

Endemism and European instruments on nature conservation

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Abstract

The EC Directive 92/43 on the conservation of natural habitats and of wild fauna and flora is one of the way to implement the Bern Convention ratified by the European Community. The aim of the directive is to contribute towards ensuring biodiversity in the European territory of the 15 EU Member States by the implementation of a network of Special Areas of Conservation (NATURA 2000 network). As an introduction, the paper presents the European Environment Agency and the European Topic Centre on Nature Conservation which support the European Commission on the scientific and technical aspects of the NATURA 2000 process. An analysis of the representativity of endemic species of the annexes of the directive and the Bern Convention is done, showing the weakness of these texts on this aspect but which can be compensated by an habitat approach including species level. Therefore, ecological studies on habitats and species are necessary to help defining management plans required for each site and accurated localisation of centres of endemism may help to assess if the NATURA 2000 network reflects to the endemism importance.

Keywords : Europe, directive, convention, natura 2000, habitat, species.

The European Environment Agency (EEA)

The European Environment Agency has been created by a Council regulation on May 7, 1990. The EEA's mission is to collect and validate data, and to provide reliable and comparable information at European level required by the European Commission and Member States to prepare and assess environmental policies.

The Agency is located in Copenhagen (Denmark) and its geographical scope covers 15 Member States of the European Union, as well as Norway, Iceland and Liechtenstein. However, the 13 PHARE countries of Central and Eastern Europe are now also associated with the work of the EEA.

To support its activities, European Topic Centres have been designated on several themes : air, inland waters, land cover, waste, soils, marine and coastal environment and nature conservation.

The European Topic Centre on Nature Conservation (ETC/NC)

Under contract with the EEA, the European Topic Centre on Nature Conservation is a consortium of 15 organisations, from 12 European countries, including the National Museum of Natural History (MNHN France), the lead institution and legal contracting party for the EEA. The ETC/NC work-programme is defined on the basis of two main activities :

1. contribution to periodical updates of two reports published by the EEA : "Europe's Environment" (contribution to Pan-European Conferences of the Ministers for the Environment) and "the Environment in the European Union" (analysis of the state of progress and preparation of the revision of European Union Environment Action Programmes). More specifically, a monograph on European Biodiversity is planned for 2000.

2. support to the implementation of the Community Natura 2000 network by the scientific analysis of data provided by the EU Member States on account of the 79/409/EEC Directive - the so-called Birds Directive - (EUROPEAN COMMISSION, 1979) and of the 92/43/EEC Directive - the so-called Habitats Directive - (EUROPEAN COMMISSION, 1992), as requested by the European Commission to the EEA.

The development and update of an European Nature Information System (EUNIS) is in progress to facilitate access and to harmonise information collected at national and supra-national levels with reference tools such as a synonyms database on European species and a standardised habitat classification .

Endemism and legal instruments

Due to its activities, ETC/NC can analyse from a scientific point-of-view how the European legal instruments such as the Bern Convention and the Habitats Directive take into account endemic aspects.

The Bern Convention

In the framework of the Council of Europe, the Bern Convention was signed in 1979. Today, nearly 40 European countries have ratified or signed the text. The aims are "*to conserve wild flora and fauna and their natural habitats, especially those species and habitats whose conservation requires the co-operation of several States, and to promote such co-operation*". Each contracting party shall take appropriate and necessary legislative and administrative measures to ensure the conservation of the habitats of the species specified in the annexes I and II (697 flora species and 713 fauna species). It is important to note that the concept of habitat is mentioned for the first time in a legal text.

A Standing Committee meets once a year and brings together representatives of the contracting parties and observers. The Standing Committee sees to it that the provisions of the convention and its appendices are applied. The Standing Committee adopts recommendations for improving the implementation of the convention. The contracting parties undertake to submit reports on their conservation policies every four years.

The Bern Convention has some specific attention for endemic species as detailed in the article 3 :

"Each Contracting Party shall take steps to promote national policies for the conservation of wild flora, wild fauna and natural habitats, with particular attention to endangered and vulnerable species, especially endemic ones, and endangered habitats, in accordance with the provisions of this Convention."

The analysis of the 55 recommendations adopted by the Standing Committee between 1982 and 1996 shows that only 6 of them mentions endemic aspect.

Recommendation no 52 (6 dec. 1996) on the conservation of habitats of Invertebrates species.

"recommend to the Contracting Parties : ...to analyse natural habitats of Invertebrates with a survey of Invertebrates species, especially rare ones and *endemic ones*....."

Recommendation no 51 (6 dec. 1996) on action plans about Invertebrates species in the annexes of the convention

"recommend to the Contracting Parties : to establish plans for *endemic species* threatened by extinction...."

Recommendation no 47 (26 jan. 1996) on the conservation of european semi-aquatic insectivora

"consider giving these species strict protection by the most appropriate means (including habitat protection if required) for *Desmana moschata* and for *Galemys pyrenaicus*..."

Recommendation no 40 (1993) on the elaboration of conservation or recovery plans for species in Appendix I of the convention

" recommend to the Contracting Parties : to elaborate and to implement conservation or recovery plans for *some endemic species threatened by extinction or vulnerable mentioned in the 'annexe I....'*"

Recommendation no 36 (1992) on the conservation of underground habitats

"recalling that underground habitats are very rich in *endemic species*....."

Recommendation no 34 (1992) on the conservation of the flora of macaronesian region

"recognising exceptional floristic interest of the macaronesian region which owns the higher proportion of *endemic plants* of all the territory covered by the convention...."

The annexes I and II have not been analysed in detail to evaluate the proportion of endemic species but for 3200 non-marine Molluscs existing in Europe, 19 are listed in the annex II among which 16 are endemic of Madeira (BOUCHET, *in press*).

The EC Directive 92/43 on the conservation of natural habitats and of wild fauna and flora

This directive adopted on 21st may 1992 is one of the way to implement the Bern Convention ratified by the European Community. The aim of the directive is "to contribute towards ensuring biodiversity in the European territory of the 15 EU Member States through the conservation of natural habitats¹ and of wild fauna and flora" by the implementation of a network of Special Areas of Conservation (SACs), called NATURA 2000 network². The selection of these areas is based on the presence of *natural habitat types of Community interest* (198 listed in the annex I³) and of *animal and plant species of Community interest* (713 listed in the annex II⁴). Each EU Member-state must propose a list of potential Sites of Community Interest (pSCIs) which will be analysed in the framework of 6 biogeographical regions defined as Alpine, Atlantic, Boreal, Continental, Macaronesian and Mediterranean regions. After a process of selection within each biogeographical region, the selected pSCIs must be designated by each Member State as SACs under their national legislation. In January 1999, 7540 pSCIs have been transmitted by 14 Member-States to the European Commission.

The representativity of each species group within the annexes II and IV⁵ is detailed below.

| Number of species | annex II | annex IV (II & IV) |
|-------------------|----------|--------------------|
| Mammals | 41 | 106 (35) |
| Reptiles | 20 | 84 (19) |
| Amphibians | 23 | 47 (22) |
| Fish | 67 | 6 (6) |
| Molluscs | 23 | 25 (16) |
| Arthropodes | 56 | 47 (27) |
| Angiosperms | 433 | 491(433) |
| Gymnosperms | 1 | 1 (1) |
| Pteridophyts | 18 | 19 (1) |
| Bryophyts | 31 | 0 |

¹ According to the article 1, natural habitat means terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural.

² The NATURA2000 network will also include the Special Protected Areas designated in the framework of the Birds directive (EC/79/409).

³ Annex I - Natural habitat types of Community interest whose conservation requires the designation of Special Areas of Conservation.

⁴ Annex II - Animal and Plant species of Community interest whose conservation requires the designation of Special Areas of Conservation.

⁵ Annex IV - Animal and Plant species of Community interest in need of strict protection.

The Article 1 of the directive defines the expression of "*species of Community interest*" as "*a species which is :*

- *endangered, except those species whose natural range is marginal in that territory and which are not endangered or vulnerable in the western palearctic region; or*

- *vulnerable, i.e. believed likely to move into the endangered category in the near future if the causal factors continue operating; or*

- *rare, i.e. with small populations that are not at present endangered or vulnerable, but are at risk. The species are located within restricted geographical areas or are thinly scattered over a more extensive range; or*

- *endemic and requiring particular attention by reason of the specific nature of their habitat and/or the potential impact of their exploitation on their habitat and/or the potential impact of their exploitation on their conservation status."*

Based on the Atlas of Amphibians and Reptiles in Europe (GASC *et al.*, 1997), the analyse of the annexes II and IV shows that 18 amphibians species and 17 reptiles species listed in these annexes are defined as endemic species (mainly endemic of a specific region). The Atlas defines a total of 21 endemic species for each group within all Europe (Europe until West of the Ural, until North-East of Azerbaijan, until North-West of Khazakhstan, Greece minus off the Turkish coast, except Asian Turkey. The macaronesian region is not included). The same analysis based on Flora Europaea (TUTIN *et al.*, 1980) shows that 72% of angiosperms species listed in the annex II are endemic of some regions in Europe (except Macaronesian region where 111 angiosperms species occur and are listed in the annexes).

So, if we limit the analysis to Amphibians and Reptiles groups, the Habitats directive covers well endemic species for these groups. Concerning Angiosperms species, even if the Habitats directive cover only 15 countries, the 195 endemic species listed in the annex II seem very low compared to the 3500 endemic vascular plants species for all Europe excluding Macaronesian region (DAVIS *et al.*, 1994). For Invertebrates and Lower Plants, the low number of species listed in the annexes let expect that endemic species are also little represented.

On the basis of around 5000 pSCIs proposed by the countries, 731 sites host endemic species and 75% of these sites are present in the Mediterranean region, 12% in the Continental region, 7% in the Atlantic region and 6% in the Alpine region. 30% of the pSCIs of the mediterranean region host endemic species but the other regions have only 7% pf pSCIS holding endemic species. We must say that proposals for pSCIs are still pending for the Alpine region and we can expect new figures for this region.

Conclusions

Endemic species are not very well represented in European instruments neither are some groups as Invertebrates and lower plants. However, it is im-

portant to consider these instruments in the light of an "habitat⁶ approach" which complement the species approach. A number of endemic species, though not listed in annexes, are likely to be hosted in some habitats listed in annexes. From a pragmatical point-of-view, a legal instrument must be defined precisely according to expected goals and the implementation of this tool must be feasible and realistic. So, if the species lists are too long or if the identification of the species needs very detailed knowledge, the instrument can be very quickly inefficient.

But, because the Habitats directive requests a management plan for each SAC, ecological studies on habitats and species are necessary to help defining management recommendations which take care of Invertebrates and Lower plants. Studies on relationship between habitats and species may help to know how many species or what species can be taken into account with an habitat approach. On the other hand, localisation of centres of endemism may help to assess if the NATURA 2000 network reflects to the endemism importance.

Bibliography

- DAVIS S.D., HEYWOOD V.H. & HALMITON A.C., 1994. - *Centres of plant diversity, a guide and strategy for their conservation*. Volume 1 : Europe, Africa, South West Asia and the Middle-East. WWF, IUCN. 354 pp.
- BOUCHET P., FALKNER G. & SEDDON M., (sous presse). - *Lists of protected land and freshwater molluscs in the Bern Convention and European Habitats Directive : are they relevant to conservation ?*. *Biological Conservation*.
- EUROPEAN COMMISSION, 1979 - Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds; O.J. L103, 25.04.79, amended OJ L1, 1.01.95.
- EUROPEAN COMMISSION, 1992 - Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora; O.J. L206, 22.07.92.
- EUROPEAN ENVIRONMENT AGENCY. - EUROPEAN TOPIC CENTRE ON NATURE CONSERVATION, DAVIES C.E. & MOSS D., 1998 - EUNIS Habitat Classification, final draft. 204 pp.
- EUROPEAN ENVIRONMENT AGENCY, 1998 - *Europe's Environment : the Second Assessment*. Elsevier Science. 293 pp.
- GASC J.-P., CABELA A., CRNOBRNJIA-ISAILOVIC J., DOLMEN D., GROSSENBACHER K., HAFFNER P., LESCURE J., MARTENS H., MARTINEZ RICA J.-P., MAURIN H., OLIVEIRA M.E., SOFIANIDOU T.S., VEITH M. & ZUIDERWIJK A. (Eds.), 1997. - *Atlas of Amphibians and Reptiles in Europe*. Societas Europaea Herpetologica & Muséum National d'Histoire Naturelle (IEGB/SPN), Paris. 496 pp.
- TUTIN T.G., HEYWOOD V.H., BURGESS N.A., MOORE D.M., VALENTINE D.H., WALTERS S.M. & WEBB D.A., 1980. - *Flora Europaea*. Cambridge University Press. 5 volumes.

⁶ According to the article 1, habitat of a species means an environment defined by specific abiotic and biotic factors, in which the species lives at any stage of its biological cycle.