Towards European Biodiversity Monitoring

Assessment, monitoring and reporting of conservation status of European habitats and species

Results, comments & recommendations of a NGO consultation within the European Habitats Forum

June 2006

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Authorship

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Foreword

Underlying Europe's cultural heritage, socio-economic development and quality of life are its diverse natural ecosystems, ranging from the forests of northern Scandinavia to the Mediterranean coastline. The habitats and species found across Europe do not respect national boundaries, and actions taken in one country often have huge impacts on the biodiversity in another. Environmental action has to be taken collectively at the international level and the EU has taken a strategic approach across Europe, by implementing the Birds and Habitats Directives.

Successful implementation of these Directives continues to increase in importance as biodiversity loss accelerates worldwide. The latest IUCN Red List shows that a third of all amphibians, one in eight birds and a quarter of all mammals are under threat globally. The Directives are the most significant steps so far taken by the EU to meet its own target of "halting the loss of biodiversity by 2010", and remain vitally important in making progress for conservation at an international level.

These EU Directives are also distinctive in aiming for species and habitats to maintain or achieve favourable conservation status, which goes beyond halting biodiversity loss to ensuring nature is in a healthy state for the future. Furthermore, sites designated under these Directives, (together known as the Natura 2000 network), offer many possibilities for protecting biodiversity and supporting well managed socio-economic activities at the same time.

Monitoring, assessing and reporting the success of this legislation is vitally important, although it presents many difficulties in practice. The monitoring exercise presented in this report represents the valuable contribution that NGOs can make towards this work. The European Habitats Forum brings together NGOs working to implement the Birds and Habitats Directives, and represents a wide range of knowledge and expertise concerning many species and habitat groups as well as experience gained from involvement at the local level. This monitoring and assessment exercise has also involved other NGOs, beyond the EHF membership, and has benefited from the expertise of many specialists for particular species and habitat types.

We hope that the European Institutions and Government Ministries and Agencies will find the findings and recommendations of this report useful in undertaking their own monitoring, assessments and reporting exercises, and will continue to involve and consult with NGO experts. We also hope that many other NGO partners will become involved in this process and offer their information and expertise, so that collectively we successfully conserve and protect Europe's natural heritage.

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Executive Summary

Europe encompasses a great diversity of habitats and species. Despite the value of this natural heritage and many efforts to protect it, recent reports show that the diversity of our flora and fauna continues to be lost at a dramatic rate. Given this situation, Europe has a tremendous responsibility to halt the loss of its biodiversity, and to take all necessary action to protect its remaining natural heritage.

The European Union has identified nature and biodiversity as one of its key areas of environmental policy requiring legislation at a European level. It adopted its Biodiversity Strategy in February 1998, which aims to anticipate, prevent and attack the causes of significant reductions in or losses to biodiversity.

The EU´s most significant contribution to protecting biodiversity has been made through the Birds and Habitats Directives, which are key policy instruments to achieve favourable conservation status for the most important habitats and species. Special Protected Areas (SPAs) and Special Areas of Conservation (SACs) designated under the Birds and Habitats Directives, together form the Natura 2000 network which currently represents about a sixth of the total land area of the EU. The aim of the Natura 2000 network is to maintain or restore the most important European habitats and species, to favourable conservation status.

In addition to selecting and managing these sites, Member States are obliged to report on the conservation status of habitats and species within their territory every six years. The first report was produced in 2001 and concentrated on the transposition of the legislation and the current status of the site designation process. The second report, covering the period 2001 to 2006, will include (based on best available information) a first assessment of the conservation status of all species and habitats of Community Interest, listed in the Habitats Directive.

The European Habitats Forum (EHF), as a member of the Habitats Committee Scientific Working Group, strongly supports the development of a robust monitoring scheme. Therefore the EHF co-ordinated the production of this report with the strong support of its member organisations and partners. The aim of this exercise was to:

1) Test the EU reporting format and the guidance documents
2) Collect some best practice examples
3) Disseminate preliminary results concerning the conservation status of European protected habitats and species.

To this end, EHF experts selected 8 habitats from Annex I and 14 species from Annexes II, IV and V of the Habitats Directive, as well as 5 bird species listed in the Birds Directive. Those 27 habitats and species are found in 5 of the biogeographic regions. Although this reporting obligation is restricted to the Habitats Directive, bird species were also included because it is also necessary to undertake such an exercise for bird species and it is likely that a similar monitoring system will be established for birds in the near future. The 27 habitats and species were generally chosen because of relatively high levels of data availability and expertise within the EHF network.

In total 37 national reports were produced. In the case of the Eurasian Lynx (*Lynx lynx*) 5 different country reports (including one from Switzerland) were used to develop an overall report showing the status of this species within the Alps subregion of the Alpine biogeographic region.

Although it was possible to complete the first monitoring reports for most of the habitats and species, a lack of data made it difficult to complete major parts of the requested assessment. EHF therefore recommends that Member States significally improve the data situation for future reporting periods.

When looking at overall assessments of the conservation status of the selected habitats and species, based on these national reports (with the exception of Switzerland), the results are disappointing. More than 60% of habitats and species were assessed as being in a "bad" conservation status and 22% had an "unknown" status. Only 6% of the sample ranked as being in a "favourable" condition. Out of the assessed 19 species, 12 had "bad" conservation status (including loggerhead turtles for the Mediterranean, brown bears in Austria and the Eurasian lynx in the Alps), 4 had "inadequate" conservation status (including wolves in France), 2 had "unknown" conservation status, and 1 had "favourable" conservation status. Two of these species were assessed in more than one country. Concerning the 8 assessed habitats, 4 had "bad" conservation status (including alkaline fens and Cork oak forests), 2 had "bad" or "unknown" conservation status depending on the country, 1 had "unknown" conservation status, and 1 had "favourable" conservation status. Two habitats were assessed in more than one country.

Specific recommendations

Further analysis, comments and detailed recommendations are provided in sections 4 and 5, but the most important ten steps to establishing an effective monitoring system can be summarised as:

1) Ensure a streamlined approach is taken when using biodiversity data to meet the various monitoring requirements for different EU policies, such as nature conservation, water management and rural development, and that these different monitoring obligations are compatible.
2) Fully integrate civil society in the monitoring process, to allow timely and adequate input at the national and EU level.
3) Special attention must be made to the setting of Favourable Reference Values (FRVs) in the European Commission evaluation of the national reports, and improve as necessary, the guidance and practical advice.
4) Integrate NGO recommendations for setting FRVs, as given in section 3.4 of this report.
5) Ensure the integration of biogeographical aspects (connectivity and trans-boundary perspectives etc) within the monitoring scheme.
6) Member States should dedicate a specific section of their reports to assessing the contribution of management measures adopted for the Natura 2000 network, and special species conservation measures.
7) Member States must improve the data situation within the 6-year period before the next report.
8) Establish adequate monitoring procedures for marine habitats and species. Clear guidance is needed with concrete actions and clear responsibilities.
9) Implement a "biogeographical seminars process" for monitoring, for all biogeographic regions, starting in 2008 in a similar way to those undertaken for Natura 2000 site selection, with a focus on concrete results and obligations for action. Member States should be required to take actions to improve the conservation status of habitats and species within the next six years.
10) Promote the establishment of a similar monitoring system for the signatories of the Convention on the conservation of European wildlife and natural habitats in order to ensure the assessment of the conservation status of habitats and species is included in the annexes of the convention.

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Acronyms

CBD	Convention on Biological Diversity
EEA	European Environmental Agency
EHF	European Habitats Forum
ETC/BD	European Topic Centre for Biodiversity
FCS	Favourable Conservation Status
FRV	Favourable Reference Values
FV	favourable as assessed conservation status (DocHab 04-03/03-rev.3)
HD	Habitats Directive
KORA	Koordinierte Forschungsprojekte zur Erhaltung und zum Management der Raubtiere in der Schweiz
MS	Member State
MVP	Minimum Viable Population
NGO	Non Governmental Organisation
SPA	Special Protection Area
SAC	Special Area of Conservation
U1	inadequate as assessed conservation status (DocHab 04-03/03-rev.3)
U2	bad as assessed conservation status (DocHab 04-03/03-rev.3)
XX	unknown conservation status (DocHab 04-03/03-rev.3)
6EAP	Sixth Environmental Action Programme

Section 1:

The State of Nature in Europe

Europe is home to a wide range of habitat types, from Alpine peaks, to Mediterranean coastlines, to the Carpathians of Eastern Europe, which together host a great diversity of flora and fauna. The vast majority of European habitats have been shaped and managed by people for millennia, which has resulted in a unique mosaic of natural and semi-natural habitats.

However, despite the value of this natural heritage and many efforts to protect it, the diversity of our flora and fauna continues to be lost at a dramatic rate. Worldwide, species are becoming extinct 1,000–10,000 times faster than they would do at the natural rate. About 15,500 species face a high risk of extinction in the near future globally, in almost all cases as a result of human activities[1]. For example one eighth of all bird species could be wiped out due to environmental degradation.

In Europe, 335 species of vertebrates are at risk of extinction, 42% of our native mammals, 45% of butterflies, 30% of amphibians, 45% of reptiles and 52% of freshwater fish are threatened[2]. Habitats and ecosystems are also at risk, for example, some 60% of wetlands have been lost in Northern and Western Europe; only a fraction of the natural forest which once covered much of Europe remains intact; and forest fires continue to cause severe problems in Southern Europe. The rate of loss is set to increase even further as climate change begins to have an impact, especially as many species and habitats are already in a vulnerable state making them less able to adapt to change. A recent report estimated that climate change threatens the extinction of a quarter of the world's land animals and plants by 2050[3].

The European Environment Agency's (EEA) most recent State of the Environment report[4], shows that the areas of many different habitat types continue to decline, for example, mire, bog and fen habitats collectively declined by 3.4% between 1990 and 2000. Even when a habitat type has not declined in area it may decrease in quality, for example, woodland and forest habitat actually increased by 0.6% during this period, but many species linked to this habitat still declined due to unfavourable changes in management regimes.

The situation seems to be similar for birds. BirdLife International publishes that 226 out of 526 bird species in Europe are in an unfavourable conservation status[5].

The extent to which policies are responding to this situation is also mixed, for example, the EEA report[6] shows that the extent to which policies have been implemented to protect threatened species in the EU has been uneven across the species groups. On a positive note, all globally threatened[7] bird species occurring in the EU-25 are now protected either under the Birds Directive or the Bern Convention. Up to 86% of threatened reptile and mammal species have also been protected at the European level so far (12 out of 14 globally threatened reptile species and 28 out of 35 threatened mammal species are included in the EU Habitats Directive or Bern Convention). However, less than half the threatened amphibian and fish species are so far protected under EU legislation (7 out of 15 amphibian species and 24 out of 63 fish species are included in the legislative lists). Even worse is the gap for invertebrates, as only 43 of the 310 threatened species are included in the lists.

Given this bleak picture, the European Union has a tremendous responsibility to halt the loss of biodiversity and to take all necessary action to protect what remains of its natural heritage. There is no doubt that some effective and suitable tools are already available to assist with this, such as legislation, conventions and pan-European strategies. Successful implementation of the Birds and Habitats Directives, as well as committed involvement and action in biodiversity policy, are essential to the sustainable future of the EU.

1 IUCN Red List of Threatened Species. **www.redlist.org**

2 DG Environment, 2004. **http://europa.eu.int/comm/environment/nature_biodiversity/index_en.htm**

3 Duke Guy (ed.) 2005. **Biodiversity and the EU – Sustaining Life**, Sustaining Livelihoods Conference Report, Irish Presidency of the EU and the European Commission

4 European Environment Agency, 2005. **State of the Environment Report**, pages 288–291

5 BirdLife International, **www.birdlife.org/regional/europe/index.html**

6 European Environment Agency, 2005. **State of the Environment Report**, pages 280–283

7 Classified according to the IUCN criteria, 2004. **www.iucnredlist.org**

Section 2:

Setting the Context

2.1 EU Biodiversity Policy

The EU has identified nature and biodiversity as one of its key areas of environmental policy requiring legislation at a European level.

The Sixth Environmental Action Programme (6EAP) was adopted in 2002, and outlines the strategic direction of the EU's environmental policy. Nature and biodiversity is included as one of its four priority areas, alongside climate change; environment, health and quality of life; and natural resources and waste. The 6EAP sets out the following objective for nature and biodiversity: *"To protect and restore the functioning of natural systems and halt the loss of biodiversity in the European Union and globally. To protect soils against erosion and pollution*[8]*."*

The importance of protecting and conserving nature and biodiversity was also recognised at the highest level within the EU, when the Heads of State committed themselves to the goal of *"halting and if possible reversing the trend of loss of biodiversity by 2010"*, at the Gothenburg European Council in September 2001. Additionally, the EU's Sustainable Development Strategy[9] identifies biodiversity loss as being one of the main threats to sustainable development, and similarly includes the following objective: *"Protect and restore habitats and natural systems and halt the loss of biodiversity by 2010."*

The EU adopted a Biodiversity Strategy[10] in February 1998, which aims to anticipate, prevent and attack the causes of significant reductions in or losses to biodiversity. This Strategy outlines how the EU will find solutions for biodiversity as a partner within the United Nations Convention on Biological Diversity (CBD). The European Commission recently reviewed the Strategy to assess its implementation, effectiveness and appropriateness, which was concluded in a stakeholder conference held in Malahide, Ireland, in May 2004[11]. Following the outcomes of this review process, the Commission is preparing a new Communication on Biodiversity, which it aims to have adopted during 2006.

The most significant and successful action that the EU has taken so far to protect and conserve biodiversity has been through the adoption of its two nature directives, the Birds and Habitats Directives. The EU is making a global contribution to biodiversity conservation through the implementation of these directives, which have the advantage of being legally enforceable at the European level. This is in contrast to other existing international agreements on biodiversity conservation and nature protection which are normally undertaken through voluntary agreements, but are not legally enforceable at the supranational level.

2.2 The Birds and Habitats Directives and the Natura 2000 Network

2.2.1 The Birds Directive

The Birds Directive[12] is the oldest piece of EU nature conservation legislation and was adopted in 1979. It was designed to ensure the long-term protection and management of all wild bird species and their habitats.

The directive sets out a range of requirements to protect bird species, including the designation of Special Protection Areas (SPAs). It also includes provision for bans on activities that directly threaten birds (such as the deliberate destruction of nests and the taking of eggs) and associated activities such as trading with live or dead birds. Hunting rules have been established under the directive which limits the number of species that can be hunted.

2.2.2 The Habitats Directive

The Habitats Directive[13] was adopted in 1992 and was designed to further biodiversity conservation in the EU through the comprehensive protection of a range of habitats, animal and plant species. It has the specific objective of achieving, maintaining and restoring, at a favourable conservation status, all the natural habitats and wild animal and plant species of Community Interest (as listed in the directive's annexes). A wide range of forests, freshwater, and marine habitats are considered to be of Community Interest. Species of Community Interest include those that are endangered, rare or endemic.

The directive sets out a number of measures to achieve this objective, including protecting the breeding and resting places of certain animal species, and preventing the capture or killing of some animal species and the destruction of certain plant species, in the wild. These measures also include the designation of some protected areas as Special Areas of Conservation (SACs). The directive provides safeguards to protect these SACs, including: statutory, administrative or contractual measures; management plans; the prior assessment of potentially damaging plans and projects; the requirement that these plans and projects be approved only if they represent an overriding public interest and only if no alternative solution exists; and measures for providing compensatory habitats in the event of damage.

The Habitats Committee was established under the Habitats Directive, to assist the Commission in its implementation and consists of representatives from all member states. The Habitats Committee Scientific Working Group reports to the Habitats Committee, and works specifically on scientific aspects of the implementation of the directive, such as monitoring and assessment of conservation status. This working group includes NGO representatives from the European Habitats Forum.

8 Sixth Environmental Action Programme, 2002, p.4, **www.europa.eu.int/comm/environment/newprg/index.htm**

9 EU Sustainable Development Strategy, 2001, p.4&12, **http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0264en01.pdf**

10 EU Biodiversity Strategy 1998. **www.europa.eu.int/comm/environment/docum/9842sm.htm**

11 Malahide Conference Report and Papers, May 2004. **www.europa.eu.int/comm/environment/nature/biodiversity/develop_biodiversity_policy/malahide_conference/index_en.htm**

12 Birds Directive, 1979. **www.europa.eu.int/comm/environment/nature/nature_conservation/eu_nature_legislation/birds_directive/index_en.htm**

13 Habitats Directive, 1992. **www.europa.eu.int/comm/environment/nature/nature_conservation/eu_nature_legislation/habitats_directive/index_en.htm**

2.2.3 Natura 2000

Together the SPAs and SACs designated under the Birds and Habitats Directives form the Natura 2000 network[14], which currently represents about one sixth of the total land area of the EU. The aim of the Natura 2000 network is to maintain, or where appropriate restore, the most important European habitats and species to favourable conservation status. This does not mean that all socio-economic activities are prevented in these areas but rather that care must be taken to ensure that human activities in these areas do not damage the wildlife and habitats. Where necessary, detailed management plans should be prepared for sites, to ensure that the conservation objectives for each area are realised. Once fully in place, this network should ensure that the best examples of EU natural habitats and areas that host rare and endangered plant and animal species, are conserved and protected.

2.3 NGO Co-operation with the EU

Collaborative working between nature conservation NGOs and the EU institutions brings many benefits, not least because NGOs bring a perspective based on lessons learnt from practical experience and local level involvement. Much of the collaboration with NGOs regarding nature conservation in the European Union is organised via the European Habitats Forum (EHF), which ensures that these organisations provide input to the EU in a coordinated way. The main focus of the EHF's activity is advising and influencing the implementation of the Birds and Habitats Directives and the establishment of the Natura 2000 network, as well as taking an advisory role concerning other areas of European biodiversity policy.

The EHF currently includes the following 14 European nature conservation NGO networks: BirdLife International, the Central and Eastern European Working Group for the Enhancement of Biodiversity (CEEWEB), EUROPARC Federation, European Environmental Bureau (EEB), European Nature Heritage Fund (Euronatur), Eurosite, Fedenatur, International Mire Conservation Group, IUCN (The World Conservation Union), Planta Europa, Societas Europea Herpetologica, EUCC – The Coastal Union, Wetlands International and WWF.

The EHF members meet with DG Environment twice a year following the Habitats Committee meetings. Members also represent the EHF within key European fora and working groups, for example: the Habitats Committee Scientific Working Group, the European Commission Biodiversity Expert Group, DG Environment's Marine Expert Group and the Ornis Committee Scientific Working Group.

Box 1: **The EHF aims to:**

1. **Advise and influence:**
   - The development and implementation of nature conservation legislation
   - The practical management and sustainable use of natural resources
   - Biodiversity monitoring, including the development of indicators
   - The promotion of information, education and public awareness of biodiversity in Europe
2. **Support the implementation of:**
   - The EU Habitats and Birds Directives and Natura 2000
   - The EU Biodiversity Action Plan
3. **Promote nature conservation and the sustainable use of natural resources in Europe, through:**
   - The Convention on Biological Diversity (CBD)
   - The Bern Convention
4. **Promote communication:**
   - Between European nature conservation NGOs in order to enhance the effectiveness of their programmes

More information on the work of EHF is available at: **www.iucn.org/places/europe/rofe/rofe_at_work/ehf.htm**

14 More information on Natura 2000 at: **www.europa.eu.int/comm/environment/nature/home.htm**

Section 3:

Assessment, Monitoring and Reporting Requirements

3.1 General Context

Many international strategies and policy instruments include objectives for protecting the environment and conserving biodiversity. Some of them focus on very specific and clear targets. The European Centre for Nature Conservation (ECNC) provided an inventory of monitoring networks in Europe, with a focus on site-based networks. The inventory[15] listed about 20 different instruments, including monitoring systems, which indicates the wide range of initiatives underway. Monitoring, developing indicators and reporting on the state, trends and pressures on biodiversity and related issues, are required under several EU policies and legislation, pan-European agreements and various conventions, including the UN Convention on Biological Diversity (CBD).

However, the Birds and Habitats Directives represent the most significant contribution made by the EU towards meeting the objective of halting the loss of biodiversity by 2010, as set out by the EU Heads of State at the Gothenburg Summit in 2001. Monitoring the conservation status of European habitats and species covered by this legislation is obligatory.

3.2 Monitoring and the Implementation of the Habitats Directive

DG Environment[16] recently described the overall purpose of the Habitats Directive, and the aim of monitoring its implementation as: *"The overall objective of the Directive is to achieve and maintain favourable conservation status (FCS) for all habitats and species of community interest and to contribute towards maintaining biodiversity of natural habitats and of wild fauna and flora in the European territory of the Member States."*

Furthermore it stated that: *"Monitoring must therefore lead to a clear picture of the actual conservation status and its trends on various levels and indicate the effectiveness of the directive in terms of approaching and reaching this objective. By doing so, monitoring, assessment and the reporting of results should:*

- *help assessing the effectiveness of management measures in Natura 2000 sites as well as other provisions of the directive*
- *assess the contribution of the directive to the broader biodiversity conservation policy (2010 target, biodiversity indicator work, etc.)*
- *provide background/guidance for setting priorities in conservation policy (on national and EU level)*
- *help setting priorities for further monitoring (on national and EU level)*
- *support the assessments made on the impact of plans and projects, which could have negative impacts on species, habitats and the Natura 2000 network*
- *support the assessment of correct use of derogation schemes*
- *give indication in how far the annexes of the directive need adaptation (e.g. upgrading of species to priority status, deletion of species/ downgrading, inclusion of a listed species in an additional annex)"*

Undertaking surveillance of conservation status is an obligation, detailed in Article 11 of the Habitats Directive[17]. Article 17 states that Member States are also obliged to report on the implementation of the Habitats Directive every six years, from which the Commission must produce a composite report. Furthermore, the Habitats Directive states that these reports should include information on conservation measures as well as an evaluation of the impact of those measures on the conservation status of the species and habitats listed in the directive.

The first report was produced in 2001 and concentrated on the extent to which Member States had transposed legislation and established the Natura 2000 network, but did not attempt to assess the conservation status of species and habitats. All 25 EU Member States are now required to report (in January 2007) on the conservation status of listed habitats and species within their territories for the period 2001–2006, and every six years thereafter. This requirement applies to all listed habitats and species in each Member State (with biogeographical areas treated separately), and is therefore not just confined to Natura 2000 sites. This second report will include (based on best available information), a first assessment of the conservation status of all species and habitats of Community Interest. To assist this process, in 2005 the Habitats Committee adopted a Reporting Format. Explanatory Notes and Guidance have also been produced by the European Environment Agency's Topic Centre on Biological Diversity (ETC/BD), with input from members of the Habitats Committee Scientific Working Group.

Table 1:
Reporting schedule, according to Article 11, Habitats Directive[17]

	Reporting period	National report (EU synthesis report)	Main focus
1.	1994–2000	2001 (2003/4)	Progress in legal transposition and implementation of the directive; progress in establishing the Natura 2000 network; administrative aspects.
2.	2001–2006	2007 (2008/9)	First assessment of conservation status based on best available data (based among others on trends and ideally in comparison with favourable reference values)
3.	2007–2012	2013 (2014/15)	Renewed assessment of conservation status, based on established monitoring system. Assessment of effectiveness of measures taken under the directive.

15 ECNC: **An inventory of European Site-based Biodiversity Monitoring Networks**; February 2003

16 DG Environment B.2, **Note to the Habitats Committee**, DOC SWG 05-09/7 Annex 1, Brussels 15th March 2005

17 **www.europa.eu.int/comm/environment/nature/nature_conservation/eu_nature_legislation/habitats_directive/index_en.htm**

3.3 Favourable Conservation Status (FCS)

One of the key terms in the Habitats Directive is "Favourable Conservation Status" (FCS), which has been and continues to be subject to considerable scientific and political discussion. The Habitats Directive aims to achieve and maintain FCS for habitats and species of Community Interest. Specifically, this applies to habitats listed in Annex I and to plant and animal species listed in Annexes II, IV and V of the directive. In general, the directive takes a positive approach to defining the concept of FCS which takes into account the long-term viability of habitats and species on different levels. The overall goal is for all habitats and species listed in the directive to be prospering both in terms of quality and quantity (area/populations/viability) as well as having good future prospects. It is therefore insufficient to aim for a situation in which the habitats and species are not under threat or at risk, as Member States are expected to take all requisite measures to actively reach and maintain the objective of FCS.

FCS is defined in general terms in Article 1e) (habitats) and 1.i) (species) of the Habitats Directive, as:

Article 1

(e) conservation status of a natural habitat means the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within the territory referred to in Article 2.
The conservation status of a natural habitat will be taken as 'favourable' when:

- its natural range and areas it covers within that range are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable as defined in (i);

(i) conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2;
The conservation status will be taken as 'favourable' when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;

The broadness of this definition of FCS, has led to a lack of clarity in the interpretation of the term and how it should be implemented. Many studies and working documents have been produced in recent years, to move this discussion forward. EHF has been following this discussion closely and providing input, for example, detailed comments and recommendations were given by WWF[18], EHF[19] and later in a document commissioned by WWF[20].

Data concerning the occurrence of target habitats and species within the whole territory of a country are fundamental to the preparation of high quality Natura 2000 network proposals for site selection, in accordance with the directive. Annex III of the Habitats Directive states that habitat area (or size of species population) in relation to the overall area of occurrence (size of population) within the national territory, must be one of the key criteria for evaluating proposed sites. The level of habitat representativeness, (which can only be assessed by taking into consideration information about the species composition of that habitat within a particular site), is also a key part of the site selection process. However, as shown by this project this data is largely lacking within the EU-15 countries, and in most cases national habitat and species inventories are only just beginning to be planned.

Box 2: Key elements for establishing, assessing and monitoring favourable conservation status:

- The European Commission and Member States should improve the clarity of the FCS definition provided in the directive and develop it further to provide conservation objectives for FCS at all appropriate levels (local, national, biogeographic, European). These should be identified within a conservation programme, for example, in the framework of an action plan.
- The European Commission must ensure that Member States adequately implement the range of measures set out in the directive to ensure FCS.
- Member States must assess the immediate and long-term impacts on habitats and species, affecting their biotic and abiotic conditions.
- The European Commission and Member States must endeavour to integrate the concept of FCS into all relevant policies at the earliest opportunity.
- The European Commission and Member States must put in place a comprehensive programme of inventories, research, monitoring and reporting, in order to assess current status and determine whether or not it is favourable.
- Member States and the European Commission should develop common standards for monitoring, assessing and reporting FCS, taking into consideration different levels, genetic variability and resilience of populations.
- The European Commission and Member States must provide sufficient funding to ensure the protection or restoration of FCS, alongside effective monitoring.
- FCS assessment should not only include an analysis of the actual status of habitats and species, but Member States should also be required to integrate a "prognosis" for all habitats and species, which considers possible threats and future prospects for all habitats and species (for the foreseeable future).
- The concept of FCS is not limited to the Natura 2000 network. The Habitats Directive states that the overall situation of species and habitats has to be assessed and monitored in order to evaluate the Conservation Status as favourable or unfavourable. Obviously, the Natura 2000 network plays an important role in terms of conserving biodiversity, but most habitats and species are only covered partly by the Natura 2000 network.

18 Halahan, R. & R. May, **Favourable Conservation Status – to the heart of EU wildlife legislation**, January 2003

19 Gent,T., R. Halahan. & R. May, **Implementing a system of strict protection through Article 12 and achieving favourable conservation status for Annex IV(A) Species**, November 2002

20 Charalambides, L. C., **Guidance document for the Habitats Directive 92/43/EEC – "Favourable Conservation Status"** – from legal interpretation to practical application, December 2004

3.4 Defining FCS and Setting Favourable Reference Values (FRV)

by **Paul Edgar** and **Tony Gent**, Herpetological Conservation Trust, November 2005, with additional comments by **Thomas Sperle**, NABU.

3.4.1 Background

In the 2007 reporting and assessment of conservation status, the European Commission's guidance* states that the following categories of conservation status should be used:

- Favourable Conservation Status (green)
- Unfavourable Conservation Status Inadequate (amber)
- Unfavourable Conservation Status Bad (red)
- Unknown

(The two unfavourable measures can be further qualified with a '+' symbol, to show that the current status is improving, or a '-' symbol to indicate a continued decline.)

In order to determine which of these categories is currently relevant to a species, reference values need to be set for the combination of parameters used to define conservation status (as indicated in Article 1 (i) of the Directive). These parameters are:

- The total range occupied by the species within a member state
- The population size of the species concerned
- The area and condition of relevant habitat(s) occupied by the species
- Future prospects of the species

When certain minimum values for each and every one of these parameters have been exceeded then a species is considered to be at FCS. If the species is below some (or all) of these minimum values it will be in an Unfavourable Conservation Status, and how much below determines whether this status is inadequate or bad. These minimum values are the "Favourable Reference Values" (FRVs) and are essential for determining the conservation status of a species. So, FCS is the overall goal and political obligation on Member States, whereas FRVs are the scientific baselines which refer to the practical implementation of FCS. The main difficulty lies in trying to decide what the FRVs should actually be in the first place – i.e. what numbers to give them.

To illustrate this problem, simply stating that species A is at FCS because 500 breeding pairs are present in a country would be meaningless without some kind of reference value against which to judge what this number really says about the status of this species. Although species A may not be in imminent danger of extinction, historical records may show that 50 years ago, there were an estimated 5 million breeding pairs in the country. Is an FRV of 500 breeding pairs (equivalent to the current population) therefore sufficient to say that FCS has been achieved? Or should the FRV for population size instead be set at 1,000 breeding pairs, or 25,463 pairs, or 1 million pairs? Or perhaps the species will only be at FCS when the earlier population size of 5 million breeding pairs has been fully re-established. Of course, the same problem applies when setting FRVs for the other parameters used to determine FCS.

3.4.2 Rationale for Setting Favourable Reference Values

A clear and logical rationale is needed from which to set FRVs and it can be instructive to articulate objectives before attempting to quantify them. A common understanding of the conservation purpose will help to gain consensus between the EC, Member State governments and agencies, NGOs and other stakeholders as which values can be attributed to FRVs and in turn, to appreciate a level that constitutes FCS for any species or habitat. It should be noted that although FRVs can be seen as "objectives", they are emphatically not the same as "targets" (e.g. as used in Species Action Plans), since achieving targets implies specific timetables and allocated resources. On the other hand, FRVs may eventually help to inform many national Species Action Plan targets or vice versa!

Conservation status is determined by the sum of all influences on a species or habitat. It is therefore important that defining FRVs recognises both biological objectives and the species'/habitat's prospects. When determining FRVs it is also important to balance what is 'desirable' with what is 'feasible'.

Factors to help define the rationale for selecting an FRV include:

i. Biological/scientific desirability and potentially achievable levels for habitats and species

- Using certain criteria such as climate, geology, etc, it is possible to determine a likely maximum range and level for any habitat or species and extent of actual habitats, and such maximum levels can help influence an assessment of FRV. In some cases this may indicate huge potential levels, for others it may identify that there is little scope to sustain a population or a habitat type much longer in a particular area.
- Some species are naturally rare whereas for others it may be important/appropriate that they are common at least in part of their range.
- It might not always be most desirable to achieve a maximum level, even if it is feasible, taking account of other biological needs (e.g. competing species/habitats).

ii. Stability/viability of populations or habitats

- Populations need to exceed any 'minimum viable level', for example, determined by MVP analysis.
- Consideration of 'what constitutes a population' is important, bearing in mind the very variable ecologies of different species and functioning of habitats.
- Long-term survival needs to ensure robustness against future environmental change and consideration needs to be given to allowing movement between 'populations/sites' or necessary changes in range (e.g. coastal erosion/accretion, climate change).
- Populations need to ensure long-term viability, across the natural range. This can help define population levels, structures and distributions and needs to be reflected in the FRV.

iii. Characteristic nature of habitats and species

- Certain species are characteristic of habitats, and both species and habitats are characteristic of geographic areas (affected by geology/climate, etc).
- Ensuring representative species and habitat compositions, with a full range of wildlife, should be a consideration when setting FRV levels.

iv. Functionality and maintaining or achieving a system that is in balance

- The functionality of natural systems needs to be considered as too small an area may fail to ensure biodiversity.
- It is possible that FRV levels should be greater than those recorded in the past.
- Systems that are not in balance (e.g. long-term viability is not likely) may require considerable management input to sustain their ecological interest.

* See footnote 22 on page 15.

- Ecosystem functions frequently extend beyond the boundaries of that habitat, for example, certain bog systems are essential for regulating water levels etc, in other systems.
- The interaction between species (e.g. predator-prey relations) and their impacts on habitats (e.g. grazing) need to be considered to ensure that these are in balance (e.g. long-term viability is likely) when determining FRVs
- In some cases the purpose of re-establishing a habitat for a particular species may be more to ensure ecological functionality than to provide a precise composition of species communities.
- FRVs therefore need to look at the extent of habitats and the interactions amongst species to ensure biodiversity and long-term viability.

v. Restoration of former extent and abundance

- It is clearly important to take historical losses into account. An understanding of the full geographic distribution appropriate to the current climatic environment is valuable for understanding the context of an FRV. This helps in understanding the reasons for change and identifying where restoration is meaningful and feasible.
- Setting an aim for the FRV that reflects a re-establishment of former ranges (extent and location) and levels (abundance), and off-sets past declines, provides a framework for determining conservation goals. An understanding of former status should be used to determine conservation goals, including re-introduction aims, and this may involve an assessment of the potential for establishing the species beyond the known historic range. When applying criteria (e.g. the IUCN reintroduction criteria), such FRVs may provide additional input in assessing acceptable conservation practice.
- When considering 'restoration' it may be appropriate to consider 'future' function rather than past levels, to take account of significant and irreversible changes that may have occurred.
- FRVs overcome the problem of defining 'baseline dates' by allowing consideration of meaningful 'levels' in a historic context, rather than fixing any date at the outset. Importantly it is important not to try to equate FCS or FRVs with the date when the Habitats Directive came into force, as species and habitats were listed because they were of concern and implicit in this is that they can't have been at FCS.

vi. Social/economic benefit of species and habitats

- Wildlife is part of a shared heritage and ensuring its continued survival is a pan-European objective and a measure of sustainable development. The interest therefore needs to extend beyond local restrictions.
- The social value of wildlife and the benefits of human interaction may influence the range and location of species relative to human populations.
- Sustaining local and regional diversity and characteristics are important in a cultural context. Wildlife and natural habitats need to be sustained at a level that significantly contributes to regional/local identity.
- When setting FRVs the commercial value of species or habitats may be considered, for example, the need to sustain adequate levels to benefit eco-tourism or to allow sustainable use, harvesting or exploitation may be an appropriate consideration.
- 'Ecosystem services' such as flood attenuation, water collection and coastal defence could provide a further rationale behind setting FRVs.

vii. Feasibility and necessity

- The FRV should consider what is reasonably achievable.

Required levels of Information and Understanding

In order to assess the conservation status of a species or habitat it is important to have sufficient understanding of its ecology and the ability to make a reasonable determination of its needs and prospects. In particular, population dynamics data needs to allow for assessment of whether a species **is maintaining itself on a long-term basis** as a viable component of its **natural habitats**, including information about:

- **Nature of species:**
  - Population dynamics
  - The component (descriptive) part that the species plays within its natural habitat
  - General background relating to research & monitoring and the state of the currently available population dynamics data both current and historic (likely projections)
- **Natural range:**
  - Current
  - Historic
  - Future/potential
- **Habitat of the species (all necessary trails and places):**
  - Habitat
  - Breeding/nesting/raising/growing site
  - Reproduction site
  - Resting place, hibernating place
  - Food area, eating site
  - Trails between above sites and places
- **Sum of Influences:**
  - Threats
  - Positive benefits
  - State of current/ historic research data

Range FRVs

The EC guidance states that the favourable range is the: *"Range within which all significant ecological variations of the species are included for a given biogeographical region and which is sufficiently large to allow the long term survival of the species. Favourable reference value must be at least the range (in size and configuration) when the Directive came into force. If the range was insufficient to support a favourable status the reference for favourable range should take account of that and should be larger (in such a case information on historic distribution may be found useful when defining the favourable reference range). 'Best expert judgement' may be used to define it in absence of other data."*

The range within a MS may be further divided by biogeographical area.

The Directive requires that the natural range of the species is neither reducing nor is likely to be reduced in the foreseeable future. FRVs need to reflect this objective and consider the following when evaluating the extent of the 'natural range':

- Current (for (i) date the directive came into force and (ii) current/ most recent assessment)
- Historic (<50 ybp, assessment of likely extent of range relative to recent climatic conditions)
- Bio-climatic extent (potential range)
- Future (e.g. <50 yfn) (potential range)
- Factors that may affect the range positively or negatively (threats/benefits)
- Ecological/geographic elements of range (number and spread of landscapes, ecological units, political units)

Measures may include:
- Known sites
- 1 km/10 km distribution
- Local/regional coverage
- County/landscape/regional coverage or number
- Range = extent of spread of the species/habitat (km^2)
- Area of occupancy (ha)

The FRV needs to reflect, in the light of the sum of all influences affecting the natural range of the species or habitat concerned, a natural range that is not being reduced or likely to be reduced in the foreseeable future.

Population FRVs

The EC guidance states that the favourable population is the: *"Population in a given biogeographical region considered the minimum necessary to ensure the long-term viability of the species. Favourable reference value must be at least the size of the population when the Directive came into force. Information on historic distribution/population may be found useful when defining the favourable reference population. 'Best expert judgement' may be used to define it in the absence of other data."*

When developing FRVs it is important to set a level at which:
- The species concerned will maintain itself as a viable component (evaluative) part of its natural habitat (considering whether the species is 'viable' in itself, i.e. the extent to which direct non-natural intervention by man is essential).
- The species concerned will maintain itself (in the light of the sum of all influences and without too much human intervention), and its population dynamics in the long term. Means sufficiently large habitats to maintain the current populations of the species concerned
- Means number, quality and total amount of habitats within populations are adequate to long-term viability of the species concerned
- The distribution pattern of habitats is adequate and population exchange between several populations (i.e. connectivity) is undisturbed to maintain long-term viability (in the light of the sum of all influences and without too much human intervention)
- Takes account of the natural range of the species across a Member State and is considered in the context of the EU as a whole

Measures may include:
- Adult numbers/breeding pairs/spawn string counts
- Number of populations/metapopulations e.g. occupied ponds/sites
- Extent of 'viable populations' (Area of occupancy – km^2)
- Minimum no. of breeding adults per (meta)population
- Average offspring number per year and population
- Average input/output ratio
- Average number of individuals changing between several populations
- Average lifespan of adults
- Average mortality of juvenile plants/animals
- Number of habitats with regular output of individuals (offspring)
- Number of habitats with low mortality of juvenile plants/animals
- Average distance of habitats within populations of species concerned
- Average distance between populations of species concerned

Habitat FRVs

The EC guidance states that the favourable reference value of the habitat is the: *"Total surface area in a given biogeographical region considered the minimum necessary to ensure the long-term viability of the habitat type. This should include necessary areas for restoration or development for those habitat types for which the present coverage is not sufficient to ensure long-term viability. Favourable reference value must be at least the surface area when the Directive came into force. Information on historic distribution may be found useful when defining the favourable reference area. 'Best expert judgement' may be used to define it in absence of other data."*

When developing FRVs it is important to set a level that:
- Considers total amount of current area (for (i) date Directive came into force and (ii) current/most recent assessment)
- Considers historic amount (<50 ybp, assessment relative to recent climatic conditions)
- Considers bio-climatic extent and change (potential amount)
- Considers future (e.g. <50 yfn) (potential amount)
- Considers necessary areas for restoration or development to ensure long-term viability
- Means distribution pattern and total amount of habitat are sufficient to maintain the current populations of typical species of habitat concerned

Measures may include:
- Known sites
- 1 km/10 km distribution
- Area of occupancy (ha)
- Average distance of habitats' occurrences

FRVs for Future Prospects

There is no EC guidance on this issue but issues to consider could include: habitat protection (Natura 2000 and others); legal protection for species (and the extent to which this is enforced); availability of funding, infrastructure, resources and staff to undertake habitat management; socio-economics; opportunities to adapt to climate change (including habitat connectivity to allow range/habitat shifts for less mobile species).

When setting FRVs we should consider:
- The vulnerable aspects of species, for example, whether their specific habitat requirements are safe
- Designation/protection of important features/areas
- Whether there is sufficiently large habitat for the species concerned
- Whether the current habitat is sufficiently large to maintain the current populations of the species concerned
- Whether there will continue to be sufficiently large habitat for the species concerned, in the light of the sum of influences on it
- Whether there will continue to be sufficiently large habitat of the species concerned, to maintain its populations on a long-term basis, in the light of the sum of influences on it

If the answer to this is 'no' then the conservation status cannot be said to be favourable.

Table 2: **Notes on setting Favourable Reference Values (Based on a UK example for amphibians and reptiles)**

Parameters Used to Define FCS	Criteria Used to Set Favourable Reference Values	Rationale for Setting the Favourable Reference Values
Range	Total Range Area (e.g. km²)	Basic measurement, historical and current ranges can be worked out. The FRV is often somewhere between these and is at least the minimum needed for the long-term viability of species.
	Geographical units	The range can be broken down into geographical units such as river valleys, mountain ranges, etc. To define the FRV, all historically occupied units should be occupied by the maximum number of viable populations of the species that are feasible to achieve
	Ecological units	Break down range into ecological units such habitat types, soil types, natural areas, etc. To define the FRV all historically occupied units should be occupied by the maximum number of viable populations of the species that it is feasible to achieve
	Political units	Break down range into political/administrative units and work out the historical distribution. All units should be reoccupied, following appropriate guidelines for re-introductions.
Population	Numbers of subpopulations or metapopulations	Genetic connectivity is vital for many species. FCS should involve reducing isolated single populations and small metapopulations and increasing the number of large metapopulations. FRV should be the minimum feasible, based on mapping, etc (not a target as such as this involves timetables, work plans and cost implications)
	Numbers of breeding adults per population	The FRV will normally be much higher than the minimum viable number per metapopulation, allowing for natural variations. Subpopulations may disappear and others form
	Evidence of breeding success	Evidence of juveniles
	Population trends or stability	Natural fluctuations should be taken into account, considering trends over time. The FRV should be based on stable populations. Adequate monitoring regimes are vital. Sex ratios/ population age structure.
Habitat	Total area of habitat	Work out historical and current areas. Desirable areas will be more than FRV for habitat area, which is at least the minimum feasible area.
	Key areas of habitat	For example, ponds would be an obvious example for amphibians, or features such as south facing slopes for reptiles
	Connectivity	Distances between populations and the potential for spread if climate change makes current habitats unsuitable
	Habitat condition	Includes qualitative features such as pollution but also habitat successional stages, etc
	Specific features	May include additional features, e.g. those necessary for nesting, burrowing, breeding etc
Prospects	Legal protection	Adequate protection, especially outside Natura 2000 sites, includes mitigation measures designed to maintain conservation status. Enforcement is vital.
	Habitat management	Habitats adequately restored if necessary, and maintained over the long-term, with adequate funding. Unsuitable management under control or minimised
	Socio-economic	Public perception/support, education, access for people to see/engage with the species, lack of persecution or (unsustainable) exploitation, 'value' of wildlife, cultural and regional characteristics
	Climate change	Ability to adapt to potential changes

3.4.3 Guidance and Framework for Evaluating Conservation Status

This should result in a logical, step by step approach.

i. Select the Criteria. For each species, decide on the most appropriate criteria to measure the conservation status within the parameters of range, population, habitat and prospects. These will vary depending on whether the species is widespread, has a restricted range, or is migratory, but many criteria will be similar.

ii. Establish Historical Values for the Criteria. The timescale may vary enormously but should not be confined to 1994! Many criteria may also often require a 'best expert' guess on the basis of former habitat extent (which can often be estimated from old maps) rather than former population sizes.

iii. Set the Favourable Reference Values for the Criteria. In many cases, these values will have to be set at the levels that are the most practical and feasible to achieve as the most 'desirable' levels may be unattainable.

iv. Explain the Rationale for Setting the FRVs at these Levels. Solid justification for the levels set is essential.

v. Establish the Current Values of the Criteria. Better information will be available for some species than others, with the most accurate datasets often available for restricted range species. The reliability of currently available information should also be assessed and suggestions made to improve the situation.

vi. Define the Current Status of the Criteria. Simply compare the current values of the criteria with the favourable reference values and define the status according to EC guidelines. The status of each parameter can then be determined which, when combined, gives the status for the species.

vii. Evaluate Monitoring Requirements. An assessment of the future monitoring required for each of the criteria should also be carried out, including the actual work needed to be done, timescales, effort and potential costs. Current monitoring work and capabilities, and the improvements that should be made to these, obviously need to be assessed at the same time.

Section 4:

Reporting Forms

4.1 Aim

Although there is agreement concerning the importance of developing accurate monitoring, assessment and reporting methods to determine the conservation status of the EU's most important species and habitats, it is very difficult to do this in practice. The diversity in population size, range and mobility of different species types, combined with vast differences in recording methods and in the quality and abundance of data, makes this an extremely challenging exercise.

As a member of the Habitats Committee Scientific Working Group, the EHF has developed this report to help Member States overcome some of these difficulties, share lessons learnt, and contribute to the development of robust monitoring and assessment methods. This report is based on best practice case studies gathered from a wide range of different NGOs and EHF partner organisations that have considerable expertise relating to particular species and habitat types.

The reporting requirement only applies to species and habitats under the Habitats Directive, however, we have also included best practice examples of assessment, monitoring and reporting for some bird species listed in the Birds Directive because:

- The objective of FCS is relevant to both the Habitats and Birds Directives and Member States are also concerned with achieving FCS for birds.
- It is expected that a similar monitoring system will be undertaken for bird species in the near future.

4.2 Methods

4.2.1 Selection of Habitats and Species

22 experts from EHF members and partner organisations selected: 8 Annex I habitat types; 14 species from Annexes II, IV and V of the Habitats Directive; and 5 bird species, from Annex I of the Birds Directive. These habitats and species were chosen as case studies mainly because data and expert knowledge were available. These 27 habitats and species are found in 5 different biogeographic regions, and a total of 37 national reports were produced. In the case of the Eurasian lynx (*Lynx lynx*) 5 different country reports (including one from Switzerland) were used to elaborate an overall Alpine report showing the situation of the sub-metapopulation of this species within the Alps subregion of the Alpine biogeographic region.

Table 3:
Selected habitats, assessed countries, biogeographic regions and EHF experts

Habitat	Biogeographic Region	Country	Directive	Experts	Organisation
7110-Active raised bogs	Con	DE	HD	Sperle, Wulf	NABU/BUND
7110-Active raised bogs	Alp	AT	HD	Steiner	University/Vienna
7140-Transition mires and quaking bogs	Con	DE	HD	Sperle, Wulf	NABU/BUND
7150-Depressions on peat substrates of the Rhynchosporion	Con	DE	HD	Sperle, Wulf	NABU/BUND
7210-Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	Alp	AT	HD	Steiner	University/Vienna
7210-Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	Pan[21]	AT	HD	Steiner	University/Vienna
7220-Petrifying springs with tufa formations	Con	DE	HD	Sperle, Wulf	NABU/BUND
7220-Petrifying springs with tufa formations	Alp	AT	HD	Steiner	University/Vienna
7220-Petrifying springs with tufa formations	Pan[21]	AT	HD	Steiner	University/Vienna
7230-Alkaline fens	Con	DE	HD	Sperle, Wulf	NABU/BUND
5110-Stable *Buxus sempervirens* formations on calcareous rock slopes	Con	DE	HD	Sperle, Wulf	NABU/BUND
9330-Cork oak forests	Med	SP	HD	Gómez Almaraz	WWF-Spain

Table 4:
Selected species, assessed countries, biogeographic regions and EHF experts

Species	Vernacular name	Region	Country	Directive	Expert	Organisation
Bombina bombina	European fire-bellied toad	Con	CZ	HD	Vlašín	Veronica
Bombina bombina	European fire-bellied toad	Pan	CZ	HD	Vlašín	Veronica
Bombina variegata	Yellow-bellied toad	Con	CZ	HD	Vlašín	Veronica
Bufo calamita	Natterjack toad	Atl	UK	HD	Edgar	Herpetological Conservation Trust
Lacerta agilis	Sand lizard	Atl	UK	HD	Edgar	Herpetological Conservation Trust
Caretta caretta	Loggerhead turtle	Med	IT	HD	Rocco, Casale	WWF-Italy
Rhinolophus hipposideros	Lesser horseshoe bat	Atl	UK	HD	Parsons	Bat Conservation Trust
Canis lupus	Wolf	Alp	FR	HD	Hernandez, Sourd	WWF-France
Lynx lynx	Lynx	Alp	FR, IT, AT, CH, SI	HD	Breitenmoser, von Arx	KORA
Ursus arctos	Brown bear	Alp	AT	HD	Striebel, Rauer	WWF-Austria
Drepanocladus vernicosus	Slender green feather-moss	Con	DE	HD	Sperle, Wulf	NABU/BUND
Gentianella anglica	Early gentian	Atl	UK	HD	Kretschmar	Plantlife International
Petallophyllum ralfsii	Petalwort	Atl	UK	HD	Kretschmar	Plantlife International
Sphagnum warnstorfii	Warnstorf's peat moss	Con	DE	HD	Sperle, Wulf	NABU/BUND
Sphagnum capillifolium	Acute-leaved peat moss	Con	DE	HD	Sperle, Wulf	NABU/BUND

Table 5:
Selected Birds, assessed countries, biogeographic regions and EHF experts

Species	Vernacular name	Region	Country	Directive	Expert	Organisation
Gypaetus barbatus	Bearded vulture	Alp	AT	BD	Zink	Hohe Tauern National Park – International Bearded Vulture Monitoring/EGS
Burhinus oedicnemus	Stone curlew	Con	AT, UK	BD	Dvorak, Hoccom et al.	BirdLife Austria RSPB/BirdLife UK
Casmerodius albus	Great white egret	Con	AT	BD	Dvorak	BirdLife Austria
Caprimulgus europaeus	Nightjar	Atl	UK	BD	Hoccom et al	RSPB/BirdLife UK
Haliaeetus albicilla	White tailed eagle	Con	AT	BD	Probst, Striebel	WWF-Austria

4.2.2 Analysis and Evaluation

To maximise the relevance of this project, EHF experts used the official EU-reporting format and the guidance documents[22] provided by the Commission and the European Topic Centre for Biodiversity (ETC-BD). This report can therefore be viewed as providing the first result of the implementation of the reporting requirement, as well as giving a preliminary view of the conservation status of some of the habitats and species protected under EU legislation.

This report is based on the results of best practice case studies which benefit from the expertise and specialist knowledge of EHF experts for those particular habitats and species. In general, these evaluations do not reflect a single expert opinion (if so, it is mentioned in the reports), but in most cases reflect a broader perspective gained from consultation with other specialists and/or specialist groups.

Our analysis and evaluations were undertaken at the national level as required by the Habitats Directive. For the habitat types, Calcareous fens (7210), and Petrifying springs with tufa formation (7220), and the species European fire bellied toad (*Bombina bombina*), the assessment was undertaken in two biogeographic regions within a Member State to give a complete picture of those habitats and species at the national level. The status of the Eurasian lynx (*Lynx lynx*) was assessed within 5 countries in the Alpine biogeographic region/subregion Alps, including Switzerland. Based on that comprehensive information the report also provides a biogeographic evaluation for (the sub-metapopulation of) that species.

The 38 different case studies should provide Member States with examples and guidance. However, in some cases the reports are incomplete due to a lack of information, which mirrors the difficulties that Member States will also face when undertaking this reporting.

Additionally, EHF experts gave general and specific comments and recommendations on undertaking the reporting. These will be helpful both for the Member States and the Commission, although some of the statements and recommendations have already been integrated into the most recent guidance paper[22], which changed significantly whilst this project was being undertaken.

21 According to EU definitions, some eastern parts of Austria belong to the Continental region, although from the scientific viewpoint of the EHF expert, these parts belong to the Pannonian region.

22 SWG 06/02/04: **Assessment, monitoring and reporting under Article 17 of the Habitats Directive: Explanatory Notes & Guidelines**, Draft 2, January 2006

7110 Active raised bogs

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7110
Member State	DE (Germany)
Biogeographic regions concerned within the MS	Alpine (Alp), Atlantic (Atl), Continental (Con)
Range	Absent in the west and east of Germany
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Database of pSCIs of Germany (2004) Rennwald, E. (2000): **Verzeichnis und Rote Liste der Pflanzengesellschaften Deutschlands**
Range	Absent in the East and the Northwest of the Continental region of Germany
Surface area	150,000 km²
Date	2004
Quality of data	3 = good
Trend	- 40% = net loss by 40% - 100,000 km²
Trend-Period	1840–2004
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction).
Area covered by habitat	4,300 km²
Distribution map	see database of pSCIs of Germany (2004)
Surface area	4,300 km²
Date	2004
Method used	1 = based on expert opinion
Quality of data	2 = moderate
Trend	- 50% = net loss by 50%
Trend-Period	1945–2004
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	
Main pressures	**141** Abandonment of pastoral systems **163** Forestry replanting **310** Peat extraction **400** Urbanized areas, human habitation **602** Skiing complex **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**141** Abandonment of pastoral systems **163** Forestry replanting **602** Skiing complex **790** Other pollution or human impacts **890** Other human induced changes in hydraulic conditions.

Complementary information	
Favourable reference range	250,000 km²
Favourable reference area	5,000 km²
Typical species	**Flowering Plants:** *Vaccinium oxycoccus, Eriophorum vaginatum, Andromeda polifolia, Vaccinium uliginosum, Betula nana, Carex pauciflora, Trichophorum cespitosum, Drosera rotundifolia, Calluna vulgaris.* **Mosses and Liverworts:** *Sphagnum magellanicum, Sphagnum angustifolium, Sphagnum capillifolium, Sphagnum fuscum, Sphagnum tenellum, Sphagnum papillosum, Sphagnum imbricatum, Aulacomnium palustre, Polytrichum strictum, Mylia anomola, Calypogeia sphagnicola, Cephalozia connivens, Odontoschisma sphagni.* **Butterflies:** *Boloria aquilonaris, Coenonympha tullia, Colias palaeno, Plebeius optilete.* **Vertebrates:** none. **Methods:** all species that occur frequently in active raised bogs (frequency more than 20%) plus all species that occur selectively in active raised bogs; Butterfly species are only listed if they are reproducing in active raised bogs. **Published sources:** Oberdorfer, E. (1977): **Süddeutsche Pflanzengesellschaften, Bd. 1**
Other relevant information	Habitat's Red List category "3" in Germany
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Area	Bad (U2)
Specific structures and functions (incl. typical species)	Bad (U2)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range			40% below "favourable reference range"	
Area covered by habitat type within range			With major losses in distribution pattern within range and more than 10% below "favourable reference range"	
Specific structures and functions (including typical species)			More than 25% of the area is unfavourable as regard its specific typical species.	
Future prospects (as regards range, area covered and specific structures and functions)		The habitats prospects are poor, severe impact from threats expected; long-term viability of many typical species not assured		
Overall assessment of CS			Bad	

7110 Active raised bogs

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7110
Member State	AT
Biogeographic regions concerned within the MS	ALP
Range	Whole country
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Steiner G. M. 1992: **Österreichischer Moorschutzkatalog**. Grüne Reihe des BMGU Bd. 1: 509 pp., Styria Medienservice, Graz
Range	Whole region
Surface area	
Date	
Quality of data	3
Trend	0 = stable
Trend-Period	1988–2005
Reasons for reported trend	6 = increased awareness and knowledge of where sites are located
Area covered by habitat	36 km²
Distribution map	
Surface area	36 km²
Date	1995
Method used	3
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1988–2005
Reasons for reported trend	6 = increased awareness and knowledge of where sites are located
Justification of % thresholds for trends	
Main pressures	Agriculture and forestry
Threats	Lowering of water table in surrounding area, marginal drains

Complementary information	
Favourable reference range	
Favourable reference area	
Typical species	*Sphagnum capillifolium, S. magellanicum, S. fuscum, Pinus mugo, Vaccinium oxycoccos, V. uliginosum, Andromeda polifolia, Drosera rotundifolia, Eriophorum vaginatum*
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Unknown (XX)
Area	Unknown (XX)
Specific structures and functions (incl. typical species)	Unknown (XX)
Future prospects	Unknown (XX)
Overall assessment of CS	Unknown (XX)

7140 Transition mires and quaking bogs

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7140
Member State	DE (Germany)
Biogeographic regions concerned within the MS	Alpine (ALP), Atlantic (ATL), Continental (CON)
Range	Throughout Germany
Map	

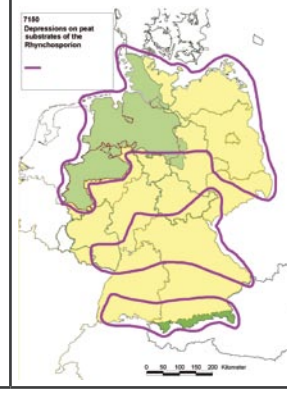
Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Database of pSCIs of Germany (2004) Rennwald, E. (2000): **Verzeichnis und Rote Liste der Pflanzengesellschaften Deutschlands** Dierssen, B.& K. (1984): **Vegetation und Flora der Schwarzwaldmoore**
Range	Throughout the Continental region of Germany
Surface area	280,000 km²
Date	2004
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1840–2004
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Area covered by habitat	Approximately 100 km²
Distribution map	See database of pSCIs of Germany (2004)
Number of localities	Approximately 2,000–3,000
Surface area	Approximately 100 km²
Date	2004
Method used	1 = based on expert opinion
Quality of data	2 = moderate
Trend	- 50% = net loss by 50%
Trend-Period	1965–1995
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	
Main pressures	**101** Modification of cultivation practices **120** Fertilisation **141** Abandonment of pastoral systems **163** Forestry replanting **310** Peat extraction **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**101** Modification of cultivation practices **120** Fertilisation **141** Abandonment of pastoral systems **163** Forestry replanting **602** Skiing complex **790** Other pollution or human impacts **810** Drainage **890** Other human induced changes in hydraulic conditions
Structures and functions	
Structure	Inadequate (U1): not favourable in more than 10% of localities
Functions	Bad (U5): bad in more than 50% of localities (see main pressures)
Conservation Status of typical species	Favourable (FV): 7 species Inadequate (U1): 8 species Bad (U2): 91 species

Complementary information	
Favourable reference range	280,000 km²
Favourable reference area	Approximately 120 km²
Typical species	**Flowering plants and clubmosses:** *Scheuchzeria palustris, Rhynchospora alba, Carex limosa, Carex lasiocarpa, Carex appropinquata, Trichophorum alpinum, Carex diandra, Carex chordorrhiza, Carex heleonastes, Eriophorum gracile, Stellaria crassifolia, Stellaria palustris, Hammarbya paludosa, Eriophorum angustifolium, Vaccinium oxycoccus, Eriophorum vaginatum, Drosera rotundifolia, Menyanthes trifoliata, Pedicularis palustris, Salix repens, Eleocharis mammillata, Carex pulicaris, Carex dioica, Carex echinata, Carex rostrata, Carex canescens, Carex nigra, Carex panicea, Agrostis canina, Viola palustris, Epilobium palustre, Molinia caerulea, Comarum palustre, Parnassia palustris, Calamagrostis stricta, Peucedanum palustre, Equisetum fluviatile, Galium palustre, Carex elata, Carex vesicaria, Lysimachia vulgaris, Lysimachia thyrsiflora, Valeriana dioica, Utricularia minor, Utricularia intermedia, Utricularia bremii, Dactylorhiza traunsteineri, Willemetia stipitata.* **Mosses and Liverworts:** *Calliergon giganteum, Calliergon trifarium, Cinclidium stygium, Pseudobryum cinclioides, Helodium blandowii, Paludella squarrosa, Bryum neodamense, Bryum weigelii, Bryum pseudotriquetrum, Meesia triquetra, Rhizomnium pseudopunctatum, Drepanocladus fluitans, Drepanocladus aduncus, Drepanocladus exannulatus, Scorpidium scorpioides, Sphagnum cuspidatum, Sphagnum majus, Sphagnum capillifolium, Sphagnum contortum, Sphagnum subsecundum, Sphagnum auriculatum, Sphagnum inundatum, Sphagnum warnstorfii, Sphagnum teres, Sphagnum subnitens, Sphagnum obtusum, Sphagnum recurvum, Campylium stellatum, Calliergon stramineum, Calliergonella palustris, Drepanocladus revolvens, Hamatocaulis vernicosus, Tomenthypnum nitens, Aulacomnium palustre, Scapania paludosa, Scapania paludicola.* **Dragonflies:** *Aeshna juncea, Aeshna subarctica, Coenagrion hastulatum, Coenagrion lunulatum, Somatochlora arctica, Somatochlora flavomaculata, Lestes sponsa, Leucorhinia dubia, Leucorhinia pectoralis, Leucorhinia rubicunda, Nehalennia speciosa, Ceriagrion tenellum, Libellula quadrimaculata, Pyrrhosoma nymphula.* **Butterflies:** *Boloria aquilonaris, Colias palaeno, Plebeius optilete, Coenonympha tullia, Melitaea diamina, Clossiana titania, Clossiana selene, Proclossiana eunomia.* **Vertebrates:** none. **Methods:** all species occuring frequently (frequency more than 20%) and all species occuring selectively in transition mires and quaking bogs. **Published sources:** Oberdorfer, E.(1977): **Süddeutsche Pflanzengesellschaften**, Bd. 1 Dierssen, B. & K. (1984): **Vegetation und Flora der Schwarzwaldmoore** Bellmann, H. (1993): **Libellen**
Other relevant information	Habitat's Red List category "1" to "3" in Germany, very significant for the overall biodiversity
Coherence	Bad – less than 50% of sites are linked
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Area	Bad (U2)
Specific structures and functions (incl. typical species)	Bad (U2)
Future prospects	Bad (U2)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Un-known
Range	About stable			
Area covered by habitat type within range			Large decrease in surface area: Equivalent to a loss of more than 1% per year and with major losses in distribution pattern within range and more than 10% below 'favourable reference area'	
Specific structures and functions (including typical species)			More than 25% of the area is unfavourable as regards its specific structures and in particular its typical species	
Future prospects (as regards range, area covered and specific structures and functions)			The habitat's prospects are poor, severe impact from threats expected; long-term viability of the most typical species not assured.	
Overall assessment of CS			Bad	

7150 Depressions on peat substrates of the Rhynchosporion

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7150
Member State	DE (Germany)
Biogeographic regions concerned within the MS	Alpine (ALP), Atlantic (ATL), Continental (CON)
Range	Partly absent in the middle and south of Germany
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Database of pSCIs of Germany (2004) Rennwald, E. (2000): **Verzeichnis und Rote Liste der Pflanzengesellschaften Deutschlands** Benkert, D./Fukarek, K. & Korsch, H. (1996): **Verbreitungsatlas der Farn – und Blütenpflanzen Ostdeutschlands** Häupler, H. & Schönfelder, P. (1988): **Atlas der Farn- und Blütenpflanzen der Bundesrepublik Deutschland** Dierssen, B. & K. (1984): **Vegetation und Flora der Schwarzwaldmoore**
Range	Partly absent in the middle and south of the Continental region
Surface area	200,000 km²
Date	1996
Quality of data	3 = good
Trend	- 13% = net loss by 13% - 30,000 km²
Trend-Period	1840–1996
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Area covered by habitat	Approximately 0,1–0,3 km²
Distribution map	See database of pSCIs of Germany (2004)
Surface area	0,1–0,3 km²
Date	2004
Method used	1 = based on expert opinion
Quality of data	1 = poor
Trend	- 22% = net loss by 22%
Trend-Period	1945–1965
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Just. of % thresholds for trends	
Main pressures	**101** Modification of cultivation practices **141** Abandonment of pastoral systems **163** Forestry replanting **310** Peat extraction **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**141** Abandonment of pastoral systems **163** Forestry replanting **790** Other pollution or human impacts **890** Other human induced changes in hydraulic conditions

Complementary information	
Favourable reference range	220,000 km²
Favourable reference area	1 km²
Typical species	**Flowering plants and clubmosses:** *Rhynchospora alba, Rhynchospora fusca, Drosera intermedia, Drosera anglica, Lycopodiella inundata, Carex.limosa, Carex lasiocarpa, Trichophorum alpinum, Eriophorum angustifolium, Vaccinium oxycoccus, Eriophorum vaginatum, Drosera rotundifolia; Carex panicea, Menyanthes trifoliata, Molinia caerulea.* **Mosses and Liverworts:** *Drepanocladus fluitans, Gymnocolea inflata, Sphagnum cuspidatum, Sphagnum majus, Campylium stellatum, Calliergon stramineum, Drepanocladus revolvens.* **Butterflies, Vertebrates:** none. **Methods:** all species that occur frequently in Rhynchosporion (frequency more than 20%), plus all species that occur selectively in Rhynchosporion. **Published sources:** Oberdorfer, E. (1977): **Süddeutsche Pflanzengesellschaften**, Bd. 1 Dierssen, B.& K.(1984): **Vegetation und Flora der Schwarzwaldmoore**
Other relevant information	Habitat's Red List category "3" in Germany
Conclusions (assessment of conservation status at end of reporting period)	
Range	Inadequate (U1)
Area	Bad (U2)
Specific structures and functions (incl. typical species)	Bad (U2)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range				
Area covered by habitat type within range			Large decrease in surface area: Equivalent to a loss of more than 1% per year and with major losses in distribution pattern within range and more than 50% below 'favourable reference area'	
Specific structures and functions (including typical species)			More than 25% of the area is unfavourable as regards its specific typical species	
Future prospects (as regards range, area covered and specific structures and functions)		The habitat's prospects are poor, severe impact from threats expected; long-term viability of some typical species not assured.		
Overall assessment of CS			Bad	

7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7210
Member State	AT
Biogeographic regions concerned within the MS	ALP
Range	Alpine foothills and Alpine basins
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Steiner G.M. 1992: **Österreichischer Moorschutzkatalog**. Grüne Reihe des BMGU Bd. 1: 509 pp. Styria Medienservice, Graz.
Range	Alpine foothills and Alpine basins
Surface area	
Date	1996
Quality of data	3
Trend	0 = stable
Trend-Period	1988–2005
Reasons for reported trend	3
Area covered by habitat	4.35775 km²
Distribution map	
Surface area	4.35775 km²
Date	
Method used	3
Quality of data	3
Trend	- 10% 0.5 km²
Trend-Period	1988–2005
Reasons for reported trend	3
Justification of % thresholds for trends	
Main pressures	**810** Drainage for agriculture and tourism
Threats	**810** Drainage for agriculture **120** Fertilisation

Complementary information	
Favourable reference range	
Favourable reference area	
Typical species	*Cladium mariscus*
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Unknown (XX)
Area	Unknown (XX)
Specific structures and functions (incl. typical species)	Unknown (XX)
Future prospects	Unknown (XX)
Overall assessment of CS	Unknown (XX)

7210 Calcareous fens with *Cladium mariscus* **and species of the** *Caricion davallianae*

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7210
Member State	AT
Biogeographic regions concerned within the MS	PAN[21]
Range	Easternmost part of Austria (Vienna Basin and Hungarian Basin)
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	CON
Published sources	Steiner, G. M., 1992: **Österreichischer Moorschutzkatalog**. Grüne Reihe des BMGU Bd. 1: 509 pp. Styria Medienservice, Graz.
Range	Easternmost part of Austria (Vienna Basin and Hungarian Basin)
Surface area	
Date	1996
Quality of data	3
Trend	0 = stable
Trend-Period	1988–2005
Reasons for reported trend	3
Area covered by habitat	0.11456 km²
Distribution map	
Surface area	0.11456 km²
Date	
Method used	3
Quality of data	3
Trend	0 = stable
Trend-Period	1988–2005
Reasons for reported trend	3
Justification of % thresholds for trends	
Main pressures	**810** Drainage for agriculture and tourism
Threats	**120** Fertilisation

Complementary information	
Favourable reference range	
Favourable reference area	
Typical species	*Cladium mariscus*
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Unknown (XX)
Area	Unknown (XX)
Specific structures and functions (incl. typical species)	Unknown (XX)
Future prospects	Unknown (XX)
Overall assessment of CS	Unknown (XX)

21 See footnote 21 on page 15.

7220 Petrifying springs with tufa formation *(Cratoneurion)*

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7220
Member State	DE (Germany)
Biogeographic regions concerned within the MS	Alpine (ALP), Atlantic (ATL), Continental (CON)
Range	Mostly in central and southern Germany; isolated parts in the north
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Database of pSCIs of Germany (2004); Rennwald, E. (2000): **Verzeichnis und Rote Liste der Pflanzengesellschaften Deutschlands** Benkert, D., Fukarek, K. & Korsch, H. (1996): **Verbreitungsatlas der Farn – und Blütenpflanzen Ostdeutschlands** Häupler, H. & Schönfelder, P. (1988): **Atlas der Farn- und Blütenpflanzen der Bundesrepublik Deutschland**
Range	Mostly in central and southern Germany; isolated parts in the north
Surface area	180,000 km²
Date	2005
Quality of data	1 = poor
Trend	- 20% = net loss by 20% - 50,000 km²
Trend-Period	1840–2005
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Area covered by habitat	Approximately 0.1–0.2 km²
Distribution map	See database of pSCIs of Germany (2004)
Surface area	Approximately 0.1–0.2 km²
Date	2005
Method used	1 = based on expert opinion
Quality of data	1 = poor
Trend	- 50% = net loss by 50%
Trend-Period	1945–1984
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Just. of % thresholds for trends	
Main pressures	**163** Forestry replanting **701** Water pollution **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**163** Forestry replanting **701** Water pollution **790** Other pollution or human impacts **810** Drainage **890** Other human induced changes in hydraulic conditions

Complementary information	
Favourable reference range	180,000 km²
Favourable reference area	Approximately 0,3–0,4 km²
Typical species	**Flowering plants:** *Cochlearia pyrenaica, Saxifraga mutata, Cardamine amara, Agrostis stolonifera.* **Mosses and Liverworts:** *Cratoneuron commutatum, Eucladium verticillatum, Barbula tophacea, Philonotis calcarea, Gymnostomum recurvirostre, Fissidens adianthioides, Bryum pseudotriquetrum, Pellia endiviaefolia, Aneura pinguis.* **Dragonflies:** *Cordulegaster bidentatus.* **Butterflies, Vertebrates:** none. **Methods:** all species occuring frequently (frequency more than 20%) and all species occuring selectively in Cratoneurion. **Published sources:** Oberdorfer, E. (1977): **Süddeutsche Pflanzengesellschaften**, Bd. 1, Bellmann, H. (1993): **Libellen**
Other relevant information	Habitat's Red List category "3" in Germany
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Area	Bad (U2)
Specific structures and functions (incl. typical species)	Bad (U2)
Future prospects	Bad (U2)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range	About stable			
Area covered by habitat type within range			Large decrease in surface area: Equivalent to a loss of more than 1% per year and with major losses in distribution pattern within range and more than 50% below 'favourable reference area'	
Specific structures and functions (including typical species)			More than 50% of the area is unfavourable as regards its building of tufa, specific aquatic functions and typical species	
Future prospects (as regards range, area covered and specific structures and functions)			The habitat's prospects are bad, severe impact from threats – particularly from climatic change – expected; long-term viability not assured.	
Overall assessment of CS			Bad	

7220 Petrifying springs with tufa formation *(Cratoneurion)*

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7220
Member State	AT
Biogeographic regions concerned within the MS	ALP
Range	Throughout country
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Steiner, G. M. (1992): **Österreichischer Moorschutzkatalog**. Grüne Reihe des BMGU Bd. 1: 509 pp. Styria Medienservice, Graz.
Range	Throughout region
Surface area	
Date	
Quality of data	3
Trend	0 = stable
Trend-Period	1988–2005
Reasons for reported trend	6 = increased awareness and knowledge of where sites are located
Area covered by habitat	
Distribution map	
Surface area	0.765 km²
Date	1988–2005
Method used	3
Quality of data	3
Trend	0
Trend-Period	1988–2005
Reasons for reported trend	6 = increased awareness and knowledge of where sites are located
Justification of % thresholds for trends	
Main pressures	**810** Drainage
Threats	**120** Fertilisation

Complementary information	
Favourable reference range	
Favourable reference area	
Typical species	*Cratoneuron commutatum, C. filicinum, Drepanocladus revolvens, Campylium stellatum, Carex davalliana, Tofieldia calyculata, Saxifraga aizoides, Primula farinosa, Gentiana pneumonanthe*
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Unknown (XX)
Area	Unknown (XX)
Specific structures and functions (incl. typical species)	Unknown (XX)
Future prospects	Unknown (XX)
Overall assessment of CS	Unknown (XX)

7220 Petrifying springs with tufa formation (*Cratoneurion*)

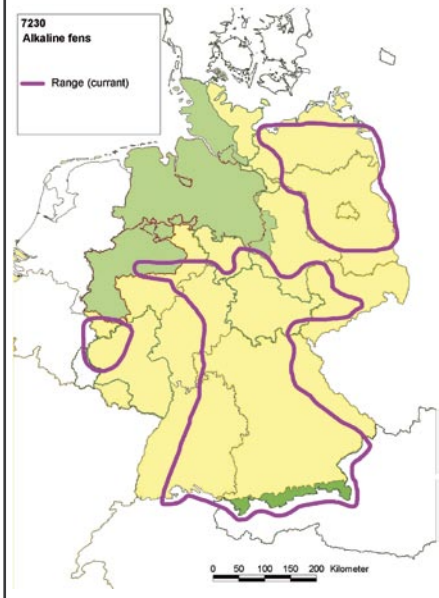
Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7220
Member State	AT
Biogeographic regions concerned within the MS	PAN[21]
Range	Easternmost part of Austria (Vienna Basin and Hungarian Basin
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	PAN
Published sources	Steiner G. M. (1992): **Österreichischer Moorschutzkatalog**. Grüne Reihe des BMGU Bd. 1: 509 pp. Styria Medienservice, Graz.
Range	Throughout region
Surface area	
Date	
Quality of data	3
Trend	0 = stable
Trend-Period	1988–2005
Reasons for reported trend	6 = increased awareness and knowledge of where sites are located
Area covered by habitat	0.765 km²
Distribution map	
Surface area	0.765 km²
Date	1988–2005
Method used	3
Quality of data	3
Trend	0
Trend-Period	1988–2005
Reasons for reported trend	6 = increased awareness and knowledge of where sites are located
Justification of % thresholds for trends	
Main pressures	**810** Drainage
Threats	**120** Fertilisation

21 See footnote 21 on page 15.

Complementary information	
Favourable reference range	
Favourable reference area	
Typical species	*Cratoneuron commutatum, C. filicinum, Drepanocladus revolvens, Campylium stellatum, Carex davalliana, Tofieldia calyculata, Saxifraga aizoides, Primula farinosa, Gentiana pneumonanthe.*
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Unknown (XX)
Area	Unknown (XX)
Specific structures and functions (incl. typical species)	Unknown (XX)
Future prospects	Unknown (XX)
Overall assessment of CS	Unknown (XX)

7230 Alkaline fens

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	7230
Member State	DE (Germany)
Biogeographic regions concerned within the MS	Alpine (ALP), Atlantic (ATL), Continental (CON)
Range	Mostly in the central and southern Germany; isolated parts in the east and west
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Database of pSCIs of Germany (2004) Rennwald, E. (2000): **Verzeichnis und Rote Liste der Pflanzengesellschaften Deutschlands** Benkert, D., Fukarek, K. & Korsch, H. (1996): **Verbreitungsatlas der Farn – und Blütenpflanzen Ostdeutschlands** Häupler, H. & Schönfelder, P. (1988): **Atlas der Farn- und Blütenpflanzen der Bundesrepublik Deutschland**
Range	Mostly in central and southern Germany; isolated parts in the east and west
Surface area	160,000 km²
Date	2005
Quality of data	2 = moderate
Trend	- 30%= net loss by 30% – 70,000 km²
Trend-Period	1945–1996
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Area covered by habitat	Approximately 10–20 km²
Distribution map	See database of pSCIs of Germany (2004) and map 7230.jpg
Surface area	Approximately 10–20 km²
Date	2005
Method used	1 = based on expert opinion
Quality of data	1 = poor
Trend	- 90% = net loss by 90%
Trend-Period	1945–2005
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	

Main pressures	**101** Modification of cultivation practices **120** Fertilisation **163** Forestry replanting **310** Peat extraction **701** Water pollution **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**101** Modification of cultivation practices **120** Fertilisation **163** Forestry replanting **701** Water pollution **790** Other pollution or human impacts **810** Drainage **890** Other human induced changes in hydraulic conditions

Complementary information	
Favourable reference range	180,000 km²
Favourable reference area	about 60 km²
Typical species	**Flowering plants:** *Schoenus ferrugineus, Schoenus intermedius, Schoenus nigricans, Gentiana utricolosa, Orchis palustris, Spiranthes aestivalis, Liparis loeselii, Juncus subnodulosus, Primula farinosa, Tofieldia calyculata, Eriophorum latifolium, Eriophorum angustifolium, Epipactis palustris, Eleocharis quinqueflora, Eleocharis uniglumis, Equisetum variegatum, Dactylorhiza incarnata, Dactylorhiza majalis, Dactylorhiza traunsteineri, Juncus alpinus, Juncus articulatus, Swertia perennis, Carex davalliana, Carex hostiana, Carex flava, Carex tumidicarpa, Carex pulicaris, Carex dioica, Carex flacca, Carex panicea, Carex elata, Triglochin palustre, Drosera anglica, Menyanthes trifoliata, Pedicularis sceptrum-carolinum, Taraxacum paludosum, Aster belliadastrum, Pinguicula alpina, Pinguicula vulgaris, Parnassia palustris, Bartsia alpina, Polygala amarella, Valeriana dioica, Crepis paludosa, Leontodon hispidus, Succisa pratensis, Molinia caeruea, Potentilla erecta, Equisetum palustre, Phragmites communis, Linum catharticum, Cirsium oleraceum, Allium suaveolens, Pedicularis palustris, Cirsium tuberosum, Carex distans, Briza media, Centaurea jacea, Utricularia minor, Saxifraga mutata, Typha minima, Typha shuttleworthii, Trichophorum alpinum, Willemetia stipitata.* **Mosses and Liverworts:** *Cratoneuron commutatum, Philonotis calcarea, Fissidens adianthioides, Bryum pseudotriquetrum, Pellia endiviaefolia, Aneura pinguis; Campylium stellatum, Drepanocladus revolvens, Tomenthypnum nitens, Calliergonella cuspidata, Plagiomnium undulatum, Ctenidium molluscum, Calliergon trifarium, Campylium elodes, Scorpidium scorpioides.* **Dragonflies, Butterflies, Vertebrates:** none. **Methods:** all species occuring frequently (frequency more than 20%) or all species occuring selectively in alkaline fens. **Published sources:** Oberdorfer, E. (1977): **Süddeutsche Pflanzengesellschaften, Bd. 1**
Other relevant information	Habitat's Red List category "1" to "3" in Germany, highly significant for overall biodiversity!
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Area	Bad (U2)
Specific structures and functions (incl. typical species)	Bad (U2)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range			More than 10% below 'favourable reference range'	
Area covered by habitat type within range			Large decrease in surface area: Equivalent to a loss of more than 1% per year and with major losses in distribution pattern within range and more than 50% below 'favourable reference area'	
Specific structures and functions (including typical species)			More than 50% of the area is unfavourable as regards its specific semiaquatic functions and particularly its typical species	
Future prospects (as regards range, area covered and specific structures and functions)		The habitat's prospects are poor; severe impact from threats expected; long-term viability for a lot of the typical species not assured.		
Overall assessment of CS			Bad	

5110 Stable *Buxus sempervirens* formations on calcareous rock slopes

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	5110
Member State	DE (Germany)
Biogeographic regions concerned within the MS	Continental (CON)
Range	Two isolated occurrences at Mosel valley and upper Rhine valley
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Database of pSCIs of Germany (2004) Häupler, H. & Schönfelder, P. (1988): **Atlas der Farn- und Blütenpflanzen der Bundesrepublik Deutschland**
Range	Two isolated occurrences at Mosel valley and upper Rhine valley (see map)
Surface area	50 km²
Date	1988
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1945–1988
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Area covered by habitat	about 1 km²
Distribution map	See database of pSCIs of Germany (2004) and Häupler, H. & Schönfelder, P. (1988): **Atlas der Farn – und Blütenpflanzen der Bundesrepublik Deutschland**
Surface area	1 km²
Date	2004
Method used	1 = based on expert opinion
Quality of data	2 = moderate
Trend	0 = stable
Trend-Period	1945–1988
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	
Main pressures	**160** General Forestry management **250** Taking/removal of flora, general **400** Urbanized areas, human habitation
Threats	**160** General Forestry management **400** Urbanized areas, human habitation

Complementary information	
Favourable reference range	50 km²
Favourable reference area	1 km²
Typical species	**Flowering plants:** *Buxus sempervirens, Acer monspessulanum, Sorbus torminalis, Quercus petraea, Ribes alpinum, Crataegus laevigata, Rosa canina, Prunus spinosa, Prunus mahaleb, Viburnum lantana, Rhamnus carthaticus, Berberis vulgaris, Amelanchier ovalis, Aster linosyris, Sedum reflexum, Sedum album, Hedera helix, Galium album, Euphorbia cyparissias, Polygonatum odoratum, Poypodium vulgare, Asplenium trichomanes, Hypericum perforatum.* **Serpents, Lizards:** *Coronella austriaca, Lacerta bilineata.* **Methods:** all plant species occuring frequently (frequency more than 40%) and all species occuring selectively in Mosel valley (described as *Acer monspessulani-Quercetum petraeae* in published sources, see below). **Published sources:** Oberdorfer, E.(1992): **Süddeutsche Pflanzengesellschaften, Bd. 4**
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Area	Favourable (FV)
Specific structures and functions (incl. typical species)	Favourable (FV)
Future prospects	Favourable (FV)
Overall assessment of CS	Favourable (FV)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range	About stable			
Area covered by habitat type within range	About stable			
Specific structures and functions (including typical species)	No significant deteriorations/pressures are known			
Future prospects (as regards range, area covered and specific structures and functions)				
Overall assessment of CS	Favourable			

9330 Cork oak forests

Data	Comments/Guidelines for reporting data
National Level	
Habitat Code	9330
Member State	ES
Biogeographic regions concerned within the MS	Mediterranean (MED)
Range	This species is within the Mediterranean biogeographical region. It occurs in the west, mainly in Spain and Portugal but also in southern France and Italy. There are also important Cork oak forests in the Atlantic side of the Moroccan plains, in the Riff Mountain and the Mid Atlas ranges further east. Finally, Cork oak forests reach Telian Atlas in Algeria and Tunisia.
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Mediterranean (MED)
Published sources	Benito Garzón, M., Maldonado Ruiz, J., Sánchez de Dios, R and Sainz Ollero, H. (2003): **Predicting Spanish sclerophyllous forest potentiality using artificial neural networks**. Graellsia 59 (2–3) Charco, J. (1999): **El bosque mediterraneo en el norte de África**. Agencia Española de Cooperación Internacional. Madrid, 1999 Costa Tenorio, M., Morla Juaristi, C. and Sainz Ollero, H. (eds) (1997): **Los bosques ibéricos. Una interpretación geobotánica**. Planeta, Barcelona Maldonado, Ruiz, J., Benito Garzón, M., Sánchez de Dios, R. and Sainz Ollero, H. (2002): **Evolución reciente de las áreas de los bosques esclerófilos ibéricos. Cambios deducidos a partir de la cartografía forestal**. En: Charco, J. (coord) La regeneración natural del bosque mediterráneo en la península Ibérica. Arba. Madrid Ruiz de la Torre, J. (1990): **Mapa Forestal de España. 1:200.000**. Ministerio de Agricultura, Madrid Rivas-Martínez, S. (1987): **Memoria y Mapa de series de vegetación de España**. ICONA. Madrid
Range	Extends more or less continuously throughout the Iberian South-West. There are some important Cork oak forests in the North-eastern Catalonia as well. Nevertheless small Cork oak populations can be found in almost any Spanish province.
Surface area	The surface area of Cork oak is very difficult to infer because of the patchy distribution across its range. Additionally, the extent of occurrence figures for such a widely distributed tree, are likely to be misleading. If the surface area is estimated according to the "extent of occurrence" concept according to the IUCN categories, the whole Iberian peninsula would have to be included to encompass all the known populations of Cork oak in Iberia.
Date	
Quality of data	
Trend	
Trend-Period	
Reasons for reported trend	
Area covered by habitat	10,000 km² (Spain and Portugal), 4,800 km² in Spain. Extremadura is the Spanish autonomous community 3730 km² with the largest surface of Cork oak forest (Costa Tenorio *et al.,* 1997) In a more recent review (Maldonado *et al.*, 2002) authors gave the following figures: 4,741 km² of Cork oak forest in Spain in 1966 (from 1966 Spanish Forests Map) and 5,085 km² (from Spanish Forests Map of 1990). So, the total net increase has been 300 km² during this recording period.
Distribution map	
Surface area	

Date	1997, 2002
Method used	3 = ground based survey 2 = based on remote sensing data 1 = based on expert opinion
Quality of data	1 (1997); 3 (2002)
Trend	We offer two different trends according to different data sources used to calculate figures. We think that both may be useful to infer true tendencies: - 40% according to the difference between potential and real range (Benito Garzón *et al.,* 2003) + 6% according to the difference between Cork oak forest in 1966 and Cork oak forest in 1990 (data from Forest vegetation maps)
Trend-Period	The first estimate (-40%) represents an idealistic approach. We have assumed that the total range of *Quercus suber* is represented by its potential distribution following Rivas-Martínez (1987). We have used the present range of cork following Ruiz de la Torre, 1990. From the two data sets we have calculated the differences between potential and actual range. The second estimate (+6%) represents a 24 year trend period using data of the two forest vegetation maps (one from 1966 and the other form 1990)
Reasons for reported trend	First trend: **3.** It may represent a historic reduction in the natural range since the beginnings of civilization in the Mediterranean basin. Second trend: **1.** and **6.** Although part of this trend may be due to the fact that both forests map do not use the same classification of forest covers. So part of this reported trend may be due to changes of forest from one category to other but not reflecting true increase or decrease in forest area. (More information in Benito Garzón *et al.,* 2003).
Justification of % thresholds for trends	
Main pressures	
Threats	

Complementary information	
Favourable reference range	
Favourable reference area	
Typical species	
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Area	Favourable (FV)
Specific structures and functions (incl. typical species)	Bad (U2)
Future prospects	Unknown (XX)
Overall assessment of CS	Bad (U2)

1202 *Bufo calamita*

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1202 Natterjack Toad *Bufo calamita*
Member State	United Kingdom
Biogeographic regions concerned within the MS	Atlantic (ATL)
Range	
Map	 This map shows polygons drawn around all reliable historical records of natterjack toads, i.e. the presumed 'natural range' in the UK. It is possible to produce other variations of this range map, based on suitable soil types, natural areas, presence in km², etc. The distribution of Natterjacks has always been sporadic within this range, so the total area of 50,970 km² does not represent the area of actual occurrence (whether past, current, favourable or otherwise). Maps of actual distribution within this range can also be produced to varying levels of accuracy (see examples below).

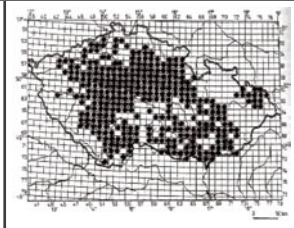
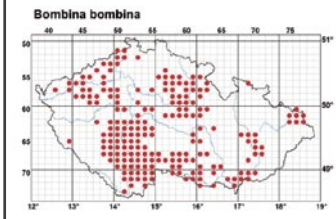
Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Atlantic (ATL)
Published sources	Beebee, T. J. C. and Buckley, J. (2001): **Natterjack Toad** (*Bufo calamita*) **Site register for the UK 1970–1999 inclusive**. University of Sussex and the Herpetological Conservation Trust, UK. Plus unpublished data held in the HCT Rare Species Database
Range	
Surface area	50,970 km² (*Bufo calamita* is actually present in 270 km²)
Date	December 2005
Quality of data	2 = moderate
Trend	- xx% = net loss by an estimated 98% (loss of populations based on area of habitat destroyed plus area of existing habitat rendered unsuitable by indirect damage and inappropriate management)
Trend-Period	1950–2005
Reasons for reported trend	3 = direct human influence (deterioration, habitat destruction) 4 = indirect anthropo(zoo)genic influence (cessation of grazing) 5 = natural processes (succession). *N.B. amphibian disease is not known to be a factor in the decline of UK natterjack toads* 6 = other (invasive aquatic and terrestrial alien plant species)

Population	
Distribution map *Two examples are given that demonstrate different levels of resolution and detail.*	 This map shows the most common interpretation the current distribution, with polygons drawn around groups of existing subpopulations within various natural areas in the UK. Large areas within these polygons no longer support natterjack toads, and this species was also once present in other areas of the natural range (i.e. outside the polygons shown here).  Map showing greater detail of distribution in the UK, i.e. the polygons have been drawn more tightly around existing populations and therefore exclude more areas of former distribution than the above map. Further resolution is possible (see examples for the sand lizard in the UK).
Population size estimation	13 small metapopulations (supporting 33 individual subpopulations) and 16 isolated single populations. A UK total of c. 3,000 breeding females were recorded in 2005
Date of estimation	December 2005
Method used	3 = from complete inventory
Quality of data	3 = good (based on annual monitoring, which includes direct counts of spawn strings laid at all known UK breeding sites)
Trend	0 = stable
Trend-Period	1990–2005
Reasons for reported trend	3 = direct human influence (habitat restoration and re-creation, plus translocations to re-introduce the species to former sites) 6 = other (UKBAP work and greatly improved implementation of species protection measures in the planning system).
Justification of % thresholds for trends	The massive losses of this species in the UK that occurred up to the late 1980's have now stopped. Since 1990, populations have been more or less stable, with some small losses (due to lack of management, habitat succession, etc) now balanced by gains through habitat management and re-introductions elsewhere. Recent monitoring has not shown an overall increase in natterjack toad populations as yet but the prospects are now good.

Main pressures (past/present)	**101** Modification of cultivation practices **110** Use of pesticides **120** Fertilisation **141** Abandonment of pastoral systems **160** General forestry management **220** Leisure fishing **301** Quarries **400** Urbanized areas, human habitation **410** Industrial or commercial areas **424** Discharges/other discharges **502** Routes, autoroutes **601** Golf course **607** Sports pitch **608** Camping and caravans **623** Motorized vehicles **629** Other leisure and tourism impacts not referred to above **701** Water pollution **702** Air pollution **703** Soil pollution **730** Military manoeuvres **790** Other pollution or human impacts/activities **803** Infilling of ditches, dykes, ponds, pools, marshes or pits **810** Drainage **853** Management of water levels **871** Sea defence or coast protection works **890** Other human induced changes in hydraulic conditions **920** Drying out **951** Accumulation of organic material **952** Eutrophication **953** Acidification **954** Invasion by a species **962** Parasitism **963** Introduction of disease **966** Antagonism arising from introduction of species **969** Other forms/mixed forms of interspecific faunal competition
Threats (future/foreseeable)	**101** Modification of cultivation practices **110** Use of pesticides **120** Fertilisation **424** Discharges/other discharges **502** Routes, autoroutes **623** Motorized vehicles **701** Water pollution **702** Air pollution **703** Soil pollution **790** Other pollution or human impacts/activities **853** Management of water levels **871** Sea defence or coast protection works **890** Other human induced changes in hydraulic conditions **920** Drying out **952** Eutrophication **953** Acidification **954** Invasion by a species **962** Parasitism **963** Introduction of disease **966** Antagonism arising from introduction of species **969** Other forms/mixed forms of interspecific faunal competition

Habitat for the species	
Area estimation	C. 100 km² (of which less than 20 km² now survives as good quality habitat). The remaining 80 km² is largely sub optimal habitat and is probably only used by this species occasionally (e. g. during breeding related movements or dispersal of juveniles)
Date of estimation	December 2005
Quality of data	2 = moderate
Trend	0 = stable
Trend-Period	1990–2005
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction) 4 = indirect anthropo(zoo)genic influence 5 = natural processes
Future prospects	1 = good prospects The natterjack toad is very unlikely to become extinct in the UK in the near future. New agri-environment funding schemes have the potential to reverse the decline of this species in many areas and will be particularly important in encouraging the re-instatement of the traditional forms of grazing (especially by cattle) that formerly sustained this species and its habitats in the UK.

Complementary information	
Favourable reference range	50,970 km². However, this value is fairly meaningless for a species of such limited mobility and a much better way of setting the favourable reference range would be to use the presence of natterjack toads in at least 1,000 km² (estimated from the potential for habitat re-creation and population linkage that is realistically achievable in the UK), as opposed to the current 270 km².
Favourable reference population	80 large, robust metapopulations (supporting a minimum of 300 individual subpopulations and at least 50,000 breeding females). This level was set based on the potential for habitat re-creation and population linkage that is realistically achievable in the UK, and is not an attempt to fully restore the former historical distribution, which would be impossible anyway. Achieving this favourable reference level would re-establish UK populations of natterjack at about 1970 levels.
Suitable Habitat for the species	400 km². Again, this level was set based on a potential for habitat re-creation and population linkage that is realistically achievable in the UK.
Other relevant information	The status of the natterjack toad in the UK is currently U2 (Unfavourable Bad), although it appears that the lowest point has now been reached and its prospects are likely to start improving (dramatically in some areas) in the near future.
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Bad (U2)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

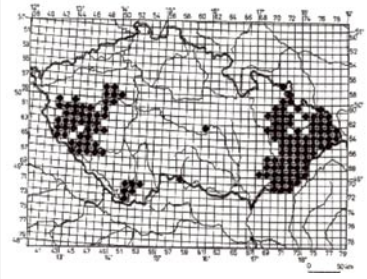
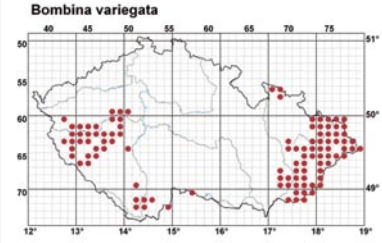
Data	Comments/Guidelines for reporting data
National Level	
Species Code	1188 *Bombina bombina*
Member State	CZ
Biogeographic regions concerned within the MS	Continental (CON), Pannonian (PAN)
Range	Whole territory of the Czech republic
Map	 (1994)  (2004)

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Baruš, V. (eds) (1989): **Červená kniha ohrožených a vzácných druhů rostlin a živočichů ČSSR 2. Kruhoústí, ryby, obojživelníci, plazi, savci.** [Red data book of plants and animals of CSSR II – Cyclostomata, Fish, Amphibians, Reptiles, Mammals] Praha ,133 s. *(in Czech)* Baruš, V., Oliva, O. (eds.) (1992): **Obojživelníci** [Amphibia], Praha (Academia), Fauna ČSFR, Vol. 25, 338 pp. *(in Czech with English summary)* Blab. J. (1986): **Biologie, Ökologie und Schutz von Amphibien**. Bonn-Bad Godesberg, 78 pp. Mikátová, B., Vlašín, M. (2002): **Ochrana obojživelníků.** [Amphibian conservation], Veronica – EkoCentrum Brno, 137 pp *(in Czech)* Moravec, J. (1994): **Atlas rozšíření obojživelníků v České republice** [Atlas of Czech amphibians]. Národní muzeum Praha, 136 s. *(in Czech with English summary)* Oldham, R. S., Swan, M. J. S. (1991): **Conservation of Amphibian Populations in Britain** Ex: Seitz, A., Loeschecke, V., (eds.): Species Conservation: A Population-Biological Approach, Birkhauser Verlag, Basel Plesník, J. (1999): **Zásady přípravy záchranných programů pro zvláště chráněné živočichy** [Fundamentals for preparing saving programs for special protected animals], Ochrana přírody 54 (7): 210–214. *(In Czech)* Plesník J., Hanzal V., Brejšková L., [eds.], (2003): **Červený seznam ohrožených druhů České republiky. Obratlovci** [Red list of endangered species of the Czech republic], Příroda, 2003 *(in Czech)*
Range	Czech part of Continental biogeographical region
Surface area	From 296 mapping squares in 1994, to 189 in 2004 – (Moravec, 1994; Mikátová, Vlašín, 2002, **www.natura2000.cz**) So approximately 22,680 km²
Date	
Quality of data	3 = good **2 = moderate** 1 = poor
Trend	Decline from 296 mapping squares to 189 is a mean net loss 36% Magnitude of change in km² is difficult to estimate.
Trend-Period	During 10 years (1994–2004) (Moravec,1994., **www.natura2000.cz**)

Reasons for reported trend	0 = unknown 1 = improved knowledge/more accurate data 2 = climate change **3 = direct human influence (restoration, deterioration, destruction)** 4 = indirect anthropo(zoo)genic influence 5 = natural processes 6 = other (specify)
Population	
Distribution map	See attached maps
Population size estimation	Difficult to estimate, because we have only information on presence/absence of species in mapping quadrant.
Date of estimation	2004
Method used	**2 = extrapolation from surveys of part of the population, sampling** (Square mapping)
Quality of data	3 = good 2 = moderate **1 = poor**
Trend	Certainly decrease, but estimation is difficult. Probably of 36 % during 10 years (and more)
Trend-Period	During 10 years (1994–2004) (Moravec,1994., **www.natura2000.cz**) – but indirectly, only estimation
Reasons for reported trend	0 = unknown 1 = improved knowledge/more accurate data 2 = climate change **3 = direct human influence (restoration, deterioration, destruction)** 4 = indirect anthropo(zoo)genic influence 5 = natural processes 6 = other (specify)
Justification of % thresholds for trends	
Main pressures	**110** Use of pesticide **120** Fertilisation **200** Fish and Shellfish Aqaculture **701** Water pollution **810** Drainage **820** Removal of sediments
Threats	**110** Use of pesticide **120** Fertilisation **200** Fish and Shellfish Aqaculture **820** Removal of sediments
Habitat for the species	
Area estimation	2,000 km^2
Date of estimation	
Quality of data	3 = good 2 = moderate **1 = poor**
Trend	
Trend-Period	
Reasons for reported trend	**0 = unknown** 1 = improved knowledge/more accurate data 2 = climate change 3 = direct human influence (restoration, deterioration, destruction) 4 = indirect anthropo(zoo)genic influence 5 = natural processes **6 = other (specify)**
Future prospects	1 = good prospects 2 = poor prospects **3 = bad prospects**

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Pannonian (PAN)
Published sources	Baruš, V. (eds) (1989): **Červená kniha ohrožených a vzácných druhů rostlin a živočichů ČSSR 2. Kruhoústí, ryby, obojživelníci, plazi, savci.** [Red data book of plants and animals of CSSR II – Cyclostomata, Fish, Amphibians, Reptiles, Mammals] Praha ,133 s. *(in Czech)* Baruš, V., Oliva, O. (eds.) (1992): **Obojživelníci** [Amphibia], Praha (Academia), Fauna ČSFR, Vol. 25, 338 pp. *(in Czech with English summary)* Mikátová, B., Vlašín, M. (2002): **Ochrana obojživelníků.** [Amphibian conservation], Veronica – EkoCentrum Brno, 137 pp *(in Czech)* Moravec, J. (1994): **Atlas rozšíření obojživelníků v České republice** [Atlas of Czech amphibians]. Národní muzeum Praha, 136 s. *(in Czech with English summary)* Oldham, R. S., Swan, M. J. S. (1991): **Conservation of Amphibian Populations in Britain** Ex: Seitz, A., Loeschecke, V., (eds.): Species Conservation: A Population-Biological Approach, Birkhauser Verlag, Basel Plesník, J. (1999): **Zásady přípravy záchranných programů pro zvláště chráněné živočichy** [Fundamentals for preparing saving programs for special protected animals], Ochrana přírody 54 (7): 210–214. *(In Czech)* Plesník J., Hanzal V., Brejšková L., [eds.], (2003): **Červený seznam ohrožených druhů České republiky. Obratlovci** [Red list of endangered species of the Czech republic], Příroda, 2003 *(in Czech)*
Range	Czech part of Continental biogeoregion
Surface area	From 34 mapped squares in 1994 to 15 in 2004, area is approximately 1,800 km^2.
Date	**2004**
Quality of data	**3 = good** 2 = moderate 1 = poor
Trend	Large decline: During 10 years decline from 34 mapping squares to 15, means a loss of 56%. Magnitude of change in km^2 is difficult to estimate.
Trend-Period	1994–2004 (Moravec,1994., **www.natura2000.cz**)
Reasons for reported trend	0 = unknown 1 = improved knowledge/more accurate data 2 = climate change **3 = direct human influence (restoration, deterioration, destruction)** 4 = indirect anthropo(zoo)genic influence 5 = natural processes 6 = other (specify)
Population	
Distribution map	
Population size estimation	Total population in biogeographical region is very difficult to assess
Date of estimation	2004
Method used	**2 = extrapolation from surveys of part of the population, sampling** (Square mapping)
Quality of data	3 = good **2 = moderate** 1 = poor
Trend	Certainly in decline similar as range: more than 50% Magnitude of change is difficult to estimate precisely.
Trend-Period	1994–2004

Reasons for reported trend	**0 = unknown** 1 = improved knowledge/more accurate data 2 = climate change **3 = direct human influence (restoration, deterioration, destruction)** 4 = indirect anthropo(zoo)genic influence 5 = natural processes 6 = other (specify)
Justification of % thresholds for trends	
Main pressures	**110** Use of pesticide **120** Fertilisation **200** Fish and Shellfish Aqaculture **701** Water pollution **810** Drainage **820** Removal of sediments
Threats	**110** Use of pesticide **120** Fertilisation **200** Fish and Shellfish Aqaculture **820** Removal of sediments
Habitat for the species	
Area estimation	200 km²
Date of estimation	2004
Quality of data	3 = good **2 = moderate** 1 = poor
Trend	0 = stable + = net increase **- = net loss**
Trend-Period	1994–2004
Reasons for reported trend	**0 = unknown** 1 = improved knowledge/more accurate data 2 = climate change **3 = direct human influence (restoration, deterioration, destruction)** 4 = indirect anthropo(zoo)genic influence 5 = natural processes **6 = other (specify)**
Future prospects	1 = good prospects 2 = poor prospects **3 = bad prospects**

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1193 *Bombina variegata*
Member State	CZ
Biogeographic regions concerned within the MS	Continental (CON)
Range	Czech part of the Continental bioregion
Map	 (1994)  (2004)

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Baruš, V. (eds) (1989): **Červená kniha ohrožených a vzácných druhů rostlin a živočichů ČSSR 2. Kruhoústí, ryby, obojživelníci, plazi, savci.** [Red data book of plants and animals of CSSR II – Cyclostomata, Fish, Amphibians, Reptiles, Mammals] Praha ,133 s. *(in Czech)* Baruš, V., Oliva, O. (eds.) (1992): **Obojživelníci** [Amphibia], Praha (Academia), Fauna ČSFR, Vol. 25, 338 pp. *(in Czech with English summary)* Dungel, J., Řehák, Z., (2005): **Atlas ryb, obojživelníků a plazů České a Slovesnské republiky** *(In Czech)*. Academ,ia, Praha 2005,181 pp Moravec, J. (1994): **Atlas rozšíření obojživelníků v České republice** [Atlas of Czech amphibians]. Národní muzeum Praha, 136 s. *(in Czech with English summary)* Plesník J., Hanzal V., Brejšková L., [eds.] (2003): **Červený seznam ohrožených druhů České republiky. Obratlovci** [Red list of endangered species of the Czech republic], Příroda, 2003 *(in Czech)* Zavadil, V., Šapovaliv, P. (1990): **Rozšíření žab ve středočeském kraji I** *(in Czech)*, Bohem. Centr. 19: 147–234
Range	Czech part of the Continental bioregion.
Surface area	105 mapping sq. – approximately 11,505 km² (Moravec, 1994; Mikátová, Vlašín, 2002, **www.natura2000.cz**)
Date	1994–2004
Quality of data	3 = good **2 = moderate** 1 = poor
Trend	Large decline: During 10 years decline from 131 mapping squares to 105 – its mean loss is 20 % (Moravec, 1994; Mikátová, Vlašín, 2002, **www.natura2000.cz**)
Trend-Period	During 10 years (1994-2004) (Moravec,1994, **www.natura2000.cz**)

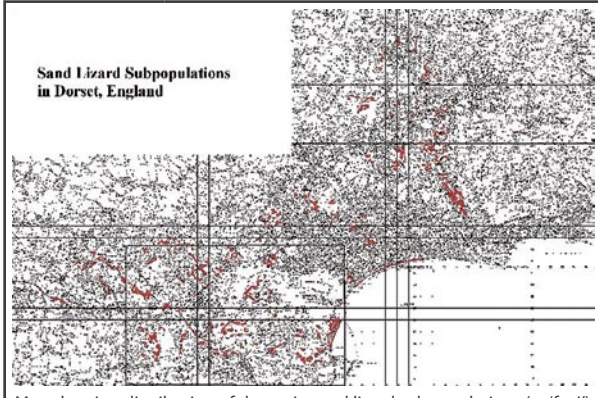
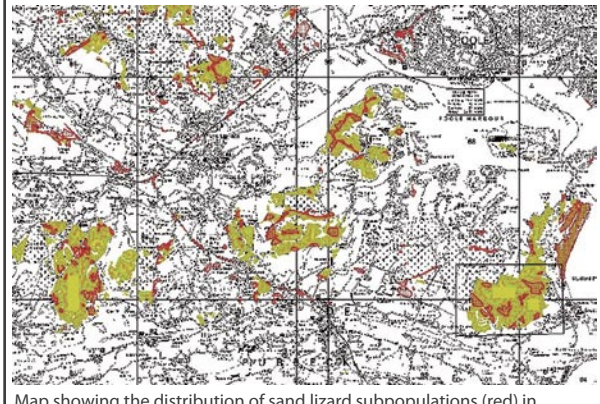
Reasons for reported trend	0 = unknown 1 = improved knowledge/more accurate data 2 = climate change **3 = direct human influence (restoration, deterioration, destruction)** 4 = indirect anthropo(zoo)genic influence 5 = natural processes 6 = other (specify)
Population	
Distribution map	
Population size estimation	It's difficult to estimate, because we have only info about presence – absence of species in mapping sq. Expert estimation is 100,000–1,000,000 individuals
Date of estimation	
Method used	**2 = extrapolation from surveys of part of the population, sampling** (Square mapping)
Quality of data	3 = good 2 = moderate **1 = poor**
Trend	Definite decrease, but estimation is difficult. A probable decrease of 20% or more over 10 years can be estimated from the amount that the range has declined.
Trend-Period	During 10 years (1994–2004) (Moravec,1994., **www.natura2000.cz**) – but indirectly, only estimation
Reasons for reported trend	0 = unknown 1 = improved knowledge/more accurate data 2 = climate change **3 = direct human influence (restoration, deterioration, destruction)** 4 = indirect anthropo(zoo)genic influence 5 = natural processes 6 = other (specify)
Justification of % thresholds for trends	
Main pressures	**110** Use of pesticide **120** Fertilisation **490** Other urbanization **502** Routes **703** Soil pollution **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**110** Use of pesticide **490** Other urbanization **502** Routes **703** Soil pollution
Habitat for the species	
Area estimation	1,000 km^2
Date of estimation	
Quality of data	3 = good 2 = moderate **1 = poor**
Trend	0 = stable + = net increase **- = net loss**
Trend-Period	1994–2004

Reasons for reported trend	**0 = unknown** 1 = improved knowledge/more accurate data 2 = climate change 3 = direct human influence (restoration, deterioration, destruction) 4 = indirect anthropo(zoo)genic influence 5 = natural processes **6 = other (specify)**
Future prospects	1 = good prospects 2 = poor prospects **3 = bad prospects**

Complementary information	
Favourable reference range	
Favourable reference population	
Suitable Habitat for the species	
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Unknown (XX)
Population	Unknown (XX)
Habitat for the species	Unknown (XX)
Future prospects	Unknown (XX)
Overall assessment of CS	Unknown (XX)

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1261 Sand Lizard *Lacerta agilis*
Member State	United Kingdom
Biogeographic regions concerned within the MS	Atlantic (ATL)
Range	
Map	 This map simply shows a polygon drawn around all reliable historical records of sand lizards, i.e. it is the presumed 'natural range' in the UK. It is possible to produce other variations of this range map, based on suitable soil types, natural areas, presence in km squares, and so on. Sand lizards have always been very patchily distributed within this range, so the total area of 22,480 km² does not represent the area of actual occurrence (whether past, current, favourable or otherwise). Maps of actual distribution within this range can also be produced to varying levels of accuracy.

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Atlantic (ATL)
Published sources	Unpublished data held in HCT Rare Species Database
Range	As for UK map (see above)
Surface area	22,480 km² (*Lacerta agilis* is actually present in 384 km²)
Date	December 2005
Quality of data	2 = moderate
Trend	- xx% = net loss by an estimated 95% (loss of populations based on area of habitat destroyed plus area of existing habitat rendered unsuitable by indirect damage and inappropriate management)
Trend-Period	1945–2005
Reasons for reported trend	3 = direct human influence (deterioration, destruction, fires) 4 = indirect anthropo(zoo)genic influence (e.g. cat predation) 5 = natural processes (succession) 6 = other (invasive alien plant species)

Population	
Distribution maps: A series of examples are given that demonstrate increasing resolution and detail.	
 This map shows the coarsest interpretation of current distribution, with polygons simply drawn around groups of existing subpopulations within various natural areas in the UK. Large areas within these polygons no longer support sand lizards, and this species was also once present in other areas of the natural range (outside the polygons shown here).	
 Map showing greater detail of distribution in southern Britain. (Area marked indicates the location of the next map, in Dorset, England.)	
 Map showing distribution of the main sand lizard subpopulations (or 'foci') in Dorset (red). There are 521 known sand lizard subpopulations, covering a total area of 10.2 km² of lowland heathland and sand dune habitats in the UK. (Area marked indicates the location of next map, in the Purbeck area of Dorset, England).	
 Map showing the distribution of sand lizard subpopulations (red) in Purbeck, Dorset. Other areas of heathland and sand dune habitats that are occupied by this species at lower densities are shown in green. The combined total of all red and green areas in the UK is 34.75 km². (Area marked indicates the location of Godlingston Heath – see next map).	

Map showing the distribution of sand lizard subpopulations within the main metapopulation that occurs on Godlingston Heath, Dorset (colours as above). However, sand lizards are often present elsewhere as single, isolated populations and achieving FCS will require the restoration, expansion and connection of numerous 'red' and 'green' areas in the UK.

Population size estimation	C. 300 small metapopulations and isolated single populations (supporting 521 individual subpopulations)
Date of estimation	December 2005
Method used	3 = from complete inventory
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1990–2005
Reasons for reported trend	3 = direct human influence (habitat restoration and re-creation) 6 = other (greatly improved implementation of species protection measures in the planning system due to the establishment of the Herpetological Conservation Trust in 1989! Also, increased wardening and protection of urban fringe heaths in Dorset from illegal fires and other pressures due to a LIFE funded project).
Justification of % thresholds for trends	The massive losses of this species in the UK that occurred up to the late 1980's have now stopped. Since 1990, populations have been more or less stable, with some small losses (due to some continued development, arson, habitat succession, etc) now balanced by gains through habitat management elsewhere. Recent monitoring appears to indicate that sand lizard populations are now increasing slightly in the UK.
Main pressures	**160** General forestry management **167** Exploitation without replanting
Threats	
Habitat for the species	
Area estimation	34.75 km² (of which 10.20 km² supports key subpopulations)
Date of estimation	December 2005
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1990–2005
Reasons for reported trend	3 = direct human influence (habitat restoration and re-creation) **6 = other (improved habitat protection legislation and wardening)**

Future prospects	1 = good prospects The sand lizard is very unlikely to become extinct in the UK in the immediate future (it is impossible to predict whether climate change will be positive or negative for this species). However, at present, crucial factors such as future funding are difficult to assess properly. Although new agri-environment funding schemes in the UK look very promising indeed, it is possible that these could also increase the occurrence of 'over-management' (i.e. result in too much grazing or mowing) of sand lizard habitats and this is already a problem in some areas. While it is expected that this species will continue to increase in both numbers and overall distribution in the UK, as its habitat is progressively restored and re-created, this trend is currently neither certain nor fast enough.

Complementary information	
Favourable reference range	22,480 km². However, this level is fairly meaningless for a species of such limited mobility and a much better way of setting the favourable reference range would be to use the presence of sand lizards in at least 500 km² (estimated from the potential for habitat re-creation and population linkage that is realistically achievable in the UK), as opposed to the current 384 km².
Favourable reference population	90 large, robust metapopulations (supporting a minimum of 900 individual subpopulations). The setting of this level was based on the potential for habitat re-creation and population linkage that is realistically achievable in the UK, and is not an attempt to fully restore the former historical distribution, which would be impossible anyway. Achieving this favourable reference level would re-establish UK populations of sand lizard at about 1970 levels.
Suitable Habitat for the species	80 km². Again, the setting of this level was based on a potential for habitat re-creation and population linkage that is realistically achievable in the UK
Other relevant information	The status of the sand lizard in the UK is currently U2 (Unfavourable Bad), although it appears that the low point has already been passed and that its prospects are steadily improving.
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Bad (U2)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1224
Member State	IT
Biogeographic regions concerned within the MS	Mediterranean (MED)
Range	ALL
Map	

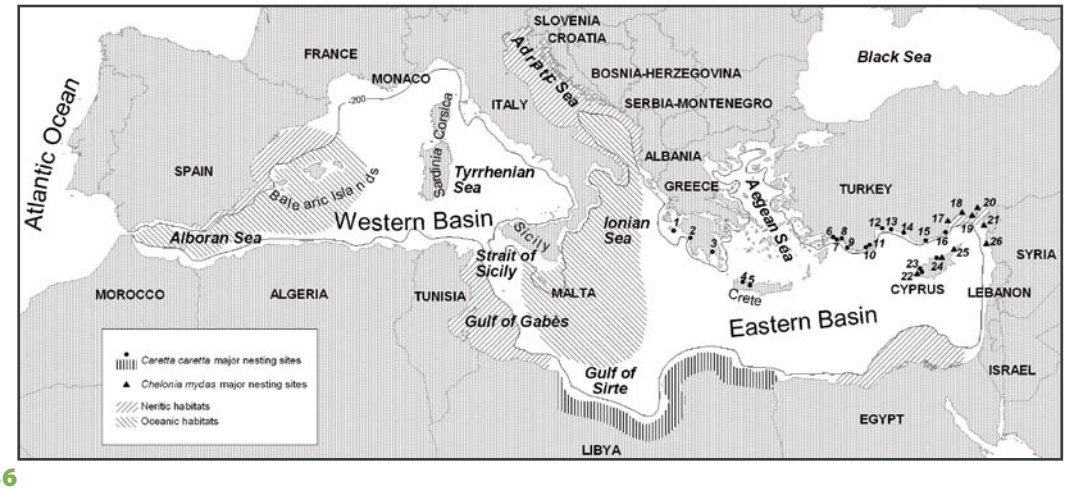
Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Mediterranean (MED)
Published sources	Margaritoulis, D., Argano, R., Baran, I., Bentivegna, F., Bradai, M. N., Caminas, J. A., Casale, P., De Metrio, G., Demetropoulos, A., Gerosa, G., Godley, B., Houghton, J., Laurent, L., Lazar, B. (2003): **Loggerhead turtles in the Mediterranean Sea: present knowledge and conservation perspectives.** In: A. B. Bolten and B. Witherington (Eds.) Loggerhead Sea Turtles. Smithsonian Institution Press. 175–198. Canbolat, A. F. (2004): **A review of sea turtle nesting activity along the Mediterranean coast of Turkey.** Biol. Conserv. 116: 81–91. Gerosa, G. and Casale, P. (1999): **Interaction of marine turtles with fisheries in the Mediterranean.** UNEP/MAP, RAC/SPA, Tunis, Tunisia. 59 pp. Broderick, A. C., Glen, F., Godley, B. J., Hays, G. C., (2002): **Estimating the number of green and loggerhead turtles nesting annually in the Mediterranean.** Oryx; 2002, v. 36, no. 3, p. 227–235.
Range	ALL
Surface area	
Date	
Quality of data	2
Trend	Unknown
Trend-Period	
Reasons for reported trend	
Population	
Distribution map	(see box)
Population size estimation	5,600 nests/year 2,300–2,800 females nesting per year
Date of estimation	1999–2000
Method used	3 and 2
Quality of data	2
Trend	Unknown
Trend-Period	
Reasons for reported trend	
Justification of % thresholds for trends	
Main pressures	**210** professional fishing **400** urbanized areas, human habitation **690** other leisure and tourism impacts

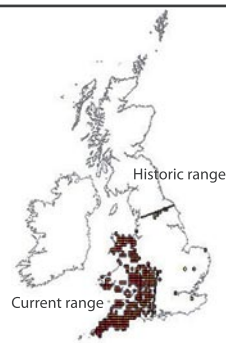
Threats	**210** professional fishing
Habitat for the species	
Area estimation	
Date of estimation	
Quality of data	
Trend	
Trend-Period	
Reasons for reported trend	
Future prospects	3

Complementary information	
Favourable reference range	
Favourable reference population	
Suitable Habitat for the species	
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	U1
Population	XX
Habitat for the species	U2
Future prospects	U2
Overall assessment of CS	U2

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range		Any other combination		
Population				XX
Habitat for the species			Area of habitat is clearly not sufficiently large to ensure the long-term survival of the species or habitat quality is bad, clearly not allowing long-term survival of the species	
Future prospects (as regards to population, range and habitat availability)			Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	
Overall assessment of CS			Bad	



Data	Comments/Guidelines for reporting data
National Level	
Species Code	1303
Member State	UK
Biogeographic regions concerned within the MS	ATL
Range	45,510 km² (estimated from areas of Wales 20,779 km², West Midlands 902 km² & Southwest England 23,829 km²).
Maps	**1. NBN map lesser horseshoe records** Red 1995–2005 Orange 1900–1994 Yellow 1800–1899 With estimated current natural range line and historic range lines entered.  **2. Regions** Wales 20,779 km² West Mids 902 km² Southwest 23,829 km² Total estimated current natural range 45,510 km² Total estimated historic natural range 114,720 km² 

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ATL
Published sources	Richardson's bat atlas (2000), Schofield (unpublished PhD thesis, 1996)
Range	
Surface area	45,510 km²
Date	Estimated from records between 1900 and 2005.
Quality of data	3 (Schofield thinks that we have ~80% of records, pers. comm.)
Trend	Massive decline in range during last century. The last records in the north, east and southeast of England date from around 1960.
Trend-Period	
Reasons for reported trend	3 = Change in land use, loss of roosts
Population	
Distribution map	Richardson's bat atlas, Schofield's thesis currently shows 294 occupied 10 km squares = 29400 km²
Population size estimation	18000 (9000 England, 9000 Wales)
Date of estimation	2002 (pers. comm. from Henry Schofield, considered an underestimate)
Method used	2 (or 1?)
Quality of data	2 (or 1?)
Trend	+ 44*/45*% (NBMP hibernation survey/colony count
Trend-Period	1997–2004/1998–2004 respectively [*significant]
Reasons for reported trend	1 (better survey, more records) & 3 (BAP actions/protection) or increased overwintering success due to milder winters
Justification of % thresholds for trends	Significant upward trend for both surveys. But not same across England and Wales.
Main pressures	**101**, **110**, **141**, **150**, **151**, **160**, **332**, **390** (inappropriate blocking of disused underground sites), **400** (development and renovation leading to roost loss), **500** (habitat fragmentation by transport networks), **624** (speliology)
Threats	**101**, **110**, **141**, **150**, **151**, **160**, **332**, **390** (inappropriate blocking of disused underground sites), **400** (development and renovation leading to roost loss), **500** (habitat fragmentation by transport networks), **624** (speliology)
Habitat for the species	

Area estimation
Suitable habitat map from Henry Schofield's thesis (1996) showing lesser horseshoe roosts (yellow) over distribution of suitable habitat (deciduous woodland without urban or dense scrub). Yorkshire & south east England are no longer represented as suitable probably due to changing farming practices. The Peak District and Cotswolds still have suitable habitat but perhaps roost availability is limiting or the populations became too isolated.

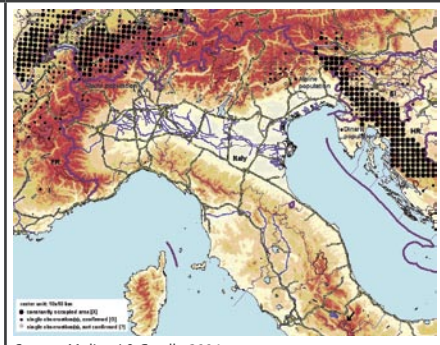
Date of estimation	1996
Quality of data	2
Trend	
Trend-Period	
Reasons for reported trend	**3 – Agricultural change & building conversion**
Future prospects	1? Assuming continued conservation effort

Complementary information	
Favourable reference range	114,720 km² (historic natural range of the species)
Favourable reference population	From estimates of density of individuals per 10 km² the reference population would be 573,600 bats if all squares within the FRR had optimum habitat (based on 500 individuals per 10 km²). Within current natural range there should be 147,000 bats but this is well above the current population estimate. Knowledge is not sufficient to know the real value though. This is greater than 25% below the reference population.
Suitable Habitat for the species	To colonise the historic range would require substantial agricultural reconversion to woodland & corridor creation & provision of roosts (maternity & hibernation) across a large area. A large proportion of this area will be unachievable due to level of urbanisation within the reference range. Some habitat enhancement may be possible within the current natural range however it is thought to be limited by the availability of underground roosts. Further calculations were not possible due to lack of GIS.
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Unknown (XX)
Future prospects	Unknown (XX)
Overall assessment of CS	Bad (U2)

Data	Comments/Guidelines for reporting data
National Level	
Species Code	Grey Wolf (*Canis lupus*)
Member State	France
Biogeographic regions concerned within the MS	Alpine
Range	
Map	 **Data from 1992–2005** The potential range of the wolf almost covers the French territory.

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Alpine
Published sources	All figures in this document are from ONCFS.
Range	
Surface area	
Date	2005
Quality of data	**3 = good** 2 = moderate 1 = poor
Trend	+ 20% per year during the recent years (estimated via the number of "communes/territories" where the wolf is present)
Trend-Period	2003–2005
Reasons for reported trend	0 = unknown 1 = improved knowledge/more accurate data 2 = climate change 3 = direct human influence (restoration, deterioration, destruction) 4 = indirect anthropo(zoo)genic influence **5 = natural processes, Natural expansion of the Italian population in France** 6 = other (specify)
Population	
Distribution map	2004–2005 
Population size estimation	80–100 individuals in the french Alps (including 39–47 "settled wolves" in 16 areas of permanent presence)
Date of estimation	Winter 2004–2005
Method used	3 = from complete inventory **2 = extrapolation from surveys of part of the population, sampling** 1 = based on expert opinion
Quality of data	**3 = good** 2 = moderate 1 = poor
Trend	**+ 15% per year (in 2003–2005)**
Trend-Period	1990–2005 The Italian population of wolves naturally "recolonised" the French Alps by 1990 and since then the French population has been growing and expanding. The species is now present in a large part of the French Alps and has also been located in other regions further north and to the west. Some individuals (proven to be of Italian origin) have even been recorded in the Eastern part of the Pyrenees.
Reasons for reported trend	0 = unknown 1 = improved knowledge/more accurate 2 = climate change 3 = direct human influence (restoration, deterioration, destruction) 4 = indirect anthropo(zoo)genic influence **5 = natural processes, Natural expansion of the Italian population in France** 6 = other (specify)
Justification of % thresholds for trends	
Main pressures	Illegal shootings, poisoning and possibly trapping are the main pressures. The wolf was previously exterminated from France, with the last one thought to be killed in 1937. Likewise, at present, killing is thought to be the main threat to this species but the population is still growing. In 2004, 2 wolves have been "legally" killed (whereas there was administrative authorization for 4 individuals). In 2005 one wolf was killed out of 6 authorisations.
Threats	Habitat availability does not appear to be an important factor for the wolf, which has a wide ecological spectrum. Illegal killings seem to be the main factor limiting the population increase (see above), as well as the accidental killing of some individuals by cars or trains.
Habitat for the species	
Area estimation	The wolf seems likely to occupy most of the French territory, as was the case in the past before its extermination (see above). The main limiting factors will be acceptance of the animal by people and the availability of prey.
Date of estimation	2005
Quality of data	**3 = good** 2 = moderate 1 = poor
Trend	**0 = stable** + = net increase - = net loss
Trend-Period	1990–2005
Reasons for reported trend	**6 = other (see above)**
Future prospects	**1 = good prospects** 2 = poor prospects 3 = bad prospects

Complementary information	
Favourable reference range	Possibly almost all the French territory with diverse densities depending on the food available.
Favourable reference population	Very difficult to define. In the Alps ONCFS considers that with 4 reproducing packs the risk of extinction is below 3% [in X (= ?) years].
Suitable Habitat for the species	
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	**Inadequate (U1)**
Population	**Inadequate (U1)**
Habitat for the species	**Favourable (FV)**
Future prospects	**Favourable (FV)**
Overall assessment of CS	**Inadequate (U1)**

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1361
Member State	IT
Biogeographic regions concerned within the MS	ALP
Range	Roughly 1,200 km² (grid cells constantly occupied)
Map	 Source: Molinari & Catello 2004

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Molinari, P. & Catello, M. (2004): Italy. In: **Status and conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001**. Ed. by M. von Arx, Ch. Breitenmoser-Würsten, F. Zimmermann and U. Breitenmoser. KORA Bericht No. 19: 120–125. = main source used here if not mentioned differently **www.kora.unibe.ch/en/proj/elois/online/index.html** Molinari, P., de Martin, O., Rodolfi, M., Colloredo, R., Vuerich, C., Catello, M., Ramires, L., Bionda, R. & Rotelli, L. (2005): **Status of the lynx in the Italian Alps: update 2000–2003.** Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 21–22. SCALP: **Status and Conservation of the Alpine Lynx Population**: **www.kora.unibe.ch/main.htm?en/proj/scalp/index.html** ***Former status reports:*** Molinari, P., Rotelli, L., Catello, M. & Bassano, B. (2001): **Present status and distribution of the Eurasian lynx in the Italian Alps.** Hystrix 12: 3–9. Molinari, P. (1998): **The lynx in the Italian south-eastern Alps.** Hystrix 10: 55–64. Ragni, B., Possenti, M., Mayr, S., Carrer, M., Zangrando, E., Catello, M., Dorigatti, E., Di Lorenzo, M., Mosca, A., Fattor, M. & Lombardi, G. (1998): **The lynx in the Italian Alps.** Hystrix 10: 31–38.
Range	See map above
Surface area	Roughly 1,200 km² (grid cells constantly occupied)
Date	1996–2001
Quality of data	2
Trend	0 (in Western sub-population), + (in Eastern sub-population)
Trend-Period	1996–2001
Reasons for reported trend	0 = unknown
Population	
Distribution map	See map at beginning (1996–2001). Additional map:  Distribution of signs of lynx presence of Q1 (hard facts, black triangles) and Q2 (confirmed records, grey dots) in the Italian Alps from 2000–2003. Source: Molinari *et al.*, 2005.

Population size estimation	~ 10 in Eastern sub-population, ~ 3 in Western sub-population
Date of estimation	2001
Method used	2
Quality of data	2
Trend	+ in Eastern sub-population, 0 = stable in Western sub-population
Trend-Period	1996–2001
Reasons for reported trend	0 = unknown
Justification of % thresholds for trends	
Main pressures	**400** Urbanized areas, human habitation **500** Communication networks **502** Routes, autoroutes **240** Taking/Removal of fauna **243** Trapping, poisoning, poaching **990** Other natural processes (due to small population size)
Threats	**400** Urbanized areas, human habitation **500** Communication networks **502** Routes, autoroutes **240** Taking/Removal of fauna **243** Trapping, poisoning, poaching **990** Other natural processes (due to small population size) **100** Cultivation (?) **160** General Forestry management (?) **164** Forestry clearance (?) **230** Hunting (?)
Habitat for the species	
Area estimation	Suggestion for making this estimation is to take the forested areas with a buffer zone.
Date of estimation	
Quality of data	
Trend	+ = net increase
Trend-Period	Forest since World War I; Ungulates (which is part of the habitat and vital for large carnivores) since World War II.
Reasons for reported trend	4 = indirect anthropo(zoo)genic influence 5 = natural processes
Future prospects	2 = poor prospects

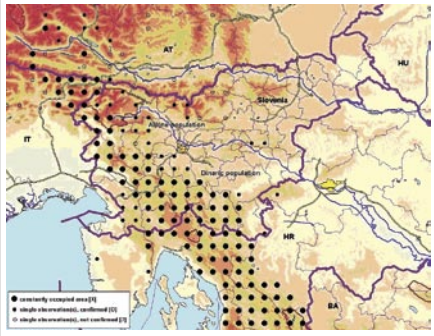
Complementary information	
Favourable reference range	24,890 km²
Favourable reference population	= 1 individual per 100 km² = 248 adults
Suitable Habitat for the species	24,890 km² (area within boundary of the Alpine Convention). Calculated from: Zimmermann, F. 2004: **Conservation of the Eurasian Lynx** (*Lynx lynx*) **in a fragmented landscape – habitat models, dispersal and potential distribution**. Thèse de doctorat des sciences de la vie, Université de Lausanne.
Other relevant information	We would define the "favourable conservation status" as (1) all potential habitats in the Alps are occupied by the lynx, and (2) the local density of lynx is low enough that conflicts with humans and their land-use are minimised (= average abundance of 1 ind/100 km²).
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Favourable (FV)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

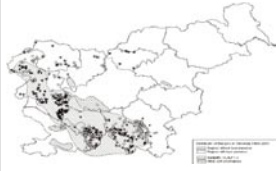
Note: Certain information (quality of data, future prospects, complementary information (fcs), and assessment) is based on personal judgement and may not reflect the opinion of authors of the published sources.

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range			More than 10% below favourable reference range (1,200/ 24,890 km²)	
Population			More than 25% below favourable reference population (13/248)	
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long term survival of the species			
Future prospects (as regards to population, range and habitat availability)		Any other combination		
Overall assessment of CS			Bad	

1361 *Lynx lynx* – **Slovenia**

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1361
Member State	SI
Biogeographic regions concerned within the MS	ALP, CON
Range	Roughly 4,700 km² (grid cells constantly occupied)
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Stanisa, C. (2004): **Slovenia**. In: **Status and conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001**. Ed. by M. von Arx, Ch. Breitenmoser-Würsten, F. Zimmermann and U. Breitenmoser. KORA Bericht No. 19: 184–190. **= main source used here if not mentioned differently** **www.kora.unibe.ch/en/proj/elois/online/index.html** Stanisa, C. & Koren, I. (2005): **Status of the lynx in Slovenia: update 2000–2001.** Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 39–40. SCALP: Status and Conservation of the Alpine Lynx Population: **www.kora.unibe.ch/main.htm?en/proj/scalp/index.html** *Former status reports:* Stanisa, C., Koren, I. & Adamic, M. (2001): **Situation and distribution of the lynx in Slovenia from 1995–1999.** Hystrix 12: 43–51. Cop, J. & Frkovic, A. (1998): **The re-introduction of the lynx in Slovenia and its present status in Slovenia and Croatia.** Hystrix 10: 65–76.
Range	See map above
Surface area	Roughly 1,900 km² (grid cells constantly occupied)
Date	1996–2001
Quality of data	2
Trend	0
Trend-Period	1996–2001
Reasons for reported trend	no change
Population	
Distribution map	See map at beginning (1996–2001). Additional map:  Distribution of lynx signs of presence of quality 1, 2 and 3 in Slovenia (stars = data from 1995–1999, dots = data from 2000–2001). Source: Stanisa & Koren 2005.

Population size estimation	~ 10
Date of estimation	1996–2001
Method used	3
Quality of data	2
Trend	- (magnitude unknown)
Trend-Period	1996–2001
Reasons for reported trend	[3 = direct human influence?]
Justification of % thresholds for trends	-
Main pressures	**960** Interspecific faunal relations **990** Other natural processes
Threats	**230** Hunting (?) **960** Interspecific faunal relations(?) **990** Other natural processes (?)
Habitat for the species	
Area estimation	Suggestion for making this estimation is to take the forested areas with a buffer zone.
Date of estimation	
Quality of data	
Trend	+ = net increase
Trend-Period	Forest since after World War I; Ungulates (which is part of the habitat and vital for large carnivores) since World War II.
Reasons for reported trend	4 = indirect anthropo(zoo)genic influence 5 = natural processes
Future prospects	2 = poor prospects

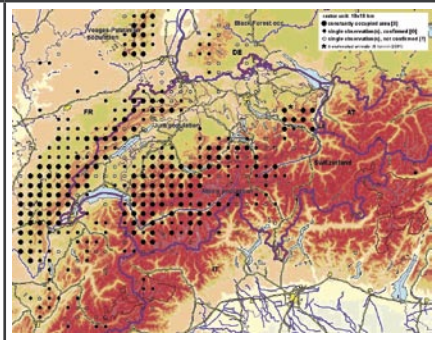
Complementary information	
Favourable reference range	3,682 km²
Favourable reference population	= 1 individual per 100 km² = 36 adults
Suitable Habitat for the species	3,682 km² (area within boundary of the Alpine Convention). Calculated from: Zimmermann, F. (2004): **Conservation of the Eurasian Lynx** (*Lynx lynx*) **in a fragmented landscape – habitat models, dispersal and potential distribution**. Thèse de doctorat des sciences de la vie, Université de Lausanne.
Other relevant information	We would define the "favourable conservation status" as (1) all potential habitats in the Alps are occupied by the lynx, and (2) the local density of lynx is low enough that conflicts with humans and their land-use are minimised (= average abundance of 1 ind/100 km²).
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Favourable (FV)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

Note: Certain information (quality of data, future prospects, complementary information (fcs), and assessment) is based on personal judgement and may not reflect the opinion of authors of the published sources!

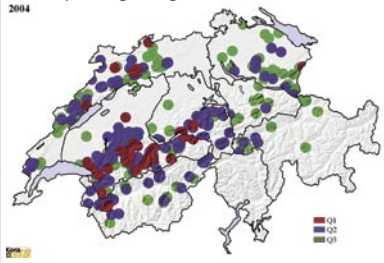
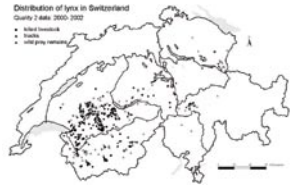
General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Un-known
Range			More than 10% below favourable reference range (1,900/3685 km²)	
Population			Decline (magnitude unknown). More than 25% below favourable reference population (10/36)	
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long term survival of the species			
Future prospects (as regards to population, range and habitat availability)		Any other combination		
Overall assessment of CS			Bad	

1361 *Lynx lynx* –Switzerland

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1361
Member State	CH
Biogeographic regions concerned within the MS	ALP, CON
Range	roughly 9,800 km² (grid cells constantly occupied)
Map	 Source: Breitenmoser, U. & Breitenmoser, Ch. 2004.

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Breitenmoser, U. & Breitenmoser, Ch. (2004): **Switzerland.** In: **Status and conservation of the Eurasian lynx** *(Lynx lynx)* **in Europe in 2001.** Ed. by M. von Arx, Ch. Breitenmoser-Würsten, F. Zimmermann and U. Breitenmoser. KORA Bericht No. 19: 198–205. **= main source used here if not mentioned differently** **www.kora.unibe.ch/en/proj/elois/online/index.html** Zimmermann, F., Molinari-Jobin, A., Weber, J.-M., Capt, S., Ryser, A., Angst, Ch., Breitenmoser-Würsten, Ch. & Breitenmoser, U. (2005): **Monitoring der Raubtiere in der Schweiz 2004.** KORA Bericht 29: 1–60. **www.kora.unibe.ch/pdf/reports/rep29.pdf** Capt, S. (2005): **Present status and distribution of the lynx in the Swiss Alps.** Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 27–29. SCALP: Status and Conservation of the Alpine Lynx Population: **www.kora.unibe.ch/main.htm?en/proj/scalp/index.html** ***Former status reports:*** Molinari-Jobin, A., Zimmermann, F., Breitenmoser-Würsten, Ch., Capt, S. & Breitenmoser, U. 2001: **Present status and distribution of the lynx in the Swiss Alps.** Hystrix 12: 17–27. Breitenmoser, U., Breitenmoser-Würsten, Ch. & Capt, S. (1998): **Re-introduction and present status of the lynx in Switzerland.** Hystrix 10: 17–30.
Range	See map above
Surface area	Roughly ~ 7,900 km² (grid cells constantly occupied)
Date	1996–2001
Quality of data	3
Trend	0 (in core population), + (re-introduction in Eastern CH)
Trend-Period	1996–2001
Reasons for reported trend	3 = direct human influence (restoration)

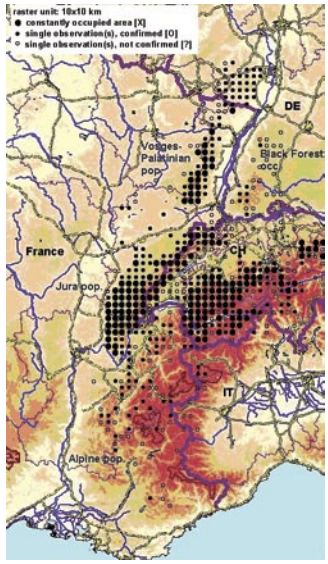
Population	
Distribution map Distribution of lynx signs of presence of quality 1, 2 and 3 in Slovenia (stars = data from 1995–1999, dots = data from 2000–2001). Source: Stanisa & Koren 2005.	See map at beginning (1996–2001). Additional map:  Synthesis of the chance observations in the criteria 1–3 in Switzerland in 2004. Q1 = "hard facts" like dead lynx, orphaned young lynx or lynx captured, clear photos of lynx, and samples (e.g. scats) attributed to lynx by means of genetic analysis; Q2 = Observations controlled and confirmed by a specialist (game warden, wildlife ranger, biologist, trained member of the network) such as killed livestock or wild prey, lynx tracks, scats, recorded lynx calls; Q3 = Unconfirmed category 2 observations (kills, tracks, excrements, calls) and all unverifiable observations such as direct observations. For each observation a buffer of 5 km is made to indicate the area. Isolated areas with only Q3 data (green) have to be interpreted as temporary lynx occurrence (if there is not an observation error). If there's a real colonization of an area – also by single individuals – Q3 data have to be confirmed by Q2 (blue) and Q1 (red) data. The Q2 indications form the foundation for the monitoring. Source: Zimmermann *et al.*, 2005.  Distribution of the lynx (only category 2 data shown here) in Switzerland and in the 8 management compartments in 2000–2002. Source: Capt 2005.
Population size estimation	~ 70
Date of estimation	1999
Method used	Combination of 3 and 2 (yearly inquiry of gamekeepers, sightings & signs, known losses of lynx, livestock numbers compensated as lynx kills, intensive and extensive sessions of camera trapping, and radio-telemetry)
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1996–2001
Reasons for reported trend	No change. Reason for no change probably 3
Justification of % thresholds for trends	
Main pressures	**240** Taking/Removal of fauna **243** trapping, poisoning, poaching **500** Communication networks **502** routes, autoroutes **940** Natural catastrophes **942** avalanche **960** Interspecific faunal relations **963** introduction of disease **990** Other natural processes (due to small population size)
Threats	**240** Taking/Removal of fauna **243** trapping, poisoning, poaching **500** Communication networks **502** routes, autoroutes **940** Natural catastrophes **942** avalanche **960** Interspecific faunal relations **963** introduction of disease **990** Other natural processes (due to small population size)

Habitat for the species	
Area estimation	Suggestion for making this estimation is to take the forested areas with a buffer zone.
Date of estimation	
Quality of data	
Trend	+ = net increase
Trend-Period	Forest since World War I; Ungulates (which is part of the habitat and vital for large carnivores) since World War II.
Reasons for reported trend	4 = indirect anthropo(zoo)genic influence 5 = natural processes
Future prospects	2 = poor prospects

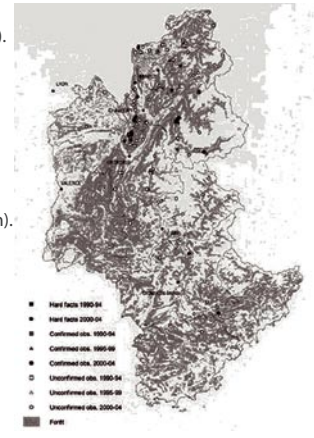
Complementary information	
Favourable reference range	12,416 km²
Favourable reference population	= 1 individual per 100 km² = 124 adults
Suitable Habitat for the species	12,416 km² (area within boundary of the Alpine Convention). Calculated from: Zimmermann, F. 2004: **Conservation of the Eurasian Lynx** (*Lynx lynx*) **in a fragmented landscape – habitat models, dispersal and potential distribution.** Thèse de doctorat des sciences de la vie, Université de Lausanne.
Other relevant information	We would define the "favourable conservation status" as (1) all potential habitats in the Alps are occupied by the lynx, and (2) the local density of lynx is low enough that conflicts with humans and their land-use are minimised (= average abundance of 1 ind/100 km²).
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Favourable (FV)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range			More than 10% below favourable reference range (7,900/12,416 km²)	
Population			More than 25% below favourable reference population (70/124)	
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long-term survival of the species			
Future prospects (as regards to population, range and habitat availability)		Any other combination		
Overall assessment of CS			Bad	

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1361
Member State	FR
Biogeographic regions concerned within the MS	ALP, CON
Range	roughly 7,300 km² (grid cells constantly occupied)
Map	 Source: Vandel *et al.*, 2004.

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Vandel, J.-M., Marboutin, E., Stahl, P. & Migot, P. (2004): **France**. In: **Status and conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001.** Ed. by M. von Arx, Ch. Breitenmoser-Würsten, F. Zimmermann and U. Breitenmoser. KORA Bericht No. 19: 86–93. **= main source used here if not mentioned differently** **www.kora.unibe.ch/en/proj/elois/online/index.html** Vandel, J.-M., Stahl, P., Migot, P. & Marboutin, E. (2005): **Lynx distribution in the French Alps: 2000–2002 update.** Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 23–25. SCALP: Status and Conservation of the Alpine Lynx Population: **www.kora.unibe.ch/main.htm?en/proj/scalp/index.html** *Former status reports:* Stahl, P. & Vandel, J.-M. (2001): **Lynx distribution in French Alps (1995–1999).** Hystrix 12: 11–15. Stahl, P. & Vandel J.-M. (1998): **Distribution of the lynx in the French Alps.** Hystrix 10: 3–15.
Range	See map above
Surface area	no permanently established area
Date	1996–2001
Quality of data	2
Trend	+
Trend-Period	1996–2001
Reasons for reported trend	From the data available it is not possible to quantify the population.

Population	
Distribution map See map at beginning (1996–2001). Additional map: Distribution of lynx signs as collected from the French network since 1990. Each data is attributed a 9×9 km square of lynx presence which obviously yields an underestimated area occupied by the species (conservative approach). Source: Vandel *et al.*, 2005.	
Population size estimation	a few single individuals
Date of estimation	1996–2001
Method used	2
Quality of data	1
Trend	unknown
Trend-Period	1996–2001
Reasons for reported trend	From the data available it is not possible to quantify the population.
Justification of % thresholds for trends	
Main pressures	From the data available it is not possible to know the pressures affecting the lynx population in the French Alps.
Threats	From the data available it is not possible to know the pressures affecting the lynx population in the French Alps.
Habitat for the species	
Area estimation	Suggestion for making this estimation is to take the forested areas with a buffer zone.
Date of estimation	
Quality of data	
Trend	+ = net increase
Trend-Period	Forest since World War I; Ungulates (which is part of the habitat and vital for large carnivores) since World War II.
Reasons for reported trend	4 = indirect anthropo(zoo)genic influence 5 = natural processes
Future prospects	

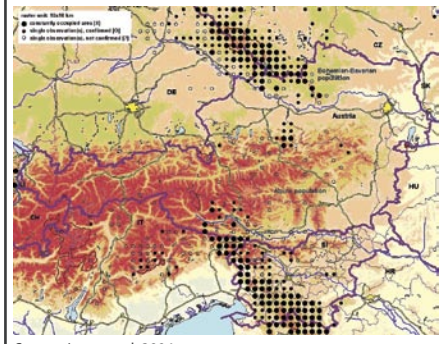
Complementary information	
Favourable reference range	17,628 km²
Favourable reference population	= 1 individual per 100 km² = 176 adults
Suitable Habitat for the species	17,628 km² (area within boundary of the Alpine Convention). Calculated from: Zimmermann, F. 2004: **Conservation of the Eurasian Lynx (*Lynx lynx*) in a fragmented landscape – habitat models, dispersal and potential distribution**. Thèse de doctorat des sciences de la vie, Université de Lausanne.
Other relevant information	We would define the "favourable conservation status" as (1) all potential habitats in the Alps are occupied by the lynx, and (2) the local density of lynx is low enough that conflicts with humans and their land-use are minimised (= average abundance of 1 ind/100 km²).
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Favourable (FV)
Future prospects	Unknown (XX)
Overall assessment of CS	Bad (U2)

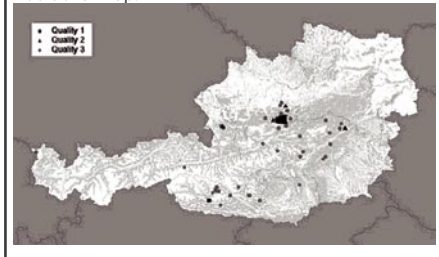
Note: Certain information (quality of data, future prospects, complementary information (fcs) and assessment) is based on personal judgement and may not reflect the opinion of authors of the published sources.

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range			More than 10% below favourable reference range (0/28'865 km²)	
Population			However, definitely more than 25% below favourable reference population (=288)	No or insufficient reliable information available
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) and habitat quality is suitable for the long-term survival of the species			
Future prospects (as regards to population, range and habitat availability)				No or insufficient reliable information available.
Overall assessment of CS			Bad	

1361 *Lynx lynx* – Austria

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1361
Member State	AT
Biogeographic regions concerned within the MS	ALP, CON
Range	roughly 2,400 km² (grid cells constantly occupied)
Map	 Source: Laass et al. 2004.

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	Laass, J., Engleder, T., Huber, T., Fuxjäger, Ch. & Forstner, M. (2004): **Austria.** In: **Status and conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001.** Ed. by M. von Arx, Ch. Breitenmoser-Würsten, F. Zimmermann and U. Breitenmoser. KORA Bericht No. 19: 33–40. **= main source used here if not mentioned differently: www.kora.unibe.ch/en/proj/elois/online/index.html** Laass, J., Huber, T. & Fuxjäger, Ch. (2005): **Knowledge on the distribution of lynx in the Austrian Alps 2000–2002.** Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 31–33. SCALP: Status and Conservation of the Alpine Lynx Population: **www.kora.unibe.ch/main.htm?en/proj/scalp/index.html** *Former status reports:* Huber, T., Laass, J. & Engleder T. 2001: **Present knowledge on the distribution of the lynx in Austria.** Hystrix 12: 31–37. Huber T. & Kaczensky P. 1998: **The situation of the lynx in Austria.** Hystrix 10: 43–54.
Range	See map above
Surface area	roughly ~ 700 km² (grid cells constantly occupied)
Date	1996–2001
Quality of data	1
Trend	unknown
Trend-Period	1996–2001
Reasons for reported trend	(No nation-wide monitoring system established; data from certain states missing.)
Population	
Distribution map	See map at beginning (1996–2001). Additional map:  Distribution of reported records on the presence of lynx in the Austrian Alps (Quality 1–3) for the period 2000–2002. Source: Laass *et al.*, 2005.
Population size estimation	~ 20
Date of estimation	2001

Method used	1
Quality of data	1
Trend	Inconsistent, depending on region; partly unknown
Trend-Period	1996–2001
Reasons for reported trend	From the data available it is not possible quantify the population.
Justification of % thresholds for trends	
Main pressures	**240** Taking/Removal of fauna **243** Trapping, poisoning, poaching **400** Urbanized areas, human habitation **500** Communication networks **502** Routes, autoroutes **503** Railway lines, TGV **600** Sport and leisure structures **990** Other natural processes (due to small population size)
Threats	**240** Taking/Removal of fauna **243** Trapping, poisoning, poaching **400** Urbanized areas, human habitation **500** Communication networks **502** Routes, autoroutes **503** Railway lines, TGV **600** Sport and leisure structures **990** Other natural processes (due to small population size)
Habitat for the species	
Area estimation	Suggestion for making this estimation is to take the forested areas with a buffer zone.
Date of estimation	
Quality of data	
Trend	+ = net increase
Trend-Period	Forest since World War I; Ungulates (which is part of the habitat and vital for large carnivores) since World War II.
Reasons for reported trend	4 = indirect anthropo(zoo)genic influence 5 = natural processes
Future prospects	3 = bad prospects

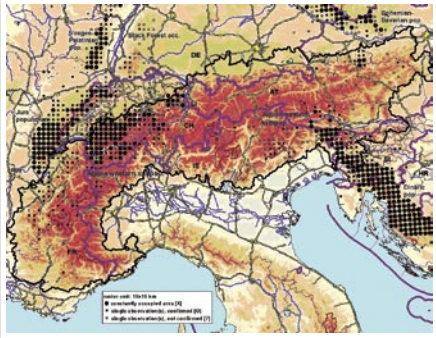
Complementary information	
Favourable reference range	28,865 km²
Favourable reference population	= 1 individual per 100 km² = 288 adults
Suitable Habitat for the species	28,865 km² (area within boundary of the Alpine Convention). Calculated from: Zimmermann, F. 2004: **Conservation of the Eurasian Lynx (*Lynx lynx*) in a fragmented landscape – habitat models, dispersal and potential distribution**. Thèse de doctorat des sciences de la vie, Université de Lausanne.
Other relevant information	We would define the "favourable conservation status" as (1) all potential habitats in the Alps are occupied by lynx, and (2) the local density of lynx is low enough that conflicts with humans and their land-use are minimised (= average abundance of 1 ind/100 km²).
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Favourable (FV)
Future prospects	Bad (U2)
Overall assessment of CS	Bad (U2)

Note: Certain information (quality of data, future prospects, complementary information (fcs), and assessment) is based on personal judgement and may not reflect the opinion of authors of the published sources!

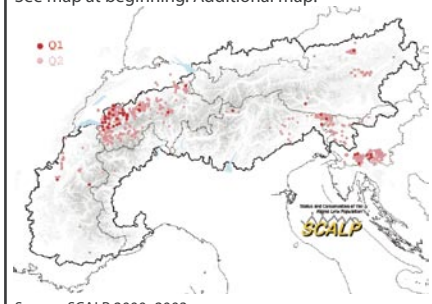
General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range			More than 10% below favourable reference range (700/28'865 km²)	
Population			More than 25% below favourable reference population (20/288)	
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long-term survival of the species			
Future prospects (as regards to population, range and habitat availability)			Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	
Overall assessment of CS			Bad	

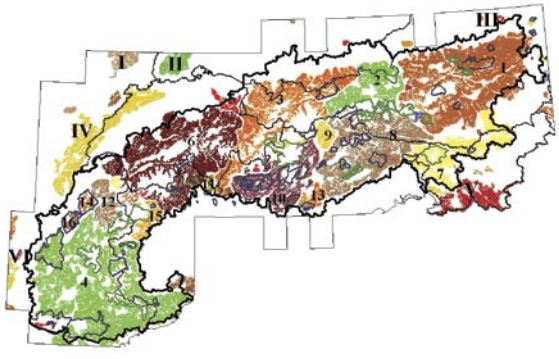
1361 *Lynx lynx* – Alpine population

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1361
Member State	FR+(CH)+IT+AT+SI
Biogeographic regions concerned within the MS	ALP
Range	roughly 11,700 km² (grid cells constantly occupied)
Map	 Source: von Arx *et al.*, 2004.

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ALP
Published sources	von Arx, M., Breitenmoser-Würsten, Ch., Zimmermann, F. & Breitenmoser, U. (eds.) (2004): **Alpine population.** In: **Status and conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001.** KORA Bericht No. 19: 258–265. **= main source used here if not mentioned differently: www.kora.unibe.ch/en/proj/elois/online/index.html** SCALP: Status and Conservation of the Alpine Lynx Population: **www.kora.unibe.ch/main.htm?en/proj/scalp/index.html** Molinari-Jobin, A., Molinari, P., Breitenmoser-Würsten, Ch., Woelfl, M., Stanisa, C., Fasel, M., Stahl, P., Vandel, J.-M., Rotelli, L., Kaczensky, P., Huber, T., Adamic, M., Koren, I. & Breitenmoser, U. (2003): **Pan-Alpine Conservation Strategy for the Lynx.** Nature and environment No. 130, Council of Europe Publishing, 20 pp.: **www.coe.int/t/e/Cultural_Cooperation/Environment/Nature_and_biological_diversity/Publications/SN130-E.pdf?L=E** Molinari-Jobin, A. (2005): **Monitoring the Alpine lynx population.** Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 17–19. Breitenmoser, U. (2005): **The Situation of the Alpine Lynx Population** – Conclusions of the Conference. Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 83–90. Breitenmoser, U., Breitenmoser-Würsten, Ch., Okarma, H., Kaphegyi, T., Kaphegyi-Wallmann, U. & Müller, U. (2000): **Action Plan for the Conservation of the Eurasian Lynx (*Lynx lynx*) in Europe.** Nature and environment No. 112, Council of Europe Publishing, Strasbourg: 1–70. **www.coe.int/t/e/Cultural%5FCo%2Doperation/Environment/Nature%5Fand%5Fbiological%5Fdiversity/Publications/SN112-E.pdf**
Range	See map above
Surface area	roughly ~ 11,700 km² (grid cells constantly occupied) Two probably more or less separated sub-populations can be identified.
Date	1996–2001
Quality of data	
Trend	partly +
Trend-Period	1996–2001
Reasons for reported trend	0 = unknown, partly 3 (CH), partly probably 5 and 1

Population	
Distribution map	See map at beginning. Additional map:  Source: SCALP 2000–2003
Population size estimation	~ 120 (however: two probably more or less separated sub-populations can be identified)
Date of estimation	2001
Method used	Differs from country to country. However, the interpretation of the data is according to SCALP standards (classification in 3 categories of verification) all over the Alps (Molinari-Jobin *et al.*, 2003, Molinari-Jobin 2005)
Quality of data	2–3
Trend	0 = stable
Trend-Period	1996–2001
Reasons for reported trend	It is assumed that most probably 3 and 4 hinder an increase & further expansion, partly also 5 (limited dispersal capacity of the species)
Justification of % thresholds for trends	
Main pressures	**240** Taking/Removal of fauna **243** trapping, poisoning, poaching **500** Communication networks **502** routes, autoroutes **400** Urbanized areas, human habitation **990** Other natural processes (due to small population size) **940** Natural catastrophes (less) **960** Interspecific faunal relations (less)
Threats	**500** Communication networks **502** routes, autoroutes **240** Taking/Removal of fauna **243** trapping, poisoning, poaching **960** Interspecific faunal relations **963** introduction of disease **990** Other natural processes (due to small population size) **400** Urbanized areas, human habitation (less)
Habitat for the species	
Area estimation	Suggestion for making this estimation is to take the forested areas with a buffer zone.
Date of estimation	
Quality of data	
Trend	+ = net increase
Trend-Period	Forest since World War I; Ungulates (which is part of the habitat and vital for large carnivores) since World War II.
Reasons for reported trend	4 = indirect anthropo(zoo)genic influence 5 = natural processes
Future prospects	2 = poor prospects

Complementary information	
Favourable reference range	90,384 km²
Favourable reference population	= 1 individual per 100 km² = 903 adults
Suitable Habitat for the species	90,384 km² (area within boundary of the Alpine Convention). Calculated from: Zimmermann, F. 2004: **Conservation of the Eurasian Lynx (*Lynx lynx*) in a fragmented landscape – habitat models, dispersal and potential distribution.** Thèse de doctorat des sciences de la vie, Université de Lausanne.
Other relevant information	We would define the "favourable conservation status" as (1) all potential habitats in the Alps are occupied by the lynx, and (2) the local density of lynx is low enough that conflicts with humans and their land-use are minimised (= average abundance of 1 ind/100 km²).
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Favourable (FV)
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)



Delimination of the Alpine Convention and borders of the national parks, nature reserve and natural or regional parks © Réseau Alpin des Espaces Protégés.

Suitable lynx habitat and fragmentation in the Alps and the adjoining regions (I = Vosges; II = Black Forest; III = Bohemian-Bavarian Mountains; IV = Jura Mountains; V = Dinaric Mountains; VI = Massif Central). The different coloured areas represent distinct patches separated by barriers. Labelled (1–16) are all patches >380 km² located within the zone defined by the Alpine Convention (thick line). The dark green and blue thick lines delimit the protected areas. (Zimmermann 2004)

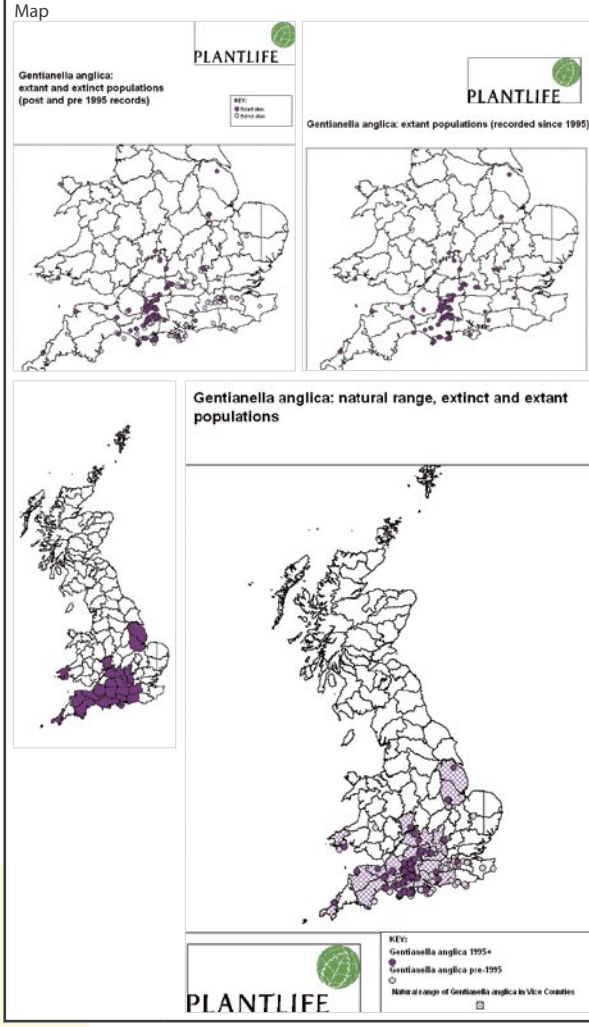
General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range			More than 10% below favourable reference range (11,700/ 90'384 km²)	
Population			More than 25% below favourable reference population (120/903)	
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long term survival of the species			
Future prospects (as regards to population, range and habitat availability)		Any other combination		
Overall assessment of CS			Bad	

1654 *Gentianella anglica*

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1654 *Gentianella anglica*
Member State	UK
Biogeographic regions concerned within the MS	ATL
Range	Roughly 11,700 km² (grid cells constantly occupied)

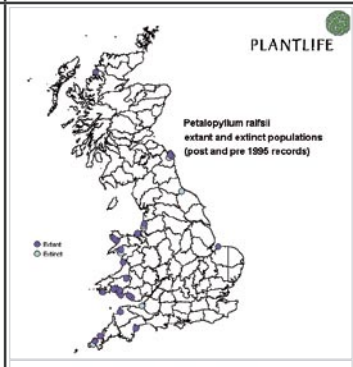
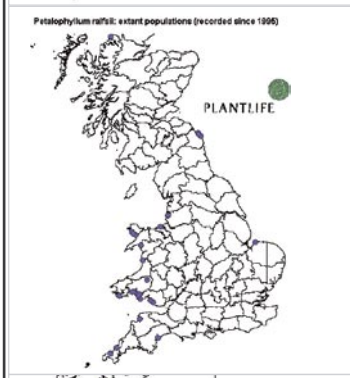
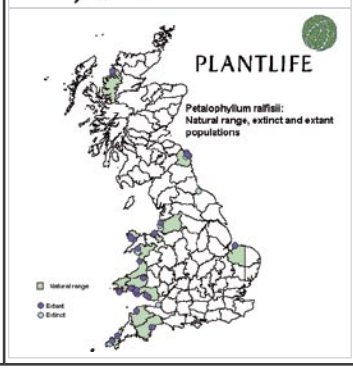
Map



Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ATL
Published sources	Plantlife International, unpublished data
Range	Not clear
Surface area	unknown
Date	1990–1999
Quality of data	3 = good
Trend	- (% unknown)
Trend-Period	1990–1999
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction) 6 = other (specify) – change of land use

Population	
Distribution map	
Population size estimation	Not known within these thresholds. Efforts have been concentrated on research of the species rather than surveys over the last years because of a taxonomic dispute over the validity of this species.
Date of estimation	Not determined
Method used	3 = from complete inventory . Survey from 1995
Quality of data	3 = good (but old)
Trend	Not known, stable to declining, extent of trend unclear.
Trend-Period	All historic data pre 1995 versus 1995 survey.
Reasons for reported trend	
Justification of % thresholds for trends	
Main pressures	
Threats	
Habitat for the species	
Area estimation	Unanswerable/extensive
Date of estimation	unanswerable
Quality of data	unanswerable
Trend	unanswerable
Trend-Period	unanswerable
Reasons for reported trend	unanswerable
Future prospects	1 = good prospects

Complementary information	
Favourable reference range	
Favourable reference population	
Suitable Habitat for the species	Not known
Other relevant information	There has been a taxonomic dispute over the validity of this species, however, it is likely that it will remain as a separate taxon. It is considered to be a "conservation dependent" species, in that its long-term survival is dependent on appropriate conservation management in the areas where it occurs.
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Population	Inadequate (U1)
Habitat for the species	Inadequate (U1)
Future prospects	Inadequate (U1)
Overall assessment of CS	Inadequate (U1)

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1395 *Petallophyllum ralfsii*
Member State	UK
Biogeographic regions concerned within the MS	Atlantic ATL
Range	UK coastline but with scattered distribution mainly focused on Wales and south-west and north-west England.
Maps	   

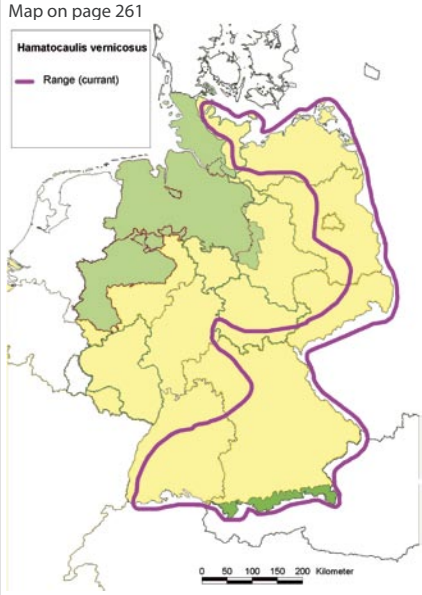
Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Atlantic (ATL)
Published sources	
Range	UK coastline but with scattered distribution mainly focused on Wales and south-west and north-west England. Single sites in Scotland and Northern Ireland

Surface area	Not possible to estimate
Date	
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1995–2005
Reasons for reported trend	No change in range
Population	
Distribution map	
Population size estimation	24 sites (localities)
Date of estimation	Date (or period) when population size was determined 2000–2004
Method used	2 = extrapolation from surveys of part of the population, sampling
Quality of data	3 = good
Trend	0 = stable
Trend-Period	2000–2004
Reasons for reported trend	No change in number of localities, but some sites, particularly in south west England, have seen an increase in size of population, possibly related to climate change. However, some sites in east England appear to have declined in terms of population size, which may be related to habitat deterioation.
Justification of % thresholds for trends	Unclear
Main pressures	**623** Motorized vehicles **810** Drainage **701** Water pollution **720** Trampling, overuse **790** Other pollution or human impacts/activities **971** Competition
Threats	**623** Motorized vehicles **810** Drainage **701** Water pollution **720** Trampling, overuse **790** Other pollution or human impacts/activities **971** Competition
Habitat for the species	
Area estimation	Not possible to estimate this
Date of estimation	See maps.
Quality of data	
Trend	
Trend-Period	
Reasons for reported trend	
Future prospects	1 = good prospects. This is not true for all sites, some are under severe threat.

Complementary information	
Favourable reference range	
Favourable reference population	
Suitable Habitat for the species	
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	FV
Population	Unknown (XX)
Habitat for the species	Unknown (XX)
Future prospects	Inadequate (U1
Overall assessment of CS	Inadequate (U1)

1393 *Hamatocaulis vernicosus (Drepanocladus vernicosus)*

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1393
Member State	Germany
Biogeographic regions concerned within the MS	Alpine (ALP), Continental (CON)
Range	In the north, east and south of Germany, lacking in the west
Map	also see Bundesamt für Naturschutz (2003): Map on page 261



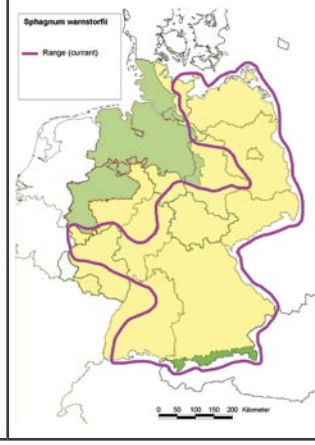
Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Bundesamt für Naturschutz (1996): **Rote Liste gefährdeter** Pflanzen Deutschlands; Bundesamt für Naturschutz (2003): **Ökologie und Verbreitung von Arten der FFH-Richtlinie in Deutschland, Band 1** R. Düll (1994): **Deutschlands Moose, Band 3** M. Nebel & G. Philippi (2001): **Die Moose Baden-Württembergs**
Range	In the north, east and south of Germany; lacking in the west and middle
Surface area	150,000 km²
Date	2003
Quality of data	3 = good
Trend	- 50% = net loss by 50% 150,000 km²
Trend-Period	1840–1994
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Population	
Distribution map	see Map. on page 261, Bundesamt für Naturschutz (2003)
Population size estimation	about 15–60 localities
Date of estimation	2003
Method used	1 = based on expert opinion
Quality of data	2 = moderate
Trend	- 14% = net loss by 14% (see side 261, Bundesamt für Naturschutz (2003))
Trend-Period	1980–1990
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	
Main pressures	**101** Modification of cultivation practices **120** Fertilisation **310** Peat extraction **790** Other pollution or human impacts **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**120** Fertilisation **600** Sport and leisure structures **790** Other pollution or human impacts **810** Drainage **890** Other human induced changes in hydraulic conditions
Habitat for the species	
Area estimation	< 0,1 km² (less than 0,1 km²)
Date of estimation	1996
Quality of data	-1 = poor
Trend	- = net loss
Trend-Period	1996–2005
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Future prospects	3 = bad prospects

Complementary information	
Favourable reference range	250,000 km²
Favourable reference population	about 200 localities
Suitable Habitat for the species	0.3 km²
Other relevant information	Red List category "2" in Germany
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2)
Population	Bad (U2)
Habitat for the species	Bad (U2)
Future prospects	Bad (U2)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Un-known
Range			More than 10% below favourable reference range	
Population			Large decline: Equivalent to a loss of more than 1% per year within 1980 to 1990 AND below 'favourable reference population'	
Habitat for the species			Habitat quality is bad, clearly not allowing long-term survival of the species	
Future prospects (as regards to population, range and habitat availability)			Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	
Overall assessment of CS			Bad	

• *Sphagnum warnstorfii*

Data	Comments/Guidelines for reporting data
National Level	
Species Code	
Member State	Germany
Biogeographic regions concerned within the MS	Alpine (ALP), Continental (CON)
Range	Germany, lacking in the northwest and middle
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Bundesamt für Naturschutz (1996): **Rote Liste gefährdeter** Pflanzen Deutschlands; Bundesamt für Naturschutz (2003): **Ökologie und Verbreitung von Arten der FFH-Richtlinie in Deutschland, Band 1** R. Düll (1994): **Deutschlands Moose, Band 1** Dierssen, B. & K. (1984): **Vegetation und Flora der Schwarzwaldmoore** M. Nebel & G. Philippi (2001): **Die Moose Baden-Württembergs**
Range	In the north, east and south of Germany, lacking in the west and middle
Surface area	200,000 km²
Date	1989
Quality of data	1 = poor
Trend	- 33% = net loss by 33% -100,000 km²
Trend-Period	1840–1989
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Population	
Distribution map	see distribution in Bundesamt für Naturschutz (1996)
Population size estimation	about 150–300 localities
Date of estimation	2005
Method used	1 = based on expert opinion
Quality of data	1 = poor
Trend	- 10% = net loss by 10%
Trend-Period	1986–1996
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	
Main pressures	**101** Modification of cultivation practices **120** Fertilisation **140** Grazing **163** Forestry replanting **790** Other pollution or human impacts **810** Drainage **890** Other human induced changes in hydraulic conditions

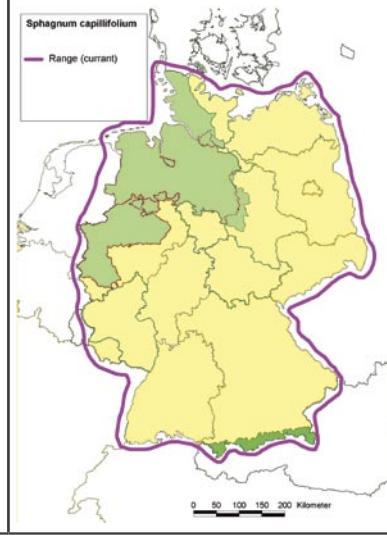
Threats	**120** Fertilisation **140** Grazing **163** Forestry replanting **600** Sport and leisure structures **790** Other pollution or human impacts **810** Drainage **890** Other human induced changes in hydraulic conditions
Habitat for the species	
Area estimation	< 1 km² (less than 1 km²)
Date of estimation	1996
Quality of data	1 = poor
Trend	- = net loss
Trend-Period	1996–2005
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Future prospects	2 = poor prospects

Complementary information	
Favourable reference range	200,000 km²
Favourable reference population	about 400 localities
Suitable Habitat for the species	2 km²
Other relevant information	Red List category "2" in Germany
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Population	Bad (U2)
Habitat for the species	Inadequate (U1)
Future prospects	Bad (U2)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range	About stable			
Population			More than 25% below favourable reference population	
Habitat for the species		Habitat quality is mostly bad; long-term survival of the species is not to be expected		
Future prospects (as regards to population, range and habitat availability)			Severe influence of pressures and threats to the species; poor prospects for its future, long-term viability at risk.	
Overall assessment of CS			Bad	

• *Sphagnum capillifolium*

Data	Comments/Guidelines for reporting data
National Level	
Species Code	
Member State	Germany
Biogeographic regions concerned within the MS	Alpine (ALP),Continental (CON)
Range	Germany
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental (CON)
Published sources	Bundesamt für Naturschutz (1996): **Rote Liste gefährdeter Pflanzen Deutschlands** Bundesamt für Naturschutz (2003): **Ökologie und Verbreitung von Arten der FFH-Richtlinie in Deutschland, Band 1** R. Düll (1994): **Deutschlands Moose, Band 1** Dierssen, B. & K. (1984): **Vegetation und Flora der Schwarzwaldmoore** M. Nebel & G. Philippi (2001): **Die Moose Baden-Württembergs**
Range	total continental region of Germany
Surface area	280,000 km²
Date	1989
Quality of data	2 = moderate
Trend	0 = stable
Trend-Period	1840–1989
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Population	
Distribution map	see distribution in Bundesamt für Naturschutz (1996)
Population size estimation	about 1,500–2,000 localities
Date of estimation	2005
Method used	1 = based on expert opinion
Quality of data	1 = poor
Trend	- 10% = net loss by 10%
Trend-Period	1945–1975
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	
Main pressures	**163** Forestry replanting **810** Drainage **890** Other human induced changes in hydraulic conditions
Threats	**163** Forestry replanting **790** Other pollution or human impacts **890** Other human induced changes in hydraulic conditions
Habitat for the species	

Area estimation	about 300–500 km²
Date of estimation	2005
Quality of data	2 = moderate
Trend	- = net loss
Trend-Period	1996 to 2005
Reasons for reported trend	2 = climate change 3 = direct human influence (restoration, deterioration, destruction)
Future prospects	1 = good prospects

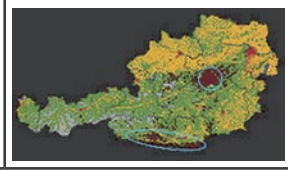
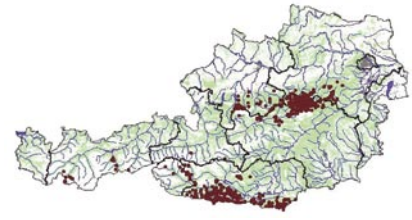
Complementary information	
Favourable reference range	280,000 km²
Favourable reference population	about 2,000 localities
Suitable Habitat for the species	500 km²
Other relevant information	Red List category "V" in Germany
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Population	Inadequate (U1)
Habitat for the species	Inadequate (U1)
Future prospects	Inadequate (U1)
Overall assessment of CS	Inadequate (U1)

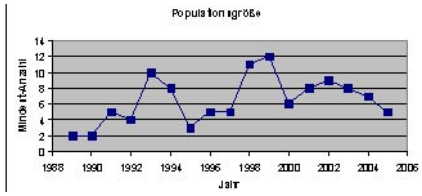
General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range	About stable			
Population		Population about 25% below 'favourable reference population'		
Habitat for the species		Area of habitat is decreasing AND habitat quality is often not suitable for the long term survival of the species		
Future prospects (as regards to population, range and habitat availability)		Main pressures and threats to the species will cause significant decline of population in the long term		
Overall assessment of CS		Inadequate		

1354 *Ursus arctos*

Data	Comments/Guidelines for reporting data
National Level	
Species Code	1354, *Ursus arctos*, Brown bear
Member State	AT
Biogeographic regions concerned within the MS	Alpine (ALP)
Range	Same as biogeographic level, see below
Map	Same as biogeographic level, see below

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Alpine (ALP)
Published sources	Rauer, G. (2005): **Braunbär**. In: Ellmauer, T. (Hrsg.), **Entwicklung von Kriterien, Indikatoren und Schwellenwerten zur Beurteilung des Erhaltungszustandes der Natura 2000-Schutzgüter. Band 2**: Arten des Anhangs II der Fauna-Flora-Habitat-Richtlinie. Im Auftrag der neun österreichischen Bundesländer, des Bundesministerium f. Land – und Forstwirtschaft, Umwelt und Wasserwirtschaft und der Umweltbundesamt GmbH, pp 344–356. Rauer et al, (2001): **Der Braunbär in Österreich II**, Umweltbundesamt, pp 102 Rauer et al, (2005): **Der Braunbär in Österreich III**, Umweltbundesamt, pp 64
Range	Although the bear population in Austria should be regarded as one, two main distribution areas can be distinguished. As there hasn't been any proof of exchange in the recent years between these two nuclei, the range has been calculated separately. See scheme below: 
Surface area	For Central Austria: 6,000 km² For Southern Austria: 4,000 km² Total about 10,000 km²
Date	2005
Quality of data	3 = good
Trend	Net increase of 300–400% if the baseline is 1989, when the reintroduction programme was started. Net loss of about 50% if the baseline is set in the years 1993/94. Net loss if the baseline is historic data (19th century: the whole Alpine range). Wide ranging movements by single individuals can account for high changes in the range, thus judging the status of the population according to the trend of the range is of very limited use.
Trend-Period	+ 1989–2005 - 1993–2005 - 1800–2005
Reasons for reported trend	3 direct human influence (reintroduction) 6 other : single young individuals often account for very high fluctuations, from one year to the next.
Population	
Distribution map	
Population size estimation	The number of individuals for Southern Austria (Carinthia and Eastern Tyrol) consisting of migrants from Slovenia and Northern Italy, is estimated to be approximately 5–8. In Central Austria (Nördliche Kalkalpen) the estimate ranges between 7–12 bears.

Date of estimation	2005
Method used	3 = from complete inventory
Quality of data	3 = good
Trend	0 = stable (for Southern Austria) Central Austria: 1989–1999: increasing 2000–2005: decreasing
Trend-Period	Southern Austria: 2000–2005 Central Austria, see above 1989–2005
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction)
Justification of % thresholds for trends	 For central Austria the minimum numbers from 1989–2005 are 2-2-5-4-10-8-3-5-7-11-12-6-8-9-8-7-5 After the reintroduction of 3 individuals in 1989 until 1993 a steady increase of the population in Central Austria was observed until 1999. From 2000 until 2005 no further increase could be reported, despite intensive genetic monitoring in Central Austria.
Main pressures	**240** Taking/removal of fauna (also referring to high culling rates in Slovenia) **243** Trapping, poisoning, poaching (suspected)
Threats	**243** Trapping, poisoning, poaching: Illegal killings may be suspected as a number of known individuals are suddenly absent from the monitoring **502** Routes, autoroutes **530** Strong infrastructural development **403** And others leading to habitat fragmentation through infrastructure barriers **990** Other natural processes (genetical depression due to small population size has to be expected)
Habitat for the species	
Area estimation	20,000–25,000 km²
Date of estimation	2006
Quality of data	2
Trend	0 = stable
Trend-Period	At least for the last 15 years
Reasons for reported trend	A reliable area estimate is impossible as bears are very adaptable and therefore not bound to a specific habitat type. The general limiting factor is human activity. An area estimate also doesn't reflect the fragmentation of the habitat although this is a crucial factor for the quality of the Alpine bear habitat.
Future prospects	3 = bad prospects, due to the small population size, the fact that all bears in Central Austria derive from 3 individuals and no evidence of migrating individuals from Southern to Central Austria

Complementary information	
Favourable reference range	35,000–50,000 km²
Favourable reference population	100–400 bears based on Rauer *et al.*, (2005): **Der Braunbär in Österreich III**; Umweltbundesamt; pp 64
Suitable Habitat for the species	20,000–25,000 km² (same as above under Habitat for the Species)

Other relevant information	It is important to note that the population nuclei in Southern Austria are part of the bigger Slovenian bear population. Transboundary coordination and cooperation in monitoring and management is therefore necessary. Despite the difficulties in setting precise favourable reference values, it is definitively possible to judge the conservation status of the brown bear in Austria according to the Assessment Matrix Annex C.
Conclusions (assessment of conservation status at end of reporting period)	
Range	Inadequate (U1)
Population	Bad (U2)
Habitat for the species	Favourable (FV)
Future prospects	Bad (U2)
Overall assessment of CS	Bad (U2)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range		Increasing (due to the movement of single individuals) but less than the favourable reference value		
Population			The current population is more than 25% below the favourable reference value and mortality strongly deviating from normal.	
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long-term survival of the species. The suitable habitat in Austria would be sufficiently large to support a viable population on a long-term basis.			
Future prospects (as regards to population, range and habitat availability)			Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk. The disappearance of young bears, which can not be due to normal mortality or migration into other areas, suggests illegal killings.	
Overall assessment of CS			Bad	

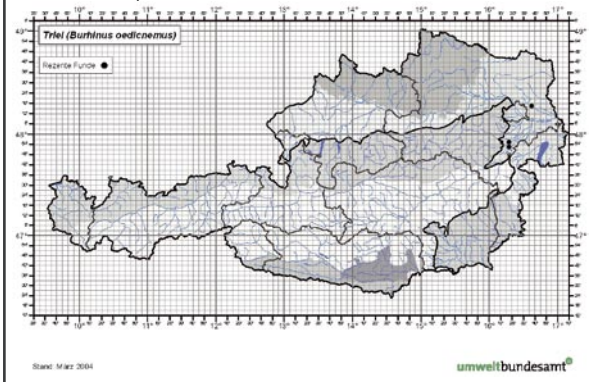
A 133 *Burhinus oedicnemus* **– United Kingdom**

Data	Comments/Guidelines for reporting data
National Level	
Species Code	A133 Stone-curlew *Burhinus oedicnemus*
Member State	UK
Biogeographic regions concerned within the MS	ATL
Range	4,510 km²
Map	

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	ATL
Published sources	Most data is from unpublished sources
Range	Now confined to Southern and Eastern England
Surface area	4,510 km²
Date	2000–2004
Quality of data	3 = good
Trend	-45% 81 to 45 10 km²
Trend-Period	1968/72–2000/04
Reasons for reported trend	4 = indirect anthropo(zoo)genic influence
Population	
Distribution map	
Population size estimation	307 breeding pairs
Date of estimation	2005
Method used	3 = from complete inventory (however this is minimum population of pairs proved breeding; c.10% of breeding pairs may not be found)
Quality of data	3 = good
Trend	+ 98% 160 pairs to 307 in last twenty years following very marked decline
Trend-Period	1985–2005
Reasons for reported trend	3 = direct human influence: contributing to availability of nesting and foraging habitat (restoration of chalk downland, lowland heathland); protection of nests
Justification of % thresholds for trends	[This question is unclear, but our interpretation is that it does not apply to Stone curlew.]
Main pressures	**101** Modification of cultivation practices **141** Abandonment of pastoral systems **230** Hunting **244** Other forms of taking of fauna (egg collection) **965** Predation **502** Routes, autoroutes **730** Military manoeuvres
Threats	**101** Modification of cultivation practices **622** Walking, horseriding and non-motorised vehicles **730** Military manoeuvres **502** Routes, autoroutes
Habitat for the species	
Area estimation	Not currently possible to accurately assess the area of habitat used by stone-curlews in the UK, not least because the population utilises several habitat types (semi-natural grassland, chalk downland, lowland heathland and arable crops).
Date of estimation	N/A
Quality of data	N/A
Trend	N/A
Trend-Period	N/A
Reasons for reported trend	Assumed main reasons for change of species habitat where known **N/A**
Future prospects	

Complementary information	
Favourable reference range	81 occupied 10 km² (ie a return to 1968–72 levels). Note that long-term UK BAP targets have yet to be agreed for this species, but will define a milestone towards achieving the favourable reference range.
Favourable reference population	500 breeding pairs (the draft BAP target for 2030). Note that long-term UK BAP targets have yet to be agreed for this species, but will define a milestone towards achieving the favourable reference population.
Suitable Habitat for the species	Unknown – not currently possible to assess.
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2): based on using 1968–1972 range for purpose of testing this reporting form
Population	Bad (U2): based on draft UK BAP population target for 2030 for purpose of testing this reporting form
Habitat for the species	Unknown (XX)
Future prospects	Inadequate (U1) – informed opinion
Overall assessment of CS	Bad (U2)

A 133 *Burhinus oedicnemus* **– Austria**

Data	Comments/Guidelines for reporting data
National Level	
Species Code	A 133 Stone curlew *Burhinus ordicnemus*
Member State	AT/AUSTRIA
Biogeographic regions concerned within the MS	Continental (CON)
Published sources	Berg, H.-M., G. (2005): **A133 Burhinus oedicnemus.** In: Ellmauer, T. (Hrsg.), **Entwicklung von Kriterien, Indikatoren und Schwellenwerten zur Beurteilung des Erhaltungszustandes der Natura 2000 – Schutzgüter. Band 1**: Vogelarten des Anhangs I der Vogelschutz-Richtlinie. Im Auftrag der neun österreichischen Bundesländer, des Bundesministerium f. Land – und Forst-wirtschaft, Umwelt und Wasserwirtschaft und der Umweltbundesamt GmbH, pp 344–356.
Range	
Surface area	38 km²
Date	2004
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1994–2003
Reasons for reported trend	No change
Population	
Distribution map	
Population size estimation	2001: 12 territories 2002: 12–13 territories 2003: 17–18 territories
Date of estimation	2001–2003
Method used	3 = from complete inventory
Quality of data	3 = good
Trend	+ xx% = net increase by 100 %
Trend-Period	1995–2003
Reasons for reported trend	1 = improved knowledge/more accurate data 6 = conservation measures, habitat management
Justification of % thresholds for trends	
Habitat for the species	
Main pressures	**101** modification of cultivation practices **120** Fertilisation **141** abandonment of pastoral systems **150** Restructuring agricultural land holding **163** Forestry replanting **190** Agriculture and forestry activities **300** Sand and gravel extraction **502** Routes, autoroutes **609** Other sport / leisure complexes
Threats	**120** Fertilisation **300** Sand and gravel extraction **502** Routes, autoroutes
Area estimation	38 km² (range and habitat identical)
Date of estimation	2004

Quality of data	3 = good
Trend	+ = net increase
Trend-Period	1995–2004
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction) 6 = conservation measures, habitat management
Future prospects	2 = poor prospects

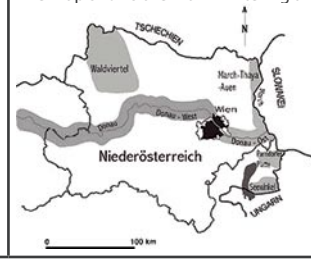
Complementary information	
Favourable reference range	~100 km²
Favourable reference population	> 50 breeding pairs
Suitable Habitat for the species	>100 km²
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Inadequate (U1)
Population	Bad (U2
Habitat for the species	Bad (U2
Future prospects	Inadequate (U1)
Overall assessment of CS	Bad (U2)

Data	Comments/Guidelines for reporting data
National Level	
Species Code	A224 European Nightjar *Caprimulgus europaeus*
Member State	UK
Biogeographic regions concerned within the MS	Atlantic (ATL)
Range	275 10 km². Note that 1 km² resolution is possible if required.
Map	 UK distribution of nightjars (churring males) by 10 km² in 2004. From: Conway, G., Wotton, S., Henderson, I., Langston, R., Drewitt, A. & Currie, F. 2005. **The status and distribution of the European Nightjar** *Caprimulgus europaeus* **in the UK in 2004**. Bird Study [submitted]

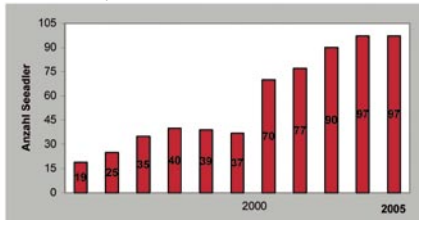
Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Atlantic (ATL)
Published sources	Conway, G., Wotton, S., Henderson, I., Langston, R., Drewitt, A. & Currie, F. 2005. **The status and distribution of the European Nightjar** *Caprimulgus europaeus* **in the UK in 2004.** Bird Study [submitted].
Range	The species currently occurs in England, Wales and southern Scotland. It is considered extinct in Northern Ireland
Surface area	27,510 km²
Date	2004
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1992–2004
Reasons for reported trend	3 = direct human influence: contributing to availability of nesting and feeding habitat (restoration of heathland, particularly in southern England; forestry practice (both positive and negative effects – eg differing provision of clear felled areas)
Population	
Distribution map	
Population size estimation	4606 churring males (95% cl. ± 913) adjusted total to account for non-surveyed habitat
Date of estimation	2004
Method used	2 = extrapolation from surveys of part of the population, sampling
Quality of data	3 = good
Trend	+ 36%
Trend-Period	1992–2004
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction) - enhanced habitat suitability eg, heathland re-creation and restoration and good forestry practice in some areas. Declines in Scotland possibly due to changes in quality of breeding and foraging habitat.
Justification of % thresholds for trends	(This question is unclear, but our interpretation is that it does not apply to nightjar).

Main pressures	**101** Modification of cultivation practices **400** Urbanized areas, human habitation **990** Other natural processes (habitat succession) **160** General forestry management **790** Other pollution or human impacts/activities (human/domestic animal disturbance) **703** Soil pollution[Where 'other' category was used, comment in brackets gives specific reason.]
Threats	**400** Urbanized areas, human habitation (housing development) **990** Other natural processes (habitat succession/ inadequate management) **160** General forestry management (irregular supply of clear fell areas) **790** Other pollution or human impacts/activities (human/domestic animal disturbance)
Habitat for the species	
Area estimation	Not currently possible to accurately assess the area of habitat used by nightjars in the UK, not least because the population utilises two main habitat types. 2004 survey results showed that at least 59% of churring males were associated with 1km squares containing heathland; 57% were associated with 1km squares associated with forestry plantations and other woodland habitats (Conway *et al.*, submitted).
Date of estimation	N/A
Quality of data	N/A
Trend	0 = Stable [informed opinion]
Trend-Period	N/A
Reasons for reported trend	1 = improved knowledge/more accurate data 3 = direct human influence (restoration, deterioration, destruction): enhanced habitat suitability eg, re-creation and restoration of lowland heathland and good forestry practice in some areas, but balanced by losses of heathland to scrub encroachment and poor forestry practice in other areas. Declines in Scotland probably due to changes in quality of breeding and foraging habitat.
Future prospects	

Complementary information	
Favourable reference range	315 occupied 10 km² by 2016 (proposed UK BAP target) – note that this is considered a milestone towards achieving a favourable reference range. We are not in a position to define a favourable reference range at this point.
Favourable reference population	5400 churring males by 2016 (proposed UK BAP target) – note that this is considered a milestone towards achieving a favourable reference population. We are not in a position to define a favourable reference population at this point
Suitable Habitat for the species	Unknown – not currently possible to assess.
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Bad (U2): based on using proposed UK BAP target for purpose of testing this reporting form
Population	Inadequate (U1): based on using proposed UK BAP target for purpose of testing this reporting form
Habitat for the species	Unknown (XX)
Future prospects	Inadequate (U1) – informed opinion
Overall assessment of CS	Bad (U2)

Data	Comments/Guidelines for reporting data
National Level	
Species Code	A075, White-tailed Eagle
Member State	AT
Biogeographic regions concerned within the MS	CONTINENTAL
Range	Eastern Austria
Map	The map shows the main wintering areas in Austria 

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Continental
Published sources	**panda.wwf.at/seeadlerprojekt.html**
Range	Eastern Austria (Lower Austria, North-Eastern Burgenland, Southern Burgenland, and South-Eastern Styria)
Surface area	Data at the moment unavailable
Date	2005
Quality of data	Net increase Precise data not available
Trend	0 = stable
Trend-Period	2002–2005
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction) 5 = natural processes
Population	
Distribution map	 Midwinter distribution and numbers of the wintering White-tailed Eagle in Austria 2000/2001
Population size estimation	6 breeding pairs in Austria, about 100 wintering (by including border areas to Germany, the Czech Republic, Slovakia and Hungary)
Date of estimation	2005
Method used	3 = from complete inventory
Quality of data	3 = good
Trend	Net increase
Trend-Period	2002–2005
Reasons for reported trend	3 = direct human influence (restoration, deterioration, destruction) 5 = natural processes

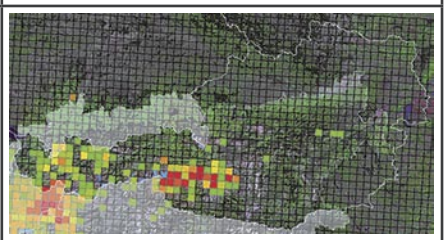
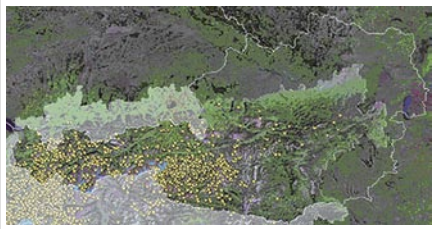
Justification of % thresholds for trends	Number of breeding White-tailed eagles in Austria: pair \ year: 2001 2002 2003 2004 2005 I: 1 2 2 2 1 II: - 1 1 2 2 III: - - 2 0 2 IV: - - 0 0 0 V: - - - - 1 VI: - - - - 1 juv. / pair: 1 1,5 1,25 1 1,17 Data of wintering birds in Austria Winter (January) data (synchronized censuses from 2001 onwards) 
Main pressures	**230**, **243** The White-tailed Eagle was removed from Austria in the first half of the 20th century by hunting. Following the introduction of total protection in Austria (and elsewhere in Europe) the species is now on the way to recovery.
Threats	**243** In Austria, birds are still most threatened by illegal poisoning (Carbofuran). Furthermore, disturbance at breeding and hunting sites may be important. **230** The protection of nesting sites is insufficient (e.g. need for protection zone around the nesting sites, where hunting is restricted). The use of lead shots has been shown to be a major cause of death. There have not been any efforts so far to ban it. **511** High voltage lines
Habitat for the species	
Area estimation	Data in km² unavailable.
Date of estimation	2005
Quality of data	3 = good
Trend	+ = net increase
Trend-Period	2002–2005
Reasons for reported trend	1 = improved knowledge/more accurate data (only true for wintering birds due to the establishment of synchronized censuses in course of the WWF Austria White-tailed Eagle project!) 3 = direct human influence (restoration, deterioration, destruction) (ban of persecution, national parks, etc.) 5 = natural processes (founding birds from highly expanding eastern populations)
Future prospects	1= good prospects provided that illegal poisoning decreases.

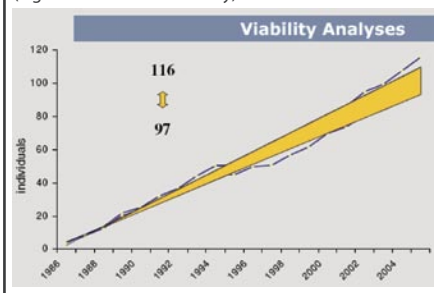
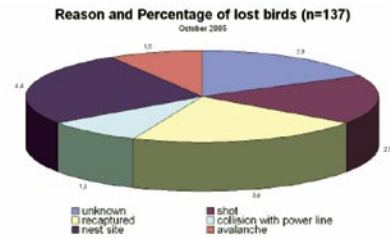
Complementary information	
Favourable reference range	Data not available
Favourable reference population	More than 15 breeding pairs
Suitable Habitat for the species	Data not available
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	**Favourable (FV)** / Inadequate (U1) / Bad (U2) / **Unknown (XX)**
Population	Favourable (FV) / Inadequate (U1) / **Bad (U2)** / Unknown (XX)
Habitat for the species	**Favourable (FV)** / Inadequate (U1) / Bad (U2) / Unknown (XX)
Future prospects	Favourable (FV) / **Inadequate (U1)** / Bad (U2) / Unknown (XX)
Overall assessment of CS	Favourable (FV) / Inadequate (U1) / **Bad (U2)** / Unknown (XX)

General evaluation matrix

Parameter	Conservation Status			
	FV	U1	U2	Unknown
Range				Strongly expanding population but precise data (in km²) about the range not available at the moment
Population			More than 25% below favourable reference population, although the breeding performance is highly positive. However, due to poisoning mortality is high in this k-strategic species. Birds in Austria are not ringed, therefore the data is insufficient to know whether the population is self sustaining.	
Habitat for the species	Austria has sufficient areas of suitable habitats for the survival of the White-tailed Eagle; the carrying capacity of the landscape is not yet reached			
Future prospects (as regards to population, range and habitat availability)		If poisoning is finally stopped the future prospects are very promising		
Overall assessment of CS			Bad	

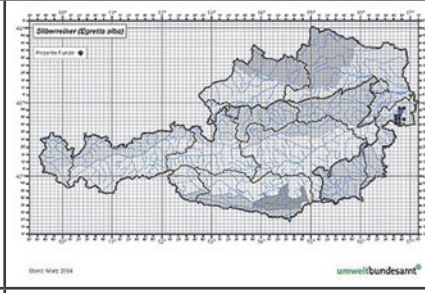
Data	Comments/Guidelines for reporting data
National Level	
Species Code	*Gypaetus barbatus*, Bearded vulture
Member State	AT
Biogeographic regions concerned within the MS	Alpine
Range	Mountainous areas in central and western Austria
Map	The map shows the main wintering areas in Austria 

Data	Comments/Guidelines for reporting data
Biogeographic level (complete for each biogeographic region concerned)	
Biogeographic region	Alpine
Published sources	**http://bartgeier.ch/monitoring**
Range	Depending on the definition of range used, might become more in the future.
Surface area	Regularly used area approximately 40,000 km², an adult pair needs ~400 km²
Date	2000–2005
Quality of data	good
Trend	0 = rather stable
Trend-Period	2000–2005
Reasons for reported trend	Because immature birds already use the entire suitable space, the trend for settled birds is significantly different but is also stable.
Population	
Distribution map	 Number of different birds per area ***Legend*** Green: low number of different birds Yellow: medium number Red: high number
Observations	

Population size estimation	In the Alps between 97–116 (Zink 2005), number in Austria varies depending on the season and is about 10–15, with one potential breeding pair.
Date of estimation	2005
Method used	3 = from complete inventory
Quality of data	3 = good
Trend	+ 20% = net increase by about 15–25% per year
Trend-Period	1986–2005
Reasons for reported trend	5 = natural processes 6 = other (release project)
Justification of % thresholds for trends	Graph reflects the situation in the Alps: The two graphs are the result of viability analyses for the entire Alps (Zink 2005). The lower graph is a more conservative approach (only observations of very high quality were used). $y = 4{,}6874x - 0{,}4708$, $r^2 = 0{,}99$ (upper graph) A census for Austria alone makes no sense because of the high proportion of regularly floating individuals (e.g. to Switzerland and Italy) 
Main pressures	Graph reflects the main pressures in the Alps. Several factors seem to limit the species in Austria today. The most important parameters are food (density of ibex and sheep), distribution and quality of nest sites (limestone versus crystalline rocks) and the distribution of foraging grounds (amount of alpine pastures). 
Threats	The use of poison is the main future threat to the species. This will become more serious as soon as wolves begin to cause damage for livestock farmers and hunters.
Habitat for the species	Considering only adult, settled birds because immature birds forage over huge areas (e. g. from Austria to France)
Area estimation	The suitable breeding habitat is much smaller than the range (40,000km²). Alpine pairs use between 200–400 km².
Date of estimation	2005
Quality of data	3 = good compared with rest of the Alps (habitat suitability model available)
Trend	No data because only one (so far unsuccessful pair)
Trend-Period	No data

Reasons for reported trend	1 = improved knowledge/more accurate data (only true for wintering birds due to the establishment of synchronized censuses in course of the WWF Austria White-tailed Eagle project!) 3 = direct human influence (restoration, deterioration, destruction) (ban of persecution, national parks, etc.) 5 = natural processes (founding birds from highly expanding eastern populations)
Future prospects	Only one unsuccessful breeding pair for the last 5 years. The species is viable in the long term if the use of poison does not become popular to defend livestock and wild ungulates against the wolf. 1 = good prospects taking into consideration further release activities, otherwise the Austrian population depends on the reproductivity of the Italian and French populations.

Complementary information	
Favourable reference range	As is! (~40.000km²)
Favourable reference population	Difficult to tell. Depending on the distribution of historical breeding sites we might expect more than 10 breeding pairs in Austria in the future.
Suitable Habitat for the species	Alpine areas usually above the tree line. Huge protected areas without hunting activity seem to favour settlement of the species (e.g. Vanoise (France) or Stelvio (Italy) National Park). A habitat model exists (see Zink 2005). Even though the number of livestock decreased slightly in recent decades there is still an adequate food supply (~7,5 t necromass per home range and year – see Zink 2005). The increase in wild ungulates seems to compensate for the loss of livestock. The increase in ibex seems to be of particularly high importance for the species.
Other relevant information	In order to avoid use of poison in alpine areas scientists working with raptors and large predators should work closely together.
Conclusions (assessment of conservation status at end of reporting period)	
Range	FV
Population	U2
Habitat for the species	U1
Future prospects	U2
Overall assessment of CS	U2

Data	Comments/Guidelines for reporting data
National Level	
Species Code	A027 Great White Egret *Casmerodius albus*
Member State	AT/AUSTRIA
Biogeographic regions concerned within the MS	Continental (CON)
Published sources	Nemeth, E:; Grubbauer, P.; Rössler, M. & Schuster, A: (2004): **Ökologische Untersuchungen an den Reihern und Löfflern des Neusiedler See Gebietes**. Habitatwahl, Nahrungsökologie, Bruterfolg, Populationsentwicklung und Schutz der in Kolonien brütenden Schreitvögel. BFB-Bericht 92: 1–22. Nemeth, E. & P. Grubbauer (2004): **Status, distribution and population trends of colonial breeding wading birds at Lake Neusiedl, Eastern Austria.** Egretta 47.
Range	Note: It is necessary to differentiate between breeding range and non-breeding/wintering range. This form only deals with the breeding range
Surface area	375 km² (breeding range)
Date	2005
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1995–2004
Reasons for reported trend	No change
Population	
Distribution map	
Population size estimation	643–745 breeding pairs
Date of estimation	2002–2004
Method used	3 = from complete inventory
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1995–2004
Reasons for reported trend	No change
Justification of % thresholds for trends	-
Main pressures	**803** Infilling of ditches, dykes, ponds, pools, marshes or pits **810** Drainage **850** Modification of hydrographic functioning, general **853** Management of water levels **890** Other human induced changes in hydraulic conditions
Threats	**850**, **890**
Habitat for the species	Breeding habitat only
Main pressures	**101** Modification of cultivation practices **120** Fertilisation **141** Abandonment of pastoral systems **150** Restructuring agricultural land holding **163** Forestry replanting **190** Agriculture and forestry activities not referred to above **300** Sand and gravel extraction **502** Routes, autoroutes **609** Other sport/leisure complexes

Threats	**120** Fertilisation **300** Sand and gravel extraction **502** Routes and autoroutes
Area estimation	110 km^2
Date of estimation	2004
Quality of data	3 = good
Trend	0 = stable
Trend-Period	1995–2004
Reasons for reported trend	**No change**
Future prospects	1 = good prospects

Complementary information	
Favourable reference range	 375 km^2
Favourable reference population	660 breeding pairs (mean of the years 1995–2004)
Suitable Habitat for the species	>100 km^2
Other relevant information	
Conclusions (assessment of conservation status at end of reporting period)	
Range	Favourable (FV)
Population	Favourable (FV)
Habitat for the species	Favourable (FV)
Future prospects	Unknown (XX) future negative impact from deterioration of water regime possible
Overall assessment of CS	Favourable (FV)

4.6

Main Results

All 38 reports aim to provide best practice examples and were produced mainly to assist Member States and the EC (with the biogeographic assessment), and support implementation of their monitoring and reporting obligations. Additionally, information provided in 36 national reports (not including Switzerland) were used to analyse: quality of data; trends; reason for the reported trends; and conclusions, where the reporting format provided standardised information. These results may therefore be viewed as providing preliminary information on data availability, methodology, status and trend of habitats and species in Europe. In some cases, no judgement could be reached for the given classes (for example due to lack of data, etc.), and those answers are collected under "others/no answer".

General and specific comments and recommendations of the EHF experts are presented in Section 5.

4.6.1 Data Quality

EC Guidelines

Monitoring must inevitably be based on sound data. Unfortunately biogeographic data on the distribution of fauna and flora is not available for all habitats and species within the European territory, not even for all habitat types of Annex I and species of Annex II and IV of the Habitats Directive within the EU, a situation which generated discussion during the Natura 2000 site selection processes. For some taxonomic groups European-wide atlases and various national inventories are available, which at least provide actual data on the distribution[24]. A comprehensive database is available for birds through the Important Bird Area publications of BirdLife International and its national partners (**www.birdlife.org/action/science/sites**), for example, **Birds in Europe: Population estimates, trends and conservation status** (Burfield, I. and van Bommel, F., 2004), and the **EBCC Atlas of European Birds** (Hagemeijer, W. and Blair, M.). For some habitat types, data availability is quite good in several countries, for example, concerning forests or grasslands. A wide range of inventories are available. Although they have been produced to meet a range of different purposes and their means of classification vary, they do provide an information basis and may be sometime adapted to meet the Habitats Directive classification system (see EUNIS Habitat Classification **http://eunis.eea.eu.int/habitats.jsp**). Nevertheless, for some habitat types, no information or maps exist either for actual or historic ranges. Evaluations can instead be undertaken based on modelling from other data sources. In defining FCS for habitats, the Habitats Directive makes reference to "typical species", although the definition of this term is still insufficient.

Assessments of "data quality" should be provided for "range", "population", "habitat for species" and "area covered by habitat" in the following three classes:

- **3 = Good**, e.g. based on extensive surveys
- **2 = Moderate**, e.g. based on partial data with some extrapolation
- **1 = Poor**, e.g. based on very incomplete date or on expert judgment

Results

In general, data for the majority of habitats and species was classified as being "good" or "moderate". In particular, the availability of data sources seemed to be sufficient for assessing "range", "populations" and "area covered by habitat" (Chart 1). Data was mainly lacking from which to assess "habitat for the species".

4.6.2 Trend

EC guidelines

Trend estimations are linked to the "prognosis" part of the monitoring and should give an impression as to whether the habitat or species is increasing or decreasing for the different criteria. The EU Reporting Format requires trend estimates for "range" (both habitat and species), "populations", "habitat for species" and "area covered by habitat" and provides three classes for evaluation:

- **(0) = stable**
- **(+) = increasing**
- **(-) = decreasing**

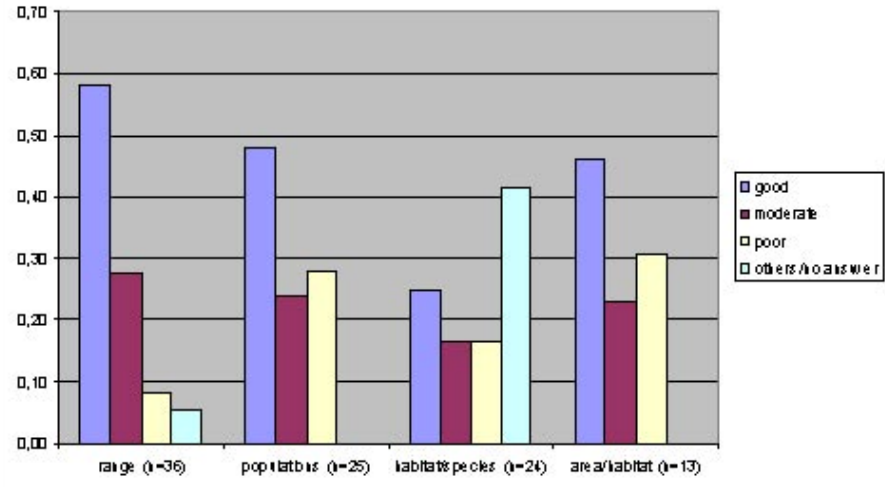


Chart 1: Percentage of "data quality" classes for assessing "range", "population", "habitat for the species" and "area covered by habitat".

24 Amphibians and Reptiles (Gasc *et al.*, 1997), Butterflies & moths (Gomez de Aizpurua, 2004, Kudrna, 2002), Invertebrates (Helsdingen, Willemse & Speight, 1996a,b,c), Mammals (Mitchell-Jones *et al.*, 1999), Vascular Plants Atlas Flora Europaea (incomplete) (Jalas & Suominen, 1972), some information on Fish in Maithland (1994) and Fishbase (**http://filaman.ifm-geomar.de/home.htm**), for Bryophytes at European Committee for Conservation of Bryophytes (**www.bio.ntnu.no/ECCB/index.php**).

Results

Our assessment showed a mixed trend situation with a high share of "net loss" throughout all categories and the highest quantity of "net loss" occurring for "area covered by habitat". "Populations" performed better, showing a higher portion of increasing trends, which is mainly due to intensive conservation programmes for many selected species. However, except in the cases of some species, the evaluation indicated that a majority of habitats and species are still facing losses in range, population and/or area they rely on.

Range: The Herpetological Conservation Trust reported severe losses of 95% and 98% for the Sand lizard (*Lacerta agilis*) and Natterjack toad (*Bufo calamita*) in the United Kingdom, between 1945 and 2000. These population losses were calculated from the area of habitat destroyed plus the area of existing habitat rendered unsuitable by indirect damage and inappropriate management. The habitat type Active raised bogs (7110) was assessed by NABU and found to have lost about 40% of its Continental range in Germany since 1840, which is about 100,000 km^2. Examples of increased range are given for the Wolf (*Canis lupus*), of about 20%, and the Brown bear (*Ursus arctos*), in the Austrian Alps, of approximately 30%–60% from 1989 to 2005. The wolf and bear examples demonstrate the success of long-term conservation programmes, combined with improvements in habitat criteria and prey availability. However, the situation is much worse for the assessed habitats, as none of these were found to be increasing in range. More than 50% of the habitats were judged to be "stable", and approximately 40%, as decreasing.

Populations: All of the evaluated bird species showed positive or stable population trends. BirdLife reported positive trends in the Stone curlew (*Burhinus oedicnemus*) populations in Austria and the UK. The Austrian population increased by 100%, and the UK population by 98%, due to intensive conservation activities in both countries. A positive trend in population index is shown also for the Lesser horseshoe bat *Rhinolophus hipposideros* (44% between 1997 and 2004 according to the index calculated by the National Bat Monitoring Programme), but the Bat Conservation Trust added that it is unclear at present whether this increase has resulted from targeted conservation work or might perhaps have been influenced by other factors, for example greater overwintering success of the species due to milder winters. Veronica found negative population trends for the European fire bellied toad (*Bombina bombina*) and Yellow bellied toad (*Bombina variegata*) in the Czech Republic. The European fire bellied toad was estimated to have lost about 50% of its territory in the Pannonian region and 36% in the Continental region of the Czech Republic, within the last 10 years.

Habitat for Species: The high portion of stable or increasing trends is based on the positive performance of species which are subject to intensive conservation programmes such as the Eurasian lynx, (*Lynx lynx*) (which was evaluated as "increasing" in all assessed Alpine countries), the Stone curlew (*Burhinus oedicnemus*) and the White-tailed eagle (*Haliaeetus albicilla*) in Austria. Negative trends were reported by NABU for Sphagnum species (*Sphagnum capillifolium* and *Sphagnum warnstorfii*) and the Slender green feather-moss (*Drepanocladus vernicosus*) within the Continental region in Germany.

Area covered by habitat: The reported trends showed a significant "loss" in area of almost all the assessed habitats. The biggest loss was 90% for Alkaline fens (7230) since 1945 in the Continental region of Germany and losses of 50% were reported for the Active raised bogs (7110), Transition mires, Quaking bogs (7140) and Petrifying springs with tufa formations (7220) all since 1840, in the Continental region in Germany. Only in the case of Cork oak forest (9330) in the Mediterranean region in Spain, could a small increase of 6% in area be reported, when compared with the area of forest in 1966. However, a comparison between the real and potential area of Cork oak forests would show a decrease in area covered by the habitat of about 40%.

EHF Recommendation: These results emphasise the overall trend of biodiversity loss mentioned in Section 1, and show the need for urgent action in terms of management programmes and responses in policy strategies.

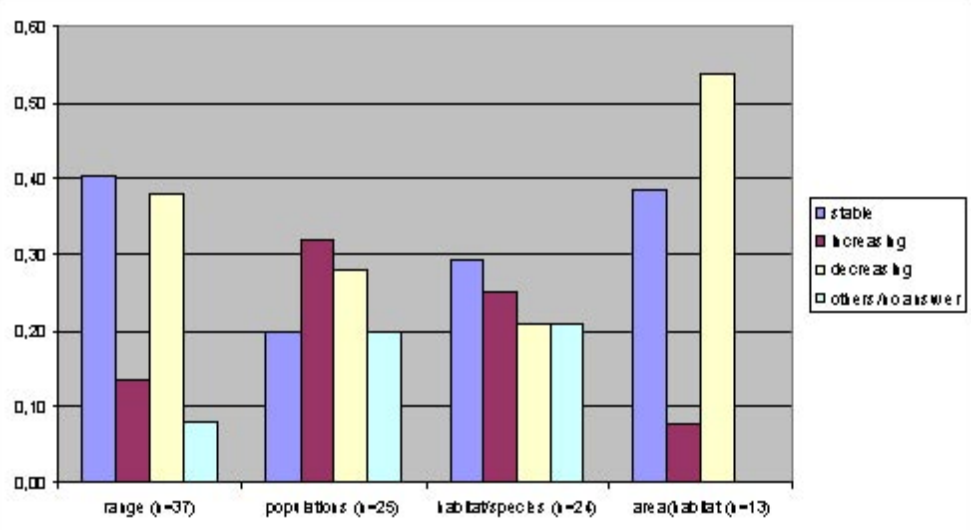


Chart 2: Percentage of trend classes for the categories "range", "population", "habitat for the species" and "area covered by habitat".

4.6.3 Reasons for Trend

EC Guidelines

The EU Reporting Format requires an indication of reasons for the reported trends in "range", "population", "habitat for species" and "area covered by habitat", and proposes the following classes:

- **0 = unknown**
- **1 = improved knowledge/more accurate data**
- **2 = climate change**
- **3 = indirect human influence** (restoration, deterioration, destruction)
- **4 = indirect anthropo(zoo)genetic influence**
- **5 = natural processes**
- **6 = other (specify)**

Results

The EHF experts clearly reported "direct human influence" as being the main reason for reported trends, whilst natural processes and climate change played minor roles. Concerning the decreases in range, population and area, the reasons for the trends are strongly connected to the pressures and threats listed for each habitat or species. Most of the pressures and threats represent direct human influences, such as the use of pesticides or fertilisers, urbanisation, soil pollution, drainage, modification of cultivation practices, development and infrastructure issues, agriculture and forestry practices, as well as trapping, poisoning, poaching or taking/removal of the wild. All of these causes are directly related to national and/or European policies and management traditions, and could be improved if further action is taken by Member States and the European Commission.

More positively, the results also show the positive impacts of conservation projects, for example, in the case of the Stone curlew (*Burhinus oedicnemus*) in Austria and the UK; the Wolf (*Canis lupus*), Eurasian lynx (*Lynx lynx*) and Brown bear (*Ursus arctos*), in the Alps; and the White-tailed eagle (*Haliaeetus albicilla*) in Austria which clearly show that human activity can also result in positive trends.

EHF Recommendation: As the category "direct human influence" includes the main causes of increases and decreases, we recommend that this class should be subdivided into "positive direct human influence" and "negative direct human influence" to specify the direction of influence.

4.6.4 Conclusions

EU Guidelines

The EC reporting format also provides matrices (Annex C and E) for assessing the conservation status of species and habitat types. The forms have to be completed for every biogeographic region within each Member State where the habitat or species occurs. Each of the following categories must be assessed and classified as either "Green/Favourable", "Amber/Inadequate", "Red/Bad" or "Unknown".

Category (more detailed information in[25])	Species/ Annex D	Habitats/ Annex E
Range		
Population		
Area covered by habitat type within range		
Habitat for the Species		
Specific structure and functions (including typical species		
Future prospects		
Overall assessment		

Results

The overall performance of all 28 selected habitats and species showed a high number of "inadequate/bad" (U2 – highlighted in Chart 4) and "unknown" assessments. Although approximately 30% of all habitat and species were reported to be "favourable" in terms of "range" and "habitat for the species", the overall results are poor. The results of the assessments for "range", "population", "area covered by habitat" and "future prospects", showed that 30% to 58% of the assessments were "bad". They also show that insufficient information was available from which to draw any conclusions for 20% to 42% of the assessments, which had to be classified as "unknown". Additionally, the category "future prospects" indicated that 60% of all habitats and species were facing "inadequate" or "bad" situations regarding their conservation status in the foreseeable future, and for a further 30% the future situation was assessed as being "unknown" (see arrows in Chart 4).

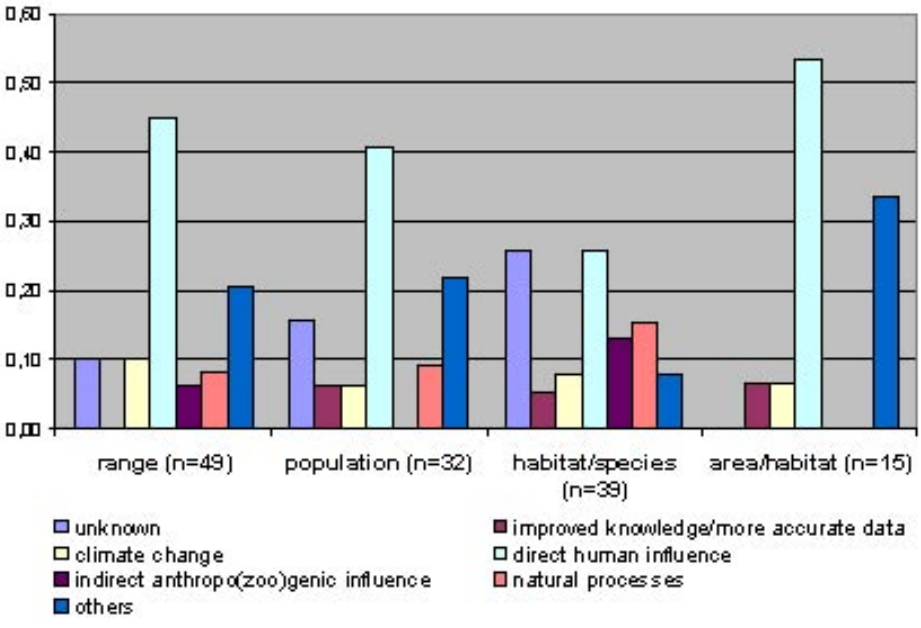


Chart 3: Percentage of different trend classes for the categories "range", "population", "habitat for the species" and "area covered by habitat".

25 See footnote 16.

The EU Reporting Format requires that all criteria are combined to generate a single value estimation of conservation status per habitat and species per country. This overall assessment is also reported as being either:

- **Green/favourable** = if all parameters are "green/favourable" or three "green/favourable" and one "unknown"
- **Amber/inadequate** = one or more "amber/inadequate" but no "red/bad"
- **Red/bad** = one or more "red/bad"
- **Unknown** = two or more "unknown" combined with "green/favourable" or all "unknown"

The results of this combined assessment by the EHF experts, was that only 6% of the habitats and species were judged to be in a favourable conservation status, whereas more than 60% were judged as having a conservation status of "red/bad".

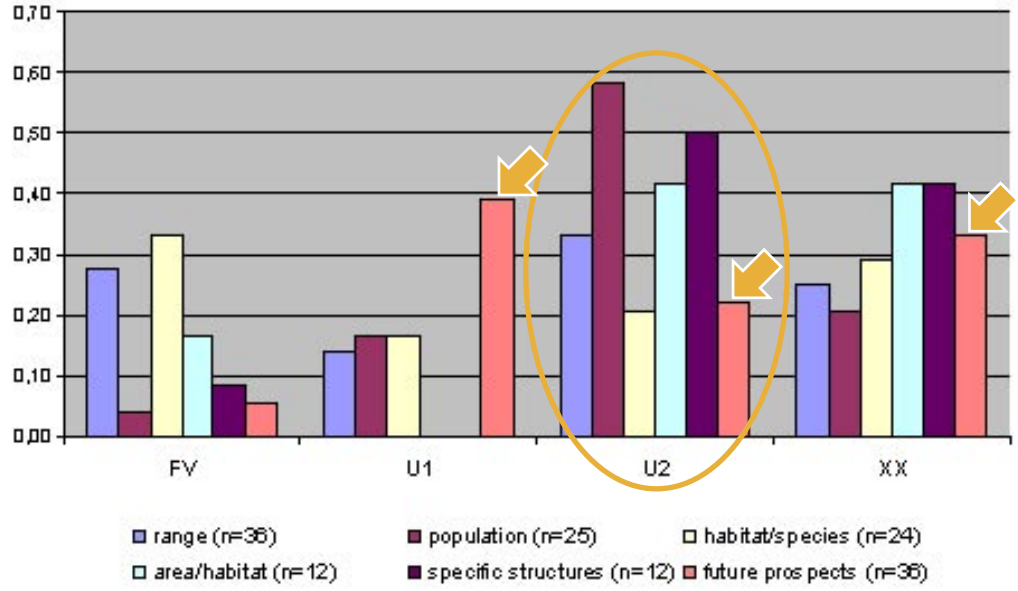


Chart 4: Conclusions: Percentage of conservation status classifications for "range", "populations", "habitat for the species", "area covered by habitat", "specific structures" and "future prospects".

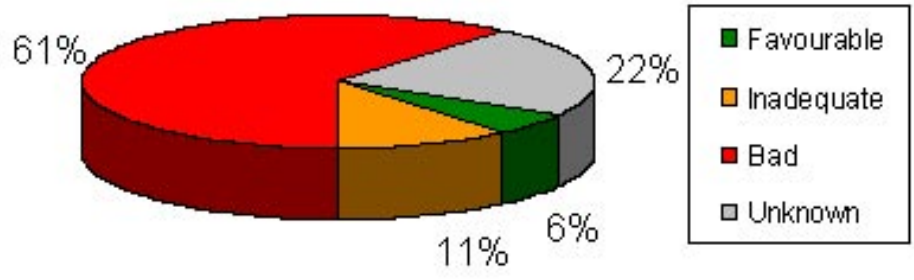


Chart 5: Overall assessment: Percentage of conservation status classes, combining all assessments.

Section 5:

Comments & Recommendations

5.1 General Comments

5.1.1 Form & Guidance Documents

The structure of the reporting forms is relatively complex, which led the EHF to recommend the provision of a clear and concise single guidance document for filling in the various sections of the forms. The new improved guidance document prepared by the ETC-BD is welcome and more or less provides all the necessary information from which to fill in the various forms[26]. However, the EHF experts still have some additional recommendations which could be taken into consideration during future reporting rounds. One obvious recommendation is that the guidance document includes a clear time schedule for reporting. EHF also supports an electronic data entry system in order to simplify the reporting, for example, by including tick boxes or codes, for easier processing as proposed by the ETC-BD. The proposal to make the assessment results visible via a simple and clear "traffic light" signal system, also seemed to work well.

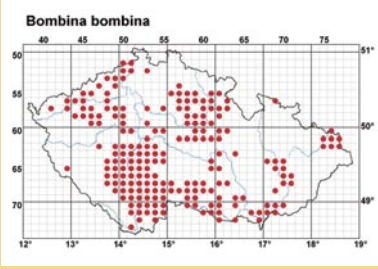
EHF recommends the inclusion of clearly communicated procedures and time schedules for Member State reporting obligations.

5.1.2 Data Sources

Although it was possible to undertake the assessment and reporting for most of the selected habitats and species (see quality of data section 4.6.1), our results showed a clear lack of information for some parts of the assessment (see above).

BOX 3: **Examples showing the differences in data sources and the presentations of these for various species:**

European fire bellied toad (*Bombina bombina*) – CZ, Sphagnum sp. (*Sphagnum warnstorfii*) – DE, Sand lizard (*Lacerta agilis*) – UK



Bombina bombina: Grid map based on absence/ presence in 296 mapping squares of Czech Republic

Sphagnum warnstorfii: Polygon drawn by expert judgment for Germany

Lacerta agilis: Distribution based on detailed field surveys down to the local level in the UK.

26 Scientific Working Group: Assessment, monitoring and reporting under Article 17 of the Habitats Directive: Explanatory Notes & Guidelines; Draft 2, January 2006

Plantlife International described calculating "actual range" or "area covered by habitat" sometimes necessarily "pure guesswork" for some plant species. Although this does not mean it is impossible to estimate it for plants, it shows that the data situation must be strengthened and that Member States must be encouraged to invest in monitoring, surveying and improving data sets. BirdLife Austria noted that whilst the provision of data for range, habitat, population and trend is generally unproblematic for well monitored and locally distributed bird species with clearly defined habitat, there will certainly be problems for less well known species and all widespread species. The Bat Conservation Trust/UK also showed that data for bats is insufficient to provide an adequate assessment of FCS at present. The solution to this is long-term study and modelling approaches, which could also present a useful tool to land-use planners. In terms of the provision of maps WWF Austria recommended that every country should use a common method for presenting maps in order to be comparable on a European level, at least within taxonomic groups.

EHF recommends that databases must improve significantly before future reporting rounds and Member States must provide better data in comparable formats, using unified methodologies. Assessments should rely on sound scientific methods (e.g. population modelling, viability analysis).

5.1.3 Populations

The term "population" was defined by the Scientific Working Group as the sum of individuals or comparable units (breeding pairs, colonies), which we would like to suggest is not fully correct nor in line with the Habitats Directive itself. According to Art.1 (i), and problems encountered with species that have numerous populations within a territory (or even beyond), the term "population" should be changed to "populations". Although EHF has requested this change, the new guidance document and reporting format still use the term "population".

In order to set FRVs for populations (see chapter 3.4) it is necessary to define the term "population" considering scientific definitions and the aim of Habitats Directive, especially the aspects of population dynamics and reproduction. Despite the request by EHF for this change, the new guidance document and the reporting format still define "population" as number of individuals.

EHF recommends changing the term "population" to "populations" and giving an adequate definition of "population" that is fully compatible with and ensures clarity with regard to the Habitats Directive definitions.

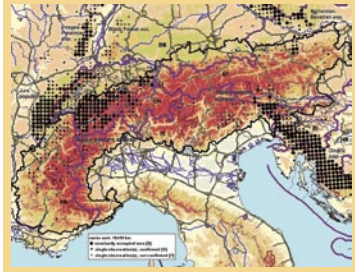
5.1.4 Biogeographic Level

As the biogeographic regions provide the overall framework for the implementation of the Habitats Directive, it is necessary to integrate this aspect more fully into the whole reporting process. Member States are expected to report at the biogeographical level, which means that the significance of assessing unconnected parts of biogeographic regions (e.g. in the case of the Alpine region) have to be clarified. For example, experts from KORA made clear, that from a biological point of view it makes no sense to assess the Eurasian lynx (*Lynx lynx*) populations from the Alps and Scandinavia together, because they are different subspecies. Therefore, the unit for the assessment should rather be the populations or meta-population.

The trans-boundary aspect is crucial in assessing the conservation status of some species (e.g. wide ranging or migrating species such as bats, the Eurasian lynx (*Lynx lynx*), Brown bear (*Ursus arctos*), and many bird species which would be inconclusive if only undertaken at the national level. One such example is the Bearded vulture (*Gypaetus barbatus*) for which monitoring and data analysis is currently implemented on an Alpine wide level. As this bird requires huge areas, assessments of population trends only make sense at the biogeographical rather than national level.

BOX 4: Biogeographic approach

Distribution of Eurasian lynx (*Lynx lynx*) in the Alps subregion of the Alpine biogeographic region.



Roughly 11,700 km² are occupied with two more or less separated subpopulations within the alpine area. Concentrating only on the national level would be insufficient from which to assess the status of the Eurasian lynx correctly. The biogeographic perspective allows a more comprehensive overview and demonstrates the need for a trans-boundary monitoring approach and transnational management actions. It is also important to integrate non-EU member states in such activities as Switzerland, which contains a large and important part of the Eurasian lynx population.

It is necessary for neighbouring Member States to take the trans-boundary perspective into account, and exchange information and coordinate their reporting activities.

Special problems arise in the context of marine habitats and species, especially migratory marine species. Data from which to assess conservation status is normally scarce, for example, the Loggerhead turtle (*Caretta caretta*) is normally migrating at sea and only found in very small terrestrial locations for breeding (where collecting exact numbers remains difficult). Simply taking a national level approach to assessing conservation status is not sound scientifically, and not supported by EHF. The biogeographic approach proposed by ETC-BD should be followed in dealing with marine species. During the 26th Symposium on Sea Turtle Conservation and Biology it was clearly recognised that more data is required from which to assess the biology and status of this species in the Mediterranean Sea. Furthermore it has been recommended that responsibility needs to be taken to establish and co-ordinate joint international efforts in the research, conservation and monitoring of sea turtles (Dick & Casale, 2006). EHF recommends that responsibility for such a challenging co-ordination effort is delegated to one particular Member State or leading organisation, and involves non-EU countries.

EHF recommends that more detail is provided concerning how to address the biogeographic aspects, e.g. concerning evaluation of trans-boundary populations and the implications for Member States (and non-EU countries). Additionally, EHF supports the development of a biogeographic approach for the treatment of marine habitats and species.

5.1.5 Non EU Member States

Although non-EU countries do not have to implement the EU Habitats and Birds Directives they sometimes make a significant contribution to the conservation status of habitats and species occuring within EU territory. One such example is the Wolf (*Canis lupus*), where Switzerland plays an important role as a biological corridor and stepping stone country within the Alpine region. Another is the Eurasian lynx, for which Switzerland is actually one of the most important sources. Including non-EU countries would not only support the establishment of a real European-wide monitoring scheme, but is also essential in order to produce a sound assessment as defined in the directive. This is particularly important for migratory species, especially birds that spend large parts of their life cycle outside the EU.

EHF recommends integrating information and data from non-EU countries within the reporting exercise, via the Bern Convention or other appropriate channels of communication. In assessing the conservation status of migratory species, pressures on their population from outside of the EU should also be taken into consideration.

5.1.6 Impact of Natura 2000

As the Natura 2000 network is one of the most significant tools for European nature conservation, it is important to relate conservation efforts and actions and the impacts of habitats and species management within this network to the wider aims of the directive, to ensure a coherent strategy and corresponding actions.

EHF recommends that a specific "Natura 2000" section is provided within the reporting format to measure and monitor the impacts of Natura 2000 on the conservation status of habitats and species.

5.1.7 Monitoring of Annex V – species

Some additional comments are made by NABU concerning page 21 of the "Explanatory Notes and Guidelines", second draft, January 2006 of the ETC/BD document. That document states that for all species of the genus *Sphagnum* (of which there are 36 species in Germany), only one report and assessment should be made of the conservation status. If that is the case some rare and endangered species would be excluded from the monitoring exercise in particular, because assessments of the range, population parameters, trends and habitats would be dominated by results from the common and not endangered species. NABU is of the opinion that relevant information for those species is available within the various Member States. For that reason EHF included two species of *Sphagnum* sp. in this report, one common and one rare species, (*Sphagnum capillifolium* and *Sphagnum warnstorfii*). Furthermore, NABU noted that there is a proposal to reduce the Annex V listed species of the genus *Lycopodium* (of which there are 9 species in Germany), to 2 species, which does not make sense in relation to recent scientific distinctions of *Lycopodium*, in different genus. The intention of the Habitats Directive was obviously to protect the *Sphagnum* species from collection, which are difficult to distinguish by non-experts. As this monitoring and reporting exercise is important for ensuring the protection of *Lycopodium* and *Sphagnum* species the reporting should be undertaken separately for each species.

5.1.8 Integrated Monitoring

EU Member States already face a range of reporting obligations for environment and biodiversity on national and European levels, for example, for the EU Water Framework Directive. It would therefore be useful to establish a common integrated approach in meeting all of these reporting requirements. The Habitats Directive reports could contribute to reporting on cross-compliance issues relating to the Habitats and Birds Directives. Additionally, the monitoring data could have additional value in contributing to the programming frameworks and implementation of EU rural development policies (for example under Axis 2), and additional agri-environment and forestry issues.

Integrating the different monitoring requirements into a more efficient system would be less onerous for the Commission and Member States. Ensuring the full participation of different sectors of civil society, including scientists, NGOs and volunteer networks in the monitoring, reporting and assessment exercise would also make the process more efficient. The involvement of such networks could also help to make the monitoring obligations simpler and cheaper to fulfil. Good examples of successfully combining high quality scientific work and volunteer networks are the BirdLife monitoring initiatives (see Important Bird Areas) and the Bat Conservation Trust's National Bat Monitoring Programme (NBMP), which relies solely on data collected by nearly 2000 volunteers across the UK.

EHF recommends that an integrated monitoring system is established to efficiently use biodiversity monitoring data in all areas of European policy, involving a broad spectrum of European civil society, such as scientists, NGOs and volunteers to assist with the implementation of monitoring obligations.

5.2 Specific Comments

5.2.1 Range

Units

Our reports show some difficulties arose when estimating area. The guidance documents request that "range" is provided in km^2 and gives some examples of how to estimate range from grid maps. However, in practice we found that such databases are often unavailable or unsuitable. For the purpose of our reports, different approaches were taken to estimating the range, for example, on the basis of number of grids (for birds in UK), potential and actual vegetation (for Cork oak forests *Quercus suber*) or from drawing polygons around known locations (for some birds). Most EHF experts recommended taking a taxonomic-specific approach in estimating the range to ensure later comparison, for example, in the case of the Eurasian lynx (*Lynx lynx*), a species that requires huge areas but occurs in a fragmented landscape, it was found that determining the range using grid cells (of an adequate size to address the scales of compatible maps e.g. ATLAS FLORAE EUROPAEAE) worked better than drawing convex polygons.

Life Cycle

Especially for bird species, as well as other migratory species such as bats or marine species, the distinction between the breeding season and the non-breeding season is an important one, as it is generally unclear which parts of the life cycle of a migratory species should be included in the range and therefore in the assessment. The exact range of marine species such as the Loggerhead turtle (*Caretta caretta*) is sometimes unknown and could cover the whole Mediterranean Sea. This difficulty was also demonstrated by the case of the Great white egret (*Casmerodius albus*) in Austria which showed a marked difference in its range during the breeding and the non-breeding seasons, as well as in winter and summer. The same applies to its habitat, as in winter the species primarily uses arable fields. To define the range as a polygon around known localities, as requested in Annex F of the guidance document[27] (as the spatial limits within the species occurs), could lead to misinterpretation when outlying (and numerically insignificant) localities are abandoned, which would show the range to be shrinking significantly (in percentage terms as suggested by the Commission), whilst in reality species could be doing well or very well in terms of numbers and reproduction (population).

Surface Area

Difficulties were also encountered in measuring the surface area for dispersed species. For example, in the case of the Cork oak forest, (*Quercus suber)* (9330), it was difficult to determine surface area because of the very patchy distribution across its range. It may not be very useful to present the range as the extent of occurrence of figures for such a widely distributed tree and could be misinterpreted as its true occupancy area. If we approximated surface area of its range using "the extent of occurrence" concept of the IUCN categories, very large parts of the Iberian Peninsula would have to be included in order to encompass all the known populations. For very widespread species, but sometimes also for much less well known species, it will be difficult to find good quality data. For wide ranging animals it is important, from an ecological point of view, to include neighbouring countries, by applying a meta-population approach.

Isolated populations or recent historic records should be considered part of the range, even when these have almost no connection to the rest of the populations like the Lesser Horseshoe bat (*Rhinolophus hipposideros*) in the UK. In the case of the Brown bear (*Ursus arctos*) in Austria, WWF Austria decided to calculate the range separately for Central and Southern Austria, as there was no proof of exchange in recent years. According to this the range should encompass both.

Defining FCS

When it comes to defining FCS, it is important to be clear about what it is related to. For species, it will be biologically related to populations within a range and for habitats it could be the range (as the biogeographical region itself may be unsuitable, for example, in the case of the Alpine Region, which includes not only the Alps but also the Pyrenees and other mountain ranges of Europe). Clear guidance should also be given in determining reference values, for example, one can take the natural historic distribution (as for the Lesser horseshoe bat, *Rhinolophus hipposideros* in the UK), the potential range (Sand lizard, *Lacerta agilis*) or a mean value of a particular reference period (Great white egret, *Casmerodius albus*, in Austria). All of those values can make sense, but, again, comparable units are necessary. For further guidance in defining FCS or setting FRVs, see section 3.4.

EHF recommends further guidance be given on the interpretation of FCS in the guidance documents and the inclusion of a set of units for species or species groups for each taxonomic group to ensure a common approach is taken and to allow comparison. The biogeographic aspects should be applied to wide-ranging and less well known species.

5.2.2 Populations

Definitions & Explanations

The new guidance document provided by ETC-BD proposes the inclusion of a list of units for species and species groups to ensure a common approach is taken. Based on our experience, EHF supports this proposal in giving greater clarity to this important section of the assessment.

For many species, the existence of numerous populations within a country must be taken into account, therefore information should be provided about populations (as defined also in Art 1(i) of Habitats Directive (see section 5.1.3).

More explanation is needed regarding the differences between pressures and threats. Some EHF experts recommended specifying whether pressures are in the past or the present. Identifying threats and pressures can be often subjective as there is hardly ever data to demonstrate it. For example, many people consider that illegal killing is the most significant threat to the Eurasian lynx (*Lynx lynx*), however, data on mortality is seldom available. Additionally the list of threats and pressures provided is not comprehensive enough, and it would be useful to add more detailed descriptions or adding additional threats (possibly by creating new codes). For example, in the case of large carnivores KORA recommended including threats and pressures concerned with the situation of prey and intrinsic factors. In this regard the IUCN Red List Threats Authority File (**www.redlist.org/info/major_threats**) provides a more adequate list than Appendix E.

However population estimates are very complex and changes in population size can occur for different reasons, which are important to understand, both for their management and also for assessing conservation status. For example, Plantlife reported that populations of the bryophyte Petalwort (*Petalophyllum ralfsii*) in South west England are increasing due to climate change, whereas they are doing less well in other areas due to individual threats to sites. **EHF therefore recommends that a free text field is provided to give greater explanation.**

27 See footnote 22 on page 15.

Units

Adopting the proposed list of units for species or species groups[28] in the guidance is a first step and would improve the situation in terms of establishing common values for estimates and setting reference values. After the second reporting period the experiences of applying those units should be reviewed and updated if necessary.

5.2.3 Habitat for species

Units

Clarity is needed as to whether estimates refer to currently used habitat or suitable (potential) habitat. The new guidance document from ETC/BD provides more detail concerning this issue, which is a useful basis. Nevertheless, more definitions are needed as to the parameters that should be used in making the estimation, for example, should only "size" of the habitat be used, or also "quality", "management regime", "connectivity to other habitats" etc.

Area

The purpose of this section needs greater clarification, for example, it was not clear whether this was an assessment of the area of habitat currently used by the species or an assessment of the area of habitat available for use by the species. For the purpose of assessing conservation status (including future prospects), a comparison of both values makes more sense. Any assessment should take into account the difficulties of accurately measuring available habitat across a species´ range, given the constraints posed by, for example, altitude, size of patch, management regime, relationship to other habitats (for example, for foraging).

Some partners mentioned that the measurement of such habitats is extremely difficult, for example, in the case of the Great white egret (*Casmerodius albus*) the habitat changes during different stages of the annual cycle, between individuals, different age groups and for different functions (for example for feeding, breeding etc.).

Estimating area proved to be extremely difficult and complex, especially for plant species. Plantlife International found problems because the habitats in non Natura 2000 sites are insufficiently assessed and for lower plants the microhabitat might be more relevant than the habitat itself, so a suitable habitat does not necessarily support the plant. As microhabitats are such small areas, it is unlikely that information is available. Such habitats are also highly dynamic.

Additionally, for many wide ranging animals including bat and bird species that use a variety of habitats during their life cycle, it was difficult to decide which habitats should be included. Habitat and range seems to be the same for large and very adaptive mammals such as the bear or lynx. The difference between habitat and range for generalist and highly adaptive species like the Brown bear (*Ursus arctos*) might only be identified by excluding densely human populated areas from the calculation of range (further details for defining "habitats for the species" are given in 3.4).

The use of digitised maps may be advisable, although it is not yet available for all species and habitats in all countries. As in the case of bats there are many species and habitats for which data is missing, however, the use of sub-samples and modelling techniques may help to gain an overall view. EHF recommends that the European Commission provides a clear framework for modelling programmes and using sub-samples to estimate the habitat for species.

EHF recommends that this criterion is defined further and units are provided for the evaluation.

5.2.4 Trend

Units

As highlighted previously, comparable units should be used to calculate time and coverage, throughout the Member States which are consistent for each taxonomic group (or habitat and species). A trend can be given for a defined period, for example, from historical times until today, which may have first decreased, then stabilised and in recent years (due to conservation measures) increased, as has been documented in the case of the Brown bear in Austria. Given that historical background, the option of reporting on different trends could make sense (possibly in an extra field). Particular considerations for individual species may also have to be taken into account for example, for biological reasons it is impossible to assess a trend for the Loggerhead turtle (*Caretta caretta*), within a six year cycle. For more details on the special situation for turtles see also G. Dick & P. Casale (2006).

Threshold

The suggested percentage threshold for evaluating trends of 1% per year, was not found to be a very realistic measure of a species' conservation status. Monitoring methods alone lead to a measurement error higher than 1%. In the case of the White tailed eagle (*Haliaeetus albicilla*), monitoring is based on synchronised counting at different sites and numbers vary due to many factors, like weather conditions. Experts therefore recommend an estimated 10% measurement error as a variation of 1% is considered to be within the normal natural range of population fluctuations.

EHF recommends that minimum recommended periods are specified for trend estimations.

5.2.5 Definition of Habitat

As the habitats of the Habitats Directive are not fully defined, further guidance would be very useful, especially concerning typical species. The inclusion of typical species would also provide clear evidence for the future prospects and management implications. For practical reasons the management units (such as protected areas) often provide a useful starting point from which to collect the requested information. A way forward for the Member States could be to collect site-based information first (with implications for site management) and this could be incorporated into the overall assessment as required by the European Commission, on this site-based information. Correctly identifying the habitat types is also the first step in assessing its conservation status! The new version of the guidance document refers to this issue and the further definitions and options for selecting typical species that it provides are welcome.

EHF recommends continuous improvement of the national lists of "typical species" for habitats, which should be systematically incorporated in monitoring, management and impact assessment needs.

28 See footnote 22 on page 15.

5.2.6 Future Prospects

This is a crucial section; however, we recognise that it is also one of the most difficult. Further guidance is needed to better understand the three classes (good, poor, bad) and gather coherent information which can be compared between countries. For species this will be mostly assessed on the population level whereas for the habitats it may be the range or even a subcategory of this, encompassing a specific regional unit within a country or biogeographic region.

5.2.7 FCS and FRV

In terms of setting FRV NABU noticed: "that the guidance document only requires reference values for 'range', 'populations' (size) and 'area' (size) but this is insufficient according to the directives Article 1 (e and i), because 'specific structure and functions' as well 'typical species' are also listed as part of the FCS evaluation".

In the case of birds, RSPB/BirdLife UK reported that there is currently no commonly agreed means of determining range, population or suitable habitat for any bird species in the UK. Agreeing a common method for setting a favourable reference range/population must be a priority.

In general, for the populations, it may only be possible to gain information via a modelling process (e.g. bats) and for some species the information is not available (e.g. habitat for European nightjar, *Caprimulgus europaeus*).

For large mammals and birds, WWF Austria commented that the key problem was estimating the "favourable reference population". For most species this is impossible to know, as mortality rates, inbreeding factors etc are unknown. The biggest problem as identified previously also remains, of how to handle transborder populations. One Member State alone may never have the capacity to host a favourable population of a certain species, because the species spreads over three Member States. It is possible for the whole population to be in a favourable status, even if the conditions in one country are unfavourable. It is difficult to know how this should be reflected when only making assumptions based on the carrying capacity of one Member State. For example, in Austria there should still be enough room for up to 400 Brown bears (*Ursus arctos*), although they will always remain part of the alpine-dinaric population, which has to be favourable as a whole.

In the case of large carnivores, for example the Eurasian lynx (*Lynx lynx*), von Arx *et al.* suggested the following approach: it should be spread all over its potential habitat in the Alps but at a density that does not cause conflicts with the local communities (around 1 ind./100 km^2). The favourable reference range and population have been calculated using a GIS model (according to Zimmermann 2004).

Plantlife International warned that only basing calculations of FRV on population size would not be meaningful in some cases, because populations naturally fluctuate, especially for pioneer plants like Petalwort (*Petalophyllum ralfsii*), which depends on sand dune habitats.

Given the complexity and importance of this final assessment, it is essential to have clarity concerning the definitions and units to be used in setting the reference values, which should be reviewed and updated to ensure they are representative and comparable for further assessments and analysis (see section 3.4).

EHF recommends further development of more practical orientated guidance concerning the determination of FRVs and keeping this information updated. EHF definitions, guidelines and factors for setting FRVs are detailed in section 3.4.

5.2.8 Examples in the Explanatory Notes

Some comments from EHF experts on the examples provided in the document's DocHab-04-03/03.rev.3 (European Commission 2005) explanatory notes and guidelines, draft 1, 2005:

- Typical species listed in the Swedish example of Habitat 4030, page 24: In the list of typical species, only the plant *Genista pilosa* is a typical species, the other ones are typical for 6230.
- The example of raised bogs in Ireland lacks typical species, but focuses on abiotic features, which does not meet the goals of the Habitat Directive. The description of habitats should mainly concentrate on species or species inventories.
- The example of the salmon (*Salmo salar*) in France clearly shows that a sound description of and evaluation of the conservation status of a species is possible, although limited data and knowledge is available.
- The example of the orchid *Liparis loeselii* (1903) on page 26 only mentions natural processes as threats which in our view is unlikely.

EHF recommends including representative examples for each taxonomic group in the guidance document.

Section 6:

Ten Steps Towards Effective European Biodiversity Monitoring

1) Ensure a streamlined approach is taken when using biodiversity data to meet the various monitoring requirements for different EU policies, such as nature conservation, water management and rural development, and that these different monitoring obligations are compatible.

2) Fully integrate civil society in the monitoring process, to allow timely and adequate input at the national and EU level.

3) Special attention must be made to the setting of Favourable Reference Values (FRVs) in the European Commission evaluation of the national reports, and improve as necessary, the guidance and practical advice.

4) Integrate NGO recommendations for setting FRVs, as given in section 3.4 of this report.

5) Ensure the integration of biogeographical aspects (connectivity and trans-boundary perspectives etc) within the monitoring scheme.

6) Member States should dedicate a specific section of their reports to assessing the contribution of management measures adopted for the Natura 2000 network, and special species conservation measures.

7) Member States must improve the data situation within the 6-year period before the next report.

8) Establish adequate monitoring procedures for marine habitats and species. Clear guidance is needed with concrete actions and clear responsibilities.

9) Implement a "biogeographical seminars process" for monitoring, for all biogeographic regions, starting in 2008 in a similar way to those undertaken for Natura 2000 site selection, with a focus on concrete results and obligations for action. Member States should be required to take actions to improve the conservation status of habitats and species within the next six years.

10) Promote the establishment of a similar monitoring system for the signatories of the Convention on the conservation of European wildlife and natural habitats in order to ensure the assessment of the conservation status of habitats and species is included in the annexes of the convention.

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Annexes

Annex 1 **Published sources**

Baruš V. & Oliva, O. (eds.) (1992): **Obojživelníci (Amphibia)**. Praha (Academia), Fauna ČSFR, Vol. 25, pp 338 *(in Czech with English summary)*

Baruš, V. (eds) (1989): **Červená kniha ohrožených a vzácných druhů rostlin a živočichů ČSSR 2. Kruhoústí, ryby, obojživelníci, plazi, savci**. *(Red data book of plants and animals of CSSR II – Cyclostomata, Fish, Amphibians, Reptiles, Mammals)*. Praha, pp 133 *(in Czech)*

Beebee, T. J. C. & Buckley, J. (2001): **Natterjack Toad (***Bufo calamita***) Site register for the UK 1970–1999 inclusive**. University of Sussex and the Herpetological Conservation Trust, UK

Beito Garzón, M., Maldonado Ruiz, J., Sánchez de Dios, R. & Sainz Ollero, H., (2003): **Predicting Spanish sclerophyllous forest potentiality using artificial neural networks.** Graellsia 59 (2–3)

Benkert, D., Fukarek, F., & Korsch, H. (1996): **Verbreitungsatlas der Farn- und Bluetenpflanzen Ostdeutschlands: Mecklenburg-Vorpommern, Brandenburg, Berlin, Sachsen-Anhalt, Sachsen, Thueringen**. Jena, pp 615 *(in German)*

Berg, H.M. & Berg, G. (2005): **A 133 *Burhinus oedicnemus*.** In: Ellmauer, T. (Hrsg.), Entwicklung von Kriterien, Indikatoren und Schwellenwerten zur Beurteilung des Erhaltungszustandes der Natura 2000-Schutzgüter. Band 1: Vogelarten des Anhangs I der Vogelschutz-Richtlinie. Im Auftrag der neun österreichischen Bundesländer, des Bundesministerium f. Land- und Forst-wirtschaft, Umwelt und Wasserwirtschaft und der Umweltbundesamt GmbH, pp 344–356 *(in German)*

Blab J. (1986): **Biologie, Ökologie und Schutz von Amphibien.** Bonn – Bad Godesberg, pp 78 *(in German)*

Breitenmoser, U. (2005): **The Situation of the Alpine Lynx Population** – Conclusions of the Conference: Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 83–90

Broderick, A., Glen, C., Godley, F., Hays, B. J. (2002): **Estimating the number of green and loggerhead turtles nesting annually in the Mediterranean.** Oryx, v. 36, no. 3, p 227–235

Bundesamt für Naturschutz (ed., 1996): **Rote Liste gefährdeter Pflanzen Deutschlands**. Münster-Hiltrup, pp 744 *(in German)*

Bundesamt für Naturschutz (2003): **Ökologie und Verbreitung von Arten der FFH-Richtlinie in Deutschland, Band 1**. *(in German)*

Bundesamt für Naturschutz (ed., 2005): **Access Date Base of pSCIs of Germany** (Compilation on CD)

Canbolat, A. F. (2004): **A review of sea turtle nesting activity along the Mediterranean coast of Turkey**. Biol. Conserv. 116: 81–91

Charco, J. (1999): **El bosque mediterraneo en el norte de África. Agencia Española de Cooperación Internacional.** Madrid. *(in Spanish)*

Conway, G., Wotton, I., Henderson, R., Langston, A., Drewitt & Currie, F. (2005): **The status and distribution of the European Nightjar *Caprimulgus europaeus* in the UK in 2004**. Bird Study [submitted]

Costa Tenorio, M., Morla Juaristi, C. & Sainz Ollero, H. (eds) (1997): **Los bosques ibéricos. Una interpretación geobotánica.** Planeta, Barcelona *(in Spanish)*

Dick, G. & Casale, P. (2006): **Assessment, monitoring and reporting of conservation status – How does the approach of the European Union fit Sea Turtles?**, poster on 26th Symposium on Sea Turtle Conservation & Biology, International Sea Turtle Society, Crete.

Dierssen, B. & Dierssen, K. (1984): **Vegetation und Flora der Schwarzwaldmoore**. Veröff. Naturschutz Landschaftspflege Baden-Württemberg, Beiheft 39, pp 512 *(in German)*

Düll, R. (1994): **Deutschlands Moose, Band 3** *(in German)*

Dungel, J., Řehák, Z., (2005): **Atlas ryb, obojživelníků a plazů České a Slovenské republiky**. Academia, Praha, pp 181 *(in Czech)*

European Commission (2005): **Assessment, monitoring and reporting of conservation status – Preparing the 2001–2007 report under Article 17 of the Habitats Directive (DocHab-04-03/03 rev.3).** 10pp & Annexes

Gerosa, G. & Casale, P. (1999): **Interaction of marine turtles with fisheries in the Mediterranean**. UNEP/MAP, RAC/SPA, Tunis, Tunisia, pp 59

Häupler, H. & Schönfelder, P., (1988): **Atlas der Farn- und Blütenpflanzen der Bundesrepublik Deutschland**. Stuttgart-Hohenheim, pp 768 *(in German)*

Maldonado Ruiz, J., Benito Garzón, M., Sánchez de Dios, R. & Sainz Ollero, H. (2002): **Evolución reciente de las áreas de los bosques esclerófilos ibéricos. Cambios deducidos a partir de la cartografía forestal**. In: Charco, J. (coord) La regeneración natural del bosque mediterráneo en la península Ibérica. Arba, Madrid *(in Spanish)*

Margaritoulis D., Argano, R., Baran, I., Bentivegna, F., Bradai, M. N., Caminas, J. A., Casale, P., De Metrio, G., Demetropoulos, A., Gerosa, G., Godley, B., Houghton, J., Laurent, L. & Lazar, B. (2003): **Loggerhead turtles in the Mediterranean Sea: present knowledge and conservation perspectives**. In: A.B. Bolten and B. Witherington (Eds.) Loggerhead Sea Turtles. Smithsonian Institution Press. p 175–198

Mikátová, B. & Vlašín, M. (2002): **Ochrana obojživelníků.** *(Amphibian conservation)*. Veronica – EkoCentrum Brno, pp 137 *(in Czech)*

Molinari-Jobin, A. (2005): **Monitoring the Alpine lynx population**. Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP), 7–9 May 2003, Amden, Switzerland. Environmental encounters, No. 58, Council of Europe: 17–19

Molinari-Jobin, A., Molinari, A. P., Breitenmoser-Würsten, Ch., Woelfl, M., Stanisa, M., Fasel, M., Stahl, P., Vandel, J.-M., Rotelli, L., Kaczensky, P., Huber, T., Adamic, M., Koren, I. & Breitenmoser, U. (2003): **Pan Alpine Conservation Strategy for the Lynx**. Nature and environment No.130, Council of Europe Publishing, pp 20

Moravec, J. (1994): **Atlas rozšíření obojživelníků v České republice** *(Atlas of Czech amphibians)*. Národní muzeum Praha, pp 136 *(in Czech with English summary)*

Nebel, M. & Philippi, G., (eds., 2000–2005): **Die Moose Baden-Württembergs** (3 vols.). Stuttgart-Hohenheim, pp 512+529+487 *(in German)*

Nemeth, E. & Grubbauer, P. (2004): **Status, distribution and population trends of colonial breeding wading birds at Lake Neusiedl, Eastern Austria.** Egretta 47

Nemeth, E., Grubbauer, P., Rössler, M. & Schuster, A. (2004): **Ökologische Untersuchungen an den Reihern und Löfflern des Neusiedler See-Gebietes.** Habitatwahl, Nahrungsökologie, Bruterfolg, Populationsentwicklung und Schutz der in Kolonien brütenden Schreitvögel. BFB-Bericht 92: 1–22. *(in German)*

Oldham, R. S. & Swan, M. J. S. (1991): **Conservation of Amphibian Populations in Britain**

Petersen, B., Ellwanger, G., Biewald, G., Hauke, U., Ludwig, G., Pretscher, P., Schröder, E. und Ssymank, A. (2003): **Das europäische Schutzgebietssystem Natura 2000. Ökologie und Verbreitung von Arten der FFH-Richtlinie in Deutschland, Band 1: Pflanzen und Wirbellose**. Münster-Hiltrup, pp 744 *(in German)*

Plesník, J. (1999): **Zásady přípravy záchranných programů pro zvláště chráněné živočichy** *(Fundamentals for preparing saving programs for special protected animals)*. Ochrana přírody 54 (7): p 210–214 *(in Czech)*

Plesník, J., Hanzal, V. & Brejsková, V. (eds.) (2003): **Červený seznam ohrožených druhů České republiky. Obratlovci** *(Red list of endangered species of the Czech republic)*. Příroda *(in Czech)*

Rauer, G. (2005): **Braunbär.** In: Ellmauer, T. (Hrsg.), Entwicklung von Kriterien, Indikatoren und Schwellenwerten zur Beurteilung des Erhaltungszustandes der Natura 2000-Schutzgüter. Band 2: Arten des Anhangs II der Fauna-Flora-Habitat-Richtlinie. Im Auftrag der neun österreichischen Bundesländer, des Bundesministerium f. Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft und der Umweltbundesamt GmbH, p 344–356 *(in German)*

Rauer, G. *et al.*, (2001): **Der Braunbär in Österreich II**. Umweltbundesamt, pp 102 *(in German)*

Rauer, G., Laass & Striebel, B. (2005): **Der Braunbär in Österreich III**. Umweltbundesamt, pp 64 *(in German)*

Rennwald, E. (2000): **Verzeichnis und Rote Liste der Pflanzengesellschaften Deutschlands mit Synonymen und Formationseinteilung**. Münster-Hiltrup, pp 800 *(in German)*

Richardson, P. (2000): **Distribution Atlas of Bats in Britain and Ireland**. Bat Conservation Trust, pp 44

Rivas-Martínez, S. (1987): **Memoria y Mapa de series de vegetación de España**. ICONA. Madrid *(in Spanish)*

Ruiz de la Torre, J. (1990): **Mapa Forestal de España, 1: 200.000**. Ministerio de Agricultura, Madrid *(in Spanish)*

Schofield, H. W. (1996): **The ecology and conservation biology of** *Rhinolophus hipposideros***, the lesser horseshoe bat**. Ph.D. Thesis, University of Aberdeen

Steiner, G. M. (1992): **Österreichischer Moorschutzkatalog**. Grüne Reihe des BMGU Bd. 1: 509 pp. Styria Medienservice, Graz *(in German)*

Von Arx, M., Breitenmoser-Würsten, Ch., Zimmermann, F. & Breitenmoser, U. (eds.) (2004): **Status and conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001**. KORA Bericht No.19, p 330.

Zavadil, V. & Šapovaliv, P. (1990): **Rozšíření žab ve středočeském kraji I**. Bohem. Centr. 19, p147–234 *(in Czech)*

Zimmermann, F. (2004): **Conservation of the Eurasian Lynx (*Lynx lynx*) in a fragmented landscape – habitat models, dispersal and potential distribution.** Thèse de doctorat des sciences de la vie, Université de Lausanne, p 180

Webpages

http://bartgeier.ch/monitoring

www.panda.at/seeadlerprojekt.html – white tailed eagle

www.oncfs.gouv.fr

http://plantlife.smartchange.org – unpublished data

www.herpconstrust.org.uk – unpublished data held in the HCT Rare Species Database

www.bats.org.uk/nbmp/documents/NBMPReport2004_000.pdf

www.plantlife.org.uk/uk/plantlife-saving-species-under-our-care-bry-petal-lophyllum-ralfsii.htm

www.kora.unibe.ch/en/proj/elois/online/index.html

www.kora.unibe.ch/en/proj/elois/online/index.html – status and conservation of Eurasian lynx

Annex 2 **Assessment Summary – Species**

Species	Region	Country	Range			Population				Habitat for the species				Conclusions				
			Quality/data	Trend	Reasons/trend	Method	Quality/data	Trend	Reasons/trend	Quality/data	Trend	Reasons/trend	Future prospects	Range	Population	Habitat/spec.	Future prospects	Overall assessment
Bufo calamita	atl	UK	2	-98%	3,4,5,6	3	3	0%	3,6	2	0	3,4,5	1	U2	U2	U2	U1	U2
Bombina bombina	con	CZ	2	-36%	3	2	1	-36%	3	1	0	0	3	XX	XX	XX	XX	XX
Bombina bombina	pan	CZ	3	-56%	3	2	2	– >50%	0,3	2	–	0,3	3	XX	XX	XX	XX	XX
Bombina variegata	con	CZ	2	-20%	3	2	1	-20%	3	1	–	0	3	XX	XX	XX	XX	XX
Lacerta agilis	atl	UK	2	-95%	3,4,5,6	3	3	0	3,6	3	0	3,6	1	U2	U2	U2	U1	U2
Caretta caretta	med	IT	2	unknown	0	3,2	2	unknown	0			0	3	U1	XX	U2	U2	U2
Rhinolophus hipposideros	atl	UK	3	–	3	2,1	2,1	44%	1	2	unknown	3	1	U2	U2	XX	XX	U2
Canis lupus	alp	FR	3	20%	5	2	3	15	5	3	0	0	1	U1	U1	FV	FV	U1
Lynx lynx	alp	ALPIN		partly +	0,3,5,1	1,2,3	2 to 3	0	3,4,5	–	+	4,5	2	U2	U2	FV	U1	U2
Lynx lynx	alp	IT	2	0,+	0	2	2	0, +	0	–	+	4,5	2	U2	U2	FV	U1	U2
Lynx lynx	alp	SI	2	0	6	3	2	–	3	–	+	4,5	2	U2	U2	FV	U1	U2
Lynx lynx	alp	CH	3	0	3	3,2	3	0	3	–	+	4,5	2	U2	U2	FV	U1	U2
Lynx lynx	alp	FR	2	+	0	2	1	unknown	0	–	+	4,5	–	U2	U2	FV	XX	U2
Lynx lynx	alp	AT	1	unknown	0	1	1	unknown	6	–	+	4,5	3	U2	U2	FV	U2	U2
Ursus arctos	alp	AT	3	+	3	3	3	unknown	3	-	0	0	3	U1	U2	FV	U2	U2
Gentianella anglica	atl	UK	3	–	3,6	3	3	unknown	0	–	unknown	0	1	FV	U1	U1	U1	U1
Petallophyllum ralfsii	atl	UK	3	0	6	2	3	0	6	–	unknown	0	1	FV	XX	XX	U1	U1
Drepanocladus vernicosus	con	DE	3	-50%	2,3	1	2	-14%	2,3	1	–	2,3	3	U2	U2	U2	U2	U2
Sphagnum warnstorfii	con	DE	1	-33%	2,3	1	1	-10%	2,3	1	–	2,3	2	FV	U2	U1	U2	U2
Sphagnum capillifolium	con	DE	2	0	3	1	1	-10%	3	2	–	2,3	1	FV	U1	U1	U1	U1
Burhinus oedicnemus	con	AT	3	0	6	3	3	100%	1,6	3	+	3,6	2	U1	U2	U2	U1	U2
Burhinus oedicnemus	atl	UK	3	-45%	4	3	3	98%	3	–	unknown	0	–	U2	U2	XX	U1	U2
Caprimulgus europaeus	atl	UK	3	0	3	2	3	36%	3	–	0	1,3	–	U2	U1	XX	U1	U2
Haliaeetus albicilla	con	AT		+	3,5	3	3	+	3,5	3	+	1,3,5	1	XX	U2	FV	U1	U2
Gypaetus barbatus	alp	AT	3	0	6	3	3	20%	5,6	3	unknown	0	1	FV	U2	U1	U2	U2
Casmerodius albus	con	AT	3	0	6	3	3	0	6	3	0	6	1	FV	FV	FV	XX	FV

Legend

Region:
alp ..... alpine
atl ..... atlantic
con ..... continental
med ..... mediterranean
pan ..... pannonic

Country:
ALPIN ..... Biogeographic region of the Alps
AT ..... Austria
CH ..... Switzerland
CZ ..... Czech Republic
DE ..... Germany
FR ..... France
IT ..... Italy
SL ..... Slovenia
UK ..... United Kingdom

Quality of data:
3 ..... good
2 ..... moderate
1 ..... poor

Trend:
0 ..... stable
+XX% ..... net increase by XX%
-XX% ..... net loss by XX%

Reasons for trend:
0 ..... unknown
1 ..... improved knowledge/more accurate data
2 ..... climate change
3 ..... direct human influence (restoration, deterioration, destruction)
4 ..... indirect anthropo(zoo)genic influence
5 ..... natural process
6 ..... other

Method/population:
3 ..... complete inventory
2 ..... extrapolation from surveys of part of the population, sampling
1 ..... expert opinion

Future prospects:
1 ..... good
2 ..... poor
3 ..... bad

Conclusions:
FV ..... favourable
U1 ..... unfavourable inadequate
U2 ..... unfavourable bad
XX ..... Unknown

Annex 3 **Assessment Summary – Habitats**

Habitat	Region	Country	Range			Area covered by habitat				Conclusions				
			Quality/data	Trend	Reasons/trend	Method	Quality/data	Trend	Reasons/trend	Range	Area	Specific structures	Future prospects	Overall assessment
7110 Active raised bogs	con	DE	3	-40%	2,3	1	2	-50%	2,3	U2	U2	U2	U1	U2
7110 Active raised bogs	alp	AT	3	0%	6	3	3	0%	6	XX	XX	XX	XX	XX
7140 Transition mires and quaking bogs	con	DE	3	0	3	1	2	-50%	3	FV	U2	U2	U2	U2
7150 Depressions on peat substrates of the *Rhynchosporion*	con	DE	3	-13%	2,3	1	1	-22%	3	U1	U2	U2	U1	U2
7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	alp	AT	3	0%	3	3	3	-10%	6	XX	XX	XX	XX	XX
7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	pan[21]	AT	3	0%	3	3	3	0%	3	XX	XX	XX	XX	XX
7220 Petrifying springs with tufa formations	con	DE	1	-20%	2,3	1	1	-50%	3	FV	U2	U2	U2	U2
7220 Petrifying springs with tufa formations	alp	AT	3	0%	6	3	3	0%	6	XX	XX	XX	XX	XX
7220 Petrifying springs with tufa formations	pan[21]	AT	3	0%	3	3	3	0%	6	XX	XX	XX	XX	XX
7230 Alkaline fens	con	DE	2	-30%	3	1	1	-90%	3	U2	U2	U2	U1	U2
5110 Stable *Buxus semp* formations on calcareous rock slopes	con	DE	3	0	3	1	2	0	3	FV	FV	FV	FV	FV
9330 Cork oak forests	med	ES				3,2,1	1,3	+6% to -40%	3,1,6	FV	FV	U2	XX	U2

Legend as on page 79,
additionally note:

Country:
ES ..... Spain

Area covered by habitat, Method:
3 ..... ground based survey
2 ..... based on remote sensing data
1 ..... based on expert opinion

21 See footnote 21 on page 15.