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Nature Conservation

Annual topic update 1998

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1. Introduction

The European Environment Agency (EEA) and the related European Environment Information and Observation Network (EIONET) were conceived to provide timely, targeted and co-ordinated information on Europe's environment to decision makers to support the sustainable development of the environment. In order to do so, EEA has to screen, evaluate, validate and process data and information pertinent to the environment. Efficient information documents are produced principally for the European Union Institutions and Member States, and also for the general public.

The European Topic Centre on Nature Conservation (ETC/NC) is one of the nine ETCs created by EEA. It consists of a consortium of fifteen institutions from twelve European countries. The French Muséum National d'Histoire Naturelle (MNHN) is the lead organisation of the consortium. Each institution has a representative in the Management Committee, which is responsible to the Agency for the overall development of the ETC/NC Work Programme.

The consortium has a variety of partners, ranging from public science and research institutions to international organisations, partners from national administrative bodies or with NGO affiliations. As well as being ETC partners, several of them are Principal Contact Points (PCPs) or National Reference Centres for Nature Conservation (NRC/NC), and sometimes National Focal Points (NFPs) within EIONET.

Partners in the consortium of ETC/NC are:		EIONET status
MNHN	Muséum National d'Histoire Naturelle (National Museum of Natural History), Paris (France)	NRC/NC
BfN	Bundesamt für Naturschutz (Federal Agency for Nature Conservation), Bonn (Germany)	NRC/NC
NERI	Danmarks Miljøundersøgelser (National Environmental Research Institute), Rønde (Denmark)	(NFP) *
MNCN	Museo Nacional de Ciencias Naturales (National Museum of Natural History), Madrid (Spain)	--
DGCN	Dirección General de Conservación de la Naturaleza (General Directorate for Nature Conservation), Madrid (Spain)	NRC/NC
FEI	Suomen Ympäristökeskus (Finnish Environment Institute), Helsinki (Finland)	NRC/NC (NFP) *
EKBY	Greek Biotope/Wetland Centre, Thermi (Greece)	NRC/NC
ANPA	Agenzia Nazionale per la Protezione dell'Ambiente (National Nature Protection Agency), Rome (Italy)	NRC/NC (NFP) *
NINA	Norsk Institutt for Naturforskning (Norwegian Institute for Nature Research), Trondheim (Norway)	(NRC/NC) *
ECNC	European Centre for Nature Conservation, Tilburg (The Netherlands)	--
ICN	Instituto para la Conservação da Natureza (Institute for Nature Conservation), Lisbon (Portugal)	NRC/NC
ISEGI	Instituto Superior de Estatística e Gestão de Informação (Higher Institute for Statistics and Information Management), Lisbon (Portugal)	MCE
ITE	Institute of Terrestrial Ecology, Monks Wood (United Kingdom)	--
JNCC	Joint Nature Conservation Committee, Peterborough (United Kingdom)	NRC/NC
SEPA	Naturvårdsverket (Swedish Environmental Protection Agency), Stockholm (Sweden)	NRC/NC (NFP) *
* a different division of the organisation is part of EIONET, but not an ETC/NC partner		

Several partners are members of the European Conservation Institutes Research Network (CONNECT). The JNCC is a co-ordinating body involving three regional institutions. The ECNC partner is also a network of institutions, among which is included the World Conservation Monitoring Centre (WCMC). ETC/NC is therefore well connected to a number of relevant networks.

In 1998, the activities of the ETC/NC have been extended to the 13 PHARE countries through the creation of the PHARE Topic Link on Nature Conservation (PTL/NC). The PTL/NC is led by The Institute of Landscape Ecology of Slovakia, Bratislava, and has two main partner organisations providing experts: The Institute of Biology of the Romanian Academy, Bucharest, and The Institute of Geography of the University of Tartu, Estonia.

The ETC/NC Leader is Juan Manuel de Benito. The ETC/NC leader is assisted in co-ordinating the Topic Centre's Work Programme by an international Core Team of specialists based at the MNHN in Paris. The PTL/NC leader is Július Oszlányi.

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The ETC/NC Leader is responsible for implementation of the extended Work Programme, either through the Core Team or by a partner of the Consortium, and for ensuring full co-ordination with PTL/NC. He assists the EEA Project Manager in preparing technical annexes for the annual subventions and provides ad hoc support when requested and agreed. He also develops and maintains contacts with relevant EEA partner organisations, international organisations and international programmes (UN-ECE, EUROSTAT, OECD, International Convention Secretariats).

The ETC/NC Work Programme is developed under EEA subventions and subventions from the French Ministry of the Environment to the MNHN as Consortium lead organisation. The PTL/NC extension to the PHARE countries is funded by the Commission DGI/A. Other partners also contribute with additional resources in various ways.

The ETC/NC has two basic missions:

- to assist EEA in assessing the state and trends of biodiversity in Europe, working at Pan-European level as far as possible and when relevant; and
- to provide EEA's technical assistance to the Commission in the implementation of EU policies on nature conservation.

To fulfil its mission, ETC/NC:

a. develops a tool: the European Nature Information System (EUNIS)

- by acquiring data step-wise and in blocks on data sources, species, habitats and sites, on a bio-geographic background when relevant;
- by establishing appropriate links between the different blocks;
- by making the information accessible to users.

b. builds a network of expertise with which to co-operate

This implies not only

- working closely with EEA member countries, but also
- following up on relevant activities being developed by specialised thematic networks all over Europe (such as European Atlas Committees) or by other European and international organisations which carry out programmes of relevance for nature and biodiversity (DGXI and DGXII, Council of Europe, UNEP, OECD, UNESCO, UN-ECE etc.).

c. provides various specific products and services:

- standards for collection of data for:
 - species*: a relational database of synonyms for species of main interest for environmental policies;
 - habitats*: a standardised classification of European habitats types, building upon previous initiatives;
 - sites*: a common database on designated areas;
 - mapping*: a standardised grid UTM 50x50km.
- reference maps:
 - Pan-European map of Bio-geographic Regions* (as an extension of the Habitats Directive concept to the Bern Convention);
 - Digitised Map of European Ecological Regions* (DMEER), linked to a background database;
- individual specific datasets (e.g. on species, nationally and internationally designated areas) established as part of EUNIS;
- statistics and maps on species, habitats, sites. Together with the above-mentioned reference maps, these products are a major input to a CD-ROM on nature resources (NATLAN project), being produced in 1998-99;
- development of a Web interface on the Internet;
- expertise contributing to EEA main reporting activities: *Europe's Environment - The Second Assessment* (1998), *Environment in the European Union at the turn of the century* (1999);
- proposals for indicators of biodiversity, in close relation with other international organisations working on these topics such as EUROSTAT, Alpine Convention Secretariat, the Convention on Biological Diversity;
- scientific advice to the European Commission DGXI and the Council of Europe on specific issues related to annexes of directives and conventions involving species, habitats and sites.

d. provides ad-hoc support to the EEA

In various activities (developing the Work Programme, advising specific clients/users, providing reviews and comments on draft reports, participating on behalf of the EEA in working groups and committees, promoting the EEA/ETC and the results obtained etc):

- by contributing to activities of other ETCs;
- by exploring new possibilities of a common European approach led by EEA;
- by ensuring application of nature-related aspects into the EEA integrated assessments.

e. supports harmonisation and common understanding within EIONET

- by organising an annual EIONET Workshop on Nature Conservation issues;
- by maintaining frequent contacts with the EIONET Principal Contact Points for nature conservation.

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1) Former Yugoslavian Republic of Macedonia

2. Progress in 1998

2.1. Development of EUNIS

ETC/NC continued to develop the European Nature Information System EUNIS, which has two main aims:

- to facilitate use of data by promoting harmonisation of terminology and definitions; and
- to be a reservoir of information on European environmentally important matters.

EUNIS consists of a central unit integrating data models on species, habitats and sites; several secondary databases which are managed by different partners; and an increasing number of satellite databases.

In 1998 the EUNIS related activities have focused on:

- harmonisation tools;
- data collection;
- data flow;
- data distribution.

2.1.1. *Harmonisation tools*

EUNIS 50x50 km UTM grid

For the evaluation of the state of nature in Europe, relevant sources are the European atlases of species such as Atlas Flora Europaea, Atlas of Amphibians and Reptiles in Europe, Atlas of European Breeding Birds, European Mammal Atlas and European Invertebrates Survey. The first European grid system used for biological recording was developed by the Atlas Florae Europaea (50 x 50 km grid cells). It formed the basis for many other atlas projects in Europe as listed above. However, it was recognised that each committee used a slightly amended mapping grid. Any attempt at an integrated exploitation of the information contained in the atlases is seriously hampered by those, albeit sometimes small, differences in cartographic principles of the grid.

In May 1998, during a meeting between ETC/NC and the Atlases mentioned above, principles for one common European Chorological Reference Grid (CGRS) were adopted. On this basis, ETC/NC has developed a 50x50 km grid reference model which will be one of the main EUNIS tools to refer any spatial data at European level. However, data referenced to this grid must sometimes be converted to other grids for integrated use with other types of data. The grid file can be obtained from the ETC/NC and has been put at the disposal of the Atlases interested.

EUNIS Synonyms Database

Consistency in the use of species names for monitoring and for administrative and legal purposes is essential. Nevertheless, for many species several synonyms are in use in legal texts (conventions, directives), in monitoring reports and in literature. This can bring confusion and reduce the possibilities for comparison of data.

Therefore the development of a system of correspondence between species and their synonyms has been necessary for the internal management of the EUNIS database and for the wider use of EUNIS data.

On the basis of the first version of the database developed by ETC/NC partner 'Museo Nacional de Ciencias Naturales' (MNCN, ES), the work in 1998 consisted of a test to check the feasibility of a periodical validation and updating process, through an experts network of the already collected scientific names and synonyms. The result of this test, which concerned both molluscs and Freshwater fish species in the database, is planned to be available on EEA's Website in 1999. By the end of 1998 the number of scientific names in the database was 14708, of which 5767 were valid names and 8941 synonyms. The EUNIS database thus handles 5767 species or sub-species, each with several records and many with more than one synonym.

However, the species synonym work undertaken by ETC/NC only addresses a limited number of species considered of priority environmental concern. ETC/NC recommends that initiatives such as Fauna Europea, the Euro+Med PlantBase or the European Register of Marine Species, all of which constitute the European contribution to the international UNEP-endorsed initiative 'Species 2000' concerning global checklists of species, should be supported by European organisations, both scientifically and financially.

EUNIS Habitat Classification

There are several habitat type classification systems in use for monitoring and description of habitats. These systems have many similarities, but they are not identical and aggregation from different systems to reporting at European level is difficult. This also applies for the habitat types listed in the EU Directives, the Bern Convention and some of the marine regional conventions.

For habitat types there is thus the same basic need as for species for harmonisation at European level of terminology and definitions in order to allow common reporting, comparison and analysis of habitat information in Europe.

ETC/NC has therefore developed a common reporting language on habitat types at European level: the EUNIS Habitat Classification. It builds upon previous initiatives such as the Palaearctic Habitats Classification, developed for the Council of Europe (CoE), but re-structures and re-defines this classification. Initiated in 1996, the work is carried out by ETC/NC partner 'Institute of Terrestrial Ecology' (ITE, UK).

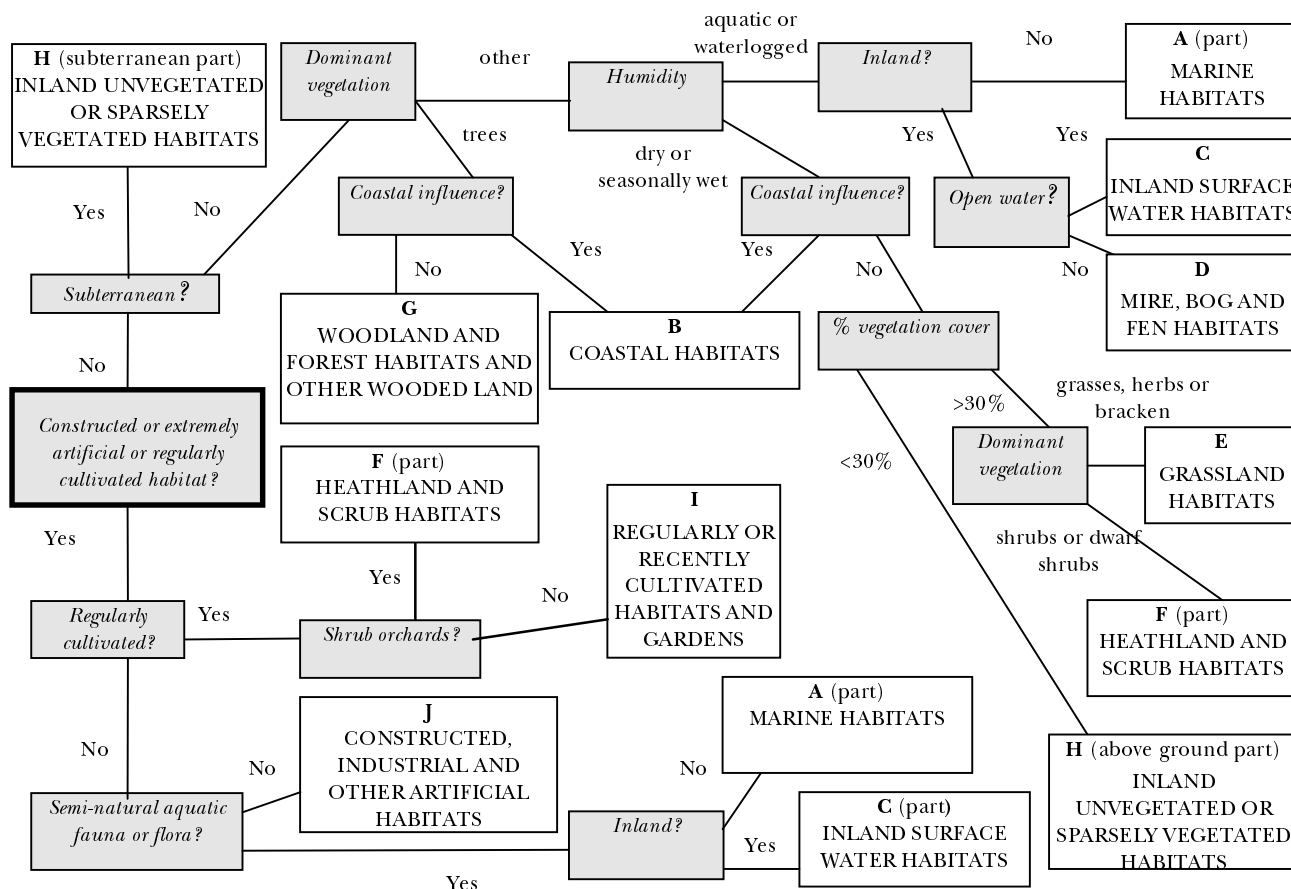
The 1997 draft proposal for the EUNIS Habitat Classification has been discussed in depth, firstly through a network of over 150 experts throughout Europe, and secondly by a restricted experts' meeting held in June 1998. By this date, almost all of the terrestrial habitat classes were widely agreed. At the end of 1998 a few groups such as forests, grasslands and marine habitats still needed refining in 1999. To start this process already in 1998, a specific marine experts' meeting was held in October 1998 to compare marine habitat classifications for the Baltic, Atlantic and Mediterranean regions.

By the end of 1998 the EUNIS Habitat Classification included:

- reasoned criteria for levels 1 to 3 (and when necessary also level 4) of the classification;
- criteria diagrams to allow easy classification of a given habitat type (Fig. 1);
- correspondence tables for CORINE Land Cover classes and the Palearctic Habitat classification.

The EUNIS Habitat Classification has been presented to different fora, where it has been accepted as a very interesting and useful initiative. In particular, the results of the marine experts' meeting had direct input to a meeting of experts from Mediterranean countries within the Barcelona convention in November 1998. The most recent versions can always be obtained from ITE.

Fig. 1: Criteria diagram for level 1 of the EUNIS Habitats Classification (version 1998)¹



2.1.2. Data collection

The contribution to main EEA reporting activities and support to DGXI of the European Commission for implementing the EC Habitats Directive mandate are priority projects for ETC/NC. Therefore most data in EUNIS has been collected in the framework of these projects. The data includes not only those provided by Member States (for example when describing the proposed NATURA 2000 sites) but also reference data collected by the ETC/NC from literature and other sources on species and habitats in the related biogeographic regions.

¹ Each choice is referred to by explanatory notes not shown here.

Moreover, EUNIS includes information on sites designated under national and international designations (Common Database on Designated Areas in Europe) and is progressively incorporating information on species and habitat types taken into account in relevant international conventions. Though developed separately, at the request of the European Commission, the database on Special Protection Areas (sites designated under the EC Birds Directive which are also part of the NATURA 2000 Network) provides relevant data.

Eventually, data collected in the framework of the EEA reporting activities will also constitute a core set of data to be up-dated periodically, though most of the information is in an aggregated form and not in raw data form, which obviously limits the possibilities for exploitation.

EUNIS Species Database

The agreed goal for the species database is to include relevant information on the environmentally important species by the end of the year 2000.

The EUNIS species model will contain in a harmonised way data on:

- reference information
 - scientific name (the most accepted one) and synonym(s);*
 - vernacular name(s);*
 - habitat preference (for a limited number of species).*
- spatio-temporal information
 - occurrence by country and bio-geographic region (the last one only for Habitat Directive species);*
 - geographical distribution by grid 50x50 km (for a limited number of species);*
 - population size and trends.*
- conservation status
 - threat status at national level;*
 - threat status at European level (only for vertebrates);*
 - legal status at international level.*

By the end of 1998 the EUNIS Species database contained around 18000 records on 5767 valid species or subspecies, but the amount of information already collected on each species varies in accordance with the potential use of the data. The 'reference information' has been collected for almost all of the species of European environmental interest², except for the habitat type preference parameter. In 1998 the 'spatio-temporal information' began to be available for a few EC Directive species (data used to illustrate the EEA reports). The data concerning the 'conservation status' has been collated as far as member countries are providing their national Red Books and other relevant literature. The species information is under constant development and is used for the bio-geographic seminars for evaluation of the national proposed Sites of Community Interest for the Habitats Directive.

EUNIS Habitat type database

The habitat concept is the foundation under several Community and international initiatives such as NATURA 2000 (Birds and Habitats Directives) and EMERALD (Council of Europe Bern Convention), while the Convention on Biological Diversity (CBD) and the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) are based on major eco-system types. Also several marine initiatives such as HELCOM, Barcelona Convention, and OSPARCOM are starting

² Those included in the Annexes of the EU Directives as well as in the reference list for the Emerald Network; those identified by the EC for the CBD-related reporting purposes; and those selected by the EEA as appropriate indicators for their reporting activities (included NATLAN and the Annual Indicators report).

to use the habitat concept for different purposes. However, collection of information on habitats and eco-systems at supra-national level is very recent.

The agreed goal is to include basic information (mostly habitat type description and distribution) on the environmentally important habitat types by the end year 2000.

The EUNIS habitat type database will contain data on:

- reference information (the 'Habitat parameter frame')
identification descriptors;
distinguishing characteristics and parameters;
links to other classifications.
- spatio-temporal information (only for Annex 1 of the Habitats Directive)
occurrence by country and bio-geographic regions;
geographical distribution by grid 50x50 km (for a limited number of habitat types);
trends.

As for species, the amount of information on each habitat type varies in accordance with the use of the data. Despite the difficulty of access to harmonised spatio-temporal data on habitats, the EUNIS habitat type model by the end of 1998 included more than 20000 geographical records on the 198 habitat types of the Habitats Directive. Data was extracted from both the NATURA 2000 and the CORINE Biotopes Sites databases. As for species, the habitat information is under constant development and is used for the bio-geographic seminars for evaluation of the national proposed Sites of Community Interest for the Habitats Directive.

EUNIS Sites³ database

The agreed goal is to include relevant information on nationally, Community and internationally designated areas. Basic data is mostly collected in the framework of the Common Database on Designated Areas (CDDA), a collaboration with WCMC and CoE on designated area data in Europe, set up to ensure that the same data are only requested from member countries through one channel. EEA is responsible for information on the nationally designated areas.

The current EUNIS data on sites mainly relates to:

- site identification
name;
code;
type of designation.
- site location
country (region);
central co-ordinates.
- site characterisation
surface;
year of establishment;
IUCN category.

Nearly all European countries have national inventories of designated sites, most of them in computerised format. Data on nationally designated areas have been collected from member countries since 1996 and several requests for updating have been sent to member countries. The result has been discouraging. By the

³ The terms 'site' or 'area' are both used in the following and substitute each other in the general text. In legal texts and in titles of documents and databases care should be taken to use the official term. In EUNIS database documentation the information type name is 'site'.

end of 1998, two years after starting the updating several countries had not yet responded. The most frequently used answer from countries concerns lack of time to verify and validate (or correct) the data, but also technical difficulties in transferring data from one organisation to the next.

This poor result may prevent a desirable enlargement of the EUNIS sites data model by adding new data fields (occurrence of species and habitats, land-use, threats, value, etc.) as well as site boundaries for each designated area.

To overcome problems of transfer, it was suggested by ETC/NC to develop specific tools to allow an automatic transfer of the requested on sites data from each national database to the EUNIS database. In co-operation with the French NRC/NC, a first attempt was started in 1998, the usefulness of which will be tested in early 1999. The updating and validation process will continue in 1999 through EIONET. It is expected that the number of sites recorded will grow considerably.

By the end of 1998 the EUNIS Sites database contained about 25370 records for all European countries. However, many sites may be designated for different purposes under different names and with slightly different boundaries. The relations between different designations are not yet fully recorded for each site, making it difficult to estimate the total number of individual designated sites represented in the database. Digitalisation of the boundaries would help solve this problem. The data were used for the report *Environment in the European Union at the turn of the century* and for the preliminary TERM (Transport and Environment Reporting Mechanism) indicator development and will be available in the NATLAN CD-ROM and Web datasets.

2.1.3. Data flow

One of the main problems in the data collection for EUNIS relates to the actual availability of data at national level.

To discuss these problems in more depth, the second EIONET Workshop on Nature Conservation (held in Battleby (UK), on 16-17 April 1998), involving 27 EIONET PCPs, was organised around the concept 'From national monitoring to EEA reporting' and focused on data flow issues. The main points for discussion were:

- data needs for EUNIS and availability of data at national level on species, habitat types and sites;
- other data needs and availability for various types of EEA reporting;
- organisation of data flow.

In general terms, the discussion highlighted the difficulty for most member countries to provide data of relevance at European level and to make what exists available. It was recommended that EEA should not be too ambitious in its requests to countries for updating and for enlargement of information.

A questionnaire on national availability of data and the related problems of providing data was sent to PCPs after the workshop to obtain more firm information. By early 1999 nine countries had responded and some basic conclusions could be drawn:

- Most countries were able to provide detailed geographic information (distribution per grid 10x10 km) for vertebrates (except, maybe, for fish), as well as for some invertebrates and vascular plants. However, quantified data on

population size and trends are only available for some breeding birds. On the contrary, only a few countries would be able to provide spatio-temporal information on other species. The relevant interval of updating for species information is around 5 years, often every 10 or 20 years;

- No country was able to provide detailed spatio-temporal information on habitat types. Half of them could provide some rough estimation about the surface covered by most habitat types, but only a few about trends in habitats surface;
- Most countries were able to provide ecological information (main occurring habitat types and species), as well as boundaries, for at least part of the designation-types of their designated sites. The same information concerning all the designation-types is only available in some countries. Only half of the countries estimated that they would be able to update yearly the basic information concerning designated sites.

It appears clear that, on the basis of the results of this questionnaire, EEA and ETC/NC have to modify the expectations for the data flow from national data sources to EUNIS. Priorities need to be proposed to, and agreed with, the EEA member countries.

2.1.4. Data distribution

EUNIS species database output

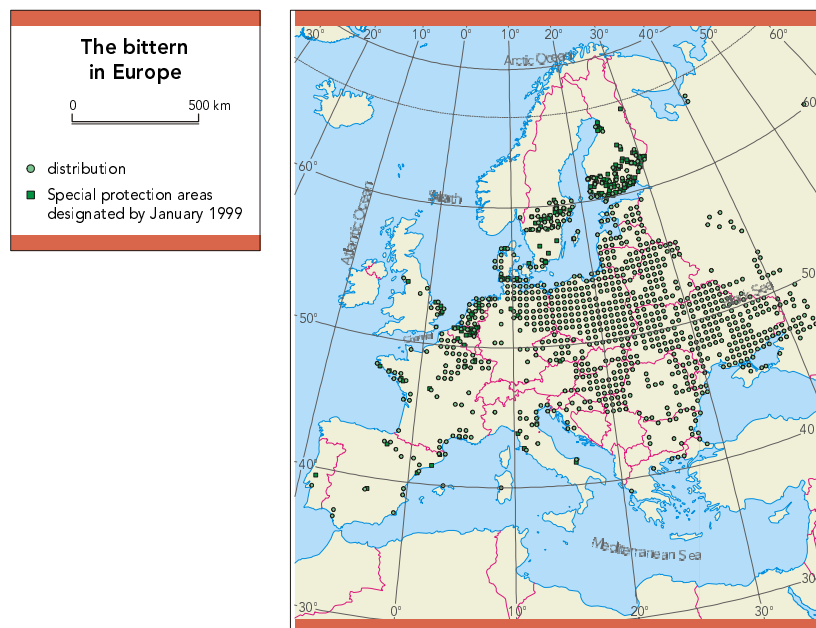
Accessibility to the EUNIS information on species has been tested using the data gathered on European vertebrates (terrestrial species and freshwater fish). A specific application has been developed to facilitate the circulation and distribution of the existing data. The main information covers identification (taxonomy and synonyms), geographical distribution (mostly by country), conservation status (at both European and National level) and legal status (European level). At this stage, the application will be circulated only within EIONET, but in the future data is foreseen to be accessible via CD-ROM or Internet.

The basis for a technical report on European Vertebrates was prepared by ETC/NC during 1998, but it was agreed to establish a joint initiative with the CoE concerning a Red Book of in Europe to be produced in 1999. This Red Book will show for the first time a European approach to assess the conservation status of the concerned species using, as far as possible, the new IUCN quantitative criteria and resulting categories. The scientific revision and improvement of the previous draft has been possible thanks to the involvement of four different networks of experts, three of which (mammals, birds and amphibians/reptiles) were set up by the respective European Atlas Committees.

The spatio-temporal information contained in the EUNIS species model has constituted the main source of reference data to assess the NATURA 2000 national proposals (see 2.2) at bio-geographic level. It has also allowed ETC/NC to respond to many questions asked by DGXI/D2 on specific geographic areas during the year.

Finally, several figures, tables and graphics in the chapter on changes in biodiversity in the EEA report *Environment in the European Union at the turn of the Century* are direct outputs from the EUNIS species database. (Fig.2)

Fig. 2: Distribution of *Botaurus stellaris* (■) and designated SPAs (●) by early 1999



EUNIS habitat type database output

The European Habitat Classification including the forest, grassland and marine parts will be available in 1999 via the EEA Website and in print. The aim is to facilitate aggregated reporting on habitat types in Europe and to allow use of the classification for future extensions or amendments of the habitats in the annexes of the Habitats Directive in order to promote converging use of classifications in Europe. EEA will work towards ensuring future co-ordination mainly with the Commission (NATURA 2000) and Council of Europe (Bern Convention for the EMERALD Network).

As for species, several figures, tables and graphics in the chapter on changes in biodiversity in the EEA report *Environment in the European Union at the turn of the century* are direct outputs from the EUNIS habitat type database. Furthermore, several habitat-related maps included in NATLAN (see 2.3.2) are also based on data collected in EUNIS.

EUNIS sites database output

The up-dated database provided the basic information for the production of a map of International designations in Europe, presented by WCMC and ECNC, on behalf of the Council of Europe, at the Pan-European Conference of Ministers of the Environment in Aarhus (DK), in June 1998.

The EUNIS sites database is also being exploited to produce specific background analyses and/or maps on request of several organisations, such as for EC projects on transport and spatial planning.

2.2. Support to NATURA 2000

The EU policy on direct nature conservation is based on the implementation of both the Birds and the Habitats Directives. One of the main tools to achieve the objectives of this policy is the setting up of a European ecological network called the NATURA 2000 Network, which results from the aggregation of the sites designated by Member States under the Birds Directive (Special Protection Areas

= SPAs) and those designated under the Habitats Directive (Special Areas of Conservation = SACs).

According to the EEA mandate, ETC/NC has to provide scientific and technical support to the European Commission (DGXI/D2), as well as to Member States, in this process. In general terms, the ETC/NC provides:

- technical support
 - to verify and, when appropriate, to process the official data coming from Member States via the Commission;
 - to handle and periodically update the central NATURA 2000 database;
 - to act as a 'help-desk' for solving practical problems when using the NATURA 2000 software, either its Central Query Module (the Commission) or the National Input Module (Member States).
- scientific support
 - to provide scientific-based reference data to be used for assessing the national contributions to the NATURA 2000 Network;
 - to take part in the assessment, mainly by organising and leading Scientific Seminars.

Since the designation mechanism is slightly different for SPAs and SACs, the related ETC/NC involvement is also slightly different.

In the framework of the Birds Directive, the identification and designation of SPAs is a direct process under the exclusive responsibility of Member States, without any previous Community assessment. Therefore, ETC/NC related work mainly focuses on the technical aspects of the support mentioned above. However, the Commission is more and more demanding of reference data from ETC/NC to base possible complaints against Member States in case of insufficient SPA designations, which leads to the need for various scientific support and assessment 'a posteriori'.

In the framework of the Habitats Directive, the designation process of SACs involves different steps, starting with a National List of proposed Sites of Community Interest (pSCIs) and finishing with a common agreement on a Community List of Sites of Community Interest (SCIs), which have to be designated later by the Member States as SACs. In this case, the ETC/NC is heavily involved in the scientific support matters.

In 1998 NATURA 2000 related activities have focused on:

- Database handling
- Software issues
- Assessment of pSCIs
- Support to Enlargement of EU

2.2.1. Database handling

Special Protected Areas (SPAs) designated under the Birds Directive

According to designations by the Member States and reported to the Commission during 1997, 187 new SPAs were added to the NATURA 2000 database at the calendar year-based update performed by ETC/NC in early 1998. On the basis of this, DGXI/D2 published the report 'Special Protected Areas EUR15' in March 1998. The report is available at the Commission DGXI Website: <http://europa.eu.int/comm/dg11/nature/docum.htm>).

During 1998 the number of SPAs reported to the Commission continued to grow. The number reported to the Commission by Member States by 1 January 1999 is summarised in Table 1. The data will be entered into the ETC/NC database in early 1999.

Table 1: Number and surface of SPAs as reported in the NATURA BAROMETER

Country	N° of SPAs	Surface (km ²)	Country	N° of SPAs	Surface (km ²)
BE	36	4 313	LU	13	160
DK	111	9 601	NL	28	3 448
DE	551	14 121	AT	58	11 333
GR	52	4 965	PT	36	3 323
ES	170	33 191	FI	439	27 500
FR	112	7 794	SE	302	22 820
IE	109	2 226	UK	187	7 718
IT	202	9 472	EUR 15	2 406	161 985

(Source: (DGXI/ D2) by 26.January 1999)

Proposed Sites of Community Interest (pSCIs)

The pSCI data handled by the ETC/NC is sent by the Commission to ETC/NC after the Commission has received it from Member States. After this it is processed by ETC/NC.

During 1998, all Member States have sent initial or complementary National Lists of pSCIs to the Commission, nearly all using the NATURA 2000 software. Of these a total of 1666 pSCIs were incorporated in the EUNIS Central Module in 1998 to make possible further assessment to be presented in up-coming bio-geographic region seminars. Table 2 shows the data entered into the NATURA 2000 Central Module by ETC/NC by 31 December 1998.

Table 2: Number and surface of pSCIs in the NATURA 2000 Central Module by 31 December 1998

Country	N° of pSCI	Surface (km ²)	Country	N° of pSCI	Surface (km ²)
BE	101	908	LU	-	-
DK	194	10259	NL	76	7078
DE	-	-	AT	90	9214
GR	230	25745	PT	65	12149
ES	588	70250	FI	-	-
FR	325	8606	SE	1445	43789
IE	-	-	UK	330	16871
IT	2204	37444	EUR15	5648	242313

Table 3 shows the total number of proposed sites received by the Commission by 26 January 1999. The data was used for the EEA report *Environment in the European Union at the turn of the century* and will be processed by ETC/NC in 1999.

Table 3: Proposed Sites of Community Interest – received by the Commission by 26 January 1999. Distributed by bio-geographic region

areas in 1000 km2 (rounded)	FI	SE	UK	IE	NL	DK	BE	DE	LU	AT	FR	IT	ES	PT	GR
Macaronesian (total area 10.5)															
area of country in bio-geo region													7	3	
%pSCI area/bio-geo reg in country													42	21	
nb of pSCIs													122	34	
Mediterranean (total area 885.5)															
area of country in bio-geo region											66	163	438	87	132
%pSCI area/bio-geo reg in country											3	13	13	12	17
nb of pSCIs											77	1167	378	28	230
Alpine (total area 258.5)															
area of country in bio-geo region	16	101						4		47	31	50	10		
%pSCI area/bio-geo reg in country	90	36						18		12	8	21	36		
nb of pSCIs	19	109						7		44	74	518	27		
Boreal (total area 655.6)															
area of country in bio-geo region	321	335													
%pSCI area/bio-geo reg in country	13	3													
nb of pSCIs	1368	1563													
Atlantic (total area 780.5)															
area of country in bio-geo region			244	70	41	15	20	59				268		58	5
%pSCI area/bio-geo reg in country			5	0	6	7	4	0				1		12	19
nb of pSCIs			330	0	76	48	47	0				118		70	4
Continental (total area 659.6)															
area of country in bio-geo region		14				29	11	293	3	37	184	88			
%pSCI area/bio-geo reg in country		10				6	8	0	13	9	1	8			
nb of pSCIs		248				146	54	0	38	46	145	519			

2.2.2. Software issues

One major bug and several minor problems were reported by different Member States when using the National Input Module of the NATURA 2000 software (version 1.3). All of them have been solved in a new version (1.4), which was distributed to the national users early 1999.

The ETC/NC's NATURA 2000 software 'help-desk' has worked very intensively. More than fifty phone or e-mail consultations on specific practical matters have been answered. In addition, three meetings with the Commission (DGXI/D2), Austrian and Italian users were organised to provide basic training on how to simplify the use of the software (query or input modules).

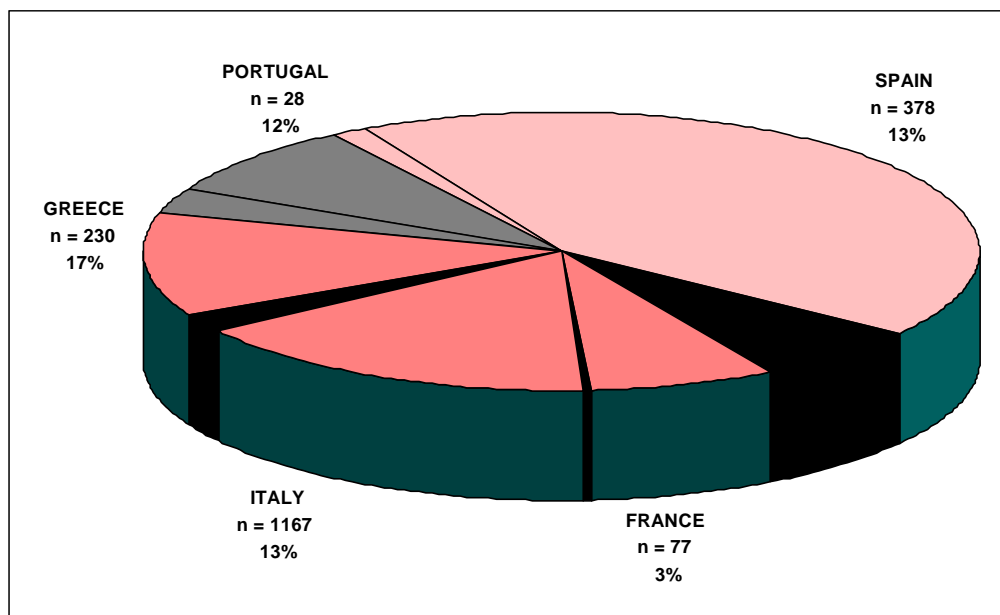
2.2.3. Assessment of pSCIs

As mentioned above, Member States in 1998 continued to send to the Commission DGXI/D2 National Lists (in some cases only partial or complementary) of pSCI. When the data arrived at ETC/NC from the Commission according to the agreed schedule, each proposal was submitted to a first technical analysis identifying gaps in information (empty fields in the data sheets, not considered species or habitat types), technical (obviously wrong data in

the fields) or inconsistencies (contradictory data in different fields of a single data sheet).

During 1998 the National Lists of pSCIs sent late 1997 by three Member States (GR, IT, PT) as their contribution to the Community List for the Mediterranean Region, were submitted to a second more in-depth scientific analysis to assess the global representativeness, completeness and coherence according to the EC Habitats Directive obligations. The result of this exercise was presented for discussion to the first NATURA 2000 Seminar for the Mediterranean Region, held in Thessaloniki (GR) in February 1998, the conclusions of which (although incomplete) will constitute the starting point for the setting up of the regional Community List of SCIs. (Fig.3)

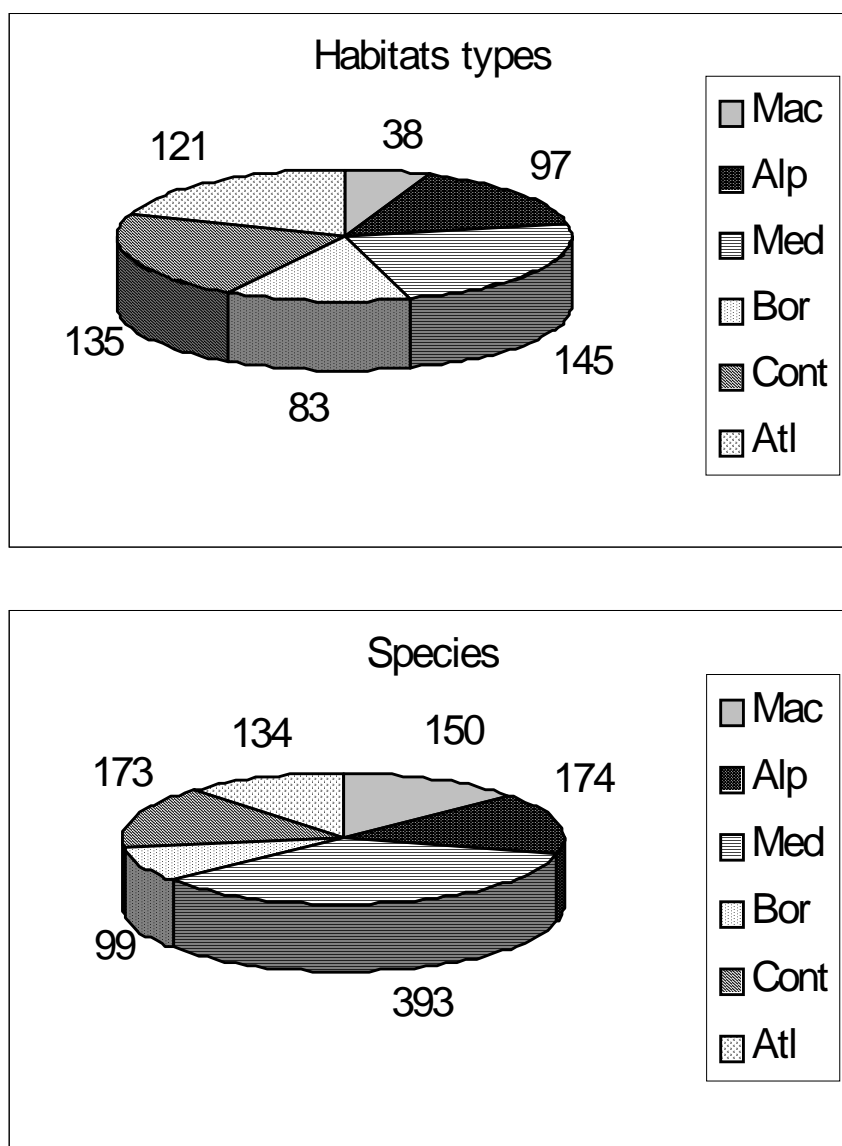
Fig. 3. Contribution from each Member State to the NATURA 2000 Mediterranean Community List (1998). (n = number of pSCIs; % = percentage of the Mediterranean part of the MS included in the pSCIs)



According to the recommendations from the first NATURA 2000 Seminar for the Alpine Region, a meeting with the Italian NATURA 2000 team and independent experts was organised in Rome in April 1998 to finalise the assessment of the pSCI related to the Apennine sub-region. Together with other similar meetings for the remaining sub-regions of the Alpine Bio-geographic Region (Pyrenees, Alps and Scandinavian mountains), the meeting will help to finalise the related Community List during the second Seminar.

The seminars foreseen for the remaining bio-geographic regions were postponed by DGXI/D2 to 1999, due to delays in the official sending of complete National Lists by a significant number of Member States. However, to gain time in this long process, a large pre-Seminar was organised in Paris (FR) in June 1998 to prepare the Reference Lists of habitat types and species occurring in the Atlantic, Boreal and Continental regions. Subsequently, the Reference Lists for the six bio-geographic regions was produced for both habitat types and species of NATURA 2000 and was made accessible at the DGXI Website in early 1999 (<http://europa.eu.int/comm/dg11/nature/natura.htm>). Fig. 4 shows the proportions in numbers of habitat types and species in the six regions.

Fig. 4: Number of NATURA 2000 habitat types and of species by bio-geographic region



This pre-seminar exercise required an update of the Interpretation Manual of European Union habitats, not only to include the new habitat types added to Annex I after the accession of the three new Member States (Finland, Sweden, Austria), but also to review and restructure the whole text. The new version of the manual was published by DGXI/D2 early in 1999 on the Commission Website (see Box 1).

2.2.4. Support to enlargement of EU

On the request of DGXI/D2, a new task was added in 1998 to the ETC/NC involvement in the NATURA 2000 process:

- to contribute to the preparation for the EU enlargement with the 11 Accession Countries.

PTL/NC has been established to contribute specifically to this task as well, and close collaboration has been set up between ETC/NC and PTL/NC.

Box 1. Excerpts from the European Commission DGXI/D2 Website
(<http://europa.eu.int/comm/dg11/nature/hab-en.htm>)

Nature Conservation Homepage :
Interpretation Manual of European Habitats

The full text of the manual is available in PDF format (667K):

Copy of 3 parts of the text :

1.

In April 1995 the Habitats Committee approved the EUR12 version of the 'Interpretation Manual of European Union Habitats' (Also available in French under the title 'Manuel d'interprétation des habitats de l'Union européenne'), which incorporated:

- i) the descriptive sheets for priority habitats (From Doc. HABITATS 94/3 FINAL), which establish clear, operational scientific definitions of habitat types, using pragmatic descriptive elements (e.g. characteristic plants), and taking into consideration regional variation;
- ii) the descriptive sheets of 36 non priority habitats similar to those used for priority habitats;
- iii) the CORINE Biotopes definitions for the remaining non priority habitats; these definitions should be considered 'a minimal interpretation', not exclusive; some CORINE definitions do not take account of sub-types, regional varieties and/or do not cover all the geographical range of an habitat type - this fact should be recognised, thus allowing a certain flexibility in the interpretation of these Annex I habitat types.

2.

The contents of the manual did not take into account the accession of Austria, Finland and Sweden which has resulted in the inclusion of a new biogeographical region (the Boreal region) in the Directive. These new Member States have asked for the introduction in Annex I of several priority habitat types that are restricted or only apply to them. In order not to delay the distribution of the manual, the Commission has decided to publish that first version (EUR12) and envisaged the preparation of a second version (EUR15) in order to incorporate new information (mainly on distribution and regional sub-types);

3.

The EUR15 version

The prime objective of the present manual is to update the EUR12 version. Descriptive sheets were added for the 11 priority types attached to Annex I when Austria, Finland and Sweden joined the Union(6); it further incorporates comments for other Annex I habitats occurring in those Member States, and corrects, or adds, newly acquired information.

As for current support to EU Member States, the requested contribution for the Accession Countries included two aspects:

- technical support:
 - mainly focused on ensuring that the Accession Countries will have the possibility of becoming familiar with the NATURA 2000 software. To do so, ETC/NC has also been involved in the development of the EMERALD software (Council of Europe, Bern Convention initiative), with the aim to make and keep it fully compatible with the NATURA 2000 software;
- scientific support:
 - oriented as a first step to the collection of relevant data on which to base negotiations concerning the amendment of the Annexes to the EC Directives (new species and habitat types of Community interest).

In 1998, one of the most visible products of this task was the new Map of Biogeographic Regions, where 3 new units have been added to reflect appropriately specific ecological features in the 11 Accession Countries. Extracted from the pan-European map elaborated in the framework of the EMERALD initiative, the final version will be refined by overlapping the digitised map of Potential Vegetation in Europe prepared by the ETC/NC partner BfN (DE). The pan-European map is available upon request from EEA and will also be made available as part of NATLAN in 1999. (see Fig. 5)

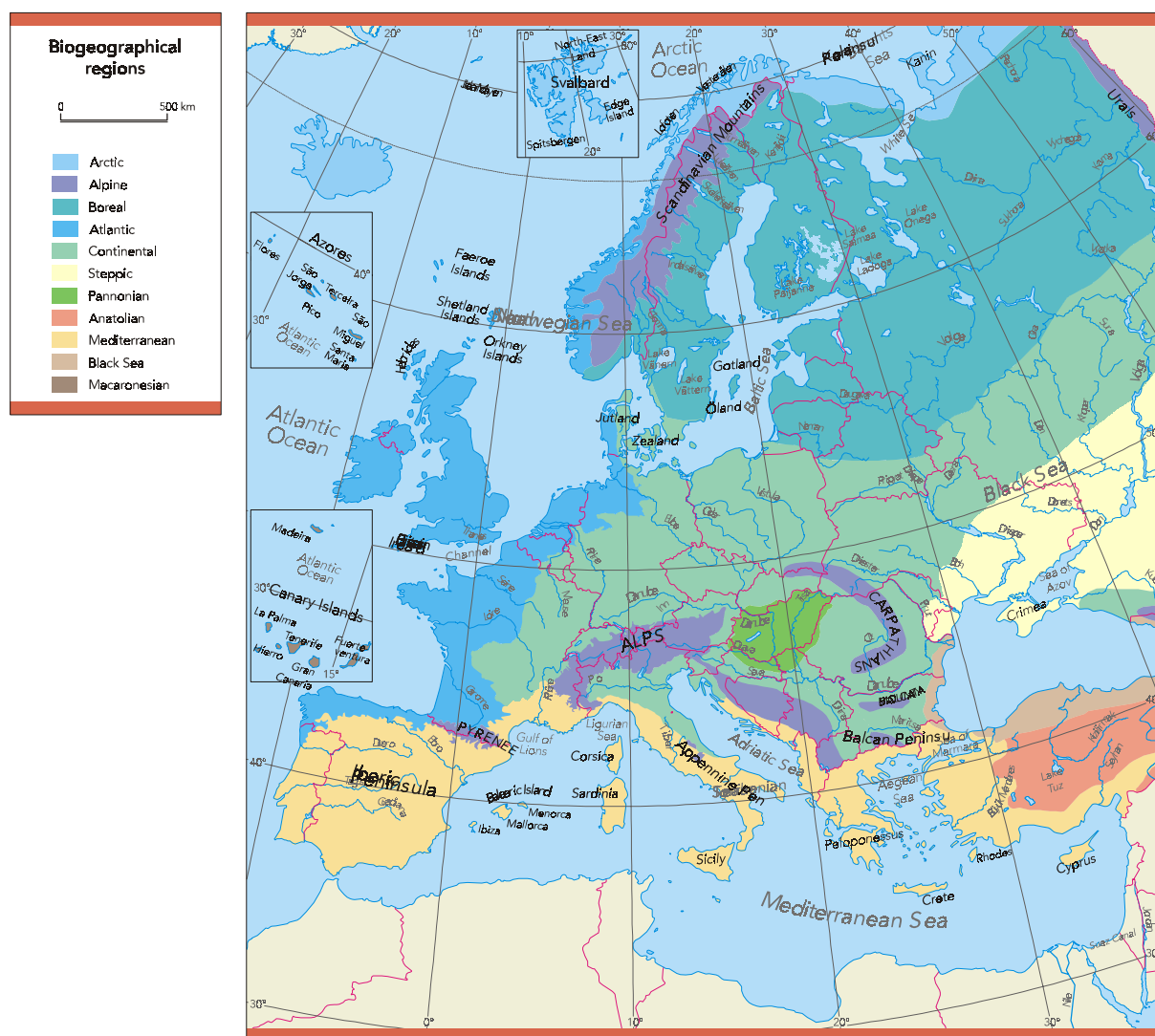
2.2.5. Results

Most of the concrete results of the work undertaken by ETC/NC on the assessment of NATURA 2000 proposals are considered as confidential, at least until the Community List of SACs is finalised. However, a specific agreement allows ETC/NC to process the national data collected in this framework and to use it for EEA purposes.

The data has been used:

- to supply the EUNIS species and habitats data models and, in combination with other collected data, to produce the related outputs (see above);
- as basis for text and illustrations of the chapter on changes in biodiversity in the report *Environment in the European Union at the turn of the century* (see section 2.3.1).

Fig. 5: The pan-European map of bio-geographic regions



2.3. Information and reporting on Europe's nature

Nature-related aspects of the environment have to be integrated in all relevant EEA periodical reports. EEA is also implementing its information strategy concerning the topic of nature through different products and presentations. ETC/NC contributes to both sets of activities, mostly through data gathering and processing, as well as through writing and illustrating specific parts of the related products.

Concerning periodical reports in addition to publication of the report *Europe's Environment: The Second Assessment*, which was presented at the Aarhus Environment Ministerial Conference, the highest EEA priority in 1998 was the preparation of *Environment in the European Union at the turn of the century*, published in 1999.

In relation to the information strategy concerning nature, the main EEA objectives were to prepare the NATLAN package (CD-ROM and Web application including data on Nature and Land Cover), to follow-up the conceptual development of monitoring activities concerning nature and biodiversity, and to start preparation of a report on 'Europe's Biodiversity'.

In 1998 ETC/NC work related to the main EEA reporting activities and was focused on:

- Environment in the European Union at the turn of the century
- Indicators
- NATLAN

2.3.1. Environment in the European Union

ETC/NC had the main responsibility for collecting and gathering basic data on biodiversity and nature, as well as for writing the chapter on biodiversity. The work also included providing an outlook assessment on the future of biodiversity based on a modelling exercise (see below). The final chapter drafts were delivered by the end of January 1999.

Data collection

National data used for the report was mainly an update of data collected for the 'Second Assessment' report. However, substantial additional data was collected from EC reports and scientific literature, as well as through exploitation of the EUNIS databases for species and habitats.

Modelling

The ETC/NC developed, through its Consortium partners ITE (UK) and NINA (NO), associated with a third CONNECT partner IBN-DLO (NL), a conceptual framework for modelling changes in biodiversity, called MIRABEL (Models for Integrated Review and Assessment of Biodiversity in European Landscapes). It was used to predict changes by 2010 in the status of major types of eco-systems (forests, grassland, arable land, open water etc.), resulting from major environmental pressures. For climate change productions, the target date was 2050.

Main findings

The main findings for biodiversity in the report show some positive trends, but most findings are still negative:

- Biodiversity (genes, species, eco-systems and habitats) will remain under threat in the EU during the period until 2010 and beyond. Habitats will decrease in area and be even more fragmented, thus endangering many indigenous, rare, endemic and specialist species populations and eco-system functions. At the same time generalist and invasive species will continue to spread. A small number of endangered species and habitats have recovered during the last decade. This trend is considered likely to continue;
- Concern for nature protection and for biodiversity as a whole are beginning to be integrated in EU sectoral policies. However, the negative impacts on biodiversity are still much more severe than the positive impacts. This concerns both intensification in agriculture and forestry, urban and transport development, climate change and introduction of alien species and possibly also use of genetically modified species. Land abandonment may be beneficial to natural biodiversity in intensively cultivated areas, but may be directly negative in areas where old meadow and pasture practices are given up. The effects of changes in use of chemicals remain to be seen;
- Positive developments can be expected as a result of the foreseen reductions in acidification and eutrophication, but full recovery is not possible because of the changes which have occurred already;
- In response to the main EU nature protection policy (Birds Directive and Habitats Directive, forming NATURA 2000), upwards of 10% of the EU

terrestrial territory is expected to be designated for nature protection and provisions taken for protection of the most threatened species;

- The European Community Biodiversity Strategy from 1998 (in the framework of the UN Convention on Biological Diversity) is aiming towards integration of biodiversity issues in action plans and policies where there is a European Community competence.

2.3.2. Indicators

In 1998 ETC/NC provided several inputs to EEA on indicators, concerning ongoing initiatives of international institutions and the initial work on the EEA yearly indicator reports.

In the context of indicators for biodiversity, it is important to note that many natural phenomena can only be assessed meaningfully over 3-5 year intervals.

ETC/NC contributed to or had contact with:

- the EUROSTAT Pressure Indices Project with expert advice in the area 'Loss of Biodiversity';
- the Secretariat of the Alpine Convention framework of the 'Système d'Observation et d'Information sur les Alpes (SOIA)' with information for nature indicators;
- initiatives concerning indicators for biodiversity and for sustainability: IDD (Sustainable Development Indicators) initiative by French IFEN, based on suggestions by FAO and World Bank; French ATEN and IARE review of current biodiversity monitoring initiatives; Swiss Biodiversity monitoring project CH-BDM; CBD-SBSTTA monitoring and indicator initiatives; DGVI and OECD Sustainable Agriculture indicators for agriculture and environment;
- ETC/LC-led EEA initiative on environmental indicators based on land cover data, for use at a European scale. The proposed indicators are designed to reflect the situation within the fields of biodiversity, agriculture/forest, transport, water resources, urban environments, coastal zones or soil degradation;
- comments on the initial work in 1998 on EEA Yearly Indicators.

2.3.3. NATLAN

EEA has developed the NATLAN project (NATure and LANd cover) as part of its information strategy in order to make widely accessible the large amount of information collected for different interconnected reporting and information activities. NATLAN is foreseen to be an information package of several closely related products on CD-ROM and the EEA Website. NATLAN's main content will be maps based on analysis of nature and land cover data. Both ETC/NC and ETC/Land Cover contributed to the development of this package in 1998.

ETC/NC co-operated closely with the Agency in 1998 to establish the general concept (scenarios, structure and main contents) of NATLAN. ETC/NC has been responsible for obtaining and delivering specific parts of the information, but has also been involved (in close collaboration with ETC/LC, ETC/Inland Water and others) in the development of maps and analyses.

In the following list of foreseen NATLAN maps, the main contributions of ETC/NC have been highlighted. Some maps are specific EEA products or have been developed directly by ETC/NC and ETC/LC, while others are developed by other organisations.

MAP	Main responsibility
1. Background maps	
NUTS 5	EEA
major settlements	EEA
major infrastructure	EEA
elevation model	EEA
water pattern	EEA
general map of Europe	EEA
2. Reference maps	
bio-geographic regions	ETC/NC
limno-faunal regions	EEA
water catchment areas	EEA
zone maps (agriculture, etc)	EEA
3. Information maps	
CORINE land cover	ETC/LC
EUNIS Habitats showing 10 habitats	ETC/NC
habitat perspective maps:	
‘wetlands and waterbodies’	ETC/NC
‘grassland and sparsely vegetated areas’	ETC/NC
‘woody species’	ETC/NC
‘agriculture’	ETC/NC
Forest maps from land cover	
‘forest’	EEA
‘forest and other wooded land’	EEA
Forest and other wooded area:	
‘forest and people’	EEA
‘forests on slopes’	EEA
designated areas:	
‘internationally designated’	ETC/NC
‘nationally designated’	ETC/NC
biotopes	ETC/NC
species distribution:	
‘reptiles’	ETC/NC
‘amphibians’	ETC/NC
‘birds’	ETC/NC
‘mammals’	ETC/NC
potential vegetation map	ETC/NC
centres of endemism	ETC/NC
Ozone critical levels for protection of crops	EEA
Exceedance of critical loads for sulphur	EEA
Exceedance of critical loads for acidifying nitrogen	EEA
Exceedance of critical loads for eutrophying nitrogen	EEA
4. Analysis maps	
pressure areas	ETC/LC
fragmentation of large forest complexes	EEA
pressure on designated areas	ETC/LC
fragmentation index	ETC/NC

Other maps worked on during 1998 for inclusion in NATLAN were:

- The Digitised Map of Ecological Regions in Europe (DMEER) is a pan-European digitised vector map proposing ecologically homogeneous units to refer any future reporting on biodiversity changes. It is based on a unified concept and updated knowledge of climatic, topographic and geo-botanical European data, and linked to an underlying descriptive database. After having received comments from EIONET a consistent revision was undertaken in 1998, but several technical and data model issues (arising from the comments) have delayed the final delivery into 1999;
- Continuation of the work on a map of Low Pressure on Habitats, developed with ETC/Land Cover, which shows a specifically developed pressure index (the so-called 'habitats fragmentation index') of anthropogenically introduced fragmentation of semi-natural habitat types.

3. Main products and services

Subject	Availability (held, present or to come)
Seminars and workshops	
Second EIONET Workshop on Nature Conservation	held in Battleby, UK 16-17 April 1998
NATURA 2000 seminars	3 seminars and several meetings related to bio-geographical regions during 1998
Printed products	
Annual topic update 1998	to be published in 1999
Changes in Biodiversity and Nature	chapter in <i>Environment in the European Union at the turn of the century</i> , published in 1999
Modelling changes in Biodiversity: the MIRABEL model (by ITE)	Internal report; under consideration for printing as EEA Report or as part of NATLAN documentation; scientific article in production by ITE
CO2 sinks of forests (by EFI)	Internal report to EEA for use as basis for <i>Environment in the European Union at the turn of the century</i> , publication in 1999
Biodiversity in forests and tree dominated ecosystems (by EFI)	Internal report to EEA for use as basis for <i>Environment in the European Union</i> ; publication in 1999
European Vertebrates Red Book (with CoE)	to be printed by CoE
Conclusions from the NATURA 2000 Seminars	Printed documents. Distribution limited to participants
Reports on Websites	
National Red Books on Species and Habitats in Europe (1998 updated list)	Available on ETC/NC's Website; Links foreseen with national Websites
From : NATURA 2000 Database: Special Protection Areas (SPAs)	In: DGXI Annual Report (http://europa.eu.int/comm/dg11/nature/)
Interpretation Manual of EUR 15 habitat types (rev.), material for	Available on DGXI's Website (http://europa.eu.int/comm/dg11/nature/)
Databases, electronic maps	
EUNIS Species Synonyms Database (1998 update, by MNCN)	part of CD-ROM delivered for distribution to EIONET; database & application on EEA's Website under consideration
EUNIS data on species (vertebrates)	part of CD-ROM (database & application) to be distributed to EIONET in 1999; Availability on EEA' Website to be considered
EUNIS Habitat classification (by ITE), version 1998	Paper copies of 1998 version available on request from ITE; final 1999 version on EEA Website 1999
Common Database on Designated Areas (1998 update)	still under validation through EIONET; data will be available in NATLAN in 1999
NATURA 2000 software (version 1.4)	Only for Member States' official users; updated version delivered to countries
Reference List of species and habitat types (occurrence by country/bio-geographic region)	Available on DGXI's Website (http://europa.eu.int/comm/dg11/nature/)
EUNIS 50x50 km UTM grid	datafiles to be used by Atlas projects; can be obtained on request from ETC/NC
Pan-European Map of Bio-geographic Regions	Printed map : available in <i>Environment in the European Union at the turn of the century</i> , 1999; digitised version available on request; will also be part of NATLAN
Digitised Map of European Ecological Regions (DMEER, by ISEG)	To appear in NATLAN

4. Plans for 1999

The workplan for 1999 carries forward the work performed in 1998. Therefore, the collection of relevant data for both support to NATURA 2000 and contributions to main EEA reporting activities, as well as the inputs in the different EUNIS modules, continue to be the cornerstones of the ETC/NC Work Programme.

The third EIONET Workshop on Nature Conservation will be held in Madrid (ES) on 15-16 April, focusing on discussions on the identification of feasible indicators as well as on data flow problems.

The identification of appropriate indicators to show, on a periodical basis, changes in biodiversity at European level will be a priority in the first months of 1999. Once identified, the collection and/or update of the related data will start. No questionnaire to EIONET PCPs is foreseen. However, depending on the nature of the proposed indicators, some requests for specific information may be needed. The preparation of the report on 'Europe's Biodiversity' could also lead to some specific needs of new data sets.

Finally, at least four NATURA 2000 Seminars (probably five) are foreseen in 1999.

The following table summarises the main events and activities to be carried out by the ETC/NC in 1999 in which NFPs or NRCs could be involved:

EVENT/ACTIVITY	EVENT DATE*	RESPONSE DEADLINE*	EXPECTED OUTPUT	OUTPUT DATE
Workshops				
3 rd EIONET Workshop on Nature Conservation	15-17.04			
1 st NATURA 2000 Seminar Boreal Region	21-23.04		Draft NATURA 2000 Community List for the Boreal Region	May 1999
2nd NATURA 2000 Seminar Mediterranean Region	7-8.06		Draft NATURA 2000 Community List for the Mediterranean Region	July 1999
2nd NATURA 2000 Seminar Alpine Region	5-6.07		NATURA 2000 Community List for the Alpine Region	August 1999
1 st NATURA 2000 Seminar Atlantic Region	6-7.09		Draft NATURA 2000 Community List for the Atlantic Region	October 1999
Data Update				
Selected Indicators (to be identified)	beginning March	end April	Contribution to the EEA Annual Indicators Report	end 1999
Drafts for review				
EUNIS Vertebrates application	mid February	end March	Public access to the EUNIS species database (partial)	mid May
EUNIS Habitats application	beginning September	end October	Public access to the EUNIS habitats database (partial)	end 1999