Species alert!

Natura 2000: a last chance for European biodiverersity

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Introduction

Importance of Biodiversity
Biodiversity as defined in Article 2 of the Biodiversity Convention (1992 Earth Summit held in Rio de Janeiro) "is the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part. This includes: diversity within the species between the species and of ecosystems."

The importance of biodiversity was recognised at the 1992 Earth Summit for example Agenda 21 includes the passage:

> "our planet's essential goods and services depend on the variety and variability of genes, species, populations and ecosystems. Biological resources feed and clothe us and provide housing, medicines and spiritual nourishment. The natural ecosystems of forests, savannahs, pastures and rangelands, deserts, tundras, rivers, lakes and seas contain most of the earth's biodiversity. Farmers' fields and gardens are also of great importance, while gene banks, botanical gardens, zoos and other germplasm repositories make a small but significant contribution. The current decline in biodiversity is largely the result of human activity and represents a serious threat to human development."

Species Decline in Europe
Species once common in Europe have declined rapidly as a result of escalating pressures from agriculture, forestry, fisheries, tourism, industry, urbanisation and transport. Species under pressure include:

- 64 endemic plants of Europe (including the Macaronesian islands) have become extinct (8 in the 1980s and 9 in the 1990s) (Lesoueff, in prep.);
- 38% of bird species are threatened, with vulnerable or endangered populations (Tucker *et al*, 1994);
- 45% of European butterflies are threatened, with vulnerable or endangered populations (van Swaay *et al*, 1997);
- 145 of the 3,200 species of land and freshwater molluscs present in Europe are considered threatened at global level (Bouchet *et al*. 1998);
- 24% of the 1,687 species and subspecies of Bryophytes occurring in Europe are threatened (European Committee for the Conservation of Bryophytes, 1995).

Despite this bleak picture, the European Community has a chance to address these pressures and reverse this trend for many species and habitats through proper implementation of the EU Habitats and Birds Directives.

The EU Habitats and Birds Directives

The EU Birds Directive (*Directive on the Conservation of Wild Birds, 79/409/EEC*) was adopted in 1979. It provides for the protection, management and control of all species of naturally occurring wild birds in the European territory of the Member States. It requires Member States to take measures to preserve a sufficient diversity of habitats in order to maintain populations at ecologically and scientifically sound levels, and requires special measures to be taken in respect of rare or migratory species.

The EU Habitats Directive (*Directive on the Conservation of Natural and Semi-natural Habitats of Wild Fauna and Flora, 92/43/EEC*) was adopted in 1992. It lists in its Annexes, habitats and species for which Member States are required to take special measures to maintain or restore natural habitats and wild species at a "favourable conservation status" in the community.

Timetable for Implementation

EU Birds Directive

Although the EU Birds Directive was agreed over twenty years ago, classification of Special Protection Areas (SPAs) under the Directive has been exceptionally slow throughout the European Union and is still far from complete.

EU Habitats Directive

Similarly, under the EU Habitats Directive, Member States failed to meet the deadline of 21 May 1995 for the submission of their lists of candidate Special Areas of Conservation (cSAC), and by 4 May 1999 not one Member State had submitted a complete national list and maps for all cSACs. In most Member States, cSACs are not afforded protection until they have been formally adopted by the Commission. As a result, many important Natura 2000 sites remain unprotected because Member States have fallen behind schedule.

Natura 2000

Natura 2000 is the term used to describe the ecological network of protected sites, considered to be of outstanding international significance and therefore of importance to the maintenance of biodiversity in the European Union. The network of sites aims to conserve species and habitats of community interest listed in the Annexes to the Birds and Habitats Directives, with an emphasis placed upon species which are endemic or largely restricted to Europe, or which have undergone rapid recent declines, or which are considered rare.

Background Information on the Selection of Species in this Report

WWF is concerned that species and habitats are continuing to decline across Europe and that Member States are not designating enough territory to the Natura 2000 network to protect them. The purpose of this report is to highlight the decline of selected species across Europe and identify how, through the EU Habitats and Birds Directives, Member States can ensure that threatened species are restored or maintained to a viable level.

This report concentrates on the following species:

Common Name	**Latin Name**
Marsh fritillary butterfly	*Euphydryas aurinia*
Atlantic salmon	*Salmo salar*
Loggerhead sea turtle	*Caretta caretta*
Harbour porpoise	*Phocoena phocoena*
Iberian lynx	*Lynx pardinus*
Brown bear	*Ursus arctos*
Monk seal	*Monachus monachus*
Lady's slipper orchid	*Cypripedium calceolus*
-	*Unio crassus*
Corncrake	*Crex crex*

These species were selected because they are:

- **Species of Special Concern:** these are usually threatened species, whose protection preserves biodiversity and ecological processes.
- **Indicator Species:** are species which reflect changes to their environment.
- **Flagship Species:** these are species of conservation concern or icons of cultural sensitivity.
- **Representative Species:** are species which are widely occurring throughout Europe.
- **Endemic Species:** are endangered species which are native to, and confined to, a certain country or area.

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Marsh fritillary butterfly, *Euphydryas aurinia.*

Taxonomy

- Phylum: Arthropoda
  - Class: Insecta
    - Order: Lepidoptera
      - Family: Nymphalidae

Habitat and Distribution

The marsh fritillary butterfly can be found in damp, acidic grasslands and dry, calcareous grasslands (which are themselves under threat) (Warren, 1993).

Population Status

The marsh fritillary is endangered or vulnerable throughout most of Europe. The species became extinct in the Netherlands in 1982 and is continuing to decline in many other countries, see Table 1 (van Swaay & Warren, 1998).

The marsh fritillary is listed in Annex II of the EU Habitats Directive and Appendix II of the Bern Convention.

Table 1 Status and distribution of the marsh fritillary butterfly across EU member states. Trend class is the change in species distribution over the last 25 years.

Country	Trend Class	Old IUCN Status
Netherlands	Extinct	Endangered
Belgium	Decrease 75-100%	Endangered
Germany	Decrease 50-75%	Vulnerable
Denmark	Decrease 50-75%	Endangered
United Kingdom	Decrease 50-75%	-
Ireland	Decrease 50-75%	-
Austria	Decrease 25-50%	Endangered
Finland	Decrease 25-50%	Vulnerable
Luxembourg	Decrease 25-50%	Endangered
Sweden	Decrease 25-50%	Vulnerable
France	Decrease 15-25%	Rare
Greece	Stable	Rare
Spain	Stable	-
Italy	Unknown	
Portugal	Unknown	-

Source: van Swaay & Warren, 1998. Red Data Book of European Butterflies.

Threats
The key threats to the marsh fritillary are as a result of changes to their grassland habitats through:

- Agricultural improvements. In England and Wales the area of unimproved lowland grassland has been reduced by 97% in just 52 years from 1932 to 1984 (Fuller, 1987).
- Isolation and fragmentation of their habitat due, for example, to development activities, such as roads, housing and mining.
- Overgrazing alters the vegetative structure of a site and reduces the availability of its foodplant, devils-bit scabious (*Succisa pratensis)* (Warren, 1992).
- Pollution, including the application of herbicides and pesticides (van Swaay & Warren, 1998).

Proposed action under EU nature legislation
As shown above, the key threat to the marsh fritillary butterfly is the loss of suitable grassland habitat. It is therefore vital that sufficient networks of these sites are protected through proper implementation of the EU Habitats Directive.

To ensure the marsh fritillary is restored to a favourable conservation status, as prescribed in the Article 6 of the EU Habitats Directive, all host Member States must, having designated appropriate Special Areas of Conservation, take appropriate steps to avoid the deterioration and disturbance of their habitat. This should include appropriate assessment of any plan or project which may significantly effect the integrity of the Natura 2000 site.

However, while the conservation of large populations in optimal habitats is important, this in itself is insufficient as it has been shown that colonies can disappear from protected land due to incorrect or insufficient management (Warren, 1992). To address this, European land-use policies, such as the Common Agricultural Policy (CAP), should, as stated in Article 10 of the Directive, contribute to the aims of the EU Habitats Directive. For example, the Directive's target towards sustainable development could be promoted through minimising the CAP's schemes and grants which may damage important sites or promote intensification, and by attaching environmental conditions to aid.

A further requirement of the Directive is monitoring and surveillance of the marsh fritillary and its habitat. This would help Member States to devise appropriate management plans, as well as provide data to assess the effectiveness of conservation measures towards stabilising or increasing its distribution.

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Atlantic salmon, *Salmo salar.*

Taxonomy

- Phylum: Fish
  - Order: Salmoniformes
    - Family: Salmonidae

Habitat and Distribution

Atlantic salmon are anadromous (i.e. they spend part of their life feeding and growing in the sea, and then return to reproduce in the fresh water stream where they hatched). They are found in rivers and in the sea along both sides of the North Atlantic Ocean (including the North Sea and the Baltic Sea).

Population Status

Stocks of wild atlantic salmon are declining rapidly and international scientific advice and available data on salmon populations indicate that this trend is set to continue. This decline is a serious threat to the species as countries are reporting that the spawning stock in many of their rivers are far below numbers which scientists recommend will keep genetically distinct populations (Roed, 2000).

The atlantic salmon is listed in Annexes II and V of the EU Habitats Directive and Appendices II and III of the Bern Convention (only in freshwater).

Threats

During the freshwater part of their life-cycle wild salmon are restricted to particular locations and, in order to adapt to their local environments, genetically distinct populations have evolved. This makes the population very sensitive to habitat changes. Human activity in and around their freshwater environment has therefore led to the dramatic decline of this species. Serious threats also exist in the marine environment from commercial fisheries and climate change. These threats have led to the dramatic decline of this species. For example:

- River engineering, including the construction of weirs and dams, blocks the passage of salmon up stream to suitable spawning grounds.
- Industrial, domestic and agricultural pollutants are often lethal to salmon. Acid rain, for example, has led to the disappearance of atlantic salmon from 25 rivers in Norway alone since the 1930s (Roed, 2000).
- Escapees from fish farms cause a series of problems including the spread of disease and parasites, such as sea lice, whose numbers have exploded due to fish farms (Roed, 2000). But perhaps more importantly, through interbreeding, farm fish threaten the genetic and ecological integrity of wild salmon populations-threatening the genetic resources which aquaculture itself depends upon. (The preservation of genetically distinct populations is vital for the preservation of fish stocks to help combat future diseases and to adapt to changing environmental conditions) (Roed, 2000).
- Significant loss of small salmon (smolts) through by-catch fishing for mackerel.

- Reduced habitat availability due to temperature changes in the North Atlantic.

Proposed action under EU nature legislation
Habitat protection and restoration are important ways in which the conservation of atlantic salmon can be achieved.

It should be noted that the EU Habitats Directive only affords protection of the atlantic salmon in its freshwater environment, however, threats also exist in the marine environment. For example, loss of small salmon (smolts) through by-catch fishing for mackerel (Roed, 2000). Member States should stop all fisheries on mixed stocks in open ocean fisheries or coastal fisheries in accordance with advice given by ICES to NASCO. WWF also emphasises the need for the reform of the Common Fisheries Policy (CFP) to contain a strategy for unsustainable levels of by-catch in fishing gear.

In order to restore the atlantic salmon to favourable conservation status, conservation of the species alone is not enough. All qualifying freshwater sites across Europe must, having been designated as Special Areas of Conservation (SAC) under the EU Habitats Directive, be restored or maintained to favourable conservation status as prescribed in the Directive. This should include measures at the Community level to address the transboundary threats. For example, plans to improve water quality and to encourage and promote the use of sustainable fishing techniques. These measures, as referred to in Article 2(3) of the Directive, should also take account of the economic, social and cultural requirements, emphasising the need for all sectors, working in and around the salmon's freshwater environment, to work together to promote the sustainable use of freshwater habitats and their species. A further requirement under Article 14 of the Directive states that measures should be implemented to ensure that taking of wild species is compatible with their being maintained at favourable conservation status. For example, the 'purchase, sale, offering for sale, keeping for sale or transport for sale' should be strictly regulated.

Member States should also endeavour to encourage the management of features which are of major importance to the species. It is vital, for example, that freshwater spawning sites are properly managed to provide suitable conditions for future populations of wild salmon.

Where there is a proposed development, such as dam construction, the plans should be subject to appropriate assessment of the implications on the site in view of its conservation objectives (Article 6(3) of the EU Habitats Directive).

To ensure that conservation measures are adequate Atlantic salmon populations should be monitored to aid management and ensure wild salmon populations are restored.

Awareness should be raised to signal the plight of Europe's wild salmon populations and highlight measures, such as the "catch-and-return" policy, that members of the public could adopt to help maintain fish stocks. Additionally, a system of certification of farmed

salmon would be a way of assuring consumers that farmed fish are not endangering wild salmon stocks.

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Loggerhead sea turtle, *Caretta caretta.*

Taxonomy

- Phylum: Chordata
  - Class: Reptilia
    - Order: Chelonii
      - Family: Testudinadae

Habitat and Distribution

The major nesting areas for this turtle are the temperate and subtropical coastal regions of the US, Mexico, Oman, Australia, South Africa, the Mediterranean and Japan (Dodd, 1992).

The loggerhead sea turtle uses a large area of the Mediterranean for foraging and growth, but is restricted to fewer and fewer coastal areas suitable for breeding (Corbett, 1989).

Population Status

Loggerhead populations throughout the world are under severe pressure from human exploitation, with an overall population in the Mediterranean between 2000-4000.

Europe's largest nesting colony of the loggerhead turtle is in Zakynthos, Greece, which supports about 300-800 nesting females per year, with about 1000 for Greece as a whole and 500-1000 in Turkey (Demetropoulos, 1995). However, only one in every 1000 hatchlings survives to maturity (http://www.aurora.komvux.norrkoping.se/zoula/nature/02/caretta.htm).

The loggerhead turtle is listed as a priority species in Annexes II and IV of the EU Habitats Directive, Appendix I of CITES, Appendix II of the Bern Convention and Appendices I and II of the Bonn Convention.

Threats

The loggerhead turtle is considered threatened for the following reasons:

- Destruction of breeding habitats through, for example tourist development along nesting beaches, (which in turn can lead to disorientation of hatchlings due to artificial light: (http://www.bio.metu.edu.tr/~e072213/loggerhead.html)), beach cleaning operations, beach erosion and off-road vehicle activities (Dodd 1992).
- Pollution of the marine environment. For example, plastic dumped at sea and ingested by the turtle clogs the mouth, throat, gut and nasal passages.
- Accidental injury and death caused when turtles become trapped in fishing gear, such as drift-nets, long-lines, bottom-set trammel nets and trawling nets.
- Injuries caused by boats or fishermen.
- Predation on eggs and hatchling by, foxes, feral dogs, jackals and other mammals, sea birds, crabs, rodents and humans.

Proposed action under EU nature legislation

To alleviate the pressures on loggerhead turtles, strict enforcement of laws and regulations at national and international levels are required, i.e. through implementation of the EU Habitats Directive.

In order for the loggerhead to reach favourable conservation status adequate protection of the critical nesting beaches is needed. Such protection would give a chance of stabilising their decline. However, this cannot be achieved without a significant reduction in mortality resulting from fisheries. Article 12 of the EU Habitats Directive states that incidental capture and killing of the loggerhead turtle should be monitored to ensure fisheries do not have significant negative impact on the species. To reduce their impact on turtle populations research should be undertaken to investigate new gear technology which addresses by-catch.

The destruction and disturbance of breeding habitats are of particular concern. With fewer and fewer beaches now available to the turtle, it is particularly important that Article 6 of the EU Habitats Directive is enforced properly. An appropriate assessment should be conducted for any plan or project which may significantly effect the integrity of a Natura 2000 site.

Additionally Article 12(1)(b) of the Directive prohibits the deliberate disturbance of the loggerhead, as a species listed under Annex IV, particularly during breeding, rearing hibernation and migration. Article 12(1)(c) prohibits the deliberate destruction or taking of eggs from the wild and Article 12(1)(d) prohibits the deterioration or destruction of breeding sites or resting places. To address these issues, coastal zone management measures should be introduced, to restrict or control public access to nesting beaches and breeding areas during spawning, nesting and incubation periods.

Dodd (1992) emphasised the need for the protection of internesting and feeding habitats, such as estuaries, ocean rips and drift lines, as well as breeding sites. Article 4 of the Directive addresses this by requiring the designation of sites, for aquatic species, where there is a ‘clearly identifiable area representing the physical and biological factors essential to their life and reproduction’. However, further nesting surveys and monitoring may be required to check for other important sites.

Marine pollution including petroleum products and indiscriminate dumping of non-biodegradable products, must also be eliminated. Article 6 of the EU Habitats Directive requires Member States to take appropriate steps to avoid the deterioration or destruction of a Natura 2000 site.

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Harbour porpoise, *Phocoena phocoena*.

Taxonomy

- Order: Cetacea
  - Family: Phocoenidae

Habitat and Distribution

The harbour porpoise is one of the most widely distributed cetaceans and can be found in the cold temperate and sub-arctic waters of the northern hemisphere in a nearly circumpolar distribution (Gaskin, 1984). Populations are found in coastal waters (with a depth of less than 150m) of the north-east and north-west Atlantic, Black Sea and the north-eastern and north Pacific. A migration occurs around SW Ireland and a seasonal migration into and out of the Baltic Sea before the population collapsed. Seasonal inshore/ offshore migrations have also been reported but are less certain.

Population Status

Evidence exists for dramatic declines in Europe. A Black Sea population exists but is much depleted. The Mediterranean population is extinct. (Evans 1987). The Biscay coast of France has few, or none and the same is true for the Baltic and Brittany where people remember them as a common sight. Around UK waters, in places such as Channel estuaries, Isles of Scilly and the Bristol Channel they were regularly seen until the 1950s (Cornwall Wildlife Trust 1996).

In 1994 the SCANS survey of small cetaceans in the North Sea, Channel and Celtic Sea indicated the population in those waters to be around 350,000 (http://www.jncc.gov.uk/). While it has only been in recent years that reliable data on the population status of the harbour porpoise has been gathered, anecdotal evidence of their widespread depletion around European coasts is overwhelming.

The harbour porpoise is listed in Annexes II and IV of the EU Habitats Directive, Appendix II of CITES, Appendix II of the Bern Convention, Appendix II of the Bonn Convention, *vulnerable throughout their range* in the IUCN Red List of Threatened Species and is covered by the terms of the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS).

Threats

The key threats to the harbour porpoise include:

- Harbour porpoise are extremely vulnerable to incidental capture and drowning in fishing nets. Particularly bottom set modern synthetic monofilament twines which are almost visually and acoustically invisible (MacDonald *et al*, 1993).
- The harbour porpoise is also at risk from environmental contaminants. For example, this species is very susceptible to pollutants that are magnified up the food chain, and to marine litter that can interfere with indigestion if accidentally or mistakenly ingested.

- It is believed that noise pollution may interfere with echolocation thought to be used by the species in hunting and navigation.
- Depletion of prey species, such as herring, through commercial fisheries, resulting in a reduction in the amount of food available to the harbour porpoise.

Proposed action under EU nature legislation
It is vital that the threats currently posed to the harbour porpoise are reduced to restore the species to a favourable conservation status, as defined in the EU Habitats Directive.

Article 4 of the EU Habitats Directive requires Member States to designate adequate sites for aquatic species, such as the harbour porpoise 'where there is a clearly identifiable area representing the physical and biological factors essential to their life and reproduction'. Further research is required to ensure all key sites are designated for the conservation of this species and its habitat.

Incidental capture, resulting from fisheries operations, must be reduced in order to maintain viable populations (see Table 3 for recent by-catch figures).

Table 3 Incidence of by-catch as a percentage of estimated total population within selected regions.

Species	Region	Population estimate	Annual by-catch estimate	% of population
Harbour porpoise	Celtic Sea and westwards	36,000 (Hammond, 1995)	2,237	6.2% (Tregenza, 1997)
	Central & east-southern North Sea	170,000 (Hammond, 1995)	4,450	2.6% (Vinther, 1995)

The significance of human induced mortality to cetacean populations has been studied by the International Whaling Commission (IWC) Scientific Committee. In November 1997 the second Meeting of Parties to ASCOBANS endorsed a resolution following the recommendations from IWC. 2% mortality of an estimated harbour porpoise population, as a result of bycatch in fishing gear, was identified to almost certainly cause decline. As the harbour porpoise is also subject to further threats, such as pollution, ASCOBANS have recognised that action at under 1% mortality (of the estimated population) may be necessary to ensure sustainable harbour porpoise populations.

In light of this information it is imperative that the incidence of by-catch is significantly reduced. Article 12 of the EU Habitats Directive requires all Member States to establish a system in which to monitor incidental capture and killing of listed species, such as cetaceans, and to take further research or conservation measures to ensure that no "significant negative impact" occurs on the species. A recent High Court decision in the UK requires the UK to apply the EU Habitats Directive out to the equivalent of the 200nm Exclusive Economic Zone (EEZ). To ensure "favourable conservation status" of the harbour porpoise in Europe, other EU Member States will also need to take action

consistent with the UK throughout the European EEZ. Reform of the Common Fisheries Policy (CFP) is required as it currently provides no solutions to these unsustainable levels of by-catch and is not in line with the Habitats Directive.

Article 6 requires Member States to avoid the deterioration or destruction of Natura 2000 sites. As such the quality of key animal habitats along the European coast should be improved or safeguarded against threats such as the the discharge of pollutants. Natura 2000 sites should also be managed to insure there is no disturbance of the essential life cycle processes of animals such as the harbour porpoise.

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Brown bear, *Ursus arctos*.

Taxonomy

- Phylum: Chordata
  - Class: Mammalia
    - Order: Carnivora
      - Family: Ursidae

Habitat and Distribution

Brown bears can be found in a variety of habitats, including tundra, coniferous and deciduous forests, seashores and dry deserts.

The brown bear is distributed throughout the world, but in Western Europe, due to persecution, they are restricted to six small fragmented mountain populations. These isolated populations are located in the Trentino Alps and Apennines in Italy, the Pyrenees Mountains on the border of France and Spain, the Cantabrian Mountains of Spain, the Pindus and Rhodope Mountains in Greece and in Austria where they have been reintroduced (Kemf *et al*, 1999). Brown bears also inhabit areas of Eastern Europe including the Carpathian Mountains and Scandinavia.

Population Status

The number and distribution of the brown bear worldwide has declined by more than 50% since the mid 1800s (Servheen, 1990). The total number of brown bears in Europe, including Russia west of the Urals is about 49,000 to 50,000 (13,000 outside Russia) (Swenson *et al*, 1999).

France's bear population faces extinction, unless measures are taken very soon, with a drop from 300 after World War 1 to just 30 in 1970. A further survey conducted in 1982, sponsored in part by WWF France, showed their number had further reduced to just 15 individuals. Populations of the brown bear in Greece and Spain are also very small and decreasing, while in Italy and Austria, populations appear to be increasing (Kemf *et al*, 1999).

Other areas in Europe which host brown bear populations include the Carpathian Mountains of Romania, Slovakia, Poland and the Ukraine with estimated populations of 8,300 to 8,400; the Dinaric-Eastern Alpine populations of about 2,700 to 2,800; and a Scandinavian population of around 1,000 bears (Kemf *et al*, 1999).

The brown bear is not threatened globally, but in Europe it is listed as a priority species under Annexes II and IV of the EU Habitats Directive and Appendix II of CITES.

Threats

The key threat to the brown bear is loss of suitable habitat, and the effects of negative public attitudes:

- Poaching and persecution from livestock owners.

- Destruction of habitat through logging and forestry clearance, dam construction and intensive agricultural practices.
- Habitat fragmentation due to road construction, which not only causes road casualties, but isolates populations as well.
- Increased demand for bear parts for use in Chinese medicine.

Proposed action under EU nature legislation

Member States could address these threats through implementation of the EU Habitats Directive, with an aim to restore the species and its habitat to a favourable conservation status.

Brown bears inhabit huge home ranges, which are often comprised of many food source areas, linked by travel corridors. Article 4(1) of the Directive requires Member States to designate sites, for animal species ranging over wide areas, which "correspond to the places within the natural range of the bear which present the physical or biological factors essential to their life and reproduction". Further research is required to ensure all key sites are designated for the conservation of this species and its habitat. For example, the Atlantic region in Spain supports an estimated population of 70-90 bears, which is divided into two populations; the eastern Cantabrian population of 20-25 individuals, and the western Cantabrian population of 50-65 bears. The eastern population faces severe problems due to inbreeding (Rey *et al*, in press), whereas the western population is larger and more viable, but has declined by about 4-5% per year (Wiegand *et al*, 1998). These two populations are divided by an area of about 30km, which WWF considers to be an essential corridor for the exchange of these populations to help restore the species to a favourable conservation status. WWF strongly urges the designation of this area as a Special Area of Conservation (SAC) under the EU Habitats Directive.

Article 6(1) of the EU Habitats Directive encourages Member States to produce management plans, where appropriate, for Natura 2000 sites. Article 6(2) of the Directive requires Member States to prohibit the deterioration or disturbance of Natura 2000 sites. Article 6(3) requires appropriate assessment of any plan or project, such as road construction, which may significantly effect the integrity of a Natura 2000 site.

Land-use policies, such as the Common Agricultural Policy (CAP) which has been responsible for the continued exploitation of the bear habitat, should be reformed to incorporate the aims of the Directive, as described in Article 10, with a view to improving the coherence of Natura 2000.

Article 12(1)(a) prohibits the deliberate capture or killing of species listed in Annex IV(a), while Article 12(1)(b) of the Directive prohibits the deliberate disturbance of this species. However, Article 14(2) provides that where such measures are deemed necessary, in light of surveillance, bears may be taken, subject to hunting rules which take the conservation objectives of this Directive into account.

WWF is promoting, through a programme called the Large Carnivore Initiative for Europe, the natural recovery of bear populations in Europe where suitable habitat still

exists. A major aim of this campaign is to raise public awareness about Europe's carnivores and highlight ways, through action plans, in which humans can live harmoniously with carnivores.

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Iberian lynx, *Lynx pardinus*.

Taxonomy

- Phylum: Chordata
  - Class: Mammalia
    - Order: Carnivora
      - Family: Felidae

Habitat and Distribution

The Iberian lynx is restricted to central and south-western parts of Spain, with small populations found in southern Portugal (www.wcmc.org.uk/species/data/species_sheets/iberlynx.htm). It occurs in Mediterranean woodland and marquis thicket and favours a mosaic of dense scrub for shelter and open pasture for hunting rabbits.

Population Status

Historically, the Iberian lynx was widespread in the Iberian peninsula and the French pyrenees, although a skull dating from the 1950's is the last evidence of its existence in France (www.wcmc.org.uk/species/data/species_sheets/iberlynx.htm). However, with evidence indicating an 80 per cent range loss between 1960 and 1990 and a total population thought to be no more than 600 in Spain and around 50 in Portugal it is now recognised as the world's most endangered cat species (Brewerton *et al*, 1999).

The Iberian lynx is listed as a priority species under Annexes II and IV of the EU Habitats Directive, Appendix I of CITES, and is classified *endangered* in the IUCN Red List of Threatened Species.

Threats

There are a number of factors responsible for the decline of the Iberian lynx including:

- Habitat destruction and fragmentation through plantations of pine and eucalyptus, scrub clearance schemes for agriculture, and dam, road and railway construction.
- Depletion of their principal prey, the European rabbit. Disease has been the principal cause of the decline in rabbit populations, with the introduction of myxomatosis in the early 1950s and more recently Rabbit Haemorrhagic Disease (RHD) in 1988 (Brewerton *et al*, 1999).
- The Iberian lynx was previously hunted for its pelt and for being perceived as a predator of livestock (www.wcmc.org.uk/species/data/species_sheets/iberlynx.htm).
- Steel leg traps for rabbits and foxes are thought to be responsible for over 60% of human induced lynx deaths (Brewerton *et al*, 1999).
- Road deaths are a further concern, particularly in Donana, Spain.

Proposed action under EU nature legislation

By adopting the EU Habitats Directive Spain and Portugal are required to 'preserve, protect and improve the quality of environment, including the conservation of natural habitats' of the Iberian lynx in order to maintain it at a favourable conservation status.

To accomplish this the Spanish and Portuguese governments must take action now.

Article 3(1) of the EU Habitats Directive requires Spain and Portugal to designate a network of special areas of conservation (SAC). Article 6(1) encourages Member States to produce management plans, where appropriate, for Natura 2000 sites. Article 6(2) of the Directive requires Member States to prohibit the deterioration or disturbance of Natura 2000 sites. Article 6(3) requires appropriate assessment of any plan or project which may significantly effect the integrity of a Natura 2000 site.

Furthermore, policies, such as the Common Agricultural Policy (CAP) which has been responsible for the unsustainable exploitation of lynx habitat, should be reformed to incorporate the conservation objectives of the EU Habitats Directive.

Articles 11 and 12(4) of the EU Habitats Directive highlight the need for monitoring and surveillance of the lynx. In light of this information, conservation measures should be undertaken to minimise the threats posed to the Iberian lynx. For example, awareness raising is vital for more sustainable land-use management practices to be put in place. Landowners should adopt selective trapping devices in lynx habitat.

WWF is promoting, through a programme called the Large Carnivore Initiative for Europe, the natural recovery of lynx populations in Europe where suitable habitat still exists. A major aim of this work is to raise public awareness, and highlight ways, through action plans, in which humans can live harmoniously with carnivores.

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Monk seal, *Monachus monachus*.

Taxonomy

- Phylum: Chordata
  - Class: Mammalia
    - Order: Pinnipedia
      - Family: Phocidae

Habitat and Distribution

The Mediterranean monk seal is now a reclusive animal since it has abandoned most of its original habitat due to human encroachment. The species inhabits remote areas in the eastern Mediterranean Sea and on the coast of north Africa. The species is believed to have gone extinct in the Black Sea. Rocky shores and coastal caves constitute key habitats for the conservation of the monk seal, especially since pupping takes place in caves.

Population Status

It is estimated that only about 500 individuals remain with the largest concentrations in the remoter parts of Greece and on the Atlantic coast of Mauritania.

The monk seal is listed as a priority species in Annex II and IV in the EU Habitats Directive, in Appendix I under CITES, Appendix II under the Bonn Convention and is *critically endangered* on the IUCN Red List.

The monk seal can be considered as an indicator of the health of the marine environment due to its high position in the food chain. It was for this reason that this species was included in this report; to highlight the threats and propose steps to reduce/eliminate them through the implementation of the EU Habitats Directive.

Threats

The key threats to this species are a combination of human activities, for example:

- Adult and juvenile mortality due to deliberate killing by fishermen who view the species as a natural competitor.
- Adult and juvenile capture due to entanglement in fishing gear, although incidence of this appears to be decreasing.
- Loss of habitat due to increasing human disturbance (tourism, other building activities, fishing etc).
- Marine pollution may also be posing a threat to the species.

Proposed action under EU nature legislation

The status of the monk seal is clearly critical. It is therefore vital that Member States act quickly to reduce the current threats in order to maintain the species at favourable conservation status, as defined in the EU Habitats Directive.

Article 4 of the EU Habitats Directive requires Member States to designate adequate sites for species, such as the monk seal 'where there is a clearly identifiable area representing the physical and biological factors essential to their life and reproduction'. Further research is required to ensure all key sites are designated for the conservation of this species and its habitat.

The interaction of monk seals and fisheries is one of the key issues which must be addressed effectively and without further delay. The development of appropriate compensation mechanisms for damage caused to fishing gear is necessary in order to achieve the conservation of the species. The EU Habitats Directive addresses this problem in Article 6(1), where appropriate management plans are required for designated sites and Article 12 which addresses the problem of incidental capture more widely.

Adoption of conservation measures described in Article 2 should also help to maintain or restore the monk seal. For example, the use alternative fishing techniques may be one way to turn their decline around, with seal excluder devices. Member States should encourage commercial fisheries to adopt such measures, through education and awareness, as it is vital that fishermen participate in seal protection efforts.

Article 6(2) requires Member States to avoid the deterioration of the habitat of a species or the disturbance of a species. Pollution of the marine environment should be strictly prohibited.

The EU Habitats Directive also requires, under Article 12.1 (d), a 'system of strict protection for the animal species listed in Annex IV (a) in their natural range, prohibiting the deterioration or destruction of breeding sites or resting places'. The Monk seal is under ever increasing pressure to find suitable sites for pupping. Adequate protection of existing sites is imperative for the survival of future generations (the seal does not migrate very extensively).

Furthermore, Member States must incorporate monk seal conservation measures in their fisheries, marine and coastal management policies.

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Lady's Slipper Orchid, *Cypripedium calceolus*.

Taxonomy

- Family: Orchidaceae

Habitat and Distribution

The lady's slipper orchid is found in shady deciduous and mixed woodland, on moist calcareous soils.

The species is widely distributed throughout northern, central, eastern and south-east Europe, westwards to Norway and eastwards to Sakhalin Island (Wigginton, 1999).

Population Status

The lady's slipper orchid is in decline through most of Europe, reaching extinction in Belgium and Luxembourg, while in Britain it is critically endangered (Cerovsky, 1995).

The lady's slipper orchid is listed in Annexes II and IV of the EU Habitats Directive, Appendix II of the Bern Convention and is classified *vulnerable* in the IUCN Red List.

Threats

The main factors causing loss or decline are:

- Uprooting by gardeners and trampling by walkers.
- Habitat deterioration due to increased grazing pressure.
- Over collecting by botanists and collectors.

Proposed action under EU nature legislation

The main concerns which must be addressed in order to maintain the lady's slipper orchid at favourable conservation status are the deterioration of suitable habitat and the need to raise awareness about the conservation status of this species.

Production payments through the Common Agricultural Policy (CAP) has encouraged intensification of agriculture through, for example, overstocking of livestock leading to overgrazing. WWF are seeking a shift in CAP subsidies towards agri-environment schemes which will promote more sustainable farming practice. Farmers with a Special Area of Conservation (SAC) on their land need to incorporate appropriate methods of habitat management to take full account of the conservation needs of the lady's slipper orchid and prevent any further damage.

Planning and development policies should incorporate the aims of the Directive, especially those described in Article 6, to include an appropriate assessment for any proposal which is likely to have a significant effect on a SAC designated for the lady's slipper orchid. If, despite the recommendations of the assessment, the development must proceed due to overriding public interest, the Member State must take necessary compensatory measures, which for example may involve translocation of the species. However, should such action be taken, surveillance of the population would be vital to

determine the effectiveness of this measure, as there are concerns that this is not a suitable option (Gault, 1997).

Awareness should be enhanced to raise public understanding relating to the conservation of this species and uncontrolled collecting should be prevented.

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Unio crassus.

Taxonomy

- Phylum: Mollusc
  - Class: Gastropod
    - Order: Margaritiferidae
      - Family: Unionoida

Habitat and Distribution

Unio crassus is an endemic species of Europe, and is considered to be the second most threatened European freshwater mussel. Its former range included central and northern Europe (excluding Great Britain) and extended to the Black Sea (Bachmann, 1999).

Unio crassus lives in fast flowing, clean water and is found in brooks, large streams and rivers with gravel or sandy/muddy beds.

Population Status

Research into the status and distribution of *Unio crassus* has been limited, although Beloff (1998) has recorded that eutrophication of rivers has led to the decline or extinction of several European populations.

Unio crassus is listed in Annex II of the EU Habitats Directive and is classified *low risk: near threatened* in the 1996 IUCN Red List.

Unio crassus was selected for this report because it is a good indicator of water quality.

Threats

Threats are mainly due to habitat deterioration, for example:

- Eutrophication from agricultural run off (manure, sewage). *Unio crassus* is very sensitive to increased levels of ammonia and nitrogen.
- Habitat loss, due to river straightening, canalisation.
- The decline of many host fish species, required for reproduction, including *Cottus gobio* (Bachmann, 1999) which is itself under threat and listed in Annex II of the EU Habitats Directive.

Proposed action under EU nature legislation

In order to maintain *Unio crassus* at a favourable conservation status the protection and improvement of its habitat is vital.

Article 2 of the EU Habitats Directive requires the adoption of measures to ‘maintain or restore, at favourable conservation status, natural habitats and species’. Such measures should include plans to improve water quality through the reduction of discharge into the freshwater environment.

Member States are required, under Article 10 of the EU Habitats Directive, to manage features which are of major importance to the species. Additionally, where there is a plan or project which is likely to effect the site, an appropriate assessment of the impacts should be made in view of its conservation objectives (Article 6.3).

Monitoring is essential to ensure conservation measures which have been put in place are adequate for the restoration of *Unio crassus* and its habitat.

Member States should also take steps to raise awareness, particularly amongst farmers, to encourage, for example, the sensitive application of fertilisers onto agricultural land.

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Corncrake, *Crex crex*.

Taxonomy

- Order: Gruiformes
  - Family: Rallidae

Habitat and Distribution

Corncrakes are found in open areas of man-made managed grassland for hay and silage (Cramp & Simmons, 1980). Their distribution is now fragmented in western Europe with autumn migration taking them to central and south-eastern Africa.

Population Status

The total European population is estimated to be 92,000 to 233,000 singing males. The corncrake has been in decline in Europe over the last century, but over the last 10 years, it has reached a rate of about 20-50% (Heredia *et al*, 1996). For example, in the early 1970s there were 3,250 calling males in the UK, falling to just 478 in 1993 (www.jncc.gov.uk/ukbg/bap/species/crecrex.htm).

The corncrake is listed in Annex I of the EU Birds Directive, Appendix II of the Bern Convention, Appendix II of the Bonn Convention and is classified as *vulnerable* by IUCN.

Table 2 Corncrake population estimates (singing males) in EU member states. The accuracy code is based on a scale from 0 (a guess) to 3 (a census accurate to 10% of the true number). Population trend over the 10 years prior to the most recent estimate is given as –2 (decrease of >50%), -1 (decrease of 20-40%), 0 (decrease of <20%), F (fluctuating, with changes of >20% but no clear trend).

Country	Number of Singing Males	Accuracy Code	Year of Estimate	Population trend
Denmark	6	3	1991	-2
Luxembourg	<10	0	-	-1
Belgium	17-21	2-3	1992-94	F
Spain	24-31	2	1993-94	-1
Netherlands	30-80	2	1990-95	-2
Ireland	174	3	1993	-2
Austria	140-180	2	1989-91	-1
Italy	250-300	0	1994	?
Sweden	250-1000	0	-	?
United Kingdom	489	3	1993	-1
Finland	500-1000	2	1994	0
Germany	800	2	1994	0
France	1100-1200	3	1991-92	-1
Greece	0	-	-	-
Portugal	0	-	-	-

Source: Heredia *et al*, 1996.

The corncrake was chosen for this study as it is widely distributed, but is under serious threat from human activities. Member States could reverse this trend through proper implementation of the EU Birds Directive and the Natura 2000 network.

Threats

The decline of the corncrake is primarily due to changes in land-use and agricultural practice, for example:

- Intensification of grassland management has led to low breeding success. For example, the switch from hay to silage production has led to earlier cutting and changes in cutting techniques; disturbing nests (www.jncc.gov.uk/ukbg/bap/species/crecrex.htm).
- Application of fertilisers has altered the plant-species composition and physical structure of the corncrake's habitat, leading to reduced prey availability (globally threatened birds).
- Application of pesticides has also reduced the availability of food.
- Loss of wetland due to drainage and flood alleviation schemes on rivers. For example, extinction of breeding corncrakes in the former Yugoslav Republic of Macedonia is linked to the reclaimation of wetlands in the last 15-20 years (V.Maletic, 1994).
- Habitat deterioration through inadequate management leads to natural succession altering the vegetation cover which becomes too dense for corncrakes (globally threatened birds).
- Recreational disturbance caused, for example, by birdwatchers.

Proposed action under EU nature legislation

The EU Birds Directive requires the designation of Special Protection Areas (SPAs). Research should be undertaken to ensure all key sites within the EU are receiving adequate protection for the restoration of the corncrake to favourable conservation status.

Land-use policies, such the Common Agricultural Policy, should incorporate the aims and objectives of the EU Birds Directive and the Natura 2000 network. Farmers should be encouraged to adopt an environmentally sensitive approach towards farming, which could be achieved through a shift in payments towards sympathetic management under the Agri-environment Regulation.

Article 5(b) of the Directive prohibits the “deliberate destruction of, or damage to, their nests and eggs”, and Article 5(d) prohibits the “deliberate disturbance of these birds particularly during the period of breeding and rearing”. As such, Member States should encourage farmers and landowners to comply with these objectives through, for example, the use of corncrake friendly cutting methods and management techniques, as it is vital to achieve the aims of the EU Birds Directive through the participation of farmers and landowners.

Article 10(1) states that research is vital for the protection and management of the corncrake. Research would also provide better population estimates and detect changes, thus allowing an evaluation of the efficacy of the conservation measures put in place.

It is also necessary to raise awareness relating to the status of the corncrake and to the importance of the EU Birds Directive, across Member States to gain the support of the general public as an aid to conservation, as well as to help lobby for policy reform.

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Conclusion

The Habitats and Birds Directives and the Natura 2000 network provide an invaluable opportunity for the European Union to take action to protect their natural heritage.

However, Member States have so far failed to meet the deadlines set out in these Directives. In view of the delay in submitting their lists of candidate SACs and potential SPAs, WWF urges Members States to take steps to prevent the further decline of species and habitats listed in the Directives. As such WWF seeks commitment across the community to treat potential SPAs and candidate SACs in the same way as classified and designated sites.

WWF urges the European Union to embrace the opportunities set out in these two Directives. To ensure their lists of candidate SACs and potential SPAs are adequate, with a view to adding more sites as necessary, and to take steps towards producing national management plans for all Natura 2000 sites and guidance on the implementation of the Habitats and Birds Directives.

The impact of other EU policies (including CAP, CFP and the construction of infrastructure, especially roads using the structural and cohesion funds) on biodiversity is a further concern, as their aims are often contradictory to the aims and objectives of the Habitats and Birds Directives. Instead, the environment should be fully integrated at all levels of strategic planning. The Natura 2000 network should be seen as a framework for guiding sustainable development, in which the conservation of biodiversity is an integral part of socio-economic progress.

Finally, the Habitats and Birds Directives are currently seriously under-resourced. WWF seeks re-allocation of EU budgets in order to provide more funds for measures which have the potential to directly support the aims of the two Directives. For example the CAP could be used to promote the aims of the Directives through application of environmental conditions, such as cross compliance, compensatory allowances and compensatory payments.

WWF is working hard to address some of the threats faced by these, and other, species and habitats. However, it is vital that Member States take action now, through the establishment of the Natura 2000 network, to restore Europe’s precious wildlife and ensure their survival for future generations.

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