

Topic report 5/2000

Nature Conservation

Annual topic update 1999

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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 coordinated information to decision makers to support sustainable development of the environment. The main clients are the European Union Institutions and EEA member countries as well as the general public.

Within the frame of the EEA work programme the tasks of the European Topic Centre on Nature Conservation (ETC/NC) have developed over the period since 1995, when ETC/NC started its practical work. The two main interlinked tasks are to support the Commission and EEA member countries on nature protection issues (lately also on somewhat wider biodiversity issues) and contribute to EEA reporting on the environment.

The core of the work is the same for each task: to provide the best available information on nature and biodiversity in a way useful to decision makers. To do so demands a work concept ranging from data collection through assessment of data to delivering information to other users and to reporting on conditions and changes in nature. EEA and consequently ETC/NC do not collect data in the field but are wholly reliant on already collected data from (mainly) national monitoring, surveillance or research. ETC/NC collects data from already existing national or international data sources (databases, literature) or by sending out questionnaires to relevant EIONET contacts or other scientific experts.

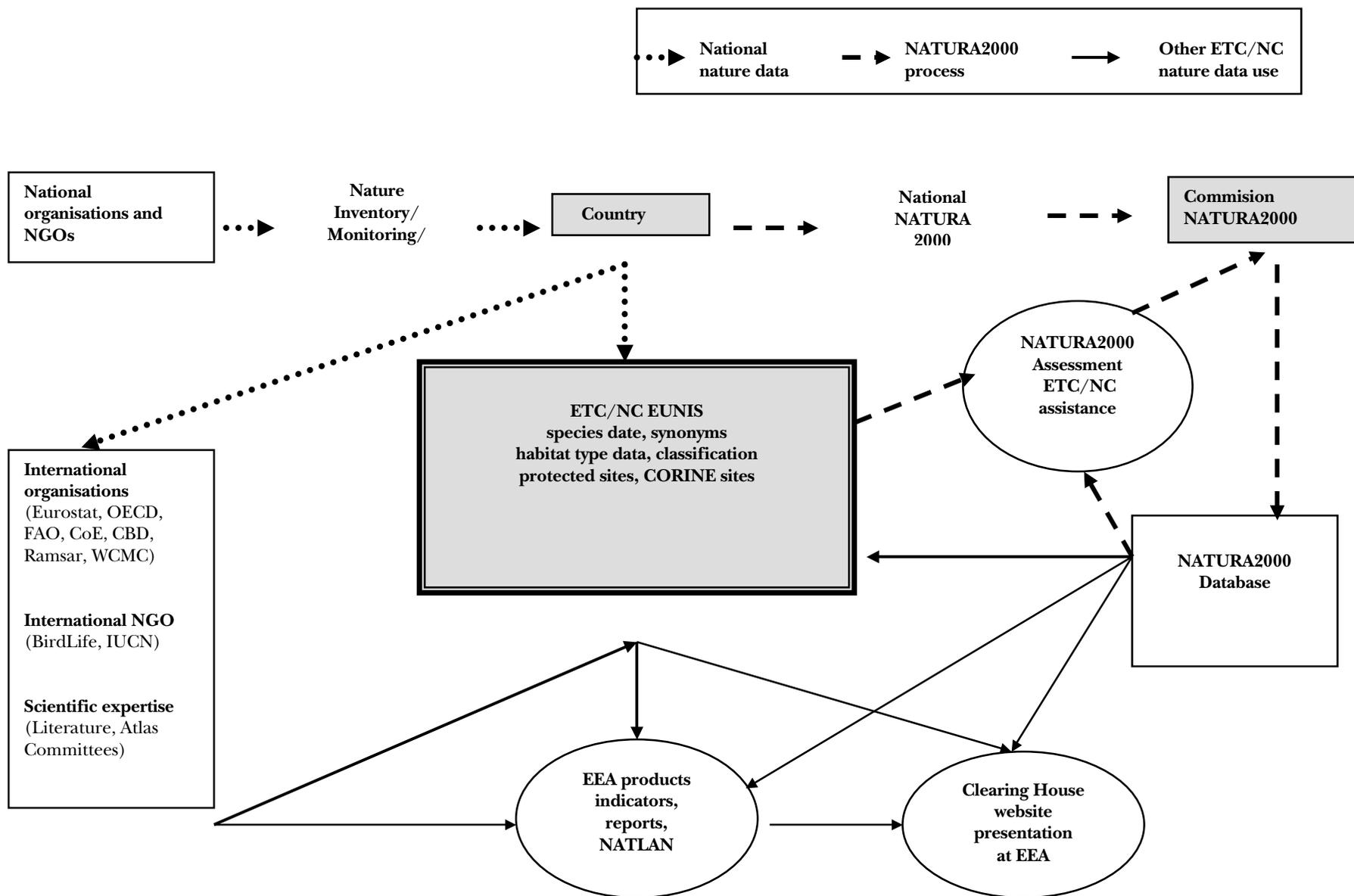
At the outset of the work of ETC/NC the main relevant nature protection instruments for which ETC/NC should provide support to the Commission and to the Member States were the Birds and the Habitats Directives. Thus, a large part of ETC/NC assistance was directed towards the NATURA 2000 process:

- practical handling of data on sites proposed to the Commission by Member States;
- technical assessment of proposals presented in a biogeographic region perspective as background for the final NATURA 2000 network of sites.

During 1997-1999, support to work related to the Community Strategy for Biological Diversity and EEA reporting has increased.

To be able to perform the NATURA 2000 work and the EEA reporting assistance ETC/NC has been developing a European Nature Information System EUNIS, where core data on species, habitat types and sites are handled for quality check of incoming country data as well as used for assessment and reporting. The actual work is done by several ETC/NC partners preparing databases on species, habitat types and sites. Data from Member States on the Birds Directive and the Habitats Directive is collected and handled in a separate database in agreement with the Commission. EUNIS and the NATURA 2000 databases are complementary to each other. (Diagram 1)

Diagram 1: Main nature data and information flows in relation to ETC/NC



NATURA 2000 support has consisted of:

- taking charge of the NATURA 2000 software (developed separately by EEA for the Commission and later taken over, expanded and modernised by Council of Europe for the Bern Convention Emerald Network), finding software bugs and acting as helpdesk for national users;
- populating the EUNIS database with NATURA 2000 data and other data relevant to EEA reporting from Member States, literature and questionnaires and from international NGO sources;
- maintaining and using when relevant the CORINE Biotopes data (no new data collection);
- maintaining the nationally designated areas data and updating this via EIONET in coordination with WCMC (World Conservation Monitoring Centre) and Council of Europe to ensure unified dataflow;
- developing terminology harmonisation tools enabling comparison among countries and regions on data on habitat types (EUNIS habitat classification) and species (synonyms).

As the NATURA 2000 process developed ETC/NC took over for the Commission the technical handling of the biogeographic assessment seminars, where Member States from the same biogeographic regions bring together their site proposals for common assessment within each region. This is where EUNIS data is most used for NATURA 2000. The assessment part of the NATURA 2000 process has proven to be a difficult and much more time consuming task than anybody could have initially foreseen: data has not been easy to come by, Member States have had difficulties in delivering their proposals, some issues are difficult to resolve (what is favourable conservation status, how detailed should the assessments be). This assessment seminar task should, however, be finished during the next couple of years.

During the same period 1997-1999 development of the Bern Convention Emerald Network of sites began to emerge and a close collaboration began with Council of Europe and ETC/NC to ensure the best synergy: using the same site description format and the same basic software for Emerald as for NATURA 2000 with amendments where necessary and also providing harmonised information to and from EUNIS. So far most work has been on information on species and habitat types listed in the annex to the Habitats Directive. Only few countries in Central and Eastern Europe have initiated pilot data collection on sites to propose for Emerald, but the process is gaining speed. The most effective way to handle and store Emerald data may be a matter for future EEA – Council of Europe coordination. Collaboration on a Red List of European Vertebrates has also been developed with Council of Europe, building on EUNIS. When it was set up, the Phare Topic Link for Nature Conservation (PTL/NC) collaborated with ETC/NC to extend the joined the work to the Phare countries of Central and Eastern Europe.

When the EU enlargement process started, ETC/NC and PTL/NC provided support to the Commission in preparation for the negotiations on species and habitat types relevant for each new country to enter NATURA 2000 upon accession to EU.

This gradual development of the ETC/NC work has meant extension of the EUNIS data collection and content to more and more countries, though with varying degree of detail and completeness. It has also become clear that EUNIS can contain only parts of the data necessary for all reporting and assessments. The bulk of detailed data and data on specific issues has to be acquired from national

and international dedicated databases, where it is specifically maintained and updated. Agreements on access to data become important to facilitate this process and agreements are being developed between EEA, WCMC and Council of Europe on designated areas to help develop a Common Database on Designated Areas (CDDA). ETC/NC harmonisation of species names (information on synonyms) and of habitat type terminology (common habitat type classification tool) also becomes a central task to ensure common use of data.

Collaboration on species, habitats and sites has been extended to include other conventions when appropriate. Furthest developed is the work on habitat type classifications, where marine specialists from the North Sea, Baltic Sea and Mediterranean Sea have been involved. It is necessary to maintain this collaboration also in the future to ensure that European habitat classifications converge, thereby facilitating reporting and use of data.

EUNIS data has been provided to users on request, but has so far not been accessible directly. By the end of 2000 full documentation of all modules shall be finished and a copy of all data moved to EEA and tested for technical access. But this is not enough. Data must also be accessible for other users for their purposes. Therefore selected data on species, habitats and site data is being prepared for the Internet and for CD-Rom.

As the Convention on Biological Diversity (CBD, 1992) began to be implemented in a wider sense by the Commission and EEA member countries and as EEA reporting becomes more and more integrated, reporting on status and progress on nature protection and biodiversity by ETC/NC and others has been expanded. This has already influenced data collection and provision of data and will continue to do so.

Apart from being used for NATURA 2000 and Emerald purposes, data in EUNIS has been used extensively for EEA reports. It has been complemented with data from international datasets (mostly on wetlands and species distribution) from international NGOs or scientific organisations. Data has been used for *Europe's Environment – the Second Assessment* (EEA, 1998), *Environment in the European Union at the turn of the century* (EEA, 1999), the EEA indicator report *Environmental signals 2000* and the report on Europe's biodiversity (to be completed in 2000). However, more general nature and biodiversity data will be needed for future assessments and indicator based reports such as for the Community reports relevant to CBD and for EEA reporting. Specifically, more data will be necessary on the influences of pressure from climate change, pollution, change in land use and management, use of genetic resources and impact of alien species as well as more information on the political responses and implementation of policies related to nature conservation and biodiversity protection. These are relatively new types of data and all data sources have yet to be identified. It has to be considered which EUNIS datasets will have to be maintained as a core in the future and which can be reliably collected ad hoc from other sources.

In the future, follow-up of the implementation of NATURA 2000 and its success has to be documented by the countries. This means that there will be a need for monitoring the development (management, status) of the sites as well as the species and habitats involved, but also for monitoring the implementation in plans and policies. No harmonised monitoring scheme has so far been developed for NATURA 2000, neither for field nor for implementation monitoring, though some preliminary concepts have been produced for the Habitats Committee. Countries urgently request this development and possible EEA and ETC/NC roles have to be identified. Monitoring of general background development of

biodiversity cannot be performed in one monitoring activity but has to rely on collaboration between a wide range of initiatives. Facilitation of collaboration and of data flow and data use becomes an important task in future. The contacts and the collaboration can be foreseen to gradually extend towards other parts of the Commission than the Directorate General (DG) for Environment, such as towards DGs responsible for agriculture, forests, and fisheries. Collaboration with Eurostat (on statistical data) and JRC on remote sensing data and monitoring will also need to increase.

Thus, the focus of the work is gradually being altered with changing needs. The most important changes concern:

- new collaborators
- geographical extension
- access to EUNIS
- development of indicators, less focus on detailed data
- focus on pressures and responses
- assessment and reporting on contract issues

The European Topic Centre on Nature Conservation (ETC/NC) is one of the nine ETCs created by the EEA and operational during the period 1994-2000.

In 1999 ETC/NC consisted of a consortium of fifteen institutions from twelve European countries (Annex 1). The French Muséum National d'Histoire Naturelle (MNHN) is the lead organisation. 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 partner types, ranging from public science and research institutions to international organisations as well as partners from national administrative bodies or with NGO affiliations. ETC partners are also in several cases Principal Contact Points (PCPs) or National Reference Centres for Nature Conservation (NRC/NC), and sometimes National Focal Points (NFPs) within EIONET. (Annex 1)

Several partners are members of the European Conservation Institutes Research Network (CONNECT). The Joint Nature Conservation Council (JNCC) is a coordination body involving three regional institutions: Scottish National Heritage (SNH), English Nature and Countryside Council (EN). The European Centre on Nature Conservation (ECNC) partner is also a network of institutions, among which is included the World Conservation Monitoring Centre (WCMC).

Since 1998, the activities of ETC/NC have been extended to the 13 additional countries through the creation of the **Phare Topic Link on Nature Conservation (PTL/NC)** funded the Phare programme. The PTL/NC Consortium is led by the Institute of Landscape Ecology of the Slovak Academy of Sciences, which has two main partner organisations providing experts on an individual basis: the Institute of Biology of the Romanian Academy in Bucharest, and the Institute of Geography of the University of Tartu (Estonia).

Until April 2000 the **ETC/NC leader** was Juan Manuel de Benito, who was assisted in coordinating the Topic Centre's work programme by an international core team of specialists based at MNHN in Paris. He was substituted by Dominique Richard from 1 April 2000.

European Topic Centre on Nature Conservation ETC/NC

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The ETC/NC leader is responsible for the implementation of the extended work programme, either through the core team or by a partner of the consortium ensuring a full coordination with the PTL/NC. He assists the EEA project manager in preparing the technical annexes for the subventions and provides ad hoc support whenever requested and agreed. He develops and maintains contacts with EEA partner organisations, international organisations and international programmes (UN-ECE, Council of Europe, EUROSTAT, OECD, International Convention Secretariats).

The ETC/NC **management committee**, which is chaired by Claus Stuffmann (formerly head of the Nature Conservation Unit of EC-DG XI), consists of:

- one representative of each partner of the consortium (except ECNC which, according to an initial Memorandum of Understanding with EEA, has two representatives);
- one representative of the PTL/NC;
- the EEA project manager responsible for ETC/NC;
- a representative of the Nature Conservation Unit of EC-DG Environment; some observers, among which a representative of the Council of Europe.

The management committee meets twice a year. During these meetings, the ETC/NC leader reports on the progress and the coordination of the work as well as on the general context of the EEA work programme and EIONET activities. He accounts to the committee for the budgetary issues and proposes priority projects for the future for discussion and amendment.

Since the management committee is large, ETC/NC has set up a **steering committee** with those partners having contracts during the year, to assist the ETC/NC leader more closely and quickly. It meets at least three times a year, and more frequently when necessary. For specific tasks **ad-hoc groups** are formed (for example EUNIS/Technical advisory and appraisal group, reporting/Technical advisory and appraisal group).

The ETC/NC work programme is developed both under EEA subvention and subvention from French Ministry of the Environment to the MNHN as consortium lead organisation. Other partners also contribute in various ways.

To fulfil its mission, the ETC/NC:

- develops the European nature information system (EUNIS)
- builds a network of expertise with which to co-operate.
- provides various specific products and services:
 - standards for collection of data;
 - reference maps;
 - statistics and maps on species, habitats, sites;
 - a website on the Internet;
 - expertise contributing to EEA reporting activities;
 - scientific advice to main clients on specific issues;
- provides ad-hoc support to EEA
- ensures harmonisation and common understanding within IEONET.

Annex 2 contains names and addresses of the EIONET contacts for nature.

2. Progress in 1999

2.1. Development of EUNIS

ETC/NC continues to develop the European nature information system EUNIS, which has two main aims:

- to be a reservoir of core information on European nature and
- to facilitate use of nature data by promoting harmonisation of terminology and definitions.

EUNIS consists of a central unit integrating data models on species, habitat types and sites, several secondary databases which are managed by different partners, and an increasing number of satellite databases. The NATURA 2000 data from Member States is handled in a separate database. EUNIS and the NATURA 2000 database are complementary to each other.

2.1.1. *EUNIS Species*

The EUNIS Species database

The agreed goal is to include in EUNIS relevant information on a selection of species (at least those listed under the EC Habitats and Birds Directives, and under the Bern Convention) by the end of the year 2000.

By the end of 1999, the EUNIS Species database contained around 35 000 records with information on 2 659 valid species or subspecies¹. They include:

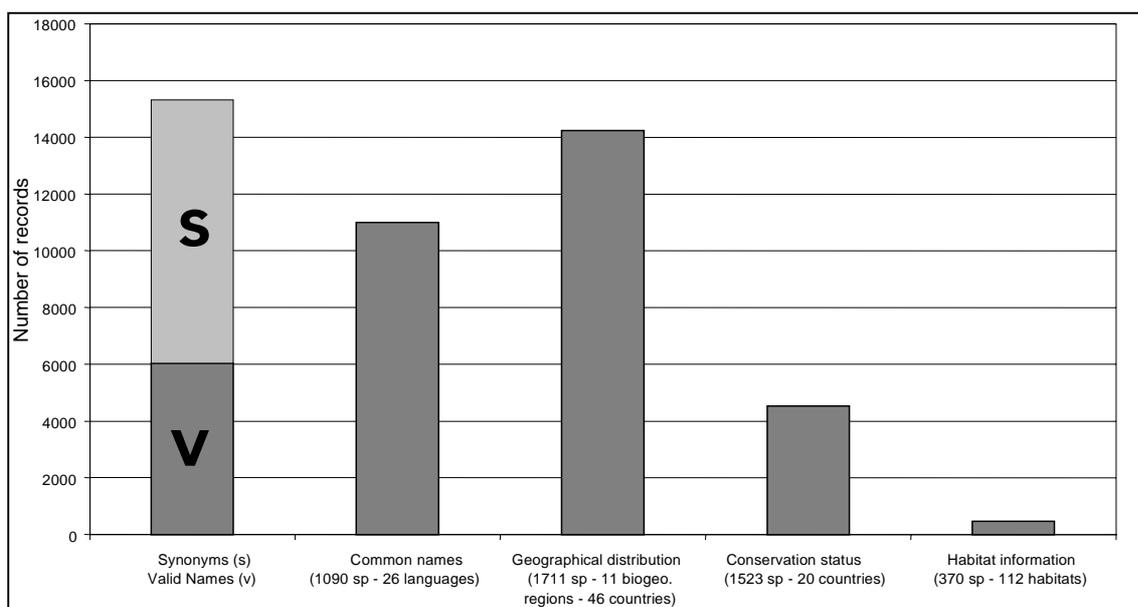
- data on species and habitat types provided by Member States to the Commission when describing the NATURA 2000 pSCIs or SPAs, but also data collected by the ETC/NC from literature and other sources as reference information;
- progressively, information on species and habitat types taken into account in relevant international conventions;
- species information on sites designated under national and international designations;
- specific data collected in the framework of EEA reporting activities, which also constitute a core set of data to be updated periodically².

However, the amount of information already collected on each species varies in accordance with the potential use of the data:

- the ‘reference information’ is available for almost all the selected species except for the habitat type preference parameter;
- the ‘spatio-temporal information’ (including population size and trends) is available for birds. For other vertebrates (except fish) and invertebrates and plants species for EC Directives, only the occurrence by country and biogeographic region is available;
- data concerning the ‘conservation status’ has been collected from national Red Books made available to ETC/NC and from other relevant literature.

¹ New records for PHARE countries, collected by the PTL have been provided to the ETC/NC in December 1999 but have not yet been included into EUNIS.

² However, most of the information is in an aggregated form and not in raw data form, which obviously limits the possibilities of exploitation.



sp= species

Figure 1. Information included in EUNIS species database

The EUNIS Species Synonyms database

Animal and plant species may have several names in scientific literature as well as in conventions and directives. This leads to confusion in use. Therefore, the EUNIS Synonyms database was created to be an internal EUNIS tool, ensuring naming consistency in the management of the EUNIS Species database. However, the same information is also useful to Member States and the Commission.

In 1999, the work carried out by the ETC/NC partner 'Museo Nacional de Ciencias Naturales (MNCN, Spain) consisted in updating and completing the database, in preparation for making it accessible on the Internet in 2000.

By the end of 1999, the total number of genera, species and sub-specific taxa in the database was 6 031. The number of species and sub-species was around 4 450. The related numbers of scientific names were 15 311 and 9 280 synonyms (Table 1):

Table 1. Number of records in the EUNIS Synonyms database 1999

		Valid Species/Subspecies	Synonyms
	Invertebrates	211	513
	Fish	444	1 958
	Amphibians	87	164
	Reptiles	208	452
	Birds	585	228
	Mammals	290	1 639
	Vascular Plants	2 607	3 575

EUNIS Species outputs and use

The species information in EUNIS has been used in:

- development of a CD-ROM prototype, validated by EIONET in 1998-99, including all European vertebrates, as well as invertebrates and plant species listed in the EC Directives. This prototype will be available in 2000 after some updating;
- the spatio-temporal information on species contained in EUNIS has been the main source of reference data to assess the NATURA 2000 national proposals (see later) at biogeographic level. It has also allowed responding to many specific questions asked by DG Environment;
- the preparation of figures, tables and graphics for the report on Europe's biodiversity (mainly those concerning the biogeographic regions description);
- development of a Red List of Vertebrates in Europe. Based on a joint initiative with the Council of Europe, this publication will show for the first time a European approach to assessing the conservation status of the listed species, using – as far as possible – the new IUCN quantitative criteria and resulting categories.

2.1.2. EUNIS Habitats

The EUNIS Habitat classification

Habitat types have different names and classification hierarchies in countries and in international instruments. The EUNIS Habitat classification was conceived as a common reporting language on habitat types at European level. The EUNIS Habitat classification builds upon previous initiatives (CORINE biotopes followed by the Palearctic Habitats classification), but introduces agreed criteria for the identification of each habitat type and provides a correspondence with other classification-types (the two above mentioned, CORINE Land Cover typology, Habitats Directive Annex I, Nordic Vegetation classification system and, potentially, other national systems).

In 1999 the ETC/NC partner Institute of Terrestrial Ecology (ITE. UK) produced the following:

- refinement of some habitat classes (Marine habitats, in collaboration with specialists for the Mediterranean and Atlantic Seas); test of the whole system (especially for grasslands, shrubs and forests-types) for Phare countries, in collaboration with PTL/NC;
- development of a user-friendly web-based tool to allow a wide diffusion of the classification (to be released in 2000).

The EUNIS Habitats database

The agreed goal is to include in EUNIS basic information (mostly habitat description and distribution) on habitat types of European concern by the end of the year 2000.

By the end of 1999 the EUNIS Habitats database contained around 20 000 records corresponding to the 198 habitat types listed in Annex 1 of the Habitats Directive. As for species, the amount of information on each habitat varies in accordance with the use of the data. Despite the difficulty to access harmonised spatio-temporal data on habitats, the EUNIS Habitats model includes more than 18 000 geographical records on habitat types, which are extracted from both the NATURA 2000 and the CORINE Biotope sites databases.

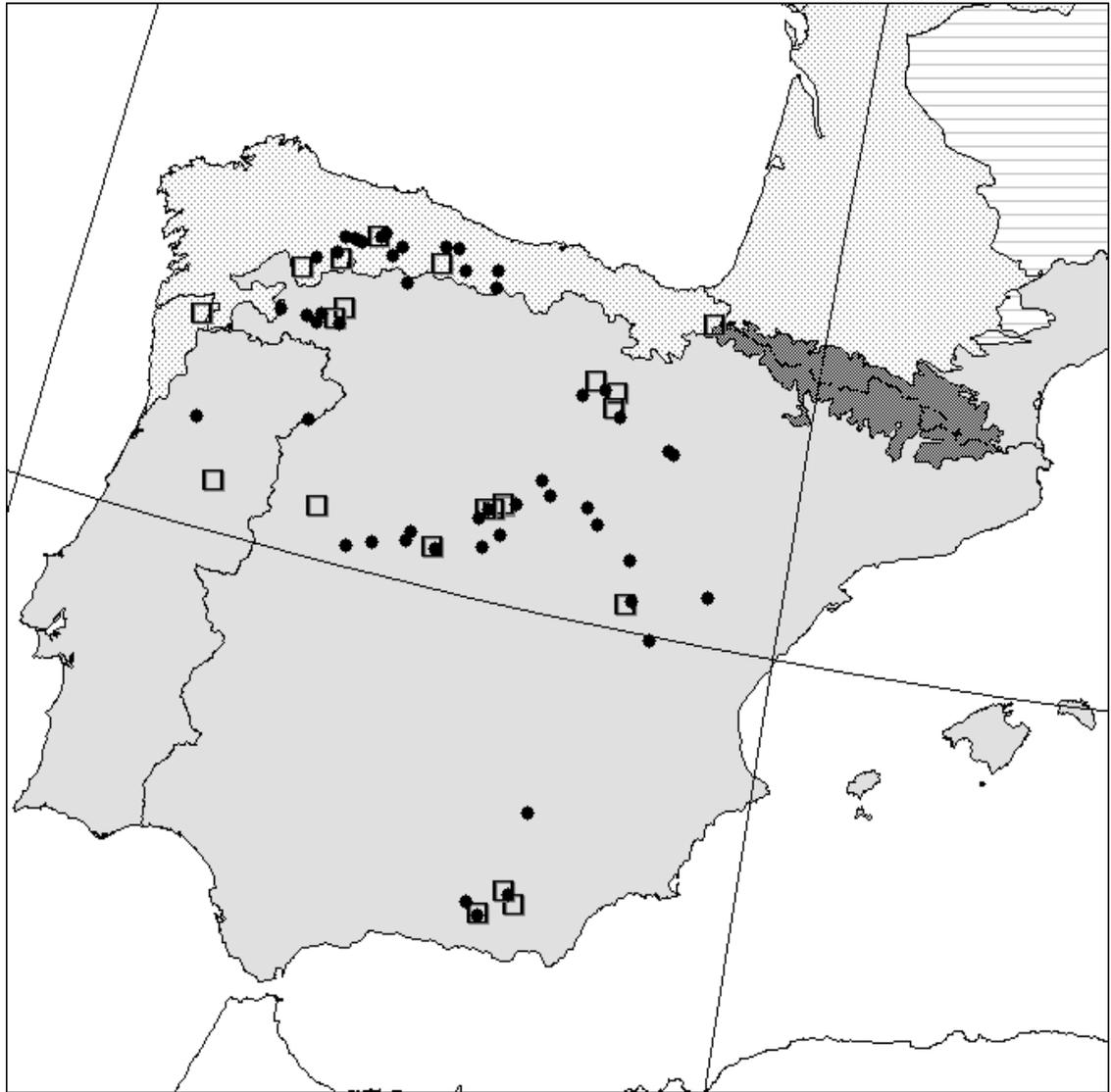


Figure 2. Example of distribution of an Annex I habitat-type: Oro-Iberian *Festuca indigesta* grasslands (from CORINE-Biotope sites dataset EUNIS (□) and pSCIs dataset (●))

EUNIS Habitats outputs and use

The first release of the EUNIS Habitat classification will be available in early 2000 and will begin to be used by EEA as a reporting and comparison frame for habitats. The aim is also 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. A Steering Group, set up in 1998 by EEA, will ensure future coordination mainly with the Commission and Council of Europe.

As for species, many figures, tables and graphics to be used in the report under preparation on Europe's biodiversity are direct outputs from the EUNIS Habitat database. Furthermore, several habitat maps included in NATLAN (see later) are also based on data from EUNIS.

2.1.3. EUNIS Sites

The EUNIS Sites database

The agreed goal is to include in EUNIS relevant information on nationally, Community and internationally designated important areas. Basic data is mostly collected in the framework of the Common Database on Designated Areas (CDDA), a collaboration between EEA, Council of Europe and WCMC.

In 1999, the CORINE Biotopes site data from Phare countries was being merged with the CORINE Biotopes from EEA countries. This will be finalised in 2000.

The part of the database related to Nationally Designated Areas was validated and updated through EIONET. Despite a lack of response from countries in the first part of the year, significant progress was made in the last quarter of the year:

- By the end of 1999, there were 44 000 site records (29 000 for EEA member countries and 15 000 for other European countries).
- For the first time, the inventory for a number of countries also includes for each site the direct link to the site code in the national database on designated areas. This should allow a more automated updating procedure in the future (see below).

Since digitised boundary information is not generally available yet, it is still difficult to estimate the total area covered by designation, since areas designated under different designation types may cover the same area fully or partly.

Future work should focus on additional information, such as digitised boundaries (at least for larger sites), as well as on more automated updating procedures via EIONET interest group (CIRCLE) (to be tested in 2000). Additional information on habitat types and species may be taken up for discussion in the future.

The second EIONET Seminar on Nature Conservation (see Annual Topic Update 1998) discussed the difficulties in general to access nature-related data from member countries: dispersion of data among various data holders, differences in scales, very little data in time series etc. These limitations have severe consequences for development of indicators at European level, as discussed during the third EIONET Seminar, held in Madrid on 15-16 April 1999 (see later). Any further consideration on possible automatic data flow from national to European level has to take these limitations into account.

A number of countries have shown interest in testing the CIRCLE process further with EEA. In the framework of the project on the European Community Clearing House Mechanism, ETC/NC is exploring the possibilities of developing specific tools to allow in the future a direct automatic transfer of data on designated areas from each national database to the EUNIS central module.

EUNIS Sites output and use

The EUNIS Sites database is being used to produce background analyses for:

- assessment of the NATURA 2000 site distribution;
- assessment of the pressure on designated areas from land-use (Figure 3);
- country profiles for the report on Europe's biodiversity.

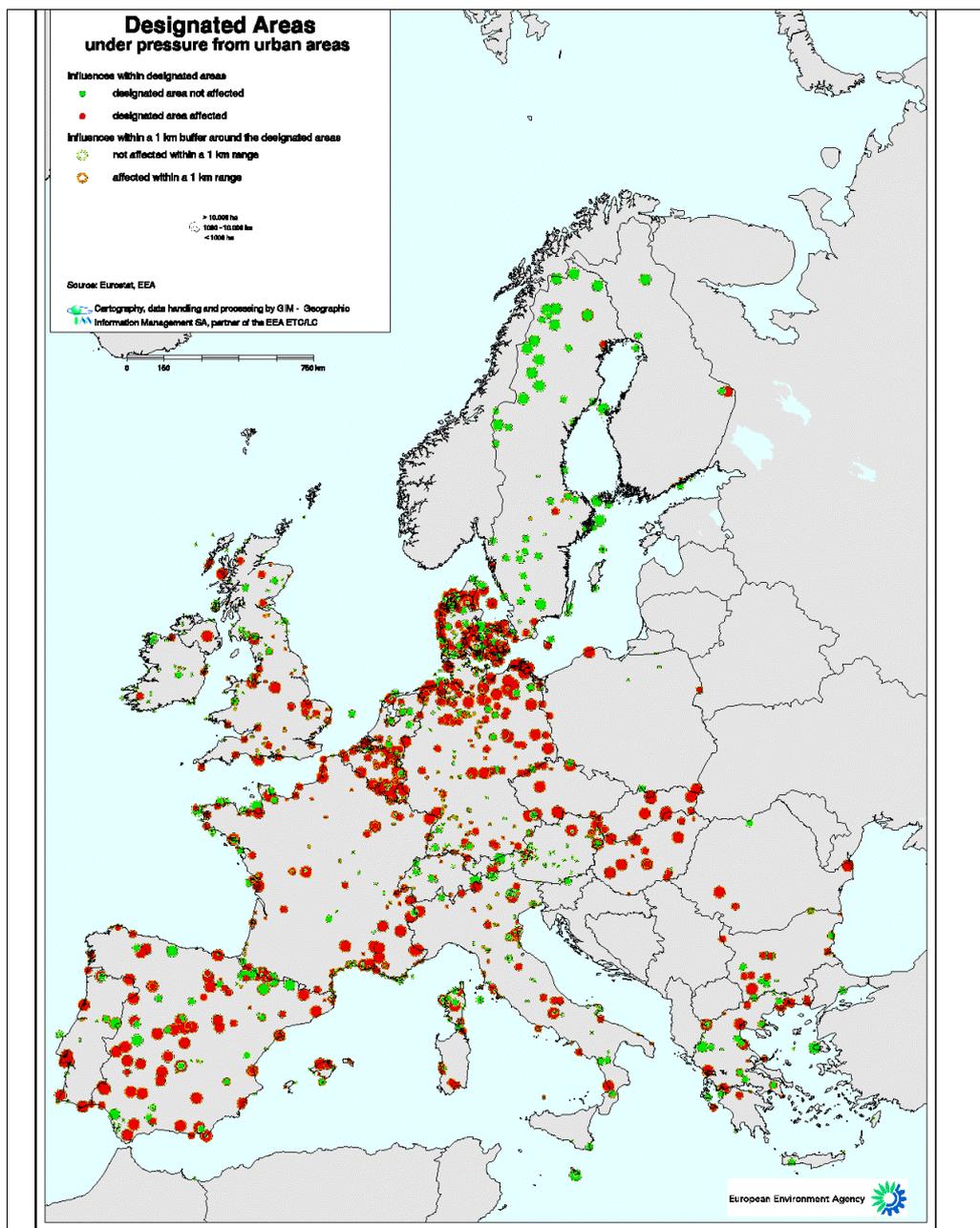


Figure 3. Example of pressure on internationally designated areas from landuse

2.2. Support to NATURA 2000

The EU Policy on Nature Conservation is mostly 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 named NATURA 2000, consisting of sites designated by Member States under the Birds Directive (Special Protection Areas = SPAs) and those proposed (proposed sites of community interest=pSCIs) and later designated under the Habitats Directive (Special Areas of Conservation = SACs).

According to the EEA mandate, the ETC/NC has to provide scientific and technical support to the European Commission (DG Environment), as well as to Member States, in this process. ETC/NC involvement was described in detail in the 1998 Annual Topic Update.

The national contacts for NATURA 2000 are most often not identical to the contact points for EIONET. Thus, the large ETC/NC work for Member States on NATURA 2000 is not easily visible through the normal EIONET.

In 1999 NATURA 2000 related activities have focused on:

- handling the database
- software issues
- pSCI assessment
- EU extension process
- outputs

2.2.1. Handling the database

SPA database

According to the designations from eight Member States during 1998 and the first half of 1999, 726 new SPAs have been added to the NATURA 2000 database at the last update. On the basis of this update, the DG Environment presented the report 'Special Protected Areas EUR15' to the 20th anniversary of the Birds Directive held in Denmark in November 1999.

Country	N° of SPAs	Surface (km ²)	Country	N° of SPAs	Surface (km ²)
BE	36	4 313	LU	13	160
DK	111	9 763	NL	30	3 522
DE	501	9 050	AT	73	11 931
GR	52	5 530	PT	36	3 911
ES	151	25 228	FI	451	28 346
FR	114	7 900	SE	301	22 365
IE	106	2 055	UK	200	9 437
IT	207	12 160	EUR 15	2 382	155 671

Table 2. Number and surface of SPAs in the NATURA 2000 Database by 30 June 1999

pSCI database

Using the NATURA 2000 software, 10 Member States in 1999 sent to the Commission initial or additional National Lists for a total of 3 202 pSCIs. They have been incorporated in the NATURA 2000 database to make further assessment possible using EUNIS data.

Country	N° of pSCI	Surface (km ²)	Country	N° of pSCI	Surface (km ²)
BE	101	908	LU	38	352
DK	194	10 259	NL	76	7 078
DE	7	741	AT	113	9 450
GR	230	25 840	PT	65	12 153
ES	808	85 895	FI	1 380	47 136
FR	1 017	31 097	SE	1 919	46 300
IE	138	2 095	UK	340	17 660
IT	2 424	39 018	EUR15	8 850	335 980

Table 3. Number and surface of pSCIs in the NATURA 2000 Central Module by 31 December 1999

2.2.2. *Software issues*

An amended version of the NATURA 2000 software (version 1.4) was distributed to users in the beginning of 1999. Since it solved most of the formerly identified operating problems, very few consultations on practical matters have subsequently arisen. Therefore, the NATURA 2000 software helpdesk has worked much less intensively in 1999 than in 1998. However, the NATURA 2000 software should be replaced by a more up-to-date system to help improve usability.

2.2.3. *pSCI assessment*

As mentioned above, 10 Member States had officially sent to the Commission National pSCI Lists (in some cases only partial or complementary) in 1999. According to the agreed schedule, each of these proposals was immediately submitted by ETC/NC to a first technical analysis aiming at identifying gaps in information (empty fields in the data sheets, not considered species or habitat types), mechanical errors (obviously wrong data in the fields) or inconsistencies (contradictory data in different fields of a single data sheet).

These National pSCI Lists were later submitted to a second more in-depth scientific analysis aiming at assessing global representativeness, completeness and coherence according to the Habitats Directive obligations. The results of such exercises were presented for discussion to the related NATURA 2000 Seminar for each biogeographic region, the conclusions of which constitute the scientific basis for the setting up of the Community List of SCIs.

Four Seminars were organised in 1999: the first seminar for the Boreal and the Atlantic regions, and the second seminar for the Alpine (divided in three sub-regional meetings) and the Mediterranean. However, after this second series of seminars it was clear that a third round of seminars (in years 2000/2001) will be needed to finalise the process for all mentioned regions.

2.2.4. *EU extension process*

At DG Environment's request, a new task was added in 1998 to the ETC/NC involvement in the NATURA 2000 process: a specific contribution to the preparation of the EU enlargement with accession countries. For the time being, this contribution is focussed on two major points: the preparation of scientifically-based documents to make possible the negotiation process, and the scientific assessment of the pertinence of the proposals made by the accession countries to modify the annexes.

Concerning the first point, the EU (15+12) Map of Bio geographic Regions was finalised in 1999 and is available in digitised format in NATLAN on the EEA website (under Services). A first draft of the 'Reference List' of the EC Directives species and habitat types occurring in the different accession countries has been prepared and circulated, the final version of which will be finalised by the end of February 2000. The ETC-PTL/NC was fully involved in this work.

2.2.5. Outputs and use

Most of the concrete results of the work undertaken by ETC/NC on the assessment of the 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 them for any EEA purpose. This data has been used to:

- feed the EUNIS Species and Habitats databases and, in combination with other collected data, to produce the related outputs (see above);
- illustrate part of the Europe's biodiversity report (see below).

2.2.6. Monitoring of NATURA 2000 sites

Though foreseen in the 1999 technical annex, this activity could not start due to priorities given the assessment of pSCIs provided by Member States.

2.3. Information and reporting on Europe's nature

Nature related aspects of the environment have to be taken into account, with an integrated approach, in the main EEA reports. At the same time, EEA is implementing its information strategy for the topic nature with different products and presentations. ETC/NC contributes to both groups of activities, mostly through data gathering and processing, as well as through writing and illustrating specific parts of the related products.

In 1999 the ETC/NC work related to EEA reporting activities mainly focused on:

- helping finalise the report *Environment in the European Union at the turn of the century*
- development of indicators
- DMEER map for NATLAN
- contribution to the report on Europe's biodiversity
- Nature reference net and monitoring

After publication of the report *Environment in the European Union at the turn of the century*, the top EEA priority in 1999 was to finalise preparation of the first annual EEA indicator-based report (published as *Environmental signals 2000*).

In relation to information for nature, the main EEA objectives were to finalise the NATLAN package (CD-ROM and Web application including data on Nature and Land Cover), and to start preparation of the report on Europe's biodiversity to be finalised in 2000.

Monitoring is a key issue for ensuring long term, reliable and comparable data from a coordinated network. EEA is considering the setting-up of a European NatureNet collaboration, equivalent to the already established networks for air and water. Preliminary discussions were held, during a workshop in early 2000, with the responsible persons of some main monitoring programmes of relevance for biodiversity in Europe.

2.3.1. Report on 'Environment in the European Union at the turn of the century'

ETC/NC assisted in the finalisation of the report *Environment in the European Union at the turn of the century* with contributions concerning biodiversity.

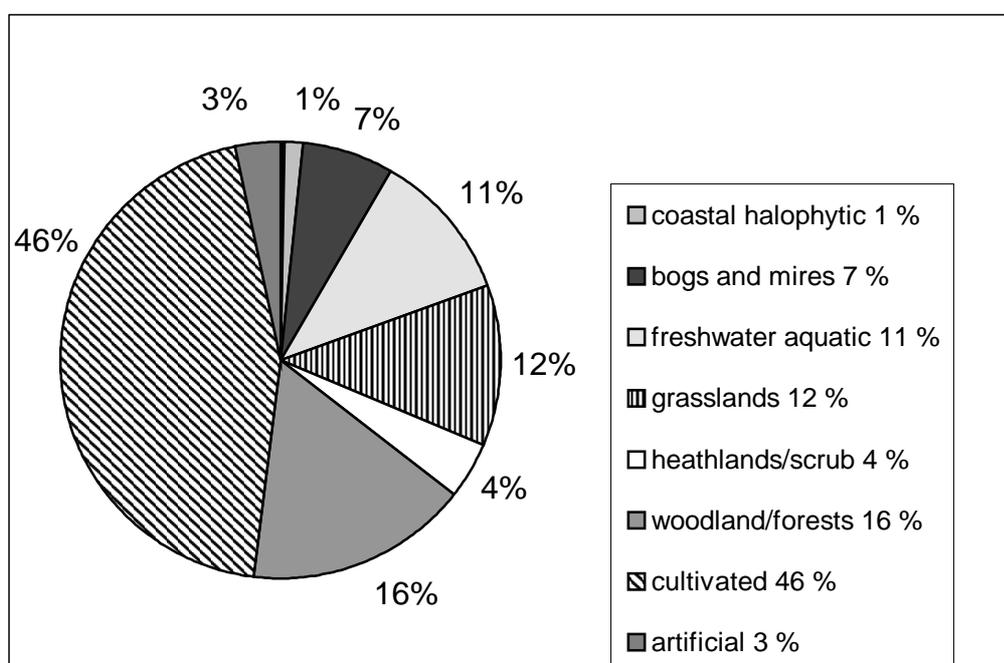
2.3.2. Development of indicators

As a contribution to the EEA project on an annual indicator report (*Environmental signals 2000*), and in reference to the European Commission's obligations to report under the Convention on Biological Diversity, ETC/NC was involved in the consideration of requirements for European-wide indicators. Nature-related indicators, and more specifically wetlands-related indicators, were the subject of discussions during the third EIONET seminar in Madrid in 16 April 1999. Presentations on selected national experiences and projects on indicators showed that countries are in general moving in the same direction. However, the confrontation with international and European demands for indicators also showed the difficulty to aggregate the data at a supra-national level in a relevant way.

In 1999, the focus was given to indicators related to wetlands. In order to have comparable criteria both for definition and selection of wetlands among countries, most data was extracted from the Ramsar database (wetlands of international importance). In the future, similar analysis will be possible for NATURA 2000 sites or Emerald sites (Bern Convention).

Four types of indicators were developed, among which:

- two 'pressure' indicators:
 - Land cover in areas surrounding Ramsar areas in southern and north-western Europe (combination of Ramsar data and CORINE Land Cover data) (Figure 4);
 - Proximity of transport infrastructure to Ramsar sites in selected European countries (combination of GISCO data and Ramsar data).



A large proportion of inland Ramsar wetlands areas in southern and north-western Europe includes or borders on agricultural lands, making these areas sensitive to (changes in) farming practices. Sea and sparsely vegetated areas are not included as they amount to less than 1 %.

Figure 4. Land Cover in and around inland Ramsar areas in southern and north-western Europe

Data source: CORINE Land Cover and Wetlands International

- one 'state' indicator:
 - Changes in waterfowl populations over time, presumably in relation to milder winters (on the basis of data provided by Wetlands International, as part of the International Waterbird Census project) (Figures 5 and 6).

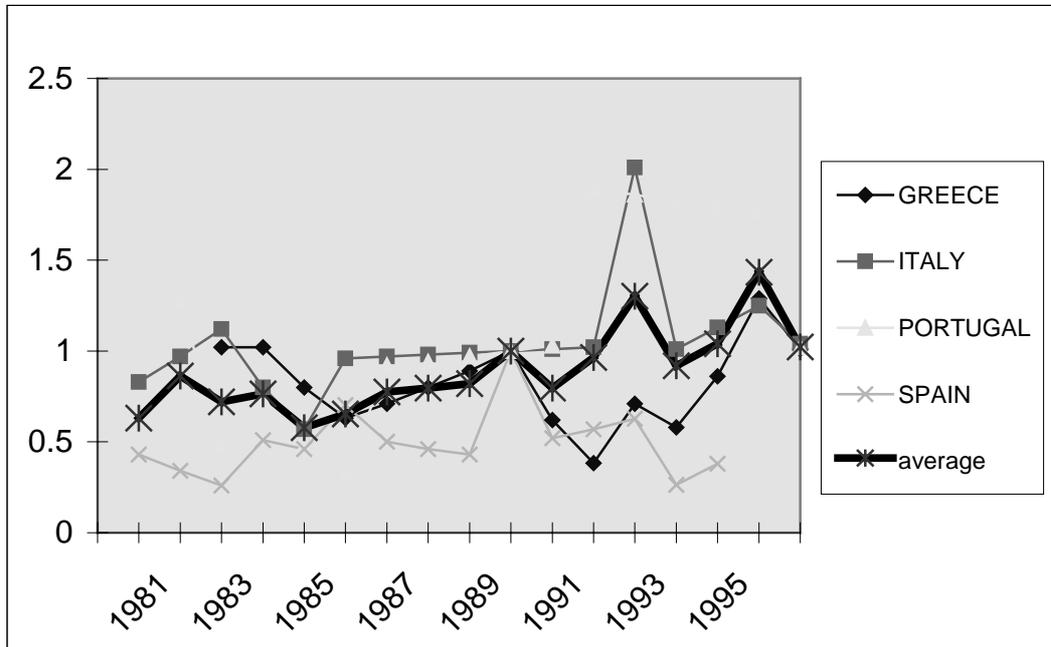


Figure 5. Index of wintering waterbirds in selected wetlands in 4 Mediterranean countries in Europe 1989-1996, index basis year 1989, slight increase

Data source: Wetlands International

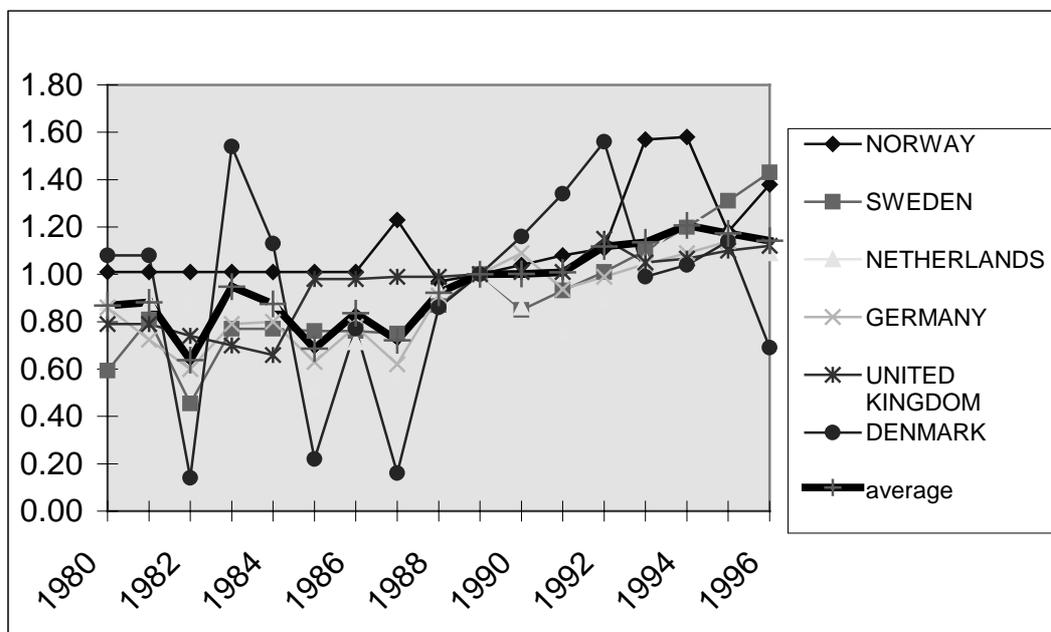


Figure 6. Index of wintering waterbirds in 6 northwest European countries 1980-1996, index basis year 1989, clear increase, though Denmark varies greatly

Data source: Wetlands International

- one ‘response’ indicator:
 - Contracting parties and total area designated over time under the Ramsar Convention for EEA member countries (data from the Ramsar database) (Figure 7).

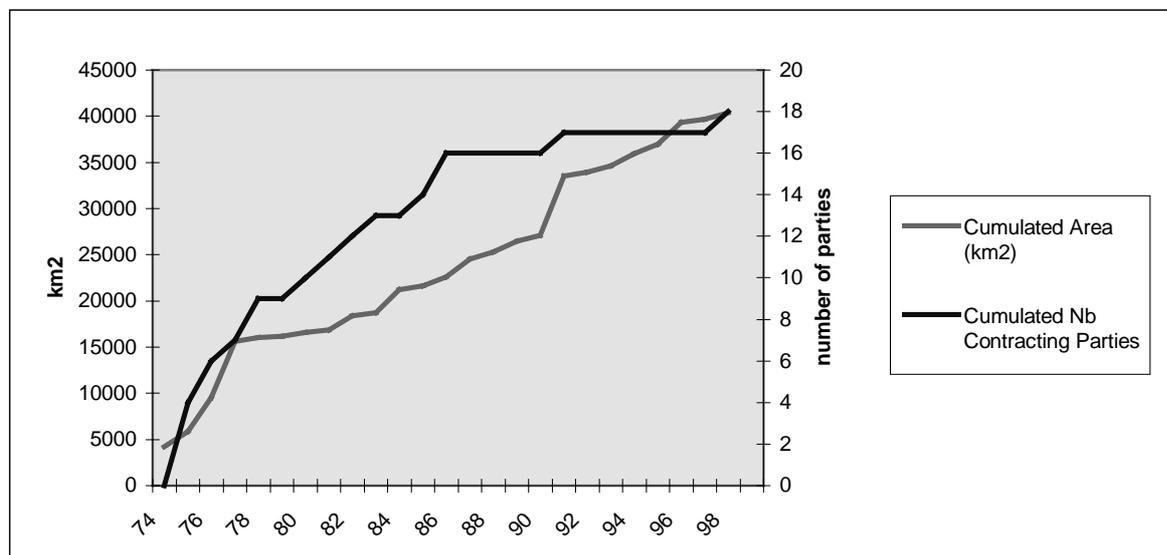


Figure 7. Contracting parties and total area designated under the Ramsar Convention by EEA member countries

Data source: Wetlands International

2.3.3. DMEER map for NATLAN

Among the various maps to be included in NATLAN, is foreseen the Digitised Map of Ecological Regions in Europe (DMEER). This pan-European digitised vector map proposing some 69 ecologically homogeneous units, provides a finer approach than the pan-European map of biogeographic Regions (11 classes).

The DMEER Project has been substantially delayed in order to take into account, for better compatibility, two global on-going projects (FAO biogeographic reporting map of the world and WWF global map on Eco-regions). The digitised map and the corresponding database will be finalised in early 2000.

2.3.4. Report on Europe's biodiversity

This EEA report, to be finalised by the end of 2000, will build upon the significant amount of data collected within EUNIS, including from PHARE countries, as well as from literature and expert advice. It is an opportunity for a close collaboration between ETC/NC, and ETC/Marine and Coastal Environment, ETC/Inland Waters and ETC/Land-Cover as well as related PTLs.

In 1999, the work consisted mostly in defining the structure of the report, agreeing on the content and finding the appropriate partners to undertake the work. The information gathered should serve other reporting needs, in particular for the development of indicators as well as ‘country profiles’, in support to the project on a European Community Clearing House Mechanism (EC CHM) under the CBD. The agreed structure for the report is as follows:

- a general part introducing main issues related to changes and losses of biodiversity in Europe;
- a series of 11 chapters, each describing the main characteristics in terms of state of biodiversity, but also pressures and responses given, of the biogeographic regions of Europe (as defined in the pan-European map of Europe approved by the Bern Convention Standing Committee);
- a series of 6 chapters describing the main European seas in terms of state of biodiversity, pressures and responses;
- a series of 'country profiles' for 44 European countries, providing facts and figures of relevance for biodiversity in those countries.

2.3.5. *Nature reference net and monitoring*

A number of supra-national initiatives has been undertaken in recent years on monitoring changes in selected features of the environment, some of them of direct relevance for biodiversity (climate changes, nutrient deposition...), either in protected areas, selected sites or in the wider landscape, either on a group of species (birds) or on ecosystems. Some programmes are institutional, in the framework of international Conventions or programmes (UNEP, UNESCO), others are NGO managed (Wetlands International, BirdLife) and others are scientific concerted actions with limited initial funding (NoLimits, BEAR project).

In view of establishing a future European NatureNet³ collaboration with the support of EIONET, EEA has to explore the possibilities for coordination/collaboration/complementarity with existing networks. This was the purpose of a workshop organised, as a first step, in Mid-January 2000 in EEA, under the responsibility of the ECNC partner of ETC/NC.

The workshop gave the opportunity for all participants to learn about other projects, to be informed about the EEA proposal to set-up NatureNet, and to report back to their own networks on potential collaboration. A workshop report will be produced in 2000.

2.3.6 *NATLAN*

NATLAN is an EEA presentation framework for nature and land cover data published on the EEA website in the section Services as well as on CD ROM. In 1999 ETC/NC contributed to with several datasets and application maps to the first version of NATLAN, published on the EEA website early 2000.

³ This type of site-based integrated monitoring is different from the one foreseen, as a legal obligation to EU member States for future NATURA 2000 sites. In the later, the goal is to ensure that the species and/or habitat for which the site has been designated will remain in a 'favourable conservation status'. The NatureNet monitoring-type aims at assessing general trends of biodiversity in a changing environment. However, several NATURA 2000 could be part of a NatureNet.

3. Main products and services

Subject	Availability
EUNIS species synonyms database (1999 update, MNCN)	Report, database & application Available on EEA's website in 2000
EUNIS habitat classification & exploitation tools (by ITE)	Report in 2000 on EEA's website
EUNIS data on species (Vertebrates)	Report, CD-ROM (database & application) and database on EEA website in 2000
European Vertebrates Red Book (with CoE)	Report (early 2000)
National Red Books on Species and Habitats in Europe (1999 updated list)	List of Red Books available on ETC/NC's website. Links foreseen with national websites in future
Nationally Designated Areas (1999 update)	Ongoing validation through EIONET
NATURA 2000 Database: - Special Protection Areas (SPAs) - Proposed Sites of Community Interest (pSCIs)	Available on DG Environment's website Not available (because of confidentiality)
Reference List of species and habitat types (occurrence by country/biogeographical region)	Available on DG Environment's website
Interpretation Manual of EUR 15 habitat types (rev.)	To be printed by DG Environment in 1999
Assessment of pSCIs (different documents)	Confidential
Conclusions from the NATURA 2000 Seminars	Printed documents. Distribution limited to the participants
Wetlands-related indicators	Facts-sheets for 4 indicator-types as a contribution to the EEA Environmental signals 2000
Pan-European Map of Bio-geographic Regions	Digital map available in NATLAN on EEA's website under Services
Digitised Map of European Ecological Regions (by ISEGI)	Digital map to be made available in 2000 on EEA's website

4. Plans for 2000

It is a priority objective for 2000 to make EUNIS data widely available, preferable via the Internet and in doing so coordinate and inter-connect both with the EEA website (European Environmental Reference Centre) and the EC Clearing House Mechanism work of EEA. Encouraging NRCs to make wider use of CIRCLE for data flow will therefore be part of the ETC/NC tasks. In 2000 the full EUNIS system shall be documented and made transferable to EEA.

The information system EUNIS shall continue to be populated to serve both NATURA 2000 and the general work on reporting on the state and trends of biodiversity (report on Europe's biodiversity, Environmental signals, Pan-European Biological and Landscape Diversity Strategy, EU biodiversity Strategy, work on transport, spatial development and tourism). Incorporation of data from PHARE countries (e.g. CORINE Biotopes, species, habitat type and designated area data) will be done via the PTL/NC.

The dataflow for the nationally designated areas data will be intensified with member countries using CIRCLE.

Concerning NATURA 2000, at least four NATURA 2000 Seminars are foreseen in 2000. The proposed calendar may be kept this year, taking into account that most Member States are now sending to the Commission their respective National Lists of pSCIs. Scientific support to the Commission regarding the negotiation with accession countries will be reinforced, mainly done in close cooperation with PTL/NC. Consideration on a general frame for monitoring NATURA 2000 sites will be initiated.

The contribution to various EEA projects (*Environmental signals*, Reporting Obligations Database, NatureNet) will continue, with priority given to the report 'Europe's biodiversity'.

The following table summarises the main activities to be carried out by ETC/NC in 2000 in which NFPs or NRCs could be involved:

EVENT/ACTIVITY	EVENT DATE*	RESPONSE DEADLINE*	EXPECTED OUTPUT	OUTPUT DATE*
Workshops				
1st NATURA 2000 Seminar Continental Region	21-23 March		Draft NATURA 2000 Community List for the Continental Region	April 2000
4th EIONET Seminar on Nature Conservation	30-31 March		Proceedings	June 2000
3rd NATURA 2000 Seminar Alpine Region	4-5 September		Draft NATURA 2000 Community List for the Alpine Region	October 2000
2nd NATURA 2000 Seminar Atlantic Region	23-25 October		NATURA 2000 Community List for the Atlantic Region	November 2000
3rd NATURA 2000 Seminar Mediterranean Region	6-8 December		Draft NATURA 2000 Community List for the Mediterranean Region	December 2000
Data Update				
Country profiles	May	August	Validated country profiles by EIONET	December 2000
Selected Indicators (to be identified)	Beginning March	End April	Contribution to the EEA Annual Indicators Report	End 2000
Nationally Designated Areas	Beginning April 2000	Sept. 2000	Contribution to EEA reports and to NATURA 2000	December 2000
Drafts for review				
Biogeographic Chapters for Europe's biodiversity report	First draft Final draft		EEA Report	December

Annex 1: ETC/NC partners

Partners in the consortium of the ETC/NC are:		Additional 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	Miljøministeriet (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 a Conservação da Natureza (Institute for Nature Conservation), Lisboa (Portugal)	NRC/NC
ISEGI	Instituto Superior de Estatística e Gestão de Informação (Higher Institute for Statistics and Information Management), Lisboa (Portugal)	--
ITE	Institute for Terrestrial Ecology, Monkswood (United Kingdom)	--
JNCC	Joint Nature Conservation Committee, Peterborough (United Kingdom)	NRC/NC
SEPA	Naturvårdsverket (Swedish Environmental Protection Agency), Stockholm (Sweden)	NRC/NC (NFP) *
*() another division of the organisation is part of EIONET, but not an ETC/NC partner		

Annex 2: Contact points for nature

EIONET primary contact points for nature

NFP: National Focal Point

NRC/NC: National reference centre on nature

* : the organisation is also partner of the ETC/NC consortium

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BE	Jan Voet, Intergewestelijke Cel voor Leefmilieu (IRCEL) Kunstlaan 10/11; B-1210 Brussels; Tel/fax: +32 2 227 5676/+32 2 227 5699; E-mail: voet@irceline.be; NRC	IT	Roberto Caracciolo; Agenzia Nazionale per l'Ambiente ANPA; Via Vitaliano Brancati, 48; I-00144 Rome; Tel/fax: +39 06 5007 2043/+39 06 5007 2218 E-mail: caracciolo@anpa.it; NRC/NC, *
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FR	Hervé Maurin; MNHN – Muséum National d'Histoire Naturelle; 57, rue Cuvier; F-75231 Paris cedex 05; Tel/fax: +33 1 40 79 32 74/+33 1 43 36 13 39; E-mail: sff@mnhn.fr; NRC/NC, *	PT	Teresa Costa Pereira; Instituto de Conservação da Natureza; Ministerio do Ambiente; Rua da Murgueira – Zambujal; Apartado 7584 – Alfragide; P-2720 Amadora; Tel/fax: +351 1 472 83 82/+351 1 471 90 74; E-mail: teresa.pereira@dga.min-amb.pt; NRC/NC
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IE	Barry Murhpy; The Office of Public Works, National Park and Wildlife Service; St. Stephens Green 51; El-Dublin 2; Tel/fax: +353 1 661 3111/ - NRC/NC	UK	Paul Swallow; Department of the Environment, Transport and the Regions; Ashdown House, 123 Victoria St.; UK-SWIE 6DE London; Tel/fax: +44 171 890 6502/+44 171 890 6489; E-mail: paul.swallow@nfp-gb.eionet.eu.int; NFP

PHARE contact points for nature

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