

## ETC on Biological Diversity: An overview of its activities



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The factsheets attached aim to provide the context for the work undertaken by the European Topic Centre on Biological Diversity (ETC/BD) and to summarise its main activities and results. They mostly cover the work done since 2005 as a contribution to the European Environment Agency Strategy 2004-2008 and its Multiannual Work Programmes.

A number of activities were initiated by the previous ETCs, respectively on Nature Conservation (1995-2000) and on Nature Protection and Biodiversity (2001-2004).

### *Contextual factsheets*

1. The policy context of ETC/BD work
2. The science context of ETC/BD work
3. Working with countries

### *Topic-oriented factsheets*

4. The European Union nature directives
5. Indicators
6. Biodiversity information
7. Designated areas and ecological networks
8. Ecosystems in a changing context

The European Topic Centre on Biological Diversity (ETC/BD) is a consortium of nine partners:

- National Museum of Natural History, FR (Coordinator)
- Agency for Nature Conservation and Landscape Protection, CZ
- Central Institute for Research Applied to the Sea, IT
- Estonian Environment Information Centre, EE
- European Centre for Nature Conservation, pan-European organisation based in NL
- European Forest Institute, pan-European organisation based in FI
- Institute of Landscape Ecology – Slovak Academy of Sciences, SK
- Joint Nature Conservation Committee, UK
- Wetlands International, global organisation based in NL

The ETC/BD operates under a Framework Partnership Agreement with the EEA. Its work is mainly co-financed by the EEA (ca. 65%) and by the French Ministère de l'Écologie, du Développement et de l'Aménagement durables (ca. 35%)

<http://biodiversity.eionet.europa.eu/>



# The policy context of ETC/BD work

## What was expected from the ETC/BD?

The EEA terms of reference call for an '*ETC on biological diversity (...) to work with EEA member countries and key international organisations to arrive at efficient structures of European data systems to deliver policy relevant biodiversity data and information*'.

Support and information to enable assessment of biodiversity policy implementation, relate specifically to:

- 2010 biodiversity targets at global, pan-European and European levels
- Birds and Habitats Directives (Natura 2000)
- Bern Convention (Emerald Network)
- Pan-European Biological and Landscape Diversity Strategy (PEBLDS)
- Regional Marine Conventions
- Ministerial Conference for the Protection of Forests in Europe
- Forest Focus Regulation

## What is the wider context of this work?



- As with the other ETCs, the ETC/BD works at the interface of science and European policy making. It is expected to contribute to the EEA mandate, i.e. *'to support sustainable development and to help achieve significant and measurable improvement in Europe's environment through the provision of timely, targeted, relevant and reliable information to policy making agents and the public'*
- Our focus is mostly on EU policy in support to the 6<sup>th</sup> Environmental Action Programme 'Environment 2010. Our future, our choice' and the EU Strategy on Sustainable Development. More recently the EU Biodiversity Communication and Action Plan on 'Halting the loss of biodiversity by 2010 and beyond' – which are the European contribution to the Convention on Biological Diversity – provide a framework for action for the next decade
- EEA and ETC/BD also provide support to the development of other multi-lateral environment agreements such as the pan-European 'Environment for Europe process', the Pan-European Ministerial Conference for the Protection of Forests in Europe, the Bern Convention and marine conventions
- The general follow-up of international conventions such as the Convention on Biological Diversity and the Ramsar Convention is also supported
- The ETCs yearly work planning takes place in the context of the European Environment Agency's multi-annual work programme, in response to the above-mentioned policy environment

## What has the ETC/BD achieved?

Some examples of work to which the Topic Centre has made a significant contribution include:

- Scientific and technical support to the EC in building the Natura 2000 network (see factsheets on 'EU Directives', on 'Working with countries', on 'Ecological Networks/Designated Areas', on 'Information', on 'Science')
- Development of guidance to support the reporting on the conservation status of species and habitats listed on Annexes of the Habitats Directive under the Article 17 reporting process (see factsheets on 'EU Directives', on 'Working with countries' and on 'Information')
- Development of European indicators to measure progress against and help achieve the 2010 biodiversity targets (the SEBI2010 programme) (see factsheets on 'Indicators' and on 'Information')

- Updating of EEA biodiversity indicators, including through the EIONET priority data flow (see factsheets on 'Indicators', on 'Information and on 'Ecological Networks/Designated Areas')
- Support to the development of the Emerald network under the Bern Convention in the West Balkan countries (see factsheet on 'Ecological Networks/Designated Areas')
- Input to the Belgrade Assessment on Europe's Environment (see factsheets on 'Information' and on 'Ecosystems')
- Input to the report on a Pan-European Ecological Network as part of the Pan-European Biological and Landscape Diversity Strategy (see factsheets on 'Ecological Networks/Designated Areas' and 'Information')
- Providing methodological guidelines for reporting on marine habitats in support to regional marine conventions: Black Sea, Baltic, Mediterranean (see factsheets on 'Information')
- Contribution to framing the biodiversity component of a forest monitoring in Europe as part of the Forest Focus regulation (see factsheet on 'Ecosystems')
- Support to the Ministerial Conference on the Protection of Forests in Europe: providing background information in support to the development of selected indicators of sustainable forestry (see factsheet on 'Ecosystems' and on 'Science')
- Compiling, analyzing and synthesizing information on selected ecosystems and on ecosystem functions, goods and services in support to policy relevant integrated assessments (see factsheets on 'Ecosystems' and 'Science')

## Which are the main challenges ahead?

- Biodiversity ranks high on the policy agenda. It is progressively being taken into account as a full component of sustainable development policy instruments at EU, pan-European and global levels. Biodiversity assessments will be increasingly needed to analyse how specific sectors influence or can benefit from biodiversity (forestry, agriculture, fisheries, business...). However, experience gained with reporting by countries under the Habitats Directive shows that the lack of basic data on biodiversity and their extreme fragmentation remains a serious difficulty to be overcome
- Important emerging issues such as climate change, the impacts of bio-fuels, valuation of ecosystem goods and services require a transfer from scientific knowledge to policy implementation. Within its mandate the EEA and its ETC/BD will have to ensure that adequate expertise is mobilized to support the various policy areas targeted by the EU Biodiversity Communication as well as the work under the Convention on Biological Diversity
- Data gathering and assessments to support the implementation of marine policy instruments including the setting up of marine protected areas are to be enhanced

## What have we learned from our experience?

All of the ETC/BD Consortium members are involved in policy development, implementation or assessments at national and/or European scale. When bidding for the ETC/BD contract, members of the Topic Centre Consortium demonstrated their extensive policy experience, including work done by the nine partners in other contexts such as in support of national and European policy delivery.

A number of lessons emerge from the experience over the past decade plus of running the three 'incarnations' of the biological diversity Topic Centre. Three stand out in particular:

- The importance of institutional memory is a key strength in refining and streamlining processes for policy development and assessment
- A broad network of contacts in many institutions, both governmental and non-governmental has enhanced opportunities for review and integration
- A range of skills, and flexibility in their application, are important in responding to challenges emerging from changes in the policy environment

# The science context of ETC/BD work

## What was expected from the ETC/BD?

According to its terms of reference, the ETC/BD should:

- Identify needs to establish and/or secure European scientific expertise and research on the state of Europe's biological diversity
- Develop capacities to perform reviews of scientific state of knowledge in relevant areas
- Use scientific knowledge and the data gathered to maintain a number of reference databases (containing information on European species, habitats and natural sites) and information systems for producing EEA's indicators and assessments
- Deliver direct policy support and build up networks by participating in working groups, committees etc., particularly those formed under EU legislation or programmes such as the Framework programmes for research and technological development (RTD).

## What is the wider context of this work?

- The ETC/BD is not a research institute in itself, although a number of its consortium partners are research institutions and participate in EU RTD projects. As with all ETCs, the ETC/BD acts at the science-policy interface
- ETCs are brokers of research results that have been compiled by an array of national and international institutions throughout Europe and worldwide over many decades. They collect, process and synthesize data and information for the purposes of reporting in support of the EC decision-making process
- ETCs have to ensure that the data and information that is collated is scientifically sound and reliable. Therefore they need to cooperate with the research community and other science brokers and contribute to the dialogue on biodiversity research
- With the implementation of the Convention on Biological Diversity, the importance of policy relevance of biodiversity related science has increased. Many networks have formed in Europe that aim at supporting this process of science-policy interaction
- At EU level the recent RTD Framework Programmes have generated an increasing number of biodiversity-related research projects and networks of excellence, many of which of relevance to EEA activities.

## What has the ETC/BD achieved?

### *Composition and functioning of the ETC/BD*

- The structure of the ETC/BD consortium ensures links with research on several biodiversity-related topics:

	National Museum of Natural History, FR	Research institution, French government's biodiversity adviser (taxonomy, terrestrial, freshwater and marine biodiversity and ecology) Leading the ETC/BD Consortium through an international team of experts
	Institute of Landscape Ecology, SK	Basic and applied research institution on landscape ecology
	Central Institute for Research Applied to the Sea, IT	Applied research institution on marine ecology, Italian government's adviser on marine biodiversity and sustainable use of marine resources
	Agency for Nature Conservation and Landscape Protection, CZ	National agency, Czech government's technical support and adviser for nature conservation and landscape policies
	Estonian Environment Information Centre, EE	National agency, Estonian government's environment adviser
	Joint Nature Conservation Committee, UK	National agency, UK government's wildlife adviser, including on biodiversity research priorities in support to policy
	European Forest Institute	International organisation: pan-European level forest research network including, universities, research organisations, industry, NGOs
	European Centre for Nature Conservation	European non-profit foundation involving a European network of over 40 research institutes, conservation agencies, NGOs in more than 20 countries acting as a biodiversity science/policy interface
	Wetlands International	International NGO aiming at conservation and restoration of wetlands through research, information exchange and conservation activities

- In order to facilitate mutual exchanges and ensure synergy in work, the ETC/BD is supported by a Collaborative Panel which meets every year. This panel includes representatives of research networks and organisations (CEC-Joint Research Centre, European Platform on Biodiversity Research Strategy), a member of the EEA Scientific Committee, as well as representatives of international governmental (Council of Europe, UNEP-WCMC) and non-governmental organisations (IUCN - the World Conservation Union Regional Office for Europe, Regional Environmental Centre)

### *Specific ETC/BD activities involving scientific expertise*

The ETC/BD has ensured solid scientific input into the following topics (amongst others):

- The process of producing Natura 2000 Community lists through a series of regional workshops with regional experts
- The production of research-based review papers on biodiversity data, indicators, monitoring, and reporting;
- Participation in expert groups that bring science and EC policy together (e.g. EC Biodiversity Expert Group and European Platform on Biodiversity Research Strategy)
- Direct involvement through advisory groups in selected research projects (e.g. BIOPRESS, BIO-HAB, ALTER-Net, EDIT, EUMon, RUBICODE, COST Action E27-PROFOR, ENBI, DIVA)<sup>1</sup>
- Direct involvement, on behalf of the European Environment Agency, in the International Mechanism for Scientific Expertise on Biodiversity Committee (IMoSEB)
- Incorporation of state of the art research in contributions to the EEA assessment reports.

### Which are the main challenges ahead?

- Science and the research community are constantly changing. New topics arise and become policy relevant (e.g. bio-fuels or GMOs). The ETC/BD needs to guard that it focuses on the EEA core business and at the same time keeps an eye on what is happening in science and research and the developments of international science-policy interfaces. The ETC/BD also needs to guard its impartiality by ensuring that any information that is produced is clear about issues such as uncertainty, reliability and possible conflicting results
- Several networks of excellence are being developed in Europe, including on terrestrial biodiversity (e.g. ALTER-NET), on marine biodiversity (e.g. MARBEF)<sup>2</sup>, and on taxonomy (EDIT). Unlike research projects, these networks aim at structuring the research potential on biodiversity in Europe. The Life Watch<sup>3</sup> project under preparation is even more integrative and will represent a unique opportunity for structuring European biodiversity research ranging from taxonomy to ecosystems. As stakeholders at the interface between science and policy, EEA and its ETC/BD will have to assess how and to what extent to participate in this venture, once the project is in place.

### What have we learned from our experience?

The ETC/BD is in a continuous dialogue with both the scientific community and the policymakers. This ensures that the reporting activities suit the policy needs in a scientifically sound way. The ETC/BD, by its mandate, is in good position to synthesise biodiversity research results without actually carrying out scientific research. Due to resource limitation, it is important to focus on research fields of particular relevance to EEA work. The ETC/BD Consortium is well-placed to cover these priorities at both national and European scales.

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<sup>1</sup> **BIOPRESS**: Linking Pan-European Land-Cover changes to pressures on Biodiversity, **BIOHAB**: A framework for the coordination of Biodiversity and Habitats; **ALTER-Net**: A Long-Term Biodiversity, Ecosystem and Awareness Research Network; **EDIT**: European Distributed Institute on Taxonomy; **EuMON**: EU-wide monitoring methods and systems of surveillance for species and habitats of Community interest; **RUBICODE**: Rationalising Biodiversity Conservation in Dynamic Ecosystems; **ENBI**: European Network for Biodiversity Information; **CoST-Action PROFOR**: Protected Forest Areas in Europe - analysis and harmonisation; **DIVA**: Public Action, Agriculture & Biodiversity(French programme)

<sup>2</sup> **MARBEF**: Marine Biodiversity and Ecosystem Functioning

<sup>3</sup> **Life Watch**: e-science and technology infrastructure for biodiversity data and observatories

# Working with countries

## What was expected from the ETC/BD?

The initial terms of reference call ETC/BD to maintain close links with Eionet and countries through:

- Networking and regular country visits
- Identifying barriers to optimally perform their tasks (e.g. monitoring capacities, staff resources, knowledge gaps) and developing proposals to solve issues
- Carrying out outreach and information dissemination campaigns to the nature and biological diversity community
- Providing training and capacity building in the countries as appropriate
- Organizing regular Eionet workshops and seminars to discuss the outcomes of the work and plan future activities with the EEA member countries.

## What is the wider context of this work?



Member countries  
Collaborating countries

Countries involved in the EIONET network

Eionet is a partnership network of the EEA and its member and participating countries. It consists of the EEA itself, the European Topic Centres (ETCs) and a network of around 900 experts from 37 countries in over 300 national environment agencies and other bodies dealing with environmental information. These are the national focal points (NFPs) and the national reference centres (NRCs). The Eionet partnership is crucial to the EEA in supporting the collection and organisation of data and the development and dissemination of information. In addition, the EEA and ETC/BD supports DG Environment in implementing and assessing the EU nature & biodiversity policies, which have their own networks of Member States representatives and experts.

The ETC/BD works closely with these different networks to support, streamline and facilitate communication, understanding of issues and key data flows.

## What has the ETC/BD achieved?

- Building effective collaboration with country representatives and experts as a result of:
  - Providing *ad hoc* support and acting as a helpdesk in different projects: e.g. Natura 2000, Article 17 reporting; Common Database on Designated Areas
  - Visits to countries in support to the development of the Emerald network of sites under the Bern Convention and in support to reporting on nationally designated areas
  - Providing methodologies and tools such as for the interpretation manual of EU27 habitats, Article 17 reporting; EUNIS<sup>4</sup> Habitat classification
  - Participating in working groups and meetings. These include: EEA National Focal Points meetings; Scientific Working Group on Habitats; DG ENV - Biodiversity Expert Group on indicators
  - Coordinating expert groups appointed by NFPs for the project on Streamlining European 2010 Biodiversity Indicators (SEBI 2010)

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<sup>4</sup> European Union Nature Information System

- Good understanding of countries' and organisations' characteristics and constraints and experience in finding the most appropriate solutions by:
  - Involving a variety of organisation-types from different countries – national agencies, research institutions, international organisations – in the ETC/BD, having a large diversity of cultural backgrounds and experiences
  - Strongly engaging in the SEBI2010 project which allows the exchange of experiences with countries on monitoring, data collection, and methodologies applied at European and national levels
  - Sharing experience with different countries to support the EEA in the development of a Millennium Ecosystem Assessment for Europe
- Rather than carrying out extensive information and dissemination campaigns, the ETC/BD carries out several supporting activities to make the biodiversity community aware and involved in the main EEA projects and initiatives:
  - Publication of an [e-newsletter](#) three times a year
  - Presentation of ETC/BD and EEA activities during meetings such as the EU Nature Director's meetings or during national meetings, conferences, workshops
  - Participation in various international and European research networks and projects as a stakeholder
- Targeted training activities and building of capacities:
  - For reporting on the Habitats Directive (e.g. to staff from national institutions, universities, NGOs...)
  - For data delivery on protected areas as part of the Eionet priority data flow
  - For building an information system on biodiversity for Mediterranean countries as part of the MEDSTAT programme on Euro-Mediterranean statistical co-operation
  - Through organising yearly workshops with Eionet-National Reference Centres on nature and biodiversity
  - Welcoming staff from governmental and non-governmental organisations at the ETC Core Team in Paris for training and exchange of knowledge.

## What are the main challenges ahead?

- The implementation of a Shared Environmental Information System, conceived as 'a decentralised infrastructure of inter-connected data repositories and data bases with access and sharing' is a challenging partnership project between the European Commission services and the EEA. The ETC/BD is assisting the EEA in the development of the biodiversity component of this system in collaboration with main data holders, including EEA member countries
- Many activities developed at global level in the framework of the Convention on Biological Diversity generate specific work programmes and technical working groups with national experts, as for example on protected areas, forests and biodiversity, ecosystem approach. It is important for the EEA and ETC/BD to be aware of the progress of this work
- Although the geographical scope of EEA activities concentrates on the 37 Eionet countries, there are needs for capacity building in reporting at Pan-European level. This is the case for the SEBI 2010 process and the pan-European environmental assessments which EEA publishes every five years.

## What have we learned from our experience?

- ETC/BD work in support to the EU Directives is highly valued by EU countries as it provides a genuine European added value to their work and needs at national level. Examples are the elaboration of guidelines, methodologies, reporting tools, country benchmarking analysis. This represents a major contribution to capacity building on biodiversity information at a European scale
- Another opportunity for extensive exchanges between the ETC/BD and Eionet countries is putting into practice the development of the 2010 biodiversity indicators. The ETC/BD can substantially assist in mitigating the reporting burden by countries and act as a forum to exchange experiences related to indicator work. Thanks to countries' involvement in the SEBI2010 project, the EEA and ETC/BD work on biodiversity indicators has also become highly visible to Eionet countries.

# The European Nature Directives

## What was expected from the ETC/BD?

The terms of reference from the EEA call for the ETC/BD to provide technical assistance to the EEA to support implementation of the EU Nature Directives by:

- Providing input, e.g. based upon data from reference databases, in workgroups and meetings
- Ensuring validation of data and input to the Commission Natura 2000 database
- Assisting in the completion of the designation process for the EU15 countries with particular attention to marine designations
- Assisting in the final process of establishing the Natura 2000 network in the accession countries including Assessment of proposals and preparation of biogeographic seminars
- Providing support in monitoring and reporting on the conservation status of habitats and species covered by the Birds and Habitats directive.

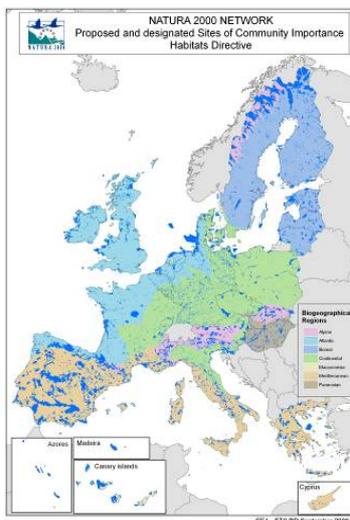
## What is the wider context of this work?

- The implementation of the Birds and the Habitats Directives implies a trans-national approach in designing an ecological network and in assessing biodiversity conservation status, based on supra-national priorities and criteria. This process, which aims at ensuring a European ecological coherence across 27 countries, is unique in the world
- It has generated a considerable amount of scientific and technical work in compiling, harmonising and assessing data on the distribution and status of more than 1500 species and habitats, based on reporting by countries and in consultation with many stakeholders
- Within this trans-national approach, provision of methodological guidelines and support to countries in their daily reporting obligations is crucial
- The information collected is an important source of data for other work such as developing biodiversity related indicators, ecological networks and integrated spatial assessments

## What has the ETC/BD achieved?

### *Support to DG Environment in the establishment of the [Natura 2000 sites](#)*

- Finalisation of the 7 Community lists<sup>5</sup> of sites under the Habitats Directive: Production, since 2004 of the Mediterranean and the Pannonic lists, and update of the 5 initial Community lists. As a whole up to 20 000 Sites of Community Importance have been adopted. This achievement is the result of a long-term process started in 1995, which, for ETC/BD, consisted in various activities:



- Assessment of national proposals:
  - Scientific evaluation of all habitats and species by using reference information from books, scientific journals, Internet...
  - Preparation of working documents: more than 1500 individual species and habitats assessments including maps
  - Management of biogeographic seminars and establishment of the conclusions of the discussions (7 since 2004)
- Establishment of community lists according to criteria defined in Annex III of the Habitats Directive
- Managing of the European Natura 2000 database including quality assurance and quality control
- Participating in regular meetings of the Habitats Committee and its Scientific Working Group and of the Member States
- Management and updating of the database on 5000 Special Protection Areas for the Birds Directive

<sup>5</sup> Alpine: 1345 sites, Atlantic : 2713 sites, Boreal : 6276 sites, Continental : 6948 sites, Macaronesia : 211 sites, Mediterranean : 2879 sites, Pannonic: 721 sites

### *Support to reporting on conservation status of given habitats and species*

The Habitats Directive requires EU member states to report on their implementation of the Directive every 6 years including the assessment of conservation status of given habitats and species at national and biogeographic level. Ultimately the reporting for Article 17 will consist of an unprecedented dataset on more than 1 500 habitats and species from across 25 countries. The ETC/BD work consists in:

- Production of a reporting format to harmonise reporting
- Supporting the EEA in developing an IT tool for transferring data from the countries
- Performing a series of rigorous quality assurance and control procedures for the descriptive and spatial data: up to six separate tests on each individual file provided by countries
- Reporting back to countries to highlight corrections needed and improve coherence and quality of the data
- Development of methodologies for producing biogeographic/ EU wide assessments of conservation status are under development.

A series of by-products have been generated as a consequence of spatial quality assurance and quality control procedures, which have a considerable value both for the Member States and for the EEA including improved GIS data sets – biogeographical boundaries, Natura 2000 site boundaries, improved country limits, vastly improved coastline data – to that which was previously available.

### **What are the main challenges ahead?**

- The Natura 2000 network is nearing completion. The information gathered across the EU 27 countries represents a unique quality checked biodiversity data set, which could be better exploited e.g. to inform policy or for research and made more widely available
- A methodology for assessing national proposals for marine Sites of Community Importance needs to be further developed
- To integrate the Birds and Habitats directive into a coherent network – Natura 2000 – requires scientific evaluation of the conservation status of bird species in a similar fashion that undertaken under Article 17 of the Habitats Directive. This requires agreement of a framework and methodologies by EU Member States
- There have been (and are likely to be further) proposals for reviewing the annexes of the Directives. The ETC/BD and EEA need to make information available so decisions can be based on evidence.

### **What have we learned from our experience?**

- The value of a full time team, associated with specific expertise from consortium partners, in close and regular contact with DG Environment, Member States and NGOs, able to be flexible in response to problems with changing deadlines
- Although most Natura 2000 sites have already been proposed and when designated will form an ecologically coherent network, the process is always changing. It needs to be able to adapt to new conditions and knowledge for example improved knowledge from new national or European inventories of habitats or species in the EU
- The quality assurance and quality control work in support to Article 17 was developed in a very short time, with limited human resources but is already showing its relevance for analysis of data delivered by Member States. This process has already generated by-products of considerable value for future EEA and ETCs work.

# Indicators

## What was expected from the ETC/BD?

The terms of reference of the ETC/BD request support for the EEA in developing indicators within the DPSIR assessment framework, to support specific policy processes including high-level processes such as the EU Sustainable Development Strategy. Specifically the ETC should:

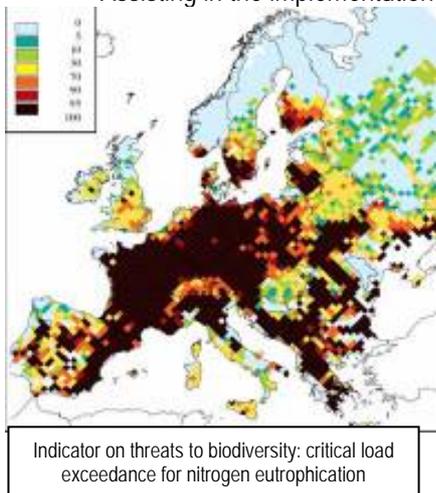
- Contribute to the maintenance and further develop a set of about 30 indicators
- Produce updates for these indicators regularly, including an analysis of the trends. Quality assessment of the data is part of this task
- Elaborate policy relevant texts describing the environmental and policy context of the indicators as well as their analysis
- Develop new indicators in cooperation with EEA member countries, other organisations or research projects. Specifically the ETC should analyse the state of knowledge and existing capacities as a basis for developing indicators and information on key ecosystem functions.

## What is the wider context of this work?

- Indicators provide a useful tool to communicate complex scientific results in a simple way to decision-makers. EEA reporting on environment in Europe is largely based on indicators
- In order to prioritise reporting by EEA member countries on various environmental issues the EEA Management Board has agreed on a Core Set of 30 environmental indicators ([CSI](#)) including three biodiversity indicators
- Various policy processes, such as the EU Sustainable Development Strategy, the EU Common Agricultural Policy, and the Marine Thematic Strategy are assessed against a set of specific indicators including a few biodiversity indicators
- At the level of the Convention on Biological Diversity the development of biodiversity indicators started in the mid-nineties, involving scientists and national and international policy- and decision-makers. This process speeded up with the global adoption of the target to significantly reduce biodiversity loss by 2010. This led to the adoption of a set of 22 international headline biodiversity indicators
- For Europe, the Gothenburg and Kyiv targets to halt biodiversity loss by 2010 provided the same impetus and led to the endorsement of the EU set of 16 headline biodiversity indicators. The [SEBI2010](#) process – Streamlining European 2010 Biodiversity Indicators – was developed to document and implement these indicators, which the European Commission needs to report on its achievement against the 2010 target.

## What has the ETC/BD achieved?

- Development, production and updating of the three biodiversity indicators, as part of the EEA Core set of environmental Indicators, respectively on species diversity, threatened species and protected areas. This includes ensuring regular provision of data from countries and international non-governmental organisations.
- Assisting in the implementation of the SEBI2010 process:



- supporting the coordination team of SEBI2010 through developing the SEBI2010 work plan
- chairing and/or coordinating expert groups on 'Species', 'Nitrogen deposition', and 'Genetic diversity'
- participating as expert in the 'Species', the 'Habitat', the 'Invasive species' and 'Sustainable Management' expert groups and in the development of a Marine trophic index'
- contributing to the selection of a first set of SEBI2010 biodiversity indicators (26 indicators)
- identifying needs for data flows from countries and other data holders;
- communicating on developments in SEBI2010 in various international and national fora

- Contributing biodiversity components to the indicators on agri-environmental issues as developed in the IRENA project (Indicator Reporting on the Integration of Environmental Concerns into Agriculture Policy)
- Contribution to the development of biodiversity indicators under the EU Marine Thematic strategy
- Contribution to the development of sustainability indicators under the UNESCO-Man and Biosphere programme
- Reviewing initiatives in developing a biodiversity index and exploring the feasibility of an indicator on species specialisation.

## Which are the main challenges ahead?

In the biodiversity indicator process the EEA and the ETC/BD are faced with the following challenges:

- An urgent need to move from developing indicators to implementing and communicating them
- Ensuring a continuous, enhanced and harmonised data flow from Member States and other data holders in order to allow regular updating of indicators and streamlined reporting
- In the case of the SEBI2010 process, ensuring progressive expansions to a pan-European coverage of all the different indicators
- Linking up with other indicator processes in order to eliminate duplication and reduce the data delivery burden from data owners
- Assessment of the effectiveness of the indicators in terms of their usefulness for decision-making purposes.

## What have we learned from our experience?

- In comparison to other environmental areas, such as water or air quality, there has been a long-term lack of policy framework for the development of biodiversity indicators. This was largely due to the difficulty to encompass the multiple dimensions of biodiversity and to set up quantitative baselines and targets. The 2010 target now provides such a framework at global, Pan-European and EU levels, and allows priorities to be set in indicator development
- The Topic Centre and its Consortium partners cover a wide range of expertise to underpin the SEBI2010 indicators. The Topic Centre has established good working relationships with Member States and other data custodians which allows for rapid data collection and consultation. This broad network is necessary to consolidate data delivery and indicator implementation. Working with related initiatives allows the Topic Centre to focus on its core task for the EEA indicators in an efficient way

# Biodiversity Information

## What was expected from the ETC/BD?

According to the EEA terms of reference, the ETC on biological diversity should:

- Use scientific knowledge and the data gathered to maintain a number of reference databases (containing information on European species, habitats and natural sites) and information systems for populating EEA's indicators and assessments, with particular attention to spatial aspects
- Establish dataflow routines with countries, EU institutions and international organisations to maximise the use of available data in EEA indicators and assessments, and to assess data quality, monitoring and reporting procedures
- Process the information in support to environmental assessments (figures, reports, indicators) to communicate to various users. This includes designing figures derived from biodiversity related datasets, participating in the elaboration of 'storylines' accompanying the indicators and datasets, including performing reviews of literature and current research to assess causal links and possible scenarios for future developments
- Provide relevant biodiversity information to specific EEA projects including sectoral studies (e.g. on agriculture, forestry or transport) and integrated spatial assessments (e.g. on land use, biodiversity and water interactions in cooperation with the other ETCs).

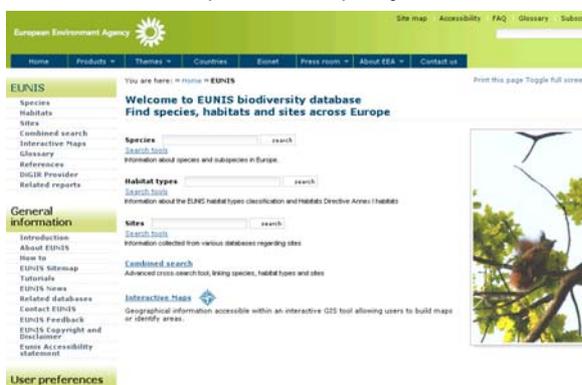
## What is the wider context of the work?

- Gathering and building information on biodiversity faces several specific challenges:
  - biodiversity is a cross-cutting issue covering a wide range of aspects (genes, species, habitats, ecosystems, landscapes, wild/ domestic biodiversity) within various biogeographic contexts
  - there are a considerable variety of potential data sources (international non-governmental and scientific initiatives to national agencies and ministries), and thus a wide diversity of non-harmonised data sets
  - there is no comprehensive biodiversity monitoring in place
- The international and European policy context related to biodiversity conservation has considerably changed over the last years, including with the political commitment to "Halt the loss of biodiversity on its own territory by 2010". This provides a framework for a more targeted reporting on biodiversity state and trends
- Following an agreement between DG Environment, Joint Research Centre, Eurostat and EEA, EEA has recently been entrusted the mandate to develop the European Biodiversity Data centre, as part of the Shared Environmental Information System (SEIS).

## What has been achieved?

### *Maintenance of reference databases and information systems*

- Development of the European Nature Information System ([EUNIS](#)) as a reference system to manage and deliver European-wide, quality checked and harmonised information on species, habitats and sites:



- New datasets incorporated from various data sources e.g. Fauna Europa, Fishbase, Plant Genetic Resources Forum, most threatened European Plant species, Butterfly Conservation...
- Further completion of the marine component of the EUNIS habitat classification with Baltic, Black Sea and Mediterranean marine habitats
- Dissemination of EUNIS information through a dedicated web site, including with interactive maps and comprehensive queering tools

- EUNIS has been a major contributor to the Global Biodiversity Information Facility (GBIF)
- Increasing number of quality checked biodiversity datasets available on the EEA [data service](#) and the European Community Biodiversity Clearing House Mechanism ([EC-CHM](#))

### ***Development of reporting tools and quality assurance / quality control procedures***

- in support of EEA member countries in reporting on nationally designated areas
- in support of EU Member States in reporting on sites designation under the Birds and the Habitats Directives and on the conservation status of species and habitats in compliance with Article 17 of the Habitats Directive.

### ***Identification of biodiversity relevant sources of information***

- Updated overview of international biodiversity monitoring programmes in Europe ( 2005)
- Updated overview of national biodiversity monitoring programmes (2005)
- Overview of Geo-Referenced Datasets on Terrestrial and Freshwater Species (2005)
- Overview of main international datasets of relevance for a biodiversity data centre (2006)
- Review literature on ecosystem functions, ecosystem goods and services, ecosystem valuation (2007)

Most of these working papers are available at the ETC/BD web site (<http://biodiversity.eionet.europa.eu/reports>).

### ***Production and documentation of indicators***

- Information compiled to document biodiversity indicators for the EEA core set, IRENA agri-environmental indicators, specific indicators for EEA thematic reports and selected SEBI 2010 indicators

### ***Contributions to various reports***

Under preparation	<ul style="list-style-type: none"><li>• Belgrade Report, 2007</li><li>• Pan-European Ecological Network: taking stock, 2007</li><li>• Climate Change Report, 2008</li><li>• SEBI assessment report, 2008</li><li>• European Forest Assessment, 2008</li></ul>
2007	<ul style="list-style-type: none"><li>• <a href="#">Halting the loss of biodiversity by 2010: proposal for a first set of indicators to monitor progress in Europe</a></li></ul>
2006	<ul style="list-style-type: none"><li>• <a href="#">How much bioenergy can Europe produce without harming the environment?</a></li><li>• <a href="#">The changing faces of Europe's coastal areas</a></li><li>• <a href="#">EU Birds Directive 25 years Anniversary</a></li><li>• <a href="#">Progress towards halting the loss of biodiversity by 2010</a></li><li>• <a href="#">Agriculture and environment - the IRENA indicator report</a></li></ul>
2005	<ul style="list-style-type: none"><li>• <a href="#">The European environment - State and outlook 2005</a></li><li>• <a href="#">EEA core set of indicators – Guide</a></li></ul>

## **What are the main challenges ahead?**

- With biodiversity high on the political agenda, EEA and its ETC/BD are faced with a pressing need to address various perspectives, from genes to ecosystems, from impacts of climate change to impacts of bio-fuels (and other renewable energies), from ecosystem health to ecology and economics, which calls for a continuous update with the most recent scientific findings in many different biodiversity areas. At the same time there is still a crucial need to facilitate the organisation of data flows from countries. This suggests huge efforts are needed in data compilation, development of common methods, standards and tools for reporting, and in developing quality assurance-quality control procedures. A major challenge will therefore be to balance the resource available with the work required
- The building-up of the Shared Environmental Information System (and the Biodiversity Data Centre) will require setting up long term partnerships with relevant organisations (non-governmental, scientific organisations, national agencies).

## **What have we learned from our experience?**

The ETC/BD consortium is uniquely positioned in Europe with its combined knowledge on biodiversity data – sources, relevance and limitations – to contribute to the implementation of the European Biodiversity Data Centre. However, due to the extreme fragmentation of biodiversity data, the building of information at a European scale – taking into account limitation of data – requires time and needs continuity in the expertise gathered. Planning such work is difficult and has been affected by changes in direction of the EEA annual work programme. As a result, the full capacities of the ETC/BD consortium have not been optimally focused. As an “umbrella” project, the Biodiversity Data Centre may help clarifying EEA's specific role in collating data about Europe's biodiversity and provide focus on the main priorities for data collection.

# Ecological Networks and Designated Areas

## What was expected from the ETC/BD?

The EEA's terms of reference on ecological networks and designated areas for the ETC/BD included:

- To contribute to the achievement of the 2010 target of halting biodiversity loss through assessments of trends in biodiversity with respect to physical planning (...)
- To provide information for EU policies, and for related conventions and international processes (e.g. the Bern Convention, the Ramsar Convention, the 'Environment for Europe' process, the Ministerial Conference on the Protection of Forests in Europe, etc.).

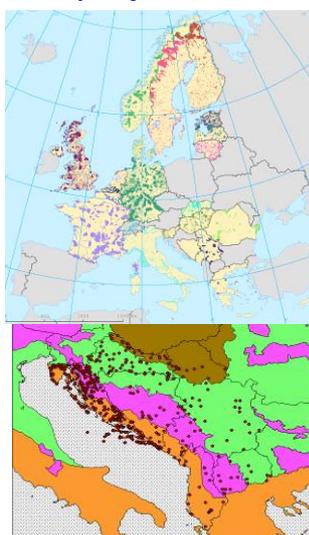
## What is the wider context of the work?

- Europe accounts for the largest number of protected areas in the world, although many of them are small. This reflects namely the high degree of pressure on land-use by agriculture, transport and urban development
- Protected areas are recognised by the Convention on Biological Diversity as '*a vital contribution to the conservation of the world's natural and cultural resources. Their values range from the protection of natural habitats and associated flora and fauna, to the maintenance of environmental stability of surrounding regions. Protected areas can provide opportunities for rural development and rational use of marginal lands, generating income and creating jobs, for research and monitoring, for conservation education, and for recreation and tourism*'
- The EU considers protected areas fundamental in safeguarding biodiversity and integrating nature conservation into other EU policies (agriculture, transport and regional development). The NATURA 2000 network is the EU ecological network of protected areas; it covers over 17% of the EU's land territory and significant marine areas
- The importance of protected areas and ecological networks to achieving the 2010 target and the three objectives of the CBD was emphasised during the Third "Biodiversity in Europe" Pan-European Conference of Ministers (Madrid 2004)
- With the broad range of ecosystems and biogeographic and socio-economic contexts they cover, ecological and biological data from protected areas provide an important dataset for integrated spatial assessments in a context of rapid land use and climate change.

## What has been achieved?

### *Compiling and harmonising data on protected areas in Europe:*

[Nationally designated areas - CDDA](#)



[Natura 2000 network](#)

[Emerald sites \(W Balkans\)](#)

- As part of the EIONET priority data flow, data on nationally protected areas is collated: 85 000 sites from 37 countries are now recorded, including site boundaries for 25 countries. This is a major contribution to the [World Database on Protected Areas](#)
- In support to the European Commission' Natura 2000 database data has been collated on more than 25 000 sites, with information on species and habitats. This is one of the most comprehensive harmonised dataset for biodiversity across Europe
- As part of a CARDS programme and in collaboration with the Council of Europe, assistance has been provided in the compilation of information on Emerald sites in the West Balkan countries. This is a major achievement for these countries in the framework of the Bern Convention

### ***Reviewing experiences on ecological networks***

- In collaboration with Council of Europe, the ETC/BD has undertaken an extensive review of initiatives at national, regional, trans-national level on ecological networks, as part of the reporting on the implementation of the Kiev Resolution on biodiversity, related to the implementation of a '[Pan-European Ecological network](#)'. The report is presented at the Pan-European Conference of Ministers, in October 2007, in the framework of the "Environment for Europe" process.

### ***Ensuring the availability of harmonised data sets for integrated assessments and specific synthesis***

- As part of the EEA integrated platform for spatial assessment of land use, water and biodiversity, datasets on Natura 2000 and on nationally designated areas are being used for analysis such as: urban and agricultural temperature, connectivity, core areas within a green background infrastructure
- The dataset on Nature 2000 sites is regularly used in various RTD projects including projects on climate change and ecological networks
- By providing a quality checked data set on nationally designated areas, the ETC/BD has made a significant contribution to the COST Action E27 on Protected Forest Areas in Europe (PFAs). This project aimed at analysing and harmonising the concept of PFAs thereby supporting the development of indicators under the Ministerial Conference on the Protection of Forests in Europe.

### ***Streamlining data flow on protected areas by collaborating with international organisations***

- The ETC/BD has made a large contribution to developing the joint project on a Common Database on Designated Areas between the EEA, the World Conservation Monitoring Centre and the Council of Europe. This collaboration is considered by UNEP-WCMC as a model which could be applied to other regions of the world
- The ETC/BD has facilitated a collaboration between the EEA and the Ramsar Bureau (to streamline the reporting by countries of digitised information on wetlands of European importance.

### **What are the main challenges ahead?**

- It is important to 'make a case' on European protected areas during the next World Conservation Union congress in Barcelona, October 2008
- Major input from the EEA-ETC/BD is expected for the 1st Conference on «European Implementation of the CBD Work-Programme on Protected Areas, taking into account the Ecosystem Approach », to be organised by the EU Presidency at the start of 2009
- Complete the gaps in CDDA coverage by EEA countries and ensuring the completeness of the dataset at pan-European level through active collaboration with UNEP-WCMC and Council of Europe
- To evaluate the effectiveness of protected areas and ecological networks in particular in the perspective of rapid land use and climate changes.

### **What have we learned from our experience?**

The ETC/BD has significantly contributed establishing a structured and regular data flow on protected areas in Europe. There is still little information available on the ecological components of sites, at least for nationally designated areas, which represents a limitation for integrated assessments on biodiversity trends. The process for developing biodiversity indicators to assess the 2010 target, including indicators on protected areas may be an important driver to further streamline such information.

# Ecosystems in a changing context

## What was expected from the ETC/BD?

The need to take into account the ecosystem dimension of biodiversity was strongly expressed in the initial ETC/BD terms of reference:

- To maintain the overview of monitoring activities in Europe relevant to populations of species, extent and quality of habitats and functioning of ecosystems
- To analyse the state of knowledge and existing capacities as a basis for developing indicators and information on key ecosystem functions
- To provide the knowledge base on the role of species and habitats in ecosystem functioning
- To translate knowledge on ecosystem functioning into policy relevant information
- To provide expertise on all European terrestrial, limnic and marine ecosystems
- To provide relevant biodiversity information to specific EEA projects. These may be sectoral studies (agriculture, forestry, transport) as well as integrated spatial assessments (e.g. on land use, biodiversity and water interactions in cooperation with ETCs on Water and Terrestrial Environment, or on climate change impacts with the ETC on Air and Climate Change).

## What is the wider context of the work?

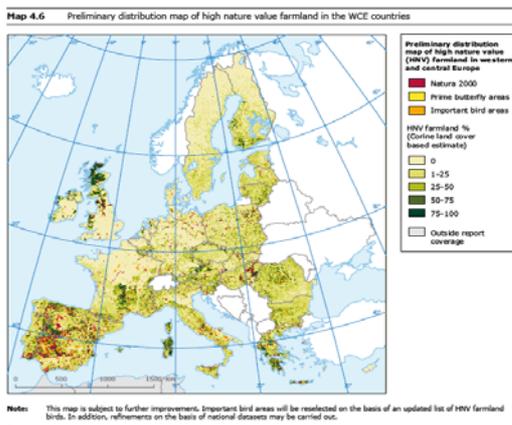
- The publication in 2005 of the Millennium Ecosystem Assessment highlight and considerably enhanced the ecosystem dimension of biodiversity, providing a framework for reporting on ecosystem health, ecosystem goods and services as well as a basis for ecosystem valuation
- The EC Communication on ["Halting the loss of Biodiversity by 2010 and Beyond, Sustaining Ecosystem Services for Human Well-being"](#) provides such a framework for reporting on ecosystems at the EU level
- As a consequence the EEA has decided to prepare a European Ecosystem Assessment report for publication in 2012
- At the same time EEA's implication in UN work on environmental accounting has generated over the last three years a need to assess the feasibility of an ecosystem accounting.

## What has been achieved?

### Reporting on ecosystems in various [EEA reports](#)

- Major contribution to the report "Progress towards Halting Biodiversity loss by 2010" published in 2006. Chapters on agro-ecosystems, wetlands, forest and mountain ecosystems were prepared by the ETC/BD
- Contribution to the EEA report on "The changes faces of Europe's coastal areas", published in 2006
- Drafting of the report on "European forest assessment" (publication in 2008), which aims at contributing to the work programme on Forests and biodiversity under the Convention on Biological Diversity.

### Sectoral approach to ecosystems



Map of High Nature Value farming areas

- Contribution to the EEA-JRC project for mapping High Nature Value farming areas (HNV) identifying habitats and species of European concern linked to extensive types of farming
- Drafting of extensive sections of the report on "How much bioenergy can Europe produce without harming the environment" (2006). The report aims at assessing the 'environmentally compatible' potentials for the utilization of biomass energy from European forest resources

- Extensive contribution to the biodiversity chapter of the '4<sup>th</sup> pan-European environment assessment' (Belgrade report) mainly focused on EECCA countries. The chapter provides a sectoral perspective on biodiversity and ecosystems and addresses sustainability of agriculture and forestry as well as threats due to invasive species and climate change
- Preparation of a scoping paper on climate change and biodiversity and contribution to the climate change impacts report planned for 2008
- Contribution to framing the biodiversity component of forest monitoring, specifically integration with bird monitoring, under the LIFE + (formerly under the Forest Focus) regulation.

### ***Ecosystems goods and services and ecosystem valuation***

- Extensive review of recent literature on valuation of ecosystem goods and services by the ETC/BD as part of the EEA project on economic valuation of ecosystem and biodiversity
- The ETC/BD participates as stakeholder or observer in various initiatives of relevance for tackling ecosystem goods and services: RTD projects (RUBICODE, ALTERNET, MARBEF project), a French initiative for a national MEA, EPBRs electronic conferences, CBD SBSTTA<sup>6</sup> meetings on the "ecosystem approach".

### ***Ecosystem accounting***

As part of the EEA project on "Land and ecosystem accounting", the ETC/BD has provided input, in close collaboration with ETC Land Use and Spatial Information ([ETC/LUSI](#)), on:

- Criteria and datasets for refining the identification of broad types of ecosystems via CORINE land cover
- Contribution to framing a methodology on ecosystem accounting, including tests on wetlands accounting
- Contribution to a classification on main ecosystem goods and services.

## **What are the main challenges ahead?**

- Ecosystem valuation and ecosystem accounting call for an economic approach to biodiversity and thus for specific skills to be further enhanced/mobilised within the ETC/BD
- Many initiatives are being developed in parallel under various international and national frameworks, with different scales of applications. It is important to follow-up these various emerging initiatives and to identify the most relevant approaches to contribute to the European Ecosystem Assessment, planned in 2012
- The CBD work on the "Ecosystem approach" needs to be applied in regional and national contexts
- A main characteristic in Europe as compared with other regions of the world is that ecosystems are embedded in a matrix/mosaic of landscapes which result from a very long human influence on nature. This specificity has to be tackled in any European approach to an ecosystem-based analysis of a sustainable use of goods and services
- The very challenging project on ecosystem accounting needs more testing and validation by the ecology community as well as discussion with economists before it is adopted for integration in the UN system of environmental accounting.

## **What have we learned from our experience?**

- The ETC/BD has a broad overview on the availability but also lack of data at European level to characterise and map European ecosystems as well as quantify goods and services they provide
- The Millennium Ecosystem Assessment has provided a useful conceptual framework to characterise ecosystem services, but there is still scientific debate on the notion of services (benefits to human beings) against ecosystem functions (inherent to ecosystems). This has important consequences in the economic valuation of ecosystems and therefore in ecosystem accounting. A clear position should be agreed upon at the EEA level, in consultation with countries, before any attempt at writing a European ecosystem assessment.

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<sup>6</sup> [CBD SBSTTA](#): Subsidiary Body for Scientific, Technical and Technological Advice of the Convention on Biological Diversity