, industrial development, fisheries and aquaculture.

VII. Pending the resolution of ocean boundary matters in the region, close co-operation among Black Sea coastal states, in adopting interim arrangements which facilitate the rehabilitation of and protection of the Black Sea ecosystem and the sustainable management of its resources shall be pursued.

VIII. Co-operation among all Black Sea basin states, and, in particular, between the Black Sea coastal states and the states of the Danube river basin, shall be promoted.

IX. The involvement of stakeholders in the implementation of this Strategic Action Plan, through, amongst other things, the determination of user and property rights shall be promoted.

X. Transparency and public participation, shall be fostered through the wide dissemination of information on the work undertaken to rehabilitate and protect the Black Sea and through the recognition and the exercise of the right of participation of the public, including stakeholders, in the decision making and implementation of this Strategic Action Plan. The Istanbul Commission

XI. In order to implement the actions and policies agreed on, it is imperative that the regional mechanisms for co-operation among Black Sea states be strengthened.

XII. The Istanbul Commission and its subsidiary bodies, including its Secretariat, should be fully functioning, in accordance with the Bucharest Convention, by January 1997. In order to achieve this, Black Sea states agree to make available the necessary financial and other resources.

XIII. The Istanbul Commission having agreed to implement this Strategic Action Plan at its second session, held in Istanbul on September 16-17, 1996, is invited to establish, by November 1997, a body to provide support for specific projects and processes related to the implementation of this Strategic Action Plan.

XIV. It is recommended that, by January 1997, the Istanbul Commission establish, on the basis of the current structure of BSEP Working Parties, subsidiary bodies which can assist it in the implementation of the Strategic Action Plan.

XV. It is recommended that the Istanbul Commission initially establish the following Advisory Groups as its subsidiary bodies, the description and general terms of reference of which are given in Annex I: A. an Advisory Group on the Environmental and Safety Aspects of Shipping, co-ordinated by the Activity Centre in Varna, Bulgaria; B. an Advisory Group on Pollution Monitoring and Assessment, co-ordinated by the Activity Centre in Odesa, Ukraine; C. an Advisory Group on Control of Pollution from Land Based Sources, co-ordinated by the Activity Centre in Istanbul, Turkey; D. an Advisory Group on the Development of Common Methodologies for Integrated Coastal Zone Management, co-ordinated by the Activity Centre in Krasnodar, Russia; E. an Advisory Group on the Conservation of Biological Diversity, co-ordinated by the Activity Centre in Batumi, Georgia; F. an Advisory Group on Fisheries and other Marine Living Resources, co-ordinated by the Activity Centre in Constanta, Romania; and G. an Advisory Group on Information and Data Exchange, co-ordinated by the Commission Secretariat.

XVI. It is recommended that the Istanbul Commission regularly review the status and functions of the Advisory Groups and consider the establishment of ad hoc groups for the purposes of implementing this Strategic Action Plan.

XVII. It is recommended that the Istanbul Commission assume the responsibilities from the Black BSEP-PCU for the operation and maintenance of the electronic communication system which has been established for purposes of facilitating communication between the components of the Black Sea institutional network.

XVIII. In order to strengthen and co-ordinate the work of national and regional research institutions, it is recommended that the Istanbul Commission assume the responsibilities from the BSEP-PCU for the clearing house mechanism for the exchange of information on bibliography, data sources and research programmes. In addition, it is recommended that the Istanbul Commission organise BI-annual research conferences on topics related to the goals of this Strategic Action Plan. The first of such conferences will be held in June 1998.

Wider Co-operation

Black Sea countries shall individually and jointly encourage the following: a) Enhanced co-ordination between the regional bodies which contribute towards the rehabilitation and protection of the Black Sea ecosystem and the sustainable development of Black Sea resources, such bodies include the Istanbul Commission and its subsidiary bodies, the Black Sea Economic Co-operation (BSEC), the Parliamentary Assembly for the Black Sea Economic Co-operation (PABSEC), the future Black Sea Fisheries Commission, and the NGO Forum; b) Close co-operation between the regional governmental bodies and the NGO Forum through transparency of the negotiating process, widespread availability of information and documents, and, where appropriate, open access to meetings; c) Close co-ordination of the activities of donors, including multilateral financial institutions, the European Union, bilateral aid agencies and private foundations, in their aim to secure funding for projects and policies identified in this Strategic Action Plan and to be further developed in the National Black Sea Strategic Action Plans. d) Close co-operation with relevant international organisations, including UN Agencies and international non-governmental organisations in implementing this Strategic Action Plan.

International agreements relevant to the aims and objectives of this Strategic Action Plan should be implemented by each Black Sea state and, where this is appropriate and has not yet been done, it is recommended that Black Sea states consider ratifying or acceding to such agreements. Consideration should also be given to implementing other relevant international instruments.

Policy Actions

A. Reduction of Pollution

Land based sources of pollution

Rivers

I. A Black Sea Basin Wide Strategy, negotiated with all states located in the Black Sea Basin, should be developed to address the eutrophication problem in the Black Sea. The objective of the Strategy should be to negotiate a progressive series of stepwise reductions of nutrient loads, until agreed Black Sea water quality objectives are met. Such a Basin Wide Strategy may also be required to ensure the reduction of inputs of other pollutants into the Black Sea, in particular oil.

II. Given that the Danube is the largest single source of nutrient inputs into the Black Sea, it is imperative that strategies for the reduction of nutrients be adopted for this river. The provisions in the Danube Strategic Action Plan (maintenance of 1995 levels) clearly are insufficient for addressing the eutrophication problem in the Black Sea. Airborne pollution

III. More attention should be focussed on the issue of airborne pollutants, particularly those that involve transboundary movements, as well as appropriate measures for controlling them at source. In initial assessment of the magnitude of this problem should be undertaken by 1999. High priority point-sources

IV. A list of high priority sites (hot-spots) for reducing discharges of pollutants has been developed. It will provide the basis for the elaboration of national strategies and timetables for realising substantial reductions of inputs of pollutants from hot-spots, in accordance with agreed water quality objectives. The following procedure has been agreed for the purpose of attaining these reduced inputs by 2006. Each Black Sea coastal state, in its National Black Sea Strategic Action Plan, will

specify the strategies and timetables for attaining reduced inputs from the hot-spots located in its territory. In those cases where investments (as opposed to policy changes or economic restructuring) are required, in order to address specific hot-spots, pre-investment and investment studies will be pursued, with donor support where possible.

V. National reports on the progress made in addressing the identified hot-spots will be presented to the Istanbul Commission and widely disseminated, in 2000 and 2005. It is recommended that the Istanbul Commission prepare a consolidated report on this topic in time for the Ministerial meetings in 2001 and 2006. This report should include an assessment of the progress made on the strategy for each site. If the progress made is found to be insufficient to meet the agreed water quality objectives, further steps to reduce inputs will be decided upon at the Ministerial meetings. Regulation of point sources

VI. In addition to the high priority point-sources, comprehensive national studies on the discharges of insufficiently treated sewage will be prepared by each Black Sea state by January 2000. It is recommended that this activity be co-ordinated by the Istanbul Commission, through its Advisory Group on the Control of Pollution from Land-Based sources. These studies should analyse the national and regional benefits to public health, the environment and recreation as well as the economic costs of installing sewage treatment plants. The studies shall serve as a basis for taking decisions and implementing significant reductions of the inputs of insufficiently treated sewage from large urban areas by 2006.

VII. In order to implement the Protocol on Land Based Sources to the Bucharest Convention and with a view to the gradual reduction of inputs of pollutants in general and the elimination of discharges of persistent pollutants of global significance (POPs) the following actions shall be taken. A. Water quality objectives shall be harmonised on the basis of the uses of water (drinking water, bathing water, aquaculture, ports etc.). It is advised that the Istanbul Commission, upon the recommendations of its Advisory Group on Pollution Monitoring and Assessment, adopt such harmonised water quality objectives and where necessary standards by mid-1998. Furthermore, these objectives should be subjected to a comprehensive review every five years. B. Procedures used for monitoring the actual discharge of effluent at point sources shall be harmonised. It is advised that the Istanbul Commission, upon the recommendations of its Advisory Group on the Control of Pollution from Land Based Sources, adopt such procedures by mid-1998. C. Each Black Sea state shall endeavour to adopt and implement, in accordance with its own legal system, by 1999, the laws and mechanisms required for regulating discharges from point sources. The basis for regulating discharges will be a licensing system, through which the harmonised water quality objectives can be applied, and through which effluent charges, based on the polluter pays principle, can be levied. D. Each Black Sea state will also endeavour to adopt and implement, in accordance with its own legal system, efficient enforcement mechanisms by 1999. E. In order to secure the implementation of the actions agreed to in this paragraph, each Black Sea state shall ensure that the national agencies responsible for licensing, monitoring and enforcement are adequately staffed and that the necessary resources are available to them. Where necessary, training courses at local agencies, will be organised. F. Each Black Sea state will consider the introduction of policies in which polluters are made to pay for compliance. The application of environmentally friendly production processes or other innovative process which reduce inputs of pollutants may also be encouraged through economic incentives.

Vessel source pollution

I. MARPOL 1973/78 shall be more effectively implemented by Black Sea states, especially with a view to giving effect to its provisions on Special Areas, by 2002.

II. Due to the rapid increase in traffic to Black Sea ports, the capacity of harbour reception facilities needs to be enlarged in order to comply with MARPOL Special Area requirements. Harbour reception facilities will be installed: for garbage by December 1999; for oil by December 2000; and for chemicals by December 2002. The use of these facilities shall be made compulsory. In installing

harbour reception facilities close co-operation with the private sector will be pursued, the advice of the IMO will be requested, and the results of the study conducted by the BSEP and the European Union will be taken into account.

III. A harmonised system of port state control will be established in the Black Sea region through the adoption of a Memorandum of Understanding on Port State Control. It is advised that the Istanbul Commission adopt such a Memorandum, upon the recommendations of the Advisory Group on Environmental and Safety Aspects of Shipping, by December 1998.

IV. Black Sea states shall take the necessary steps to enable them to fully exercise their prescriptive and enforcement powers, in accordance with international law, in order to pursue the reduction of illegal discharges by vessels into the Black Sea.

V. A harmonised system of enforcement, including fines, will be developed for the Black Sea region. It s advised that the Istanbul Commission, upon the recommendations of the Advisory Group on the Environmental and Safety Aspects of Shipping, adopt such a system by December 1998. The primary aim of this system will be to serve as a deterrent for illegal discharges and, where necessary, to exercise enforcement action against illegal dischargers.

VI. Black Sea states will present a joint proposal to the IMO, in 1997, for conducting an in-depth study on measures to avoid any further introductions of exotic species into the Black Sea through the deballasting of vessels. Given the danger of such species migrating to other seas in the region, the coastal states of the Caspian and Mediterranean Seas will be consulted.

Pollution from dumping

I. A total ban on the disposal of municipal garbage in marine, shoreline and estuarine areas shall be imposed by December 1996. Each Black Sea state shall develop a plan setting out the manner in which comprehensive enforcement of the ban will be attained by December 1999.

II. Illegal dumping operations in the Black Sea are a matter of concern. Black Sea states, individually and jointly, shall take measures to control any dumping activities that may take place.

III. Black Sea states, through the Istanbul Commission and in accordance with article 3 of the Protocol on Dumping to the Bucharest Convention, shall define concentration levels for trace contaminants in dredged spoils, by February 1998.

IV. Black Sea states shall consider amending the Protocol on Dumping to the Bucharest Convention, in accordance with the London Convention 1972, including its subsequent amendments.

Waste management

I. The Black Sea coastal states will co-operate in developing and implementing environmentally sound waste management policies, giving due consideration to waste minimisation, recycling and reuse.

Transboundary movement of hazardous wastes

I. Without further delay, Black Sea states, through the Istanbul Commission, and in accordance with Resolution 1, adopted at the Diplomatic Conference on the Protection of the Black Sea Against Pollution, shall complete and adopt the text of a Protocol to the Bucharest Convention concerning the transboundary movement of hazardous wastes and co-operation in combating illegal traffic thereof.

Contingency planning and emergency response

I. A Black Sea Strategy for contingency planning and emergency response shall be developed. It is recommended that the Istanbul Commission, upon the recommendation of its Advisory Group on the Environmental and Safety Aspects of Shipping, adopt such a Strategy, by December 1997. This Strategy should provide a basis for ensuring that the contingency plans developed within Black Sea states are sufficiently co-ordinated. It will also serve as a basis for the development of the regional contingency plan.

II. National and local contingency plans, covering both vessels and offshore installations, shall be improved and, where appropriate, adopted, by December 1998. The responsibilities and obligations of governmental agencies in the event of marine emergencies shall be clearly defined. National contingency plans shall be developed in accordance with IMO guidelines, as well as other relevant international instruments, including the Black Sea Strategy for contingency planning and emergency response.

III. A Black Sea Contingency Plan shall be adopted. It is recommended that the Istanbul Commission, upon the recommendations of its Advisory Group on the Environmental and Safety Aspect of Shipping, adopt such a plan by December 2000. The Black Sea Contingency Plan should address the compatibility of: emergency equipment, reporting forms and oil spill data; classification of the scale of spillage's; methods for evaluating the sensitivity of the coast to hazards; and spill decision support systems, including models for forecasting oil movements. In addition, regionally co-ordinated national classification and risk assessment systems shall be developed.

IV. In order to ensure rapid and effective action by national emergency response agencies, each Black Sea state, in co-operation with the private sector and, where appropriate, with international and bilateral agencies, shall ensure that their own national agencies are adequately staffed and that the necessary resources are available to them.

V. Close co-operation shall be sought with the shipping, oil and gas sectors in order to ensure that, to the extent possible, the cost of developing and implementing contingency plans are born by these sectors.

Assessment and monitoring of pollutants

I. A "State of Pollution of the Black Sea" report will be prepared and published every five years, beginning in 1996. It will be based on the data collected through the co-ordinated pollution monitoring and assessment programmes.

II. A Black Sea Monitoring System, based upon biological effects measurements and measurements of key contaminants, will be established in compliance with the Bucharest Convention. It will consist of the integration of obligatory national monitoring programmes, to be included in the National Strategic Action Plans, and an independent quality assurance system. It is advised that the Istanbul Commission develop such a quality assurance system through its Advisory Group on Pollution Monitoring and Assessment, by 1998.

III. A uniform measurement technique for bathing water quality with a common quality assurance support mechanism shall be developed. It is advised that the Istanbul Commission, upon the recommendations of its Advisory Group on Pollution Monitoring and Assessment, develop this uniform measurement technique by December 1997. Transparency shall be encouraged through the publication and free exchange of data from bathing water quality measurements on at least an annual basis.

IV. Data regarding actual and assessed contaminant discharge measurements for point sources, rivers, and, where possible, diffuse sources, shall be compiled and freely exchanged every five years, beginning in 1996. It is advised that the Advisory Group Control of Pollution from Land Based Sources make these compilations in future.

Living resources management

Commercially exploited resources

I. Fish are an integral part of the marine ecosystem, fish stocks thrive in a non-polluted and protected ecosystem and the marine ecosystem profits from properly managed fishing activities. The measures to reduce pollution and to protect biological diversity, habitat and landscape, as agreed upon in this Strategic Action Plan, are therefore pre-conditions for the restoration of commercial fisheries in the Black Sea. In addition, spawning and nursery grounds require special protection.

II. In order to rehabilitate ecosystems, which are of particular importance to Black Sea fisheries as a whole, Phyllophora fields and other critical nursery areas will receive special protection, spawning areas of anadromous species will be restored, and coastal lagoons will be rehabilitated. By 2000, each Black Sea state will develop at least one pilot project which will contribute to the restoration of areas vital to the recovery of Black Sea fish stocks.

III. In order to rehabilitate the Black Sea ecosystem and achieve sustainable fisheries in the Black Sea, fisheries management policies need to be enhanced and fishing effort needs to be adjusted to the status of the stocks. In this regard, the Black Sea coastal states are expected to expedite the adoption of the Fisheries Convention as soon as possible so as to develop a fisheries management system which consists of the following components: regular regionally co-ordinated stock assessments; national fishing authorisations for all Black Sea fishing vessels; a regional licensing system; and a quota system. In addition, enforcement of fisheries regulations urgently needs to be improved. These measures and others, which are required to attain more sustainable fisheries in the Black Sea, should be taken in close co-operation with the fishing sector.

Biological diversity protection

I. The text of a Protocol on Biological Diversity and Landscape Protection to the Bucharest Convention shall be developed and adopted. It is advised that the Istanbul Commission adopt this Protocol by 2000, upon the recommendations of the Advisory Group on the Conservation of Biological Diversity. The aim is to present the Protocol to the 2001 Ministerial Meeting for signature, after which governments can initiate the national ratification process.

II. A regional Black Sea Red Data Book, identifying and describing endangered species, will be prepared and published by December 1998. It is advised that the work on the Red Data Book be co-ordinated by the Istanbul Commission, through its Advisory Group on the Conservation of Biological Diversity.

III. With the aim of restoring populations of marine mammals the following measures shall be taken: A. A ban on the hunting of marine mammals will be enforced by all Black Sea states with immediate effect. B. Regular population assessments of marine mammals shall be conducted and the first assessment will be completed in 1998. It is advised that these assessments be co-ordinated by the Istanbul Commission, through its Advisory Group on the Conservation of Biological Diversity. C. The Centre for the Conservation of Biological Diversity in Batumi, Georgia, shall be provided with the necessary equipment in order to function as a regional rehabilitation centre for captive marine mammals. D. National centres and sanctuaries for the rehabilitation of marine mammals shall be strengthened. E. Consideration shall be given to modify fishing practices in order to avoid catching marine mammals, as by-catch, during normal operations. It is recommended that the Istanbul Commission, through its Advisory Group on the Conservation of Biological Diversity and its Advisory Group on Fisheries and other Marine Living Resources, develop a strategy for the reduction of by-catches of marine mammals.

Protection of Habitat and Landscape

I. In addition to the actions referred to in paragraphs 57, 58, and 59 of this Strategic Action Plan, the following measures will also be taken to protect habitats and landscape in the Black Sea region.

II. In marine and coastal areas, and in particular in wetlands, new conservation areas shall be designated and the protection of existing conservation areas enhanced. In drafting their National Biological Diversity Strategies, Black Sea states shall take into consideration the integrity of the Black Sea system, by, for example, designating conservation areas which are of regional significance.

III. With a view to enhancing the protection of habitats and landscape in the Black Sea region, both national and regional regulatory instruments shall be improved through the following actions. A. A Regional Strategy for Conservation Areas shall be adopted, and it shall be reviewed every five years. It is advised that the Istanbul Commission adopt the plan by mid-1998, and conduct the reviews, upon the recommendations of its Advisory Group on the Conservation of Biological Diversity. The plan, amongst other things, should address the following: priority locations which should be designated as conservation areas; priority locations where current measures for protection should be enhanced; objectives, standards and measures for the protection of conservation areas; and fund raising aspects. B. Each Black Sea state, by 2000, shall endeavour to revise, and where applicable adopt, in accordance with its own legal system, national laws, regulations and planning instruments for the protection of conservation areas. These laws, regulations and planning instruments shall conform with relevant international instruments, including the Regional Strategy for Conservation Areas. The national instruments, amongst other things, should identify the responsible management authority and the responsible government agency; include procedures for the identification of conservation areas; require that management plans be developed for each conservation area; set standards for managing conservation areas; and, where appropriate, establish procedures for public participation and partnerships between governmental agencies and NGO's for the management of conservation areas. C. Each Black Sea state, where appropriate with the support of bilateral or multilateral agencies, shall ensure that the authorities which manage conservation areas are adequately staffed and that the necessary resources are available to them.

IV. Public awareness campaigns, including programs for schools, local communities, and natural resource users in the conservation areas shall be developed. Such campaigns, where appropriate, will be co-ordinated at the regional level.

Sustainable Human Development

Environmental Impact Assessment 1. By 1998, all Black Sea coastal states will adopt criteria for environmental impact assessments and environmental audits that will be compulsory for all public and private projects. The coastal states will co-operate to harmonise these criteria by 1999 and where possible, to introduce strategic environmental assessments. Integrated coastal zone management

I. In order to ensure proper management of the coastal zone, co-ordinated integrated coastal zone management strategies shall be developed for the Black Sea region. In order to attain this the following actions will be taken. A. A Regional Black Sea Strategy for integrated coastal zone management shall be developed. It is advised that the Istanbul Commission develop such a strategy by December 1998, upon the recommendations of its Advisory Group on the Development of Common Methodologies for Integrated Coastal Zone Management. The regional strategy should elaborate basic principles and methodologies for land- and water-use planning as well as for designing zoning systems. The methodologies and principles recommended in the regional strategy shall be taken into account when developing or reviewing national strategies and planning instruments for integrated coastal zone management. B. Each Black Sea coastal state shall endeavour to adopt and implement, in accordance with its own legal system, by 1999, the legal and other instruments required to facilitate integrated coastal zone management. C. Inter-sectoral committees for integrated coastal zone management shall be established at the national, regional

and local levels of public administration, where appropriate, by the end of 1997. These committees shall design and implement national plans for integrated coastal zone management through participatory approaches.

II. Erosion and land degradation have important environmental and social impacts. Coastal erosion, due to the changed hydraulic conditions in many of the regions rivers, is a problem which has transboundary implications. Deforestation is another major factor contributing to land degradation. A survey of coastal erosion problems in the region will be conducted by 1998. It is recommended that the Istanbul Commission, through its Advisory Group on the Development of Common Methodologies for Integrated Coastal Zone Management co-ordinate the work on this survey. The survey should address the magnitude of the problem, including its economic implications; propose remedial actions, and include suggestions for pilot studies and demonstration projects.

Development of sustainable aquaculture and tourism

I. Aquaculture and tourism are two areas considered to have scope for economic growth in the Black Sea and to benefit the region in general. In order to avoid environmental damage resulting from these activities, and particularly damage with transboundary implications, their development shall be managed along common environmental norms to be established by 1999. It is advised that that the Istanbul Commission, with the support of its Advisory Groups, adopt these common norms and liaise, where appropriate, with the Fisheries Commission, once this body has been established, to adopt an industry code of practice.

II. Sustainable aquaculture should be stimulated, amongst other things, through the conduct of feasibility studies. In parallel, legislation enabling the regulation of aquaculture should be developed. Such legislation should ensure that aquaculture itself does not present a threat to the environment and should address issues, such as, the location and density of cages, releases of commercial strains, imports and releases of exotic species, quarantining and matters of hygiene. Moreover, aquaculture projects shall be subjected to environmental impact assessments in which the potential effect of the activity upon biological diversity are given careful consideration.

III. Eco-tourism should be stimulated in the region, amongst other things, through the implementation of concrete pilot projects in Black Sea coastal states. In close co-operation with the tourist industry and the national tourism authorities, environmental codes of conduct and training courses in sustainable tourism will be developed. The tourism industry, both for the benefit of the industry and for the benefit of the environment, needs to be more adequately planned with a view to incorporating concerns such as those related to water supply, sewage treatment bathing water quality, the use of natural resources and resort development into newly developed projects from the beginning. Moreover, it shall be required that tourist development projects be subjected to environmental impact assessments.

Involving the public in environmental decision making

I. Participation of all sectors of society is an essential requirement for the development of sustainable policies in the region. It requires the development of education projects, transparent and participatory decision making procedures and open rules on access to administrative and judicial procedures.

II. Municipalities will be closely involved in the implementation of this Strategic Action Plan. Both existing mechanisms, as the International Black Sea Club of Cities, as well as new mechanisms will be used for this purpose. Black Sea municipalities will also be stimulated to co-operate at the national level and with municipalities in other countries and regions. The Union of Governors of the BSEC will also be requested to co-operate towards the implementation of this Strategic Action Plan.

III. NGOs will continue to be closely involved in the development and implementation of both national and regional policies aimed at rehabilitating and protecting the Black Sea ecosystem and the sustainable use of its natural resources.

IV. The Black Sea NGO Forum is encouraged to continue giving its support to the actions taken to rehabilitate and protect the Black Sea and, in particular, to support the implementation of this Strategic Action Plan. It is recommend that the Istanbul Commission adopt procedures which facilitate the participation of the NGO Forum, as an observer, in its meetings.

V. Stakeholders will have to be clearly identified for each of the policy areas included in this Strategic Action Plan. Their involvement in the decision making process will be secured and their responsibilities in implementing this Strategic Action Plan defined, through mechanisms such as those provided by new Regional Environmental Centres.

VI. Each Black Sea state, in accordance with its own national legal system, will endeavour to adopt and implement, by 2000, rules which guarantee the right of access to environmental information, which provide for the right of the public and NGOs to participate in decision making, and which provide for the right of individuals and groups to appeal to administrative and judicial organs. It is recommended that the Istanbul Commission prepare a draft position paper on this topic.

VII. Information about the actions taken to rehabilitate and protect the Black Sea ecosystem and achieve the sustainable use of its resources will be widely disseminated. Each Black Sea state will publish a popularised version of this Strategic Action Plan, in its own language. In addition, the following actions will taken through the BSEP, in close co-operation with the NGO Forum:. A. An educational information package for use in schools will be developed and each Black Sea state will translate it into its own language; B. A mobile exhibition will be prepared and translated into the languages of the Black Sea states for display at public functions and educational establishments; C. A user-friendly Black Sea CD ROM multimedia information package, based upon the existing GIS system, will be developed.

VIII. Based on harmonised criteria, information on the state of bathing water suitable for advising the public on the potential risks to their health shall be made widely available to the public during the active tourist season, starting in 1998. Frequency of sampling and analytical methodology should be sufficient to inform bathers of conditions which may pose health risks. Additionally, a colour coding system for bathing water quality maps shall be developed and such maps shall be published annually starting January in 1999.

National Black Sea Strategic Action Plans

I. Each Black Sea coastal state shall prepare, by October 1997, a National Black Sea Strategic Action Plan or other corresponding document, which shall present detailed plans for the national implementation of this Strategic Action Plan. These shall include details of specific projects where possible.

Financing the Strategic Action Plan

I. Funding for the actions agreed upon in this Strategic Action Plan may be secured from domestic, regional or international sources, through general public funding or through the application of specific economic instruments, as well as through grants and loans. Specific projects for international funding should be prepared for bilateral or multilateral funding. Donor Conferences, for assisting in this process, shall be held on a five yearly basis, starting in 1997.

II. Specific funding arrangements for the national policies and measures agreed on in this Strategic Action Plan shall be presented in the National Black Sea Strategic Action Plans to be adopted by each of the Black Sea State.

III. The feasibility of a Black Sea Environmental Fund shall be fully evaluated with a view to its establishment by the year 2000. The main source of finance for the Fund shall be a set of economic instruments adopted at the national level. Additional funding could be sought from the international community, including multilateral and bilateral donor organisations, international financial institutions and private sector sources. The Fund may be used to finance the work of the Istanbul

Commission; the development of project proposals for submission to potential funding sources; and specific projects which support the priorities set in this Strategic Action Plan or as decided on by the Istanbul Commission.

Arrangements for Future Co-operation

I. Given the assessment of implementation of the Odesa Declaration, which recommends that Ministerial meetings be held every five, instead of every three years, the following arrangements have been agreed.

II. It is advised that the Secretariat of the Istanbul Commission annually report to the Commission on the progress made in implementing this Strategic Action Plan. The report should also contain recommendations for enhancing implementation and adjustment of this Strategic Action Plan, taking into account the Bucharest Convention and the Odesa Declaration. The Istanbul Commission should consider the report and decide on any enhancements and/or adjustments which may be necessary to secure implementation of this Strategic Action Plan.

III. It is advised that a comprehensive report, assessing the implementation of this Strategic Action Plan, be prepared by the Istanbul Commission, upon the recommendations of its subsidiary bodies, and presented to the Governments of the Black Sea states and to the general public every five years. The report should also contain recommendations for enhancing implementation of the Strategic Action Plan as well as recommendations for its amendment, with a view to adopting any further actions which may be required to secure the rehabilitation and protection of the Black Sea.

IV. Ministers responsible for the rehabilitation and protection the Black Sea states will meet every five years with the objective of evaluating the progress made in implementing this Strategic Action Plan and adopting any additional actions that may be required to attain its overall aims.

CONVENTION ON THE PROTECTION OF THE BLACK SEA AGAINST POLLUTION (21 Apr 1992)

The Contracting Parties,

Determined to act with a view to achieve progress in the protection of the marine environment of the Black Sea and in the conservation of its living resources, Conscious of the importance of the economic, social and health values of the marine environment of the Black Sea, Convinced that the natural resources and amenities of the Black Sea can be preserved primarily through joint efforts of the Black Sea countries, Taking into account the generally accepted rules and regulations of international law, Having in mind the principles, customs and rules of general international law regulating the protection and preservation of the marine environment and the conservation of the living resources thereof, Taking into account the relevant provisions of the Convention on Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972 as amended; the International Convention on Prevention of Pollution from Ships of 1973 as modified by the Protocol of 1978 relating thereto as amended; the Convention on Control of Transboundary Movement of Hazardous Wastes and Their Disposal of 1989 and the International Convention on Oil Pollution Preparedness, Response and Co-operation of 1990, Recognising the significance of the principles adopted by the Conference on Security and Co-operation in Europe, Taking into account their interest in the conservation, exploitation and development of the bio-productive potential of the Black Sea, Bearing in mind that the Black Sea coast is a major international resort area where Black Sea Countries have made large investments in public health and tourism, Taking into account the special hydrological and ecological characteristics of the Black Sea and the hypersensitivity of its flora and fauna to changes in the temperature and composition of the sea water, Noting that pollution of the marine environment of Black Sea also emanates from land-based sources in other countries of Europe, mainly through rivers, Reaffirming their readiness to co-operate in the preservation of the marine environment of the Black Sea and the protection of its living resources against pollution, Noting the necessity of scientific, technical and technological co-

operation for the attainment of the purposes of the Convention, Noting that existing international agreements do not cover all aspects of pollution of the marine environment of the Black Sea emanating from third countries, Realising the need for close co-operation with competent international organisations based on a concerted regional approach for the protection and enhancement of the marine environment of the Black Sea,

Have agreed as follows:

Article I Area of application

1. This Convention shall apply to the Black Sea proper with the southern limit constituted for the purposes of this Convention by the line joining Capes Kelagra and Dalyan.

2. For the purposes of this Convention the reference to the Black Sea shall include the territorial sea and exclusive economic zone of each Contracting Party in the Black Sea. However, any Protocol to this Convention may provide otherwise for the purposes of that Protocol.

Article II Definitions

For the purposes of this Convention:

1. "Pollution of the marine environment" means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazard to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.

2. a) "Vessel" means seaborne craft of any type. This expression includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft whether self-propelled or not and platforms and other man-made structures at sea. b) "Aircraft" means airborne craft of any type.

3. a) "Dumping" means: i) any deliberate disposal of wastes or other matter from vessels or aircraft; ii) any deliberate disposal of vessels or aircraft;

b) "Dumping" does not include: i) the disposal of wastes or other matter incidental to or derived from the normal operations of vessels or aircraft and their equipment, other than wastes or other matter transported by or to vessels or aircraft operating for purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels or aircraft; ii) placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this Convention.

Article III General provisions

The Contracting Parties take part in this Convention on the basis of full equality in rights and duties, respect for national sovereignty and independence, non-interference in their internal affairs, mutual benefit and other relevant principles and norms of international law.

Article IV Sovereign immunity

This Convention does not apply to any warship, naval auxiliary or other vessels or aircraft owned or operated by a State and used, for the time being, only on government non-commercial service. However, each Contracting Party shall ensure, by the adoption of appropriate measures not impairing operations of such vessels or aircraft owned or operated by it, that such vessels or aircraft act in a manner consistent, so far as is practicable, with this Convention.

Article V General undertakings

1. Each Contracting Party shall ensure the application of the Convention in those areas of the Black Sea where it exercises its sovereignty as well as its sovereign rights and jurisdiction without prejudice to the

rights and obligations of the Contracting Parties arising from the rules of international law. Each Contracting Party, in order to achieve the purposes of this Convention, shall bear in mind the adverse effect of pollution within its internal waters on the marine environment of the Black Sea. 2. The Contracting Parties shall take individually or jointly, as appropriate, all necessary measures consistent with international law and in accordance with the provisions of this Convention to prevent, reduce and control pollution thereof in order to protect and preserve the marine environment of the Black Sea. 3. The Contracting Parties will co-operate in the elaboration of additional Protocols and Annexes other than those attached to this Convention, as necessary for its implementation. 4. The Contracting Parties, when entering bilateral or multilateral agreements for the protection and preservation of the marine environment of the Black Sea, shall endeavour to ensure that such agreements are consistent with this Convention Copies of such agreements shall be transmitted to the other Contracting Parties through the Commission as defined in Article XVII of this Convention. 5. The Contracting Parties will co-operate in promoting, within international organisations found to be competent by them, the elaboration of measures contributing to the protection and preservation of the marine environment of the Black Sea.

Article VI Pollution by hazardous substances and matter

Each Contracting Party shall prevent pollution of the marine environment of the Black Sea from any source by substances or matter specified in the Annex to this Convention.

Article VII Pollution from land-based sources

The Contracting Parties shall prevent, reduce and control pollution of the marine environment of the Black Sea from land-based sources, in accordance with the Protocol on the Protection of the Black Sea Marine Environment Against Pollution from Land-Based Sources which shall form in integral part of this Convention.

Article VIII Pollution from vessels

The Contracting Parties shall take individually or, when necessary, jointly, all appropriate measures to prevent, reduce and control pollution of the marine environment of the Black Sea from vessels in accordance with generally accepted international rules and standards.

Article IX Co-operation in combating pollution in emergency situations

The Contracting Parties shall co-operate in order to prevent, reduce and combat pollution of the marine environment of the Black Sea resulting from emergency situations in accordance with the Protocol on Co-operation in Combating Pollution of the Black Sea by Oil and Other Harmful Substances in Emergency Situations which shall form an integral part of this Convention.

Article X Pollution by dumping

1. The Contracting Parties shall take all appropriate measures and co-operate in preventing, reducing and controlling pollution caused by dumping in accordance with the Protocol on the Protection of the Black Sea Marine Environment Against Pollution by Dumping which shall form an integral part of this Convention. 2. The Contracting Parties shall not permit, within areas under their respective jurisdiction, dumping by natural or juridical persons of non-Black Sea States.

Article XI Pollution from activities on the continental shelf

1. Each Contracting Party shall, as soon as possible, adopt laws and regulations and take measures to prevent, reduce and control pollution of the marine environment of the Black Sea caused by or connected with activities on its continental shelf, including the exploration and exploitation of the natural resources of the continental shelf. The Contracting Parties shall inform each other through the Commission of the laws, regulations and measures adopted by them in this respect. 2. The Contracting Parties shall co-operate in this field, as appropriate, and endeavour to harmonise the measures referred to in paragraph 1 of this Article.

Article XII Pollution from or through the atmosphere

The Contracting Parties shall adopt laws and regulations and take individual or agreed measures to prevent, reduce and control pollution of the marine environment of the Black Sea from or through the atmosphere, applicable to the airspace above their territories and to vessels flying their flag or vessels and aircraft registered in their territory.

Article XIII Protection of the marine living resources

The Contracting Parties, when taking measures in accordance with this Convention for the prevention, reduction and control of the pollution of the marine environment of the Black Sea, shall pay particular attention to avoiding harm to marine life and living resources, in particular by changing their habitats and creating hindrance to fishing and other legitimate uses of the Black Sea, and in this respect shall give due regard to the recommendations of competent international organisations.

Article XIV Pollution by hazardous wastes in transboundary movement

The Contracting Parties shall take all measures consistent with international law and co-operate in preventing pollution of the marine environment of the Black Sea due to hazardous wastes in transboundary movement, as well as in combating illegal traffic thereof, in accordance with the Protocol to be adopted by them.

Article XV Scientific and technical co-operation and monitoring

1. The Contracting Parties shall co-operate in conducting scientific research aimed at protecting and preserving the marine environment of the Black Sea and shall undertake, where appropriate, joint programmes of scientific research, and exchange relevant scientific data and information. 2. The Contracting Parties shall co-operate in conducting studies aimed at developing ways and means for the assessment of the nature and extent of pollution and of its effect on the ecological system in the water column and sediments, detecting polluted areas, examining and assessing risks and finding remedies, and in particular, they shall develop alternative methods of treatment, disposal, elimination or utilisation of harmful substances. 3. The Contracting Parties shall co-operate through the Commission in establishing appropriate scientific criteria for the formulation and elaboration of rules, standards, and recommended practices and procedures for the prevention, reduction and control of pollution of the marine environment of the Black Sea. 4. The Contracting Parties shall, inter alia, establish through the Commission and, where appropriate, in co-operation with international organisations they consider to be competent, complementary or joint monitoring programmes covering all sources of pollution and shall establish a pollution monitoring system for the Black Sea including, as appropriate, programmes at bilateral or multilateral level for observing, measuring, evaluating and analysing the risks or effects of pollution of the marine environment of the Black Sea. 5. When the Contracting Parties have reasonable grounds for believing that activities under their jurisdiction or control may cause substantial pollution or significant and harmful changes to the marine environment of the Black Sea, they shall, before commencing such activities, assess their potential effects on the basis of all relevant information and monitoring data and shall communicate the results of such assessments to the Commission. 6. The Contracting Parties shall co-operate as appropriate, in the development, acquisition and introduction of clean and low-waste technology, inter alia, by adopting measures to facilitate the exchange of such technology. 7. Each Contracting Party shall designate the competent national authority responsible for scientific activities and monitoring.

Article XVI Responsibility and liability

1. The Contracting Parties are responsible for the fulfilment of their international obligations concerning the protection and the preservation of the marine environment of the Black Sea. 2. Each Contracting Party shall adopt rules and regulations on the liability for damage caused by natural or juridical persons to the marine environment of the Black Sea in areas where it exercises, in accordance with international law, its sovereignty, sovereign rights or jurisdiction. 3. The Contracting Parties shall ensure that recourse is available in accordance with their legal systems for prompt and adequate compensation or other relief for damage

caused by pollution of the marine environment of the Black Sea by natural or juridical persons under their jurisdiction. 4. The Contracting Parties shall co-operate in developing and harmonising their laws, regulations and procedures relating to liability, assessment of and compensation for damage caused by pollution of the marine environment of the Black Sea, in order to ensure the highest degree of deterrence and protection for the Black Sea as a whole.

Article XVII The Commission

1. In order to achieve the purposes of this Convention, the Contracting Parties shall establish a Commission on the Protection of the Black Sea Against Pollution, hereinafter referred to as "the Commission". 2. Each Contracting Party shall be represented in the Commission by one Representative who may be accompanied by Alternate Representatives, Advisers and Experts. 3. The Chairmanship of the Commission shall be assumed by each Contracting Party, in turn, in the alphabetical order of the English language. The first Chairman of the Commission shall be the Representative of the Republic of Bulgaria. The Chairman shall serve for one year, and during his term he cannot act in the capacity of Representative of his country. Should the Chairmanship fall vacant, the Contracting Party chairing the Commission shall appoint a successor to remain in office until the term of its Chairmanship expires. 4. The Commission shall meet at least once a year. The Chairman shall convene extraordinary meetings upon the request of any Contracting Party. 5. Decisions and recommendations of the Commission shall be adopted unanimously by the Black Sea States. 6. The Commission shall be assisted in its activities by a permanent Secretariat. The Commission shall nominate the Executive Director and other officials of the Secretariat. The Executive Director shall appoint the technical staff in accordance with the rules to be established by the Commission. The Secretariat shall be composed of nationals of all Black Sea States. The Commission and the Secretariat shall have their headquarters in Istanbul. The location of the headquarters may be changed by the Contracting Parties by consensus. 7. The Commission shall adopt its Rules of Procedure for carrying out its functions, decide upon the organisation of its activities and establish subsidiary bodies in accordance with the provisions of this Convention. 8. Representatives, Alternate Representatives, Advisers and Experts of the Contracting Parties shall enjoy in the territory of the respective Contracting Party diplomatic privileges and immunities in accordance with international law. 9. The privileges and immunities of the officials of the Secretariat shall be determined by agreement among the Contracting Parties. 10. The Commission shall have such legal capacity as may be necessary for the exercise of its functions. 11. The Commission shall conclude a Headquarters Agreement with the host Contracting Party.

Article XVIII Functions of the Commission

The Commission shall: 1. Promote the implementation of this Convention and inform the Contracting Parties of its work. 2. Make recommendations on measures necessary for achieving the aims of this Convention. 3. Consider questions relating to the implementation of this Convention and recommend such amendments to the Convention and to the Protocols as may be required, including amendments to Annexes of this Convention and the Protocols. 4. Elaborate criteria pertaining to the prevention, reduction and control of pollution of the marine environment of the Black Sea and to the elimination of the effects of pollution, as well as recommendations on measures to this effect. 5. Promote the adoption by the Contracting Parties of additional measures needed to protect the marine environment of the Black Sea, and to that end receive, process and disseminate to the Contracting Parties relevant scientific,technical and statistical information and promote scientific and technical research. 6. Co-operate with competent international organisations, especially with a view to developing appropriate programmes or obtaining assistance in order to achieve the purposes of this Convention. 7. Consider any questions raised by the Contracting Parties. 8. Perform other functions as foreseen in other provisions of this Convention or assigned unanimously to the Commission by the Contracting Parties.

Article XIX Meetings of the Contracting Parties

1. The Contracting Parties shall meet in conference upon recommendation by the Commission. They shall also meet in Conference within ten days at the request of one Contracting Party under extraordinary circumstances. 2. The primary function of the meetings of the Contracting Parties shall be the review of the implementation of this Convention and of the Protocols upon the report of the Commission. 3. A non-Black

Sea State which accedes to this Convention may attend the meetings of the Contracting Parties in an advisory capacity.

Article XX Adoption of amendments to the Convention and/or to the Protocols

1. Any Contracting Party may propose amendments to the Articles of this Convention. 2. Any Contracting Party to this Convention may propose amendments to any Protocol. 3. Any such proposed amendment shall be transmitted to the depositary and communicated by it through diplomatic channels to all the Contracting Parties and to the Commission. 4. Amendments to this Convention and to any Protocol shall be adopted by consensus at a Diplomatic Conference of the Contracting Parties to be convened within 90 days after the circulation of the proposed amendment by the depository. 5. The amendments shall enter into force 30 days after the depository has received notifications of acceptance of these amendments from all Contracting Parties.

Article XXI Annexes and amendments to Annexes

1. Annexes to this Convention or to any Protocol shall form an integral part of the Convention or such Protocol, as the case may be. 2. Any Contracting Party may propose amendments to the Annexes to this Convention or to the Annexes of any Protocol through its Representative in the Commission. Such amendments shall be adopted by the Commission on the basis of consensus. The depository, duly informed by the Chairman of the Commission of its decision, shall without delay communicate the amendments so adopted to all the Contracting Parties. Such amendments shall enter into force 30 days after the depository has received notifications of acceptance from all Contracting Parties. 3. The provisions of paragraph 2 of this
Article shall apply to the adoption and entry into force of a new Annex to this Convention or to any Protocol.

Article XXII Notification of entry into force of amendments

The depository shall inform, through diplomatic channels, the Contracting Parties of the date on which amendments adopted under
Articles XX and XXI enter into force.

Article XXIII
Financial rules The Contracting Parties shall decide upon all financial matters on the basis of unanimity, taking into account the recommendations of the Commission.

Article XXIV
Relation to other international instruments Nothing in this Convention shall affect in any way the sovereignty of States over their territorial sea, established in accordance with international law, and the sovereign rights and the jurisdiction which States have in their exclusive economic zones and their continental shelf in accordance with international law, and the exercise by ships and aircraft of navigational rights and freedoms as provided for in international law and as reflected in relevant international instruments.

Article XXV
Settlement of disputes In case of a dispute between Contracting Parties concerning the interpretation and implementation of this Convention, they shall seek a settlement of the dispute through negotiations or any other peaceful means of their own choice.

Article XXVI
Adoption of additional Protocols 1. At the request of a Contracting Party or upon a recommendation by the Commission, a Diplomatic Conference of the Contracting Parties may be convened with the consent of all Contracting Parties in order to adopt additional Protocols. 2. Signature, ratification, acceptance, approval, accession to, entry into force, and denounciation of additional Protocols shall be done in accordance with procedures contained, respectively, in Articles XXVIII, XXIX, and XXX of this Convention.

Article XXVII
Reservations No reservations may be made to this Convention.

Article XXVIII Signature, ratification, acceptance, approval and accession 1. This Convention shall be open for signature by the Black Sea States. 2. This Convention shall be subject to ratification, acceptance or approval by the States which have signed it. 3. This Convention shall be open for accession by any non-Black Sea State interested in achieving the aims of this Convention and contributing substantially to the protection and preservation of the marine environment of the Black Sea provided the said State has been invited by all Contracting Parties. Procedures with regard to the invitation for accession will be dealt with by the depositary. 4. The instruments of ratification, acceptance, approval or accession shall be deposited with the depositary. The depositary of this Convention shall be the Government of Romania.

Article XXIX
Entry into force This Convention shall enter into force 60 days after the date of deposit with the depositary of the fourth instrument of ratification, acceptance or approval. For a State acceding to this Convention in accordance with
Article XXVIII, the Convention shall enter into force 60 days after the deposit of its instrument of accession.

Article XXX
Denounciation After the expiry of five years from the date of entry into force of this Convention, any Contracting Party may, by written notification addressed to the depositary, denounce this Convention. The denounciation shall take effect o the thirty-first day of December of the year which follows the year in which the depositary was notified of the denounciation. Done in English, on the twenty first day of the month of April of one thousand nine hundred and ninety two, in Bucharest.

Annex 1. Organotin compounds. 2. Organohalogen compounds e.g. DDT, DDE, DDD, PCB's. 3. Persistent organophosphorus compounds. 4. Mercury and mercury compounds. 5. Cadmium and cadmium compounds.
6. Persistent substances with proven toxic, carcinogenic, teratogenic or mutagenic properties. 7. Used lubricating oils. 8. Persistent synthetic materials which may float, sink or remain in suspension. 9. Radioactive substances and wastes, including used radioactive fuel. 10. Lead and lead compounds.

PROTOCOL ON PROTECTION OF THE BLACK SEA MARINE ENVIRONMENT AGAINST POLLUTION FROM LAND BASED SOURCES

Article 1 In accordance with Article VII of the Convention, the Contracting Parties shall take all necessary measures to prevent, reduce and control pollution of the marine environment of the Black Sea caused by discharges from land-based sources on their territories such as rivers, canals, coastal establishments, other artificial structures, outfalls or run-off, or emanating from any other land-based source, including through the atmosphere.

Article 2 For the purposes of this Protocol, the fresh water limit means the landward part of the line drawn between the endpoints on the right and the left banks of a water course where it reaches the Black Sea.

Article 3 This protocol shall apply to the Black Sea as defined in
Article I of the Convention and to the waters landward of the baselines from which the breadth of the territorial sea is measured and in the case of fresh-water courses, up to the fresh-water limit.

Article 4 The Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Black Sea from land-based sources by substances and matter listed in Annex I to this Protocol. The Contracting Parties undertake to reduce and, whenever possible, to eliminate pollution of the marine environment of the Black Sea from land-based sources by substances and matter listed in Annex II to this Protocol. As to water courses that are tributaries to the Black Sea, the Contracting Parties will endeavour to co-operate, as appropriate, with other States in order to achieve the purposes set forth in this Article.

Article 5 Pursuant to the provisions of
Article XV of the Convention, each Contracting Party shall carry out, at the earliest possible date, monitoring activities in order to assess the levels of pollution, its sources and ecological effects along its coast, in particular with regard to the substances and matter listed in Annexes I and II to this Protocol. Additional research will be conducted upstream of river sections in order to investigate fresh/salt water interactions.

Article 6 In conformity with Article XV of the Convention, the Contracting Parties shall co-operate in elaborating common guidelines, standards or criteria dealing with special characteristics of marine outfalls and in undertaking research on specific requirements for effluents necessitating separate treatment and concerning the quantities of discharged substances and matter listed in Annexes I and II, their concentration in effluents, and methods of discharging them. The common emission standards and timetable for the implementation of the programme and measures aimed at preventing, reducing or eliminating, as appropriate, pollution from land-based sources shall be fixed by the Contracting Parties and periodically reviewed for substances and matter listed in Annexes I and II to this Protocol. The Commission shall define pollution prevention criteria as well as recommend appropriate measures to reduce, control and eliminate pollution of the marine environment of the Black Sea from land-based sources. The Contracting Parties shall take into consideration the following: a) The discharge of water from municipal sewage systems should be made in such a way as to reduce the pollution of the marine environment of the Black Sea. b) The pollution load of industrial wastes should be reduced in order to comply with the accepted concentrations of substances and matter listed in Annexes I and II to this Protocol. c) The discharge of cooling water from nuclear power plants or other industrial enterprises using large amounts of water should be made in such a way as to prevent pollution of the marine environment of the Black Sea. d) The pollution load from agricultural and forest areas affecting the water quality of the marine environment of the Black Sea should be reduced in order to comply with the accepted concentrations of substances and matter listed in Annexes I and II to this Protocol.

Article 7 The Contracting Parties shall inform one another through the Commission of measures taken, results achieved or difficulties encountered in the application of this Protocol. Procedures for the collection and transmission of such information shall be determined by the Commission.

Annex I

Hazardous Substances and Matter The following substances or groups of substances or matter are not listed in order of priority. They have been selected mainly on the basis of their toxicity, persistence and bioaccumulation characteristics. This Annex does not apply to discharges which contain substances and matter listed below that are below the concentration limits defined jointly by the Contracting Parties, not exceeding environmental background concentrations. 1. Organotin compounds. 2. Organohalogen compounds e.g. DDT, DDE, DDD, PCB's. 3. Persistent organophosphorus compounds. 4. Mercury and mercury compounds. 5. Cadmium and cadmium compounds. 6. Persistent substances with proven toxic carcinogenic, teratogenic or mutagenic properties. 7. Used lubricating oils. 8. Persistent synthetic materials which may float, sink or remain in suspension. 9. Radioactive substances and wastes, including used radioactive fuel. 10. Lead and lead compounds.

Annex II

Noxious Substances and Matter The following substances and matter have been selected mainly on the basis of criteria used in Annex I, while taking into account the fact that they are less harmful or more readily rendered harmless by natural processes. The control and strict limitation of the discharges of substances and matter referred to in this Annex shall be implemented in accordance with Annex III to this Protocol. 1. Biocides and their derivatives not covered in Annex I. 2. Cyanides, flourides, and elemental phosphorus. 3. Pathogenic micro-organisms. 4. Nonbiodegradable detergents and their surface-active substances. 5. Alkaline or acid compounds. 6. Thermal discharges. 7. Substances which, although of a non-toxic nature, may become harmful to the marine biota owing to the quantities in which they are discharged e.g. inorganic phosphorous, nitrogen, organic matter and other nutrient compounds. Also substances which have an adverse effect on the oxygen content in the marine environment. 8. The following elements and their compounds: Zinc Selenium Tin Vanadium Copper Arsenic Barium Cobalt Nickel Antimony

Beryllium Thallium Chromium Molybdenum Boron Tellurium Titanium Uranium Silver 9. Crude oil and hydrocarbons of any origin.

Annex III The discharges of substances and matter listed in Annex II to this Protocol shall be subject to restrictions based on the following: 1. Maximum permissible concentrations of the substances and matter immediate before the outlet; 2. Maximum permissible quantity (load, inflow) of the substances and matter per annual cycle or shorter time limit; 3. In case of differences between 1 and 2 above, the stricter restriction should apply. When issuing a permit for the discharge of wastes containing substances and matter referred to in Annexes I and II to this Protocol, the national authorities will take particular account, as the case may be, of the following factors: A. CHARACTERISTICS AND COMPOSITION OF THE WASTE 1. Type and size of waste source (e.g. industrial process). 2. Type of waste (origin, average composition). 3. Form of waste (solid, liquid, sludge, slurry). 4. Total amount (volume discharged. e.g. per year). 5. Discharge pattern (continuous, intermittent, seasonally variable, etc.). 6. Concentrations with respect to major constituents, substances listed in Annex I, substances listed in Annex II, and other harmful substances as appropriate. 7. Physical, chemical and biological properties of the waste. B. CHARACTERISTICS OF WASTE CONSTITUENTS WITH RESPECT TO THEIR HARMFULNESS 1. Persistence (physical, chemical, biological) in the marine environment. 2. Toxicity and other harmful effects. 3. Accumulation in biological materials and sediments. 4. Biochemical transformation producing harmful compounds. 5. Adverse effects on the oxygen contents and balance. 6. Susceptibility to physical, chemical and biochemical changes and interaction in the marine environment with other seawater constituents which may produce harmful biological or other effects on any of the uses listed in section E below. C. CHARACTERISTICS OF DISCHARGE SITE AND RECEIVING MARINE ENVIRONMENT 1. Hydrographic, meteorological, geological and topographic characteristics of the coastal area. 2. Location and type of discharge (outfall, canal, outlet, etc.) and its relation to other areas (such as amenity areas, spawning, nursery and fishing areas, shellfish grounds) and other discharges. 3. initial dilution achieved at the point of discharge into the receiving marine environment. 4. Dispersal characteristics such as the effect of currents, tides and winds on horizontal transport and vertical mixing. 5. Receiving water characteristics with respect to physical, chemical, biological and ecological conditions in the discharge area. 6. Capacity of the receiving marine environment to receive waste discharges without undesirable effects. D. AVAILABILITY OF WASTE TECHNOLOGIES The methods of waste reduction and discharge for industrial effluents as well as household sewage should be selected taking into account the availability and feasibility of: a) Alternative treatment processes; b) Recycling, re-use, or elimination methods; c) On-land disposal alternatives; and d) Appropriate clean and low-waste technologies. E. POTENTIAL IMPAIRMENT OF MARINE ECOSYSTEMS AND SEA-WATER USES 1. Effects on human life through pollution impact on: a) Edible marine organisms; b) Bathing waters; c) Aesthetics. Discharges of wastes containing substances and matter listed in Annexes I and II shall be subject to a system of self-monitoring and control by the competent national authorities. 2. Effects on marine ecosystems, in particular living resources, endangered species, and critical habitats. 3. Effects on other legitimate uses of the sea.

PROTOCOL ON COOPERATION IN COMBATING POLLUTION OF THE BLACK SEA MARINE ENVIRONMENT BY OIL AND OTHER HARMFUL SUBSTANCES IN EMERGENCY SITUATIONS

Article 1 In accordance with
Article IX of the Convention, the Contracting Parties shall take necessary measures and co-operate in cases of grave and imminent danger to the marine environment of the Black Sea or to the coast of one or more of the Parties due to the presence of massive quantities of oil or other harmful substances resulting from accidental causes or from accumulation of small discharges which are polluting or constituting a threat of pollution.

Article 2 The Contracting Parties shall endeavour to maintain and promote, either individually or through bilateral or multilateral co-operation, contingency plans for combating pollution of the sea by oil and other harmful substances. These shall include, in particular, equipment, vessels, aircraft and manpower prepared for operations in emergency situations.

Article 3 Each Contracting Party shall take necessary measures for detecting violations and, within areas under its jurisdiction for enforcing the provisions of this Protocol. Furthermore, the Contracting Parties shall ensure compliance with the provisions of this Protocol by vessels flying their flag. The Contracting Parties

shall promote exchange of information on subjects related to the implementation of this Protocol, including transmission of reports and urgent information which relate to
Article 1 thereof.

Article 4 Any Contracting Party which becomes aware of cases where the marine environment of the Black Sea is in imminent danger of being damaged or has been significantly damaged by pollution, it shall immediately notify the other Contracting Parties it deems likely to be affected by such damage as well as the Commission.

Article 5 Each Contracting Party shall indicate to the other Contracting Parties and the Commission, the competent national authorities responsible for controlling and combatting of pollution by oil and other harmful substances. Each Contracting Party shall also designate a focal point to transmit and receive reports of incidents which have resulted or may result in a discharge of oil or other harmful substances, in accordance with the provisions of relevant international instruments.

Article 6 1. Each Contracting Party shall issue instructions to the masters of vessels flying its flag and to the pilots of aircraft registered in its territory requiring them to report in accordance with the Annex to this Protocol and by the most rapid and reliable channels, to the Party or Parties that might potentially be affected and to the Commission: a) The presence, characteristics and extent of spillages of oil or other harmful substances observed at sea which are likely to present a threat to the marine environment of the Black Sea or to the coast of one or more Contracting Parties; b) All emergency situations causing or likely to cause pollution by oil or other harmful substances. 2. The information collected in accordance with paragraph 1 shall be communicated to the other Parties which are likely to be affected by pollution: a) by the Contracting Party which has received the information; b) by the Commission.

ANNEX Contents of the report to be made pursuant to
Article 6 1. Each report shall contain in general: a) The identification of the source of pollution; b) The geographic position, time and date of occurrence of the incident or of the observation; c) Land and sea conditions prevailing in the area; d) Relevant details with respect to the condition of the vessel polluting the sea. 2. Each report shall contain, whenever possible, in particular: a) A clear indication or description of the harmful substances involved, including the correct technical names of such substances;
b) A statement of estimate of the quantities, concentrations and likely conditions of harmful substances discharged or likely to be discharged into the sea; c) A description of packaging and identifying marks; d) Name of the consignor, consignee, or manufacturer. 3. Each report shall clearly indicate, whenever possible, whether the harmful substances discharged or likely to be discharged are oil or noxious liquid, solid, or gaseous substances and whether such substances were or are carried in bulk or contained in packaged form, freight containers, portable tanks or road and rail tank wagons. 4. Each report shall be supplemented, as necessary, by any relevant information requested by a recipient of the report or deemed appropriate by the person sending the report. 5. Any of the persons referred to in
Article 6 paragraph 1 of this Protocol shall: a) Supplement the initial report, as far as possible and necessary, with information concerning further developments; b) Comply as fully as possible with requests from affected Contracting Parties for additional information.

PROTOCOL ON THE PROTECTION OF THE BLACK SEA MARINE ENVIRONMENT AGAINST POLLUTION BY DUMPING

Article 1 In accordance with
Article X of the Convention, the Contracting Parties shall take individually or jointly all appropriate measures for the implementation of this Protocol.

Article 2 Dumping in the Black Sea of wastes or other matter containing substances listed in Annex 1 to this Protocol is prohibited. The preceding provision does not apply to dredged spoils provided that they contain trace contaminants listed in Annex 1 below the limits of concentration to be defined by the Commission within a 3 year period from the entry into force of the Convention.

Article 3 Dumping in the Black Sea of wastes or other matter containing noxious substances listed in Annex II to this Protocol requires, in each case, a prior special permit from the competent national authorities.

Article 4 Dumping in the Black Sea of all other wastes or matter requires a prior general permit from the competent national authorities.

Article 5 The permits referred to in
Articles 3 and 4 above shall be issued after a careful consideration of all the factors set forth in Annex III to this protocol by the competent national authorities of the relevant coastal State. The Commission shall receive records of such permits.

Article 6 The provisions of
Articles 2, 3 and 4 shall not apply when the safety of human life or of vessel or aircraft at sea is threatened by complete destruction or total loss or in any other case when there is a danger to human life and when dumping appears to be the only way of averting such danger, and if there is every probability that the damage resulting from such dumping will be less than would otherwise occur. Such dumping shall be carried out so as to minimise the likelihood of damage to human or marine life. The Commission shall promptly be informed.

Article 7 1. Each Contracting Party shall designate one or more competent authorities to: a) issue the permits provided for in
Articles 3 and 4; b) keep records of the nature and quantities of the wastes or other matter permitted to be dumped and of the location, date and method of dumping. 2. The competent authorities of each Contracting Party shall issue the permits provided for in
Article 3 and 4 in respect of the wastes or other matter intended for dumping: a) loaded within its territory; b) loaded by a vessel flying its flag or an aircraft registered in its territory when the loading occurs within the territory of another State.

Article 8 1. Each Contracting Party shall take the measures required to implement this Protocol in respect of: a) vessels flying its flag or aircraft registered in its territory; b) vessels and aircraft loading in its territory wastes or other matter which are to be dumped; c) platforms and other man-made structures at sea situated within its territorial sea and exclusive economic zone; d) dumping within its territorial sea and exclusive economic zone.

Article 9 The Contracting Parties shall co-operate in exchanging information relevant to
Articles 5, 6, 7 and 8. Each Contracting Party shall inform the other Contracting Parties which may potentially be affected, in case of suspicions that dumping in contravention of the provisions of this Protocol has occurred or is about to occur.

Annex I

Hazardous Substances and Matter 1. Organohalogen compounds e.g. DDT, DDE, DDD, PCB's. 2. Mercury and mercury compounds. 3. Cadmium and cadmium compounds. 4. Organotin compounds.
5. Persistent synthetic matter which may float, sink or remain in suspension. 6. Used lubricating oils. 7. Lead and lead compounds. 8. Radioactive substances and wastes, including used radioactive fuel. 9. Crude oil and hydrocarbons of any origin.

Annex II

Noxious Substances The following substances, compounds or matter have been selected mainly on the basis of criteria used in Annex I, while taking into account the fact that they are less harmful or more readily rendered harmless by natural processes. The control and strict limitation of the dumping of the substances referred to in this Annex shall be implemented in accordance with Annex III of this Protocol. 1. Biocides and their derivatives not covered in Annex I. 2. Cyanides, fluorides, and elemental phosphorus. 3. Pathogenic micro-organisms. 4. Nonbiodegradable detergents and their surface-active substances. 5. Alkaline or acid compounds. 6. Substances which, though of a non-toxic nature, may become harmful to the marine biota owing to the quantities in which they are discharged e.g. inorganic phosphorus, nitrogen, organic matter and other nutrient compounds. Also substances which have an adverse effect on the oxygen content of the marine environment. 7. The following elements and their compounds: Zinc Selenium Tin

Vanadium Copper Arsenic Barium Cobalt Nickel Antimony Beryllium Thallium Chromium Molybdenum Boron Tellurium
Titanium Uranium Silver 8. Sewage Sludge

Annex III In issuing permits for dumping at sea, the following factors shall be considered: A. CHARACTERISTICS AND COMPOSITION OF THE MATTER 1. Amount of matter to be dumped (e.g. per year). 2. Average composition of the matter to be dumped. 3. Properties: physical (e.g. solubility, density), chemical and biochemical(e.g. oxygen demand, nutrients), biological (e.g. presence of bacteria, etc.). The data should include sufficient information on the annual mean levels and seasonal variations of the mentioned properties. 4. Long-term toxicity. 5. Persistence: physical, chemical, biological. 6. Accumulation and transformation in the marine environment. 7. Susceptibility to physical, chemical and biochemical changes and interaction with other dissolved matter. 8. Probability of inducing effects which would reduce the marketability of resources (e.g. fish, shellfish). B. CHARACTERISTICS OF DUMPING SITE AND DISPOSAL METHOD 1. Location (e.g. co-ordinates of the dumping area, depth and distance from the coast) and its relation to areas of special interest (e.g. amenity areas, spawning, nursery and fishing grounds). 2. Methods and technologies of packaging and disposal of matter. 3. Dispersal characteristics. 4. Hydrological characteristics and seasonal variations in these characteristics (e.g. temperature, pH, salinity, stratification, turbidity, dissolved oxygen, biochemical oxygen demand, chemical oxygen demand, nutrients, productivity). 5. Bottom characteristics (e.g. topography, geochemical, geological and biological productivity). 6. Cases and effects of other dumping. C. GENERAL CONSIDERATIONS 1. Possible effects on amenities (e.g. floating or stranded matter, water turbidity, objectionable odour, discoloration, and foaming). 2. Possible effects on marine life, fish stocks, mari-cultures areas, traditional fishing grounds, seaweed harvesting and cultivation sites. 3. Possible effects on other uses of the sea (e.g. impairment of water quality for industrial use, underwater corrosion of structures, interference with vessel operations or fishing due to floating matter or through deposit of wastes or objects on the sea bed, and difficulties in protecting areas of special interest for scientific research or protection of nature). 4. Practical availability of alternative land disposal methods. CONVENTION CONCERNING FISHING IN THE BLACK SEA (Varna, 7 July 1959) The Governments of the People's Republic of Bulgaria, the Romanian People's Republic and the Union of Soviet Socialist Republics, Having a common interest in the rational utilisation of the fishery resources of the Black Sea and in the development of marine fishing, Have decided to conclude this Convention and have for this purpose appointed as their plenipotentiaries: who, having exchanged their full powers, found in good and due form, have agreed as follows:

Article 1 The Contracting Parties agree to co-operate and to assist one another, in accordance with the provisions of this Convention, in carrying on rational fishing in the Black Sea, in improving fishing technique, and in carrying out research in the field of ichthyology and hydrobiology for the purpose of maintaining and augmenting the stocks of fish in the Black Sea with a view to increasing the yield. The provisions of this Convention shall not affect the status of the territorial and inland waters of the Contracting Parties.

Article 2 Fishing vessels of the People's Republic of Bulgaria, the Romanian People's Republic and the Union of Soviet Socialist Republics engaged in fishing in the open sea may enter the following ports of refuge in order to shelter from bad weather or in case of damage: In the People's Republic of Bulgaria: Balchik, Varna, Nesebur, Burgas, Sozopol and Michurin; In the Romanian People's Republic: Constanta and Sulina; In the Union of Soviet Socialist Republics: Odessa, Evpatoria, Yalta, Novorossysk, Sochi, Sukhum, Poti and Batum. The list of ports of refuge may be amended by agreement among the Parties to the Convention.

Article 3 In the cases referred to in

Article 2 of this Convention, the fishing vessels of the Contracting Parties shall where necessary be given an opportunity to repair the damage and to replenish their supplies of foodstuffs, drinking water, fuel, lubricants and other ship's stores so that the vessel may continue on its route or return to its nearest home port, and an opportunity to dispose of their catch fresh at the ports of refuge if it cannot be preserved on board the vessel.

Article 4 The procedure governing the disposal of fish and payment for services rendered to fishing vessels entering ports of refuge and for fish disposed of in the cases referred to in

Article 3 of this Convention shall be agreed between the competent authorities of the Parties to the Convention.

Article 5 The following shall be the minimum sizes at which fish may be taken: Beluga (Huso huso). .....140 cm Russian sturgeon (Acipenser guldenstaedti) . ...80 cm Sevryuga (Acipenser stellatus) .....75 cm Turbot (Rhombus maeoticus) ..... 35 cm Shad (Alosa kessleri pontica) 16

cm The size of a fish shall be determined by measuring its length from the tip of the snout to the base of the tail fin. Any fish taken which is under the prescribed size must be put back in the sea. The taking of fish under the prescribed minimum size shall be permissible in a proportion not exceeding the following percentage by number of the total catch of each protected species: 8 per cent in the case of shad (Alosa kessleri pontica); 5 per cent in the case of turbot (Rhombus macoticus); and 5 per cent in the case of Acipenseridae (Huso huso, Acipenser guldenstaedti, Acipenser stellatus). The taking of Acipenser nudiventris shall be prohibited for five years from the date of entry into force of this Convention.
Article 6 For the purpose of preparing forecasts for fishing in the Black Sea, the Contracting Parties agree to exchange by any suitable means operational information concerning the migration of industrial fish, indicating the time and place at which they congregate, the direction of movement, the density of the schools, and the hydrometeorological conditions in which such congregations and migrations are observed.
Article 7 With a view to the rational utilisation of the stocks of fish in the Black Sea, the Contracting Parties agree to exchange information annually on the results of scientific research in the fields of marine ichthyology, hydrobiology and fishing technique. The Contracting Parties shall exchange statistical data on catches of fish.
Article 8 With a view to working out and co-ordinating measures for the application of this Convention, a Mixed Commission shall be established. Within one month after the entry into force of the Convention, each Contracting Party shall appoint one representative to the said Commission and shall communicate the name of its representative to the other Contracting Parties. The Mixed Commission shall meet at least once a year in the territory of each of the Contracting Parties in turn. The Mixed Commission shall function under a statute drafted by it at its first meeting and approved by the Contracting Parties.
Article 9 The Mixed Commission shall have the following functions: 1. It shall work out agreed measures to regulate fishing, with a view to the conservation and augmentation of the stocks of fish in the Black Sea, and to develop industrial fishing technique; 2. It shall introduce amendments to
Article 5 of the Convention concerning the species and dimensions of fish caught in the Black Sea. Proposals for such amendments must be communicated to the representatives of the Contracting Parties on the Mixed Commission not later than three months before the opening of the Commission's regular session; 3. It shall co-ordinate the planning of scientific research projects on matters relating to fishing in the Black Sea, to be conducted by the competent authorities of the Contracting Parties; 4. It shall determine the nature and extent of the statistical and other data which each Contracting Party shall furnish to the Mixed Commission for the purpose of implementing this Convention; 5. It shall exchange information concerning the application of this Convention; 6. It shall examine such other matters as the Contracting Parties may refer to it.
Article 10 The Mixed Commission shall make recommendations to the Contracting Parties on the matters referred to in
Article 9 with the exception of paragraph 2 of that
Article, on which the Commission may take decisions. Recommendations and decisions shall be deemed to be adopted by the Mixed Commission if they receive the favourable votes of the representatives of all the Contracting Parties. The recommendations of the Mixed Commission shall be submitted to the Contracting Parties for approval and may be given effect if none of the Parties raises objections within four months.
Article 11 This Convention shall not impede the conclusion of bilateral agreements on matters relating to fishing in the Black Sea between any two Contracting Parties or between a Contracting Party and any other Black Sea State, so long as such agreements do not conflict with the terms of this Convention.
Article 12 This Convention shall be ratified and shall enter into force on the date of deposit of the last instrument of ratification with the Government of the People's Republic of Bulgaria, in whose archives the original of the Convention shall be kept. The Government of the People's Republic of Bulgaria shall notify the Governments of all Contracting Parties of the date of deposit of the last instrument of ratification. Certified true copies of this Convention shall be transmitted by the Government of the People's Republic of Bulgaria to the other Contracting Parties.
Article 13 This Convention is concluded for a term of five years. It shall remain in force for successive terms of five years for those Contracting Parties which do not inform the Government of the People's Republic of Bulgaria, six months before the expiry of the current five-year term, that they wish to terminate the Convention.
Article 14 Other Black Sea States may accede to this Convention.
Article 15 The Government of the People's Republic of Bulgaria shall take the necessary action to register this Convention with the Secretariat of the United Nations. Done at Varna, on 7 July 1959, in one copy in the Bulgarian, Romanian and Russian languages, all texts being equally authentic.

CONVENTION CONCERNING FISHING IN THE BLACK SEA (Varna, 7 July 1959)

The Governments of the People's Republic of Bulgaria, the Romanian People's Republic and the Union of Soviet Socialist Republics, Having a common interest in the rational utilisation of the fishery resources of the Black Sea and in the development of marine fishing, Have decided to conclude this Convention and have for this purpose appointed as their plenipotentiaries:

who, having exchanged their full powers, found in good and due form, have agreed as follows:

Article 1

The Contracting Parties agree to co-operate and to assist one another, in accordance with the provisions of this Convention, in carrying on rational fishing in the Black Sea, in improving fishing technique, and in carrying out research in the field of ichthyology and hydrobiology for the purpose of maintaining and augmenting the stocks of fish in the Black Sea with a view to increasing the yield.

The provisions of this Convention shall not affect the status of the territorial and inland waters of the Contracting Parties.

Article 2 Fishing vessels of the People's Republic of Bulgaria, the Romanian People's Republic and the Union of Soviet Socialist Republics engaged in fishing in the open sea may enter the following ports of refuge in order to shelter from bad weather or in case of damage: In the People's Republic of Bulgaria: Balchik, Varna, Nesebur, Burgas, Sozopol and Michurin; In the Romanian People's Republic: Constanta and Sulina; In the Union of Soviet Socialist Republics: Odessa, Evpatoria, Yalta, Novorossysk, Sochi, Sukhum, Poti and Batum. The list of ports of refuge may be amended by agreement among the Parties to the Convention.

Article 3 In the cases referred to in article 2 of this Convention, the fishing vessels of the Contracting Parties shall where necessary be given an opportunity to repair the damage and to replenish their supplies of foodstuffs, drinking water, fuel, lubricants and other ship's stores so that the vessel may continue on its route or return to its nearest home port, and an opportunity to dispose of their catch fresh at the ports of refuge if it cannot be preserved on board the vessel.

Article 4 The procedure governing the disposal of fish and payment for services rendered to fishing vessels entering ports of refuge and for fish disposed of in the cases referred to in article 3 of this Convention shall be agreed between the competent authorities of the Parties to the Convention.

Article 5 The following shall be the minimum sizes at which fish may be taken: Beluga (Huso huso). .....140 cm Russian sturgeon (Acipenser guldenstaedti) . ...80 cm Sevryuga (Acipenser stellatus) .....75 cm Turbot (Rhombus maeoticus) ..... 35 cm Shad (Alosa kessleri pontica) .....16 cm The size of a fish shall be determined by measuring its length from the tip of the snout to the base of the tail fin. Any fish taken which is under the prescribed size must be put back in the sea. The taking of fish under the prescribed minimum size shall be permissible in a proportion not exceeding the following percentage by number of the total catch of each protected species: 8 per cent in the case of shad (Alosa kessleri pontica); 5 per cent in the case of turbot (Rhombus macoticus); and 5 per cent in the case of Acipenseridae (Huso huso, Acipenser guldenstaedti, Acipenser stellatus). The taking of Acipenser nudiventris shall be prohibited for five years from the date of entry into force of this Convention.

Article 6 For the purpose of preparing forecasts for fishing in the Black Sea, the Contracting Parties agree to exchange by any suitable means operational information concerning the migration of industrial fish, indicating the time and place at which they congregate, the direction of movement, the density of the schools, and the hydrometeorological conditions in which such congregations and migrations are observed.

Article 7 With a view to the rational utilisation of the stocks of fish in the Black Sea, the Contracting Parties agree to exchange information annually on the results of scientific research in the fields of marine ichthyology, hydrobiology and fishing technique. The Contracting Parties shall exchange statistical data on catches of fish.

Article 8 With a view to working out and co-ordinating measures for the application of this Convention, a Mixed Commission shall be established. Within one month after the entry into force of the Convention, each Contracting Party shall appoint one representative to the said Commission and shall communicate the name of its representative to the other Contracting Parties. The Mixed Commission shall meet at least once a year in the territory of each of the Contracting Parties in turn. The Mixed Commission shall function under a statute drafted by it at its first meeting and approved by the Contracting Parties.

Article 9 The Mixed Commission shall have the following functions: 1. It shall work out agreed measures to regulate fishing, with a view to the conservation and augmentation of the stocks of fish in the Black Sea, and to develop industrial fishing technique; 2. It shall introduce amendments to article 5 of the Convention concerning the species and dimensions of fish caught in the Black Sea. Proposals for such amendments must be communicated to the representatives of the Contracting Parties on the Mixed Commission not later than three months before the opening of the Commission's regular session; 3. It shall co-ordinate the planning of scientific research projects on matters relating to fishing in the Black Sea, to be conducted by the competent authorities of the Contracting Parties; 4. It shall determine the nature and extent of the statistical and other data which each Contracting Party shall furnish to the Mixed Commission for the purpose of implementing this Convention; 5. It shall exchange information concerning the application of this Convention; 6. It shall examine such other matters as the Contracting Parties may refer to it.

Article 10 The Mixed Commission shall make recommendations to the Contracting Parties on the matters referred to in article 9 with the exception of paragraph 2 of that article, on which the Commission may take decisions. Recommendations and decisions shall be deemed to be adopted by the Mixed Commission if they receive the favourable votes of the representatives of all the Contracting Parties. The recommendations of the Mixed Commission shall be submitted to the Contracting Parties for approval and may be given effect if none of the Parties raises objections within four months.

Article 11 This Convention shall not impede the conclusion of bilateral agreements on matters relating to fishing in the Black Sea between any two Contracting Parties or between a Contracting Party and any other Black Sea State, so long as such agreements do not conflict with the terms of this Convention.

Article 12 This Convention shall be ratified and shall enter into force on the date of deposit of the last instrument of ratification with the Government of the People's Republic of Bulgaria, in whose archives the original of the Convention shall be kept. The Government of the People's Republic of Bulgaria shall notify the Governments of all Contracting Parties of the date of deposit of the last instrument of ratification. Certified true copies of this Convention shall be transmitted by the Government of the People's Republic of Bulgaria to the other Contracting Parties.

Article 13 This Convention is concluded for a term of five years. It shall remain in force for successive terms of five years for those Contracting Parties which do not inform the Government of the People's Republic of Bulgaria, six months before the expiry of the current five-year term, that they wish to terminate the Convention.

Article 14 Other Black Sea States may accede to this Convention.

Article 15 The Government of the People's Republic of Bulgaria shall take the necessary action to register this Convention with the Secretariat of the United Nations. Done at Varna, on 7 July 1959, in one copy in the Bulgarian, Romanian and Russian languages, all texts being equally authentic.

BIBLIOGRAPHY

WCMC has access to a Black Sea bibliography of about 5000 references. This bibliography has been searched and reduced to the following list which may be of some use. Unfortunately there was not time nor the resources to obtain all of these titles, some which are not easily available in the UK.

Leslie, D.M.JR and Tissuescu A.. Beyond the Danube Delta: Forest Conservation and Research Opportunities in Romania. *Conservation Biology*, Volume 6, NO.2, June 1992. pp.165-167

Pringle. C.M. Us- Romanian Environmental Reconnaissance in the Danube Delta. *Conservation Biology,* Volume 5, No. 4. December 1991. pp 442-445.

FAO.1993. Trends in catches and landings. Mediterranean and Black Sea Fisheries: 1972-1991. FAO Fisheries Circular No.855.4.

FAO. 1994. Second Technical Consultation on stock Assessment in the Black Sea. Ankara Turkey, 15-19 February 1993. No.495.

Berkes and Fikret. 1977. Turkish dolphin fisheries. Oryx, Journal of Fauna Preservation Society. Vol 14. Pp 163-167.

UNEP. 1997. Georgian Biodiversity Country Study Report 1996 program "Assistance for the Preparation of Biodiversity Country Study in the Republic of Georgia". United Nation Environmental Programme. Ministry of Environment of Georgia. Noah's Ark Centre for Recovery of Endangered Species.

Grimmet, R.F.A. and Jones, T.A. Important Bird Areas in Europe. 1990. International Council for Bird Preservation Technical Publication No.9 International Waterfowl and Wetlands Research Bureau. (held at WCMC)

Ivanov, L.M. 1982. *The fisheries resources of the Black Sea.* Part II. The sea and the ocean fishing of Bulgaria. Etudes et Revue. Vol 60, p2-135. (ref no.1547)

-

Nikolaev, S.D Changes in the Romanian marine fishery in connection with the alteration of the environmental conditions and the status of the fish resources in the Black Sea. Deep Sea Research (Black Sea Special Issue).

Popov, V.F. 1986. State and development of fishing technologies in the Black Sea along the Bulgarian coast. FAO Fish Report. No. 26-27. Pp113-128. Rome 1963/1980.

Prodanov, K. 1991. Management of the biological resources and their rational exploitation. Science and management in the Black Sea. Results of an International Workshop held in Varna, Bulgaria. September/October 1991 pub: Woods Hole Oceanographic Institution.

Aubrey, D.G. and Unluata, V. Science and Management in the Black Sea. 1991. Results of an International Workshop held in Varna Bulgaria. September/October. 1991.

Aubrey, D.G.1993. *Intergovernmental oceanographic Commission Workshop Report # 86.* September 30 - October 4. 1991. Scientific Working Group Report for the Black Sea. Vol.86. p1-36.

Balkas, T. 1990. *State of the marine environment in the Black Sea region.* UNEP. Region Sea Report and Studies. No. 126.

Bologa, A.S. 1992. *Review of the state of the environment and biological changes in the Romanian Black Sea sector.* Problems of the Black Sea. Public Akad. Nauk. Uk. MAI. pp 91-96

Della Croce, N. 1992. *Marine environmental studies in coastal waters.* Problems of the Black sea. Publi Akad. Nauk. Uk. pp168-172..

Nikolaev, S.D. *Changes in the Romanian marine fishery in connection with the alteration of the environmental conditions and the status of the fish resources in the Black Sea.* Deep Sea Research . Black Sea Special Issue. Inter-library loan.

Rybalka, A.T. 1993. *South coast of the Crimea: environmental specificity and coast protection problems.* Coastline of the Black Sea. Proceeding of 8th Symposium on coastal and Ocean Management. Coastal Zone 93. New Orleans. L/A July 19-23 Publi Series Coastline of the world. American Society of Civil engineers (ASCE).

Aubray D.G. 1992. *Focus on the coast: Threatened by Nature and civilization.* Oceanus. Vol. 35, issue1. Pp.82-84.

Aybulatov, N.A. 1993. *Geoecology of the Black Sea coastal zone.* Proceeding of 8th Symposium on coastal zone 93. New Orleans. LA. July 19-23. Publi: Series coastline of the World. Pp 103-124.

Konsulov, Ts. 1988. *Ecological issues related to living resources (Zooplankton and zoobenthos) along the Bulgarian coast.* Hydrobiology. Vol 2

Coastline of the Black Sea. 1993. Proceedings of the 8th Symposium on coastal and ocean management. Coastal zone 93. New Orleans #. LA July 19-23.

Muller, G.I. 1985 On the opportunity of a marine reserve to be established at the Romanian coast of the Black Sea. Pp97-106. Not found in Ul.

Petrova karakjova, J.Y. 1982. Distribution and stocks of marine seagrasses Zostera marina and Zostera nana L. of the Bulgarian Black Sea. Institute of fisheries.vol 19.

Rybalka, A.I. 1993. Southcoast of the Crimea: environmental specificity and coast protection problems. Proceedings of the 8th Symposium on Coastal and Ocean Management. Coastal Zone 93. New Orleans. LA. July 19-23 1993. Publi: Series coastlines of the world. Coastlines of the Black Sea . American Society of Civil Engineurs. (ASCE). 1993.

Salukvadza, N.I. 1993. New structure used for protection of the Black Sea Coast. Proceedings of the 8th Symposium on Coastal and Ocean Management. Coastal Zone 93. New Orleans. LA. July 19-23 1993. Publi: Series coastlines of the world. Coastlines of the Black Sea . American Society of Civil Engineers. (ASCE). 1993.

Monolili, P 1974. Some ecological considerations on the flora and fauna of the Southern part of the Musura Bay (the delta of the Danube onto the Black Sea).Trav. Mus. Hist. Nat. "Gr. Antipe".

Esin, N.V. and Ko-Yan R. D.1993. Ecology of Gelondzlorik Bay. Proceedings of the 8th Symposium on Coastal and Ocean Management. Coastal Zone 93. New Orleans. LA. July 19-23 1993. Publi: Series coastlines of the world. Coastlines of the Black Sea . American Society of Civil Engineers. (ASCE). 1993.

Bologa, A.S. Review of the state of the environment and biological changes on the Romanian Black Sea sector. 1992. Problems of the Black Sea Akad-Nauk Ukr., MHI. Sevastopol. Pp 91-96.

Nokolaev, S.R. Changes in the Romania marine fisheries in connections with the alteration of the environmental conditions of the status of the fish resources in the Black Sea. Deep sea Research (Black sea Species Issue) Volume 2

Della Croce, N. 1992. Marine environmental studies in coastal waters. Problems of the Black sea Publi. Akad, Nauk. Ukr..MHI.. pp 168-172. Not held in Ul nor SPL.

Nikolaev, S.D. Changes in the Romanian marine fisheries in connection with the alteration of the environmental conditions and the status of the fish resources in the Black sea, Deep Sea Research. Volume 2

Ozturk, I, 1992. Marine outfall applications on the Turkish coasts of the Black Sea. Water Science and Technology. Vol 25, issue 9, pp 203-210.

Provirof, L. 1994. Conservation of Black Sea wetlands: a review and preliminary action plan based on national reports by L. Provirof. {et al} compiled by A.M. Wilson and M.E. Moser for International Waterfowl and Wetlands Research Bureau. Slimbridge: International Waterfowl and Wetlands Research Bureau. IWRB publication; 33

Khutsishvili, G. (Georgii). 1980. The Black Sea coast on the Caucasus: a guide/By G. Khutsinkvili. Moscow, progress.

Darke, Diane. 1987. Guide to eastern Turkey and the Black Sea coast.

Ovchininikov, I.M. 1991. Investigations of the Black Sea Ecosystems in winter (the 21th cruise of the R/N Vityas) , 9 Feb-8 April Oceanology 1991. Vol 31, issue 6, p 1081-1085.

Annex 1

Globally threatened plants endemic to one country bordering the Black Sea

Sorted alphabetically by genus

WORLD CONSERVATION
MONITORING CENTRE

Explanation of Conservation Status Listing

The attached listing was generated from the threatened plants database at WCMC. The list may deal with either a taxonomic group (*e.g.*, all ferns, a family, or a genus) or a geographic area (*e.g.*, a country or a Basic Recording Unit (BRU) (see next page). The list is sorted either by genus or family.

Source of data

Following the actual listing is a list of data sources used to create the list. To facilitate finding references by their DS number, these data sources are arranged by their number, not alphabetically by author.

Note: Our databases are dynamic and change daily. The information on the list represents only what had been computerised as of the date shown.

First line(s)

1. **Original IUCN Red Data Book category at the world level (in bold).** This is assigned by WCMC on the basis of national threat information available (see 5 below), and applies to the degree of threat to this taxon at the world level. Definitions are given on page 3 of this report. (NB These data do **not** cover the new 1994 IUCN categories).

2. **Inclusion on CITES Appendix**. A Roman numeral **I**, **II**, or **III** indicates the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendix on which the plant appears.

   I, II, III (normal font): inclusion is at the species, subspecies, or variety level;
   I, II, III (italicised): inclusion is at the genus level;
   <u>I</u>, <u>II</u>, <u>III</u> (underlined): inclusion is at the family level.

3. **Scientific name including author (Family name) Data source of name.**

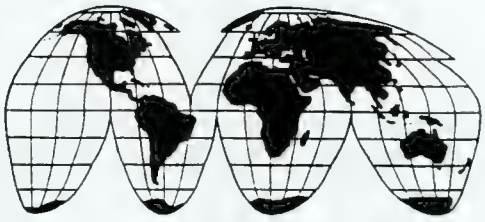
4. **Subsequent line(s)**

5. **IUCN Red Data Book category for this BRU**. This applies to the degree of threat to this taxon in this area only, and is assigned according to information in a data source (see 6 below).

6. **Data source** number for conservation status in this BRU.

7. **Distribution of taxon (geographical qualifier) Data source number for distribution**. Note: A "**?**" directly before the area name indicates there is doubt as to the accuracy of the distribution information. If the distribution is known or assumed to be incomplete, an explanation to that effect is displayed after the last distribution.

Geographic Coding Scheme



WCMC has adopted the geographic coding system of Basic Recording Units (BRU) (Hollis and Brummitt, 1992)[1]. This system is used for recording plant, animal and protected area distribution information. Under this scheme the world is divided into 622 BRUS, with a hierarchy comprising four levels of subdivision. Level 1 divides the world into "continents" as follows:

Europe	Asia-Tropical	Northern America
Africa	Australasia	Southern America
Asia-Temperate	Pacific	Antarctic

Each continent is then subdivided into regions (level 2), these then being further subdivided into level 3 (mostly country level divisions) and level 4 (mostly state level divisions) which totals 622 separate units.

Examples of countries broken down to level 4:

Brazil (29 areas)	India (32 areas)	Mexico (30 areas)
China (27 areas)	New Zealand (8 areas)	USA (60 areas)

In addition to the countries listed above, oceanic islands and island groups are treated as level 4 areas regardless of their "parent" country.

---

[1]Hollis, S. & R.K. Brummitt (1992) *World Geographical Scheme for Recording Plant Distributions*. Published for the International Working Group on Taxonomic Databases for Plant Sciences (TADWG). 102pp.

The original IUCN Red Data Book Categories

The original Red Data Book categories used by the World Conservation Monitoring Centre (WCMC) and the Species Survival Commission (SSC) of IUCN - the World Conservation Union to indicate the degree of threat to individual taxa in their wild habitats. Below are the formal definitions of the categories. **Note: There is a degree of subjectivity to the application of these categories, a subjectivity that will be diminished by a thorough understanding of and a strict adherence to these definitions.**

Extinct (Ex)

Taxa that are no longer known to exist in the wild after *repeated* searches of the type localities *and other known or likely places.*

Endangered (E)

Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction.

Vulnerable (V)

Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating. Included are taxa of which most or all the populations are decreasing because of over-exploitation, extensive destruction of habitat or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security is not yet assured; and taxa with populations that are still abundant but are under threat from serious adverse factors throughout their range.

Rare (R)

Taxa with small world populations that are not at present Endangered or Vulnerable but are at risk. These taxa are usually localised within restricted geographic areas or habitats or are thinly scattered over a more extensive range.

Indeterminate (I)

Taxa known to be Extinct, Endangered, Vulnerable, or Rare but where there is not enough information to say which of the four categories is appropriate.

Insufficiently Known (K)

Taxa that are *suspected* but not definitely known to belong to any of the above categories because of the lack of information.

Out of Danger (O)

Taxa formerly included in one of the above categories, but are now considered relatively secure because effective conservation measures have been taken, or because the previous threat to their survival has been removed.

Not threatened (nt)

Taxa that are not in any of the above categories.

No information (?)

Taxa for which there is no information.

In addition to the categories listed above, occasionally "hybrid" categories such as **Ex/E** are used.

R *Acantholimon acerosum* Willd. var. *parvifolium* Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon caryophyllaceum* Boiss. ssp. *parviflorum* Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon confertiflorum* Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon damassanum* Mobayen var. *lancibracteatum* Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

V *Acantholimon halophilum* Bokhari [Plumbaginaceae] *12840*
V *12840* Turkey *12840*

R *Acantholimon knorringianum* Lincz. [Plumbaginaceae]
R former USSR *6930*

R *Acantholimon langaricum* O. & B. Fedtsch. [Plumbaginaceae]
R former USSR *6930*

R *Acantholimon puberulum* Boiss. & Bal. var. *longiscapum* Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon reflexifolium* Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon ruprechtii* Bunge [Plumbaginaceae]
R former USSR *6930*

R *Acantholimon saxifragiforme* (Hausskn. & Sint.) ex Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon spirizianum* Mobayen [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon strigillosum* Bokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acantholimon ulicinum* (Will. ex Schultes) Boiss. var. *purpurascens* (Bokhari) Bokhari ex Edmondson [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

R *Acanthus dioscoridis* L. var. *brevicaulis* (Freyn) A. Hossain [Acanthaceae] *12840*
R *12840* Turkey *12840*

R *Acanthus dioscoridis* L. var. *laciniatus* Freyn [Acanthaceae] *12840*
R *12840* Turkey *12840*

R *Acanthus dioscoridis* L. var. *perringii* (Siehe) A. Hossain [Acanthaceae] *12840*
R *12840* Turkey *12840*

R *Acer cappadocicum* Gleditsch var. *stenocaryum* Yalt. [Aceraceae] *12840*
R *20618* Turkey *20618*

R *Acer hyrcanum* Fischer & Meyer ssp. *sphaerocaryum* Yaltirik [Aceraceae] *20618*
R *20618* Turkey *20618*

R *Acer monspessulanum* L. ssp. *oksalinum* Yalt. [Aceraceae] *12840*
R *20618* Turkey *20618*

Acer undulatum Pojark. [Aceraceae] *12840*
I *20618* Turkey *20618*

R *Achillea armenorum* Boiss. & Hausskn. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea brachyphylla* Boiss. & Hausskn. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea fraasii* Shultes Bip. var. *troiana* Aschers. & Heimerl [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea goniocephala* Boiss. & Bal. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea gypsicola* Huber-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea kotschyi* Boiss. ssp. *canescens* Bassler [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea magnifica* Huber-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea multifida* (DC.) Boiss. [Compositae] *12840, 20171*
R *12840* Turkey *12840*

R *Achillea nobilis* L. ssp. *denissima* (O. Schwarz ex Bassler) [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea nobilis* L. ssp. *kurdica* Huber-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea pseudoaleppica* Hub.- Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea sieheana* Stapf [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea sintenisii* Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea sipikorensis* Hausskn. & Bornm. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea sipinulifolia* Fenzl ex Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R *Achillea thracica* Velen. [Compositae] *5204, 20171*
R *5204* Bulgaria (central) *5204*

R *Acinos troodii* (Post) Leblebici ssp. *grandiflora* Hartvig & Strid [Labiatae] *12840*
R *12840* Turkey *12840*

R *Acinos troodii* (Post) Leblebici ssp. *vardaranus* E. Leblebici [Labiatae] *12840*
R *12840* Turkey *12840*

V *Aconitum talassicum* Popov [Ranunculaceae]
V former USSR *6930*

R *Adenophora taurica* (Sukaczev) Juz. [Campanulaceae] *8000, 20171*
R former European USSR *8000*

R *Aethionema cordatum* (Desf.) ssp. *pichleri* (Boiss.) Hardvig & Strid [Cruciferae] *12840*
R *12840* Turkey *12840*

R *Aethionema demirizii* Davis & Hedge

[Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Aethionema froedinii*** **Rech. fil. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema huber-morathli*** **Davis & Hedge [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema lepidioides*** **Hub.-Mor. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema lycium*** **I.A. Anderson ex al. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema marashicum*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema munzurense*** **Davis & Yildirimli [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema papillosum*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema speciosum*** **Boiss. & Huet ssp. *compactum* Hardvig & Strid [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Aethionema subulatum*** **(Boiss. & Heldr.) Boiss. [Cruciferae]** *12840*
R *12840* Turkey *12840*

V ***Aethionema thesiifolium*** **Boiss. & Heldr. [Cruciferae]** *12840*
V *12840* Turkey *12840*

I ***Agropyron cimmericum*** **Nevski [Gramineae]** *20171*
I former European USSR

R ***Agropyron dasyanthum*** **Ledeb. [Gramineae]** *20171*
R former European USSR

R ***Agropyron deweyi*** **A. Love [Gramineae]** *12840*
R *12840* Turkey *12840*

R ***Agropyron tanaiticum*** **Nevski [Gramineae]** *20171*
R former European USSR

R ***Ajuga chamaepitys*** **(L.) Schreber ssp. *euphratica* Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Ajuga postii*** **Briq. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Ajuga vestita*** **Boiss. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Ajuga xylorrhiza*** **Kit Tan [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Alcea freyniana*** **Iljin [Malvaceae]**
R former USSR *6930*

R ***Alchemilla achtarovii*** **Pawl. [Rosaceae]** *5204*
R *5204* Bulgaria (central) *5204*

R ***Alchemilla amoena*** **(Czeczott.) Rothm. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla asteroantha*** **Rothm. [Rosaceae]** *5204, 20171*
R *5204* Bulgaria (central) *5204*

V ***Alchemilla bandericensis*** **Pawl. [Rosaceae]** *5204, 20171*
V *5204* Bulgaria (south-west) *5204*

R ***Alchemilla bornmuelleri*** **Rothm. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla bursensis*** **B. Pawl [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla buseriana*** **Rothm. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla ciminensis*** **B. Pawl. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla erzincanensis*** **B. Pawl. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla hirsutiflora*** **(Buser) Rothm. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla jumrukczalica*** **Pawl. [Rosaceae]** *5204, 20171*
R *5204* Bulgaria (central) *5204*

R ***Alchemilla orduensis*** **B. Pawl. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla orturcica*** **B. Pawl. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla pirinica*** **Pawl. [Rosaceae]** *5204, 20171*
R *5204* Bulgaria (south-west) *5204*

R ***Alchemilla procerrima*** **Frohner [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla sciadiophylla*** **Bothm. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla sintenisii*** **Rothm. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Alchemilla tiryalensis*** **B. Pawl. [Rosaceae]** *12840*
R *12840* Turkey *12840*

I ***Alkanna amana*** **Rech. f. [Boraginaceae]** *12840*
I *12840* Turkey *12840*

I ***Alkanna areolata*** **Boiss. var. *areolata* [Boraginaceae]** *12840*
I *12840* Turkey *12840*

I ***Alkanna areolata*** **Boiss. var. *sublaevis* Huber-Mor. [Boraginaceae]** *12840*
I *12840* Turkey *12840*

R ***Alkanna attilae*** **Davis [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Alkanna aucherana*** **A. DC [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Alkanna cappadocica*** **Boiss. & Bal. [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Alkanna froedinii*** **Rech. f. [Boraginaceae]** *12840*
R *12840* Turkey *12840*

I ***Alkanna haussknechtii*** **Bornm. [Boraginaceae]** *12840*
I *12840* Turkey *12840*

R ***Alkanna hispida*** **Huber-Mor. [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Alkanna incana*** **Boiss. [Boraginaceae]** *12840*
R *12840* Turkey *12840*

V ***Alkanna macrophylla*** **Boiss. & Heldr. [Boraginaceae]** *12840*
V *12840* Turkey *12840*

V ***Alkanna macrosiphon*** **Boiss. & Heldr. [Boraginaceae]** *12840*
V *12840* Turkey *12840*

R *Alkanna oreodoxa* Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Alkanna orientalis* (L.) Boiss var. *leucantha* (Bornm.) Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Alkanna pamphylica* Huber-Mor. & Reese [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Alkanna phrygia* Bornm. [Boraginaceae] *12840*
R *12840* Turkey *12840*

V *Alkanna pinardii* Boiss. [Boraginaceae] *12840*
V *12840* Turkey *12840*

R *Alkanna punctulata* Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Alkanna saxicola* Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

Alkanna shattuckia (Post) Post [Boraginaceae] *12840*
I *12840* Turkey *12840*

R *Alkanna sieheana* Rech. f. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Alkanna verecunda* Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

Alkanna viscidula Boiss. [Boraginaceae] *12840*
I *12840* Turkey *12840*

R *Allium alpinarii* Ozhatay & Kollmann [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium balansae* Boiss. [Alliaceae] *12840*
R *12840* Turkey *12840*

V *Allium baytopiorum* Kollmann & Ozhatay [Alliaceae] *12840*
V *19873* Turkey *12840*

R *Allium brevicaule* Boiss. & Bal. [Alliaceae] *12840*
R *12840* Turkey *12840*

Allium czelghauricum Bordz. [Alliaceae] *12840*
I *19873* Turkey *12840*

R *Allium decidum* Ozhatay & Kollmann [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium djimilense* Boiss. & Regel [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium eldivanense* Ozhatay [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium flavum* L. var. *pilosum* Kollmann & Koyuncu [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium gayi* Boiss. [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium glumaceum* Boiss. & Hausskn. [Alliaceae] *12840*
R *12840* Turkey *12840*

Allium gorumsense Boiss. [Alliaceae] *12840*
I *19873* Turkey *12840*

Allium grande Lipsky [Alliaceae] *5942*
V *11552* Russia - North Caucasus (near coast) *5942*

R *Allium ilgazense* Ozhatay [Alliaceae] *12840*
R *12840* Turkey *12840*

Allium incisum Fomin [Alliaceae] *12840*
I *19873* Turkey *12840*

R *Allium isauricum* Huber-Mor. & Wendelbo [Alliaceae] *12840*
R *12840* Turkey *12840*

V *Allium jubatum* MacBride [Alliaceae] *19426*
V *19426* Bulgaria *19426*

V *Allium junceum* Sm. ssp. *tridentatum* Kollmann, Ozhatay & Koyuncu [Alliaceae] *12840*
V *12840* Turkey *12840*

E *Allium karamanglui* Koyuncu & Kollmann [Alliaceae] *12840*
E *12840* Turkey *12840*

R *Allium kastambulense* Kollmann [Alliaceae] *12840*
R *12840* Turkey *12840*

I *Allium koenigianum* Grossh. [Alliaceae] *12840*
I *19873* Turkey *12840*

I *Allium kurtzianum* (Acherson & Sint.) ex Kollmann [Alliaceae] *12840*
I *19873* Turkey *12840*

R *Allium macrochaetum* Boiss. & Hausskn. ssp. *tuncelianum* Kollmann [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium mariae* Bordz. [Alliaceae]
R former USSR *6930*

V *Allium microspathum* Ekberg0 [Alliaceae] *12840*
V *19873* Turkey *12840*

V *Allium nemrutaghense* Kit Tan & Sorger [Alliaceae] *12840*
V *19873* Turkey *12840*

V *Allium oltense* Grossh. [Alliaceae] *12840*
V *19873* Turkey *12840*

R *Allium peroninianum* Aznav. [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium pervestitum* Klokov [Alliaceae] *20171*
R former European USSR

R *Allium phanerantherum* Boiss. & Hausskn. ssp. *deciduum* Kollmann & Koyuncu [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium phrygium* Boiss. [Alliaceae] *12840*
R *19873* Turkey *12840*

R *Allium proponticum* Stearn & Özhatay [Alliaceae] *12840, 20171*
R *19873* Turkey *12840*

I *Allium rhetoreanum* Nab. [Alliaceae] *12840*
I *19873* Turkey *12840*

R *Allium robertianum* Kollmann [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium sandrasicum* Kollmann, Ozhatay & Bothmer [Alliaceae] *12840*
R *12840* Turkey *12840*

R *Allium scabriflorum* Boiss. [Alliaceae] *12840*
R *19873* Turkey *12840*

V *Allium shatakiense* Rech. f. [Alliaceae] *12840*
V *19873* Turkey *12840*

I *Allium sieheanum* (Hausskn. ex) Kollmann [Alliaceae] *12840*
I *19873* Turkey *12840*

V *Allium sintenisii* Freyn [Alliaceae] *12840*
V *19873* Turkey *12840*

R *Allium sivasicum* Ozhatay & Kollmann

[Alliaceae] *12840*
R *19873* Turkey *12840*

V ***Allium sosnowskyanum*** Miscz. [Alliaceae] *12840*
V *19873* Turkey *12840*

R ***Allium stearnianum*** Koyuncu, Ozhatay & Kollmann [Alliaceae] *12840*
R *19873* Turkey *12840*

I ***Allium stenopetalum*** Boiss. & Kotschy [Alliaceae] *12840*
I *19873* Turkey *12840*

V ***Allium stipitatum*** Regel [Alliaceae]
V former USSR *6930*

R ***Allium stojanovii*** Kov. [Alliaceae] *5204, 20171*
R *5204* Bulgaria (east) *5204*

R ***Allium stylosum*** O. Schwarz [Alliaceae] *12840*
R *19873* Turkey *12840*

R ***Allium tauricola*** Boiss. [Alliaceae] *12840*
R *19873* Turkey *12840*

R ***Allium tchihatschewii*** Boiss. [Alliaceae] *12840*
R *12840* Turkey *12840*

R ***Allium transvestiens*** Vved. [Alliaceae]
R former USSR *6930*

V ***Allium vuralii*** Kit Tan [Alliaceae] *12840*
V *12840* Turkey *12840*

R ***Allium wiedemannianum*** Regel [Alliaceae] *12840*
R *12840* Turkey *12840*

R ***Alnus glutinosa*** (L.) Gaertner ssp. ***betuloides*** [Betulaceae] *20618*
R *20618* Turkey *20618*

R ***Alopecurus laguroides*** Bal. [Gramineae] *12840*
R *12840* Turkey *12840*

V ***Alopecurus thracicus*** Penev & Kozuharov [Gramineae] *8000, 20171*
V *5204* Bulgaria (south) *5204*

R ***Alyssum anatolicum*** Hausskn. ex Nyar [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum argyrophyllum*** Schott & Kotschy [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum artvinense*** Busch [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum aurantiacum*** Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum bornmuelleri*** Hausskn. ex Degen [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum caespitosum*** Baumg. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum calycocarpum*** Rupr. [Cruciferae] *20171*
R former European USSR

V ***Alyssum caricum*** Dudley & Hub.-Mor. [Cruciferae] *12840*
V *12840* Turkey *12840*

R ***Alyssum cilicicum*** Boiss. & Bal. [Cruciferae] *12840*
R *12840* Turkey *12840*

I ***Alyssum crenulatum*** Boiss. [Cruciferae] *12840*
I *12840* Turkey *12840*

R ***Alyssum davisianum*** Dudley [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum discolor*** Dudley & Hub.-Mor. [Cruciferae] *12840*
R *12840* Turkey *12840*

I ***Alyssum dubertretii*** Gomb [Cruciferae] *12840*
I *12840* Turkey *12840*

R ***Alyssum eriophyllum*** Boiss. & Hausskn. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum fulvescens*** Sibth. & Sm. var. ***stellatocarpum*** Hub.-Mor. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum giosnanum*** Nyar [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum haussknechtii*** Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum huber-morathii*** Dudley [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum lepidoto-stellatum*** (Hausskn. & Bornm.) Dudley [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum lycaonicum*** (Schulz) Dudley [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum macropodum*** Boiss. & Bal. var. ***heterotrichum*** Hub.-Mor. [Cruciferae] *12840*
R *12840* Turkey *12840*

I ***Alyssum niveum*** Dudley [Cruciferae] *12840*
I *12840* Turkey *12840*

V ***Alyssum pinifolium*** (Nyar) Dudley [Cruciferae] *12840*
V *12840* Turkey *12840*

R ***Alyssum praecox*** Boiss. & Bal. var. ***albiflorum*** Dudley [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum pterocarpum*** Dudley [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum tetrastemon*** Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum thymops*** (Hub.-Mor. & Reese) Dudley [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum trapeziforme*** Bornm. ex Nyar [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Alyssum trichocarpum*** Dudley & Hub.-Mor. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Amelanchier parviflora*** Boiss. var. ***dentata*** Browicz [Rosaceae] *12840*
R *20618* Turkey *20618*

V ***Amphoricarpos elegans*** Albov [Compositae] *5942*
V *11552* Russia - North Caucasus *11552*

R ***Amphoricarpos exsul*** O. Schwarz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Amphoricarpos praedictus*** Ayasligil & Grierson [Compositae] *12840*
R *12840* Turkey *12840*

E ***Amygdalus balansae*** [Rosaceae] *20618*
E *20618* Turkey *20618*

Amygdalus carduchorum* ssp. *serrata
[Rosaceae] *20618*
R *20618* Turkey *20618*

***Amygdalus korshinskyi* (Hand.-Mazz.) Bornm.**
[Rosaceae] *20618*
V *20618* Turkey *20618*

***Amygdalus nairica* Feodorov & Takht. [Rosaceae]**
R former USSR *6930*

Amygdalus trichamygdalus* var. *elongata
[Rosaceae] *20618*
R *20618* Turkey *20618*

Anacyclus latealatus* Hub.-Mor. [Compositae] *12840
V *12840* Turkey *12840*

***Anchonium elichrysifolium* (DC.) Boiss. ssp. *canescens* (Hausskn. & Bornm.) Coode & Cullen**
[Cruciferae] *12840*
R *12840* Turkey *12840*

Anchonium elichrysifolium* (DC.) Boiss. ssp. *glandulosum* Coode & Cullen [Cruciferae] *12840
R *12840* Turkey *12840*

Anchonium elichrysifolium* (DC.) Boiss. ssp. *villosum
Cullen & Coode [Cruciferae] *12840*
R *12840* Turkey *12840*

***Andrachne colchica* (Fischer & C.A. Meyer) Pojark**
[Euphorbiaceae]
R former USSR *6930*

***Andrachne pusilla* Pojark [Euphorbiaceae]**
R former USSR *6930*

Androsace koso-poljanskii* Ovcz. [Primulaceae] *5942, 20171
I *5942* Ukraine *5942*

Anthemis adonidifolia* Boiss. [Compositae] *12840
R *12840* Turkey *12840*

***Anthemis amophila* Boiss. & Heldr.**
[Compositae] *12840*
V *12840* Turkey *12840*

***Anthemis anthemiformis* (Freyn & Sint.) Grierson**
[Compositae] *12840*
R *12840* Turkey *12840*

Anthemis antitaurica* Grierson [Compositae] *12840
R *12840* Turkey *12840*

Anthemis arenicola* Boiss. var. *arenicola
[Compositae] *12840*
R *12840* Turkey *12840*

***Anthemis argyrophylla* (Halácsy & T.Georgiev) Velen.**
[Compositae] *8000, 20171*
V *5204* Bulgaria (south) *5204*

Anthemis calcarea* Sosn. [Compositae] *12840
R *12840* Turkey *12840*

Anthemis cretica* L. ssp. *argaea* (Boiss. & Bal.) Grierson [Compositae] *12840
R *12840* Turkey *12840*

***Anthemis cuneata* Hub.-Mor. & Reese**
[Compositae] *12840*
R *12840* Turkey *12840*

Anthemis davisii* Yavin [Compositae] *12840
R *12840* Turkey *12840*

Anthemis dipsacea* Bornm. [Compositae] *12840
R *12840* Turkey *12840*

R ***Anthemis fimbriata* Boiss. [Compositae] *12840***
R *12840* Turkey *12840*

I ***Anthemis gaudium-solis* Velen. [Compositae] *5204, 20171***
I Bulgaria

V ***Anthemis halophila* Boiss. & Bal. [Compositae] *12840***
V *12840* Turkey *12840*

R ***Anthemis lithuanica* (DC.) Besser ex Trautv.**
[Compositae] *8000, 20171*
R former European USSR *8000*

R ***Anthemis melanoloma* Trautv. ssp. *trapezuntica***
Grierson [Compositae] *12840*
R *12840* Turkey *12840*

R ***Anthemis orbelica* Pancic [Compositae] *5204, 20171***
R *5204* Bulgaria (south and west) *5204*

R ***Anthemis oxylepis* (Boiss.) Boiss.**
[Compositae] *12840*
R *12840* Turkey *12840*

R ***Anthemis pauciloba* Boiss. var. *sieheana* (Eig)**
Grierson [Compositae] *12840*
R *12840* Turkey *12840*

R ***Anthemis pestalozzae* Boiss. [Compositae] *12840***
R *12840* Turkey *12840*

R ***Anthemis pungens* Yavin [Compositae] *12840***
R *12840* Turkey *12840*

R ***Anthemis regis-borisii* Stoj. & Acht.**
[Compositae] *5204, 20171*
R *5204* Bulgaria (east) *5204*

R ***Anthemis rumelica* (Velen.) Stoj. & Acht.**
[Compositae] *5204, 20171*
R *5204* Bulgaria (south & east) *5204*

I ***Anthemis saguramica* Sosn. [Compositae] *5942***
I *5942* Georgia *5942*

R ***Anthemis sancti-johannis* Turrill [Compositae] *5204, 20171***
R *5204* Bulgaria *5204*

V ***Anthemis sterilis* Steven [Compositae] *8000, 20171***
V former European USSR *8000*

R ***Anthemis stribrnyi* Velen. [Compositae] *5204, 20171***
R *5204* Bulgaria (south) *5204*

R ***Anthemis tinctoria* L. var. *virescens* Bornm.**
[Compositae] *12840*
R *12840* Turkey *12840*

R ***Anthemis tricornis* Big [Compositae] *12840***
R *12840* Turkey *12840*

R ***Anthemis virescens* Velen. [Compositae] *5204, 20171***
R *5204* Bulgaria (south & east) *5204*

R ***Anthemis wallii* Hub.-Mor. & Reese**
[Compositae] *12840*
R *12840* Turkey *12840*

R ***Anthyllis vulneraria* L. ssp. *variegata* (Boiss.)**
Cullen [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Apera baytopiana* M. Dogan [Gramineae] *12840***
R *12840* Turkey *12840*

R ***Apera triaristata* M. Dogan [Gramineae] *12840***
R *12840* Turkey *12840*

R ***Aquilegia colchica* Kemul.-Nath.**
[Ranunculaceae] *6930*

R former Asiatic USSR (Caucasus) *6930*

R ***Arabis abietina*** **Bornm. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Arabis androsacea*** **Fenzl. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Arabis aubrietioides*** **Boiss. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Arabis carduchorum*** **Boiss. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Arabis drabiformis*** **Boiss. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Arabis ferdinandi-coburgi*** **Kellerer & Sünd. [Cruciferae]** *5204, 20171*
R *5204* Bulgaria *5204*

R ***Arabis graellsiformis*** **Hedge [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria angustifolia*** **Mc.Neill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria angustijolioides*** **Kit Tan & Sorger [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria angustisepala*** **McNeill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria cariensis*** **A. Carlstrom [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria davisii*** **McNeill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria deflexa*** **Dec. ssp. *microcephala* McNeill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria eliasiana*** **Kit Tan & Sorger [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria isauricaa*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria ledebouriana*** **Fenzl var. *armeniaca* McNeill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria ledebouriana*** **Fenzl var. *grandiflora* Hartvig & Strid [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria luschanii*** **McNeill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria mons-cragus*** **Kit Tan ex Sorger [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

V ***Arenaria pamphylica*** **sensu Hayek [Caryophyllaceae]** *12840, 20171*
V *12840* Turkey *12840*

R ***Arenaria pseudoacantholimon*** **Bornm. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

V ***Arenaria rhodia*** **Boiss. ssp. *macropetala* McNeill [Caryophyllaceae]** *12840*
V *12840* Turkey *12840*

R ***Arenaria sabulinea*** **Gris. ex Fenzl [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria saponarioides*** **Boiss. & Balansa ssp. *saponarioides* [Caryophyllaceae]** *12840, 20171*
R *12840* Turkey *12840*

R ***Arenaria scariosa*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria sivasica*** **Kit Tan ex Sorger [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria speluncarum*** **McNeill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Arenaria uninervia*** **McNeill [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

I ***Aristolochia brevilabris*** **Bornm. [Aristolochiaceae]** *12840*
I *12840* Turkey *12840*

R ***Aristolochia cilicica*** **Davis & Khan [Aristolochiaceae]** *12840*
R *12840* Turkey *12840*

R ***Aristolochia krausei*** **Davis [Aristolochiaceae]** *12840*
R *12840* Turkey *12840*

R ***Aristolochia lycica*** **Davis & Khan [Aristolochiaceae]** *12840*
R *12840* Turkey *12840*

R ***Aristolochia poluninii*** **Davis & Khan [Aristolochiaceae]** *12840*
R *12840* Turkey *12840*

R ***Aristolochia rechingeriana*** **Kit Tan & Sorger [Aristolochiaceae]** *12840*
R *12840* Turkey *12840*

E ***Aristolochia samsunensis*** **Davis [Aristolochiaceae]** *12840*
E *12840* Turkey *12840*

R ***Aristolochia stenosiphon*** **Davis & Khan [Aristolochiaceae]** *12840*
R *12840* Turkey *12840*

Ex/E ***Armeria pocutica*** **Pawl. [Plumbaginaceae]** *20171*
Ex/E *20655* Ukraine (Carpathian Mts) *20655*

R ***Armeria trojana*** **Bokhari & Quezel [Plumbaginaceae]** *12840*
R *12840* Turkey *12840*

R ***Arnebia purpurea*** **Erik & Sumbul [Boraginaceae]** *12840*
R *12840* Turkey *12840*

V ***Artemisia hololeuca*** **M.Bieb. ex Besser [Compositae]** *8000, 20171*
V *11552* Russian Federation (west) *11552*

R ***Artemisia salsoloides*** **Willd. [Compositae]** *8000, 20171*
R *11552* Russian Federation (west Caucasus, west Siberia) *11552*

R ***Arum balansanum*** **R. Mill [Araceae]** *12840*
R *12840* Turkey *12840*

R ***Arum conophalloides*** **Kotschy ex Schott var. *caudatum* Engler [Araceae]** *12840*
R *19873* Turkey *12840*

R ***Arum dioscoridis*** **Sm. var. *luschanii* R. Mill. [Araceae]** *12840*
R *12840* Turkey *12840*

Arum euxinum R. Mill [Araceae] *12840*
R *19873* Turkey *12840*

Asparagus coodei Davis [Asparagaceae] *12840*
R *12840* Turkey *12840*

Asparagus litoralis Steven [Asparagaceae] *20171*
R former European USSR

Asparagus lycaonicus Davis [Asparagaceae] *12840*
E *12840* Turkey *12840*

Asperula antalyensis Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula capitellata Houuskn. ex Bornm. & Bornm. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula cilicica Hausskn. & Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula lilaciflora Boiss. ssp. *lilaciflora* [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula lilaciflora Boiss. ssp. *mutensis* Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula littoralis Sibth. & Sm. [Rubiaceae] *12840, 20171*
V *12840* Turkey *12840*

Asperula lycia Stapf [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula nitida Sm. ssp. *hirtella* (Boiss.) Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula nitida Sm. ssp. *subcapitellata* Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula pseudochlorantha Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula sintenisii Acherson ex Bornm. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula stricta Boiss. ssp. *elmaliensis* Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula stricta Boiss. ssp. *grandiflora* Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula tephrocarpa Czern. ex Popov & Chrshan. [Rubiaceae] *20171*
R former European USSR

Asperula virgata Hub.-Mor. ex Ehre.& Scho.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asperula woronowii Krecz. [Rubiaceae] *12840*
R *12840* Turkey *12840*

Asphodeline anatolica E. Tuzlaci [Asphodelaceae] *12840*
R *12840* Turkey *12840*

Asphodeline cilicica E. Tuzlaci [Asphodelaceae] *12840*
R *12840* Turkey *12840*

Asphodeline damascena (Boiss.) Baker ssp. *ovoidea* E. Tuzlaci [Asphodelaceae] *12840*
V *12840* Turkey *12840*

Asphodeline damascena (Boiss.) Baker ssp. *rugosa* E. Tuzlaci [Asphodelaceae] *12840*
R *12840* Turkey *12840*

Asphodeline peshmeniana E. Tuzlaci [Asphodelaceae] *12840*
R *12840* Turkey *12840*

Asphodeline prismatocarpa J. Gay ex Baker [Asphodelaceae] *12840*
R *12840* Turkey *12840*

Asphodeline tenuior (Bieb.) Ledeb. [Asphodelaceae] *5942*
I *5942* Russia - North Caucasus *5942*

Asphodeline tenuior (Fischer) Ledeb. var. *puberulenta* E. Tuzlaci [Asphodelaceae] *12840*
R *12840* Turkey *12840*

Asplenium reuteri Milde [Aspleniaceae] *12840*
E *12840* Turkey *12840*

Aster tarbagatensis (K.Koch) Merxm. [Compositae] *8000, 20171*
R Russia (E.Europe) - South (South-East) *8000*

Astragalus acmophyllus Bunge [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus adustus Bunge [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus aintabicus Bunge [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus akscheherensis Freyn & Bornm. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus albicalycinus Huber-Mor. & Mathews [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus albifolius Freyn & Sint. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus alindanus Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus altanii Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus angustiflorus C. Koch ssp. *amanus* (Boiss.) Chamb. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus antiochianus Post [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus argaeus Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus armeniacus Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus atrocarpus Chamb. & Mathews [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus aydosensis Pesmen & Erik [Leguminosae] *12840*
V *12840* Turkey *12840*

Astragalus badachschianus A. Boriss. [Leguminosae]
R former USSR *6930*

Single country endemic globally threatened plants

: Leguminosae: *Astragalus*

E ***Astragalus badamensis*** **Popov [Leguminosae]**
E former USSR *6930*

I ***Astragalus balkisensis*** **Sirj. & Rech. [Leguminosae]** *12840*
I *12840* Turkey *12840*

R ***Astragalus barba-jovis*** **DC [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus barbarae*** **Bornm. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus barbeyanus*** **Post [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus bashkalensis*** **Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus baytopianus*** **Chamb. & Mathews [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus bombycalyx*** **Eig [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus canescens*** **DC. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus cariensis*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus caudiculosus*** **Boiss. & Huet [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus celakowskyanus*** **Freyn & Bornm. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus cephalotes*** **Banks & Bornm. var. *brevicalyx*** **Eig [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus cephalotes*** **Banks & Bornm. var. *sintenianus*** **(Sirj) Chamb. & Mathews [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus chaldiranicus*** **Kit Tan & Sorger [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus chamaephaca*** **Freyn [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus chrysochlorus*** **Boiss. & Kotschy [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus chthonocephalus*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

V ***Astragalus cicerellus*** **Boiss. & Bal. [Leguminosae]** *12840*
V *12840* Turkey *12840*

R ***Astragalus coadunatus*** **Huber-Mor. & Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus columnaris*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus commagenicus*** **(Hand.-Mazz.) Sirj. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus comosoides*** **Cham. & Mathews [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus consimilis*** **Bornm. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus crinitus*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus cuspistipulatus*** **Eig [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus cymbibracteatus*** **Huber-Mor. & Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus cymbostegius*** **Bunge [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus czorochensis*** **Charadze [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus darwasicus*** **Basilevsk. [Leguminosae]**
R former USSR *6930*

R ***Astragalus dasycarpus*** **Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus decurrens*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus delanensis*** **Sirj. & Rech.f. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus delbesii*** **Eig [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus depressus*** **L. var. *tasheliensis*** **Erik & Sumbul [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus diphtherites*** **Fenzl var. *karatashensis*** **(Sirj.) Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus dirmilensis*** **Huber-Mor. & Reese [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus discessiflorus*** **Gontsch. [Leguminosae]**
R former USSR *6930*

R ***Astragalus distinctissimus*** **Eig [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus edinburghensis*** **Ponert [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus edmodii*** **(Kuntze) Sheldon [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus elatus*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus elazigensis*** **Ekim [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus elbistanicus*** **Huber-Mor. & Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus eliasianus*** **Kit Tan & Sorger [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus eriocephalus*** **Willd. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus ermineus*** **Matt. [Leguminosae]** *12840*
R *12840* Turkey *12840*

Astragalus fissuralis Alexej. [Leguminosae] *11552*
R *11552* Russian Federation (Caucasus) *11552*

Astragalus fodinarum Boiss. & Noe [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus gaeobotrys Boiss. & Bal. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus gevaschensis Chamb. & Matt. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus gilvus Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus goeznensis Eig [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus gymnalopecias Rech.f. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus hakkiaricus Chamb. & Matt. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus hareftae (Nab.) Sirj [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus hartvigii Kit Tan [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus helmii Fischer var. ***permiensis*** C. Meyer ex Rupr. [Leguminosae]
R former USSR

Astragalus henningii (Steven) Boriss. [Leguminosae] *20171*
R former European USSR

Astragalus hilaris Bunge [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus huber-morathii Agerer-Kirchhoff [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus ideae Sirj. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus insignis Gontsch. [Leguminosae]
R former USSR *6930*

Astragalus isauricus Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus isparticus Kit Tan & Sorger [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus kangalicus Kit Tan & Sorger [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus karelinianus Popov [Leguminosae] *20171*
R former European USSR

Astragalus kirshehiricus Chamb. [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus kitianus Sorger [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus lagopodioides Vahl [Leguminosae] *12840*
R *12840* Turkey *12840*

Astragalus latistipulatus Chamb. & Matt. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus leptocaulis*** Ledeb. [Leguminosae]
R former USSR *6930*

R ***Astragalus listoniae*** Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus longifolius*** Lam. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus macrouroides*** Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus maximus*** Willd. var. ***dasysemius*** Chamb. & Matt. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus melitensis*** Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus microrchis*** Barbey [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus mitchellianus*** Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus mokeevae*** Popov [Leguminosae]
R former USSR *6930*

R ***Astragalus mordiensis*** Nab. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus mukisiensis*** Rech.f. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus nervulosus*** Eig & Reese emend Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus nuratensis*** Popov [Leguminosae]
R former USSR *6930*

R ***Astragalus ocakverdii*** Kit Tan & Sorger [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus ovalis*** Boiss. & Bal. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus ovatus*** DC. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus ovinus*** Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus oxypterus*** A. Boriss. [Leguminosae]
R former Asiatic USSR *6930*

R ***Astragalus paecilanthus*** Boiss. & Heldr. [Leguminosae] *12840*
R *12840* Turkey *12840*

I ***Astragalus pallescens*** M.Bieb. [Leguminosae] *20171*
I former European USSR

R ***Astragalus panduratus*** Bunge [Leguminosae] *12840*
R *12840* Turkey *12840*

E ***Astragalus papasianus*** O. Schwarz [Leguminosae] *12840*
E *12840* Turkey *12840*

R ***Astragalus patnosicus*** Chamb. & Matth. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Astragalus phrygius*** Sirj. [Leguminosae] *12840*
R *12840* Turkey *12840*

Ex/E ***Astragalus physocalyx*** Fisch. [Leguminosae] *8000, 20171*
Ex/E *5204* Bulgaria (Southern - two unconfirmed sites) *5204*

R ***Astragalus plumosus*** **Willd. var. *nitens*** **(Freyn & Birnm.) Chamb. & Matt [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus polemoniacus*** **Bunge [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus pseudocaspicus*** **Fischer [Leguminosae]** *12840*
R *12840* Turkey *12840*

Ex ***Astragalus pseudocylindraceus*** **Bornm. [Leguminosae]** *12840*
Ex *12840* Turkey *12840*

R ***Astragalus pycnocephalus*** **Fischer var. *seytunensis*** **(Bunge) Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus ramicaudex*** **Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus rarissimus*** **Popov [Leguminosae]**
R former USSR *6930*

R ***Astragalus rechingeri*** **Sirj. [Leguminosae]** *12840*
R *12840* Turkey *12840*

I ***Astragalus reduncus*** **Pall. [Leguminosae]** *20171*
I former European USSR *8000*

R ***Astragalus renzii*** **Huber-Mor. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus robertianus*** **Kit Tan & Sorger [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus roseocalycinus*** **Matt. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus sachanevii*** **Sirj. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus scabrifolius*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

E ***Astragalus setosulus*** **Gontsch. [Leguminosae]** *20171*
E *20655* Ukraine - Crimea *20653*

R ***Astragalus seydishehiricus*** **Kit Tan & Ocakverdi [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus sorgerae*** **Huber-Mor. & Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus sparsipilis*** **Huber-Mor. & Chamb. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus stenosemioides*** **Bornm. ex Chamb. & Matt. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus stridii*** **Kit Tan [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus subternatus*** **Pavlov [Leguminosae]**
R former USSR *6930*

R ***Astragalus syringus*** **Chamb [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus talasseus*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

V ***Astragalus tanaiticus*** **K.Koch [Leguminosae]** *11552, 20171*
V *11552* Russian Federation (western) *11552*

R ***Astragalus taochius*** **Woron. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus tatlii*** **H. Pesmen [Leguminosae]** *12840*
R *12840* Turkey *12840*

I ***Astragalus tekutjevii*** **Gontsch. [Leguminosae]**
I former USSR *6930*

R ***Astragalus thiebaetii*** **Eig [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus tmoleus*** **Boiss. var. *tmoleus* [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus tokatensis*** **Fischer [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus trachytricus*** **Bunge [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus trifoliastrum*** **Huber-Mor. & Matt. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus uhlwormianus*** **Freyn & Bornm. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus ulashensis*** **Huber-Mor. & Reese [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus vanulosus*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus velenowskyi*** **Nab. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus victoriae*** **Podlech-Ayerer-Kirchhoff [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus viridiflorus*** **A. Boriss. [Leguminosae]**
R former USSR *6930*

R ***Astragalus voronovianus*** **(Boriss.) Boriss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus wartoensis*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus wilmottianus*** **Stoj. [Leguminosae]** *5204, 20171*
R *5204* Bulgaria (West) *5204*

R ***Astragalus yueksekovae*** **Matthews [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Astragalus zahlbruckneri*** **Hand.-Mazz. [Leguminosae]** *12840*
R *12840* Turkey *12840*

V ***Astragalus zingeri*** **Korsh. [Leguminosae]** *8000, 20171*
V *11552* Russian Federation (western) *11552*

R ***Asyneuma babadaghensis*** **Yildiz & Kit Tan [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Asyneuma compactum*** **(Boiss. & Heldr.) Damboldt [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Asyneuma davisianum*** **Yildiz & Kit Tan [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Asyneuma ekimianum*** **Kit Tan & Yikdiz [Campanulaceae]** *12840*

R *12840* Turkey *12840*

Asyneuma ilgazensis Yildiz & Kit Tan [Campanulaceae] *12840*
R *12840* Turkey *12840*

Asyneuma isauricum Contandr. & al. [Campanulaceae] *12840*
R *12840* Turkey *12840*

Asyneuma linifolium (Boiss. & Heldr.) Bornm. ssp. ***eximium*** (Rech.f.) Damboldt [Campanulaceae] *12840*
R *12840* Turkey *12840*

Asyneuma linifolium (Boiss. & Heldr.) Bornm. ssp. ***glabrum*** Kit Tan & Yildiz [Campanulaceae] *12840*
V *12840* Turkey *12840*

Asyneuma linifolium (Boiss. & Heldr.) Bornm. ssp. ***nallihanicum*** Kit Tan & Yildiz [Campanulaceae] *12840*
V *12840* Turkey *12840*

Asyneuma lycium (Boiss.) Bornm. [Campanulaceae] *12840*
R *12840* Turkey *12840*

Asyneuma pulvinatum Davis [Campanulaceae] *12840*
R *12840* Turkey *12840*

Asyneuma rigidum (Willd.) Grossh. ssp. ***graminifolium*** Huber-Mor. [Campanulaceae] *12840*
R *12840* Turkey *12840*

Asyneuma trichostegium (Boiss.) Bornm. [Campanulaceae] *12840*
R *12840* Turkey *12840*

Atriplex tatarica L. var. ***constantinopolitana*** Aellen [Chenopodiaceae] *12840*
R *12840* Turkey *12840*

Atriplex tatarica L. var. ***pseudo-ornata*** Aellen [Chenopodiaceae] *12840*
R *12840* Turkey *12840*

Aubrieta anamasica H. Pesmen & A. Guner [Cruciferae] *12840*
R *12840* Turkey *12840*

Aubrieta olympica Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

Ballota cristata Davis [Labiatae] *12840*
R *12840* Turkey *12840*

Ballota inaequidens Hub.-Mor. & Patzak [Labiatae] *12840*
R *12840* Turkey *12840*

Ballota latibracteolata Davis & Droszenko [Labiatae] *12840*
R *12840* Turkey *12840*

Ballota macrodonta Boiss. & Bal. [Labiatae] *12840*
R *12840* Turkey *12840*

Ballota pseudodictamnus (L.) Benth. [Labiatae] *12840, 20171*
R *12840* Turkey *12840*

Ballota rotundifolia C. Koch [Labiatae] *12840*
R *12840* Turkey *12840*

Ballota saxatilis Sieber ex J. &C.Presl. ssp. ***brachyodonta*** (Boiss.) Davis & Droszenko [Labiatae] *12840*
R *12840* Turkey *12840*

Barbarea auriculata Hausskn. ex Bornm. s.l. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Barbarea lutea*** Cullen & Coode [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Barbarea minor*** C. Koch var. ***anfiactroza*** Hartvig & Strid [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Barbarea platycarpa*** Hausskn. ex Bornm. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Bellardiochloa argaea*** (Boiss. & Bal.) R. Mill [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Bellardiochloa carica*** R. Mill [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Bellevalia forniculata*** (Fomin) Deloney [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

R ***Bellevalia lipskyi*** (Miscz.) E.Wulff [Hyacinthaceae] *20171*
R former European USSR

V ***Bellevalia modesta*** Wendelbo [Hyacinthaceae] *12840*
V *12840* Turkey *12840*

R ***Bellevalia rixii*** Wendelbo [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

V ***Beta adanensis*** Pamukç. ex Aellen [Chenopodiaceae] *12840, 20171*
V *12840* Turkey *12840*

E ***Beta trojana*** (Pamuk.) Aellen [Chenopodiaceae] *12840*
E *12840* Turkey *12840*

R ***Betula browicziana*** Guner [Betulaceae] *12840*
R *20618* Turkey *20618*

I ***Betula megrelica*** Sosn. [Betulaceae] *5942*
I *5942* Georgia *5942*

R ***Biarum eximium*** (Schott & Kotschy) Engler [Araceae] *12840*
R *19873* Turkey *12840*

R ***Bolanthus cherlerioides*** (Bornm.) Bark. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Bolanthus frankenioides*** (Boiss.) Bark. var. ***fasciculatus*** (Boiss. & Heldr.) Bark. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Bolanthus frankenioides*** (Boiss.) Bark. var. ***frankenioides*** [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Bolanthus spergulifolius*** (Jaub. & Spach) Huber-Mor. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Bolanthus stenopetalum*** Hartvig & Strid [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Bolanthus thymoides*** Huber-Mor. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

V ***Boreava aptera*** Boiss. & Heldr. [Cruciferae] *12840*
V *12840* Turkey *12840*

R ***Bornmuellera cappadocica*** (DC.) Cullen & Dudley [Cruciferae] *12840*

R *12840* Turkey *12840*

R ***Bornmuellera glabrescens*** **(Boiss. & Bal.) Cullen & Dudley [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Botschantzevia karatavica*** **(Lipsch. & Pavlov) Nabiev [Cruciferae]**
R former USSR *6930*

R ***Brachypodium kotschy*** **Boiss. [Gramineae]** *12840*
R *12840* Turkey *12840*

R ***Brachypodium sanctum*** **(Janka) Janka [Gramineae]** *5204, 20171*
R *5204* Bulgaria (Southern Bulgaria - three areas.) *5204*

R ***Brassica nivalis*** **Boiss. & Heldr. ssp. *jordanoffii* O. E. Schulz [Cruciferae]** *8000, 20171*
R *5204* Bulgaria (south-west) *8000*

I ***Brassica sylvestris*** **(L.) Mill. ssp. *taurica* Tzvelev [Cruciferae]** *5942*
I *5942* Ukraine - Crimea *5942*

R ***Bromus armenus*** **Boiss. [Gramineae]** *12840*
R *12840* Turkey *12840*

I ***Bromus macrocladus*** **Boiss. [Gramineae]** *12840*
I *12840* Turkey *12840*

R ***Bromus moesiacus*** **Velen. [Gramineae]** *8000, 20171*
R *19709* Bulgaria *8000*

E ***Bromus psammophilus*** **P.M. Smith [Gramineae]** *12840*
E *12840* Turkey *12840*

R ***Bunium microcarpum*** **(Boiss.) Freyn ssp. *longiradiatum* Hedge & Lamond [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum anatolicum*** **Huber-Mor. & Reese [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum davisii*** **Snogerup [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum eginense*** **(Wolff) Snogerup [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum eruberescens*** **Boiss. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum koechelii*** **Fenzl [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum pauciradiatum*** **Fenzl [Umbelliferae]** *12840, 20171*
R *12840* Turkey *12840*

I ***Bupleurum pendikum*** **Snogerup [Umbelliferae]** *12840*
I *12840* Turkey *12840*

R ***Bupleurum polyactis*** **Post ex Snogerup [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum pulchellum*** **Boiss. & Heldr. [Umbelliferae]** *12840*
R *12840* Turkey *12840*.

R ***Bupleurum subuniflorum*** **Boiss. & Heldr. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Bupleurum zoharii*** **Snogerup [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Calamintha caroli-henricana*** **Kit Tan & Sorger [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Calamintha pamphylica*** **Boiss. & Heldr. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Calamintha tauricola*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Calophaca sericea*** **B. Fedtsch. ex A. Boriss. [Leguminosae]**
R former USSR *6930*

I ***Camelina anomala*** **Boiss. & Hausskn. [Cruciferae]** *12840*
I *12840* Turkey *12840*

R ***Camelina stiefelhagenii*** **Bornm. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Campanula aghrica*** **Kit Tan & Sorger [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula antalyensis*** **Ayasligil & Kit Tan [Campanulaceae]** *12840*
R *12840* Turkey *12840*

I ***Campanula ardonensis*** **Rupr. [Campanulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

R ***Campanula argentea*** **Lam. [Campanulaceae]** *12840*
R *12840* Turkey *12840*

I ***Campanula autraniana*** **Albov [Campanulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

R ***Campanula bipinnatifida*** **Davis [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula bornmuelleri*** **Nab. [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula choruhensis*** **Kit Tan & Sorger [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula coriacea*** **Davis [Campanulaceae]** *12840*
R *12840* Turkey *12840*

E ***Campanula damboldtiana*** **Davis & Sorger [Campanulaceae]** *12840*
E *14197* Turkey *12840*

R ***Campanula davisii*** **Turrill [Campanulaceae]** *12840*
R *12840* Turkey *12840*

I ***Campanula dolomitica*** **E. Busch [Campanulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

R ***Campanula ekimiana*** **Guner [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula fruticulosa*** **(Schwarz & Davis) Damboldt [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula hakkarica*** **Davis [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula hedgei*** **Davis [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Campanula isaurica*** **Contandr. et al. [Campanulaceae]** *12840*
R *12840* Turkey *12840*

I ***Campanula komarovii*** **Maleev [Campanulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

I ***Campanula kryophila*** **Rupr. [Campanulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

R ***Campanula lanata*** **Friv.** [Campanulaceae] *19709, 20171*
R *19709* Bulgaria *19709*

R ***Campanula latiloba*** **A. DC. ssp.** ***rizeensis*** **Guner**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula ledebouriana*** **Trautv.**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula leucosiphon*** **Boiss. & Heldr.**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

E ***Campanula lycica*** **Kit Tan & Sorger**
[Campanulaceae] *12840*
E *12840* Turkey *12840*

R ***Campanula macrostyla*** **Boiss. & Heldr.**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

Campanula makaschvilii **E. Busch**
[Campanulaceae] *5942*
I *5942* Georgia *5942*

Campanula mirabilis **Albov** [Campanulaceae] *5942*
I *5942* Russia - North Caucasus *5942*

R ***Campanula munzurensis*** **Davis** [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula myrtifolia*** **Boiss. & Heldr.**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

Ex ***Campanula oligosperma*** **Damboldt**
[Campanulaceae] *12840*
Ex *12840* Turkey *12840*

Campanula ossetica **M. Bieb.** [Campanulaceae] *5942*
I *5942* Russia - North Caucasus *5942*

Campanula paradoxa **Kolak.** [Campanulaceae] *5942*
I *5942* Russia - North Caucasus *5942*

R ***Campanula peshmenii*** **Guner** [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula pinnatifida*** **Huber-Mor.**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula psilostachya*** **Boiss. & Kotschy**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula ptarmicifolia*** **Lam. var.** ***capitellata***
Damboldt [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula pterocaula*** **Hausskn.** [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula pubicalyx*** **(Davis) Damboldt**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula pulvinaris*** **Hausskn. & Bornm.**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula quercetorum*** **Huber-Mor. & Simon**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

Campanula raveyi **Boiss.** [Campanulaceae] *12840*
V *12840* Turkey *12840*

R ***Campanula rimarum*** **Boiss.** [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula scoparia*** **(Boiss. & Hausskn.) Damboldt**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula seraglio*** **Kit Tan & Sorger**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

V ***Campanula sorgerae*** **Phitos** [Campanulaceae] *12840*
V *12840* Turkey *12840*

R ***Campanula stricta*** **L. var.** ***alidagensis*** **Damboldt**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula strigillosa*** **Boiss.** [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula telephioides*** **Boiss. & Hausskn.**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula telmessii*** **Huber-Mor. & Phitos**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula teucrioides*** **Boiss.** [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula tomentosa*** **Lam.** [Campanulaceae] *12840, 20171*
R *12840* Turkey *12840*

R ***Campanula trachyphylla*** **Schott & Kotschy**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula troegerae*** **Damboldt** [Campanulaceae] *12840*
R *12840* Turkey *12840*

R ***Campanula yildirimlii*** **Kit Tan & Sorger**
[Campanulaceae] *12840*
R *12840* Turkey *12840*

V ***Capsella bursa-pastoris*** **(L.) Medik. ssp.** ***thracica***
(Velen.) Stoj. & Stefanov [Cruciferae] *19266, 20171*
V *5204* Bulgaria (south) *19266*

R ***Caragana leiocalycina*** **(Huber-Mor.) Huber-Mor.**
[Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Cardamine trifida*** **(Lam. ex Poir.) B.M.G.Jones**
[Cruciferae] *20171*
R former European USSR

R ***Carduus acanthoides*** **L. ssp.** ***sintenisii*** **Kazmi**
[Compositae] *12840*
R *12840* Turkey *12840*

R ***Carduus adpressus*** **C.A.Mey.** [Compositae] *8000, 20171*
R *5204* Bulgaria (Southern - two sites only)
5204

R ***Carduus nutans*** **L. ssp.** ***falcato-incurvus*** **Davis**
[Compositae] *12840*
R *12840* Turkey *12840*

R ***Carduus nutans*** **L. ssp.** ***trojanus*** **Davis**
[Compositae] *12840*
R *12840* Turkey *12840*

R ***Carduus onopordioides*** **Fisch. ex Bieb. ssp.** ***turcicus***
(Kazmi) Davis [Compositae] *12840*
R *12840* Turkey *12840*

R ***Carduus rechingeranus*** **Kazmi** [Compositae] *12840*
R *12840* Turkey *12840*

R ***Carduus thracicus*** (Velen.) Hayek [Compositae] *5204, 20171*
R *5204* Bulgaria (Southern and eastern - five sites) *5204*

R ***Carex cilicica*** Boiss. ssp. ***muglaica*** O. Nilson [Cyperaceae] *12840*
R *12840* Turkey *12840*

R ***Carex cilicica*** Boiss. ssp. ***muratica*** O. Nilson [Cyperaceae] *12840*
R *12840* Turkey *12840*

R ***Carex eriocarpa*** Hausskn. Kuk. [Cyperaceae] *12840*
R *12840* Turkey *12840*

I ***Carlina cirsioides*** Klokov [Compositae] *20171*
I *5942* Ukraine *5942*

R ***Carlina oligocephala*** Boiss. & Kotschy ssp. ***pallescens*** (Wettst.) Muesel & Kastner [Compositae] *12840*
R *12840* Turkey *12840*

R ***Carum rupicola*** Hardvig & Strid [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Castilleja schrenkii*** Rebrist. [Scrophulariaceae] *20171*
R former European USSR

R ***Centaurea amaena*** Boiss. & Bal. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea amanicola*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea androssovii*** Iljin [Compositae] *8001*
R former USSR *6930*

R ***Centaurea anthemifolia*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea antiochia*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea antitauria*** Hayek [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea aphrodisea*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea arifolia*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea arpensis*** (Czerep.) Wagentiz [Compositae] *8001*
R former USSR *6930*

R ***Centaurea aucherana*** DC. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea austro-anatolica*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

I ***Centaurea barbeyi*** (Albov) Sosn. [Compositae] *5942*
I *5942* Transcaucasus *5942*

R ***Centaurea bourgaei*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

I ***Centaurea bovina*** Velen. [Compositae] *20171*
I Bulgaria

R ***Centaurea brevifimbriata*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea calcitrapa*** L. ssp. ***cilicica*** (Boiss. & Bal.) Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea cariensiformis*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea cariensis*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea cataonica*** Boiss. & Hausskn. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea chaldaeorum*** Nab. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea cheirolepidoides*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea chrysantha*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea davisii*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

V ***Centaurea deflexa*** Wagenitz [Compositae] *12840*
V *12840* Turkey *12840*

R ***Centaurea demirizii*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea derderiifolia*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

V ***Centaurea dichroa*** Boiss. & Heldr. [Compositae] *12840*
V *12840* Turkey *12840*

R ***Centaurea drabifolioides*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea dubjanskii*** Iljin [Compositae]
R former European USSR

R ***Centaurea ensiformis*** Davis [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea germanicopolitana*** Bornm. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea gracillima*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea hakkariensis*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

V ***Centaurea halophila*** Hub.-Mor. [Compositae] *12840*
V *12840* Turkey *12840*

R ***Centaurea haradjianii*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea hedgei*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

V ***Centaurea hermannii*** F.Herm. [Compositae] *17781, 20171*
V *17781* Turkey *17781*

R ***Centaurea hierapolitana*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea holtzii*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea huber-morathii*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea karduchorum*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea kernerana*** Janka [Compositae] *5204, 20171*

R *5204* Bulgaria (central & west) *5204*

Centaurea kilaea Boiss. [Compositae] *12840, 20171*
V *12840* Turkey *12840*

Centaurea koniensis Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea kotschyi (Boiss. & Heldr.) Hayek var. ***decumbens*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea longifimbriata Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea luschaniana Heimerl [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea lycica Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea lycopifolia Boiss. & Kotschy [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea lydia Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea mannagettae Podp. ssp. ***pirinica*** (D. Jord.) Koz. [Compositae] *19709*
R *19709* Bulgaria *19709*

Centaurea margaritacea Ten. [Compositae] *20171*
V former European USSR

Centaurea mathiolifolia Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea mykalea Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea nydeggeri Hub.-Mor [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea odyssei Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea olympica C. Koch. [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea pamphylica Boiss. & Heldr. [Compositae] *12840*
V *12840* Turkey *12840*

Centaurea paphlagonica (Bornm.) Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea pecho Albow [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea pestalozzae Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea pinetorum Hub.-Mor. [Compositae] *12840*
V *12840* Turkey *12840*

Centaurea poluninii Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea psephelloides Freyn & Sint. [Compositae] *12840*
Ex *19873* Turkey *12840*

Centaurea pseudokotschyi Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

Centaurea pseudoleucolepis Kleopow [Compositae] *5942, 20171*
E *20655* Ukraine (south-east) *5942*

Centaurea pseudoreflexa Hayek [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea ptosimopappa*** Hayek [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea ptosimopappoides*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea pulcherrima*** Willd. var. ***freynii*** (int.) Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea reuterana*** Boiss. var. ***reuterana*** [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea rhizocalathium*** (C. Koch.) Tchihat. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea schischkinii*** Tzvelev. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea scopulorum*** Boiss. & Heldr. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea sericea*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea sipylea*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea sivasica*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea solstitialis*** L. ssp. ***carneola*** (Boiss.) Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea solstitialis*** L. ssp. ***pyracantha*** (Boiss.) Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea stapfiana*** (Hand.-Mazz.) Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea straminicephala*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea tardiflora*** Wagenitz [Compositae] *12840*
R *12840* Turkey *12840*

E ***Centaurea tchihatcheffii*** Fisch. & Mey. [Compositae] *12840*
E *12840* Turkey *12840*

R ***Centaurea tossiensis*** Freyn & Sint. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea vermiculigera*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

V ***Centaurea wagenittzii*** Hub.-Mor. [Compositae] *12840*
V *12840* Turkey *12840*

R ***Centaurea wiedemanniana*** Fisch. & Mey. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Centaurea woronowii*** Bornm. [Compositae] *12840*
R *12840* Turkey *12840*

V ***Centaurea zeybekii*** Wagenitz [Compositae] *12840*
V *12840* Turkey *12840*

I ***Centaurea zlatarskyana*** Urum. & J.Wagner

[Compositae] *20171*
I Bulgaria

R ***Centaurium serpenticola*** **A. Carltrom**
[Gentianaceae] *12840*
R *12840* Turkey *12840*

R ***Centranthus kellererii*** **(Stoj. Stef. et Georg.) Stoj. et Stef. [Valerianaceae]** *19709*
R *19709* Bulgaria *19709*

R II ***Cephalanthera kotschyana*** **Renz & Taub.**
[Orchidaceae] *12840*
R *19873* Turkey *12840*

R ***Cephalaria amana*** **Rech. fil. [Dipsacaceae]** *12840*
R *12840* Turkey *12840*

I ***Cephalaria calcarea*** **Albov [Dipsacaceae]**
I former USSR *6930*

R ***Cephalaria dirmilensis*** **Hub.-Mor.**
[Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Cephalaria elmaliensis*** **Hub.-Mor.**
[Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Cephalaria hakkiarica*** **Matthews [Dipsacaceae]** *12840*
R *12840* Turkey *12840*

R ***Cephalaria isaurica*** **Matthews [Dipsacaceae]** *12840*
R *12840* Turkey *12840*

I ***Cephalaria litvinovii*** **Bobrov [Dipsacaceae]** *5942, 20171*
I *5942* Russia (E.Europe) - South *5942*

R ***Cephalaria lycica*** **Matthews [Dipsacaceae]** *12840*
R *12840* Turkey *12840*

R ***Cephalaria paphlagonica*** **Bobrov [Dipsacaceae]** *12840*
R *12840* Turkey *12840*

I ***Cephalaria salicifolia*** **Post [Dipsacaceae]** *12840*
I *12840* Turkey *12840*

I ***Cephalaria scoparia*** **Contandr. ex Quezel**
[Dipsacaceae] *12840*
I *12840* Turkey *12840*

R ***Cephalaria sparsipilosa*** **Matthews**
[Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Cephalaria taurica*** **Szabo [Dipsacaceae]** *12840*
R *12840* Turkey *12840*

R ***Cerastium araraticum*** **Rupr. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Cerastium dominici*** **Kit Tan & R. Mill**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Cerastium haussknechtii*** **Boiss.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Cerastium krylovii*** **Schischk. & Gortschak.**
[Caryophyllaceae]
R former European USSR

R ***Cerastium macranthum*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Cerastium pisidicum*** **Ayasligil & Kit Tan**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Cerastium saccardoanum*** **Dirat**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Cerasus erzincanica*** **Yildirimli [Rosaceae]** *20618*
R *20618* Turkey *20618*

R ***Cerasus hippophaeoides*** **[Rosaceae]** *20618*
R *20618* Turkey *20618*

I ***Ceratophyllum tanaiticum*** **Sapjegin**
[Ceratophyllaceae] *8000, 20171*
I *11552* Russian Federation (western) *11552*

R ***Chaerophyllum hakkiaricum*** **Hedge & Lamond**
[Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Chaerophyllum karsianum*** **Kit Tan ex Ocakverdi**
[Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Chamaecytisus anatolicus*** **[Leguminosae]** *20618*
R *20618* Turkey *20618*

R ***Chamaecytisus blockianus*** **(Pawl.) Klásk.**
[Leguminosae] *8000, 20171*
R former European USSR *8000*

R ***Chamaecytisus cassius*** **(Boiss.) Rothm.**
[Leguminosae] *12840*
R *20618* Turkey *20618*

R ***Chamaecytisus kovacevii*** **(Velen.) Rothm.**
[Leguminosae] *5204, 20171*
R *5204* Bulgaria (north) *5204*

E ***Chamaecytisus nejceffii*** **(Urum.) Rothm.**
[Leguminosae] *8000, 20171*
E Bulgaria *19847*

R ***Chamaecytisus paczoskii*** **(V.I.Krecz.) Klásk.**
[Leguminosae] *8000, 20171*
R former European USSR *8000*

R ***Chamaecytisus podolicus*** **(Blocki) Klásk.**
[Leguminosae] *8000, 20171*
R former European USSR *8000*

R ***Chamaecytisus skrobiszewskii*** **(Pacz.) Klásk.**
[Leguminosae] *8000, 20171*
R former European USSR *8000*

R ***Chesneya elegans*** **Fomin [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Chionodoxa forbesii*** **Baker [Hyacinthaceae]** *12840*
R *19873* Turkey *12840*

V ***Chionodoxa luciliae*** **Boiss. [Hyacinthaceae]** *12840*
V *12840* Turkey *12840*

V ***Chionodoxa sardensis*** **Whittall ex Barr & Sugden**
[Hyacinthaceae] *12840*
V *12840* Turkey *12840*

R ***Chondrilla spinosa*** **Lamond et Matthews**
[Compositae] *12840*
R *12840* Turkey *12840*

R ***Chronanthus orientalis*** **(lois) Heywood et Frodin**
[Leguminosae] *19873*
R *20618* Turkey *20618*

V ***Chrysochamela draboides*** **Woronow [Cruciferae]** *20171*
V former European USSR

R ***Chrysochamela noeana*** **(Boiss.) Boiss.**
[Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Chrysophthalmum dichotomum*** **Boiss. & Heldr.**

[Compositae] *12840*
R *12840* Turkey *12840*

R ***Cicer echinospermum*** Davis [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Cicer floribundum*** Fenzl [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Cicer isauricum*** Davis [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Cicer reticulatum*** Ladizinsky [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Cicerbita brevirostris*** (Schu.-Bip.exVis.&Panc) C. Jeffr [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium aduncum*** Fisch. & Mey. ex DC. ssp. ***bashkalense*** Davis & Parris [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium alatum*** (Gmelin) Bobrov ssp. ***pseudocreticum*** Davis & Parris [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium baytopae*** P.H.Davis & Parris [Compositae] *12840, 20171*
R *12840* Turkey *12840*

R ***Cirsium boluense*** Davis & Parris [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium cassium*** Davis & Parris [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium davisianum*** Kit Tan & Sorger [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium eliasianum*** Kit Tan & Sorger [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium ellenbergii*** Bornm. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium hakkiaricum*** Davis & Parris [Compositae] *12840*
R *12840* Turkey *12840*

R ***Cirsium poluninii*** Davis & Parris [Compositae] *12840*
R *12840* Turkey *12840*

Cirsium polycephalum DC. [Compositae] *12840, 20171*
V *12840* Turkey *12840*

Cirsium pubigerum (Desf.) DC. var. ***paphlabonicum*** Petrak [Compositae] *12840*
R *12840* Turkey *12840*

Cirsium simplex C.A. Meyer ssp. ***satdaghense*** Davis & Parris [Compositae] *12840*
R *12840* Turkey *12840*

Cirsium sipyleum O. Schwarz [Compositae] *12840*
R *12840* Turkey *12840*

Clypeola ciliata Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

Clypeola raddeana Albow [Cruciferae] *12840*
I *12840* Turkey *12840*

Cochlearia amana Contandr. & Quezel [Cruciferae] *12840*
R *12840* Turkey *12840*

Colchicum baytopiorum C.D. Brickel [Colchicaceae] *12840*
R *12840* Turkey *12840*

V ***Colchicum borisii*** Stef. [Colchicaceae] *8000, 20171*
V *5204* Bulgaria (South Bulgaria - one site only.) *5204*

R ***Colchicum bornmuelleri*** Freyn [Colchicaceae] *12840*
R *12840* Turkey *12840*

V ***Colchicum davidovii*** Stef. [Colchicaceae] *8000, 20171*
V *5204* Bulgaria (east) *5204*

R ***Colchicum diampolis*** Delip. et Ceschm. [Colchicaceae] *5204, 20171*
R *5204* Bulgaria (east) *5204*

V ***Colchicum micranthum*** Boiss. [Colchicaceae] *12840, 20171*
V *19873* Turkey (Istanbul) *12840*

R ***Colchicum rhodopaeum*** Kov. [Colchicaceae] *5204, 20171*
R *5204* Bulgaria (Southern Bulgaria - one site only .) *5204*

R ***Colutea melanocalyx*** Boiss. & Heldr. ssp. ***melanocalyx*** [Leguminosae] *12840*
R *20618* Turkey *20618*

R ***Conioselinum boreale*** Schischk. [Umbelliferae] *20171*
R former USSR *6930*

R ***Conioselinum victoris*** Schischkin [Umbelliferae]
R former USSR *6930*

R ***Conringia grandiflora*** Boiss. & Heldr. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Consolida armeniaca*** (Stapf ex Huth) Schrod. [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Consolida cornuta*** (Davis & Hossain) Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

I ***Consolida cruciata*** (Davis & Hossain) Davis [Ranunculaceae] *12840*
I *12840* Turkey *12840*

R ***Consolida lineolata*** Huber-Mor. & Simon [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Consolida olopetala*** (Boiss.) Hayek [Ranunculaceae] *12840, 20171*
R *12840* Turkey *12840*

R ***Consolida staminosa*** Davis & Sorger [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Consolida stapfiana*** Davis & sorger [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Convolvulus holosericeus*** Bieb. ssp. ***macrocalycinus*** Hausskn. & Bornm. ex Bornm. [Convolvulaceae] *12840*
R *12840* Turkey *12840*

R ***Convolvulus phrygius*** Bornm. [Convolvulaceae] *12840*
R *12840* Turkey *12840*

V ***Convolvulus pulvinatus*** Sa'ad [Convolvulaceae] *12840*
V *12840* Turkey *12840*

R ***Corispermum algidum*** Iljin [Chenopodiaceae] *8000, 20171*
R former European USSR *8000*

R ***Corydalis rutifolia*** (Sibth. & Sm.) DC. ssp. ***kurdica***

Cullen & Davis [Papaveraceae] *12840*
R *12840* Turkey *12840*

V ***Corydalis sewerzowii*** **Regel [Papaveraceae]**
V former USSR *6930*

R ***Corydalis solida*** **(L.) Swartz ssp.** ***tauricola*** **Cullen & Davis [Papaveraceae]** *12840*
R *12840* Turkey *12840*

R ***Cotoneaster tauricus*** **Pojark. [Rosaceae]** *20171*
R former European USSR

R ***Cousinia agelocephala*** **Tscherneva [Compositae]**
R former USSR *6930*

R ***Cousinia androssovii*** **Juz. [Compositae]**
R former USSR *6930*

R ***Cousinia aucheri*** **DC. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia cataonica*** **Boiss. & Hausskn. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia cirsioides*** **Boiss. & Bal. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia davisiana*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia decolorans*** **Freyn & Sint. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia eleonorae*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia ermenekensis*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia euphratica*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia hakkarica*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

V ***Cousinia halysensis*** **Hub.-Mor. [Compositae]** *12840*
V *12840* Turkey *12840*

V ***Cousinia intertexta*** **Freyn & Sint. [Compositae]** *12840*
V *12840* Turkey *12840*

R ***Cousinia margiana*** **Juz. [Compositae]**
R former USSR *6930*

R ***Cousinia nabelekii*** **Bornm. [Compositae]** *12840*
R *12840* Turkey *12840*

E ***Cousinia platystegia*** **Tscherneva [Compositae]**
E former USSR *6930*

E ***Cousinia pseudolanata*** **Popov & Tscherneva [Compositae]**
E former USSR *6930*

R ***Cousinia satdagensis*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia sintenisii*** **Freyn [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia sivasica*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia vanensis*** **Hub.-Mor. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Cousinia woronowii*** **Bornm. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Crambe tataria*** **Sebeok var.** ***parviflora*** **(H.-Mor. Reese) Hedge & H.-Mor. Reese [Cruciferae]** *12840*
R *12840* Turkey *12840*

V ***Crataegus aronia*** **(L.) Bosc. var.** ***dentata*** **Browicz [Rosaceae]** *12840*
V *20618* Turkey *20618*

R ***Crataegus aronia*** **(L.) Bosc. var.** ***minuta*** **Browicz [Rosaceae]** *12840*
R *20618* Turkey *20618*

R ***Crataegus davisii*** **Browicz [Rosaceae]** *12840*
R *20618* Turkey *20618*

I ***Crataegus dikmensis*** **Pojark [Rosaceae]** *12840*
I *20618* Turkey *20618*

R ***Crataegus karadaghensis*** **Pojark. [Rosaceae]** *20171*
R former European USSR

I ***Crataegus pojarkovae*** **Kossych [Rosaceae]** *5942, 20171*
I *5942* Ukraine - Crimea *5942*

R ***Crataegus ucrainica*** **Pojark. [Rosaceae]** *20171*
R former European USSR

R ***Crepis amanica*** **Bobcock [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Crepis aurea*** **(L.) Cass. ssp.** ***olympica*** **(C. Koch) Lamond [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Crepis bithynica*** **Boiss. [Compositae]** *5204, 20171*
R *5204* Bulgaria (Southern - two sites) *5204*

R ***Crepis hakkarica*** **Lamond [Compositae]** *12840*
R *12840* Turkey *12840*

V ***Crocus abatensis*** **T. Baytop & Mathew [Iridaceae]** *12840*
V *14155* Turkey (L. Abant in Bolu) *12840*

R ***Crocus adanensis*** **T. Baytop & Mathew [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus aerius*** **Herbert [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus asumaniae*** **Mathew [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus baytopiorum*** **Mathew [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus biflorus*** **Miller ssp.** ***artvinensis*** **(J. Phill.) Mathew [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus cancellatus*** **Herbert ssp.** ***cancellatus*** **[Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus cancellatus*** **Herbert ssp.** ***lycius*** **Mathew [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus cancellatus*** **Herbert ssp.** ***pamphylicus*** **Mathew [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus flavus*** **Meston ssp.** ***dissectus*** **T. Baytop & Mathew [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus gargaricus*** **Herbert [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Crocus karduchorum*** **Kotschy ex Maw [Iridaceae]** *12840*
R *12840* Turkey *12840*

Iridaceae: *Crocus*

R *Crocus kotschyanus* C. Koch. ssp. *cappadocicus* Mathew [Iridaceae] *12840*
R *12840* Turkey *12840*

R *Crocus kotschyanus* C. Koch. ssp. *hakkariensis* Mathew [Iridaceae] *12840*
R *12840* Turkey *12840*

R *Crocus leichtlinii* (D. Dewar) Bowles [Iridaceae] *12840*
R *12840* Turkey *12840*

V *Crocus olivieri* Gay ssp. *istanbulensis* Mathew [Iridaceae] *12840*
V *12840* Turkey *12840*

V *Crocus pestalozzae* Boiss. [Iridaceae] *12840, 20171*
V *19873* Turkey *12840*

R *Crocus reticulatus* Steven ex Adams ssp. *hittiticus* (T. Baytop & Mathew) Mathew [Iridaceae] *12840*
R *12840* Turkey *12840*

R *Crocus sieheanus* Barr ex Burtt [Iridaceae] *12840*
R *12840* Turkey *12840*

R *Crocus speciosus* Bieb. ssp. *ilgazensis* Mathew [Iridaceae] *12840*
R *12840* Turkey *12840*

R *Crocus speciosus* Bieb. ssp. *xantholaimos* Mathew [Iridaceae] *12840*
R *12840* Turkey *12840*

R *Crucianella sorgerae* Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R *Cruciata mixta* Ehrend. ex Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

V *Cuscuta obtusata* (Engilmann) Trabut [Convolvulaceae] *12840*
V *12840* Turkey *12840*

R *Cyathobasis fruticulosa* (Bunge) Aellen [Chenopodiaceae] *12840*
R *12840* Turkey *12840*

II *Cyclamen cilicicum* Boiss. & Heldr. [Primulaceae] *12840*
V *12840* Turkey (S. Anatolia) *12840*

II *Cyclamen intaminatum* (Meikle) Grey-Wilson [Primulaceae] *15934*
V *19873* Turkey (WC & WS) *15934*

Cyclamen kuznetzovii Kotov & Czernova [Primulaceae] *21389*
E *20655* Ukraine - Crimea *5942*

II *Cyclamen mirabile* Hildebr. [Primulaceae] *15934*
V *14071* Turkey (south-west Anatolia) *8619*

II *Cyclamen pseudibericum* Hildebr. [Primulaceae] *12840*
I *15934* Turkey (South, Amanus and Anti-Taurus) *12840*

II *Cyclamen trochopteranthum* Schwarz [Primulaceae] *12840*
V Turkey (SW Anatolia) *15934*

Cyclotrichium glabrescens (Bois.& Kot. & Rech. f.) Leb. [Labiatae] *12840*
R *12840* Turkey *12840*

Cymbocarpum amanum Rech. f. [Umbelliferae] *12840*
R *12840* Turkey *12840*

Cyperus melanorrhyncha Nelmes [Cyperaceae] *12840*
R *12840* Turkey *12840*

I *Cyperus noeanus* Boiss. [Cyperaceae] *12840*
I *12840* Turkey *12840*

R *Cytisus acutangulus* Jaub & Spach [Leguminosae] *12840*
R *20618* Turkey *20618*

E II *Dactylorhiza chuhensis* Renz & Taub. [Orchidaceae] *12840*
E *12840* Turkey *12840*

R II *Dactylorhiza nieschalkiorum* H. Bauumann & Kunk. [Orchidaceae] *12840*
R *19873* Turkey *12840*

R II *Dactylorhiza osmanica* (KI.) Soo var. *anatolica* (Nelson) Renz & Taub. [Orchidaceae] *12840*
R *12840* Turkey *12840*

E *Daphne baksanica* Pobed. [Thymelaeaceae] *5942*
E *11552* Russia - North Caucasus *11552*

I *Daphne sophia* Kalen. [Thymelaeaceae] *5942, 20171*
I *5942* Ukraine *5942*

R *Delphinium anatolicum* Misirdali et al. [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium bithynicum* Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium cilicicum* Davis & Kit Tan [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium cinereum* Boiss. [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium cyphoplectrum* Boiss. var. *vanense* (Rech.) Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium dolichostachyum* Chowdhuri & Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium ilgazense* Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium munzianum* Davis & Kit Tan [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R *Delphinium nydeggeri* Huber-Mor. [Ranunculaceae] *12840*
R *12840* Turkey *12840*

V *Delphinium puniceum* Pall. [Ranunculaceae] *20171*
V *11552* Russian Federation (Caucasus, west) *11552*

R *Delphinium queneri* Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

I *Dendranthema sinuatum* (Ledeb.) Tsvelev [Compositae] *5942*
I *5942* Russia (Siberia) - Altai *5942*
I *5942* Russia (Siberia) - Tuva *5942*

I *Deschampsia turczaninowii* Litv. [Gramineae] *5942*
I *5942* Russia (Siberia) - Irkutsk (L. Baikal) *5942*

I *Dianthus andronakii* Woron. ex Schischk. [Caryophyllaceae] *12840*
I *12840* Turkey *12840*

R *Dianthus brevicaulis* Fenzl var. *setaceus* Reeve [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Dianthus cibrarius*** **Clem. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus eldivenus*** **Czecz. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus elegans*** **Urv. var. *actinopetalus*** **(Fenzl) Reeve [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus engleri*** **Hausskn. & Bornm. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus eretmopetalus*** **Stapf [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus erinaceus*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus goerkii*** **Hartvig & Strid [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

I ***Dianthus hypanicus*** **Andrz. [Caryophyllaceae]** *5942, 20171*
I *5942* Ukraine (west) *5942*

R ***Dianthus lanceolatus*** **Steven ex Rchb. [Caryophyllaceae]** *8000, 20171*
R former European USSR *8000*

R ***Dianthus muschianus*** **Kotschy & Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus recognitus*** **Schischk. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus robustus*** **Boiss. & Kotschy [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus sessiliflorus*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dianthus zederbaueri*** **Vierh. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Dionysia teucroides*** **Davis & Wendelbo [Primulaceae]** *12840*
R *12840* Turkey *12840*

I ***Dioscorea caucasica*** **Lipsky [Dioscoreaceae]** *5942*
I *5942* Georgia *5942*

V ***Dipsacus cephalarioides*** **Matthews & Kupicha [Dipsacaceae]** *12840*
V *12840* Turkey *12840*

R ***Doronicum balansae*** **Cavill. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Doronicum bithynicum*** **Edmondson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Doronicum cacaliifolium*** **Boiss. & Heldr. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Doronicum haussknechtii*** **Cavill. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Doronicum macrolepis*** **Freyn & Sint. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Doronicum reticulatum*** **Boiss. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Doronicum tobeyi*** **J.R. Edmondson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Dorycnium amani*** **Zohary [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Dorycnium axilliflorum*** **Huber-Mor. [Leguminosae]** *12840*
R *12840* Turkey *12840*

V ***Dorycnium sanguineum*** **Vural [Leguminosae]** *12840*
V *12840* Turkey *12840*

R ***Dorystaechas hastata*** **Boiss. et Heldr ex Bentham [Labiatae]** *20618*
R *20618* Turkey *19873*

R ***Draba acaulis*** **Boiss. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Draba bruniifolia*** **Stev. ssp. *armeniaca*** **Coode & Cullen [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Draba cuspidata*** **M.Bieb. [Cruciferae]** *20171*
R former European USSR

R ***Draba elegans*** **Boiss. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Draba thylacocarpa*** **(Nab.) Hedge [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus barbigera*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus boissieri*** **Barber [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus bourgaei*** **Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus cappadocica*** **Hausskn. & Siehe ex Bornm. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus depressa*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus haussknechtii*** **Bornm. ex Huber-Mor. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus laguroides*** **Boiss. var. *cilicica*** **(Boiss.) Bornm. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus longipes*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus pisidica*** **Huber-Mor. & Reese [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus plumosus*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Ebenus reesei*** **Huber-Mor. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Echinophora carvifolia*** **Boiss. & Bal. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Echinophora chrysantha*** **Freyn & Sint. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Echinophora tirchophylla*** **J.E. Smith [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R *Echinops emiliae* O. Schwarz ex Davis [Compositae] *12840*
R *12840* Turkey *12840*

R *Echinops melitenensis* Hedge & Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

R *Echinops onopordum* Davis [Compositae] *12840*
R *12840* Turkey *12840*

R *Echinops pungens* Trautv. var. *adenoclados* Hedge [Compositae] *12840*
R *12840* Turkey *12840*

R *Echinops vaginatus* Boiss. & Hausskn. [Compositae] *12840*
R *12840* Turkey *12840*

Edraianthus owerinianus Rupr. [Campanulaceae] *5942*
I *5942* Russia - North Caucasus *5942*

R *Elymus clivorum* Melderis [Gramineae] *12840*
R *12840* Turkey *12840*

R *Elymus erosiglumis* Melderis [Gramineae] *12840*
R *12840* Turkey *12840*

R *Elymus lazicus* (Boiss.) Melderis ssp. *lazicus* [Gramineae] *12840*
R *12840* Turkey *12840*

R *Elymus longearistatus* (Boiss.) Tzvelev ssp. *sintenisii* Melderis [Gramineae] *12840*
R *12840* Turkey *12840*

R *Elymus nodosus* (Nevski) Melderis ssp. *gypsecolus* Melderis [Gramineae] *12840*
R *12840* Turkey *12840*

R *Elymus nodosus* (Nevski) Melderis ssp. *platyphyllus* Melderis [Gramineae] *12840*
R *12840* Turkey *12840*

R *Elymus sosnowskyi* (Hackel) Melderis [Gramineae] *12840*
R *12840* Turkey *12840*

Epilobium tundrarum Sam. [Onagraceae] *20171*
R former European USSR (Arctic)

Eragrostis diarrhena (Schult. & Schult.f.) Steud. [Gramineae] *20171*
R former European USSR

Eremogone cephalotes (M. Bieb.) Fenzl [Caryophyllaceae] *5942*
I *5942* Ukraine *5942*

Eremopoa attalica H. Scholz [Gramineae] *12840*
R *12840* Turkey *12840*

Eremopoa mardinensis R. Mill [Gramineae] *12840*
V *12840* Turkey *12840*

Eremosparton aphyllum (Pall.) Fisch. & C.A.Mey. [Leguminosae] *8000, 20171*
V *11552* Russian Federation (Caucasus, west) *11552*

Eremostachys pulchra Popov [Labiatae]
R former USSR *6930*

Erica bocquetii (H. Pesmen) P.F. Stevens [Ericaceae] *12840*
R *20618* Turkey *20618*

Eriosynaphe longifolia (Fisch. ex Spreng.) DC. [Umbelliferae] *11552, 20171*
V *11552* Russian Federation (western) *11552*

E *Erodium beketowii* Schmalh. [Geraniaceae] *20171*
E *20655* Ukraine (south-east) *20649*

R *Erodium cedrorum* Schott & Kotschy s.l. [Geraniaceae] *12840*
R *12840* Turkey *12840*

R *Erodium hakkiaricum* Davis [Geraniaceae] *12840*
R *12840* Turkey *12840*

R *Erodium leucanthum* Boiss. [Geraniaceae] *12840*
R *12840* Turkey *12840*

R *Erodium micropetalutum* Boiss. & Hausskn. ex Boiss. [Geraniaceae] *12840*
R *12840* Turkey *12840*

R *Erodium pelargoniiflorum* Boiss. & Heldr. [Geraniaceae] *12840*
R *12840* Turkey *12840*

R *Erodium sibthorpianum* Boiss. ssp. *sibthorpianum* [Geraniaceae] *12840*
R *12840* Turkey *12840*

V *Erodium somanum* Pesmen [Geraniaceae] *12840*
V *12840* Turkey *12840*

R *Erodium stevenii* M. Bieb. [Geraniaceae] *5942*
R *11552* Russia - North Caucasus *5942*

R *Eryngium bornmuelleri* Nab. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R *Eryngium ilex* Davis [Umbelliferae] *12840*
R *12840* Turkey *12840*

R *Eryngium isauricum* Contandr. ex Quezel [Umbelliferae] *12840*
R *12840* Turkey *12840*

V *Eryngium pseudothoriifolium* Contandr. ex Quezel [Umbelliferae] *12840*
V *12840* Turkey *12840*

R *Eryngium thorifolium* Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

I *Erysimum amasianum* Hausskn. & Bornm. [Cruciferae] *12840*
I *12840* Turkey *12840*

R *Erysimum caricum* Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

R *Erysimum deflexum* Cullen [Cruciferae] *12840*
R *12840* Turkey *12840*

V *Erysimum degenianum* Aznav. [Cruciferae] *12840*
V *19873* Turkey *12840*

R *Erysimum echinellum* Hand.-Mazz. [Cruciferae] *12840*
R *12840* Turkey *12840*

R *Erysimum leptocarpum* Gay [Cruciferae] *12840*
R *12840* Turkey *12840*

R *Erysimum leptostylum* DC. [Cruciferae] *20171*
R former European USSR

R *Erysimum pallidum* Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

V *Erysimum torulosum* Hub.-Mor. [Cruciferae] *12840*
V *12840* Turkey *12840*

R *Erysimum ucranicum* J.Gay [Cruciferae] *20171*
R former European USSR

R *Euonymus latifolius* (L.) Miller ssp. *cauconis* Coode & Cullen [Celastraceae] *12840*
R *20618* Turkey *20618*

R *Euphorbia anacampseros* Boiss. var. *tmolea* M.S.

Khan [Euphorbiaceae] *12840*
R *12840* Turkey *12840*

I ***Euphorbia aristata*** Schmalh. [Euphorbiaceae] *5942*
I *5942* Russia - North Caucasus *5942*

R ***Euphorbia austroanatolica*** Hub.-Mor. & M.S. Khan [Euphorbiaceae] *12840*
R *12840* Turkey *12840*

R ***Euphorbia davisii*** M.S. Khan [Euphorbiaceae] *12840*
R *12840* Turkey *12840*

R ***Euphorbia isaurica*** M.S. Khan [Euphorbiaceae] *12840*
R *12840* Turkey *12840*

R ***Euphorbia pestalozzae*** Boiss. [Euphorbiaceae] *12840*
R *17672* Turkey *12840*

R ***Euphorbia petrophila*** C.A. Meyer var. ***armena*** Boiss. [Euphorbiaceae] *12840*
R *17672* Turkey *12840*

R ***Euphorbia pisidica*** Hub.-Mor. & M.S. Khan [Euphorbiaceae] *12840*
R *17672* Turkey *12840*

R ***Euphorbia rhytidosperma*** Boiss. & Bal. [Euphorbiaceae] *12840*
R *17672* Turkey *12840*

R ***Euphorbia sanasunitensis*** Hand.-Mazz. [Euphorbiaceae] *12840*
R *17672* Turkey *12840*

R ***Euphorbia sclerocyathium*** Korovin & Popov [Euphorbiaceae] *17672*
R *17672* former USSR *6930*

R ***Euphorbia yaroslavii*** Poljakov [Euphorbiaceae] *17672*
R *17672* former USSR *6930*

R ***Euphorbia zhiguliensis*** Prokh. [Euphorbiaceae] *17672, 20171*
R *11552* Russian Federation (western) *11552*

R ***Ferula amanicola*** Huber-Mor. & Pesmen [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Ferula drudeana*** Korovin [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Ferula glaberrima*** Korovin [Umbelliferae]
R former USSR *6930*

V ***Ferula halophila*** H. Pesmen [Umbelliferae] *12840*
V *12840* Turkey *12840*

V ***Ferula huber-morathii*** H. Pesmen [Umbelliferae] *12840*
V *12840* Turkey *12840*

V ***Ferula longipedunculata*** H. Pesmen [Umbelliferae] *12840*
V *12840* Turkey *12840*

R ***Ferula lycia*** Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

I ***Ferula moschata*** (Reinsch) Koso-Polj. [Umbelliferae]
I former Asiatic USSR (Tien Shan) *6930*

R ***Ferula tenuissima*** Huber-Mor. & Pesmen [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Ferulago antiochia*** Saya & Miski [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Ferulago balancheana*** Post [Umbelliferae] *12840*
R *19873* Turkey *12840*

E ***Ferulago bracteata*** Boiss. & Hausskn. [Umbelliferae] *12840*
E *12840* Turkey *12840*

R ***Ferulago isaurica*** H. Pesman [Umbelliferae] *12840*
R *12840* Turkey *12840*

E ***Ferulago kurdica*** Post [Umbelliferae] *12840*
E *12840* Turkey *12840*

R ***Ferulago latiloba*** Schischkin [Umbelliferae] *12840*
R *12840* Turkey *12840*

V ***Ferulago longistylis*** Boiss. [Umbelliferae] *12840*
V *12840* Turkey *12840*

R ***Ferulago muglae*** H. Pesmen [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Ferulago pachyloba*** (Fenzl) Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Ferulago sandrasica*** H. Pesmen & Quezel [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Ferulago silaifolia*** (Boiss.) Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Festuca anatolica*** Markgr.-Dannenb. ssp. ***borealis*** Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca cappadocica*** (Hackel) Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca cataonica*** (Hackel ex Boiss.) Markgr.-Dan. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca cratericola*** Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca cyllenica*** Boiss. & Heldr. ssp. ***uluana*** Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca decolorata*** Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca ilgazensis*** Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca lazistanica*** Alexeev [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca paphlagonica*** (St.-Yves) Markgr.-Dannenb. ssp. ***paphlagonica*** [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca pirinica*** Horvat ex Markgr.-Dann. [Gramineae] *5204, 20171*
R *5204* Bulgaria (south) *5204*

R ***Festuca pontica*** (E. Alekseev) Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca puctoria*** Sm. [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Festuca rubra*** L. ssp. ***pseudorivularis*** Markgr.-Dannenb. [Gramineae] *12840*

R *12840* Turkey *12840*

Festuca woronowii Hackel ssp. ***argaea*** Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

Festuca xenophontis Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

Festuca ziganensis Markgr.-Dannenb. [Gramineae] *12840*
R *12840* Turkey *12840*

Flueggea anatolica Gemici [Euphorbiaceae] *20698*
E *20698* Turkey *20698*

Fritillaria acmopetala Boiss. ssp. ***wendelboi*** Rix [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria alburyana Rix [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria alfredae Post ssp. ***glaucoviridis*** (Turrill) Rix [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria assyriaca Baker ssp. ***melananthera*** Rix [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria aurea Schott [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria carica Rix ssp. ***serpenticola*** Rix [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria fleischeriana Steud. & Hoch. ex Sch.& Sch.f. [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria forbesii Baker [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria michailovskyi Fomin [Liliaceae] *12840*
V *12840* Turkey *12840*

Fritillaria minima Rix [Liliaceae] *12840*
R *12840* Turkey *12840*

Fritillaria pontica Wahlenb. [Liliaceae] *5204, 20171*
R *5204* Bulgaria *5204*

Fritillaria sibthorpiana auct. balcan., non (Sibth. & Sm.) Baker [Liliaceae] *12840, 20171*
R *12840* Turkey *12840*

Fritillaria viridiflora Post [Liliaceae] *12840*
I *12840* Turkey *12840*

Fritillaria whittallii Baker [Liliaceae] *12840*
R *12840* Turkey *12840*

Froriepia gracillima Leute [Umbelliferae] *12840*
R *12840* Turkey *12840*

Fumana trisperma Huber-Mor. & Reese [Cistaceae] *12840*
R *20618* Turkey *20618*

Gagea tenuissima Miscz. [Liliaceae] *12840*
V *12840* Turkey *12840*

II ***Galanthus elwesii*** Hook.f. [Amaryllidaceae] *20171*
I *5942* Ukraine *5942*

Galanthus nivalis L. ssp. ***cilicicus*** (Baker) Gottl.-Tann. [Amaryllidaceae] *21389, 17665*
I *17664* Turkey (South west) *17665*

V II ***Galanthus plicatus*** M. Bieb. ssp. ***byzantinus*** (Baker) D.A. Webb [Amaryllidaceae] *12840*
V *12840* Turkey *12840*

R ***Galatella saxatilis*** Novopokr. [Compositae] *8001*
R former USSR (Tien Shan) *6930*

R ***Galium angustissimum*** (Hausskn. & Bornm.) Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium antitaurica*** Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium aretioides*** Boiss. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium basalticum*** Ehrend. & Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium baytopianum*** Ehrend. & Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium bornmuelleri*** Hausskn. ex Bornm. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium campanelliferum*** Ehrend. & Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium canum*** Reg. ex DC. ssp. ***antalyense*** Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium ceratocarpon*** Boiss. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium cornigerum*** Boiss. & Hausskn. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium diechii*** Bornm. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium exsurgens*** Ehrend. & Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium galiopsis*** (Hand.-Mazz.) Ehrend [Rubiaceae] *12840*
R *12840* Turkey *12840*

V ***Galium globuliferum*** Huber-Mor. & Reese [Rubiaceae] *12840*
V *12840* Turkey *12840*

R ***Galium huber-morathii*** Ehrend. & Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium hypoxylon*** Ehrend. & Schonb.-Tem [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium isauricum*** Ehrend. & Schonb.-Tem. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium lasiocarpum*** Boiss. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium membranaceum*** Ehrend. [Rubiaceae] *12840*
R *12840* Turkey *12840*

R ***Galium olympicum*** auct. ital., non Boiss. [Rubiaceae] *12840, 20171*
R *12840* Turkey *12840*

R ***Galium pamphylicum*** **Boiss. & Heldr. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium papilliferum*** **Ehrend. & Schonb.-Tem. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium parvulum*** **Hub.-Mor. ex Ehre. & Scho.-Tem [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium pseudocapitatum*** **Hub.-Mor. ex Ehrend. & Schonb. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium pterocarpum*** **Ehrend. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium runcinatum*** **Ehrend. & Schonb.-Tem. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium scopulorum*** **Schonb.-Tem. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium setuliferum*** **Ehrend. & Schonb.-Tem. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium siehanum*** **Ehrand. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium sorgerae*** **Ehrend. & Schonb.-Tem [Rubiaceae]** *12840*
R *12840* Turkey *12840*

V ***Galium stojanovii*** **Degen [Rubiaceae]** *8000, 20171*
V *5204* Bulgaria (south-west) *5204*

R ***Galium tmoleum*** **Boiss. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium tolosianum*** **Boiss. & Kotschy [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium tortumense*** **Ehrend. & Schonb.-Tem. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium tubiflorumq*** **Ehrend. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium xylorrhizum*** **Boiss. & Huet [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Galium zabense*** **Ehrend. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Genista burdurensis*** **P. Gibb [Leguminosae]** *12840*
R *20618* Turkey *20618*

Ex/E ***Genista libanotica*** **Boiss. [Leguminosae]** *20618*
Ex/E *20689* Turkey *20618*

R ***Genista lipskyii*** **Novopokr. & Schischkin [Leguminosae]**
R former USSR *6930*

R ***Genista lydia*** **Boiss. var. *antiochia* [Leguminosae]** *20618*
R *20618* Turkey *20618*

R ***Genista sandrasica*** **Hartvig & Strid [Leguminosae]** *12840*
R *20618* Turkey *20618*

I ***Genista tanaitica*** **P.A.Smirn. [Leguminosae]** *8001, 20171*
I *5942* Ukraine *5942*

E ***Genista tetragona*** **Besser [Leguminosae]** *5942, 20171*
E *20655* Ukraine (southern) *20653*

R ***Gentiana boissierii*** **Scott & Kotschy ex Boiss. [Gentianaceae]** *12840*
R *12840* Turkey *12840*

R ***Gentiana dschungarica*** **Regel [Gentianaceae]** *10260*
R former USSR (Turkestan) *6930*

R ***Geranium cinereum*** **Cav var. *elatius* Davis [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Geranium cinereum*** **Cav var. *palmatipartitum* Hausskn. ex Knuth [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Geranium cinereum*** **Cav var. *pisidicum* Pesmen & Guner [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Geranium cinereum*** **Cav var. *ponticum* Davis & Roberts [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Geranium davisianum*** **Pesmen & Guner [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Geranium eginense*** **Hausskn. & Sint ex Knuth [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Geranium glaberrimum*** **Boiss. & Heldr. [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Geranium platipetalum*** **Fisch. & Mey. var. *albipetalum* Erik & Demirkus [Geraniaceae]** *12840*
R *12840* Turkey *12840*

R ***Gladiolus humilis*** **Stapf [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Gladiolus micranthus*** **Stapf [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Glaucium acutidentatum*** **Hausskn. & Bornm. [Papaveraceae]** *12840*
R *12840* Turkey *12840*

R ***Glaucium cappadocicum*** **Boiss. [Papaveraceae]** *12840*
R *12840* Turkey *12840*

V ***Glaucium grandiflorum*** **Boiss. & Huet var. *turquatum* Cullen [Papaveraceae]** *12840*
V *12840* Turkey *12840*

R ***Globularia davisiana*** **O. Schwarz [Globulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Globularia dumulosa*** **O. Schwarz [Globulariaceae]** *12840*
R *12840* Turkey *12840*

E ***Glycyrrhiza iconica*** **Hub.-Mor [Leguminosae]** *17781*
E *17781* Turkey *17781*

R ***Glycyrrhiza korshinskyi*** **Grig. [Leguminosae]** *8000, 20171*
R *11552* Russian Federation (western, western Siberia) *11552*

R ***Gnaphalium leucopilinum*** **Schott & Kotschy ex Boiss. [Compositae]** *12840*
R *12840* Turkey *12840*

V ***Goniolimon graminifolium*** **(Aiton) Boiss. [Plumbaginaceae]** *20171*

V former European USSR

Gonocytisus dirmilensis **Huber-Mor.**
[Leguminosae] *12840*
R *20618* Turkey *20618*

Graellsia davisiana **Poiter [Cruciferae]** *12840*
R *12840* Turkey *12840*

Grammosciadium confertum **Huber-Mor. & Lamond**
[Umbelliferae] *12840*
R *12840* Turkey *12840*

Gymnospermium odessanum **(DC.) Takht.**
[Berberidaceae] *5942*
I *5942* Ukraine *5942*

Gymnospermium smirnowii **(Trautv.) Takht.**
[Berberidaceae] *5942*
I *5942* Ukraine *5942*

Gypsophila adenophylla **Bark.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila aucheri **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

Gypsophila baytopiorum **Kit Tan**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila bitlisensis **Bark.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila brachypetala **Trautv.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila briquetiana **Schischk.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila confertifolia **Huber-Mor.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila curvifolia **Fenzl [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

Gypsophila davisii **Bark. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

Gypsophila festucifolia **Huber-Mor.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila germanicapolitana **Huber-Mor.**
[Caryophyllaceae] *12840*
V *12840* Turkey *12840*

Gypsophila glomerata **auct., non Pall. ex Adams**
[Caryophyllaceae] *12840, 20171*
R *12840* Turkey *12840*

Gypsophila graminifolia **Bark.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila hakkiarica **Kit Tan**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila heteropoda **Freyn & Sint. ssp.** ***minutiflora***
Bark. [Caryophyllaceae] *12840*
I *12840* Turkey *12840*

Gypsophila lepidioides **Boiss.**
[Caryophyllaceae] *12840*
I *12840* Turkey *12840*

Gypsophila leucochlaena **Huber-Mor.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila nodiflora **(Boiss.) Bark.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila oblanceolata **Bark.**
[Caryophyllaceae] *12840*
V *12840* Turkey *12840*

Gypsophila paniculata **L. var.** ***araratica***
Huber-Mor. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila parva **Bark. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

Gypsophila perfiolata **L. var.** ***araratica*** **Kit**
Tan [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila peshmenii **A. Guner**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila pilulifera **Boiss. & Heldr.**
[Caryophyllaceae] *12840*
V *12840* Turkey *12840*

Gypsophila pinifolia **Boiss. & Hausskn.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila simonii **Huber-Mor.**
[Caryophyllaceae] *12840*
V *12840* Turkey *12840*

Gypsophila simulatrix **Bornm. & Woron.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila sphaerocephala **Fenzl ex Tchihat. var.**
syriaca **(Sch.) Huber-Mor. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

Gypsophila tuberculosa **Huber-Mor.**
[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Gypsophila uralensis **Less. ssp.** ***pinegensis*** **(Perf.)**
R. Kam. [Caryophyllaceae] *8001*
R *11552* Russian Federation (north western)
11552

Haberlea rhodopensis **Friv. [Gesneriaceae]** *5204,*
20171
R *5204* Bulgaria (central & south) *5204*

Halosciastrum melanotilingia **(Boiss.) Pim.& Tikhom.**
[Umbelliferae]
I *5942* Russia (Far East) - Primorye *5942*

Haplophyllum cappadocicum **Spach [Rutaceae]** *12840*
R *12840* Turkey *12840*

Haplophyllum megalanthum **Bornm. [Rutaceae]** *12840*
R *12840* Turkey *12840*

Haplophyllum pumiliforme **Huber-Mor. & Reese**
[Rutaceae] *12840*
R *12840* Turkey *12840*

Haplophyllum suaveolens **(DC.) G. Don var.** ***cilicicum***
(Boiss.) C.C. Townsend [Rutaceae] *12840*
R *12840* Turkey *12840*

Haplophyllum vulcanicum **Boiss. & Heldr.**

[Rutaceae] *12840*
R *12840* Turkey *12840*

R ***Hedysarum antitauricum*** **Huber-Mor. & Yurdakulol** [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Hedysarum aucheri*** **Boiss.** [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Hedysarum candidissimum*** **Freyn** [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Hedysarum cretaceum*** **Fisch.** [Leguminosae] *8000, 20171*
R *11552* Russian Federation (south western) *11552*

R ***Hedysarum laxum*** **Boiss.** [Leguminosae] *12840*
R *12840* Turkey *12840*

V ***Hedysarum pycnostachyum*** **Hedge & Huber-Mor.** [Leguminosae] *12840*
V *12840* Turkey *12840*

V ***Hedysarum rotundifolium*** **Boiss. & Noe** [Leguminosae] *12840*
V *12840* Turkey *12840*

R ***Hedysarum ucrainicum*** **Kaschm.** [Leguminosae] *8000, 20171*
R *11552* Russian Federation (western) *11552*

R ***Hedysarum vanense*** **Hedge & Huber-Mor.** [Leguminosae] *12840*
R *12840* Turkey *12840*

I ***Hedysarum zundukii*** **Pesch.** [Leguminosae] *5942*
I *5942* Russia (Siberia) - Irkutsk *5942*

V ***Heldreichia atalayi*** **Kit Tan** [Cruciferae] *12840*
V *12840* Turkey *12840*

R ***Heldreichia bourgaei*** **Boiss.** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Helianthemum antitauricum*** **Davis et Coode** [Cistaceae] *19873*
R *20618* Turkey *20618*

R ***Helichrysum artvinense*** **Davis & Kupicha** [Compositae] *12840*
R *12840* Turkey *12840*

V ***Helichrysum chasmolycicum*** **Davis** [Compositae] *12840*
V *12840* Turkey *12840*

R ***Helichrysum compactum*** **Boiss.** [Compositae] *12840*
R *12840* Turkey *12840*

R ***Helichrysum heywoodianum*** **Davis** [Compositae] *12840*
R *12840* Turkey *12840*

E ***Helichrysum peshmenianum*** **Erik** [Compositae] *12840*
E *12840* Turkey *12840*

R ***Helictotrichon pubescens*** **(Hudson) Besser ex Schult. & Sch.f ssp.** ***longifolia*** **(Boiss.) M. Dogan** [Gramineae] *12840*
R *12840* Turkey *12840*

I ***Heliotropium ferrugineogriseum*** **Nab.** [Boraginaceae] *12840*
I *12840* Turkey *12840*

R ***Heliotropium haussknechtii*** **Bunge** [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Helleborus vesicarius*** **Auch.** [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Heptaptera cilicica*** **(Boiss. & Bal.) Tutin** [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Heracleum argaeum*** **Boiss. & Bal.** [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Heracleum ligusticifolium*** **M.Bieb.** [Umbelliferae] *20171*
R former European USSR

R ***Heracleum paphlagonicum*** **Czecz.** [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Heracleum pastinaca*** **Fenzl** [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Heracleum pesmenianum*** **Ekim** [Umbelliferae] *12840*
R *12840* Turkey *12840*

I ***Heracleum pubescens*** **(Hoffm.) M.Bieb.** [Umbelliferae] *20171*
I former European USSR

R ***Heracleum sphondylium*** **L. ssp.** ***artvinense*** **(Manden.) Davis** [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Herniaria olympica*** **J.Gay** [Illecebraceae] *12840, 20171*
R *12840* Turkey *12840*

R ***Herniaria pisidica*** **Brumm.** [Illecebraceae] *12840*
R *12840* Turkey *12840*

R ***Herniaria saxatilis*** **Brumm.** [Illecebraceae] *12840*
R *12840* Turkey *12840*

R ***Hesperis aintabica*** **Post** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis bottae*** **Fourn.** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis breviscapa*** **Boiss.** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis campicarpa*** **Boiss.** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis hedgei*** **Davis** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis kitiana*** **Davis** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis matronalis*** **L. ssp.** ***cilicica*** **(Siehe ex Bornm.) Cullen** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis pisidica*** **Hub.-Mor.** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis schischkinii*** **Tzvelev** [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Hesperis stellata*** **Dvorak** [Cruciferae] *12840*
R *12840* Turkey *12840*

E ***Hulthemosa guzarica*** **Juzepczuk** [Rosaceae]
E former USSR *6930*

R ***Hyacinthella acutiloba*** **K. Pearson & Wendolbo** [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

R ***Hyacinthella campanulata*** **K. Persson & Wendolbo** [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

R ***Hyacinthella glabrescens*** **(Boiss.) K. Persson & Wendolbo** [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

E *Hyacinthella hispida* (J. Gay) Chouard [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

E *Hyacinthella micrantha* (Boiss.) Chouard [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

Hyacinthella pallasiana (Steven) Losinsk. [Hyacinthaceae] *8000, 20171*
I former European USSR *8000*

E *Hyacinthella siirtensis* Matthew [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

Hyacinthus orientalis L. ssp. *chionophilus* Wendelbo [Hyacinthaceae] *12840*
V *12840* Turkey *12840*

E *Hypericum aviculariifolium* Jaub. & Spach ssp. *byzantinum* (Azn.) Robson [Guttiferae] *12840, 20171*
R *12840* Turkey *12840*

E *Hypericum aviculariifolium* Jaub. & Spach ssp. *byzantium* (Azn.) Robson [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum aviculariifolium* Jaub. & Spach ssp. *uniflorum* (Boiss. & Heldr.) Robson [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum capitatum* Choisy var. *capitatum* [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum crenulatum* Boiss. [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum fissurale* Woron [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum huber-morathii* Robson [Guttiferae] *12840*
R *12840* Turkey *12840*

Hypericum imbricatum Poulter [Guttiferae] *12840*
V *12840* Turkey *12840*

E *Hypericum kotschyanum* Boiss. [Guttiferae] *12840*
R *12840* Turkey *12840*

Hypericum lanuginosum Lam. var. *pestalozzae* (Boiss.) Robson [Guttiferae] *12840*
V *12840* Turkey *12840*

E *Hypericum malatyanum* Pesmen [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum marginatum* Woron [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum minutum* Davis & Poulter [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum monodenum* Robson apud Poulter [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum neurocalycinum* Boiss. & Heldr. [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum olympicum* L. ssp. *auriculatum* Robson & Huber-Mor. [Guttiferae] *12840*
R *12840* Turkey *12840*

E *Hypericum pamphylicum* Robson & Davis [Guttiferae] *12840*
R *12840* Turkey *12840*

V *Hypericum polyphyllum* Boiss. & Bal. ssp. *lycium* Robson & Hub.-Mor. [Guttiferae] *12840*
V *12840* Turkey *12840*

R *Hypericum polyphyllum* Boiss. & Bal. ssp. *polyphyllum* [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum pumilio* Bornm. [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum salsolifolius* Hand.-Mazz. [Guttiferae] *12840*
R *12840* Turkey *12840*

V *Hypericum salsugineum* Robson & Hub.-Mor [Guttiferae] *12840*
V *14197* Turkey *12840*

R *Hypericum saxifragum* Robson & Hub.-Mor [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum scabroides* Robson & Poulter [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum sorgerae* Robson [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum strictum* Maleev [Guttiferae]
R former European USSR (Caucasus) *6930*

R *Hypericum ternatum* Poulter [Guttiferae] *12840*
R *20618* Turkey *20618*

R *Hypericum thymbrifolium* Boiss. & Noe [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum thymopsis* Boiss. [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum uniglandulosum* Hausskn. & Bornm. [Guttiferae] *12840*
R *12840* Turkey *12840*

R *Hypericum vacciniifolium* Hayek & Siehe [Guttiferae] *12840*
R *20618* Turkey *20618*

E *Hyssopus cretaceus* Dubj. [Labiatae] *5942, 20171*
E *20655* Ukraine *5942*

R *Iberis carica* Bornm. [Cruciferae] *12840*
R *12840* Turkey *12840*

R *Inula fragilis* Boiss. & Hausskn. [Compositae] *12840*
R *12840* Turkey *12840*

R *Inula helenium* L. ssp. *vanensis* Grierson [Compositae] *12840*
R *12840* Turkey *12840*

R *Inula macrocephala* Boiss. & Kotschy ex Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R *Inula sarana* Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

V *Inula sechmenii* Hardvig & Strid [Compositae] *12840*
V *12840* Turkey *12840*

R *Iris histrioides* (Wilson) Arnott [Iridaceae] *12840*
R *12840* Turkey *12840*

V *Iris junonia* Schott & Kotschy ex Schott [Iridaceae] *12840*
V *12840* Turkey *12840*

R *Iris kolpakowskiana* Regel [Iridaceae]

R former USSR *6930*

R ***Iris nectarifera*** **A. Guner [Iridaceae]** *12840*
R *12840* Turkey *12840*

R ***Iris pamphylica*** **Hedge [Iridaceae]** *12840*
R *19174* Turkey *12840*

V ***Iris paradoxa*** **Steven [Iridaceae]**
V former USSR (Caucasus) *6930*

R ***Iris purpureobractea*** **B. Mathew & T. Baytop [Iridaceae]** *12840*
R *12840* Turkey *12840*

I ***Iris schelkownikwii*** **(Fomin) Fomin [Iridaceae]**
I former USSR *6930*

V ***Iris sprengeri*** **Siehe [Iridaceae]** *8619*
V *19873* Turkey *8619*

V ***Iris stenophylla*** **Hausskn. & Siehe ex Baker ssp. *allisonii*** **B. Mathew [Iridaceae]** *12840*
V *19873* Turkey *12840*

E ***Iris susiana*** **L. [Iridaceae]** *8934*
E Turkey *8934*

R ***Iris taochia*** **Woronow ex Grossh. [Iridaceae]** *12840*
R *12840* Turkey *12840*

V ***Iris timofejewii*** **Woronow [Iridaceae]** *11552*
V *11552* Russian Federation (Caucasus) *11552*

V ***Iris xanthospuria*** **B. Mathew & T. Baytop [Iridaceae]** *12840*
V *12840* Turkey *12840*

E ***Isatis arenaria*** **Azn. [Cruciferae]** *12840, 20171*
E *19174* Turkey *12840*

Ex ***Isatis arnoldiana*** **N. Busch. [Cruciferae]** *6930*
Ex *6930* former USSR *6930*

R ***Isatis aucheri*** **Boiss. [Cruciferae]** *12840*
R *19174* Turkey *12840*

R ***Isatis bitlisica*** **Davis [Cruciferae]** *12840*
R *19174* Turkey *12840*

R ***Isatis callifera*** **Boiss. & Bal. [Cruciferae]** *12840*
R *19174* Turkey *12840*

R ***Isatis candolleana*** **Boiss. [Cruciferae]** *12840*
R *19174* Turkey *12840*

R ***Isatis cappadocica*** **Desv. ssp. *alyssifolia*** **(Boiss.) Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis cappadocica*** **Desv. ssp. *nurihakensis*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis constricta*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

E ***Isatis davisiana*** **Misirdali [Cruciferae]** *12840*
E *12840* Turkey *12840*

R ***Isatis demiriziana*** **Misirdali [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis erzurumica*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis frigida*** **Boiss. & Kotschy [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis huber-morathii*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis lockmanniana*** **Kotschy & Boiss. [Cruciferae]** *12840*
R *19174* Turkey *12840*

V ***Isatis mardinensis*** **Davis & Misirdali [Cruciferae]** *12840*
V *12840* Turkey *12840*

E ***Isatis pinnatiloba*** **Davis [Cruciferae]** *12840*
E *19174* Turkey *12840*

R ***Isatis sivasica*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis spatella*** **Davis [Cruciferae]** *12840*
R *19174* Turkey *12840*

R ***Isatis spectabilis*** **Davis [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Isatis undulata*** **Aucher ex Boiss. [Cruciferae]** *12840*
R *19873* Turkey *12840*

I ***Isoetes beringensis*** **Komarov [Isoetaceae]** *5942*
I *5942* Russia (Far East) - Kamchatka (Komandorskije) *5942*

R ***Jasione bulgarica*** **Stoj. & Stef. [Campanulaceae]** *19709, 20171*
R *19709* Bulgaria *19709*

E ***Jasione heldreichii*** **Boiss. & Orph var. *papillosa*** **J. Parnel [Campanulaceae]** *12840*
E *12840* Turkey *12840*

R ***Jasione idaea*** **Stoy. [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Jasione supina*** **Sieber ssp. *akmanii*** **Damboldt [Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Jasione supina*** **Sieber ssp. *supina*** **[Campanulaceae]** *12840*
R *12840* Turkey *12840*

R ***Jasione supina*** **Sieber ssp. *tmolea*** **(Stoj.) Damboldt [Campanulaceae]** *12840*
R *12840* Turkey *12840*

V ***Johrenia polyscias*** **Bornm. [Umbelliferae]** *12840*
V *12840* Turkey *12840*

R ***Johrenia silenoides*** **Boiss. & Bal. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

I ***Juncus arianus*** **Krecz. [Juncaceae]**
I former USSR *6930*

R ***Jurinea brevicaulis*** **Boiss. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Jurinea elegantissima*** **Iljin [Compositae]**
R former USSR *6930*

I ***Jurinea karatavica*** **Iljin [Compositae]**
I former USSR *6930*

R ***Jurinea lydiae*** **Iljin [Compositae]**
R former USSR *6930*

E ***Kalidiopsis wagenitzii*** **Aellen [Chenopodiaceae]** *12840*
E *12840* Turkey *12840*

R ***Kitaibelia balansae*** **Boiss. [Malvaceae]** *12840*
R *12840* Turkey *12840*

E ***Knautia tatarica*** **(L.) Szabó [Dipsacaceae]** *20171*
E former European USSR

R ***Kundmannia anatolica*** **Huber-Mor. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

Kundmannia syriaca Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

Lactuca mira Pavlov [Compositae] *8001*
R former Asiatic USSR (Tien Shan) *6930*

Lagoseris purpurea (Willd.) Boiss. [Compositae] *5942, 20171*
E *20655* Ukraine - Crimea *5942*

Lagotis uralensis Schischk. [Scrophulariaceae] *20171*
R former European USSR

Lamium armenum Boiss. ssp. *sintenisii* R. Mill. [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium cymbalariifolium Boiss. [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium eriocephalum Bentham [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium garganicum L. ssp. *nepetifolium* (Boiss.) R. Mill [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium garganicum L. ssp. *pulchrum* R. Mill. [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium glandulosidens Hub.-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium lycium Boiss. [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium microphyllum Boiss. [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium pisidicum R. Mill [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium purpureum L. var. *aznavourii* Gand. ex Aznav. [Labiatae] *12840*
E *12840* Turkey *12840*

Lamium sandrasicum Davis [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium sulphureum Hausskn. & Sint. ex R. Mill [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium tenuiflorum Fisch. & Mey. [Labiatae] *12840*
R *12840* Turkey *12840*

Lamium veronicifolium Bentham [Labiatae] *12840*
R *12840* Turkey *12840*

Lamyropsis lycia Kupicha [Compositae] *12840*
R *12840* Turkey *12840*

Lappula echinophora (Pall.) Kuntze [Boraginaceae] *20171*
R former European USSR

Lappula glabrata Popov [Boraginaceae]
R former USSR *6930*

Laserpitium carduchorum Hedge & Lamond [Umbelliferae] *12840*
R *12840* Turkey *12840*

Lathyrus bitlisicus Pesmen [Leguminosae] *12840*
R *12840* Turkey *12840*

Lathyrus cilicicus Hayek & Siehe [Leguminosae] *12840*
R *12840* Turkey *12840*

Lathyrus cyaneus (Stev.) Koch var. *pinnatus* Davis [Leguminosae] *12840*
R *12840* Turkey *12840*

Ex *Lathyrus dominianus* Litv. [Leguminosae] *6930*
Ex *6930* former USSR *6930*

R *Lathyrus kersianus* Davis [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Lathyrus layardii* J. Ball ex Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

V *Lathyrus lycius* Boiss. [Leguminosae] *12840*
V *12840* Turkey *12840*

V *Lathyrus phaselitanus* Huber-Mor. & Davis [Leguminosae] *12840*
V *12840* Turkey *12840*

R *Lathyrus satdaghensis* Davis [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Lathyrus stenolobus* Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Lathyrus tauricola* Davis [Leguminosae] *12840*
R *12840* Turkey *12840*

I *Lathyrus trachycarpus* (Boiss.) Boiss. [Leguminosae] *12840*
I *12840* Turkey *12840*

R *Lathyrus undulatus* Boiss. [Leguminosae] *12840, 20171*
R *12840* Turkey *12840*

I *Ledebouriella seseloides* (Hoffmann) H. Wolff [Umbelliferae]
I former USSR *6930*

V *Lepidium caespitosum* Desv. [Cruciferae] *12840*
V *12840* Turkey *12840*

R *Lepidium turczaninowii* Lipsky [Cruciferae] *20654*
R *20650* Ukraine - Crimea *8001*

I *Leptopus colchicus* (Fischer & C. Meyer) Pojark. [Euphorbiaceae] *5942*
I *5942* Georgia *5942*

R *Lilium carniolicum* Bernh. ex W. Koch var. *artvinense* (Miscz.) Davis & Henderson [Liliaceae] *12840*
R *12840* Turkey *12840*

I *Lilium caucasicum* (Miscz. ex Grossh.) Grossh. [Liliaceae] *5942*
I *5942* Russia - North Caucasus *5942*

V *Lilium ciliatum* Davis [Liliaceae] *12840*
V *12840* Turkey *12840*

R *Limoniopsis davisii* BKokhari [Plumbaginaceae] *12840*
R *12840* Turkey *12840*

V *Limonium anatolicum* Hedge [Plumbaginaceae] *12840*
V *12840* Turkey *12840*

V *Limonium asterotrichum* (C.E.Salmon) C.E.Salmon [Plumbaginaceae] *8000, 20171*
V *5204* Bulgaria (central) *5204*

V *Limonium effusum* (Boiss.) O. Kuntz [Plumbaginaceae] *12840*
V *12840* Turkey *12840*

V *Limonium iconicum* (Boiss. & Heldr.) O. Kuntze [Plumbaginaceae] *12840*
V *12840* Turkey *12840*

V *Limonium lilacinum* (Boiss. & Bal.) Wagenitz [Plumbaginaceae] *12840*

V *12840* Turkey *12840*

I ***Limonium pycnanthum*** **(C. Koch) O. Kuntze [Plumbaginaceae]** *12840*
I *12840* Turkey *12840*

V ***Limonium tamaricoides*** **Bokhari [Plumbaginaceae]** *12840*
V *12840* Turkey *12840*

R ***Limonium vanense*** **Kit Tan & Sorger [Plumbaginaceae]** *12840*
R *12840* Turkey *12840*

I ***Linaria biebersteinii*** **Besser [Scrophulariaceae]** *20171*
I former European USSR

R ***Linaria chalapensis*** **(L.) Miller var. *brevicalyx* Davis [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

V ***Linaria cretacea*** **Fisch. ex Spreng. [Scrophulariaceae]** *20171*
V former European USSR

R ***Linaria genistifolia*** **(L.) Miller ssp. *polyclada* (Fenzl) Davis [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Linaria kurdica*** **Boiss. & Hohen ssp. *eriocalyx* (Boiss.) Davis [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

Ex ***Lindelofia angustifolia*** **(Schrenk) A. Brand. [Boraginaceae]** *6930*
Ex *6930* former USSR *6930*

R ***Linum anisocalyx*** **Davis [Linaceae]** *12840*
R *12840* Turkey *12840*

R ***Linum aretioides*** **Boiss [Linaceae]** *12840*
R *12840* Turkey *12840*

R ***Linum boissieri*** **Asch. & Sint. ex Boiss. [Linaceae]** *12840, 20171*
R *12840* Turkey *12840*

R ***Linum ciliatum*** **Hayek [Linaceae]** *12840*
R *12840* Turkey *12840*

R ***Linum elegans*** **Spruner ex Boiss. [Linaceae]** *5204, 20171*
R *5204* Bulgaria (south-west three sites) *5204*

R ***Linum empetrifolium*** **(Boiss.) Davis [Linaceae]** *12840*
R *12840* Turkey *12840*

R ***Linum hirsutum*** **L. ssp. *oreocaricum* Davis [Linaceae]** *12840*
R *12840* Turkey *12840*

V ***Linum hirsutum*** **L. var. *platyphyllum* Davis [Linaceae]** *12840*
V *12840* Turkey *12840*

R ***Linum mucronatum*** **Bertol var. *gypsiocola* [Linaceae]** *12840*
R *12840* Turkey *12840*

R ***Linum mucronatum*** **Bertol var. *papilliferum* (Huber-Mor. & Reese) Davis [Linaceae]** *12840*
R *12840* Turkey *12840*

R ***Linum pamphylicum*** **(Boiss.) Podp. [Linaceae]** *12840*
R *12840* Turkey *12840*

R ***Linum pycnophullum*** **Boiss. & Heldr. ssp. *kurdicum* Davis [Linaceae]** *12840*
R *12840* Turkey *12840*

E ***Linum tauricum*** **Willd. ssp. *bosphori* Davis [Linaceae]** *12840*
E *12840* Turkey *12840*

R ***Linum triflorum*** **Davis [Linaceae]** *12840*
R *12840* Turkey *12840*

E ***Liquidambar orientalis*** **Miller var. *integriloba* Fiori [Hamamelidaceae]** *12840*
E *20618* Turkey *20618*

R ***Lonicera nummulariifolia*** **Jaub. & Spach ssp. *glandulifera* (Huber-Mor.) Chamb. [Caprifoliaceae]** *12840*
R *20618* Turkey *20618*

R ***Lotus armeniacus*** **Kit Tan & Sorger [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Luzula deflexa*** **Kozuharov [Juncaceae]** *5204, 20171*
R *5204* Bulgaria (central & west) *5204*

R ***Malope anatolica*** **Huber-Mor. [Malvaceae]** *12840*
R *12840* Turkey *12840*

V ***Malus sylvestris*** **Mill. var. *microphylla* Browicz [Rosaceae]** *12840*
V *12840* Turkey *12840*

R ***Marrubium bourgaei*** **Boiss. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Marrubium globosum*** **Montbret & Aucher ex Bentham ssp *micranthum* (Boiss. & Heldr.) Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Marrubium vanense*** **Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Marrubium vulcanicum*** **Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Matthiola anchoniifolia*** **Hub.-Mor. [Cruciferae]** *12840*
R *12840* Turkey *12840*

V ***Medicago cancellata*** **M.Bieb. [Leguminosae]** *8000, 20171*
V *11552* Russian Federation (Caucasus & west) *20628*

R ***Medicago rhodopea*** **Velen. [Leguminosae]** *5204, 20171*
R *5204* Bulgaria (mainly southern and eastern - eight sites) *5204*

R ***Medicago shepardii*** **Post ex Boiss. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Megacarpaea schugnanica*** **B. Fedtsch. [Cruciferae]**
R former USSR *6930*

R ***Melampyrum arvense*** **L. var. *elatius* Boiss. [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

I ***Melandrium astrachanicum*** **Pacz. [Caryophyllaceae]** *5942, 20171*
I *5942* Russia (E.Europe) - South (Astrakhan) *5942*

R ***Merendera rhodopaea*** **Velen. [Colchicaceae]** *5204, 20171*
R *5204* Bulgaria (Southern Bulgaria - two sites.) *5204*

R ***Michauxia thyrsoidea*** **Boiss. & Heldr. [Campanulaceae]** *12840*
R *12840* Turkey *12840*

E *Microcnemum coralloides* (Loscos et Parda) Font-Quer ssp. *anatolicum* Wagenitz [Chenopodiaceae] *17781*
E *17781* Turkey *17781*

R *Micromeria carica* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria cilicica* Hausskn. ex Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria cremnophila* Boiss. & Heldr. ssp. *amana* (Rech.fil.) Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria cristata* (Hampe) Griseb. ssp. *carminea* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria cristata* (Hampe) Griseb. ssp. *orientalis* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria cristata* (Hampe) Griseb. ssp. *phrygia* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria cristata* (Hampe) Griseb. ssp. *xylorrhiza* (Boiss. & Heldr.) Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria cymuligera* Boiss. & Hausskn. [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria dolichodonta* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Micromeria elliptica* C. Koch. [Labiatae] *12840*
R *12840* Turkey *12840*

Micromeria fruticosa (L.) Druce ssp. *giresunica* Davis [Labiatae] *12840*
V *12840* Turkey *12840*

R *Micromeria serpyllifolia* (M.Bieb.) Boiss. [Labiatae] *20171*
R former European USSR (Crimea) *8001*

R *Minuartia anatolica* (Boiss.) Woron. var. *lanuginosa* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia anatolica* (Boiss.) Woron. var. *phrygia* (Bornm.) McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia anatolica* (Boiss.) Woron var. *scleranthoides* (Boiss. & Noe) McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia anatolica* (Boiss.) Woron var. *tetrastiche* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Minuartia bilykiana Klokov [Caryophyllaceae] *8000, 20171*
I former European USSR *8000*

Minuartia corymbulosa (Boiss. & Bal.) McNeill var. *breviflora* (Boiss.) McNeill [Caryophyllaceae] *12840*
E *12840* Turkey *12840*

Minuartia corymbulosa (Boiss. & Bal.) McNeill var. *gypsophiloides* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

Minuartia dianthifolia (Boiss.) Hand.-Mazz. ssp. *cataonica* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia dianthifolia* (Boiss.) Hand.-Mazz. ssp. *dianthifolia* [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia gracilis* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia issaurica* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia krascheninnikovii* Schischk. [Caryophyllaceae] *8000, 20171*
R *11552* Russian Federation (Ural Mts) *11552*

R *Minuartia mesogitana* (Boiss.) Hand.-Mazz. ssp. *lydia* (Boiss.) McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

V *Minuartia mesogitana* (Boiss.) Hand.-Mazz. ssp. *macrocarpa* McNeill [Caryophyllaceae] *12840*
V *12840* Turkey *12840*

R *Minuartia nifensis* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia pestalozzae* (Boiss.) Bornm. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia recurva* (All.) Schinz. & Thell. ssp. *carica* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia rimarum* (Boiss. & Bal.) Mattf. var. *multiflora* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia taurica* (Steven) Graebn. [Caryophyllaceae] *8000, 20171*
R former European USSR *8000*

R *Minuartia umbellulifera* (Boiss.) McNeill ssp. *fimbriata* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia umbellulifera* (Boiss.) McNeill var. *kurdica* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia umbellulifera* (Boiss.) McNeill ssp. *pontica* (Bornm.) McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia umbellulifera* (Boiss.) McNeill ssp. *salbacica* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia valedictionis* McNeill [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R *Minuartia verna* (L.) Hiern ssp. *brevipetala* Hartvig & Strid [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

I *Moehringia hypanica* Grynj & Klokov [Caryophyllaceae] *5942, 20171*
I *5942* Ukraine *5942*

R *Morina persica* L. ssp. *decussatifolia* Erik & Demirkus [Morinaceae] *12840*
R *12840* Turkey *12840*

I *Morina subinervis* Boiss. [Morinaceae] *12840*
I *12840* Turkey *12840*

R *Muretia aurea* Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

V ***Muscari discolor*** **Boiss. & Hausskn.**
[Hyacinthaceae] *12840*
V *12840* Turkey *12840*

R ***Muscari latifolium*** **Kirk [Hyacinthaceae]** *12840*
R *12840* Turkey *12840*

R ***Muscari microstomum*** **Davis & Stuart**
[Hyacinthaceae] *12840*
R *12840* Turkey *12840*

V ***Muscari muscarimi*** **Medik. [Hyacinthaceae]** *12840, 20171*
V *12840* Turkey *12840*

R ***Muscari sandrasicum*** **Karlen [Hyacinthaceae]** *12840*
R *12840* Turkey *12840*

R ***Myopordon thiebautii*** **(Gently) Wagenitz**
[Compositae] *12840*
R *12840* Turkey *12840*

I ***Myosotis czekanowskii*** **(Trautv.) Kamelin & V. Tikhom.**
[Boraginaceae] *5942*
I *5942* Russia (Siberia) - Yakutiya (north) *5942*

R ***Myosotis platyphylla*** **Boiss. [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Necranthus orobanchioides*** **Gilli**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Nectaroscordum meliophillum*** **(Juz.) Stank.**
[Alliaceae]
R former European USSR

E ***Neogontscharovia mira*** **(Lincz.) Lincz.**
[Plumbaginaceae]
E former Asiatic USSR *6930*

R ***Neogontscharovia miranda*** **(Lincz.) Lincz.**
[Plumbaginaceae]
R former Asiatic USSR *6930*

Ex/E$_{II}$ ***Neottia ussuriensis*** **(Komarov & Nevski) Soo**
[Orchidaceae] *5942*
Ex/E *5942* Russia (Far East) - Primorye (south) *5942*

R ***Nepeta aristata*** **Boiss. & Kotschy ex Boiss.**
[Labiatae] *12840*
R *12840* Turkey *12840*

R ***Nepeta baytopii*** **Hedge & Lamond [Labiatae]** *12840*
R *12840* Turkey *12840*

V ***Nepeta conferta*** **Hedge & Lamond [Labiatae]** *12840*
V *12840* Turkey *12840*

R ***Nepeta crinita*** **Montbret & Aucher ex Bentham**
[Labiatae] *12840*
R *12840* Turkey *12840*

R ***Nepeta gontscharovii*** **Kudrj. [Labiatae]**
R former USSR *6930*

R ***Nepeta ladanolens*** **Lipsky [Labiatae]**
R former USSR *6930*

R ***Nepeta maussarifi*** **Lipsky [Labiatae]**
R former USSR *6930*

R ***Nepeta nadinae*** **Lipsky [Labiatae]**
R former USSR *6930*

V ***Nepeta nuda*** **L. ssp. *glandulifera*** **Hub.-Mor. & Davis [Labiatae]** *12840*
V *12840* Turkey *12840*

R ***Nepeta nuda*** **L. ssp. *lydiae*** **Davis**
[Labiatae] *12840*
R *12840* Turkey *12840*

R ***Nepeta obtusicrena*** **Boiss. & Kotschy ex Hedge**
[Labiatae] *12840*
R *12840* Turkey *12840*

R ***Nepeta phyllochlamys*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Nepeta plinux*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Nepeta sorgerae*** **Hedge & Lamond [Labiatae]** *12840*
R *12840* Turkey *12840*

V ***Nepeta sulfuriflora*** **Davis [Labiatae]** *12840*
V *12840* Turkey *12840*

V ***Nigella arvensis*** **L. var. *oblanceolata*** **Davis**
[Ranunculaceae] *12840*
V *12840* Turkey *12840*

R ***Nigella lancifolia*** **Huber-Mor. [Ranunculaceae]** *12840*
R *12840* Turkey *12840*

I ***Nonea anomala*** **Hausskn. & Bornm.**
[Boraginaceae] *12840*
I *12840* Turkey *12840*

I ***Nonea karsensis*** **M. Popov [Boraginaceae]** *12840*
I *12840* Turkey *12840*

R ***Nonea pulmonarioides*** **Boiss. & Bal.**
[Boraginaceae] *12840*
R *12840* Turkey *12840*

V ***Olymposciadium caespitosum*** **(Sm.) Wolff**
[Umbelliferae] *12840*
V *12840* Turkey *12840*

R ***Omphalodes davisana*** **Kit Tan & Sorger**
[Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Omphalodes ripleyana*** **Davis [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Onobrychis albiflora*** **Huber-Mor. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Onobrychis araxina*** **Schis. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Onobrychis argaea*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Onobrychis argyrea*** **Boiss. ssp. *isaurica*** **Hedge & Huber-Mor. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Onobrychis beata*** **Sirj [Leguminosae]** *12840*
R *12840* Turkey *12840*

V ***Onobrychis bornmuelleri*** **Freyn [Leguminosae]** *12840*
V *12840* Turkey *12840*

V ***Onobrychis cilicica*** **Kit Tan & Sorger**
[Leguminosae] *12840*
V *12840* Turkey *12840*

R ***Onobrychis densijuga*** **Hedge ex Huber-Mor.**
[Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis elata*** **Boiss. & Bal. [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Onobrychis germanicopolitana*** **Huber-Mor. & Simon**
[Leguminosae] *12840*
R *12840* Turkey *12840*

I ***Onobrychis halyensis*** **Sirj [Leguminosae]** *12840*

I *12840* Turkey *12840*

R ***Onobrychis huetiana*** Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

V ***Onobrychis mutensis*** Kit Tan & Sorger [Leguminosae] *12840*
V *12840* Turkey *12840*

R ***Onobrychis nitida*** Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis occulta*** Hedge & Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis ornata*** (Willd.) Desv. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis pallasii*** (Willd.) M.Bieb. [Leguminosae] *20171*
R former European USSR

R ***Onobrychis paucijuga*** Bornm. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis pisidica*** Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis podperae*** Sirj [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis quadrijuga*** Hedge & Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis radiata*** (Desf.) Bieb. [Leguminosae] *20171*
R former USSR

R ***Onobrychis sivasica*** Kit Tan & Sorger [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis stenostachya*** Freyn ssp. ***krausei*** (Sirj.) Hedge [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Onobrychis stenostachya*** Freyn ssp. ***sosnowskyi*** (Grossh.) Hedge [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Ononis adenotricha*** Boiss. var. ***nuda*** Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Ononis basiadnata*** Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Ononis macrosperma*** Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R ***Ononis sessilifolia*** Bornm. [Leguminosae] *12840*
R *12840* Turkey *12840*

I ***Onopordum bracteatum*** L. var. ***arachnoideum*** Erik & Sumbul [Compositae] *12840*
V *12840* Turkey *12840*

R ***Onopordum caricum*** Hub.-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

Ex ***Onosma affine*** Hausskn. ex H. Rield [Boraginaceae] *12840*
Ex *12840* Turkey *12840*

R ***Onosma angustissimum*** Hausskn. & Bornm. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma arcuatum*** H. Rield [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma argentatum*** Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma bozakmanii*** H. Riedl [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma briquetii*** Czecz. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma cappadocicum*** Siehe ex H. Riedl [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma davisii*** H. Reidl [Boraginaceae] *12840*
R *12840* Turkey *12840*

Ex ***Onosma discedens*** Hausskn. ex Bornm. [Boraginaceae] *12840*
Ex *12840* Turkey *12840*

V ***Onosma halophilum*** Boiss. & Heldr. [Boraginaceae] *12840*
V *12840* Turkey *12840*

R ***Onosma helleri*** Greuter & Burdet [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma intertextum*** Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

I ***Onosma linearilobum*** Hausskn. ex H. Riedl [Boraginaceae] *12840*
I *12840* Turkey *12840*

R ***Onosma liparioides*** DC. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma lycaonicum*** Huber-Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma neglectum*** H. Reidl [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma nigricaula*** H. Riedl [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma obtusifolium*** Hausskn. & Sint. ex Bornm. [Boraginaceae] *12840*
R *12840* Turkey *12840*

I ***Onosma papillosum*** H. Riedl. [Boraginaceae] *12840*
I *12840* Turkey *12840*

R ***Onosma polyanthum*** DC. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma proballantherum*** Rech.f. [Boraginaceae] *12840*
R *12840* Turkey *12840*

E ***Onosma proponticum*** Aznav. [Boraginaceae] *12840*
E *12840* Turkey *12840*

R ***Onosma pulchrum*** H. Riedl [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma rutilum*** Huber- Mor. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma sieheanum*** Hayek [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma sintenisii*** Hausskn. ex Bornm. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma sorgeri*** Teppner var. ***sorgeri*** [Boraginaceae] *12840*
R *12840* Turkey *12840*

R ***Onosma strigosissimum*** Boiss. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Onosma subulifolium* Riedl [Boraginaceae] *12840*
R *12840* Turkey *12840*

I *Onosma tschichatschevii* Popov [Boraginaceae] *12840*
I *12840* Turkey *12840*

R *Onosma velutinum* Boiss. [Boraginaceae] *12840*
R *12840* Turkey *12840*

E II *Ophrys bornmuelleri* M. Schulze ex Bornm. ssp. *carduchorum* Renz & Taub. [Orchidaceae] *12840*
E *12840* Turkey *12840*

E II *Ophrys holoserica* (Burnm. f.) Greuter ssp. *heterochila* Renz & Taub. [Orchidaceae] *12840*
E *12840* Turkey *12840*

E II *Ophrys isaura* Renz & Taub. [Orchidaceae] *12840*
E *12840* Turkey *12840*

E II *Ophrys lycia* Renz & Taub. [Orchidaceae] *12840*
E *12840* Turkey *12840*

E II *Ophrys phrygia* Fleishm. & Bornm. [Orchidaceae] *12840*
E *19873* Turkey *12840*

E II *Ophrys reinholdii* Spruner ex Fleischm. ssp. *leucotaenia* Renz & Taub. [Orchidaceae] *12840*
E *12840* Turkey *12840*

R II *Ophrys transhyrcana* Czernjak. ssp. *amanensis* (Nelson) Renz & Taub. [Orchidaceae] *12840*
R *12840* Turkey *12840*

R *Origanum amanum* Post [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum bilgeri* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum haussknechtii* Boiss. [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum hypericifolium* O. Schwarz & Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum leptocladum* Boiss. [Labiatae] *12840, 20171*
R *12840* Turkey *12840*

R *Origanum micranthum* Vogel [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum minutiflorum* O. Schwarz & Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum munzurense* Kit Tan & Sorger [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum saccatum* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Origanum solymicum* Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R *Ornithogalum nivale* Boiss. [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

R *Ornithogalum sorgerae* H. Wittmann [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

R *Orobanche armena* Tzvelev [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R *Orobanche hadroantha* Beck [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V *Orobanche sideana* Gilli [Scrophulariaceae] *12840*
V *12840* Turkey *12840*

E *Orobanche solenanthi* Novopokr. & Pissjauka [Scrophulariaceae]
E former USSR *6930*

I *Oxytropis argyroleuca* Bornm. [Leguminosae] *12840*
I *12840* Turkey *12840*

R *Oxytropis astragaloides* A. Boriss [Leguminosae]
R former USSR *6930*

R *Oxytropis hippolyti* Boriss [Leguminosae]
R former European USSR

R *Oxytropis kamtschatica* Hulten [Leguminosae]
R former Asiatic USSR (Far east) *6930*

R *Oxytropis kateninii* Jurtz. [Leguminosae] *21309*
R *21309* Russia (E.Europe) - Northwest *21309*

R *Oxytropis uniflora* Jurtz. [Leguminosae] *21309*
R *21309* Russia (E.Europe) - Northwest *21309*

R *Oxytropis uralensis* (L.) DC. [Leguminosae] *20171*
R former European USSR

R *Oxytropis uschakovii* Jurtz. [Leguminosae] *21309*
R *21309* Russia (E.Europe) - North *21309*
R *21309* Russia (E.Europe) - Northwest *21309*

R *Paeonia kavachensis* Aznav. [Paeoniaceae] *6930*
R *11552* Russian Federation (Caucasus) *11552*

I *Paeonia macrophylla* (Albov) N. Lom. [Paeoniaceae] *5942*
I *5942* Georgia *5942*

I *Paeonia mlokosewitschii* N. Lom. [Paeoniaceae] *5942*
I *5942* Russia - North Caucasus *5942*

R *Papaver argemone* L. ssp. *davisii* Kaderit [Papaveraceae] *12840*
R *12840* Turkey *12840*

R *Papaver atrovirens* Petrovsky [Papaveraceae] *21309*
R *21309* Russia (E.Europe) - Northwest *21309*

I *Papaver bracteatum* Lindl. [Papaveraceae] *5942, 20171*
I *5942* Russia - North Caucasus *5942*

V *Papaver guerlekense* Stapf [Papaveraceae] *12840, 20171*
V *12840* Turkey *12840*

R *Papaver maeoticum* Klokov [Papaveraceae] *20171*
R former European USSR

R *Papaver pilosum* Sibth. & Sm. [Papaveraceae] *12840*
R *12840* Turkey *12840*

R *Papaver strictum* Boiss. & Bal. [Papaveraceae] *12840*
R *12840* Turkey *12840*

R *Papaver tenellum* Tolmatchew [Papaveraceae]
R former USSR *6930*

R *Paracaryum amani* (Rchb.f.) R. Mill [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Paracaryum artvinense* R. Mill [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Paracaryum corymbiforme* (DC. & A. DC.) Boiss. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Paracaryum erysimifolium* Boiss. [Boraginaceae] *12840*
R *12840* Turkey *12840*

R *Paracaryum kurdistanicum* (Brand) R. Mill [Boraginaceae] *12840*

R *12840* Turkey *12840*

Paracaryum leptophyllum (A. DC.) Boiss. [Boraginaceae] *12840*
I *12840* Turkey *12840*

Paracaryum lithospermifolium (Lam.) Grande var. ***erectum*** R. Mill. [Boraginaceae] *12840*
R *12840* Turkey *12840*

Paracaryum paphlagonicum (Bornm.) R. Mill [Boraginaceae] *12840*
R *12840* Turkey *12840*

Paracaryum polycarpum (Rech.f.) R. Mill [Boraginaceae] *12840*
R *12840* Turkey *12840*

Paracaryum reuteri Boiss. & Hausskn. [Boraginaceae] *12840*
R *12840* Turkey *12840*

Paracaryum shepardii Post & Beauv. [Boraginaceae] *12840*
R *12840* Turkey *12840*

Paracaryum stenolophum Boiss. [Boraginaceae] *12840*
R *12840* Turkey *12840*

Paronychia adalia Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia anatolica Czecz. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia angorensis Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia arabica (L.) DC. ssp. ***euphratica*** Choudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia argyroloba Stapf [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia beauverdii Czecz. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia cataonica Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia condensata Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia davisii Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia dudleyi Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia galatica Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia kayseriana Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia kurdica Boiss. var. ***fragilis*** Chaudhri [Illecebraceae] *12840*
V *12840* Turkey *12840*

Paronychia kurdica Boiss. ssp. ***haussknechtii*** Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia kurdica Boiss. ssp. ***montis-munzur*** Chaurhri [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia lycica Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

Paronychia paphlagonica Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

R ***Paronychia saxatilis*** Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

R ***Paronychia turcica*** Chaudh. [Illecebraceae] *12840*
R *12840* Turkey *12840*

R ***Pastinaca armena*** Fisch. & Mey. ssp. ***dentata*** (Freyn & Sint) Chamb. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Pedicularis olympica*** Boiss. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Peltariopsis grossheimii*** N. Busch. [Cruciferae]
R former USSR *6930*

I ***Petrocoma hoefftiana*** (Fischer) Rupr. [Caryophyllaceae] *5942*
I *5942* Russia - North Caucasus *5942*

V ***Petrorhagia hispidula*** (Boiss. & Heldr.) Ball & Heyw. [Caryophyllaceae] *12840*
V *12840* Turkey *12840*

R ***Petrorhagia lycica*** (Davis) Ball & Heyw. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

V ***Petrorhagia pamphylica*** (Boiss. & Ball.) Ball. & Heyw. [Caryophyllaceae] *12840*
V *12840* Turkey *12840*

R ***Petrorhagia peroninii*** (Boiss. Ball. & Heyw. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

V ***Petrosimonia nigdeensis*** Aellen [Chenopodiaceae] *12840*
V *12840* Turkey *12840*

R ***Peucedanum arenarium*** Waldst. & Kit ssp. ***urbanii*** (Freyn & Sint. ex Wolff) Chamb [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Peucedanum mogoltavicum*** Korovin [Umbelliferae]
R former USSR *6930*

R ***Phlomis angustissima*** Hub.-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

V ***Phlomis brunneogaleata*** Hub.-Mor. [Labiatae] *12840*
V *12840* Turkey *12840*

R ***Phlomis carica*** Rech.fil. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Phlomis chimerae*** Boissieu [Labiatae] *12840*
R *20618* Turkey *20618*

V ***Phlomis integrifolia*** Hub.-Mor. [Labiatae] *12840*
V *12840* Turkey *12840*

R ***Phlomis leucophracta*** Davis & Hub.-Mor. [Labiatae] *12840*
R *20618* Turkey *20618*

R ***Phlomis longifolia*** Boiss. & Bal. var. ***bailanica*** (Vierh.) Hub.-Mor. [Labiatae] *12840*
R *20618* Turkey *20618*

R ***Phlomis monocephala*** Davis [Labiatae] *12840*
R *20618* Turkey *20618*

R ***Phlomis physocalyx*** Hub.-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Phlomis sintenisii*** Rech.fil. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Phryna ortegioides*** (Fisch. & Mey.) Pax & Hoffm.

[Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Physocardamum davisii*** **Hedge [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Physoptychis haussknechtii*** **Bornm. [Cruciferae]** *12840*
R *12840* Turkey *12840*

R ***Picris campylocarpa*** **Boiss. & Heldr. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Pimpinella anisetum*** **Boiss. & Bal. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Pimpinella flabellifolia*** **(Boiss.) Bent & Hook ex Drude [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Pimpinella isaurica*** **Matthews [Umbelliferae]** *12840*
R *12840* Turkey *12840*

I ***Pinus sylvestris*** **L. var. *cretacea* (Kalen.) Komarov [Pinaceae]** *5942, 20171*
I *5942* Ukraine *5942*

R ***Plantago anatolica*** **B. Tutel & R. Mill [Plantaginaceae]** *12840*
R *12840* Turkey *12840*

R ***Plantago euphratica*** **Decne ex Barneoud [Plantaginaceae]** *12840*
R *12840* Turkey *12840*

R ***Poa aitosensis*** **Koz. et Stoeva [Gramineae]** *5204*
R *5204* Bulgaria (east) *5204*

R ***Poa davisii*** **Bor [Gramineae]** *12840*
R *12840* Turkey *12840*

R ***Poa pseudobulbosa*** **Bor [Gramineae]** *12840*
R *12840* Turkey *12840*

R ***Poa speluncarum*** **Edmondson [Gramineae]** *12840*
R *12840* Turkey *12840*

V ***Polygala inespectata*** **Pesman & Erik [Polygalaceae]** *12840*
V *12840* Turkey *12840*

R ***Polygala pruinosa*** **Boiss. ssp. *megaptera* Cullen [Polygalaceae]** *12840*
R *12840* Turkey *12840*

R ***Polygonum afyonicum*** **E. Leblebici & Y. Gemici [Polygonaceae]** *12840*
R *12840* Turkey *12840*

R ***Polygonum aschersonianum*** **H.Gross [Polygonaceae]** *20171*
R former European USSR

V ***Polygonum paralongum*** **Coode & Cullen [Polygonaceae]** *12840*
V *12840* Turkey *12840*

R ***Polygonum salebrosum*** **Coode & Cullen [Polygonaceae]** *12840*
R *12840* Turkey *12840*

I ***Polylophium panjutinii*** **Manden. & Schischkin [Umbelliferae]** *5942*
I *5942* Georgia *5942*

R ***Potentilla aladagensis*** **E. Leblebici [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla anadyrensis*** **Juzepczuk [Rosaceae]**
R former USSR *6930*

R ***Potentilla armeniaca*** **Siegfr. ex Th.Wolf [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla buccoana*** **Clem. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla buchneri*** **Kit Tan & Sorger [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla cappadocica*** **Boiss. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla discipulorum*** **Davis. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla doddsii*** **Davis [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla isaurica*** **(Davis) B. Pawl. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla pulvinaris*** **Fenzl [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla subpalmata*** **Ledeb. [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla tauricola*** **H. Pesmen [Rosaceae]** *12840*
R *12840* Turkey *12840*

R ***Potentilla tollii*** **Trautv. [Rosaceae]**
R former USSR *6930*

Ex ***Potentilla volgarica*** **Juz. [Rosaceae]** *11552*
Ex *11552* Russian Federation (western) *11552*

R ***Prangos denticulata*** **Fisch. & Mey. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

I ***Prangos scrabifolia*** **Post ex Beauv. [Umbelliferae]** *12840*
I *12840* Turkey *12840*

R ***Prenanthes glareosa*** **(Scho.&Kotsc. ex Bois.) C. Jeff. [Compositae]** *12840*
R *12840* Turkey *12840*

I ***Primula darialica*** **Rupr. [Primulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

R ***Primula davisii*** **W.W. Sm. [Primulaceae]** *12840*
R *12840* Turkey *12840*

R ***Primula deorum*** **Velen. [Primulaceae]** *5204, 20171*
R *5204* Bulgaria (Rila Mt.) *5204*

R ***Primula frondosa*** **Janka [Primulaceae]** *5204, 20171*
R *5204* Bulgaria (central) *5204*

R ***Primula komarovii*** **Losinsk. [Primulaceae]** *20171*
R former European USSR *6930*

R ***Primula longipes*** **Freyn & Sint. [Primulaceae]** *12840*
R *12840* Turkey *12840*

I ***Primula megaseifolia*** **Boiss. & Bal. ex Boiss. [Primulaceae]** *5942*
I *5942* Georgia *5942*

R ***Primula minkwitziae*** **W.W. Smith [Primulaceae]**
R former USSR *6930*

R ***Prunus cocomilia*** **Ten var. *puberula* (Schneider) Browicz [Rosaceae]** *12840*
R *20618* Turkey *20618*

R ***Prunus kurdica*** **Fenzl [Rosaceae]** *12840*

R *20618* Turkey *20618*

R ***Pseudophleum gibbum*** (Boiss.) M. Dogan [Gramineae] *12840*
R *12840* Turkey *12840*

V ***Puccinellia anisoclada*** (V. Kreez.) V. Kreez. ssp. ***melderisiana*** Kit Tan [Gramineae] *12840*
V *12840* Turkey *12840*

R ***Pulicaria armena*** (Boiss.) Kotschy [Compositae] *12840*
R *12840* Turkey *12840*

R ***Pulsatilla kostyczewii*** (Korsch.) Juzepczuk [Ranunculaceae]
R former USSR *6930*

R ***Pyrus anatolica*** Browicz [Rosaceae] *12840*
R *20618* Turkey *20618*

R ***Pyrus hakkiarica*** Browicz [Rosaceae] *12840*
R *20618* Turkey *20618*

R ***Pyrus salicifolia*** Pallas var. ***serrulata*** Browicz [Rosaceae] *12840*
R *20618* Turkey *20618*

V ***Pyrus serikensis*** [Rosaceae] *20618*
V *20618* Turkey *20618*

R ***Pyrus syriaca*** Boiss. var. ***microphylla*** Zoh. ex Browicz [Rosaceae] *20618*
R *20618* Turkey *20618*

R ***Pyrus yaltirikii*** Browicz [Rosaceae] *12840*
R *20618* Turkey *20618*

Quercus robur ssp. ***imeretina*** (Steven ex Woronow) Menitsky [Fagaceae] *20283*
I *20283* Russian Federation (in Georgia, Caucasus) *20627*

R ***Ranunculus bingoeldaghensis*** A. Engin [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus crateris*** Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus dissectus*** Bieb. ssp. ***ermenekensis*** Kit Tan & M. Vural [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus dissectus*** Bieb. ssp. ***rigidulus*** (Boiss.) Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus guenerii*** Y. Ayasligil & Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus isthmicus*** Boiss. ssp. ***tenuifolous*** (Stev.) Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus munzurensis*** S. Erik & S. Yildirimli [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus poluninii*** Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus sintenisii*** Freyn [Ranunculaceae] *12840*
R *19873* Turkey *12840*

R ***Ranunculus tempskyanus*** Freyn & Sint. [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Ranunculus vanensis*** Davis [Ranunculaceae] *12840*
R *12840* Turkey *12840*

R ***Reaumuria badhysi*** Korovin [Tamaricaceae]
R former USSR *6930*

R ***Reaumuria zakirovii*** Gorschk. [Tamaricaceae]
R former USSR *6930*

R ***Reseda armena*** Boiss. [Resedaceae] *12840*
R *12840* Turkey *12840*

R ***Reseda balansae*** Muller [Resedaceae] *12840*
R *12840* Turkey *12840*

R ***Reseda coodei*** Huber-Mor. [Resedaceae] *12840*
R *12840* Turkey *12840*

I ***Reseda germanicopolitana*** Huber-Mor. [Resedaceae] *12840*
I *12840* Turkey *12840*

R ***Reseda tomentosa*** Boiss. var. ***tomentosa*** [Resedaceae] *12840*
R *12840* Turkey *12840*

R ***Rhabdosciadium microcalycinum*** Hand.-mazz. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Rhamnus hirtellus*** Boiss. [Rhamnaceae] *12840*
R *20618* Turkey *20618*

R ***Rhamnus kayacikii*** Davis & F. Yaltirik [Rhamnaceae] *12840*
R *20618* Turkey *20618*

R ***Rhamnus nitidus*** Davis [Rhamnaceae] *12840*
R *20618* Turkey *20618*

R ***Rhamnus pichleri*** Schneider & Bornm. ex Bornm. [Rhamnaceae] *12840*
R *20618* Turkey *20618*

I ***Rhamphicarpa medwedewii*** Albov [Scrophulariaceae] *5942*
I *5942* Georgia *5942*

R ***Rhodothamnus sessilifolius*** Davis [Ericaceae] *12840*
R *20618* Turkey *12840*

R ***Rhynchocorys odontophylla*** Burbridge & Richard [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

Ex ***Ribes kolymense*** (Trautv.) Komarov ex Pojark [Grossulariaceae] *6930*
Ex *6930* former USSR *6930*

R ***Ricotia davisiana*** Burtt [Cruciferae] *12840*
R *12840* Turkey *12840*

V ***Ricotia tenuifolia*** Sibth. & Sm. [Cruciferae] *12840*
V *12840* Turkey *12840*

R ***Ricotia varians*** Burtt [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Roemeria carica*** A. Baytop [Papaveraceae] *12840*
R *12840* Turkey *12840*

R ***Rorippa aurea*** (Boiss. & Heldr.) Hub.-Mor. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Rosa dumalis*** Bechat. var. ***anatalyensis*** (Menden) O. Nilson [Rosaceae] *12840*
R *12840* Turkey *12840*

R ***Rosa dumalis*** ssp. ***boissieri*** var. ***antalyensis*** [Rosaceae] *20618*
R *20618* Turkey *20618*

R ***Rosularia davisii*** Muirhead [Crassulaceae] *12840*

R *12840* Turkey *12840*

R ***Rosularia haussknechtii*** **Boiss. & Reuter [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Rosularia serpentinica*** **(Werdermann) Muirhead [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Rubia davisiana*** **Ehrend. [Rubiaceae]** *12840*
R *12840* Turkey *12840*

R ***Rumex amanus*** **Rech. [Polygonaceae]** *12840*
R *12840* Turkey *12840*

V ***Rumex bithynicus*** **Rech. f. [Polygonaceae]** *12840*
V *12840* Turkey *12840*

R ***Rumex gracilescens*** **Rech. [Polygonaceae]** *12840*
R *12840* Turkey *12840*

R ***Rumex olympicus*** **Boiss. [Polygonaceae]** *12840*
R *12840* Turkey *12840*

R ***Rumex tmoleus*** **Boiss. [Polygonaceae]** *12840*
R *12840* Turkey *12840*

R ***Salix rizeensis*** **[Salicaceae]** *20618*
R *20618* Turkey *20618*

R ***Salix trabzonica*** **A. Skv. [Salicaceae]** *12840*
R *20618* Turkey *20618*

V ***Salsola anatolica*** **Aellen [Chenopodiaceae]** *12840*
V *12840* Turkey *12840*

E ***Salsola chiwensis*** **Popov [Chenopodiaceae]** *6930*
E former Asiatic USSR *6930*

V ***Salsola prostrata*** **Pall. ssp. *anatolica*** **Aellen [Chenopodiaceae]** *12840*
V *12840* Turkey *12840*

R ***Salsola stenoptera*** **Wagenitz [Chenopodiaceae]** *12840*
R *12840* Turkey *12840*

V ***Salvia adenocaulon*** **Davis [Labiatae]** *12840*
V *12840* Turkey *12840*

R ***Salvia adenophylla*** **Hedge & Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia albimaculata*** **Hedge & Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia aucheri*** **Bentham [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia cedronella*** **Boiss. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia chionantha*** **Boiss. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia cilicica*** **Boiss. & Kotschy [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia divaricata*** **Montbret & Aucher ex Bentham [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia eriophora*** **Boiss. & Kotschy [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia euphratica*** **Montbret & Aucher ex Bentham [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia garedji*** **Troitsky [Labiatae]**
R former USSR *6930*

V ***Salvia halophila*** **Hedge [Labiatae]** *12840*
V *12840* Turkey *12840*

R ***Salvia huberi*** **Hedge [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia kronenburgei*** **Rech.fil. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia nydeggeri*** **Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia odontochlamys*** **Hedge [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia quezelii*** **Hedge & Ajzal-Rafri [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia reeseana*** **Hedge & Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia sericeo-tomentosa*** **Rech.fil. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia smyrnea*** **Boiss. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia tigrina*** **Hedge & Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia tobeyi*** **Hedge [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Salvia vermifolia*** **Hedge & Hub.-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

E ***Sambucus tigranii*** **Troitsky [Caprifoliaceae]**
E former USSR

R ***Saponaria dalmasiia*** **Boissieu [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

E ***Saponaria halophila*** **Hedge & Huber-Mor. [Caryophyllaceae]** *12840*
E *12840* Turkey *12840*

R ***Saponaria pamphylica*** **Boiss. & Heldr. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Saponaria picta*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Saponaria pinetorum*** **Hedge [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

I ***Saponaria syriaca*** **Boiss. [Caryophyllaceae]** *12840*
I *12840* Turkey *12840*

I ***Satureja bzybica*** **Woronow [Labiatae]** *5942*
I *5942* Russia - North Caucasus *5942*

R ***Satureja cilicica*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Satureja parnassica*** **Heldr. & Sart. ex Boiss. ssp. *sipylea*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Satureja rumelica*** **Velen. [Labiatae]** *5204, 20171*
R *5204* Bulgaria (central) *5204*

R ***Saussurea sovietica*** **Komarov [Compositae]** *5942*
R *5942* Russia (Far East) - Primorye *5942*

R ***Saxifraga artvinensis*** **Matthews [Saxifragaceae]** *12840*
R *12840* Turkey *12840*

I ***Saxifraga columnaris*** **Schmalh. [Saxifragaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

[***Saxifraga dinnikii*** Schmalh. [Saxifragaceae] *5942*
I *5942* Russia - North Caucasus *5942*

R ***Saxifraga lactea*** Turcz. [Saxifragaceae] *11552*
R *11552* Russian Federation (extreme south east) *11552*

R ***Scabiosa columbaria*** L. ssp. ***paphlagonica*** (Bornm.) Matthews [Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Scabiosa hololeuca*** Bornm. [Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Scabiosa kurdica*** Post [Dipsacaceae] *12840*
R *12840* Turkey *12840*

Scabiosa olgae Albov [Dipsacaceae] *5942*
I *5942* Russia - North Caucasus *5942*

R ***Scabiosa paucidentata*** Hub.-Mor. [Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Scabiosa pseudograminifolia*** Hub.-Mor. [Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Scabiosa rhodopensis*** Stoj. & Stef. [Dipsacaceae] *5204, 20171*
R *5204* Bulgaria (Southern - two areas) *5204*

R ***Scabiosa sulphurea*** Boiss. & Huet [Dipsacaceae] *12840*
R *12840* Turkey *12840*

R ***Scaligeria capillifolia*** Post [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Scandix balansae*** Reuter ex Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R ***Schivereckia berteroides*** Fisch. ex M.I.Alex. [Cruciferae] *8000, 20171*
R former European USSR (Ural Mountains)

R ***Scilla atropatana*** Grossh. [Hyacinthaceae]
R former USSR *6930*

R ***Scilla leepii*** Speta [Hyacinthaceae] *12840*
R *12840* Turkey *12840*

Scorzonera argyria Boiss. [Compositae] *12840*
I *12840* Turkey *12840*

R ***Scorzonera aucheriana*** DC. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Scorzonera boissieri*** Lipschitz [Compositae] *12840*
R *12840* Turkey *12840*

R ***Scorzonera davisii*** Lipschitz [Compositae] *12840*
R *12840* Turkey *12840*

Scorzonera hieracifolia Hayek [Compositae] *12840*
V *12840* Turkey *12840*

R ***Scorzonera inaequiscapa*** Boiss. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Scorzonera lacera*** Boiss. & Bal. [Compositae] *12840*
R *12840* Turkey *12840*

Scorzonera lasiocarpa Chamb. [Compositae] *12840*
R *12840* Turkey *12840*

Scorzonera mirabilis Lipschitz [Compositae] *12840*
R *12840* Turkey *12840*

Scorzonera pisidica Huber-Mor. [Compositae] *12840*
R *12840* Turkey *12840*

Scorzonera pygmaea Sibth. & Sm. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Scorzonera sandrasica*** Hartvig & Strid [Compositae] *12840*
R *12840* Turkey *12840*

R ***Scorzonera suberosa*** C. Koch. ssp. ***cariensis*** (Boiss.) Chamb. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Scorzonera violacea*** Chamb. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia amana*** Lall [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia bitlisica*** Lall [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia candelabrum*** Heywood [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia capillaris*** Boiss. & Bal. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia carduchorum*** R. Mill. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia gypsicola*** Huber-Mor. & lall [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia lepidota*** Boiss. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia libanotica*** Boiss. var. ***antalyensis*** Y. Ayasligil & R. Mill. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia libanotica*** Boiss. var. ***nevshehirensis*** R. Mill. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia libanotica*** Boiss. var. ***oligantha*** Heywood [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia mersinensis*** Lall [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia pumilio*** Lall [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia scoplii*** Hoppe ex Pers. var. ***parryi*** R. Mill. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia scopolii*** Hoppe ex Pers. var. ***burdurensis*** (H. Pesmen) R. Mill. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia scopolii*** Hoppe ex Pers. var. ***longirostrata*** Heywood [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia serratifolia*** Huber-Mor ex Lall [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia subsequiloba*** Lall [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Scrophularia versicolor*** Boiss. [Scrophulariaceae] *12840*

R *12840* Turkey *12840*

R ***Scutellaria glophyrostachys*** **Rech.fil. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Scutellaria heterotricha*** **Juzepczuk & Vved. [Labiatae]**
R former USSR *6930*

R ***Scutellaria juzepczukii*** **Gontsch. [Labiatae]**
R former USSR *6930*

R ***Scutellaria orientalis*** **L. ssp. *carica* Edmondson [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Scutellaria orientalis*** **L. ssp. *porphyrostegia* Edmondson [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Scutellaria orientalis*** **L. ssp. *sintenisii* (Hausskn. ex Bornm.) Edmondson [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Scutellaria orientalis*** **L. ssp. *tortumensis* Kit Tan & Sorger [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Scutellaria rubicunda*** **Hornem ssp. *pannosula* (Rech.f.) Edmondson [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Secale cereale*** **L. var. *ancestrale* (Zhuk.) Kit Tan [Gramineae]** *12840*
R *12840* Turkey *12840*

R ***Secale rhodopaecum*** **Delip. [Gramineae]** *5204*
R *5204* Bulgaria (South Bulgaria - one site only.) *5204*

V ***Sedum borissovae*** **Balk. [Crassulaceae]** *20171*
V former European USSR

R ***Sedum caroli-henrici*** **Kit Tan [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sedum cilicicum*** **Kit Tan & Vural [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sedum hewittii*** **Chamb. [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sedum hispanicum*** **L. var. *planifolium* Chamb. [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sedum kostovii*** **Stef. [Crassulaceae]** *5204, 20171*
R *5204* Bulgaria (south) *5204*

Ex ***Sedum polystriatum*** **R.T. Clausen [Crassulaceae]** *12840*
Ex *12840* Turkey *12840*

R ***Sedum sorgerae*** **Kit Tan & Chamberlain [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum armenum*** **Boiss. & Huet var. *insigne* Muirhead [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum brevipetalum*** **Kit Tan & Sorger [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum furseorum*** **Muirhead [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum gillianii*** **Muirhead [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum glabrifolium*** **Boiss. [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum globiferum*** **L. ssp. *aghricum* Kit Tan & Sorger [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum ispartae*** **Muirhead [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum minus*** **Turrill s.l. [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum pisidicum*** **H. Pesmen & A. Guner [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Sempervivum staintonii*** **Muirhead [Crassulaceae]** *12840*
R *12840* Turkey *12840*

R ***Senecio cariensis*** **Boiss. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio davisii*** **Matthews [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio farfarifolius*** **Boiss. & Kotschy [Compositae]** *12840, 20171*
R *12840* Turkey *12840*

R ***Senecio hypochionaeus*** **Boiss. var. *hypochionaeus* [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio jurineifolius*** **Boiss. & Bal. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio karelinoides*** **Winkler [Compositae]** *8001*
R former Asiatic USSR (Pamir-Alai) *6930*

R ***Senecio lazicus*** **Boiss. & Bal. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio olympicus*** **Boiss. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio ovatifolius*** **Boiss. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio platyphyllus*** **DC. var. *glandulosus* Mathews [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio sandrasicus*** **Davis [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Senecio tauricolus*** **Matthews [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Serratula hakkiarica*** **Davis [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Serratula lasiocephala*** **Bornm. [Compositae]** *12840*
R *12840* Turkey *12840*

I ***Serratula tanaitica*** **P.A.Smirn. [Compositae]** *5942, 20171*
I *5942* Russia (E.Europe) - South *5942*

R ***Seseli degenii*** **Urum. [Umbelliferae]** *5204, 20171*
R *5204* Bulgaria (north) *5204*

R ***Seseli lehmannii*** **Degen [Umbelliferae]** *20171*
R former European USSR

R ***Seseli ramosissimum*** **(Port.) Ces. [Umbelliferae]** *12840, 20171*
R *12840* Turkey *12840*

R ***Seseli resinosum*** Freyn & Sint. [Umbelliferae] *12840*
R *12840* Turkey *12840*

Seseli saxicolum (Albov) Pim. [Umbelliferae] *5042*
I *5942* Georgia *5942*

R ***Sesleria araratica*** Kit Tan [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Sesleria klasterskii*** Deyl [Gramineae]
R Bulgaria

R ***Sideritis albiflora*** Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis amasica*** Bornm. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis argyrea*** Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis armeniaca*** Bornm. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis bilgerana*** Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis brevibracteata*** Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis brevidens*** Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis cassia*** Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis cilicica*** Boiss. & Bal. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis condensata*** (Boiss. & Heldr.) Bentham [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis congesta*** Davis & Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis erythrantha*** (Boiss. & Heldr.) Bentham [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis galatica*** Bornm. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis hispida*** Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis hololeuca*** (Boiss. & Heldr.) Bentham [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis huber-morathii*** Greuter ex Burdet [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis leptoclada*** O. Schwarz & Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis libanotica*** Labill. ssp. ***violescens*** (Davis) Davis [Labiatae] *12840*
R *12840* Turkey *12840*

Sideritis lycia (Boiss. & Heldr.) Bentham [Labiatae] *12840*
V *12840* Turkey *12840*

R ***Sideritis niveotomentosa*** Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

Sideritis phlomoides Boiss. & bal. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis phrygia*** Bornm. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis pisidica*** (Boiss. & Heldr.) Bentham [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis rubiflora*** Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis serratifolia*** Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis stricta*** (Boiss. & Heldr.) Bentham [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis tmolea*** Davis [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis trojana*** Bornm. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Sideritis vulcanica*** Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Silene akmaniana*** Ekim & Celik [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene anatolica*** Melzheimer & Baytop [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene araratica*** Schischk. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene argaea*** Fisch. & Mey. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene armena*** Boiss. var. ***serrulata*** (Boiss.) Coode & Cullen [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene azirensis*** Coode & Cullen [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene birandiana*** Ekim [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene bolanthoides*** Quezel,Coutaud & A. Pamukc. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene brevicalyx*** Hartwig & Strid [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene capillipes*** Boiss. & Heldr. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene caramanica*** Boiss. & Heldr. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene cariensis*** Boiss. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene cartilaginea*** Huber-Mor. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene caryophlloides*** (Poiret.) Otth ssp. ***echinus*** (Bois. & Held.) Coode & Cullen [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Silene caryphylloides*** (Poiret) Otth ssp. ***stentoria*** (Fenzl) Coode & Cullen [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

I ***Silene cretacea*** **Fisch. ex Spreng.** **[Caryophyllaceae]** *5942, 20171*
I *5942* Russia (E.Europe) - South *5942*

R ***Silene delicatula*** **Boiss. ssp. *pisidica* Coode & Cullen [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene ermenekensis*** **M. Vural & Kit Tan** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene haradjianii*** **Chowdh. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

I ***Silene hellmannii*** **Claus [Caryophyllaceae]** *8000, 20171*
I *11552* Russian Federation (western, Ural Mts) *11552*

R ***Silene inclinata*** **Huber & Mor.** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene isaurica*** **Contandr. & Quezel** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene ispartensis*** **Ghazanfar** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene lucida*** **Chowdh. ssp. *glandulosa* T. Ekim** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene lycaonica*** **Chowdh. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

Ex ***Silene oligotricha*** **Huber-Mor.** **[Caryophyllaceae]** *12840*
Ex *12840* Turkey *12840*

R ***Silene oreades*** **Boiss. & Heldr.** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene paphlagonica*** **Bornm. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

E ***Silene pompeiopolitana*** **J.Gay ex Boiss.** **[Caryophyllaceae]** *12840, 20171*
E *12840* Turkey *12840*

V ***Silene salsuginea*** **Huber-Mor.** **[Caryophyllaceae]** *12840*
V *12840* Turkey *12840*

V ***Silene sangaria*** **Coode & Cullen** **[Caryophyllaceae]** *12840, 20171*
V *19873* Turkey *12840*

R ***Silene scythicina*** **Coode & Cullen** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene sipylea*** **O. Schwarz [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

V ***Silene sordida*** **Huber-Mor. & Reese** **[Caryophyllaceae]** *12840*
V *12840* Turkey *12840*

R ***Silene splendens*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene squamigera*** **Boiss. ssp. *vesiculifera* (Gay ex Boiss.) Coode & Cullen [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene surculosa*** **Huber-Mor. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Silene tunicoides*** **Boiss. [Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

R ***Smyrnium gelaticum*** **Czecz. [Umbelliferae]** *12840*
R *12840* Turkey *12840*

R ***Sobolewskia sibirica*** **(Willd.) P.W.Ball** **[Cruciferae]** *20171*
R former European USSR

R ***Solenanthus formosus*** **R. Mill [Boraginaceae]** *12840*
R *12840* Turkey *12840*

V ***Sonchus erzincanicus*** **Matthews [Compositae]** *12840*
V *12840* Turkey *12840*

R ***Spergularia lyciaularia*** **Mounnier & Quezel** **[Caryophyllaceae]** *12840*
R *12840* Turkey *12840*

E ***Sphaerophysa kotschyana*** **Boiss. [Leguminosae]** *12840*
E *14155* Turkey *12840*

R ***Stachys aleurites*** **(Boiss. & Heldr.) Bentham** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys amanica*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys annua*** **(L.) L. ssp. *cilicica* (Boiss.) Bhattacharjee [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys antalyensis*** **Ayasligil & Davis** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys bayburtensis*** **Bhattacharjee & Huber-Mor.** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys bombycina*** **Boiss. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys burgsdorffiioides*** **(Bentham) Boiss. ssp. *ladanoides* Hand.-Mazz. [Labiatae]** *12840*
R *12840* Turkey *12840*

E ***Stachys buttlerii*** **R. Mill. [Labiatae]** *12840*
E *12840* Turkey *12840*

R ***Stachys cataonica*** **Bhattacharjee & Huber-Mor.** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys chasmosericea*** **Ayasligil & Davis** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys choruhensis*** **Kit Tan & Sorger** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys cretica*** **L. ssp. *trapezuntica* Rech.f.** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys distans*** **Bentham var. *cilicica* Bhattacharjee & Huber-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys euadenia*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys huber-morathii*** **Bhattacharjee** **[Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys inanis*** **Hausskn. & Bornm. [Labiatae]** *12840*

R *12840* Turkey *12840*

R ***Stachys megalodonta*** **Hausskn. & Bornm. ex Davis ssp. *mardinensis* Bhattacharjee [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys munzurdaghensis*** **Bhattacharjee [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys pinardii*** **Boiss. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys pseudopinardii*** **Bhattacharjee & Huber-Mor. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys pumila*** **Banks & Sol. [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys ramosissima*** **Montbret & Aucher ex Bentham [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys rizeensis*** **Bhattacharjee [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys sericantha*** **Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys subnuda*** **Montbret & Aucher ex Bentham [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Stachys tundjeliensis*** **Kit Tan & Sorger [Labiatae]** *12840*
R *12840* Turkey *12840*

Staphylea colchica **Steven [Staphyleaceae]** *5942*
I *5942* Georgia *5942*

R ***Stefanoffia insoluta*** **Kijuykov [Umbelliferae]** *12840*
R *12840* Turkey *12840*

E ***Stelleropsis caucasica*** **Pobed. [Thymelaeaceae]** *5942*
E *11552* Transcaucasus (Georgia) *11552*

R ***Sterigmostemum sulphureum*** **(Banks & Sol.) Bornm. ssp. *glandulosum* Hub.-Mor. & Reese [Cruciferae]** *12840*
R *12840* Turkey *12840*

E *II* ***Sternbergia candida*** **B. Mathew & T. Baytop [Amaryllidaceae]** *17663*
E *17662* Turkey (Nr Fethiye in Mugla Province) *12840*

II ***Sternbergia schubertii*** **Schenk [Amaryllidaceae]** *17663*
I *12840* Turkey *12840*

R ***Stipa aktauensis*** **Roshev. [Gramineae]**
R former USSR *6930*

R ***Stipa cretacea*** **P.A.Smirn. [Gramineae]** *8000, 20171*
R former European USSR *8000*

R ***Stipa lithophila*** **P.A.Smirn. [Gramineae]** *5942, 20171*
R *5942* Ukraine - Crimea *5942*

R ***Stipa longiplumosa*** **Roshev. [Gramineae]**
R former USSR *6930*

R ***Stipa magnifica*** **Junge [Gramineae]**
R former USSR *6930*

R ***Stipa trichoides*** **P. Smirnow [Gramineae]**
R former USSR *6930*

Ex ***Stroganowia sagittata*** **Karelin & Kir. [Cruciferae]** *6930*
Ex *6930* former Asiatic USSR *6930*

Suaeda cucullata **Aellen [Chenopodiaceae]** *12840*
E *14155* Turkey *12840*

E ***Swida darvasica*** **(Pojark.) Sojak [Cornaceae]**
E former USSR *6930*

R ***Symphyandra lazica*** **Boiss. & Bal. [Campanulaceae]** *12840*
R *12840* Turkey *12840*

E ***Symphyandra zangezura*** **Lipsky [Campanulaceae]**
E former USSR *6930*

R ***Symphytum longipetiolatum*** **Wickens [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Symphytum longisetum*** **Huber-Mor. & Wickens [Boraginaceae]** *12840*
R *12840* Turkey *12840*

V ***Symphytum pseudobulbosum*** **Asnav [Boraginaceae]** *12840*
V *12840* Turkey *12840*

R ***Symphytum savvalense*** **Kurtto [Boraginaceae]** *12840*
R *12840* Turkey *12840*

R ***Symphytum sylvaticum*** **Boiss. [Boraginaceae]** *12840*
R *12840* Turkey *12840*

V ***Syrenia talijevii*** **Klokov [Cruciferae]** *20171*
V former European USSR

I ***Tanacetum akinfievii*** **(Alexeenko) Tzvel. [Compositae]** *5942, 20627*
I *5942* Transcaucasus *5942*

R ***Tanacetum albipannosum*** **Huber-Mor. & Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum alyssifolium*** **(Bornm.) Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum argenteum*** **(Lam.) Willd. ssp. *canum* (C. Koch) Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum argenteum*** **(Lam.) Willd. ssp. *flabellifolium* (Boiss. & Heldr.) Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum cappadocicum*** **(DC.) Schultz Bip. [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum densum*** **(Lab.) Schultz Bip. ssp. *laxum* Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum densum*** **(Lab.) Schultz Bip. ssp. *sivasicum* Hub.-Mor. & Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum eginense*** **(Hausskn. ex Bornm.) Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum germanicopolitanum*** **(Bornm. & Heimerl) Grierso [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum haradjanii*** **(Rech.fil.) Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum haussknechtii*** **(Bornm.) Grierson [Compositae]** *12840*
R *12840* Turkey *12840*

R ***Tanacetum heterotomum*** (Bornm.) Grierson [Compositae] *12840*
R *12840* Turkey *12840*

R ***Tanacetum oltense*** (Sosn.) Grierson [Compositae] *12840*
R *12840* Turkey *12840*

R ***Tanacetum oxtstegium*** (Sosn.) Grierson [Compositae] *12840*
R *12840* Turkey *12840*

R ***Tanacetum paczoskii*** (Zefir.) Tzvelev [Compositae] *20171*
R former European USSR

R ***Tanacetum praeteritum*** (Horwood) Heywood [Compositae] *12840*
R *12840* Turkey *12840*

R ***Taraxacum turiense*** N.I.Orlova [Compositae] *20171*
R former European USSR

R ***Tephroseris integrifolia*** (L.) Holub. ssp. ***karsianus*** Mathews [Compositae] *12840*
R *12840* Turkey *12840*

R ***Teucrium alyssifolium*** Stapf. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Teucrium antitauricum*** T. Ekim [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Teucrium cavernarum*** Davis [Labiatae] *12840*
R *12840* Turkey *12840*

Ex ***Teucrium leucophyllum*** Montbret & Aucher ex Bentham [Labiatae] *12840*
Ex *12840* Turkey *12840*

V ***Teucrium montbretii*** Bentham ssp. ***pamphlicum*** Davis [Labiatae] *12840*
V *12840* Turkey *12840*

R ***Teucrium odontites*** Davis & Bal. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Teucrium paederotoides*** Boiss. & Halkin [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Teucrium pestalozzae*** Boiss. [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Teucrium sandrasicum*** O. Schwarz [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Thalictrum uncinatum*** Rehmann [Ranunculaceae] *20171*
R former European USSR

E ***Thermopsis turcica*** Kit Tan, Vural & Kucukoduk [Leguminosae] *12840*
E *12840* Turkey *12840*

R ***Thesium aureum*** Jaub. & Spach [Santalaceae] *12840*
R *12840* Turkey *12840*

R ***Thesium bertramii*** Aznav. [Santalaceae] *12840*
R *12840* Turkey *12840*

R ***Thesium cilicicum*** Bornm. [Santalaceae] *12840*
R *12840* Turkey *12840*

R ***Thesium minkwitzianum*** B. Fedtsch. [Santalaceae]
R former USSR *6930*

R ***Thesium oreogetum*** hendrych [Santalaceae] *12840*
R *12840* Turkey *12840*

V ***Thesium scabriflorum*** Davis [Santalaceae] *12840*
V *12840* Turkey *12840*

R ***Thesium stelleroides*** Jaub. & Spach [Santalaceae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi aghricum*** Davis & Tan [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi bornmuelleri*** (Rech.) Hedge [Cruciferae] *12840*
R *12840* Turkey *12840*

E ***Thlaspi cariense*** A. Carlstrom [Cruciferae] *12840*
E *12840* Turkey *12840*

R ***Thlaspi cilicicum*** (Boiss.) Hayek [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi crassum*** Davis [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi densiflorum*** Boiss. & Kotschy [Cruciferae] *12840*
R *12840* Turkey *12840*

V ***Thlaspi dolichocarpum*** (Zohary) Greuter & Burdet [Cruciferae] *12840*
V *12840* Turkey *12840*

R ***Thlaspi eigii*** (Zohary) Greuter & Burdet [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi elegans*** Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi papillosum*** Boiss. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi sintenisii*** Hausskn. ex Bornm. [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thlaspi watsonii*** Davis [Cruciferae] *12840*
R *12840* Turkey *12840*

R ***Thurya capitata*** Boiss. & Bal. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

R ***Thymbra sintenisii*** Bornm. & Azn. ssp. ***isaurica*** Davis [Labiatae] *12840*
R *20618* Turkey *20618*

R ***Thymbra spicata*** L. var. ***intricata*** Davis [Labiatae] *12840*
R *20618* Turkey *20618*

R ***Thymelaea cilcicica*** Meissner [Thymelaeaceae] *12840*
R *12840* Turkey *12840*

R ***Thymus argaeus*** Boiss. & bal. [Labiatae] *12840*
R *12840* Turkey *12840*

E ***Thymus aznavourii*** Velen. [Labiatae] *12840, 20171*
E *14155* Turkey (Safraköy, near Istanbul) *12840*

R ***Thymus binervulatus*** Klokov & Roussine [Labiatae] *8000, 20171*
R former European USSR *8000*

R ***Thymus bornmuelleri*** Velen [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Thymus borysthenicus*** Klokov & Roussine [Labiatae] *8001, 20171*
R former European USSR (Black Sea) *8001*

R ***Thymus canoviridis*** Jalas [Labiatae] *12840*
R *12840* Turkey *12840*

R ***Thymus cappadocicus*** Boiss. var. ***cappadocicus*** [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus cappadocicus* Boiss. var. *globifer* Jalas [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus cariensis* Huber-Mor. [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus convolutus* Klokov [Labiatae] *12840*
R *19873* Turkey *12840*

R *Thymus haussknechtii* Velen. [Labiatae] *12840*
R *12840* Turkey *12840*

V *Thymus leucostomous* Hausskn. & Velen. var. *argyllaceus* Jalas [Labiatae] *12840*
V *12840* Turkey *12840*

V *Thymus leucostomus* Hausskn. & Velen var. *gypsaceus* Jalas [Labiatae] *12840*
V *12840* Turkey *12840*

R *Thymus pectinatus* Fisch. & Mey. var. *pectinatus* [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus pubescens* Boiss. & Kotschy var. *cratericola* Jalas [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus pulvinatus* Celak [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus revolutus* Celak [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus sipyleus* Boiss. var. *davisianus* Ronniger [Labiatae] *12840*
R *12840* Turkey *12840*

R *Thymus spathulifolius* Hausskn. & Velen [Labiatae] *12840*
R *12840* Turkey *12840*

V *Thymus talievii* Klok. & Schost. [Labiatae] *8000*
V former European USSR *8000*

R *Tomanthea daralghezica* (Fomin) Takht. [Compositae]
R former USSR *6930*

R *Tordylium elegans* Alava & Huber-Mor. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R *Tordylium lanatum* (Boiss.) Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R *Tordylium macropetalum* Boiss. [Umbelliferae] *12840*
R *12840* Turkey *12840*

V *Tordylium pustulosum* Boiss. [Umbelliferae] *12840*
V *12840* Turkey *12840*

R *Torilis triradiata* Boiss. & Heldr. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R *Tragopogon albinervis* Freyn & Sint [Compositae] *12840*
R *12840* Turkey *12840*

V *Tragopogon cretaceus* S.A.Nikitin [Compositae] *20171*
V former European USSR

R *Tragopogon fibrosus* Freyn & Sint. ex Freyn [Compositae] *12840*
R *19873* Turkey *12840*

R *Tragopogon oligolepis* Hartvig & Strid [Compositae] *12840*
R *12840* Turkey *12840*

R *Trichanthemis aurea* Kraschen. [Compositae] *8001*
R former Asiatic USSR *6930*

R *Trifolium apertum* Bobrov var. *kilaeum* Zoh. & lenr. [Leguminosae] *12840*
R *12840* Turkey *12840*

V *Trifolium batmanicum* Katznelson [Leguminosae] *12840*
V *12840* Turkey *12840*

R *Trifolium davisii* Hossain [Leguminosae] *12840*
R *12840* Turkey *12840*

V *Trifolium euxinum* Zoh. [Leguminosae] *12840*
V *12840* Turkey *12840*

R *Trifolium longidentatum* Nab. [Leguminosae] *12840*
R *12840* Turkey *12840*

E *Trifolium pachycalyx* Zoh. [Leguminosae] *12840*
E *12840* Turkey *12840*

R *Trifolium roussaenanum* Boiss. [Leguminosae] *12840*
R *12840* Turkey *12840*

E *Trigonella arenicola* Huber-Mor. [Leguminosae] *12840*
E *12840* Turkey *12840*

R *Trigonella cephalotes* Boiss. & Bal. [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Trigonella cilicica* Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

V *Trigonella halophila* Boiss. [Leguminosae] *12840*
V *12840* Turkey *12840*

R *Trigonella lycica* Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Trigonella pamphylica* Huber-Mor. & Sirj. [Leguminosae] *12840*
R *12840* Turkey *12840*

V *Trigonella polycarpa* Boiss. & Heldr. [Leguminosae] *12840*
V *12840* Turkey *12840*

R *Trigonella pseudocapitata* Contandr. ex Quezel [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Trigonella rhytidocarpa* Boiss. & Bal. [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Trigonella rigida* Boiss. & Bal. [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Trigonella sirjaevii* Huber-Mor. [Leguminosae] *12840*
R *12840* Turkey *12840*

R *Trigonosciadium intermedium* Freyn & Sint. [Umbelliferae] *12840*
R *12840* Turkey *12840*

R *Trinia crithmifolia* (Willd.) H.Wolff [Umbelliferae] *20171*
R former European USSR

R *Trinia kitaibelii* auct., non M.Bieb. [Umbelliferae] *20171*
R former European USSR

V *Tripleurospermum baytopianum* E. Hossain [Compositae] *12840*
V *12840* Turkey *12840*

R *Tripleurospermum corymbosum* E. Hossain [Compositae] *12840*
R *12840* Turkey *12840*

R ***Tripleurospermum fissurale*** (Sosn.) E. Hossain [Compositae] *12840*
R *12840* Turkey *12840*

R ***Tripleurospermum hygrophilum*** (Bornm.) Bornm. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Tripleurospermum kotschyi*** (Boiss.) E. Hossain [Compositae] *12840*
R *12840* Turkey *12840*

R ***Tripleurospermum rosellum*** (Boiss. & Orph.) Hayek var. ***album*** E. Hossain [Compositae] *12840*
R *12840* Turkey *12840*

R ***Trisetum thospiticum*** Chrtek [Gramineae] *12840*
R *12840* Turkey *12840*

I ***Triticum timopheevii*** (Zhuk.) Zhuk. [Gramineae] *5942*
I *5942* Georgia *5942*

R ***Tulipa carinata*** Vved. [Liliaceae]
R former USSR *6930*

E ***Tulipa fosteriana*** Irving [Liliaceae]
E former USSR *6930*

R ***Tulipa heteropetala*** Ledeb. [Liliaceae]
R former USSR *6930*

E ***Tulipa hoogiana*** B. Fedtsch. [Liliaceae]
E former USSR *6930*

V ***Tulipa korolkowii*** Regel [Liliaceae]
V former USSR *6930*

E ***Tulipa kuschkensis*** B. Fedtsch. [Liliaceae]
E former USSR *6930*

R ***Tulipa linifolia*** Regel [Liliaceae]
R former USSR *6930*

R ***Tulipa maximowiczii*** Regel [Liliaceae]
R former USSR *6930*

V ***Tulipa praestans*** Hoog [Liliaceae]
V former USSR *6930*

V ***Tulipa rhodopaea*** Vel. [Liliaceae] *5204*
V *5204* Bulgaria (Southern Bulgaria - one site only.) *5204*

R ***Tulipa rosea*** Vved. [Liliaceae]
R former USSR *6930*

R ***Tulipa schmidtii*** Fomin [Liliaceae]
R former USSR *6930*

Ex ***Tulipa sprengeri*** Baker [Liliaceae] *12840*
Ex *12840* Turkey *12840*

E ***Tulipa subpraestans*** Vved. [Liliaceae]
E former USSR *6930*

R ***Tulipa tarda*** Stapf [Liliaceae]
R former USSR *6930*

V ***Tulipa urumoffii*** Hayek [Liliaceae] *5204, 20171*
V *5204* Bulgaria (Rodopi) *8000*

V ***Tulipa wilsoniana*** Hoog [Liliaceae]
V former USSR *6930*

R ***Tulipa zenaidae*** Vved. [Liliaceae]
R former USSR *6930*

R ***Uechtritzia armena*** Freyn & Sint. [Compositae] *12840*
R *12840* Turkey *12840*

R ***Valeriana bolkarica*** Contandr. ex Quezel [Valerianaceae] *12840*
R *12840* Turkey *12840*

R ***Valeriana oliganthe*** Boiss. & Heldr. [Valerianaceae] *12840*
R *12840* Turkey *12840*

R ***Valeriana speluncaria*** Boiss. ssp. ***glabriuscula*** Contandr. ex Quezel [Valerianaceae] *12840*
R *12840* Turkey *12840*

R ***Velezia hispida*** Boiss. [Caryophyllaceae] *12840*
R *12840* Turkey *12840*

V ***Velezia pseudorigida*** Huber-Mor. [Caryophyllaceae] *12840*
V *12840* Turkey *12840*

V ***Velezia tunicoides*** Davis [Caryophyllaceae] *12840*
V *12840* Turkey *12840*

R ***Ventenata eigiana*** (H. Scholz & Raus) M. Dogan [Gramineae] *12840*
R *12840* Turkey *12840*

R ***Verbascum adenocarpum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum adenophorum*** Boiss. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum afyonense*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum agastachyum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum amanum*** Boiss. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum anastasii*** Nab. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum ancyritanum*** Bornm. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum anisophyllum*** Murb. [Scrophulariaceae] *8000, 20171*
V *5204* Bulgaria (west) *8000*

R ***Verbascum antitauricum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum apiculatum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum ballsianum*** Murb. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum basivelatum*** Huber-Mor. [Scrophulariaceae] *12840*
V *12840* Turkey *12840*

R ***Verbascum bellum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum biledschikianum*** Bornm. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum biscutellifolium*** Bentham [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum bombyciferum*** Boiss.

[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum bourgeauanum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum brandianum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

Ex ***Verbascum calycosum*** Hausskn. & Murb.
[Scrophulariaceae] *12840*
Ex *12840* Turkey *12840*

R ***Verbascum campestre*** Boiss. & Heldre.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cariense*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cerinum*** Boiss. & Heldr.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum charputense*** Murb. var. ***adenophorum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum chazaliei*** Boiss. [Scrophulariaceae] *12840*
V *12840* Turkey *12840*

R ***Verbascum cheiranthifolium*** Boiss. var. ***heldrechii*** Boiss. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cheiranthifolium*** Boiss. var. ***obtusiusculum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum chionophyllum*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cholorostegium*** Bornm. et Murb.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum chrysorrhacos*** Boiss.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cilicicum*** Boiss. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cilicium*** (Boiss. et Heldr.) O. Kuntze
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum coronopifolium*** (Boiss. et Bal.) O. Kuntz
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cucullatibracteatum*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum cymigerum*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

Verbascum dalamanicum Huber et Mor.
[Scrophulariaceae] *12840*
V *12840* Turkey *12840*

Verbascum davidoffii Murb. [Scrophulariaceae] *8000, 20171*
V *5204* Bulgaria (south) *5204*

R ***Verbascum davisianum*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum decursivum*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum degenii*** Halácsy [Scrophulariaceae] *12840, 20171*
V *19873* Turkey *12840*

R ***Verbascum demirizianum*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum detersile*** Boiss. et Heldr.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum discolor*** Murb. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum diversifolium*** Hochst.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum drymophilum*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum dudleyanum*** (Huber et Mor.) Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum dumulosum*** Davis et Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum eleonarae*** Huber et Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum eriocarpum*** (Freyn & Sint.) Bornm.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum euphraticum*** Bentham
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

I ***Verbascum exuberans*** Huber-Mor.
[Scrophulariaceae] *12840*
I *12840* Turkey *12840*

R ***Verbascum flabellifolium*** (Huber-Mor.) Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum flavipannosum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum freynii*** (Sint.) Murb.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum germaniciae*** Hausskn.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum globiferum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum gracilescens*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum hadschinense*** Freyn

[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum hajastanicum*** **Bordz.**
[Scrophulariaceae] *8001*
R former USSR *6930*

V ***Verbascum helianthomoides*** **Huber-Mor.**
[Scrophulariaceae] *12840*
V *12840* Turkey *12840*

R ***Verbascum heterobarbatum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum heterodontum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum iconicum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum inaequale*** **Freyn & Sint.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum infidelium*** **Boiss. & Hausskn.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum inulifolium*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum isauricum*** **Boiss. & Heldr.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum jankaeanum*** **Pancic**
[Scrophulariaceae] *8000, 20171*
V *5204* Bulgaria (west) *5204*

R ***Verbascum lachnopus*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum latisepalum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum leiocarpum*** **Murb.** [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum leiranthoides*** **Murb.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum leptocladum*** **Boiss. & Heldr.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum leuconeurum*** **Boiss. & Heldr.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum linearilobum*** **(Boiss.) Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum linguifolium*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum lobatum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
V *12840* Turkey *12840*

R ***Verbascum longipedicellatum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum luciliae*** **(Boiss.) O. Kuntz**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum luridifolium*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum lyratifolium*** **Kochel**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum maendri*** **Bornm.** [Scrophulariaceae] *12480*
V Turkey *12480*

R ***Verbascum meincheanum*** **Murb.**
[Scrophulariaceae] *12480*
R Turkey *12480*

R ***Verbascum melitense*** **Huber-Mor.**
[Scrophulariaceae] *12480*
R Turkey *12480*

R ***Verbascum microsepalum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum murbeckianum*** **Huber-Mor.**
[Scrophulariaceae] *12480*
R Turkey *12480*

R ***Verbascum myrianthum*** **Boiss.**
[Scrophulariaceae] *12480*
R Turkey *12480*

R ***Verbascum napifolium*** **Boiss.**
[Scrophulariaceae] *12480*
R Turkey *12480*

R ***Verbascum nudatum*** **Murb.** [Scrophulariaceae] *12480*
R Turkey *12480*

R ***Verbascum nudiusculum*** **Huber-Mor.**
[Scrophulariaceae] *12480*
R Turkey *12480*

R ***Verbascum obtusifolium*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum olympicum*** **Boiss.** [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum orbicularifolium*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pallidiflorum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pellitum*** **Huber-Mor.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pestalozzae*** **Boiss.**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum petiolare*** **Boiss. & Kotschy**
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum phrygium*** **Bornm.** [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pinardii*** **Boiss.** [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pinetorum*** (Boiss.) O. Kuntze
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum prusianum*** auct., non Boiss.
[Scrophulariaceae] *12840, 20171*
R *12840* Turkey *12840*

R ***Verbascum pseudoholotrichum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pseudovarians*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pterocalycinum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pterocladum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum pumiliforme*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum pumilum*** Boiss. & Heldr.
[Scrophulariaceae] *12840*
V *12840* Turkey *12840*

V ***Verbascum pyroliforme*** (Boiss. & Heldr.) O. Kuntze
[Scrophulariaceae] *12840*
V *12840* Turkey *12840*

R ***Verbascum reeseanum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum renzii*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum rubricaule*** Boiss. & Heldr.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum serpenticola*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum simavicum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum smyrnaeum*** Boiss. [Scrophulariaceae] *12840*
V *12840* Turkey *12840*

R ***Verbascum songaricum*** Schrenk ex Fisch. & Mey. ssp. ***subdecurrens*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum sorgerae*** (Huber-Mor.) Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum spectabile*** Bieb. var. ***isandrum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum sphenandroides*** C. Koch.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum spodiotrichum*** (Huber-Mor.) Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum stachydifolium*** Boiss. & Heldr.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum stenocarpum*** Boiss. & Heldr.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum stenostachyum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

V ***Verbascum stepporum*** Huber-Mor.
[Scrophulariaceae] *12840*
V *12840* Turkey *12840*

R ***Verbascum subnivale*** Boiss. & Hausskn.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum subserratum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum tauri*** Boiss. & Kotschy
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum tenue*** Murb. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum transolympicum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum trapifolium*** (Stapf.) Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum trichostylum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum urceolatum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum urobracteatum*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum vanense*** Huber-Mor.
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum varians*** Freyn & Sint. var. ***stepporum*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum varians*** Freyn & Sint. var. ***trapezunticum*** Murb. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Verbascum vulcanicum*** Boiss. & Heldr. var. ***viridans*** Huber-Mor. [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

E ***Veronica allahuekberensis*** Ozturk
[Scrophulariaceae] *12840*
E *12840* Turkey *12840*

R ***Veronica antalyensis*** Fischer, Erik & Sumbul
[Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Veronica bombycina*** Boiss. et Kotschy ssp. ***bolkardaghensis*** Fischer [Scrophulariaceae] *12840*
R *12840* Turkey *12840*

R ***Veronica bombycina*** Boiss. & Kotschy ssp. ***froediniana*** Rech.f. [Scrophulariaceae] *12840*

R *12840* Turkey *12840*

R ***Veronica cetikii*** **Ozturk [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica cuneifolia*** **D. Don ssp. *massicytica* Fischer [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica donii*** **Rommpp [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

I ***Veronica filifolia*** **Lipsky [Scrophulariaceae]** *5942*
I *5942* Russia - North Caucasus *5942*

R ***Veronica fredericae*** **Fischer [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica fuhsii*** **Freyn & Sint. [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica gentianoides*** **Vahl. ssp. *kopgecidiensis* A. Ozturk [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica hispidula*** **Boiss. & Huet ssp. *ixodes* (Boiss. & Bal.) Fischer [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica kotschyana*** **Bentham [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica lycica*** **E. Lehm. [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica macrostachya*** **Vahl ssp. *sorgerae* Fischer [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica montbretti*** **Fischer [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica oltensis*** **Woronow [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica orientalis*** **Miller ssp. *carduchorum* Davis [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica polium*** **Davis [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica pusilla*** **Kotschy var. *erciyasdagi* (Fischer) Fischer [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica quezelii*** **Fischer [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica surculosa*** **Bioss. & Bal. [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica tauricola*** **Bornm. [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Veronica thymoides*** **Davis ssp. *thymoides* [Scrophulariaceae]** *12840*
R *12840* Turkey *12840*

R ***Vicia canescens*** **Lab. ssp. *leucomalla* (Bornm.) Davis [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Vicia glareosa*** **Davis [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Vicia hololasia*** **Woronow [Leguminosae]** *11552*
R *11552* Russian Federation (Caucasus) *11552*

R ***Vicia quadrijuga*** **Davis [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Vicia splendens*** **Davis [Leguminosae]** *12840*
R *12840* Turkey *12840*

R ***Vincetoxicum rossicum*** **(Kleopow) Barbar. [Asclepiadaceae]** *20171*
R former European USSR *8000*

R ***Viola cilicica*** **Contandr. ex Quezel [Violaceae]** *12840*
R *12840* Turkey *12840*

R ***Viola crassifolia*** **Fenzl [Violaceae]** *12840*
R *12840* Turkey *12840*

R ***Viola dichroa*** **Boiss. & Huet [Violaceae]** *12840*
R *12840* Turkey *12840*

I ***Viola incisa*** **Turcz. [Violaceae]** *5942*
I *5942* Russia (Siberia) - Altai (south) *5942*
I *5942* Russia (Siberia) - Irkutsk (L. Baikal) *5942*
I *5942* Russia (Siberia) - Krasnoyarsk *5942*

R ***Viola isaurica*** **Contandr. ex Quezel [Violaceae]** *12840*
R *12840* Turkey *12840*

V ***Viola oreades*** **M.Bieb. [Violaceae]** *8000, 20171*
V *20655* Ukraine - Crimea *8000*

R ***Viola sandrasea*** **Melchior [Violaceae]** *12840*
R *12840* Turkey *12840*

R ***Zingeria verticillata*** **(Boiss. & Bal.) Chrtek [Gramineae]** *12840*
R *12840* Turkey *12840*

R ***Ziziphora serpyllacea*** **M. Bieb. [Labiatae]** *8001*
R former Asiatic USSR (Caucasus) *8001*

R ***Ziziphora taurica*** **M. Bieb. ssp. *cleonioides* (Boiss.) Davis [Labiatae]** *12840*
R *12840* Turkey *12840*

R ***Zygophyllum darvasicum*** **A. Boriss. [Zygophyllaceae]**
R former USSR *6930*

R ***Zygophyllum kaschgaricum*** **A. Boriss. [Zygophyllaceae]**
R former USSR *6930*

5042 **Rackham, O. et al. (1983)**. Trees in the 21st century. Berkhamsted, A B Academic Publishers. 133p. Illus., maps.

5204 **Velchev, V., Kozuharov, S., Bondev, I., Kuzmanov, B., & Markova, M. (1984)**. Chervena kniga na NR Bulgariya: izcheznali, zastrasheni ot izchezvane i redki rasteniya i zhivotni: tom 1. Rasteniya. [Red Data Book of the People's Republic of Bulgaria: v. 1. Plants]. Sofiya: Izdatelstvo na Bulgarskata Akademiya na Naukite. 447 pp. Bul (En, Rus). Illus., col. illus., maps.

5942 **Borodin, A.M. et al. (1985)**. Krasnaya kniga SSSR: redkie i nakhodyashchiesya pod ugrozoi ischeznoveniya vidy zhivotnykh i rastenii. - izdanie vtoroe [2]: tom pervyi - vtoroi [1-2]. (2nd edition). [Plant Red Data Book for the USSR]. Moscow: Lesnaya Promyshlennost. Illus., col., maps. Vol. 1 - Animals; Vol. 2 - Plants.

6930 **Takhtajan, A.L. (1981)**. Rare and vanishing plants of the USSR to be protected. Leningrad: Nauka. 202 pp.

8000 **Tutin, T.G. et al. (eds.) (1964)**. Flora Europaea. (1st ed.). Cambridge: Cambridge University Press. 5 vols, 1964-1980. 2nd ed. vol 1 1993.

8001 **Komarov, V.L. & Shishkin, B.K. (1933)**. Flora URSS. Jerusalem, Israel: Academy of Sciences of the USSR, Moscow and Leningrad. 30 vols (1933-1964). Program for Scientific Translations. Vols 1-21 and 24 translated into English, 1963-1979, by N. Landau.

8619 **Davis, P.H. (1965-1985)**. Flora of Turkey and the East Aegean Islands. 9 vols. Edinburgh: Edinburgh University Press. Illus., maps.

8934 **Avishai, M. (1980)**. A list of oncocyclus *Iris* from the Middle East proposed for inclusion in the threatened plants survey. Includes notes on distribution.

10260 **HMSO. (1895-1992)**. Index Kewensis plantarum phanerogamarum. Kew: Royal Botanic Gardens. Vols 1-2 published in 1895; 19 supplements up to 1993. CD-ROM version 1993 (Oxford University Press).

11552 **Golovanov, V.D. et al. (eds.) (1988)**. Red Data Book of RSFSR, plants. Komarov, Moscow: Academy of Sciences of USSR, Botanical Institut of V.L. Rosagropromizdat. 591 pp. Col. illus., maps.

12480 **Webster, G. & Huft, M.J. (1988)**. Revised synopsis of Panamanian Euphorbiaceae. *Ann. Missouri Bot. Gard.* 75(3):1087-1144.

12840 **Ekim, T., Koyuncu, M., Erik, S., & Ilarslan, R. (eds.). et al. (1989)**. Türkiye'nin tehlike altindaki nadir ve endemik bitki turleri. (Serie no: 18). [List of rare, threatened and endemic plants in Turkey prepared according to IUCN Red Data Book categories]. Ankara: Türkiye Tabiatini Koruma Dernegi [Turkish Association for the Conservation of Nature and Natural Resources]. 227 pp. Tu (En).

14071 **Ekim, T. (1990)**. Letters to Chris Leon concerning Bern Convention - revision of Appendix I. With data sheets.

14155 **Anon. (no date)**. Annotated printout of Bern Convention - revision of Appendix I. 175 pp.

14197 **Ekim, T., Koyuncu, M., Guner, A., & Vural, M. (1990)**. Conservation summary. Turkish species.

15934 **Grey-Wilson, C. (1988)**. The genus *Cyclamen*. Portland, Oregon, USA: Timber Press. 147 pp.

17662 **Mathew, B. (1992)**. Annotations to: Conservation status listing: *Sternbergia*.

17663 **Mathew, B. (1983)**. A review of the genus *Sternbergia*. *The Plantsman* 5(1):1-16.

17664 **Mathew, B. (1992)**. Annotations to: Conservation status listing: *Galanthus*. 3 pp. TPU printout.

17665 **Walters, S.M. et al. (1986)**. The European Garden Flora. (1). 318 pp.

17672 **Carter, S. (1992)**. Annotations to: Conservation status listing: *Euphorbia*. TPU printout.

17781 **Morgan, V. & Leon, C. (1990)**. Bern Convention. Revision of Appendix I (Flora).

19174 **Iriondo, J.M., De Hond, L.J., & Gómez-Campo, C. (1993)**. Current research on the biology of threatened plant species of the Mediterranean Basin and Macaronesia: a database. (Preliminary Draft). Madrid, Spain: Commission for the Conservation of Plant Resources. Organization for the phyto-Taxonomic Investigation of the Mediterranean Area. (unpublished)209 pp. Includes database printout of 201 threatened species with details of the organisation undertaking research.

19266 **Tutin, T.G., Burges, N.A., Chater, A.O., Edmondson, J.R., Heywood, V.H., Moore, D.M., Valentine, D.H., Walters, S.M., & Webb, D.A. (eds.). (1993)**. Flora Europaea Volume 1. (Second edition). Psilotaceae to Platanaceae. Cambridge, UK: Cambridge University Press. 581 pp.

19426 **Anon. (1994)**. Correspondance with WCMC including list of plant species to be added to the CORINE Biotopes Project. Bulgarian Ministry of Environment.

19709 **Peev, D. (1993)**. Convention on the conservation of European wildlife and natural habitats. Threatened plant species in Bulgaria including candidate species for Appendix I of the Bern Convention. Strasbourg: Council of Europe. Standing Committee, 13th meeting.

19847 **Jordanov, D. (1976)**. Flora Reipublicae Populares Bulgarica (Flora of the People's Republic of Bulgaria). Volume VI. Bulgaria: *In* Aedibus Academiae Scientiarum Bulgaricae.

19873 **Atay, S. (1994)**. Annotations to WCMC printout entitled "Turkey - conservation status listing of plants" dated 21 June 1994. Includes list of corrections by Prof.Dr. Neriman Ozhatay.

20171 **Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H., Walters, S.M., & Webb, D.A. (eds.). (1995)**. Flora Europaea Vol 1-5. Electronic dataset supplied by R.J Pankhurst, Royal Botanic Garden Edinburgh, May 1995.

20283 **Govaerts, R. (1994)**. Checklist of *Quercus* species world wide.

20618 **Guener, A. (1995)**. Conservation status of Turkish woody plants. 12 pp.

20627 **Degteva, S. (1995)**. Annotations to WCMC list of plants of the Russian Federation.

20628 **Czerepanov, S.K. (ed.). (1995)**. Plantae vasculares rossicae et civitatum collimitanearum. St Petersburg: World and Family-95 Ltd. 990 pp. Russian Edition.

20649 **Anon. (1936-1965)**. Flora of UkrSSR. Kiev: Publishing House of Academy of Sciences of Ukrssr. vol. 1-12.

20650 **Andrienko, T.L. (1995)**. Annotations to WCMC list of plants of Ukraine, including new list of datasources for Ukraine.

20653 **Anon. (1987)**. Determinant of higher plants of Ukraine. Kiev: Naukova Dumka. 546 pp.

20654 **Anon. (1972)**. Determinant of higher plants of Crimea. Leningrad: Nauka. 560 pp.

20655 **Anon. (1994)**. Red Book of the Ukraine. Kiev: Ukrainska Encyclopedia. part 1, animals part 2, plants in print.

20689 **Nooteboom, H.P. (1985)**. Notes on Magnoliaceae with a revision of *Pachylarnax* and *Elmerrillia* and the Malesian species of *Manglietia* and *Michelia*. *Blumea* 31:65-121.

20698 **Güner, A. & Zielinski, J. (comps.). (1995)**. The conservation status of the Turkish woody flora. 17 pp.

21309 **Talbot, S.S. (ed.). (1997)**. Rare Arctic Endemic Vascular Plants. (Draft 18/2/97 CAFF Plants). 84 pp.

21389 **Davis, A.P. et al. (1997)**. CITES Bulb Checklist (Draft). For the genera: *Cyclamen*, *Galanthus* and *Sternbergia*. The Royal Botanic Gardens, Kew. 1-87 pp.

: :

R ***Abies koreana*** **Wilson [Pinaceae]** *15957*
R *20761* Russia *15957*
R *20761* Korea, South *15957*

I ***Acer heldreichii*** **Orph. ex Boiss. ssp. *visianii* H. Maly [Aceraceae]** *6062, 20171*
R *21091* Bosnia & Herzegovina *21091*
I *6062* Bulgaria (west) *8000*
I *6062* (former) Yugoslavia *8000*

R ***Achillea oxyloba*** **(DC.) Sch.Bip. ssp. *schurii* (Sch.Bip.) Heimerl [Compositae]** *20171*
R *19947* Romania *17823*
I *5942* Ukraine *5942*

R ***Alkanna primulifolia*** **Griseb. [Boraginaceae]**
R Bulgaria
R Greece

R ***Alkanna stribrnyi*** **Velen. [Boraginaceae]** *5204, 20171*
V *19426* Bulgaria (south) *5204*
R (former) Yugoslavia

R ***Allium regelianum*** **A.K.Becker [Alliaceae]** *5942, 20171*
E *11552* Russia (E.Europe) - South *11552*
R *20655* Ukraine (south) *20649*

R ***Anthemis macrantha*** **Heuff. [Compositae]** *5204, 20171*
R *5204* Bulgaria (west) *5204*
R *19947* Romania *20631*

R ***Anthemis trotzkiana*** **Claus ex Bunge [Compositae]** *5942, 20171*
I *5942* Russia (E.Europe) - South *5942*
R *5942* Kazakhstan *5942*

R ***Arenaria rigida*** **M.Bieb. [Caryophyllaceae]** *8001, 20171*
R *5204* Bulgaria (north-east) *5204*
E *19949* Romania *20631*
R former European USSR *8001*

R ***Asperula suberosa*** **Sibth. & Sm. [Rubiaceae]** *5204, 20171*
R *5204* Bulgaria (south-west) *5204*
R Greece *8000*

R ***Astragalus arnacantha*** **M.Bieb. [Leguminosae]** *8000, 20171*
R Bulgaria *8000*
R *11552* Ukraine - Crimea *8000*

R ***Astragalus dasyanthus*** **Pall. [Leguminosae]** *8000, 20171*
R Bulgaria *8000*
V *20686* Hungary *17786*
R *20631* Romania *20631*
R (former) Yugoslavia
I Russia (E.Europe) - Northwest *8000*

I ***Betula raddeana*** **Trautv. [Betulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Georgia *5942*

V ***Biarum davisii*** **Turrill [Araceae]** *8000, 20171*
V *19121* Greece (Simi) *19121*
V *19121* Turkey (south-west Anatolia) *19121*

I ***Buglossoides glandulosa*** **(Velen.) R.Fern. [Boraginaceae]** *5204, 20171*
V *19426* Bulgaria (south) *5204*
I *19417* Romania *19417*

I ***Buxus colchica*** **Pojark. [Buxaceae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Azerbaijan *5942*
I *5942* Georgia *5942*

I ***Campanula engurensis*** **Charadze [Campanulaceae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Georgia *5942*

R ***Campanula transsilvanica*** **Schur ex Andrae [Campanulaceae]** *5204, 20171*
R *5204* Bulgaria (Southern and Western - three sites) *5204*
V *19949* Romania *20631*

V ***Carlina onopordifolia*** **Besser ex Szafer, Kulcz. & Pawl. [Compositae]** *5942, 20171*
V *18216* Poland (south) *20800*
I *5942* Ukraine *5942*

I ***Centaurea bagadensis*** **Woronow [Compositae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Transcaucasus *5942*

R ***Centaurea carpatica*** **(Porcius) Porcius [Compositae]** *20171*
R *19947* Romania *8001*
R *5942* Ukraine *5942*

I ***Centaurea taliewii*** **Kleopow [Compositae]** *11552, 20171*
I *5942* Russia (E.Europe) - South *5942*
I *5942* Kazakhstan *5942*
I *5942* Ukraine - Crimea *5942*

I ***Cladochaeta candidissima*** **(M. Bieb.) DC. [Compositae]** *8001*
I *5942* Russia - North Caucasus *5942*
I *5942* Azerbaijan *5942*

I ***Colchicum fominii*** **Bordz. [Colchicaceae]** *8000, 20171*
V *19949* Romania *8000*
I *5942* Moldova *5942*
I *5942* Ukraine *5942*

I ***Crambe steveniana*** **Rupr. [Cruciferae]** *5942, 20171*
I *5942* Russia - North Caucasus *5942*
I *5942* Transcaucasus *5942*
I *5942* Ukraine - Crimea *5942*

R ***Crataegus taurica*** **Pojark. [Rosaceae]** *20171*
R Ukraine - Crimea *8000*
R former European USSR (Crimea) *8000*

I ***Crocus angustifolius*** **Weston [Iridaceae]** *5942, 20171*
I *5942* Moldova *5942*
I *5942* Ukraine *5942*

R II ***Dactylorhiza kalopissii*** **Erich Nelson [Orchidaceae]**
I *19425* Bulgaria *19425*
R Greece

I ***Delphinium fissum*** **Waldst. & Kit. [Ranunculaceae]** *5942, 20171*
V *21091* Bosnia & Herzegovina *21091*
I *5942* Georgia *5942*
I *5942* Moldova *5942*
I *5942* Ukraine - Crimea *5942*

R ***Dianthus freynii*** **Vandas [Caryophyllaceae]** *6951, 20171*
V *21091* Bosnia & Herzegovina *21091*
I Bulgaria *6951*
R (former) Yugoslavia *6951*

R ***Dianthus nardiformis*** **Janka [Caryophyllaceae]** *19266, 20171*
R *5204* Bulgaria (north & east) *5204*
V *19608* Romania *8000*

R ***Dianthus pallidiflorus*** **Ser. [Caryophyllaceae]** *20171*
R Bulgaria
I former European USSR

R ***Draba subcapitata*** **Simm. [Cruciferae]** *20850, 20171*
I *20850* Canada - Franklin *20850*

I ***Elytrigia stipifolia*** **(Czern. ex Nevski) [Gramineae]** *5942, 20171*
- **I** *5942* Russia - North Caucasus *5942*
- **I** *5942* Russia (E.Europe) - South *5942*
- **I** *5942* Ukraine *5942*

I ***Epimedium colchicum*** **(Boiss.) Trautv. [Berberidaceae]** *5942*
- **I** *5942* Russia - North Caucasus *5942*
- **I** *5942* Georgia (Black Sea coast) *5942*

R II ***Epipactis pontica*** **Taub. [Orchidaceae]** *12840*
- **I** *19321* Slovakia *19321*
- **R** *19873* Turkey *12840*

V II ***Epipactis troodi*** **Lindb.f. [Orchidaceae]** *14230*
- **V** *19164* Cyprus *14230*
- **V** *19873* Turkey (Amanus mts.) *14230*

I ***Erythronium caucasicum*** **Woronow [Liliaceae]** *5942*
- **I** *5942* Russia - North Caucasus *5942*
- **I** *5942* Georgia *5942*

R ***Frankenia pulverulenta*** **L. [Frankeniaceae]** *17617, 20171*
- **V** *5204* Bulgaria (east) *5204*
- **V** *19949* Romania *20631*
- **R** *17617* China - Gansu (Mingqing) *11139*
- **R** *17617* China - Nei Monggol Zizhiqu (Ejinaqi) *11139*
- **R** *17617* China - Xinjiang Uygur Zizhiqu (Xingyun) *11139*

R ***Fritillaria drenovskii*** **Degen & Stoj. [Liliaceae]** *8000, 20171*
- **V** *19426* Bulgaria (south west) *8000*
- **R** Greece (north east) *8000*

R ***Fritillaria gussichiae*** **(Degen & Dörfl.) Rix [Liliaceae]** *8000, 20171*
- **R** Bulgaria *8000*
- **R** Greece *8000*
- **R** (former) Yugoslavia *8000*

I II ***Galanthus alpinus*** **Sosn. [Amaryllidaceae]** *5942*
- **I** *5942* Armenia *5942*
- **I** *5942* Georgia *5942*

R II ***Galanthus lagodechianus*** **Kem.-Nat. [Amaryllidaceae]** *5942*
- **R** *11552* Russia - North Caucasus *11552*
- **R** *11552* Transcaucasus *11552*

R ***Galium moldavicum*** **(Dobrescu) Franco [Rubiaceae]** *17762, 20171*
- **V** *19949* Romania *20631*
- **R** former European USSR *8001*

I ***Gentiana paradoxa*** **Albov [Gentianaceae]** *5942*
- **I** *5942* Russia - North Caucasus *5942*
- **I** *5942* Georgia *5942*

I ***Gladiolus palustris*** **Gaudin [Iridaceae]** *8000, 20171*
- **I** Albania *8000*
- **E** *19710* Austria *8000*
- **I** Bulgaria *8000*
- **E** *2050* Czech Republic (Bohemia) *19710*
- **V** *20528* France (east) *20528*
- **E** *19710* Germany *8000*
- **E** *19710* Hungary *8000*
- **I** Italy *8000*
- **E** *14229* Liechtenstein *14229*
- **E** *18216* Poland *8000*
- **I** Romania *8000*
- **E** *19710* Slovakia *19321*
- **E** *18154* Switzerland *8000*
- **I** (former) Yugoslavia *8000*
- **I** *5942* Byelarus *5942*
- **Ex** *18216* Lithuania *17779*
- **I** *5942* Ukraine *5942*

R ***Gymnospermium altaicum*** **(Pallas) Spach ssp.** ***odes.*** **(DC.) E. Mayer & Pulevic [Berberidaceae]** *10270*
- **R** *19121* Albania *19121*
- **E** *14155* Greece (Peloponnisos) *20731*
- **E** *19949* Romania *8000*

R ***Haplophyllum balcanicum*** **Vandas [Rutaceae]** *5204, 20171*
- **R** *5204* Bulgaria (south) *5204*
- **R** Greece

R ***Heracleum carpaticum*** **Porcius [Umbelliferae]** *17823, 20171*
- **V** *19949* Romania *20631*
- **R** former European USSR

E ***Iris acutiloba*** **C. Meyer [Iridaceae]** *5942*
- **E** *5942* Russia - North Caucasus *5942*
- **E** *5942* Azerbaijan (Caucasus) *5942*

R ***Jurinea taygetea*** **Halácsy [Compositae]** *20171*
- **V** *19426* Bulgaria *19426*
- **R** Greece

I ***Koeleria sclerophylla*** **P.A.Smirn. [Gramineae]** *5942, 20171*
- **I** *5942* Russia (E.Europe) - South *5942*
- **I** *5942* Kazakhstan *5942*

R ***Lamium glaberrimum*** **(K.Koch) Taliev [Labiatae]** *20*
- **E** *20655* Ukraine - Crimea *20654*
- **R** former European USSR

R ***Larix decidua*** **Mill. ssp.** ***polonica*** **(Racib.) Domin [Pinaceae]** *20171*
- **V** *18270* Poland (Carpathian Mts.) *18270*
- **R** *19947* Romania (Carpathian Mts.) *20650*
- **E** *20655* Ukraine (Carpathian Mts.) *20650*

R ***Laserpitium affine*** **Ledeb. [Umbelliferae]** *5942*
- **R** Turkey (Pontus range) *8001*
- **I** *5942* Georgia *5942*

R ***Lathraea rhodopea*** **Dingler [Scrophulariaceae]** *5204, 20171*
- **R** *5204* Bulgaria *5204*
- **R** Greece

R ***Lathyrus pancicii*** **(Jurisic) Adamovic [Leguminosae]** *8000, 20171*
- **Ex** *5204* Bulgaria (west) *5204*
- **R** (former) Yugoslavia *8000*

I ***Leiospora exscapa*** **(C. Meyer) Dvorak [Cruciferae]** *5942*
- **I** *5942* Russia (Siberia) - Altai *5942*
- **I** *5942* Kazakhstan *5942*

R ***Lepidium meyeri*** **Claus [Cruciferae]** *5942, 20171*
- **I** *5942* Russia (E.Europe) - South *5942*
- **R** *5942* Kazakhstan (north western) *5942*
- **I** *5942* Ukraine *5942*

R ***Lilium rhodopaeum*** **Delip. [Liliaceae]** *5204, 20171*
- **V** *19426* Bulgaria (south - one area and one site.) *5204*
- **R** *14000* Greece *14000*

R ***Liquidambar orientalis*** **Miller var.** ***orientalis*** **[Hamamelidaceae]** *20618*
- **R** *20731* Greece - East Aegean Is (Rhodes) *20731*
- **E** *20618* Turkey *20618*

R ***Malus florentina*** **(Zuccagni) C.K.Schneid. [Rosaceae]** *20178, 20171*
- **R** *20178* Albania *20178*
- **R** Greece
- **R** Italy

R (former) Yugoslavia
R *20618* Turkey (Anatolia) *20618*

V ***Microcnemum coralloides*** **(Loscos & J.Pardo) Buen [Chenopodiaceae]** *8000, 20171*
V Spain *8000*
E Turkey *8001*
E former USSR *6930*

R ***Minuartia stojanovii*** **(Kit.) Kozuharov & Kuzmanov [Caryophyllaceae]** *5204*
R *5204* Bulgaria (south-west) *5204*
R Greece

R ***Moehringia jankae*** **Griseb. ex Janka [Caryophyllaceae]** *19266, 20171*
R *5204* Bulgaria *19266*
V *19949* Romania (Dolurogea) *19266*

I ***Najas tenuissima*** **(A.Braun) Magnus [Hydrocharitaceae]** *20673, 20171*
V *20673* Finland *20673*
I *5942* Russia (E.Europe) - Central *5942*
I *5942* Russia (E.Europe) - Northwest *5942*
I *5942* Estonia *5942*

I ***Nectaroscordum dioscoridis*** **(Sibth. & Sm.) Zahar. [Alliaceae]** *5942, 20171*
I *5942* Azerbaijan *5942*
I *5942* Ukraine *5942*

I ***Nectaroscordum tripedale*** **(Trautv.) Grossh. [Alliaceae]** *11552*
I *5942* Russia - North Caucasus *5942*
V *11552* Armenia *11552*
V *11552* Azerbaijan *11552*

I ***Onosma polyphylla*** **Ledeb. [Boraginaceae]** *5942, 20171*
I *5942* Russia - North Caucasus (north) *5942*
I *5942* Ukraine - Crimea *5942*

R ***Onosma rhodopea*** **Velen. [Boraginaceae]**
I Bulgaria
R Greece

V II ***Ophrys argolica*** **Fleischm. ssp. *elegans* (Renz) Erich Nelson [Orchidaceae]** *14230*
V *19164* Cyprus *14230*
E *19873* Turkey *14230*

I II ***Ophrys caucasica*** **Woronow ex Grossh. [Orchidaceae]** *5942, 20627*
I *5942* Russia - North Caucasus *5942*
I *5942* Armenia *5942*
I *5942* Azerbaijan *5942*

I II ***Ophrys oestrifera*** **M.Bieb. [Orchidaceae]** *5942, 20171*
I *5942* Russia - North Caucasus *5942*
I *5942* Armenia *5942*
I *5942* Azerbaijan *5942*
I *5942* Georgia *5942*
I *5942* Ukraine - Crimea (south) *5942*

R ***Ornithogalum amphibolum*** **Zahar. [Hyacinthaceae]** *5942, 20171*
R Bulgaria *8000*
V *19949* Romania *8000*
I *5942* Moldova *5942*

R ***Ornithogalum oreoides*** **Zahar. [Hyacinthaceae]** *8000, 20171*
R Bulgaria *8000*
I *19417* Romania *8000*
I *5942* Moldova *5942*

Paeonia steveniana **Kem.-Nat. [Paeoniaceae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Georgia *5942*

R ***Papaver spicatum*** **Boiss. & Bal. [Papaveraceae]** *12840*
V *17832* Norway *17832*
R *12840* Turkey *12840*

V ***Phoenix theophrasti*** **Greuter [Palmae]** *8000, 20171*
V *14155* Greece - Crete *8000*
V *20731* Turkey *20618*

R ***Picea koraiensis*** **Nakai var. *koraiensis* [Pinaceae]** *18270*
R *18270* Russia (Ussuri River) *16386*
R *18270* China - Jilin *16386*
R *18270* Korea, North *16386*

V ***Pinus brutia*** **Ten. var. *pityusa* (Stev.) Silba [Pinaceae]** *18270*
V *18270* Syria *18270*
V *11552* Russia (Caucasus) *11552*
V *18270* Georgia (Black Sea coast) *18270*
V *18270* Ukraine - Crimea *20654*

R ***Pinus densiflora*** **Sieb. & Zucc. var. *funebris* (Komarov) Liou & Wang [Pinaceae]** *18270*
V *18270* Russia (maritime province) *20497*
R *18270* Korea, North *20497*

R ***Pinus peuce*** **Griseb. [Pinaceae]** *18270, 20171*
E *20178* Albania *10370*
R *18270* Bulgaria (west) *10370*
R *18270* Greece (extreme north) *10370*
R *18270* (former) Yugoslavia (south) *10370*

R ***Plantago schwarzenbergiana*** **Schur [Plantaginaceae]** *17786, 20171*
R *20686* Hungary *20686*
R *19949* Romania *20631*
I former European USSR

R ***Poa pirinica*** **Stoj. & Acht. [Gramineae]** *5204, 20171*
R *5204* Bulgaria (south) *5204*
R Greece

R ***Poa rehmannii*** **(Asch. & Graebn.) Wol [Gramineae]** *8000, 20171*
R *19949* Romania *8000*
I former European USSR *8000*

R ***Potentilla emilii-popii*** **Nyár. [Rosaceae]** *5204, 20171*
R *5204* Bulgaria (North-eastern - two sites and one area) *5204*
V *19949* Romania *20631*

I ***Pseudovesicaria digitata*** **(C. Meyer) Rupr. [Cruciferae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Armenia *5942*
I *5942* Azerbaijan (Caucasus Mts.) *5942*
I *5942* Georgia (Caucasus Mts.) *5942*

R ***Pulmonaria filarszkyana*** **Jáv. [Boraginaceae]** *17762, 20171*
R *20631* Romania *20631*
V former European USSR

I ***Quercus imeretina*** **Stev. ex Woronow [Fagaceae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Georgia *5942*

R ***Ramonda serbica*** **Pancic [Gesneriaceae]** *8000, 20171*
R *20178* Albania *20178*
R *5204* Bulgaria (north-west) *5204*
V Greece
R (former) Yugoslavia

R ***Rheum rhaponticum*** **L. [Polygonaceae]** *5204, 20171*
R *5204* Bulgaria *5204*
R Norway

R ***Ruscus colchicus*** **Yeo [Ruscaceae]** *5942*
R Turkey

I *5942* Georgia *5942*

R ***Salvia scabiosifolia*** **Lam. [Labiatae]** *8000, 20171*
R *5204* Bulgaria (north) *8000*
I former European USSR (Crimea) *8001*

R ***Saussurea involucrata*** **Karelin & Kir. ex Maxim. [Compositae]** *17617*
V *17617* China - Xinjiang Uygur Zizhiqu *11139*
R former USSR *6930*

I ***Scrophularia cretacea*** **Fisch. ex Spreng. [Scrophulariaceae]** *5942, 20171*
I *5942* Russia (E.Europe) - South *5942*
I *5942* Ukraine *5942*

I ***Secale kuprijanovii*** **Grossh. [Gramineae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Georgia *5942*

R ***Serratula bulgarica*** **Acht. & Stoj. [Compositae]** *8000, 20171*
R *5204* Bulgaria (north-east) *5204*
V *19608* Romania (eastern) *8000*

I ***Silene akinfievii*** **Schmalh. [Caryophyllaceae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Georgia *5942*

R ***Silene jailensis*** **N.I.Rubtzov [Caryophyllaceae]** *20171*
E *20655* Ukraine - Crimea *20653*
R former European USSR

R ***Silene zawadzkii*** **Herbich [Caryophyllaceae]** *17823, 20171*
R *19947* Romania *19949*
I *5942* Ukraine (Carpathian Mts.) *5942*

I ***Stipa anomala*** **P.A.Smirn. [Gramineae]** *5942, 20171*
I *5942* Russia (E.Europe) - South *5942*
I *5942* Ukraine *5942*

R ***Stipa dasyphylla*** **(Lindem.) Trautv. [Gramineae]** *8000, 20171*
R *2050* Czech Republic *2050*
E *20640* Germany *20640*
V *20686* Hungary *17786*
R *19947* Romania *19840*
V *19321* Slovakia *19321*
V *11552* Russia (west, Ural Mts., south-west Siberia) *11552*

I ***Stipa syreistschikowii*** **P. Smirn. [Gramineae]** *20654*
I *5942* Russia - North Caucasus *5942*
E *20655* Ukraine - Crimea *20655*

R ***Stipa zalesskii*** **Wilensky [Gramineae]** *8000*
R Czech Republic
R Slovakia
V *11552* Russia (Caucasus, west, south-west & east Siberia) *11552*

R ***Syringa josikaea*** **J.Jacq. ex Rchb. [Oleaceae]** *5942, 20171*
R *19949* Romania *17823*
I *5942* Ukraine *5942*

R ***Trachelium jacquinii*** **(Sieber) Boiss. [Campanulaceae]** *5204, 20171*
R *5204* Bulgaria (south) *5204*
R Greece
R *19873* Turkey *19873*

I ***Vavilova formosa*** **(Steven) Fed. [Leguminosae]** *5942*
I *5942* Russia - North Caucasus *5942*
I *5942* Armenia *5942*
I *5942* Azerbaijan *5942*

R ***Verbascum oocarpum*** **Murb. [Scrophulariaceae]** *12840*
I *2050* Czech Republic *2050*
R *12840* Turkey *12840*

R ***Verbascum purpureum*** **(Janka) Hub.-Mor. [Scrophulariaceae]** *8000, 20171*
R *5204* Bulgaria (east) *5204*
E *19949* Romania (south Dobrogea) *19840*
R Turkey *8000*

R ***Veronica turrilliana*** **Stoj. & Stef. [Scrophulariaceae]** *5204, 20171*
R *5204* Bulgaria (east) *5204*
R Turkey (European) *2203*

R ***Vicia montenegrina*** **Rohlena [Leguminosae]** *20171*
V *21091* Bosnia & Herzegovina *21091*
I Bulgaria
R (former) Yugoslavia

R ***Viola delphinantha*** **Boiss. [Violaceae]** *5204, 20171*
R *5204* Bulgaria (south-west) *5204*
V Greece (northern) *8000*

R ***Viola jooi*** **Janka [Violaceae]** *17823, 20171*
R *19949* Romania *19840*
E *20655* Ukraine (Carpathian Mts.) *20649*

R ***Viola perinensis*** **W. Becker [Violaceae]** *5204, 20171*
R *5204* Bulgaria (south-west) *5204*
R Greece

R ***Viola speciosa*** **Pant. [Violaceae]** *5204, 20171*
R *20178* Albania *20178*
R *5204* Bulgaria (south-west) *5204*
R (former) Yugoslavia

R ***Viola stojanowii*** **W.Becker [Violaceae]** *5204, 20171*
R *5204* Bulgaria (south-west) *5204*
R Greece

I ***Zingeria biebersteiniana*** **(Claus) P. Smirn. [Gramineae]** *11552, 20171*
I *5942* Russia (E.Europe) - South *5942*
I *5942* Georgia *5942*
I *5942* Kazakhstan *5942*
I *5942* Ukraine - Crimea *5942*

2050 **Holub, J., Procházka, F., & Cerovsky, J. (1979).** Seznam vykynulych, endemickych a ohrozenych taxonu vyssich rostlin kveteny CSR (1. verze). [List of the extinct, endemic and threatened taxa of vascular plants of the flora of the Czech Socialist Republic (first draft)]. *Preslia* 51(3):213-237. Cz (En).

2203 **Kuzmanov, B. (1978).** About the "Red Book of Rare Bulgarian Plants". *Phytology* 9:17-33. English summary.

5204 **Velchev, V., Kozuharov, S., Bondev, I., Kuzmanov, B., & Markova, M. (1984).** Chervena kniga na NR Bulgariya: izcheznali, zastrasheni ot izchezvane i redki rasteniya i zhivotni: tom 1. Rasteniya. [Red Data Book of the People's Republic of Bulgaria: v. 1. Plants]. Sofiya: Izdatelstvo na Bulgarskata Akademiya na Naukite. 447 pp. Bul (En, Rus). Illus., col. illus., maps.

5942 **Borodin, A.M. et al. (1985).** Krasnaya kniga SSSR: redkie i nakhodyashchiesya pod ugrozoi ischeznoveniya vidy zhivotnykh i rastenii. - izdanie vtoroe [2]: tom pervyi - vtoroi [1-2]. (2nd edition). [Plant Red Data Book for the USSR]. Moscow: Lesnaya Promyshlennost. Illus., col., maps. Vol. 1 - Animals; Vol. 2 - Plants.

6062 **Fukarek, P. (1959).** Arbres et arbustes rares et menacées de la flore de Yougoslavie. [Rare and threatened trees and shrubs of Yugoslavia]. pp. 159-165 *In* IUCN. Animaux et vegetaux rares de la Région Mediterranéenne. Proceedings of the IUCN 7th Technical Meeting, 11-19 September 1958, Athens, vol. 5. Brussels: IUCN.

6930 **Takhtajan, A.L. (1981).** Rare and vanishing plants of the USSR to be protected. Leningrad: Nauka. 202 pp.

6951 **Hendrych, R. (1981).** Bemerkungen zum Endemismus in der Flora der Tschechoslowakei. [Observations on endemism in the flora of Czechoslovakia]. *Preslia* 53:97-120. Translated from German.

8000 **Tutin, T.G. et al. (eds.) (1964).** Flora Europaea. (1st ed.). Cambridge: Cambridge University Press. 5 vols, 1964-1980. 2nd ed. vol 1 1993.

8001 **Komarov, V.L. & Shishkin, B.K. (1933).** Flora URSS. Jerusalem, Israel: Academy of Sciences of the USSR, Moscow and Leningrad. 30 vols (1933-1964). Program for Scientific Translations. Vols 1-21 and 24 translated into English, 1963-1979, by N. Landau.

10270 **Greuter, W., Burdet, H.M., & Long, G. (eds.). (1984).** Med-Checklist. Vols. 1, 3 & 4. A critical inventory of vascular plants of the circum-mediterranean countries. Secretariat Med-Checklist, Botanischer Garten & Botanisches Museum Berlin-Dahlem. Vol. 1: Pteridophyta (ed 2.), Gymnospermae, Dicotyledones (Acanthaceae - Cneoraceae; Vol. 2 Convolvulaceae - Labiatae; Vol. 3 Lauraceae - Rhamnaceae; Vol. 4.

10370 **FAO Forestry Department. (1986).** Databook on endangered tree and shrub species and their provenances. Forestry Paper No. 77. Rome: FAO. 524 pp. Datasheets on 81 species.

11139 **National Environment Protection Bureau. (1987).** The list of rare and endangered plants protected in China. Botanical Institute of Chinese Academy of Sciences, Beijing: Academy Press. 96 pp.

11552 **Golovanov, V.D. et al. (eds.) (1988).** Red Data Book of RSFSR, plants. Komarov, Moscow: Academy of Sciences of USSR, Botanical Institut of V.L. Rosagropromizdat. 591 pp. Col. illus., maps.

12840 **Ekim, T., Koyuncu, M., Erik, S., & Ilarslan, R. (eds.). et al. (1989).** Türkiye'nin tehlike altindaki nadir ve endemik bitki turleri. (Serie no: 18). [List of rare, threatened and endemic plants in Turkey prepared according to IUCN Red Data Book categories]. Ankara: Türkiye Tabiatini Koruma Dernegi [Turkish Association for the Conservation of Nature and Natural Resources]. 227 pp. Tu (En).

14000 **ECE. (1989).** Draft European Red List of threatened animals and plants. Addendum 3: Non-endemic vascular plants. 12 pp. With annotations of changes to the draft red list.

14155 **Anon. (no date).** Annotated printout of Bern Convention - revision of Appendix I. 175 pp.

14229 **Broggi, M.F. & Waldburger, E. (1984).** Rote Liste der gefahrdeten und seltenen Gefasspflanzenarten des Furstentums Liechtenstein. [Red List of rare and threatened vascular plants of the Principality of Liechtenstein]. Vaduz: Buch- und Verlagsdruckerei AG. 40 pp. Col. illus.

14230 **Meikle, R.D. (1977-1985).** Flora of Cyprus. Kew, UK: Bentham-Moxon Trust, Royal Botanic Gardens, Kew. 1969 pp. 2 vols.

15957 **Lee, T.B. (1983).** Endemic plants and their distribution in Korea. *Bull. Kwanak Arboretum*:71-113.

16386 **Farjon, A. (1990).** Pinaceae. Drawings and descriptions of the genera *Abies, Cedrus, Pseudolarix, Keteleeria, Nothotsuga, Tsuga, Cathaya, Pseudotsuga, Larix* and *Picea*. Königstein, Germany: Koeltz Scientific Books. 330 pp.

17617 **Fu, L. & Jin, J. (eds.). (1992).** China Plant Red Data Book. Rare and endangered plants. Vol. 1. Beijing: Science Press. xviii, 741 pp. Col. illus.; maps. 338 taxa, of which 121 are Endangered, 110 are Rare, and 157 are Vulnerable.

17762 **Dihoru, G. (no date).** Proposals for adding to the check list of threatened plants. 15 pp. (Romania) List of species.

17779 **Lapelé, M. & Vaiciúaité, R. (1992).** Red Data List of Lithuania. Lists plants, including lower plants, and animals.

17786 **Anon. (1992).** A Hungarian proposal concerning amendments to the CORINE biotopes project's endangered plant species list. 7 pp.

17823 **Dihoru, G. (1992).** Proposals for adding to the

check list of threatened plants. Endemics. 2 pp. Produced in 1992 for the CORINE biotopes project for Romania.

17832 **Storkersen, O.R. (1992)**. Truete arter i Norge. [Norwegian Red List]. DN-rapport 1992 - 6. Tungasletta 2, N-7005 Trondheim: Directorate for Nature Management. 22-28 pp. List of Vascular plants, fungi, lichens, bryophytes, mammals, birds, reptiles and amphibians, fish, butterflies and moths, beetles, dragonflies and other invertebrates.

18154 **Landolt, E. (1991)**. Rote Liste - Gefährdung der Farn- und Blütenpflanzen in der Schweiz. [Red List - Threatened ferns and flowering plants in Switzerland]. Bern, Switzerland: Bundesamt für Umwelt, Wald und Landschaft. 185 pp.

18216 **Ingelög, T., Anderson, R., & Tjernberg, M. (eds.). (1993)**. Red Data Book of the Baltic Region. Part 1. Lists of threatened vascular plants and vertebrates. Uppsala: Swedish Threatened Species Unit. 95 pp.

18270 **Farjon, A., Page, C.N., & Schellevis, N. (1993)**. A preliminary world list of threatened conifer taxa. *Biodiversity and Conservation* 2:304-326. 416 Threatened, 1 Extinct. IUCN's V & R categories subdivided.

19121 **Akeroyd, J.R. (1992)**. Annotations to WCMC Conservation Status Listing - Plants of Greece. With particular attention to endemics of Crete.

19164 **Akeroyd, J.R. (1992)**. Letter to Hugh Synge concerning conservation status of plants of various Mediteranean Islands including: Cyprus, Sicily, Malta, Corsica, Sardinia and the Balearic Islands. Includes annotations to 1991 TPU printouts for the these countries.

19266 **Tutin, T.G., Burges, N.A., Chater, A.O., Edmondson, J.R., Heywood, V.H., Moore, D.M., Valentine, D.H., Walters, S.M., & Webb, D.A. (eds.). (1993)**. Flora Europaea Volume 1. (Second edition). Psilotaceae to Platanaceae. Cambridge, UK: Cambridge University Press. 581 pp.

19321 **Maglocky, S. & Feráková, V. (1993)**. Red List of ferns and flowering plants (*Pteridophyta and Spermatophyta*) of the flora of Slovakia (the second draft). *Biológia* (48) 4:361-385.

19417 **Oltean, M., Negrean, G., Popescu, A., Roman, N., Sanda, V., Milhailescu, S., & Dihoru, G. (1994)**. Lista rosie a speciilor de plante endemice si amenintate din Romania. [Red list of endemic and threatened plant species in Romania]. (Produced for CORINE Biotopes Project for Romania). Includes letter of explanation from Dr. Mircea Oltean to Johanna Sidey.

19425 **Anon. (1994)**. List of plant species which are distributed in Bulgaria and are included in CORINE programme. 2 pp. Correspondance to Graham Drucker from Ministry of Environment.

19426 **Anon. (1994)**. Correspondance with WCMC including list of plant species to be added to the CORINE Biotopes Project. Bulgarian Ministry of Environment.

19608 **Dihoru, G. (1994)**. Letter to Johanna Sidey concerning the candidate check-list of threatened plants for the PHARE countries of Europe dated 25 March 199 Includes list of 34 species suggested for inclusion in the check-list.

19710 **Sánta, A. (1993)**. Convention on the conservation of European wildlife and natural habitats. Report on the biogeographical regions of Hungary and i main plant conservation problems and data sheets of species selected. Strasbourg: Council of Europe. 36 pp.

19840 **Beldie, A.L. (1977-1979)**. Flora Romaniei. Determinator ilustrat al plantelor vasculare. Bucuresti: Editura Acadamiei Repulicii Socialiste România. two volumes.

19873 **Atay, S. (1994)**. Annotations to WCMC printout entitled "Turkey - conservation status listing of plants" dated 21 June 1994. Includes list of corrections by Prof.Dr. Neriman Ozhatay.

19947 **Oltean, M. & Negrean, G. et al. (1994)**. Lista rosie a plantelor superioare din România. Studii, sinteze, documentatii de Ecologie 1. Bucuresti. 52(2):52.

19949 **Dihoru, G. & Dihoru, A. (1994)**. Plante rare, periclitate si endemice in flora Romaniei. Lista rosie Acta Botanica horti Bucurestiensis. 1993-1194 173-197.

20171 **Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H., Walters, S.M., & Webb, D.A. (eds.). (1995)**. Flora Europaea Vol 1-5. Electronic dataset supplied by R.J Pankhurst, Royal Botanic Garden Edinburgh, May 1995.

20178 **Vangjeli, J., Ruci, B., & Mullaj, A. (1995)**. Libri i kuq. Bimët e kërcënuara e të rralla të Shqipërisë. [Red Book of threatened and rare plant species of Albania]. Tirana: Akademia e Shkencave e Republikës Së Shqipërisë & Instituti I Kërkimeve Biologjike Komiteti I Mbrojtjes Së Mjedisit. 169 pp. Lists 320 rare and threatened plants, including 4 extinct and 12 probably extinct species.

20497 **Kolbeck, J. & Kucera, M. (1989)**. A Brief Survey of Selected Woody Species of North Korea. Pruhonice, Czechoslovakia: Botanical Institute, Czech Academy of Sciences.

20528 **Olivier, L., Galland, J., & Maurin, H. (eds.). (1995)**. Livre rouge de la flore menacée de France. Tome 1: Espèces prioritaires. [Red book of threatened plants of France. Volume 1: Priority species]. Paris: Muséum National d'Histoire Naturelle. 486 pp.

20618 **Guener, A. (1995)**. Conservation status of Turkish woody plants. 12 pp.

20627 **Degteva, S. (1995)**. Annotations to WCMC list of plants of the Russian Federation.

20631 **Sávulescu, T. (ed.). (1952-1970)**. Flora Republicü Populare Române. Bucuresti: Flora Republicii Sócialist România.

20640 **Korneck, D., Schnittler, M., & Vollmer, I.**

(1995). Rote Liste der Fern- und Blütenpflanzen. in *in* Rote Listen Gefährdeter Pflanzen in Deutschland. - Schr.R. Vegetations Kunde. Germany: Bundesamt Für Naturschutz. in preparation.

20649 **Anon. (1936-1965)**. Flora of UkrSSR. Kiev: Publishing House of Academy of Sciences of Ukrssr. vol. 1-12.

20650 **Andrienko, T.L. (1995)**. Annotations to WCMC list of plants of Ukraine, including new list of datasources for Ukraine.

20653 **Anon. (1987)**. Determinant of higher plants of Ukraine. Kiev: Naukova Dumka. 546 pp.

20654 **Anon. (1972)**. Determinant of higher plants of Crimea. Leningrad: Nauka. 560 pp.

20655 **Anon. (1994)**. Red Book of the Ukraine. Kiev: Ukrainska Encyclopedia. part 1, animals part 2, plants in print.

20673 **Rassi, P., Kaipainen, H., Mannerkoski, I., & Stehls, G. (eds.). (1992)**. Uhanalaisten elinten ja kasvien seurantatoimikunnan mietint. [Report on the monitoring of threatened animals and plants in Finland]. Helsinki: Ministry of the Environment. 328 pp. in Finnish.

20686 **Rakonczay, Z. (ed.). (1990)**. Voros Konyu. [Hungarian Red Data Book]. Budapest: Akadémiai Kiadó. 360 pp.

20731 **Tzanoudakis, D. & Montmollin, B. de. (1996)**. Annotations to WCMC printout entitled "Greece - nationally threatened taxa listed at WCMC" dated 16 October 1995.

20761 **Farjon, A. et al. (1996)**. SSC Conifer Specialist Group.

20800 **Puchalski, J. & Kazmierczakowa, R. (no date)**. Threatened Plant Species in Poland, including candidate species for Appendix I of the Bern Convention. 50 pp. Council of Europe, Convention on the conservation of European Wildlife and Natural Habitats.

20850 **The Nature Conservancy. (1996)**. Natural Heritage Central Database. (Status and distribution data on North American plants, developed in collaboration with the Association for Biodiversity Information, U.S. and Canadian Natural Heritage Programs and Conservation Data Centers, and North Carolina Botanical Garden Biota of North America Program.).

21091 **Silic, C. (ed.). (1996)**. The List of the Vegetable Species (Pteridophyta and Spermatophyta) for the Red Book of Bosnia and Herzegovina. Sarajevo: 1996. 20 pp.

Bathymetry:

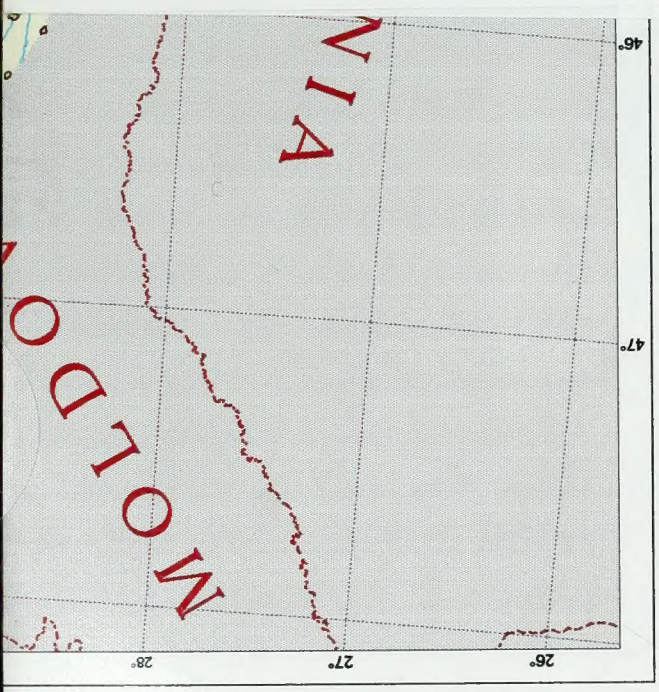
0 - 200 m

201 - 2000 m

0 50 100 150 200 250 300 Kilometers

WORLD CONSERVATION
MONITORING CENTRE

42°



The Black Sea Coastal Zone - An Environmental Profile

Map prepared for the US Navy and PCCI

Coastal Zone defined as 50 miles inland of the high water mark for the purposes of this map.

LEGEND:

- International Boundaries
- Coastline
- Ramsar Sites
- Ramsar Site Boundary (where known)
- Important Bird Areas
- Dunabe Delta - World Heritage Site
- Wetlands
- Protected Areas
- Protected Areas location (Where boundary data not available)
- Forest
- Lakes
- Seasonal Lakes
- Rivers
- Cities

Bathymetry:

- 0 - 200 m
- 201 - 2000 m

0 50 100 150 200 250 300 Kilometers

WORLD CONSERVATION MONITORING CENTRE

BOUND in 2001