



## ENDANGERED PLANTS

Natura 2000 managing plant diversity

### IN FOCUS

► Europe's wild plants under threat

### ON SITE

► LIFE-Nature and plant conservation

### MAMMALS IN EUROPE

► One in six species threatened

*nature*



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environment

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## Theme of this issue: ENDANGERED PLANTS



### Editorial

## Europe's endangered plants – challenges for conservation



Photo: Alva Sopena

*Riverbank and Juniperus thurifera woodlands in the canyon of Duratón River, Spain*

**P**lants are vital to almost every aspect of our daily lives. They provide us with food, fibres, medicines, fuel, shelter, clothing and even the air we breathe. Many animal species are also directly dependent on plants for their survival. Plants are essential constituents of ecosystems and a key to the Earth's environmental equilibrium and stability.

Europe is blessed with a high level of diversity, but, despite their undeniable importance, plants everywhere are under threat. Some 21 % of Europe's vascular plant species (flowering plants, conifers and ferns) are classified as threatened according to the IUCN. Half of the continent's 4,700 vascular plant endemics are in danger of extinction and 64 have already become extinct. In a number of European countries more than two thirds of the existing plant habitat types are endangered. Major land-use changes from agriculture and forestry, habitat destruction, fragmentation and degradation, direct impacts by economic activities, invasive plant species, and now climate change, are all rapidly eroding our plant communities.

The EU is firmly committed to halting the loss of Europe's biodiversity, including endangered plant species, and to restoring habitats and natural systems. A clear action plan to this end is identified in the Commission's Communication on "Halting the Loss of Biodiversity by 2010 and Beyond". The implementation of the Natura 2000 network, which aims to maintain habitats and species in a favourable conservation status, is critical in achieving this.

LIFE, the financial instrument for the environment, has been a cornerstone of plant conservation efforts, especially within the boundaries of the Natura 2000 network. Now, LIFE+, with a budget of over €2 billion, will continue to offer robust support to the conservation of plant species and of biodiversity in general across Europe.

Preventing the disappearance of so many species of plants is one of the major challenges that must be addressed in order to achieve the goal of halting the loss of Europe's biodiversity.

**Ladislav Miko**

*Director, Directorate B - Protecting the Natural Environment, DG Environment.*



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Cover photo: Lake Constance forget-me-not (*Myosotis rehsteineri*) by Gerold Ender, Stadt Bregenz



# Europe's plants: status and threats

Plants are essential to life on the planet: without them there would be no other dependent species. They are a key element of biodiversity and provide many of our basic needs, including food, fibres, medicines, fuel, shelter, clothing and even the air we breathe. Plants are also the primary constituent of habitat infrastructure for many ecosystems and the key to the Earth's essential environmental equilibrium and stability. The disappearance of so many of them sets one of the greatest challenges for the European Union.

In Europe, Natura 2000, the cornerstone of EU nature conservation policy, is the key legal instrument that aims to effectively protect European biodiversity and thus endangered plant species. A clear commitment to halting the loss of biodiversity in the EU and to restoring habitats and natural systems has also been identified in the Commission's recent Communication on "Halting the Loss of Biodiversity by 2010 – and Beyond" [COM(2006)216] see p.4.

Europe's varied geography and climate provides a vast range of habitats supporting over 12,500 vascular plants (flowering plants, conifers and ferns). Centres of particularly high plant diversity include the mountainous areas around the Mediterranean and the Black Sea with the floras of Spain, Greece, Italy, Bulgaria and Romania supporting the highest numbers of both endemic and endangered plant species.

Europe's flora is one of the best known in the world and has been shaped by human intervention for many hundreds of years. However, an accelerated pace of industrialisation in recent decades, together with major land-use changes have resulted in European plants today being considered among the most threatened globally. According to the World Con-

servation Union (IUCN), some 21% of Europe's vascular plant species are classified as threatened and half of the continent's 4,700 vascular plant endemics are in danger of extinction. In a number of European countries more than two thirds of the existing plant habitat types are endangered.

The main factors that have contributed to the progressive decline of European plant diversity are major land-use changes from agriculture and forestry, habitat destruction, fragmentation and degradation, direct

impacts by economic activities and the introduction of non-native invasive species (see "Invasive plant species" box p.4).

More recently, Europe's plants are facing an unequivocal warming of the climate. According to the latest projections more than half of the plant species assessed could be vulnerable or threatened by 2080<sup>1</sup>. The impact of climatic changes on European

.....  
<sup>1</sup> Thuiller W. et al. (2005) "Climate change threats to plant diversity in Europe".

*Very endangered orchid Cephalanthera cucullata, Crete, 'caged' to protect against grazing*



Photo: Costas Thanos - LIFE04/NAT/GP/000104



flora, such as changes in the distribution of species, flowering times etc., are forecast to be most pronounced in mountainous areas and in the Mediterranean and Pannonian biogeographical regions. Climate change poses an enormous challenge to the conservation and management of the plant species and habitats both within and outside the Natura 2000 network (for further information, see the June 2007 issue of this newsletter - Issue 22 "Biodiversity and Climate Change").

### Importance of plants: their goods and services

Plants are universally recognised as an essential part of biological diversity and a vital resource (i.e., in maintaining carbon dioxide and oxygen equilibrium in the atmosphere). In addition to the small number of crop plants used for basic food and fibres, many thousands of wild plants have considerable economic and cultural importance and potential, providing food, fuel, clothing, shelter and medicine.

An estimated 50,000 - 70,000 plant species are used in medicines throughout the world. These species



Photo: P. Piroch - LIFE02 NAT/IT/008574

Plant goods and services: wolf's bane (*Arnica montana*) - left - a medicinal plant and cork oak (*Quercus suber*) a multiuse natural resource



Photo: Martin Olsson

make an essential contribution to healthcare, and provide an important source of income in rural areas.

The vast majority of medicinal and aromatic plant species used today are collected from the wild. Unfortunately, this can sometimes result in unsustainable collection practices. For example wolf's bane (*Arnica mon-*

*tana*), used to treat sprains, bruises, and muscle aches, and great yellow gentian (*Gentiana lutea*) are harvested throughout Europe (especially in Bulgaria and Romania) and are included in Annex V of the Habitats Directive (92/43/EEC), which identifies plants (and animals) requiring management measures because of exploitation concerns.

### Invasive plant species

***Invasive alien species are acknowledged as one of the major threats to biodiversity, together with habitat loss and fragmentation. Reducing the impact on EU biodiversity of invasive alien species is one of the key policy areas identified for action for the 2010-2013 period in the European Commission's Communication on Biodiversity.***

Native species throughout Europe are under assault from invasive alien plant species (IAS) – non-indigenous plants introduced deliberately or unintentionally outside their natural habitats that have the ability to establish themselves, invade, out-compete natives and take over the new environments and in so doing, adversely affect biological diversity. Particularly vulnerable are European island ecosystems (especially in the Macaronesian and Mediterranean biogeographical regions), due to their historic isolation.

The problem of invasive species was specifically addressed in a LIFE-Nature project in Madeira, Portugal, which involved the removal of over 850 tons of Kahili ginger (*Hedychium gardnerianum*) plant material from an area covering 165 ha. The ginger is an ornamental plant introduced to local gardens in Madeira in the 1930's, but which now runs wild throughout the island, displacing the native Macaronesian laurel forest, a priority Natura 2000 habitat. Like the Kahili ginger, the sour fig (*Carpobrotus edulis*) from South Africa, with its beautiful flowers, was planted in gardens very far away from its native soil. The diverse coastal plant habitats of Minorca, Spain have been particularly hard hit by this uncontrolled IAS. Thanks to a Spanish LIFE-Nature project, however, the sour fig is being eliminated from the island.

Sour fig (*Carpobrotus edulis*)

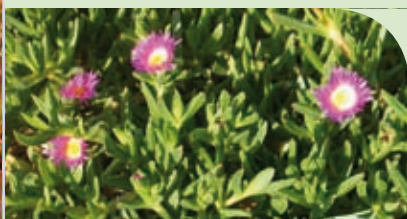


Photo: LIFE00 NAT/E/79355



#### Project reference:

LIFE97 NAT/P/004082

#### Website:

[www.pnm.pt](http://www.pnm.pt)

#### Project reference:

LIFE00 NAT/E/007355

#### Website:

<http://www.cime.es/lifeflora/>



### European Biodiversity Policy and plant conservation

European heads of State agreed at the 2001 summit in Gothenburg to halt all biodiversity loss by 2010. The following year, the parties to the Convention on Biological Diversity (CBD) and some 130 world leaders committed themselves to a significant reduction in the rate of biodiversity loss by the same target date (see "CBD – global and European strategy for plant conservation" box p.5). Europe's commitment to implementation of the CBD was reconfirmed in May 2006, with the Commission's Communication on halting the biodiversity loss by 2010 and beyond.

Two particular threats to EU biodiversity are highlighted in the Communication. First, that of spatial development: Member States have particular responsibility, through improved planning, to reconcile development needs with the conservation of biodiversity and maintenance of ecosystem services. Secondly, the potential impact of climate change, where rising temperatures are already having a biological impact, including earlier timing

of spring events, and poleward and upward shifts in ranges in plant, as well as animal species (see: Natura 2000 Issue 22 p.4).

The EU approach recognises that biodiversity is not evenly spread, and that certain species are more at risk than others. Consequently it affords special attention to the protection of sites of highest nature value and species most at risk included in the Habitats and Birds directives. However, this approach also recognises that much biodiversity resides outside these sites, and that effective conservation and sustainable use of biodiversity, and the maintenance of essential ecosystem services, also requires action in the wider countryside. For plants, this is provided for by specific requirements in the Habitats Directive and more generally by the integration of biodiversity concerns into agricultural and other policies.

The 2001 Biodiversity Action Plan for Agriculture (COM/2001/0162) aims to reduce the negative impacts of farming practices by promoting the sustainable use of biological resources. It is one of the four biodiversity action plans, covering 1) conservation of natural resources, 2) agriculture, 3) fisheries, and 4) economic and development co-operation outside Europe, included in the EU's Sixth Environmental Action Programme (6th EAP), approved by the Council of Ministers in 2001, and also with the goal of stemming biodiversity loss by 2010. Many of the biodiversity-rich habitats in need of conservation are situated in, or close to, agricultural land, where inappropriate agricultural practices

Photo: Josip Olopal - LIFE02 NAT/SLO/006587



*Many biodiversity rich habitats in need of conservation are situated in, or close to, agricultural lands for example the grasslands of Karst Edge in Slovenia*

have reduced biological diversity. The presence of some plant species and habitats that are dependent on extensive farming, for example, has declined in recent decades.

EU Rural Development Policy (Council Reg (EC) No.1257/1999) aims to reconcile agriculture with the objectives of the EU nature conservation policy. This is achieved by financing agri-environmental measures that go beyond the usual good farming practices and that have a direct impact on the conservation of European flora, particularly through the maintenance of extensive systems and support for agriculture in Natura 2000 zones.

The recent reforms of the Common Agriculture Policy (CAP) have also enabled further integration of biodiversity concerns into agricultural policy and the 2008 review of the CAP provides an important opportunity to

further strengthen and support measures for farmland and forest biodiversity. For example, national statutory requirements derived from EU directives covering birds, habitats, nitrates and pesticides are now included in the accepted standards for good farming practices.

### **Natura 2000 network and plant conservation**

The main focus of the Habitats Directive has been on the requirements that Member States establish a network of special areas of conservation (SACs) that, together with the special protection areas (SPAs) designated under the Birds Directive (79/409/EEC), make up the Natura 2000 network.

Annexes I (natural habitat types of Community interest) and II (animal and plant species of Community interest) to the Habitats Directive list the habitats and species whose conservation

## **CBD – global and European strategy for plant conservation**

In 1992, at the Rio de Janeiro Earth Summit, world leaders adopted the Convention on Biological Diversity (CBD), committing governments around the world to develop national strategies for the conservation and sustainable use of biological diversity. Ten years later, the Conference of the Parties of the CBD adopted the Global Strategy for Plant Conservation (GSPC) that aims to put an end to the reduction in plant diversity. Within the framework of the GSPC, in 2002 a European Plant Conservation Strategy was set as a joint initiative of the Council of Europe and the NGO Planta Europa with the following major objectives: documenting and conservation of plant diversity; sustainable plant use; awareness raising and conservation capacity building.

One of the contributions to the European Plant Conservation Strategy is the production of an inventory of Important Plant Areas (IPAs) in Europe. IPAs are natural or semi-natural sites exhibiting exceptional botanical richness, or supporting rare, threatened or endemic plant species or vegetation of high botanical value. Today the inventory covers IPAs in most of Eastern Europe and the UK (150 areas). The IPAs along with BirdLife Important Bird Areas (IBAs) provide a valuable reference for the implementation of the Natura 2000 network sites of Community importance, especially in new Member States.

The IPA programme in Europe is co-ordinated by Plantlife International, a UK-based environmental NGO, in partnership with the IUCN. For more information on the Global Strategy for Plant Conservation (GSPC), visit: <http://www.cbd.int/gspc/default.shtml>.





Photo: R. Jardim, J. B. Madera - LIFE95 NAT/P/6431

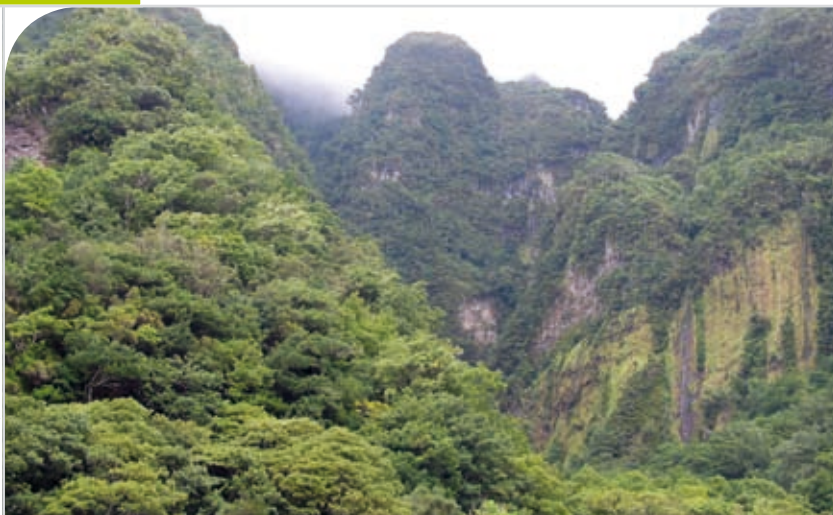


Photo: João Pedro Silva

Macaronesian laurissilva forests (left) and *Asphodelus bento-rainhae* (right) a priority, Annex II plant species of the Mediterranean biogeographical region

requires the designation of SACs. Some of them are defined as “priority” habitats or species (in danger of disappearing).

Annex II identifies 324 animal species whose conservation requires the designation of SACs. However, the number of plant species listed is much higher – 587, or 64%, of the total (see Fig.1). Moreover, some 204 (80%) of listed plant species are priority – compared with just 51 for animals.

The distribution of plant diversity across Europe is not even. A full 60% of the plant species included in Annex II are found within the Mediterranean and Macaronesian regions, according to the reference lists for biogeographical regions (EU-25), see Fig. 2.

As well as the plant species included in Annex II of the directive, there are

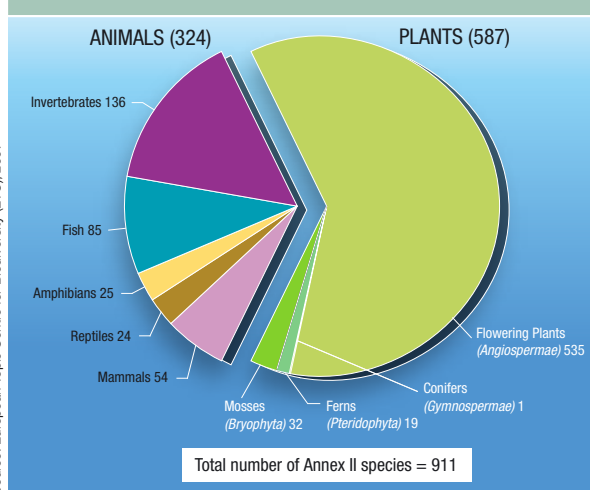
habitats that are characterised by high rates of endemic plants, which are normally found in restricted areas. These tend to be dominated by a particular plant species and often are classified as “priority natural habitat types” under the directive. For example, the endangered golden oak (*Quercus alnifolia*) is the main species within a Cyprus Annex I priority habitat – scrub and low forest vegetation with *Quercus alnifolia* (9390\*); the rock rose (*Cistus palhinhae*) is the main species within maritime wet heath formations (5140\*) in the southwest of Portugal; and sea grass (*Posidonia oceanica*) is the main species within Mediterranean sea grass habitats (1120\*).

Other habitat types with broader distribution are also very important for some plant species such as orchids. The dry to semi-dry calcareous grasslands habitat (6210), which is widely

distributed around Europe, can be host to important populations of rare orchid species. Where this is the case, the habitat is considered a priority for conservation. For example, important endangered orchid species (e.g., genus *Ophrys*) are dependent on calcareous substrate semi-natural dry grasslands or forests (e.g., *Cypripedium calceolus*).

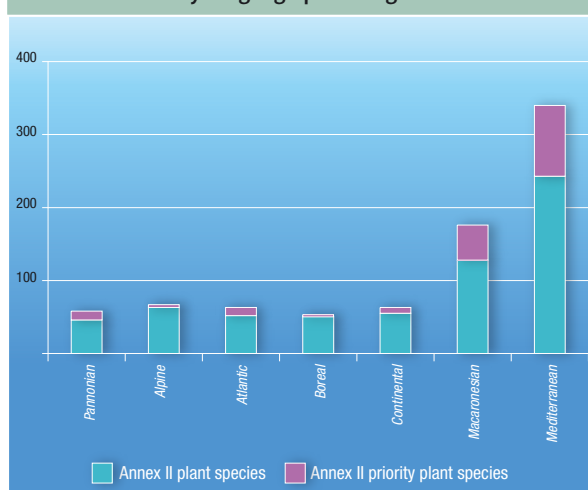
Finally, Article 13 of the Habitats Directive requires that Member States should also establish both within and outside the Natura 2000 network, a system for the strict protection of endangered plant species included in Annex IV (b) by prohibiting the “deliberate picking, collecting, cutting, uprooting or destruction” of such plants in their natural range in the wild; and the “keeping, transport and sale or exchange” of specimens of such species taken in the wild.

Fig.1: EU-27 plant and animal species listed in Annex II of the Habitats Directive



Source: European Topic Centre for Biodiversity (ETC), 2007

Fig.2: Annex II plant species by biogeographical region



Source: ETC, 2004 - excludes Black Sea &amp; Steppic regions (Bulgaria, Romania)

# Managing plant diversity via the Natura 2000 network

Guaranteeing the protection of endangered plant species relies principally on the management of Natura 2000 sites. Across Europe, Member States are implementing conservation measures on these sites, but this activity is not without its challenges.

According to Article 6 of the Habitats Directive, Member States are required to undertake conservation measures in order to maintain species and habitats at a “favourable conservation status”. If necessary, these measures may involve appropriate management plans.

The Commission has consistently encouraged Member States to draw up management plans to ensure the appropriate conservation management of the sites and to verify how different uses are compatible with conservation objectives. Management plans are also an excellent way of involving the key interest groups affected by the designation in the management decision-making process, thus meeting the concerns of local stakeholders and other users.

However, Natura 2000 sites with a high level of plant diversity present a considerable challenge in terms of conservation and, therefore, in the drawing up of management plans. There are a number of reasons for this. Plant species often exist across only a small area, and the populations are normally isolated, and



Photo: Olga Baeta, J. B. Madeira - LIFE99 NAT/P/006431

*Natura 2000 species management - helping to conserve populations of rare and endangered plant populations*

frequently there is also a lack of scientific or monitoring data, and little local experience in managing Natura 2000 sites for plants.

Generally speaking, there is a low level of awareness of the threats to plants, especially when compared to the understanding of threats to animal species. Furthermore, plant populations are sometimes located on pri-

vate land, or dependent on sustainable agricultural or forestry activities.

Funding from the EU's LIFE-Nature programme has been used to assist in the preparation of a number of management plans that include measures and management guidelines for specific plant species. Examples include projects in Spain, Greece and Slovenia.

*Ophrys fusca*, a micro-reserve orchid species, Slovenia



Photo: Josip Otupai - LIFE02 NAT/SLO/008587

## Creating a network of flora micro-reserves in the Valencian region

The aim of this project was to set up a network of 100 small botanical Spanish reserves – up to 20 ha in size – which together would contain the main populations of rare, endemic and endangered plant species, as well as the different vegetation types present in the Valencian region. Ultimately, the project established 158 micro-reserves, with an area of 285 ha, 77 of which were officially proclaimed and included in the Natura 2000 network. The project also implemented the propagation protocols for 20 endangered endemic plant species and implemented recovery and management plans for 12 Annex II plant species. Micro-reserves cover 56 priority habitats listed in

Annex I of the EU Habitats Directive and 12 plant species included in Annex II. Together, these sites form the core of the Natura 2000 network sites for the Valencian region.

The micro-reserve plant conservation model is now being adopted by other Spanish territories and beyond, as a valuable management tool of the Habitats Directive and is helping in the implementation of the Natura 2000 network. A network of micro-reserves has been established on the island of Minorca, in the Kraški rob region of Slovenia, and in Crete, Greece under the aegis of three other LIFE-Nature projects (LIFE00/NAT/E/007355, LIFE02 NAT/SLO/008587 and LIFE04/NAT/GR/000104).



### Project reference:

LIFE93 NAT/E/011100 (1st phase) and LIFE95 NAT/E/000856 (2nd phase)

### Website:

[www.gva.es/coma/\\_espacios/flora\\_amenazada/flora1.htm](http://www.gva.es/coma/_espacios/flora_amenazada/flora1.htm)






























# Natura 2000 BAROMETER - June 2007

## Nota Bene:

- The Natura Barometer is managed by the European Topic Centre for Biodiversity and based on information officially transmitted by Member States.
- Numerous sites have been designated according to both nature directives, either in their entirety or partially. It is therefore not possible to combine the numbers implemented under the two directives to get an overall figure for Natura 2000.
- The surface area percentage relates only to the terrestrial area that has been designated, which is the overall SPA (Birds Directive), proposed SCI, SCI or SAC (Habitats Directive) area, not including the marine area. Some Member States have designated substantial portions of their marine waters. These are included in the number of sites and areas proposed but not in the percentage surface area or indications of progress. The sufficiency of national proposals for several marine habitats and species cannot be determined, as further work is needed for the successful application of Natura 2000 under both directives, especially in the area of offshore marine environment.
- Several Member States have proposed large areas including "buffer zones", while others have proposed only the core areas. In both cases, Article 6 of the Habitats Directive also applies to new activities, which are foreseen outside a Natura 2000 site but likely to affect it.
- The 10 new Member States that acceded to the EU on 1 May 2004, had a duty to classify SPAs and propose SCIs by the date of their accession. All countries have submitted their lists and evaluations are ongoing.
- The global assessment of national lists may be revised upwards or downwards, following more complete scientific analysis of the data, particularly at the relevant biogeographical seminars.

-  notably insufficient
-  incomplete
-  largely complete
-  recent significant progress

MEMBER STATES	SPECIAL PROTECTION AREAS (SPAs) Birds Directive					
	Number of sites	Total area sites (km <sup>2</sup> )	Terrestrial area (%)*	Number of marine sites	Marine area (km <sup>2</sup> )	Progress
BELGIË/BELGIQUE	234	3,276	9.7	4	310	
BULGARIA	88	12,551	11.3	3	9	
ČESKÁ REPUBLIKA	38	6,936	8.8	-	-	
DANMARK	113	14,709	5.9	59	12,173	
DEUTSCHLAND	568	48,102	8.9	14	16,216	
EESTI	67	12,592	13.1	26	6,654	
ÉIRE/IRELAND	131	2,815	2.9	66	810	
ELLÁDA	151	13,703	10.0	16	567	
ESPAÑA	563	97,123	19.1	23	634	
FRANCE	369	45,804	7.7	62	3,260	
ITALIA	590	37,671	12.2	18	763	
KÝPROS**	7	788	13.4	1	21	
LATVIJA	98	6,766	9.7	4	520	
LIETUVA	77	5,435	8.1	1	171	
LUXEMBOURG	12	139	5.4	-	-	
MAGYARORSZÁG	55	13,519	14.5	-	-	
MALTA	12	14	4.5	0	0	
NEDERLAND	77	10,109	12.5	7	4,913	
ÖSTERREICH	96	9,719	11.6	-	-	
POLSKA	114	43,276	13.8	4	6,066	
PORTUGAL	50	9,956	10.1	10	622	
ROMÂNIA	0	0	0.0	0	0	
SLOVENIJA	27	4,656	23.0	1	3	
SLOVENSKO	38	12,236	25.1	-	-	
SUOMI	467	30,836	7.5	66	5,567	
SVERIGE	530	28,872	6.2	107	3,033	
UNITED KINGDOM	258	14,967	5.8	3	710	
<b>EU</b>	<b>4,830</b>	<b>486,571</b>	<b>10.0</b>	<b>495</b>	<b>63,022</b>	

Photos: Arge Naturschutz - LIFE00NAT/A7055







### SITES OF COMMUNITY IMPORTANCE (SCIs) Habitats Directive

Number of sites	Total area sites (km <sup>2</sup> )	Terrestrial area (%)*	Number of marine sites	Marine area (km <sup>2</sup> )	Progress	MEMBER STATES
280	3,241	10.0	2	200		BELGIUM
180	14,882	13.3	8	124	BE	BULGARIA
864	7,244	9.2	-	-		CZECH REPUBLIC
254	11,136	7.4	118	7,959		DENMARK
4,617	53,294	9.9	48	18,086		GERMANY
497	11,328	16.5	36	3,854		ESTONIA
413	10,561	10.2	92	3,386		ÉIRE/IRELAND
239	27,641	16.4	102	5,998		GREECE
1,430	123,382	23.4	90	5,217		SPAIN
1,335	52,156	8.5	90	5,593		FRANCE
2,281	45,059	14.2	160	2,244		ITALY
36	711	11.5	5	50		CYPRUS**
331	7,663	11.0	6	562		LATVIA
267	6,664	9.9	2	171		LITHUANIA
48	399	15.4	-	-		LUXEMBOURG
467	13,929	15.0	-	-		HUNGARY
27	48	12.6	1	8		MALTA
141	7,510	8.4	9	4,025		THE NETHERLANDS
166	8,888	10.6	-	-		AUSTRIA
294	23,256	7.4	0	0.0		POLAND
94	16,503	17.4	23	490		PORTUGAL
273	32,833	13.2	6	1,353	BE ↑	ROMANIA
259	6,360	31.4	3	0.2		SLOVENIA
382	5,739	11.8	-	-		SLOVAKIA
1,715	48,552	12.7	98	5,460		FINLAND
3,971	62,782	13.7	325	5,849		SWEDEN
613	25,109	6.5	41	9,131		UNITED KINGDOM
<b>21,474</b>	<b>626,870</b>	<b>12.8</b>	<b>1,265</b>	<b>79,759</b>		<b>EU</b>



notably insufficient



incomplete



largely complete



recent significant progress



being evaluated in the context of biogeographical seminars

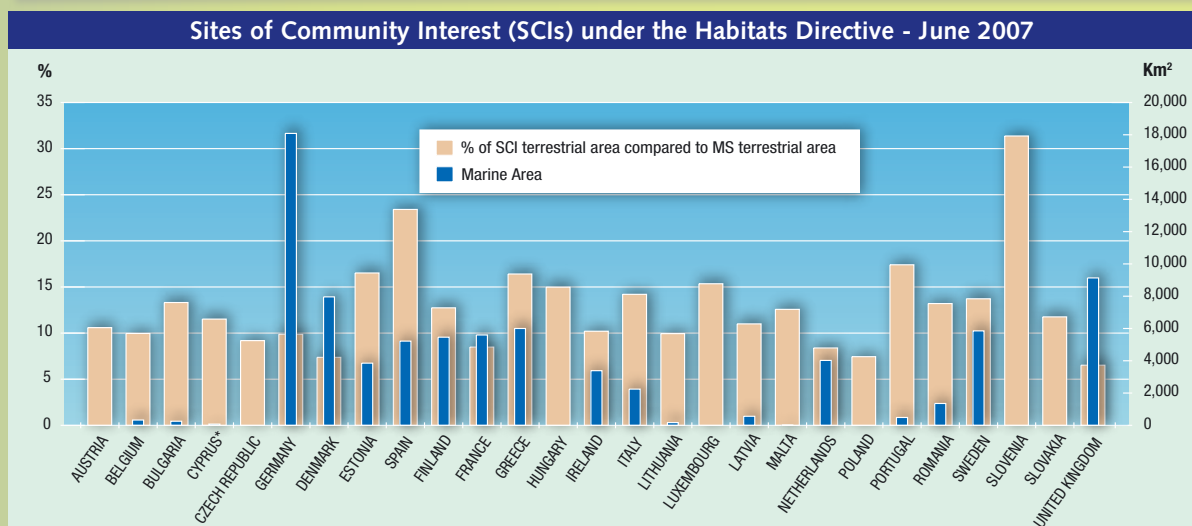
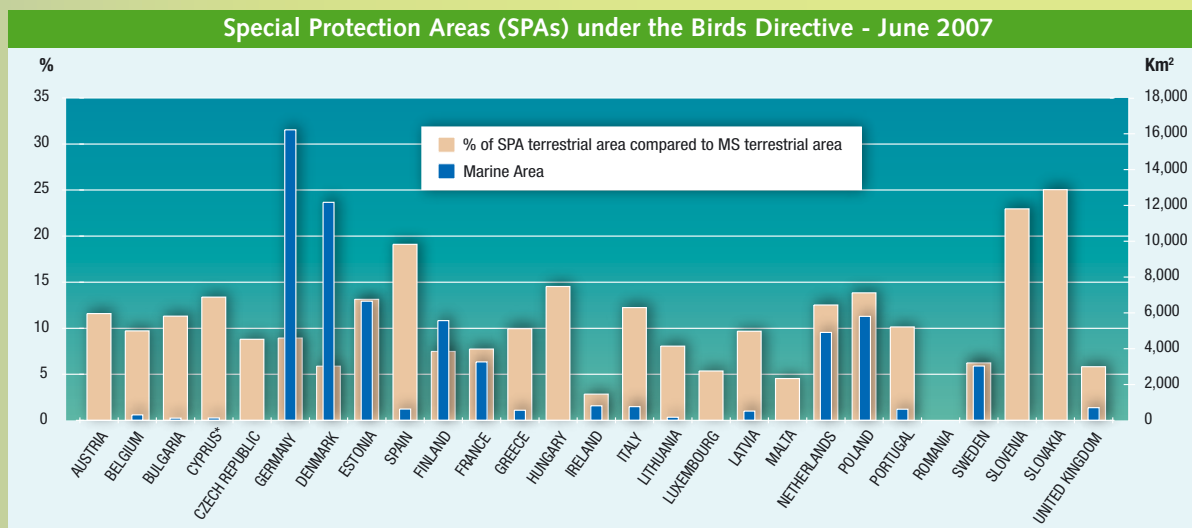
### The Natura 2000 Barometer: commentary on progress

- The current barometer reflects data submitted on the implementation of both the Habitats and the Birds directives in all 27 countries up to June 2007. Evaluation of progress is based on the biogeographical seminars.
- Bulgaria and Romania, new EU Member States since January 2007, have published their proposals. New proposals from Poland are beginning to fill in the gaps in that country, and Spain, France and Italy have all proposed new sites in order to begin to overcome the insufficiencies in their networks, as well as to improve the representativeness of the habitats and species in their proposals.
- Austria, Belgium and Luxembourg also proposed sites.
- The proposed SCIs for the new Member States are being evaluated through biogeographical seminars to determine whether they cover sufficiently the relevant habitats and species.
- As for Sweden, the number of sites is diminishing, but this is simply because many of its sites have been combined. Overall in fact, Sweden has actually increased the total surface area of sites of Community importance (SCIs)
- No new sites have been established in any of the other Member States. However, there is now additional information on the existing sites, along with updates on the presence of habitats and species.
- With regard to evaluating the completeness of national SPA networks, there is no biogeographical screening process, but the Commission makes use of different scientific references, including national inventories, where they exist, and the Important Bird Areas' (IBAs) publications of BirdLife International.

\* % of SCI or SPA terrestrial area compared to MS terrestrial area

\*\* The area of the MS and the % corresponds to the area of Cyprus where the Community acquis applies at present, according to protocol 10 of the Accession Treaty of Cyprus

## Proportion of Member State land territory and marine surface area included in the Natura 2000 network



Note: \*The area of the MS and the % corresponds to the area of Cyprus where the Community acquis applies at present, according to protocol 10 of the Accession Treaty of Cyprus  
Source: EEA-ETC/BD, June 2007

## Progress in the establishment of Natura 2000

In November 2007, the Commission adopted a new initial list of sites of Community importance (SCI) for the Pannonian biogeographical region. This region was added following the accession of the Czech Republic, Hungary and Slovakia in 2004. By the end of 2007, the Commission also adopted first updated lists of sites of Community importance for the Atlantic, Boreal, Continental, Alpine and Macaronesian biogeographical regions.

The Community list for the Mediterranean region will be updated in early

2008. With these decisions, 4,744 new SCI with a total area of 108,355 km² will be added to the Natura 2000 network (more than the size of Portugal). At the same time, the Natura 2000 network will for the first time also be extended to the ten new Member States that joined the EU in 2004: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, Slovakia, Malta and Cyprus.

The Natura 2000 network will include 21,087 sites of Community importance under the Habitats Directive,

covering 538,249 km² of terrestrial land and 78,129 km² of marine areas. The network will also include 4,830 Special Protection Areas (SPAs) designated under the Birds Directive, covering 429,615 km² of terrestrial land and 56,956 km² of marine areas.

In total, the EU wide Natura 2000 network will cover a terrestrial area of approximately 850,000 km² (taking into account the overlap between SCI and SPAs) and more than 100,000 km² marine area.



# Lake Constance forget-me-not flourishes once more

Restoration works by a LIFE-Nature project along an Austrian stretch of the Lake Constance shoreline have helped to ensure the long-term survival of *Myosotis rehsteineri* – a forget-me-not species endemic to the region.

**T**he Lake Constance forget-me-not (*Myosotis rehsteineri*), as the name suggests, is found in the Lake Constance region, which straddles Austria, Germany and Switzerland. Here, in the lake's natural flood plain, it thrives on the gravel banks built up during the postglacial period, from pebbles washed down by the Alpine rivers.

In early spring when the Lake Constance Forget-me-not blooms – and when lake water levels are at their lowest – strips of the shoreline used to be carpeted with a light blue sheen. Unfortunately, this spectacular sight has become increasingly rare. One reason for the species' decline is that up until the 1990s, large amounts of the gravel were extracted from the lake for building projects. Over time, the broad gravel banks that used to gently slope down into the lakes gradually disappeared and were replaced by unstable, steep slopes where the motion of the waves rolls the gravel to and fro unimpeded – leaving little chance for the delicate gravel bank flora to take hold.

The main objective of the LIFE-Nature project, "Protecting the habitat of *Myosotis rehsteineri* in Bregenz", was to restore 2,600 m of eroding lakeshore near the city of Bregenz in Austria, to help guarantee the survival of *Myosotis rehsteineri*, as well as to

Lake Constance gravel bank shoreline - the habitat of the endemic forget-me-not (*Myosotis rehsteineri*)

preserve other important habitats and species found in the erosion zone. At the same time, the gravel deposited under water would serve as spawning ground for fish.

The project was run by *Amt der Landeshauptstadt Bregenz*, the department (Amt) of the Austrian city of Bregenz responsible for environment and con-

servation issues. Using a technique that had already been successfully applied on the German side of the lake, technical restoration works to stabilise the shoreline were implemented during the four winters of the project period (April 2001 to May 2005), to avoid damaging the sensitive plant life on the shore.

A line of coarse pebbles was laid along the low-water mark (to absorb the shock of the breaking waves). Then the space between this line and the original shoreline was filled with a thin layer of finer gravel, similar to the shore sediment that was previously found here and that had originally been the habitat of the forget-me-not. The choice of grain size of the gravel used for the outer border and the shallow infill depended on the inclination of the slope and the wave forces expected at that point. The lakeshore of about 2,600 m length was successfully treated by this technique during the low-water periods each winter.

LIFE-Nature works to restore the eroding gravel banks of Lake Constance



Photo: Gerold Ender, Stadt Bregenz - LIFE00 NAT/A/007069

Photo: Gerold Ender, Stadt Bregenz - LIFE00 NAT/A/007069



Completed in 2005, the works are only visible during times of extremely low water levels.

Through collaboration with the local municipal plant nursery, the project team also demonstrated that the species was easy to artificially propagate. As a result, more than 1,650 specimens were produced within a few months. These were then re-introduced to certain sections of the shoreline within the project's wider restoration actions.

Over the course of the project, the beneficiary faced two major problems. Firstly, there was political and social pressure to weaken the protection status of the site, which is situated in a popular tourist area, partly within the

city of Bregenz. And, secondly, once the restoration was achieved, visitor pressure increased, generating a need for management of these visitors to avoid trampling and disturbance.

The project dealt with both these problems successfully by carrying out intensive public relations, communications and visitor guidance work. This included the production of a video film "Grillfest meets Haubentaucher" ("Barbeque meets Great crested grebe"), dealing with tourist pressure and its impact on the designated Natura 2000 site, and also a website, designed and maintained by secondary school students, providing information on the LIFE project.

In 2003, the designated Natura 2000 site gained its regional protection sta-

tus. The conservation work carried out by the LIFE team was commended in accompanying documentation for this process.

Finally, in 2004, thanks to the restoration of its habitat and the artificial propagation of the plant, some 83,000 individuals of the Lake Constance forget-me-not species were counted in the project area. This was evaluated as a stable population with "very good" long-term prospects.



**Project reference:**

LIFE00 NAT/A/007069

**Website:**

[www.bregenz.at/index.php?id=1066](http://www.bregenz.at/index.php?id=1066)



## LIFE's contribution to plant conservation

LIFE is the EU's financial instrument that supports environmental and nature conservation projects throughout the EU. Originally launched in 1992, LIFE has contributed approximately €1.35 billion to the protection of the environment.

Of all the LIFE-Nature projects, totalling 970 since 1992, only 33 have actually directly targeted plant species, even though there is a far greater proportion of plants species than animal species in Annex II of the Habitats Directive. Furthermore, the majority of projects related to plants actually target plant conservation within a broader context, for example as part of habitat actions, Natura 2000 network site management plans or more general conservation actions.

LIFE has financed a range of plant-targeted projects that include

- plant species assessments
- population or habitat recovery plans
- direct conservation measures for the protection and management of species and habitats
- creation or development of designated areas for plant reproduction
- elimination of invasive alien species

LIFE has also funded a range of plans for ongoing Natura 2000 site management. Additionally, an Annex II plant species can occur on private land, so land purchase, or acquisition of land-use rights, has been one of the key conservation measures. Following the completion of LIFE III, LIFE+<sup>1</sup> is now the new Financial Instrument for the Environment

for the period 2007-13. With a budget of over €2 billion, LIFE+ will continue to offer robust support to the protection of plant species in Europe in the coming years. The projects targeting plants and habitats inside and outside Natura 2000 will be financed by the two components of LIFE+ Nature and Biodiversity: 'LIFE+ Nature', which will co-finance best practice or demonstration projects contributing to the implementation of the Birds and Habitats directives; and 'LIFE+ Biodiversity', which will co-finance innovative or demonstration projects contributing to the implementation of the objectives of the Commission's 2006 Communication "Halting the loss of biodiversity by 2010 – and beyond".

<sup>1</sup> <http://ec.europa.eu/environment/life/funding/lifeplus.htm>

*Cytisus aeolicus endemic to the Aeolian Islands (Sicily)*



*In-vitro propagation of Annex II plants*





# New study of European mammals highlights actions required under the Habitats Directive

Nearly one in every six European mammal species is threatened with extinction – according to a new report prepared by the World Conservation Union (IUCN) on behalf of the European Commission. The report, the first comprehensive assessment of the conservation status of mammals at a European level, shows that population trends are equally alarming: over a quarter (27%) of all mammals have declining populations and a further 33% have an unknown population trend. Only 8% were identified as increasing, including the European bison (*Bison bonasus*), thanks to successful conservation measures.

**F**or nearly 50 years the IUCN's Species Survival Commission has been assessing the conservation status of species, subspecies and populations on a global scale to highlight those threatened with extinction, and therefore promote their conservation. This is the first time that European mammals have been evaluated according to the IUCN Red List criteria at regional levels, and as such is a major contribution to our understanding of the threats facing Europe's mammals and of the actions required under the EU Habitats Directive and Natura 2000 network to improve their status.

According to the "European Mammal Assessment (EMA)", Europe is now home to the world's most threatened cat species, the Iberian lynx (*Lynx pardinus*), and the world's most threatened seal, the Mediterranean monk seal (*Monachus monachus*) both classified as "critically endangered". Only 150 Iberian lynx survive today and the Mediterranean monk seal population has decreased

to between 350-450 individuals. The most threatened category also includes the Arctic fox (*Alopex lagopus*) and the European mink (*Mustela lutreola*), which both have very small and declining populations.

While some 15%, or almost one sixth, of mammals are threatened in Europe, the report also shows that the situation of marine mammals is even bleaker: some 22% are classified as threatened with extinction. The real situation is likely to be even worse, as almost 44% were classified as "data deficient" due to missing information. By comparison, according to BirdLife 43% of European birds are threatened.

Commenting on the report, published in May 2007, Environment Commissioner Stavros Dimas said: "The results highlight the challenge we currently face to halt the loss of biodiversity by 2010, as European governments have promised. It is clear that the full implementation of the Habitats Directive, which covers nearly all mammals found threatened in this assessment, is of utmost importance to protect Europe's species".



Iberian lynx (*Lynx pardinus*) – the most endangered feline in the world

IUCN Director-General Julia Marton-Lefèvre added: "This new assessment proves that many European mammals are declining at an alarming rate. However, we still have the power to reverse that trend, as the case of the European bison, which was brought back from the brink of extinction clearly shows."

The main threats to European mammals are habitat degradation and loss, due to deforestation or wetland drainage, followed by pollution and over-harvesting. For marine species, pollution and accidental mortality from fisheries' by-catch or ship collisions are the main risks. These threats are most severe in the enclosed Baltic, Mediterranean and Black Seas.

To reverse the decline of Europe's mammals, the report recommends urgent implementation of the European Union's nature conservation policies, development of species action plans and the integration of nature conservation into the EU's land use policies.

For copies of the report and further information, visit the DG Environment EMA website at: <http://ec.europa.eu/environment/nature/conservation/species/ema/>



Mediterranean monk seal (*Monachus monachus*) – the world's most threatened seal

Photo: P. Dendinos/MOM

## Biological invasions in Europe & DAISIE initiative – conference & portal

Biological invasions by non-native or 'alien' species are widely recognized as a significant component of human-caused global environment change. Organised within the framework of the Commission's Sixth Framework Programme project DAISIE (Delivering Alien Invasive Species Inventories for Europe), this European conference will be held on 23 January in Portorez, Slovenia.

For more information, contact: [Melanie.Josefsson@snv.slu.se](mailto:Melanie.Josefsson@snv.slu.se).

Meanwhile, the DAISIE portal brings together information on alien species and their impacts, and for the first time has developed an overview and assessment of biological invasions in the Pan-European region.

Visit the website at: [www.europe-alien.org](http://www.europe-alien.org)

## European conference on invasive alien species

Another European conference on "Invasive Alien Species", organised

by Spain together with the Slovenian presidency and the European Commission, will be held on 15 -16 January 2008 in Madrid. The event will provide stakeholders with an opportunity to meet and exchange knowledge and experience on the issues involved in this matter.

## Large carnivores - leaflet



A Commission-financed project has published a leaflet showing the current distribution areas of

grey wolf (*Canis lupus*), brown bear (*Ursus arctos*), Eurasian lynx (*Lynx lynx*) and wolverine (*Gulo gulo*) in Europe and explaining the background to the approach to managing large carnivores at population level.

[http://ec.europa.eu/environment/nature/info/pubs/docs/brochures/large\\_carnivores\\_know\\_no\\_boundaries.pdf](http://ec.europa.eu/environment/nature/info/pubs/docs/brochures/large_carnivores_know_no_boundaries.pdf)

## Large carnivores - website

For anyone interested in knowing more about large carnivores, the Commission website provides guidelines for the population level management plans for large carnivores and a link to a "Species Online Information System" for Europe. This link provides easily-accessible, regularly-updated, information on the distribution, status, population trends, management practices and conservation needs of grey wolf, brown bear, Eurasian lynx and wolverine.

[http://ec.europa.eu/environment/nature/conservation/species/carnivores/index\\_en.htm](http://ec.europa.eu/environment/nature/conservation/species/carnivores/index_en.htm)

## Research highlights 'significant' impact of Birds Directive

Research recently published in the journal Science has shown that the European Union's Birds Directive (79/409/EEC) has had a significant positive impact in protecting many of the continent's most threatened birds. The research highlighted the effectiveness of special protection areas (SPAs).

Environment Commissioner Stavros Dimas said: "This provides further evidence of the effectiveness of EU nature legislation and underlines the critical role that must be played by Natura 2000 if we are to reach our target of halting the loss of biodiversity by 2010."

Dr Paul Donald, the paper's senior author from the RSPB (BirdLife in the UK) commented: "For over 25 years, the Birds Directive has helped provide proper protection for those bird species facing the greatest

threats. We can now reveal that this protection has apparently worked."

Researchers analysed data from 15 Member States and showed that the populations of threatened birds not only fared better, on average, than other bird species in the European Union, but also that the same species perform better within the EU than in European countries outside.

One of the ways that the EU is supporting the implementation of the directive is through the co-funding of LIFE conservation projects within the Natura 2000 network. Many of these targeted projects have improved the habitats of endangered bird species, such as Eurasian spoonbill (*Platalea leucorodia*), white-tailed eagle (*Haliaeetus albicilla*) and Spanish imperial eagle (*Aquila adalberti*).



An example of the positive impact of the Birds Directive – a golden eagle (*Aquila chrysaetos*) chick has hatched in Donegal, Ireland, for the first time in 100 years, as part of a golden eagle reintroduction programme co-funded between 2001 and 2006 by the EU's LIFE-Nature programme.

Photo: LIFE00 NAT/IRL/007145



### Guidance on Article 3 of Birds Directive & Article 10 of Habitats Directive

Many of Europe's habitats are highly fragmented and at risk of further fragmentation as a result of ongoing developments and land use changes. A new report has recently been produced, on behalf of the Commission, to assist Member States in developing and implementing integrated ecological connectivity-related measures that contribute to the maintenance or restoration of the "favourable conservation status" of species and habitats of Community interest in accordance with requirements of the Habitats and Birds directives. In particular, the IEEP (Institute for European Environmental Policy) report provides guidance on implementation of Article 10 of the Habitats Directive and Article 3 of the Birds Directive. It also aims to support the connectivity and climate change objectives in the EU Biodiversity Action Plan. The guidance covers all terrestrial, freshwater and inter-tidal habitats in Europe, but does not cover marine habitats and species.

[http://ec.europa.eu/environment/nature/ecosystems/index\\_en.htm](http://ec.europa.eu/environment/nature/ecosystems/index_en.htm)

### Business & Biodiversity Conference



Eco-tourism activities, such as whale watching, provide business opportunities

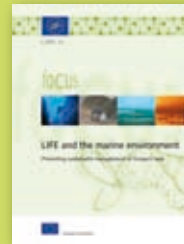
A conference on business and biodiversity was held in Lisbon in November 2007. Organised by the Portuguese presidency of the EU, the event explored the way European businesses can contribute to halting the loss of biodiversity and improving its performance. <http://countdown2010.net/business/>

### LIFE and the marine environment

The LIFE programme has greatly assisted the implementation of the Natura 2000 network in the marine environment – providing co-funding for projects aiding the conservation of Europe's highly endangered marine species and habitats. This publication provides further information and examples of successful case studies from around Europe.

Published by the European Commission, 2006, 64p, it is available in English in electronic format at:

<http://ec.europa.eu/environment/life/publications/lifepublications/lifefocus/nat.htm#marine>



### LIFE and Europe's rivers

The nature and environment case studies featured in this attractive new publication provide practical examples of the way the LIFE programme is helping Member States meet the requirements of the EU's Water Framework Directive (2000/60/EC). Other case studies focus on issues detailed in other European directives, such as the EU Nitrates (91/676/EEC), Birds (79/409/EEC) and the Habitats (92/43/EEC) directives.

Published by the European Commission, 2007, 52p, it is available in English in electronic format at:

<http://ec.europa.eu/environment/life/publications/lifepublications/lifefocus/nat.htm#rivers>



### Greek Natura sites under fire

Biodiversity hotspots including Natura 2000 sites were among those areas most damaged by the forest fires that ravaged Greece last summer. The forest fires, which resulted in significant loss of lives and left many thousands homeless, have had a devastating impact on the environment.

The Natura 2000 sites affected by the fires include Mount Taygetos, a rich forest composed largely of pine and an endemic fir species (*Abies cephalonica*). The mountain gorges are important for bird species such as the golden eagle

(*Aquila chrysaetos*) and lesser kestrel (*Falco naumanni*). The area is also known to host a small population of golden jackal (*Canis aureus*).

Mount Parnonas was also damaged by the fires. Parnonas consists largely of conifer and pine forests and is the only European site with Syrian juniper (*Juniperus drupacea*). This area is home to diverse fauna with golden jackal populations, endemic snake and turtle species.

Elsewhere in Europe, Natura 2000 sites were affected in Cyprus, France, Italy, Portugal and Spain.



Photo: www.bigfoto.com



### Financing Natura 2000 IT tool launched

The EU has recently introduced a new, interactive IT financing tool, which was piloted in Austria, Italy and Latvia, providing information on sources of funding for Natura 2000 sites. The technical solutions developed in these pilots regions can be adapted to other countries in the EU.

For more details, visit:  
[www.financing-natura2000.moccu.com](http://www.financing-natura2000.moccu.com).

### EU guidelines on Natura 2000 in the marine environment

The Commission has published new guidelines to assist Member States in establishing Natura 2000 in the marine environment. Guidance is provided on the selection and management of sites under both Habitats and Birds directives and covers both the inshore and offshore marine environments.

The establishment of Natura 2000 in the marine environment

## LIFE+ offers new opportunities for nature & biodiversity funding

The first call for proposals for nature and biodiversity projects funded under the EU's new LIFE+ funding programme has been launched. Applications for projects were submitted to National Authorities at the end of November 2007. Following selection, the first LIFE+ projects are expected to start in January 2009.

The "Nature & Biodiversity" component of LIFE+ builds on experience with the former LIFE-Nature programme. It is divided into:

- LIFE+ Nature – focusing on the "demonstration or best-practice projects" concerned with implementing the objectives of the Birds and the Habitats directives, including the Natura 2000 network of sites.
- LIFE+ Biodiversity - targeting innovative or demonstration projects that support the implementation of the EU Biodiversity Action Plan (see: COM(2006) 216 final "Halting the loss of biodiversity by 2010- and beyond").

For more information, see: <http://ec.europa.eu/environment/life/index.htm>



remains an important gap that needs to be filled in 2008.

[http://ec.europa.eu/environment/nature/natura2000/marine/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/marine/index_en.htm)

### Natura 2000 Networking Programme

In 2007 the Commission financed the "Natura 2000 Networking Programme", managed by Eurosite, ELO and Europarc. Fifteen workshops were successfully implemented throughout Europe. A website ([www.Natura.org](http://www.Natura.org)) has also been created to promote and provide information on

Natura 2000, including exchange of best practices and the registering of Green Days' activities.

### Natura 2000 event calendar

For anyone seeking information on Natura 2000 seminars or conferences, the Commission is testing an on-line event calendar. The pilot event calendar includes information on different events associated with Natura 2000 themes, in particular those with wider EU interests.

For more details, visit:  
[http://ec.europa.eu/environment/nature/natura2000/calendar/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/calendar/index_en.htm)

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[http://ec.europa.eu/environment/nature/info/pubs/natura2000nl\\_en.htm](http://ec.europa.eu/environment/nature/info/pubs/natura2000nl_en.htm)

Alternatively, you can view this newsletter, together with other information and documents at the EU's nature and biodiversity homepage: [http://ec.europa.eu/environment/nature/info/pubs/paper\\_en.htm](http://ec.europa.eu/environment/nature/info/pubs/paper_en.htm)

For details on LIFE and LIFE-Nature projects see: <http://ec.europa.eu/environment/life/>



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