

MONITORING THE IMPACT OF EU BIODIVERSITY POLICY



Biodiversity – the variety of ecosystems, species and genes – is the world’s natural capital and its conservation is a key environmental priority for the EU.

As it is impossible to measure all aspects of biodiversity, Europe-wide biodiversity ‘indicators’ have been developed. These offer a quick and easy tool for highlighting key messages and presenting general trends on the state of biodiversity in Europe.

Biodiversity indicators are also a fundamental part of policy-making as they provide an all-important feedback mechanism for determining whether the EU’s policies and actions are having the desired effect.

The latest indicator-based assessments revealed that, whilst some progress had been made, the state of Europe’s biodiversity is still a serious cause for concern.

These findings have prompted decision-makers to develop a post-2010 EU biodiversity strategy and 2020 target.

As part of this process, the EU has established a solid biodiversity baseline for the year 2010. This will act as a reference point for measuring future changes in biodiversity, for instance as a result of EU policy.

In the meantime the EC continues to support the further development of biodiversity indicators, as well as basic biodiversity research and monitoring, at both European and global level in order to help fill the knowledge gaps.

Italian Dolomites - wildlife rich
farmland important for biodiversity

nature



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environment

Fact 1: Biodiversity is a key environmental priority for the EU

Biodiversity – the variety of ecosystems, species and genes – is the world's natural capital. It is integral to sustainable development because it provides vital goods and services, such as food, carbon sequestration and water regulation that underpin economic prosperity, social well-being and the quality of life. Together with climate change, the loss of biodiversity is the most critical global environmental threat and gives rise to substantial economic and welfare losses.

Recognising it is a key environmental priority, the EU of 27 countries set itself the target to halt the loss of biodiversity within its territory and to significantly reduce biodiversity loss worldwide. This was the prime catalyst for the development of an EU Biodiversity Action Plan (BAP) in 2006, and for the stepping up of efforts to implement fully the EU Birds and Habitats Directives which, together, form the backbone of the EU nature conservation legislation.

Fact 2: Biodiversity indicators help summarise complex scientific data

As it is impossible to measure all aspects of biodiversity, 'indicators' are often used. These help to summarise complex and often disparate sets of scientific data in a simple and clear manner. They operate just like a petrol or temperature gauge on the dashboard of a car. Each gauge provides an indication of how the car is performing, or, in the event of a malfunction, allows immediate action to be taken, without the driver having to understand the full complexity of the engine within.

Similarly, biodiversity indicators offer a quick and easy tool for highlighting key messages and presenting general trends on the state of biodiversity. They are also a fundamental part of policy-making. By building up a comprehensive set of facts and figures of different biodiversity and ecosystem components within the EU, biodiversity indicators not only help assess the impact of specific EU

policies and actions on Europe's biodiversity but they also provide indications of how these policies can be adjusted and improved to better respond to biodiversity's needs.

Fact 3: European biodiversity indicators help to build up a picture of the state of Europe's environment

Since 2005, the European Commission has been working with the European Environment Agency to develop a set of European Biodiversity indicators – known as the SEBI 2010 indicators - to measure progress in achieving the target of halting biodiversity loss in Europe by 2010.

The 26 SEBI indicators have been carefully selected to provide a range of interlinked information on different biodiversity attributes. Some directly track impacts on a component of biodiversity (eg the abundance and distribution of selected species), whereas others reflect key threats to biodiversity (eg trends in invasive alien species), its sustainable use (eg the amount of deadwood in forests) or ecosystems integrity (eg water quality).

The main concern when developing these indicators was to ensure that they are scientifically robust and have a broad geographical scope. It was also a priority to make full use of scientific data derived from the regular assessment reviews of the EU Biodiversity Action Plan or reporting obligations under the two EU nature Directives as well as other relevant EU legislation or policies.

Fact 4: Europe's biodiversity remains under serious threat

The latest indicator based assessment shows that the state of Europe's biodiversity remains a serious concern. For instance, although the decline in some common farmland birds appears to have levelled off since the mid 1990s, Europe's grassland butterflies continue to decline dramatically (almost 70%) and show no sign of abating. Up to 25% of European animal species, including mammals, amphibians, reptiles, birds and butterflies also face the risk of extinction.



European Biodiversity Indicators

Status and trends of components of biodiversity

1. Abundance and distribution of selected species (e.g. birds, butterflies)
2. Change in status of threatened species
3. Change in status of protected species of European interest
4. Trends in ecosystems coverage
5. Trends in habitats of European interest
6. Trends in genetic diversity of domesticated species (livestock, crops)
7. Coverage of nationally designated protected areas
8. Coverage of Natura 2000 sites

Threats to biodiversity

9. Critical loads for excess nitrogen deposits
10. Trends in invasive alien species in Europe
11. Impact of climate change on temperature-sensitive species

Ecosystems integrity, goods and services

12. Marine trophic index of European seas
13. Fragmentation of natural and semi-natural areas
14. Fragmentation of river systems
15. Level of nutrients in transitional, coastal and marine waters
16. Freshwater quality

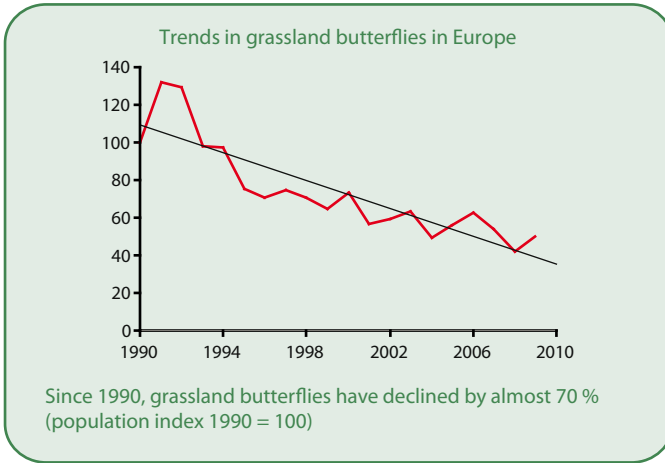
Sustainable use

17. Area of forest under sustainable management
18. Extent of deadwood in forests
19. Nitrogen balance in agriculture
20. Areas being managed in a way that potentially supports biodiversity
21. State of European commercial fish stocks
22. Effluent water quality from finfish farms
23. Ecological footprint of European countries on the rest of the world

Other

24. Patent applications based on genetic resources
25. Financing biodiversity management
26. Public awareness and participation.

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Some biodiversity-rich areas, such as grasslands and wetlands, are also still declining. Artificial areas (eg industrial zones, housing developments, transport infrastructure..) have, on the other hand, increased by nearly 8% since 1990 (covering over 12,500 km²). Such significant changes in land use not only lead to habitat loss and degradation but also cause severe fragmentation of existing habitats which can seriously affect their ability to continued to deliver valuable ecosystem goods and services.

In this respect, the assessment also found that Europe's ecosystem services are degrading to such an extent that many are no longer able to deliver the optimal quality and quantify of basic services such as crop pollination, providing clean air and water, or controlling of floods and erosion.

On a more global scale, Europe's ecological footprint shows that its demand for natural resources has impacts far beyond its geographical boundaries. Europeans are currently consuming twice as much as its land and sea can deliver in terms of natural resources.

Status and trends in ecosystem services in the EU

Services	Ecosystems	Agro ecosystems	Forests	Grasslands	Heath and scrubs	Wetlands	Lakes and rivers
Provisioning							
Crops/timber		↓	↑			↓	
Livestock		↓	=	=	=	↓	
Wild Foods			↓	↓		=	
Wood fuel					=		
Capture fisheries						↓	=
Aquaculture						↓	↓
Genetic	=	↓	↓	=	=	=	
Fresh water		↓				↑	↑
Regulating							
Pollination	↑		↓	=			
Climate regulation		↑			=	=	=
Pest regulation	↑			=			
Erosion regulation			=	=	=		
Water regulation			=		↑	↑	=
Water purification						=	=
Hazard regulation						=	=
Cultural							
Recreation	↑		=	↓	→	↑	=
Aesthetic	↑		=	=	=	↑	=

Trend between periods

- ↑ Positive change between the periods 1950 – 1990 and 1990 to present
- ↓ Negative change between the periods 1950 – 1990 and 1990 to present
- = No change between the two periods.

Status for period 1990 – present

- Degraded ■ Mixed ■ Enhanced ■ Unknown □ Not applicable

(source: EU project RUBICODE)

Butterflies are good biodiversity indicators as they are sensitive to environmental change

Scientific monitoring is an essential part of policy making

More information:

EU Biodiversity Policy

http://ec.europa.eu/environment/nature/biodiversity/comm2006/index_en.htm

2010 EU Biodiversity Baseline

<http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline>

EEA website on SEBI 2010 biodiversity indicators

<http://www.eea.europa.eu/themes/biodiversity/indicators>

EEA report N°4/2009 – Progress towards the European 2010 Biodiversity target

<http://www.eea.europa.eu/publications/progress-towards-the-european-2010-biodiversity-target>

Health check for habitats and species protected under the Habitats Directive

http://ec.europa.eu/environment/nature/knowledge/rep_habitats/index_en.htm

IUCN European Red Lists

http://ec.europa.eu/environment/nature/conservation/species/redlist/index_en.htm

RUBICODE project

RUBICODE is an EU funded research project which is reviewing and developing concepts of dynamic ecosystems and the services they provide. Those components of biodiversity which provide specific services to society are being defined and evaluated in order to increase our understanding of their value and, consequently, of the cost of losing them. <http://www.rubicode.net>

Fact 5: EU policy is having a positive impact in some areas

There are however also some positive signs that would indicate that EU legislation is having a positive impact and contributing to at least stemming the decline of biodiversity in some areas. The Natura 2000 Network, for instance, which is designed to protect key sites of around 1500 rare and threatened species and habitats targeted by the two EU nature Directives is now almost complete.

The Network, which extends over all 27 EU countries, has doubled in size in the last ten years and now contains over 26,000 sites and covers around 18% of the EU land and sea. Water quality in Europe's freshwater lakes and rivers has also improved thanks to the implementation of the EU's Water Framework Directive and Nitrates Directive.

Fact 6: The 2010 Biodiversity baseline sets a reference for the future

The ultimate conclusion from the latest indicator-based assessment was that EU failed to meet the original target of halting biodiversity by 2010, despite progress in some areas. This has prompted decision-makers to develop a new post-2010 EU biodiversity strategy and 2020 target, taking account of feedback from the biodiversity indicators.

As part of this process, the EU has set a new biodiversity baseline for the year 2010. This baseline is the first of its kind for the EU and sets a clear reference point against which future changes in biodiversity can be assessed, for instance as a result of EU policies and action.

The baseline is structured in such a way that it provides facts and figures on the current status of biodiversity according to major ecosystem types: agro-ecosystems, grasslands, heaths and scrubs, forests, wetlands, lakes and rivers, coastal and marine ecosystems. It also, for the first time, provides a measure of the ability of different ecosystems to deliver a range of different ecosystem services.

Fact 7: Further research and monitoring is needed to support the baseline

The European Biodiversity indicators and EU 2010 Biodiversity Baseline are based on best available information. However, addressing the complexity of biodiversity remains a challenge and it is acknowledged that there are still significant knowledge and data gaps in many areas.

In the coming years, it will be important to ensure that biodiversity research and monitoring within the EU and globally is stepped up to fill these knowledge gaps. This will create a more robust and comprehensive knowledge base for supporting future policies and actions, which should ultimately result in more efficient and effective policy making.

Biodiversity Information System for Europe (BISE)

The EU's Biodiversity Baseline is supported by the Biodiversity Information System for Europe (BISE) which has been set up by the European Environment Agency and the European Commission. It provides a single entry point for data and information on biodiversity in the EU. Bringing together facts and figures on biodiversity and ecosystem services, it links to related policies, environmental data centres, assessments and research findings from various sources. It is an important new gateway to information on European biodiversity: www.biodiversity.europa.eu



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