

EN

EN

EN



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, xxx
SEC(2006) 607/2

COMMISSION STAFF WORKING PAPER

Annex to the

Communication from the Commission

on Halting the Loss of Biodiversity by 2010 – and Beyond

Sustaining ecosystem services for human well-being

Impact Assessment

{COM(2006)216 final}

TABLE OF CONTENTS

1.	Procedural issues and consultation of interested parties	7
1.1.	Purpose of this Impact Assessment.....	7
1.2.	Policy context.....	7
1.3.	Organisation and timing.....	8
1.4.	Consultation and expertise	8
1.4.1.	Policy review 2003-2004 and Malahide Conference	8
1.4.2.	Council Conclusions and Commission follow-up.....	9
1.4.3.	Results of the web consultation.....	10
2.	Problem definition.....	11
2.1.	What is biodiversity and what are ecosystem services, and how are they linked?	11
2.2.	What is happening to biodiversity and ecosystem services?	13
2.2.1.	Loss, fragmentation and degradation of ecosystems.....	13
2.2.2.	Loss of species and reduction in species' populations.....	17
2.2.3.	Loss of genetic diversity	21
2.2.4.	Decline in ecosystem services.....	21
2.3.	What is causing biodiversity loss and the degradation of ecosystem services?.....	24
2.3.1.	Key pressures and drivers of loss.....	24
2.4.	Why do the loss of biodiversity and degradation of ecosystem services matter?	27
2.4.1.	The value of provisioning services	27
2.4.2.	The value of regulating services	27
2.4.3.	The value of supporting services.....	28
2.4.4.	The value of cultural services	28
2.4.5.	The importance of ecosystem services in developing countries	28
2.4.6.	Costs of non-action	28
2.5.	Who is affected and to what extent?	31
2.6.	What have we done about it so far?	31
2.6.1.	Progress with implementation – EU internal dimension.....	31
2.6.2.	Progress with implementation – EU external dimension.....	36
2.6.3.	Progress with implementation – supporting measures.....	37

2.7.	How would the problem evolve, all things being equal?	38
2.7.1.	Changes in pressures and drivers	38
2.7.2.	Ecosystems and species.....	41
2.7.3.	Ecosystem services.....	42
2.8.	Does the EU have the right to act?.....	43
3.	Objectives.....	44
3.1.	What are the aims of the Communication?	44
3.2.	Has account been taken of previously established objectives?	44
3.3.	To what extent are the objectives consistent with other EU policies?.....	44
4.	Policy options.....	45
4.1.	What are the available policy approaches?	45
4.2.	Elaboration of the preferred option	46
4.2.1.	A new approach to biodiversity policy	46
4.2.2.	Relationship of the Action Plan to the EC Biodiversity Strategy and Biodiversity Action Plans	46
4.2.3.	Identification of key policy areas, priority objectives and supporting measures.....	47
4.2.4.	Scope of Policy Area 1 - Biodiversity in the EU	47
4.2.5.	Scope of Policy Area – The EU and global biodiversity	49
4.2.6.	Scope of Policy Area 3 – Biodiversity and climate change.....	49
4.2.7.	Scope of Policy Area 4 – The knowledge base.....	50
4.2.8.	Scope of the four Supporting Measures	50
4.3.	What policy instruments and options are available?.....	51
5.	Analysis of impacts	51
5.1.	Impacts of proposed actions to address priority objectives	51
5.1.1.	Objective 1: To safeguard the EU’s most important habitats and species.....	51
5.1.2.	Objective 2: To conserve and restore biodiversity in the wider EU countryside.....	53
5.1.3.	Objective 3: To conserve and restore biodiversity in the wider EU marine environment.....	53
5.1.4.	Objective 4: To reinforce compatibility of regional and territorial development with biodiversity in the EU	54
5.1.5.	Objective 5: To substantially reduce the impact on EU biodiversity of invasive alien species and alien genotypes	55

5.1.6.	Objective 6: To substantially strengthen effectiveness of international governance for biodiversity.....	56
5.1.7.	Objective 7: To substantially strengthen support for biodiversity in external assistance.....	57
5.1.8.	Objective 8: To substantially reduce the impact of international trade on EU and global biodiversity.....	58
5.1.9.	Objective 9: To support biodiversity adaptation to climate change.....	58
5.1.10.	Objective 10: To substantially strengthen the knowledge base for conservation and sustainable use of biodiversity, in the EU and globally.....	59
5.2.	Impacts of proposed actions to address the ‘supporting measures’	60
5.2.1.	Supporting measure 1: Ensuring adequate financing.....	60
5.2.2.	Supporting Measure 2: Strengthening EU decision-making for biodiversity.....	61
5.2.3.	Supporting measure 3: Building partnerships.....	62
5.2.4.	Supporting measure 4: Building public awareness and participation	63
6.	Comparing the Options	64
7.	Monitoring and evaluation	64
7.1.	Core indicators of progress towards meeting the objectives.....	64
7.2.	Broad outline for monitoring and evaluation arrangements	64

IMPACT ASSESSMENT ANNEX 1

Impact Assessment of the Communication on Halting the Loss of Biodiversity by 2010 – and Beyond

EXECUTIVE SUMMARY

This Impact Assessment aims to analyse the impact of the Communication on Halting the Loss of Biodiversity by 2010 – and Beyond. It provides the European institutions and public with information on the impacts of biodiversity loss and of proposed measures to halt this loss and secure the longer-term recovery of biodiversity.

Section 1 provides a review of the use of consultation and expertise in the preparation of the Communication. This includes a year-long stakeholder review of progress in implementation, effectiveness and appropriateness of the European Community Biodiversity Strategy and Action Plans, culminating in the Stakeholder Conference on Biodiversity and the EU held under the auspices of the Irish Presidency in May 2004, and further consultation since then including a public web consultation.

Section 2 reviews the problem of biodiversity loss – at the levels of ecosystems, species and genes - and the closely related problem of decline in natural capital and ecosystem services, both within the EU and globally. It examines why this loss matters, in particular in terms of its impact on human wellbeing. It also reviews what we have done about it so far, both in terms of addressing biodiversity concerns in the policy framework, and in terms of implementation, and identified policy gaps and implementation shortfalls.

Section 3 presents the aims of the Communication and their consistency with other EU policies. It establishes the relevance of action to halt biodiversity loss, restore biodiversity and thereby reverse the decline in ecosystem services to sustainable development and the Lisbon agenda.

Section 4 presents three possible policy approaches:

- (1) ***Business as usual*** – that is, ongoing implementation of existing instruments, with no attempt to prioritise action to meet the political commitments.
- (2) ***EU Action Plan***: development of a focused EU Action Plan to 2010 and Beyond, addressed to the Community and to Member States, created by deconstructing the 2010 commitments into a clear set of prioritised targets and actions, and apportioning responsibility for delivery between Commission, Member States and other stakeholders.
- (3) ***EU Action Plan plus regulation***: as for 2, but in addition the rapid introduction of new legislation.

The second of these approaches is defended as the preferred option, and is shown to be overwhelmingly supported by the results of expert and public consultation. The approach is elaborated through four key policy areas for action and ten related priority objectives, and four key supporting measures. Delivery of the objectives and supporting measures will require specific actions which are set out with targets and responsibilities in an ‘Action Plan to 2010 - and Beyond’ presented in *Annex 1* of the Communication.

Section 5 analyses the impacts of those few actions in the Action Plan which are new or accelerated beyond already agreed timetables. The impact assessment shows that a wide range of policy instruments already provide for these actions. Details of the specific provisions relating to each action are provided in *Annex 1* of this impact assessment. For new and accelerated actions, the analysis suggests that the benefits – in terms of sustained ecosystem services - will significantly outweigh short-term costs. A small number of policy gaps are identified for further exploration and may be the subject of proposals and full impact assessment in due course.

Section 6 refers to the differentiation of Community and Member State responsibilities for each action, as presented in the Communication Annex 1. It indicates that the applicability and relative importance of each action will vary from Member State to Member State and that, in this sense, the Action Plan presents a menu of policy options for Member States.

Plans for monitoring and evaluation, including the establishment and implementation of a headline set of biodiversity indicators, are presented in section 7.

1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Purpose of this Impact Assessment

This Impact Assessment aims to analyse the impact of the Communication on Halting the Loss of Biodiversity by 2010 – and Beyond. It provides the European institutions and public with information on the impacts of biodiversity loss and of proposed measures to halt this loss and secure the longer-term recovery of biodiversity.

1.2. Policy context

The legal basis for the conservation and sustainable use of biodiversity at the EU level is provided by the Treaty Article 174 which states that community policy on the environment shall contribute to ‘preserving, protecting and improving the quality of the environment’, based *inter alia* on the precautionary principle.

Early measures to safeguard species and habitats include the Birds Directive¹ of 1979 and the Habitats Directive² of 1992. The EU ratified the Convention on Biological Diversity (CBD) in 1993. Pursuant to the Convention, the Community adopted a Biodiversity Strategy in 1998³ and four Biodiversity Action Plans⁴ in 2001. All EU Member States are parties to the CBD and have developed – or are developing – their own national strategies and action plans.

The EC Biodiversity Strategy aims at preventing and attacking the causes of reduction and loss of biological diversity and is built around four major themes: conservation and sustainable use of biodiversity; sharing of benefits arising out of the utilisation of genetic resources; research, identification, monitoring and exchange of information; and education, training and awareness. The Strategy defines the specific objectives to be attained in various fields of Community activity and proposes sectoral and cross-sectoral action plans to achieve these objectives and defining indicators and mechanisms to evaluate the progress made. The EC Biodiversity Action Plans define concrete actions and measures to meet the objectives defined in the Strategy, and specify measurable targets. The Action Plans relate to four sectors – the conservation of natural resources, agriculture, fisheries, and economic and development cooperation.

In 2001, EU Heads of State and government agreed to halt the decline of biodiversity [in the EU] by 2010⁵. Beyond halting the loss of biodiversity, and in acknowledgment of the degraded state of biodiversity in the EU, they also set an objective to secure the recovery of habitats and natural systems⁶. In 2002, the CBD adopted its strategic plan which includes the overall target to significantly reduce the rate of biodiversity loss by 2010⁷. This target was subsequently endorsed by some 130 world leaders (including EU heads of state and

¹ Directive of 2 April 1979 on the conservation of wild birds (79/409/EC), OJ L 103, 25.4.1979, p.1.

² Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats of wild fauna and flora, OJ L 206, 22.7.1992, p.7.

³ COM(1998)42 final

⁴ COM(2001)142final. Vols I-V.

⁵ Presidency Conclusions, Göteborg Council, 15 and 16 June 2001. SN/200/1/01 REV1, page 8. See: <http://ue.eu.int/newsroom/newmain.asp?lang=1>

⁶ This is a headline objective in the EU Sustainable Development Strategy, COM(2001)264 final, p12.

⁷ Convention on Biological Diversity Decision VI/26 Annex (Strategic Plan) paragraph 11, see: <http://www.biodiv.org/decisions/default.aspx?m=COP-06&id=7200&lg=0>

government) at the World Summit on Sustainable Development (2002). This Summit also recognised the CBD as the key international body to promote achievement of the 2010 target.⁸

1.3. Organisation and timing

The Communication and this Impact Assessment are based on a broad, deep and lengthy consultative process involving Commission services, Member States and civil society. This process engaged a wide range of experts as well as the wider public in accordance with the Commission's minimum standards for consultation and use of experts. The general chronology of the Impact Assessment was as follows: expert consultation through Biodiversity Expert Group, May 2003 to February 2006 and through working groups established under the Biodiversity Expert Group from May 2003 to March 2004; Presidency stakeholder conference 25-27 May 2004; Environment Council discussion and conclusions, 28 June 2004; public internet consultation 12 December 2005 to 6 February 2006; Inter-Departmental Coordination Group (5 meetings March 2004 to February 2006 – participants included AGRI, AIDCO, COMP, DEV, EAC, ECFIN, ELARG, EMPL, ENTR, ESTAT, FISH, INFISO, JLS, JRC, MARKT, REGIO, RELEX, RTD, SANCO, SG, SJ, TAXUD, TREN).

1.4. Consultation and expertise

1.4.1. Policy review 2003-2004 and Malahide Conference

The Commission initiated in May 2003 a broad stakeholder process for assessment of the implementation, effectiveness and appropriateness of the EC Biodiversity Strategy and Biodiversity Action Plans. This process was agreed in consultation among Commission services most concerned (notably ENV, AGRI, FISH, DEV, RTD), Member States (EU-15), Accessing Countries (now EU-10) and civil society. The review process was overseen by the Commission's Biodiversity Expert Group, under which four sectoral working groups were established to review the four sectoral Biodiversity Action Plans (the first of these working groups also addressed those provisions of the EC Biodiversity Strategy not addressed in any Action Plan). These groups reported to the Biodiversity Expert Group and were each co-chaired by the responsible DG (ENV, AGRI, FISH, DEV) and by a Member State or civil society representative. They carried out an 'audit' of implementation, effectiveness and appropriateness of the existing Strategy and Action Plans, and recommended priority measures towards meeting the political commitments a) to halt the loss of biodiversity (in the EU) by 2010, and b) to significantly reducing the rate of biodiversity loss (worldwide) by 2010. A fifth working group addressed the horizontal issues of indicators, monitoring and reporting. The principal output from this group was a proposal for a first set of EU biodiversity headline indicators. The working groups were open to representatives from all key stakeholders.

The research community was engaged through the European Platform for Biodiversity Research Strategy (EPBRS)⁹ and in particular through the Irish Presidency meeting of the EPBRS entitled 'Sustaining Livelihoods and Biodiversity – Attaining the 2010 targets in the European Biodiversity Strategy' held in Killarney 21-24 May 2004¹⁰. The Killarney meeting

⁸ World Summit for Sustainable Development, Plan of Implementation, Paragraph 44, see: http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English_POIToc.htm

⁹ See <http://www.epbrs.org>

¹⁰ See meeting website at: <http://www.biodiversityresearch.ie/DesktopDefault.aspx?tabid=112>

adopted a declaration and recommendations on biodiversity research. Subsequent EPBRS meetings have developed and adopted an Action Plan for Biodiversity Research in Europe (work in progress)¹¹.

The review process culminated in a conference held under the Irish Presidency in Malahide, Ireland 25-27 May 2004, entitled 'Biodiversity and the EU – Sustaining Life, Sustaining Livelihoods'. Conference deliberations were informed by the substantive products from the five working groups and the EPBRS meeting.¹² Malahide was attended by 230 participants representing a wide range of interests including delegates from 22 Member States, 1 non-Member State (Norway), conservation agencies and non-governmental organisations, and representatives of key economic sectors including agriculture, forestry, fisheries and industry. The main output of the stakeholder conference was the Message from Malahide. This document presents an unprecedented degree of consensus on priority objectives and detailed targets designed to meet the EU commitment to 'halt the decline of biodiversity by 2010'¹³, and to optimise the EU contribution to the global commitment to 'the achievement by 2010 of a significant reduction in the current [2002] rate of loss of biological diversity'¹⁴. The objectives and targets were evolved in four broadly-based working groups at the Conference, each group drawing membership from the various stakeholder groups present. Annex 1 to the Message from Malahide presented a first set of headline biodiversity indicators to monitor progress towards the 2010 commitments. Annex 2 to the Message from Malahide presented a declaration and recommendations on biodiversity research (based on the Killarney meeting outcomes). While not all conference participants gave their individual agreement to each objective and target, a remarkably high degree of consensus was achieved on all 18 objectives and 97 targets. The conference report¹⁵ (containing the Message from Malahide) is available online¹⁶.

1.4.2. Council Conclusions and Commission follow-up

Following the Conference, the Environment Council agreed on 28 June 2004 a set of Council Conclusions on Halting the Loss of Biodiversity by 2010¹⁷. In these Conclusions, Council took note of the Message from Malahide and called on the Commission to report to Council and Parliament taking into account the findings of the policy review process and in particular

¹¹ See http://www.epbrs.org/PDF/EPBRS-HU-HU-2005-Action_Plan_Release1_1.pdf

¹² Conference papers are available at:

http://europa.eu.int/comm/environment/nature/biodiversity/develop_biodiversity_policy/malahide_conference/index_en.htm

¹³ Presidency Conclusions, Goteborg Council, 15 and 16 June 2001. SN/200/1/01 REV1, page 8. See: <http://ue.eu.int/newsroom/newmain.asp?lang=1>

¹⁴ Convention on Biological Diversity Decision VI/26 Annex (Strategic Plan) paragraph 11, see: <http://www.biodiv.org/decisions/default.aspx?m=COP-06&id=7200&lg=0>; and World Summit for Sustainable Development, Plan of Implementation, Paragraph 44, see: http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm

¹⁵ Duke G. (ed) (2005) *Biodiversity and the EU – Sustaining Life, Sustaining Livelihoods*. Conference Report. Stakeholder Conference held under the Irish Presidency of The European Union in partnership with the European Commission, 25th - 27th May 2004, Grand Hotel, Malahide, Ireland. Department of Environment, Heritage and Local Government, Republic of Ireland.

¹⁶ See:

http://europa.eu.int/comm/environment/nature/biodiversity/develop_biodiversity_policy/malahide_conference/index_en.htm

¹⁷ Environment Council Conclusions of 28 June 2004. 'Halting the loss of biodiversity by 2010.' Document no. 10997/04

the Message. Council also highlighted in these Conclusions a number of issues identified in the Message from Malahide and encouraged Member States to act upon these.

The need for accelerated action to meet the 2010 target was also reiterated by EU Heads of State and Government at the European Council of 17-18 June 2004 which notably linked this target to the Lisbon Reform Agenda¹⁸.

In response, the Commission then began work to draft the present Communication. Consultation with services and external stakeholders was continued through the Biodiversity Expert Group (meetings of 11 January, 28 June and 15 November 2005), and through the Inter-Departmental Coordination Group on Biodiversity (EU Implementation) (meetings of 15 July 2004, 9 November 2005, 2 February 2006). Written expert consultation was held (through the Biodiversity Expert Group) on advanced draft texts of the prescriptive sections of the Communication and on the Road Map (now named 'Action Plan') between November 2005 and February 2006. A parallel internet public consultation on the Communication was held between 12 December 2005 and 6 February 2006.

Care has been taken in the Communication and Impact Assessment to take the Message from Malahide and subsequent expert consultation into account. The key policy areas, priority objectives and supporting measures identified in the Communication relate closely to the objectives of the Message from Malahide, while the targets and actions of the Action Plan relate closely to the targets of the Message from Malahide. The Commission has removed duplication where possible, and adjusted targets and actions both to take account of developments post-Malahide, and to make targets more outcome-oriented and SMART (Specific, Measurable, Achievable, Realistic, Timed).

1.4.3. Results of the web consultation

A full report of the web consultation is provided on Europa¹⁹. The public consultation ran for 8 weeks and received a total 1,455 responses. The great majority of the respondents (75%) found the survey and the questionnaire satisfactory and adequate to address the issues explored, while around 20% complained about the fact that the survey had been conducted in the English language only.

Of the respondents, 93.5% agreed with the proposed policy option ('Road Map to 2010 and Beyond' – now re-named 'EU Action Plan to 2010 and Beyond'), 4% proposed an alternative option, and only 2.5% preferred the 'business as usual' option. Most of the proposed 'alternative options' in fact suggested actions already covered by the proposed Road Map. There were a few suggestions for a more comprehensive legislative framework on biodiversity (in a possible form of a Directive) and others stressing the need for more resources to research on ecosystems and biodiversity. A few responses also noted the need for wider changes in individual and societal behaviour such as patterns of consumption. Several advocated wider and stronger use of the precautionary principle.

However, the vast majority of respondents (over 92% in each case) agreed or strongly agreed with all 10 key challenges (now all but one identified as 'objectives' in the Communication – the exception being 'policy impact assessment' which is now addressed under supporting measures) and all 5 delivery measures (now all but one identified as 'supporting measures' in

¹⁸ Presidency conclusions, European Council, 17-18 June 2004.

¹⁹ http://europa.eu.int/comm/environment/consultations_en.htm

the Communication – the exception being ‘knowledge’ which is now among the objectives) proposed. In almost all cases, those disagreeing or strongly disagreeing were under 2% of respondents. The measures attracting most disagreement were those related to invasive alien species and climate change – but even here less than 8% of respondents disagreed.

82% of respondents responded as individuals, 18% on behalf of organisations. Non-governmental organisations, public sector and academic organisations were relatively equally represented among the organisational respondents, businesses rather less so. The main areas of activity of respondents were nature conservation, general environment, education and awareness, research, and agriculture/forestry. However development aid, fisheries/marine, infrastructure/transport/construction/mining, property/land management and business/enterprise/manufacturing were cited as areas of activity by at least 5% of respondents. Almost 88% of the respondents had no prior involvement in this review and policy development process.

There were marked differences between Member States. Over 86% of respondents were from 10 Member States with France (19.2%), Italy (14.4%), Portugal (11.6%), UK (10.7%), Belgium (9%), Germany (7.6%) and Spain (7.4%) providing most responses. There was particularly low level of response from the new Member States which may indicate a lower level of awareness of the issues in these countries, or unfamiliarity of their citizens with such consultations. More responses were received from the Acceding Countries (Bulgaria 3.2%, Romania 0.5%) than from all the new Member States put together (total c.4.3%). The low response from many Member States may partly be explained by the language constraint. Less than 1% of responses were from countries other than EU Member States and the Acceding Countries, these being Switzerland, Australia, Turkey, Norway and Cayman Islands.

2. PROBLEM DEFINITION

2.1. What is biodiversity and what are ecosystem services, and how are they linked?

Biodiversity, or biological diversity, is the variety of life on Earth. Biodiversity is expressed at three levels – the diversity of ecosystems, the diversity of species, and the diversity of genes. Humans are part of biodiversity and depend on many life support systems provided by biodiversity and ecosystems.

Ecosystems provide a stream of services, the continued delivery of which is essential to our economic prosperity, security, health and other aspects of our quality of life²⁰. These ‘ecosystem services’ include the air we breathe, and the provision of goods such as food, fibre, fuel, freshwater and medicines. They include the regulation of climate, flooding, disease and water quality. They include essential supporting services such as soil formation, nutrient cycling, pollination and primary production. And they include cultural services such as aesthetic, educational, recreational, psychological and spiritual benefits.

Examples of such ecosystem services from various ecosystem types are shown in *Figure 1*, and the links between these services and human well-being are shown in *Figure 2*.

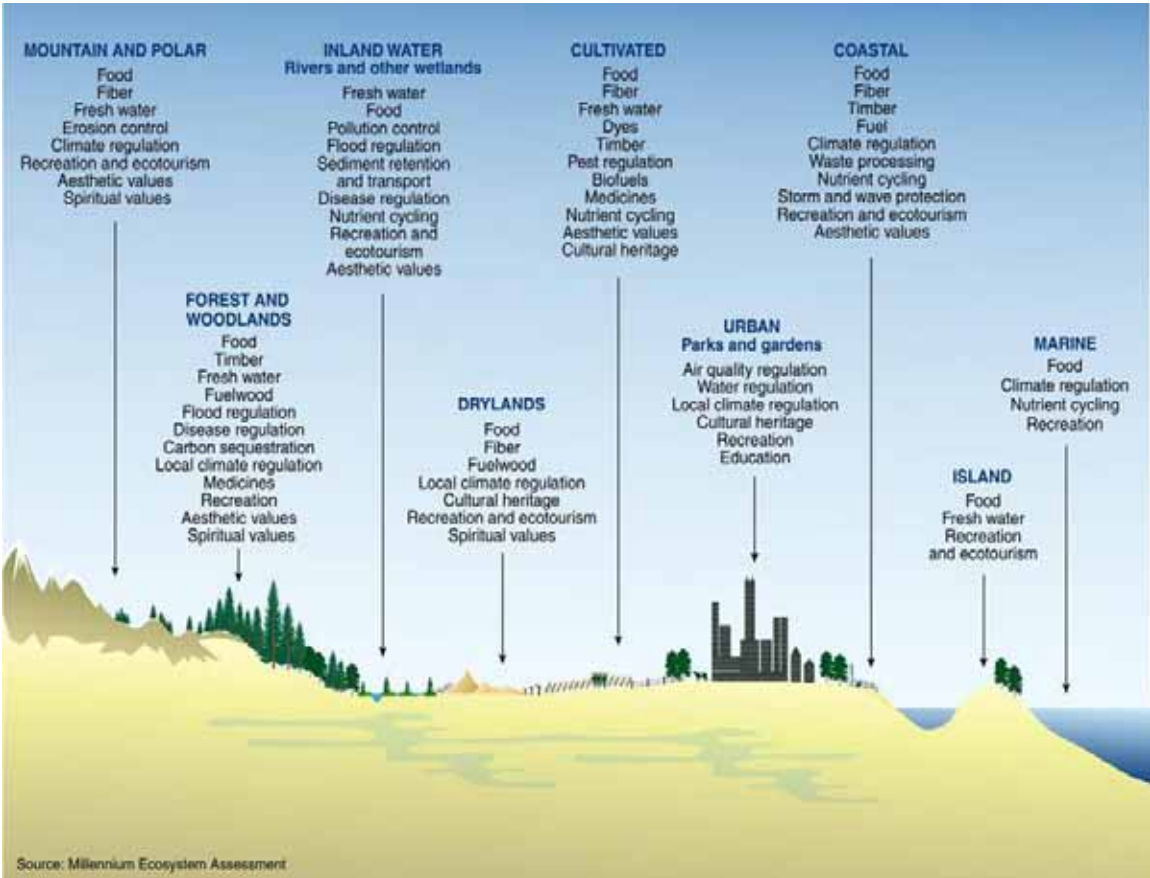
²⁰ The 2005 Millennium Ecosystem Assessment describes ecosystems as “the complex of living communities (including human communities) and non-living environment (Ecosystem Components) interacting (through Ecological Processes) as a functional unit which provides *inter alia* a variety of benefits to people (Ecosystem Services).”

There is strong scientific consensus on the link between biodiversity and the flow of ecosystem services. An important review²¹ of scientific understanding in this regard found that changes in biodiversity have strong potential to alter ecosystem properties and the goods and services they supply to humanity. The review concluded:

‘Ecological experiments, observations and theoretical developments show that ecosystem properties depend greatly on biodiversity in terms of the functional characteristics of organisms present in the ecosystem and the distribution and abundance of those organisms over space and time. Species effects act in concert with the effects of climate, resource availability and disturbance regimes in influencing ecosystem properties’.

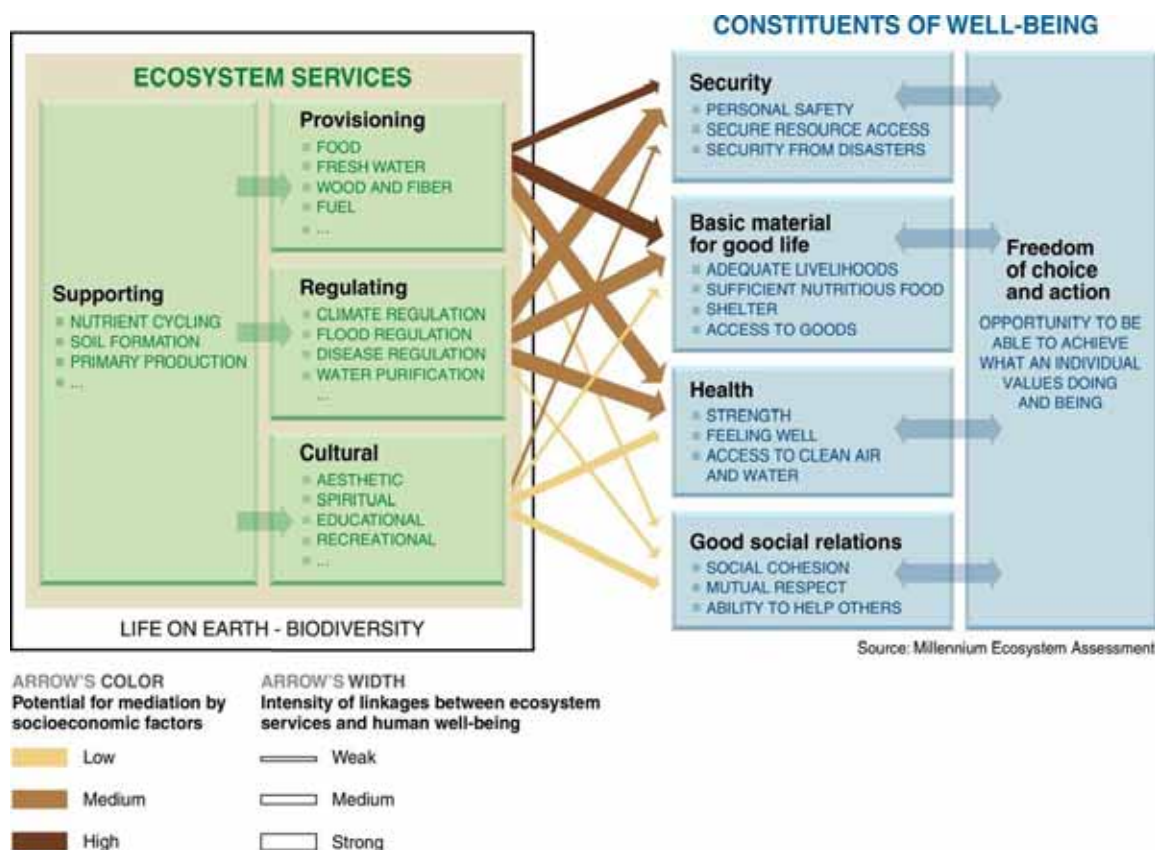
The more we lose biodiversity, the more ecosystem services are put at risk.

Figure 1 – Examples of ecosystem services



²¹ Hooper, D. et al. (2005) Effects of biodiversity on ecosystem functioning: a consensus of current knowledge. Ecological Society of America Report. *Ecological Monographs* 75(1) pp3-35.

Figure 2 Consequences of Ecosystem Change for Human Well-Being



2.2. What is happening to biodiversity and ecosystem services?

2.2.1. Loss, fragmentation and degradation of ecosystems

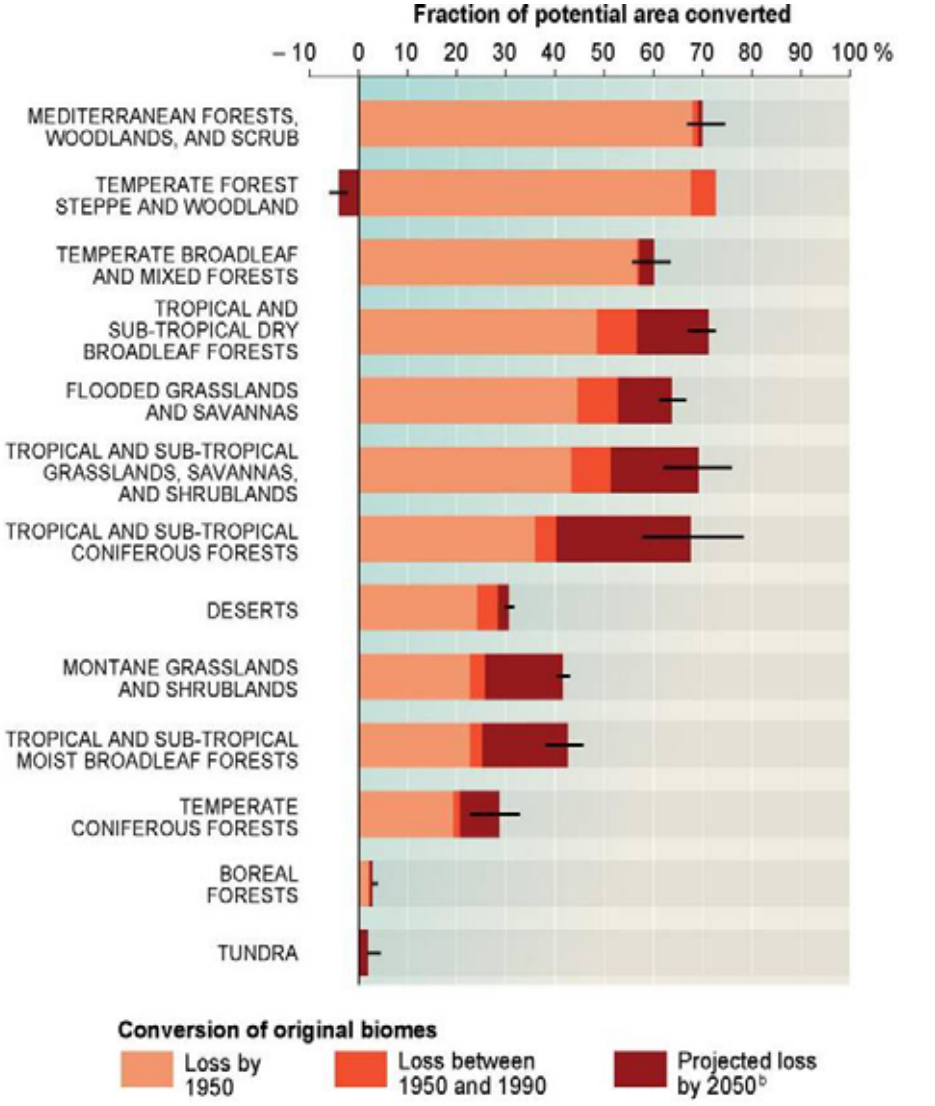
The world's ecosystems can be grouped into major 'biomes'. The Millennium Ecosystem Assessment found that man has converted a large proportion of the world's biomes (Figure 3). More than two thirds of the area of two biomes and more than half of the area of four others had been converted by 1990.

Europe is no exception. Indeed, Europe's nature is possibly more greatly modified by man than that of any other continent. In the absence of man, Europe would today be almost entirely forested. Europe's deforestation commenced in prehistoric times, accelerated with the spread of agriculture 3000-4000 years ago, and continued through Greco-Roman and Medieval times and the Industrial Revolution. While this clearance led to the widespread loss of forest ecosystems, it introduced to the European landscape a new diversity of agricultural, grassland and wetland ecosystems. Very little of the EU remains true wilderness. Yet until recent decades, Europe has continued to support a rich variety of wildlife. Traditional forms of agriculture and other land uses often created habitats favourable to wildlife and the maintenance of ecological processes and functions.

However, in the last fifty years or so, the pace and scale of developments has led to an increasing loss, degradation and fragmentation of habitats – to the extent that it was felt necessary, in 1992, to list some two-thirds of EU habitat types in the Habitats Directive as

requiring special attention for their conservation. The intensification of agriculture and forestry, and the spread of urban areas and growth of transport infrastructure, have been prime causes of this. The Millennium Ecosystem Assessment found that Europe’s ecosystems have suffered more man-induced fragmentation than those of any other continent (Figure 4)²².

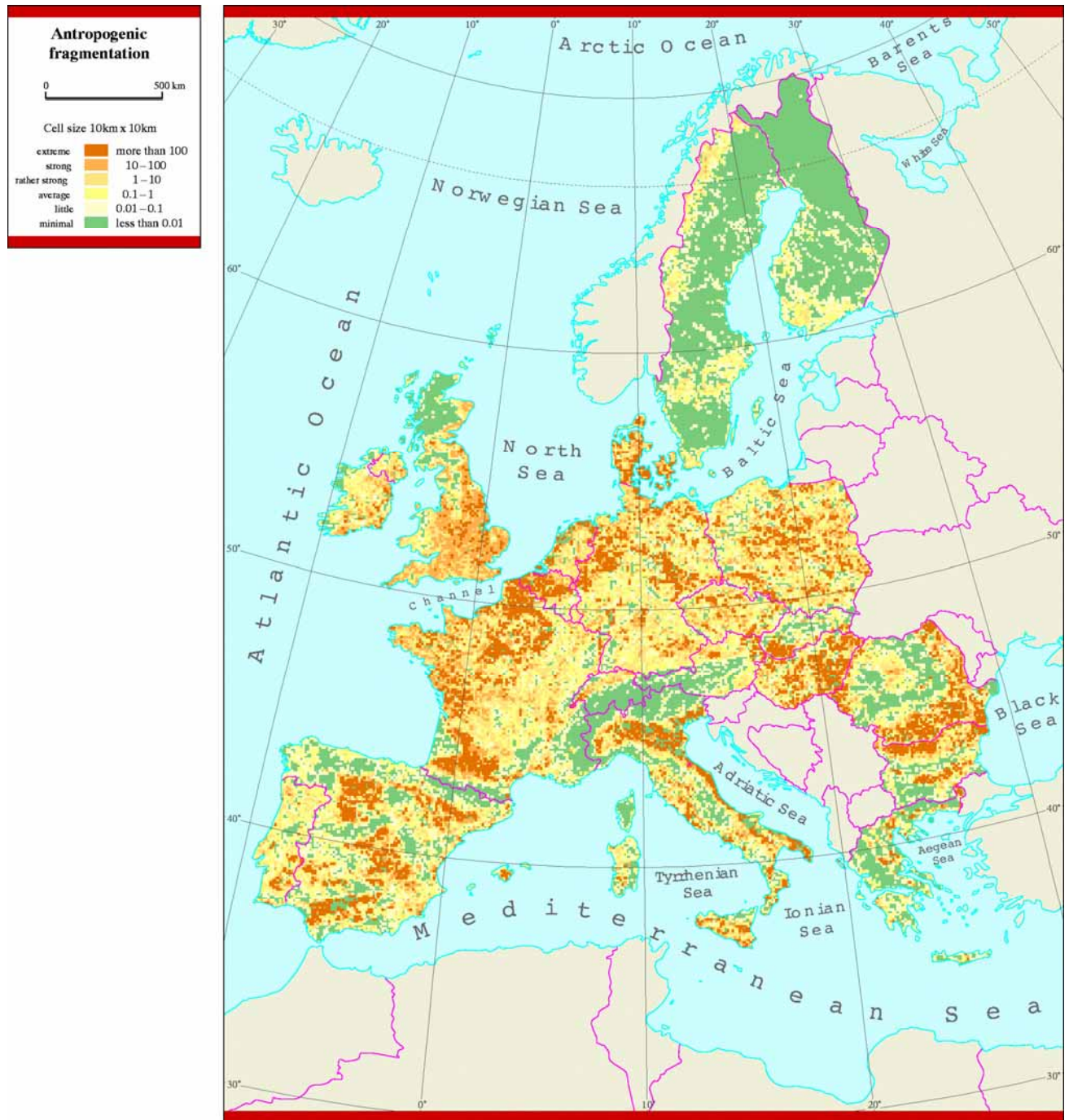
Figure 3: Fraction of world’s major biomes converted by man



Source: Millennium Ecosystem Assessment

²² Mace, G. (2005) *The current status of global biodiversity*. Address to the international scientific conference: Biodiversity Science and Governance, Paris, January 2005

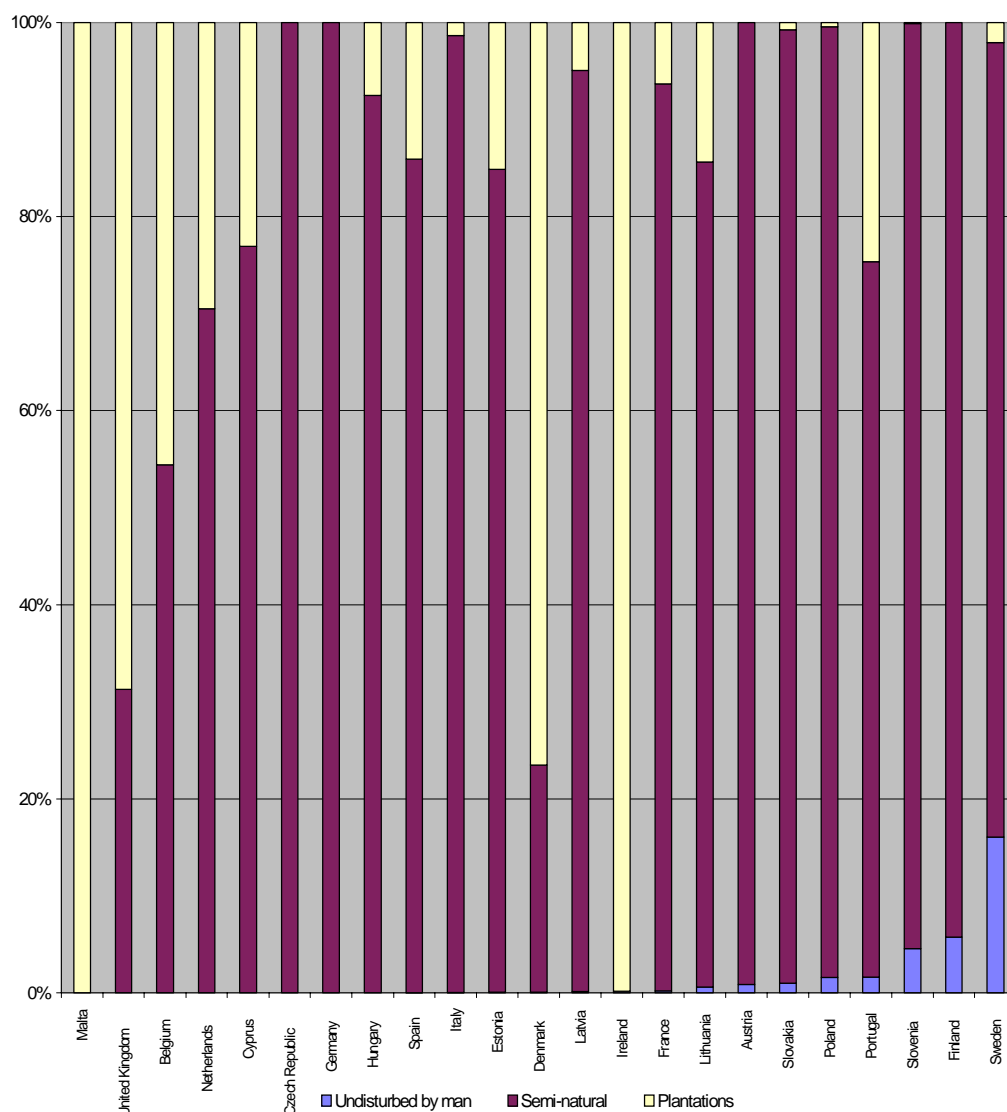
Figure 4: Anthropogenic fragmentation of ecosystems in the EU25



Extensive fragmentation occurs across most of EU-25 with limited fragmentation found only in mountainous and/or forested, low population areas, for example in Sweden, Finland, north-west parts of Scotland and Spain and the Alps, the Pyrenees and Carpathians

Figure 5: Proportions of undisturbed, semi-natural and plantation forests in EU

The Ministerial Conference on the Protection of Forests in Europe classifies forest as ‘undisturbed by man’, semi-natural and plantations. EU-25 forests are mainly semi-natural with the largest areas of ‘undisturbed by man’ forests located in northern Sweden and northern Finland. These remnants of ‘undisturbed’ forests are of high importance biodiversity. Countries with large proportions of plantations are Ireland, Denmark, Malta and the United Kingdom. The degree of naturalness of forest ecosystems reflects the intensity of human intervention. Different levels of utilisation intensity are characterised not only by changing structures but also by different species communities and thus influence the biological diversity of an area.



Source: Ministerial Conference on the Protection of Forests in Europe

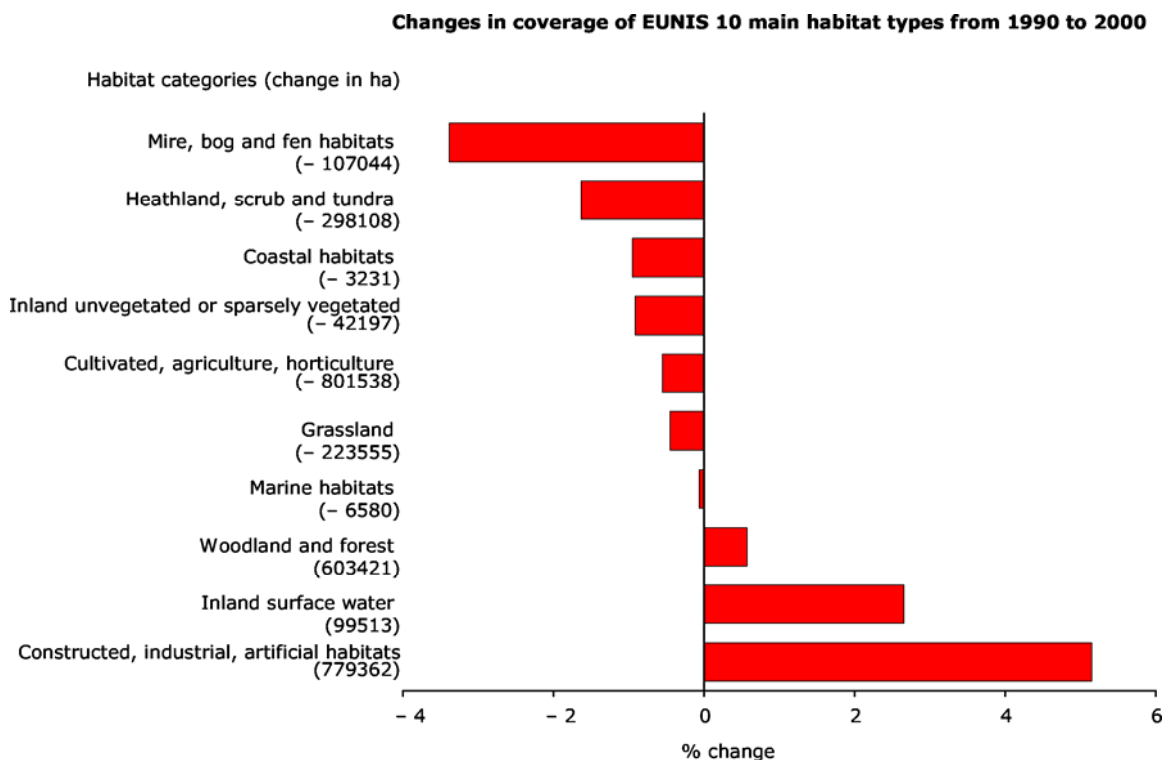
While the majority of western Europe’s forests and woodlands are semi-natural, only 1-3% can be classed as ‘old-growth’ (Figure 5)²³. Since the 1950s, Europe has lost more than half of its wetlands, and most of its once species-rich farmland (only 15-25% of European farmland

²³ Halka A. and Lappalainen, I. (2001) La protection des forets en Europe. Gland, World Wide Fund for Nature.

can now be said to be of high nature value²⁴). Many of the EU's marine ecosystems are disrupted²⁵. Even Europe's most protected places are subject to habitat loss and degradation; the County of Cornwall in the UK, for example, lost 550 ha of habitat from protected areas in the period 1987-1995²⁶.

Continuing habitat loss in Europe is confirmed by the most recent state of the environment report from the European Environment Agency (*Figure 6*)²⁷. Changes in habitats during the 1990s included increases in artificial habitats (5 %) and in inland surface water (some 2.5 %), due to the creation of dams, and losses in heath, scrub and tundra (some 2 %) and wetland mires, bogs and fens (c.3.5%).

Figure 6: Changes in areas of major EU habitat types from 1990 to 2000



Source: EEA

The recent Second Global Biodiversity Outlook confirms that biodiversity is being lost at all levels²⁸.

2.2.2. Loss of species and reduction in species' populations

There is scientific consensus that the loss of species has strong potential to alter ecosystem properties and the goods and services they supply²⁹. Species declines therefore signal significant risks to our economies and societies.

²⁴ EEA (2006) *The European Environment State and Outlook 2005*

²⁵ EEA (2006) *The European Environment State and Outlook 2005*

²⁶ See: <http://www.ercis.co.uk/index.htm>

²⁷ EEA (2006) *The European Environment State and Outlook 2005*.

²⁸ CBD (2006) Summary of the Second Global Biodiversity Outlook.

Recorded rates of species decline are alarming. In Europe, records show significant declines in diversity, populations and distribution of a wide range of species in all major groups. While some rare species, the subject of targeted action, are showing signs of recovery, many species remain threatened, including 42% of native mammals, 43% of birds³⁰, 45% of butterflies, 30% of amphibians, 45% of reptiles and 52% of freshwater fish. Many fish stocks are being exploited outside safe biological limits and some are in danger of collapse (*Figure 7*)³¹. There are clear declines in invertebrates such as butterflies³² as well as crashes in important pollinator populations³³. And some 800 plant species in Europe are at risk of global extinction³⁴.

Worldwide, the rate of extinction of species has greatly accelerated above the natural background rate. The fossil record and statistical studies suggest that the average rate of extinction over the past hundred million years has hovered at several species per year. Human activities have increased the species extinction rate by 100 times compared to the natural rate observed in the fossil record³⁵, taking the planet to the edge of a massive wave of species extinctions, further threatening our own well-being. In contrast, new species are evolving at a rate of less than one a year. In 2004, the World Conservation Union's Red List said more than 15,500 species (out of around 38,000 assessed) faced some extinction risk, including 20% of all known mammal species, 12% of all known bird species, 31% of all known amphibian species, and 31% of all known gymnosperm species (conifers and their allies)³⁶ – not to mention the millions of unknown (but possibly more economically important) microbes.³⁷ The latest 2006 Red List just launched has highlighted that this species decline appears to be accelerating worldwide³⁸.

Not only are species going extinct, the populations of most of those remaining are being fragmented, and reduced in size and range. For example, European bird and butterfly populations show marked declines (*Figures 8, 9*). Further, nature is becoming increasingly 'homogenized' – with so-called 'weedy species' dominating over the more specialist species³⁹.

²⁹ Hooper, D. et al. (2005) Effects of biodiversity on ecosystem functioning: a consensus of current knowledge. ESA Report. *Ecological Monographs* 75(1) pp3-35.

³⁰ BirdLife International 2004. *Birds in Europe: population estimates, trends and conservation status*. Cambridge, UK: BirdLife International (BirdLife Conservation series no.12)

³¹ EEA (2006) *The European Environment State and Outlook 2005*.

³² Swaay, C. and Warren, M. (eds.) (2003) *Prime butterfly areas in Europe: Priority sites for conservation*. National Reference Centre for Agriculture, Nature and Fisheries, Ministry of Agriculture, Nature Management and Fisheries, The Netherlands.

³³ See, for example, BBC report on bee decline in France in 2003:

<http://news.bbc.co.uk/1/hi/world/europe/3178400.stm>

³⁴ See: <http://www.plantaeuropa.org/>

³⁵ Mace (2005) The current status of global biodiversity. Presentation to the international conference on Biodiversity Science and Governance, Paris, January 2005.

³⁶ IUCN Red List 2004, summary statistics: <http://www.redlist.org/info/tables/table1.html>

³⁷ Adapted quote, Lord May, President UK Royal Society:

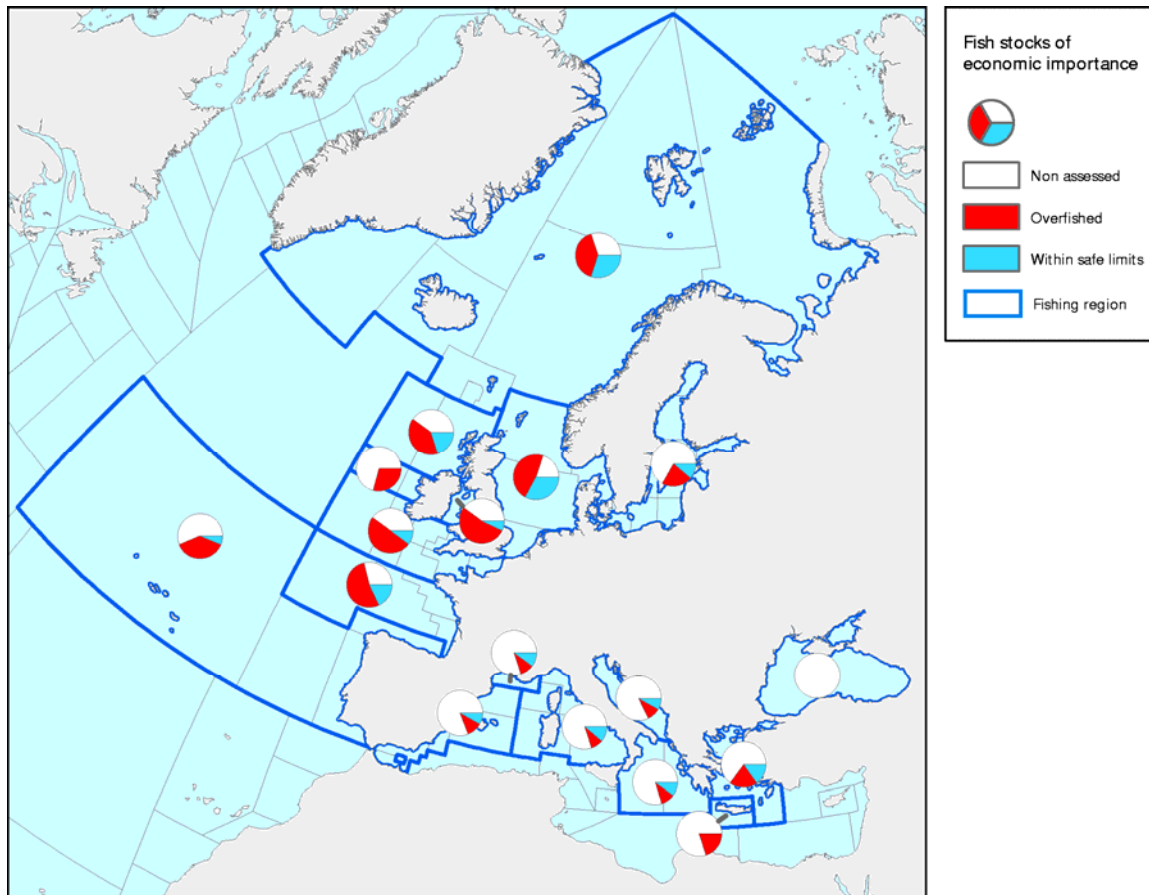
<http://news.bbc.co.uk/1/hi/sci/tech/3667300.stm>

³⁸ <http://www.iucn.org/themes/ssc/redlist2006/redlist2006.htm>

³⁹ Meyer, S. (2004). *End of the Wild*. Boston Review April/May 2004. <http://www.bostonreview.net/NR29.2/meyer.html>

Figure 7: Status of commercial fish stocks in European seas 2003-04

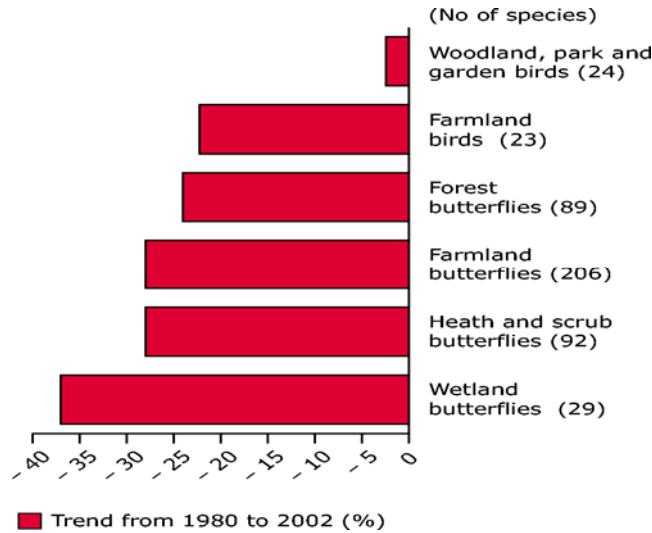
Many commercial fish stocks in European waters remain non-assessed. Of the assessed fish stocks in the NE Atlantic, 22% to 53% are outside safe biological limits (SBL). Of the assessed stocks in the Baltic Sea, the West Ireland Sea and the Irish Sea, 22, 29 and 53% respectively are outside SBL. In the Mediterranean, the percentage of stocks outside SBL range from 10-20%.



Source: EEA

Figure 8: Changes in bird and butterfly populations, EU-25.

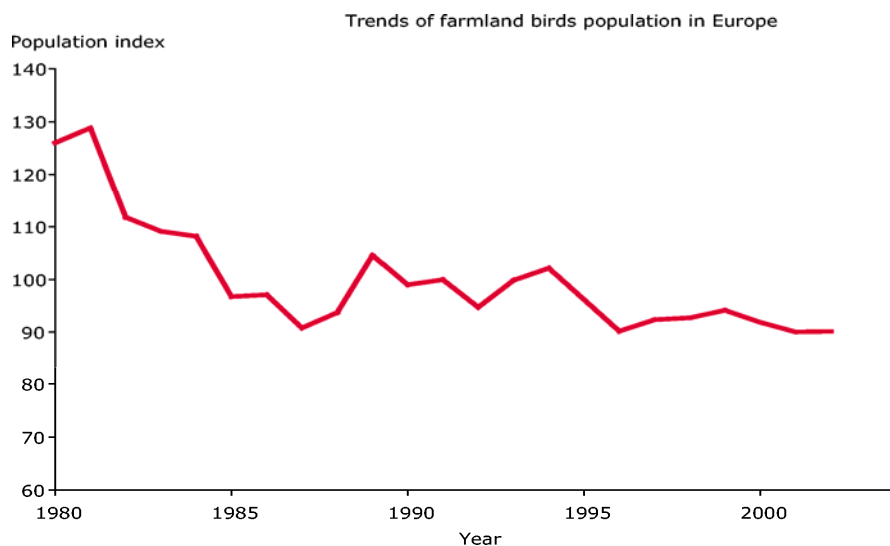
Butterfly and bird species occurring in different habitat types across the EU show population declines of between -2% and -37% since the early 1970s. Similar trends can be observed in the land-cover change for related habitats between 1990 and 2000, especially for heaths and scrubs as well as mires, bogs and fens, which are specific wetland habitats. (The numbers in brackets show the number of species taken into account for each habitat type. The bird trends reflect the period 1980-2002. The butterfly trends reflect the period 1972/73-1997/98.)



Source: EEA

Figure 9: Trends of farmland birds' population in Europe

This indicator has been adopted as a structural indicator and as a sustainable development indicator by the Commission. The period considered as representative for the whole of Europe is limited to 1990-2005. The period from 1980 to 1990 is only based on a very limited number of Member States and the trend observed in each of these countries is variable. Thus, the period before 1990 on the graph below is not completely representative of farmland bird populations in Europe.



Source: European Bird Census Council/Royal Society for the Protection of Birds/BirdLife International/Statistics Netherlands

2.2.3. *Loss of genetic diversity*

With every species extinction, a set of genes particular to that species is irreversibly lost. However, genetic variety is also lost well before the ultimate extinction of a species. As the number of individuals within a species population declines, the variety of genes found within the remaining population also declines. This loss of genetic diversity reduces the ability of species to adapt to pressures, making the remaining population more vulnerable. It also reduces opportunities for mankind to benefit from genetic variety – for example to breed new varieties of crops or livestock. Indeed, the loss of genetic variety is of serious concern in agriculture, fisheries, forestry and horticulture.

For example, the Food and Agriculture Organisation of the United Nations (FAO) estimates that somewhere in the world at least one breed of traditional livestock dies out every week. Many traditional breeds have disappeared as farmers focus on new breeds of cattle, pigs, sheep, and chickens. Of the 3,831 breeds of cattle, water buffalo, goats, pigs, sheep, horses, and donkeys believed to have existed in this century, 16 percent have become extinct, and a further 15 percent are rare. Some 474 of extant livestock breeds can be regarded as rare.⁴⁰ Europe is home to a large proportion of the world's domestic livestock diversity with over 2500 breeds registered in the FAO breed's database – yet a large proportion of these European breeds are threatened.

Similarly, Europe hosts a wide range of plants varieties while the genetic diversity of crops used in agricultural production has decreased. The depletion of fish stocks and resulting decline in genetic diversity within stocks can undermine the chances of future stock recovery. The increasing use of conventionally-bred plants in agriculture, horticulture and forestry – including those used for sowing pastures, hay meadows and amenity areas - threatens indigenous varieties.

2.2.4. *Decline in ecosystem services*

While there are still many uncertainties regarding the extent to which we can afford to lose biodiversity and yet retain vital ecosystem services, there is sufficient evidence to justify taking a precautionary approach in line with the Treaty. The more we damage and degrade ecosystems (whether forests, grasslands, drylands, wetlands, mountains or marine) and the more species we remove from the complex web of life, the greater the risk that essential ecosystem services are compromised.

Indeed, we have already greatly compromised the world's ecosystem services. The 2005 Millennium Ecosystem Assessment⁴¹ confirms that humans have made unprecedented changes to ecosystems in recent decades to meet growing demands for food, fresh water, fibre, energy. These changes have improved the lives of billions, but at the same time have weakened nature's ability to deliver other key services such as purification of air and water, protection from disasters, and the provision of medicines. Worldwide, some two-thirds of the ecosystem services on which humankind depends are in decline (*Figures 10a and 10b*).

⁴⁰ Thrupp, L.A. (1998) Linking Biodiversity and Agriculture: Challenges and Opportunities for Sustainable Food Security. World Resources Institute. <http://www.wri.org/wri/sustag/lba-home.html>

⁴¹ Millennium Ecosystem Assessment Statement of the Board: <http://www.maweb.org/en/Products.BoardStatement.aspx>

There is established but incomplete evidence that changes being made in ecosystems are increasing the likelihood of nonlinear changes in ecosystems (including accelerating, abrupt, and potentially irreversible changes), with important consequences for human well-being. Thresholds exist within ecosystems which, if crossed, cause the ecosystem to switch to a different structure or functioning. Generally, the more diverse an ecosystem, the further it is from such a threshold and thus the more resilient it is to pressures. The loss of species and genetic diversity, and increasing pressures, push ecosystems towards such thresholds.

There is substantial evidence of the decline of ecosystem services in Europe. This evidence includes increasing frequency and severity of flooding events (aggravated by deforestation of watersheds, construction on floodplains, canalisation of rivers), widespread loss of soil fertility, sporadic collapses in pollinator populations (possibly caused by pesticides), the spread of diseases in crops and forests (facilitated by monocultures), and the accelerating release of carbon from the soil (possibly due to global warming). In some cases – such as in the Baltic Sea - thresholds may already have been passed.

Figure 10a: Status of Provisioning Services

Service		Status
Food	crops	↑
	livestock	↑
	capture fisheries	↓
	aquaculture	↑
	wild foods	↓
Fiber	timber	+/-
	cotton, silk	+/-
	wood fuel	↓
Genetic resources		↓
Biochemicals, medicines		↓
Fresh water		↓

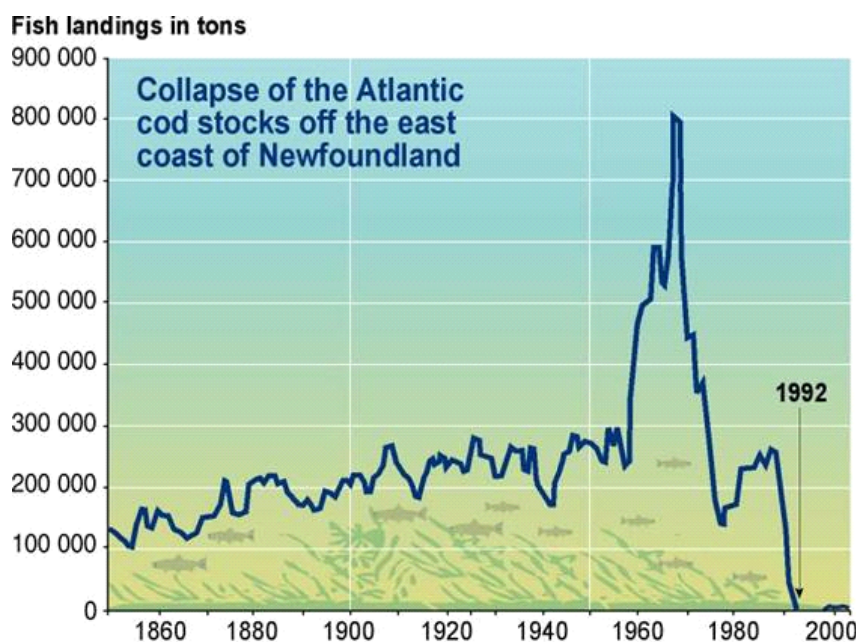
Source: Millennium Ecosystem Assessment

Figure 10b: Status of Regulatory and Supporting Services

	Status
Regulating Services	
Air quality regulation	↓
Climate regulation – global	↑
Climate regulation – regional and local	↓
Water regulation	+/-
Erosion regulation	↓
Water purification and waste treatment	↓
Disease regulation	+/-
Pest regulation	↓
Pollination	↓
Natural hazard regulation	↓
Cultural Services	
Spiritual and religious values	↓
Aesthetic values	↓
Recreation and ecotourism	+/-

Source: Millennium Ecosystem Assessment

Figure 11: Collapse of Atlantic cod stocks of the East coast of Newfoundland



Source: Millennium Ecosystem Assessment

2.3. What is causing biodiversity loss and the degradation of ecosystem services?

2.3.1. Key pressures and drivers of loss

The main causes of biodiversity loss are well known. The principal cause is the destruction, degradation and fragmentation of habitats – for example as a result of conversion (eg. from forest to agriculture), intensification of production systems, or construction. Other pressures include over-exploitation (eg. unsustainable levels of fishing), the spread of invasive alien species and pollution. Examples are given in *Figure 11* (collapse of fish stocks) and *Figures 12 and 13* (nutrient pollution).

These direct pressures are the manifestation of a range of underlying driving forces⁴². These include: demographic drivers (eg population growth, increased housing demand); macro-economic drivers (eg. economic growth where not de-coupled from environmental impact); sectoral developments (eg. growth in transport demand); technological developments (eg. new energy technologies); and social and cultural drivers (eg. developments in social values and preferences, consumption patterns, etc.). The relative importance of each these pressures and drivers varies from place to place. Very often, several pressures and drivers act in combination, complicating action for the conservation and sustainable use of biodiversity.

A key aspect of the economic drivers of biodiversity loss is that of market failure. The benefits of biodiversity – whilst real and significant – are often not marketed and so actors do not have an incentive to take them into account in their decisions. In particular, local decision-makers have only a weak incentive to take on board wider national and global impacts of biodiversity. This means that the market, when left to itself, leads to over exploitation. Public authorities have a particular responsibility to provide a suitable framework that encourages environmentally responsible behaviour and discourages activities that damage biodiversity and ecosystem services. This is likely to require a reform of the financial system at a global scale (eg. internalising environmental costs in the financial system).

Added to these pressures and drivers, there are the increasing pressures from climate change and unchecked globalisation. Historic, directly measured, and projected changes in global temperatures are shown in *Figure 14*. The effects of climate change on biodiversity are already observable, and profound effects are to be expected over the next few decades as unavoidable climate change takes place (*Figure 15*)⁴³. For example, more than half of Europe's plant species could be vulnerable or threatened by 2080⁴⁴. For many species, the 'climate space' within which they thrive will move faster than they can adapt. The threat of climate change reinforces all the more the need to address existing pressures and to maintain ecosystem processes and functions. Much as a healthy human with a strong immune system is better able to respond to infection, healthy ecosystems which are diverse and fully-functioning will be better able to respond to climate change.

Globalisation increases pressure on natural systems in developing countries. For example, it increases the incentives for over-exploitation of natural systems to feed the export market. And the explosion of global transport facilitates the spread of invasive alien species.

⁴² EEA (2006) *The European Environment – State and Outlook 2005*.

⁴³ See for example: Parmesan, C. and Yohe, G. (2003) A globally coherent fingerprint of climate change impacts across natural systems. *Nature* **421**, 37-42.

⁴⁴ Thuiller, W. et al. (2005) Climate change threats to plant diversity in Europe. *Proc. Nat. Acad. Sci.* Early Edition www.pnas.org/cgi/doi/10.1073/pnas.0409902102

Figure 12: Human input of nitrogen to ecosystems (worldwide)

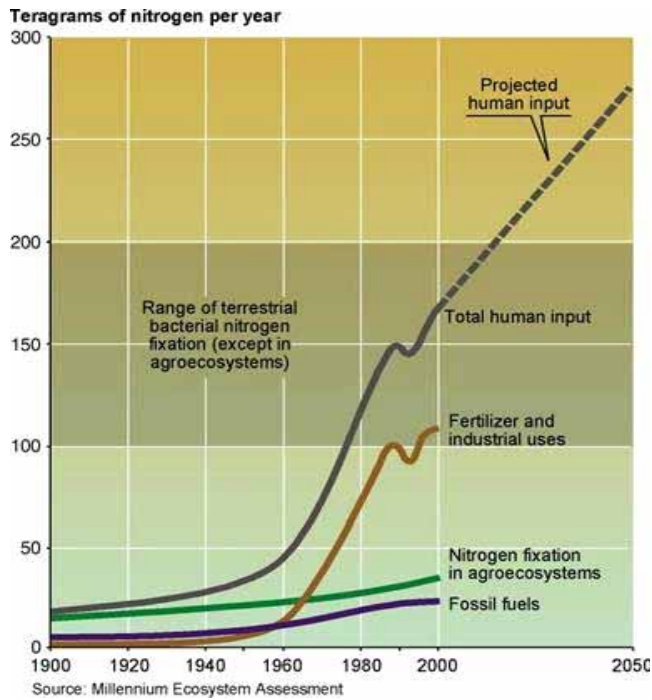


Figure 13: Exceedance of nutrient critical loads in EU

While there was some improvement in the extent of nutrient pollution of EU ecosystems from 1980 to 2000, nutrient pollution still exceeded critical loads for almost 80% of EU terrestrial ecosystems in 2000, and the rate of improvement has tailed off since then.

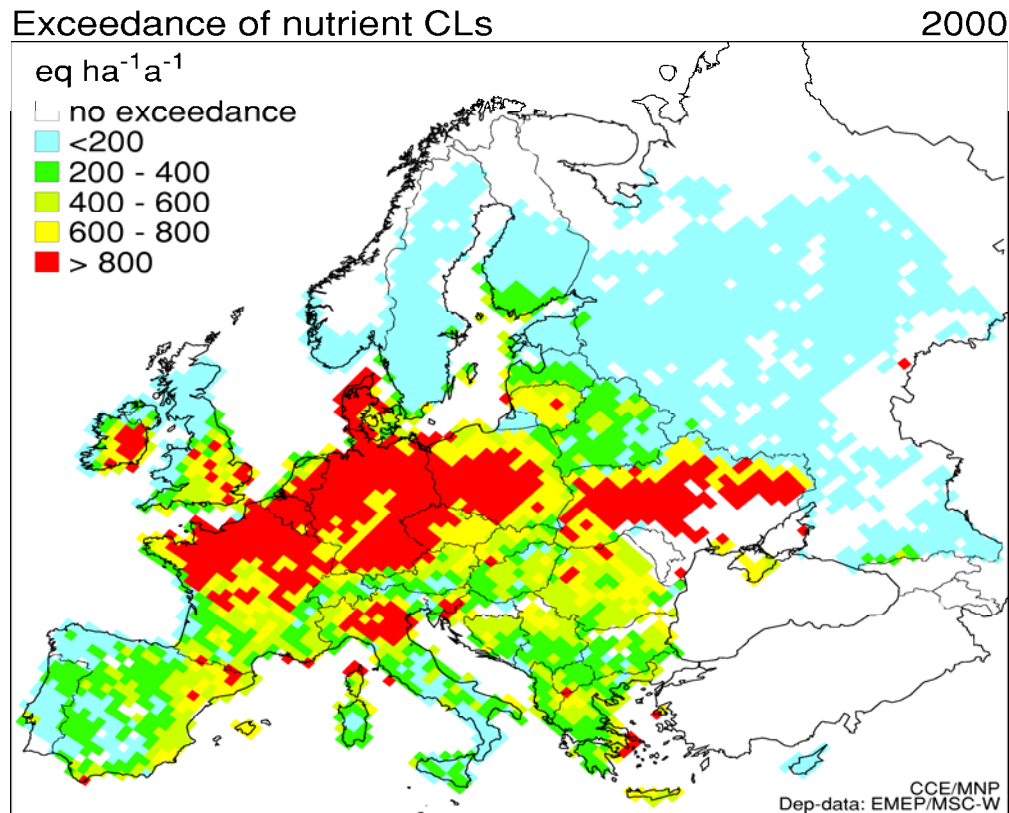


Figure 14. Global changes in temperature – historic and projected

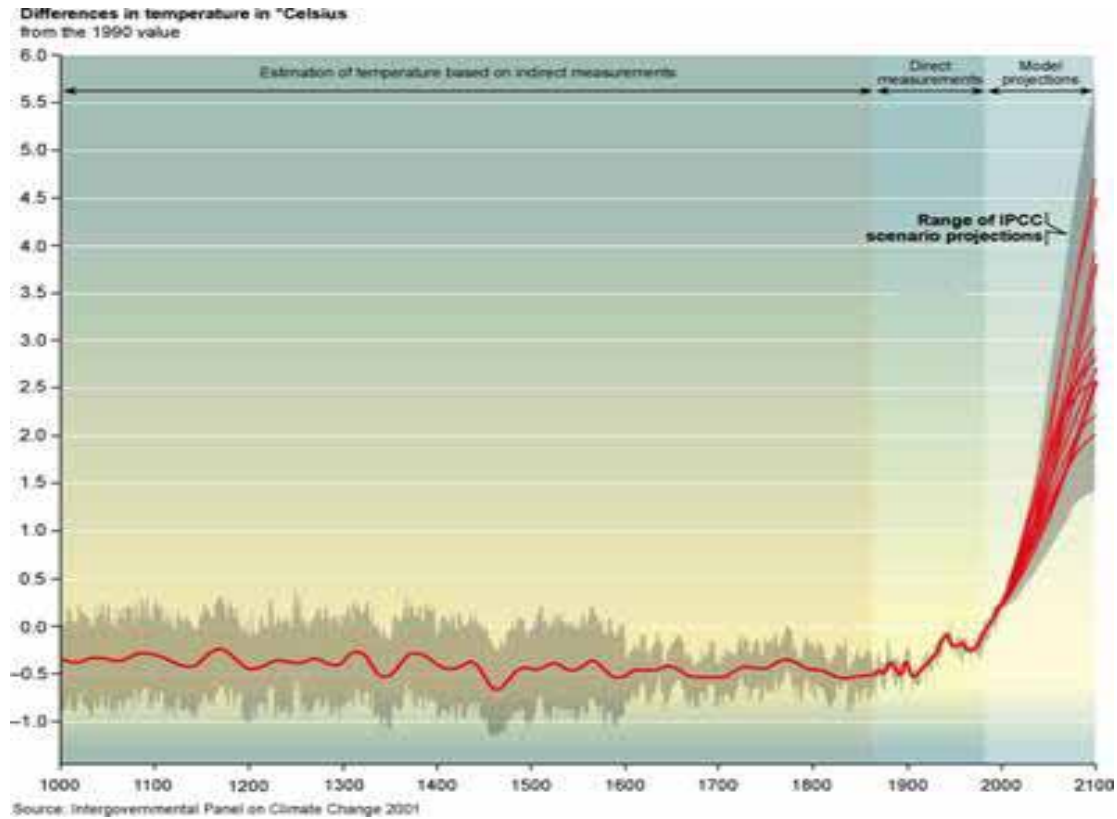
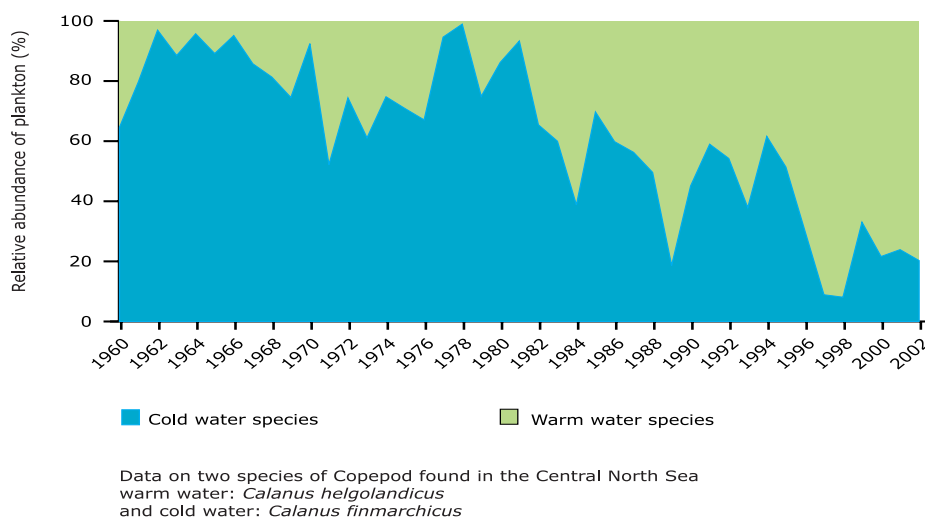


Figure 15: Changing plankton communities in the Central North Sea

The past decade has seen a marked change in the relative abundance of zooplankton in the North Sea. The warm-water copepod *Calanus helgolandicus* has become more than twice as abundant as the cold-water species *Calanus finmarchicus*. These data are illustrative of a general trend for zooplankton populations to shift northwards in response to changing climatic conditions. The composition of the marine ecosystem has been changing since the mid 1980s in the North Sea, a trend that directly affects fish populations and consequently fisheries. Projections show that global warming will increasingly change the composition of the ecosystems in the oceans and cause a shift by warm-water species towards higher latitudes.



Source: EEA

2.4. Why do the loss of biodiversity and degradation of ecosystem services matter?

Humanity is entirely dependent upon plants, animals and other organisms that form the world's biological diversity (or biodiversity) and on the flow of ecosystem services. Examples of the values of the various types of ecosystem services – to both developed and developing countries - are provided in the sections below.

2.4.1. *The value of provisioning services*

The value of ecosystem provisioning services are perhaps most clearly seen when they are lost. For example, over-fishing has reduced most EU fish stocks to below safe biological limits, and resulted in a severe reduction in fish landings over recent decades. In the UK alone, total landings of major fish species by UK vessels in UK ports declined from some 900,000 tonnes to 400,000 tonnes between the mid-1960s and 1999 and the value of the landed catch, corrected for inflation and in 1999 prices, fell from a peak of some £880m to just £196m.⁴⁵ The dependence of modern agriculture on a small number of varieties and breeds, and the loss of local breeds and varieties, reduces the genetic material available for breeding and genetic engineering, putting our future food security at risk. Ecosystems and the species within them are also an important source of medical products. For example, Tamiflu, the only defence the world currently has against the threatened flu pandemic, derives its active ingredient from a rare Chinese tree.⁴⁶

2.4.2. *The value of regulating services*

Recent major natural disasters – including Hurricane Katrina, the Asian tsunami, and floods in central Europe bring into sharp focus the value of ecosystem regulating services. In the former two cases, massive loss of protective coastal ecosystems (mangroves and other wetlands) increased the exposure of coastal communities^{47,48}. In Central Europe, loss of natural floodplains and canalisation of natural channels exacerbated flooding⁴⁹.

In the US, payment is increasingly made for such ecological services. For example, in 1997, New York realised that changing agricultural practices meant it would need to act to preserve the quality of the city's drinking water. One way to have done this would have been to install new water-filtration plants, but that would have cost \$4-6 billion up front, together with annual running costs of \$250 million. Instead, the government is paying to preserve the rural nature of the Catskill Mountains from which New York gets most of its water. It is spending \$250 million on buying land to prevent development, and paying farmers \$100 million per year to minimise water pollution⁵⁰.

⁴⁵ WWF (2001) *Now or never. The cost of Canada's cod collapse and disturbing parallels with the UK.*

⁴⁶ BCGI online 18 October 2005. Bird Flu Medicinal Herb Shortage:

http://www.bgci.org/news/anise_treats_birdflu.html

⁴⁷ Reichhardt, T. (2004) Hurricane Ivan highlights future risk for New Orleans. *Nature* **431**, 388

⁴⁸ For article on tsunami and mangroves, see :

<http://www.scidev.net/News/index.cfm?fuseaction=printarticle&itemid=1823&language=1>

⁴⁹ EEA. 2005. *Climate change and river flooding in Europe.* EEA Briefing 01/2005. Also: COM (2006) 15 final, Proposal for a directive of the European Parliament and of the Council on the assessment and management of floods.

⁵⁰ *The Economist*, 21 April 2005.

2.4.3. *The value of supporting services*

The value of ecosystem supporting services is less easily valued and marketed. An example is that of pollinators, which provide a service valued at \$65-70 billion/year worldwide. Marked declines in insect pollinators have been recorded in parts of Europe, and also in the US, with significant impact on many crop yields⁵¹. Without the ecosystem services of nutrient cycling and soil formation, waste processing costs and agricultural input costs would soar.

2.4.4. *The value of cultural services*

Cultural ecosystem services are less easily monetarised, but this does not mean they are less important than nature's other services. We derive from nature pleasure, fulfilment, inspiration and solace. Nature is fundamental to our culture, language, psychological, physical and spiritual wellbeing. Nature is also a knowledge resource for education, scientific and historic discovery⁵². And finally, throughout history, many – of both religious and secular beliefs – have argued that biodiversity has its own, intrinsic value and that we have a moral duty to ensure its good stewardship⁵³.

2.4.5. *The importance of ecosystem services in developing countries*

Outside the EU, ecosystem services are essential to poverty eradication in Africa and other developing parts of the world. 75% of the world's poor are rural poor, who depend directly on natural systems for their livelihood. The continued loss of ecosystem services will make it impossible to meet the Millennium Development Goals related to poverty eradication, health, water and environment^{54, 55, 56}.

Moreover, the EU depends for its growth and well-being upon the ecosystem goods and services of these third countries. Indeed, it has recently been estimated that it now requires two continents of the size and fecundity of modern-day Europe to maintain the continent in the style to which we have become accustomed⁵⁷. It is an uncomfortable reality that the European market, along with that of other developed countries, is the destination for much of the illegally felled timber that is resulting in the destruction of tropical forests. As biodiversity declines and the goods and services it supplies become scarcer, competition for these goods and services will intensify, threatening global and European security.

2.4.6. *Costs of non-action*

The costs of non-action are potentially immense – in terms of lost assets, goods and services.

⁵¹ Kevan, P.G. and Phillips, T. (2001) The economic impacts of pollinator declines: an approach to assessing the consequences. *Conservation Ecology* 5, i.

⁵² English Nature (2002) *Revealing the value of nature*.

⁵³ Glacken, C. (1990) *Traces on the Rhodian Shore. Nature and culture in western thought from ancient times to the end of the Eighteenth Century*. University of California Press.

⁵⁴ *Millennium Ecosystem Assessment, Statement of the MA Board*.

⁵⁵ <http://www.maweb.org/en/Products.BoardStatement.aspx>

⁵⁵ Malloch Brown, M. (2004) *Conserving Biodiversity for Development. Opinions, Science and Development Network*.

⁵⁶ <http://www.scidev.net/Opinions/index.cfm?fuseaction=readopinions&itemid=240&language=1>

⁵⁶ World Resources Institute. *World Resources 2005*.

⁵⁷ WWF (2005) *Europe 2005 The Ecological Footprint*.

The degradation of ecosystem services represents the loss of ‘natural capital’. The loss of this capital (or wealth) due to ecosystem degradation is however not reflected in conventional national accounts. For example, a country could cut its forests and deplete its fisheries, and this would show only as a positive gain in Gross Domestic Product (GDP) without registering the corresponding decline in assets (wealth). A number of countries that appeared to have positive growth in net savings (wealth) in 2001 actually experienced a loss in wealth when degradation of natural resources was factored into the accounts.

Estimates put the value of ecosystem goods and services at hundreds of billions of Euros per year^{58, 59}. When ecosystem services are taken into account, the net present value of natural and sustainably managed ecosystems is frequently higher than that of converted and intensively managed systems (see *Figure 16*). A recent study commissioned by DG Environment provides a range of case studies documenting EU examples where biodiversity loss has led to the loss of ecosystem services and economic costs⁶⁰.

Further, restoring degraded ecosystems, or substituting artificially for these biodiversity goods and services where natural systems fail is frequently much more costly than looking after them in the first place. The control of invasive alien species is a good example. The economic damages caused by invasive alien species and the costs of controlling and eliminating them amount to billions of Euros per year - far greater than the costs of preventing their introduction. Control of the zebra mussel, for example, a shellfish which rapidly multiplies and clogs the cooling systems of coastal industrial plants, cost US and European businesses around Euro 1 billion in the period 1998-2000⁶¹. These costs – which fall upon both public and private sectors - undermine competitiveness and growth.

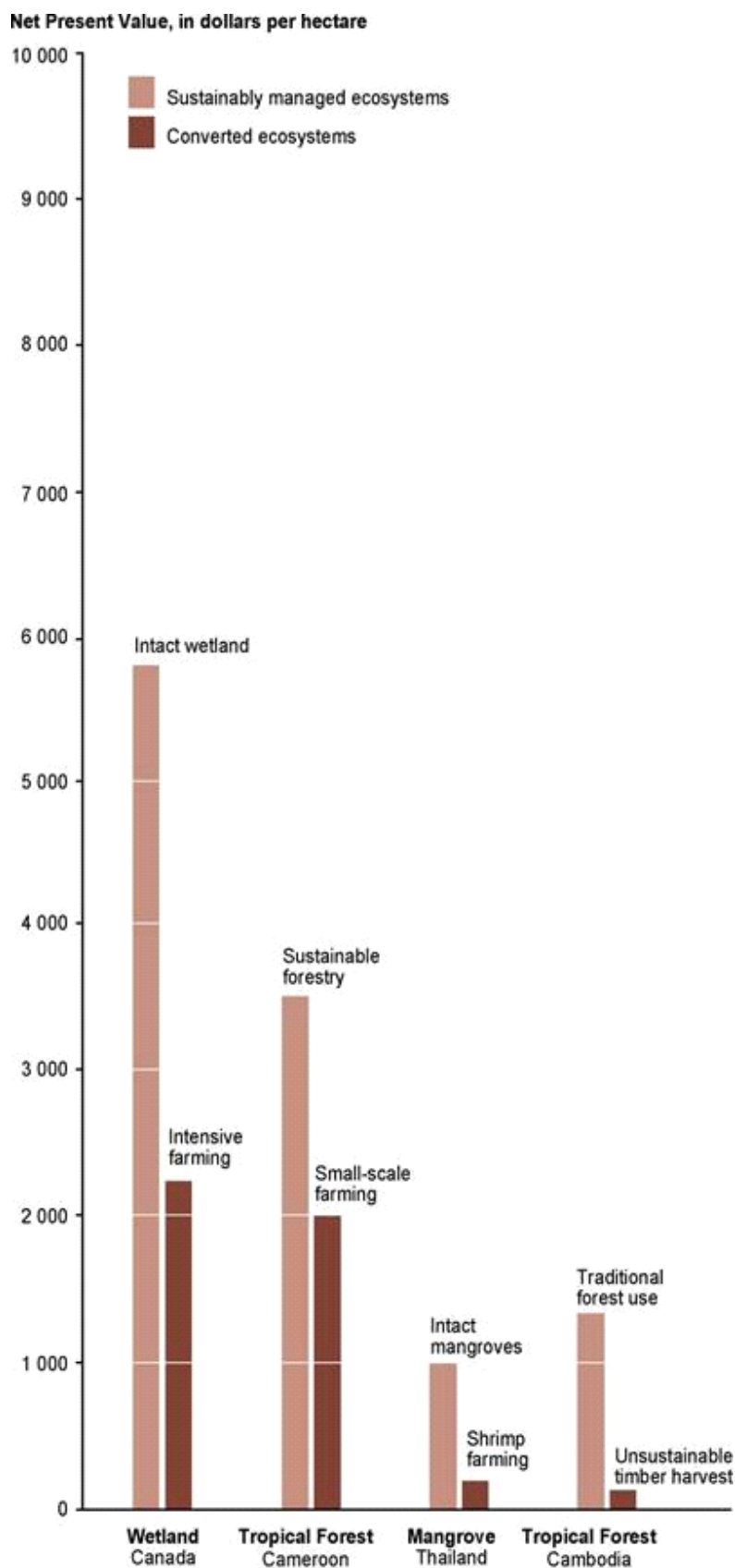
⁵⁸ Heal, G. (2005) *The costs of policy inaction with respect to biodiversity loss*. Prepared for OECD High Level Special Session on Costs of Inaction, 14 April 2005.

⁵⁹ Perrings, C. (2005) *Economics and the value of ecosystem services*. Address to the international scientific conference Biodiversity Science and Governance, Paris, January 2005

⁶⁰ Kettunen, M. & ten Brink, P (2006) Value of biodiversity – documenting EU examples where biodiversity loss has led to the loss of ecosystem services. Final report to the European Commission. Institute for European Environmental Policy (IEEP), Brussels. (Draft final report)

⁶¹ National aquatic nuisances clearinghouse 2000, cited in Wittenberg, R, Cock, M (eds) (2001) *Invasive Alien Species: A toolkit of best prevention and management practices*. CAB International, Oxon, UK.

Figure 16: Comparison of net present value of natural and sustainably managed ecosystems with converted and intensively managed systems



Source: Millennium Ecosystem Assessment

2.5. Who is affected and to what extent?

The loss of biodiversity, and the consequent decline in natural capital and in the flow of ecosystem services, affects everyone, but some more than others. Very often, it is the rural poor in developing countries who are most severely affected by biodiversity loss – for they are most immediately dependent on ecosystem services. There are increasing areas of the world where biodiversity loss and the decline of ecosystem services has reached the point of ecological collapse, resulting in malnourishment, famine and conflict.

However, as section 2.4 indicates, many in developed countries, including the EU are also affected – whether farmers or fishermen, private or public sector, the insurance industry or the general public. The extent of the impacts felt by these various societal groups are very variable, ranging from the emotive distress felt at the loss of local landscape features to severe economic and social disruption, such as that caused by collapsing fish stocks, or storm damages unmitigated by natural coastal defences.

In most cases, those who benefit in each case from biodiversity loss and the degradation of ecosystem services are small interest groups and the benefit is short-term – while the negative impacts of the loss and degradation are felt by a wider cross-section of society and are often long-term, affecting both current and future generations. As already mentioned, this is in part due to the failure of markets to internalise these social and environmental costs of biodiversity loss.

2.6. What have we done about it so far?

This section provides a review of implementation, effectiveness and appropriateness of the EC Biodiversity Strategy and Action Plans.⁶²

2.6.1. Progress with implementation – EU internal dimension

2.6.1.1. Dedicated nature policy

The Birds Directive⁶³ and the Habitats Directive⁶⁴ provide the cornerstone of action for biodiversity in the EU. They provide for the designation and effective management of areas representing Europe's most important habitats, and the protection of Europe's most threatened species. Substantial progress has been made in implementation of these nature directives. The Natura 2000 network now covers some 18% of the territory of the EU-15 and is now being extended to the EU-10 and the marine environment. This network - complimented by other protected areas recognised at national, regional or local levels - represents the EU's main 'reservoir' of biological diversity, and is essential to maintaining the vital stream of ecosystem services. The nature directives also provide for species-specific measures such as recovery plans which are proving beneficial for some of the EU's most endangered species.

With establishment of the network approaching completion, the next challenge is the effective management of the network which will require substantial funding. Limited but effective co-financing of Natura 2000 has been provided to date through the LIFE Nature fund. New ways

⁶² Further details (for the period to early 2004) may be found in the audit reports submitted to the Malahide Conference, see footnote 13

⁶³ Directive of 2 April 1979 on the conservation of wild birds (79/409/EC), OJ L 103, 25.4.1979, p.1.

⁶⁴ Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats of wild fauna and flora, OJ L 206, 22.7.1992, p.7.

of providing enhanced co-financing through rural development and cohesion funds have been proposed by the Commission⁶⁵. However, the recent Council decision on the Financial Perspectives⁶⁶ is likely to result in limited availability of community co-financing for Natura 2000. This means that Member States will have a greater responsibility to ensure adequate financial resources are available.

Despite this progress made, a large proportion of the complaints received by the Commission relate to alleged infringements of the Nature Directives. While not all complaints are upheld, the volume of complaints tends to suggest substantial continuing threats to priority habitats and species, a need to reinforce efforts for full implementation of the Directives, and in particular to raise awareness of the benefits of Natura 2000.

2.6.1.2. Other environmental policy

Biodiversity is an over-arching goal of environmental policy, as expressed in the Sustainable Development Strategy⁶⁷, in the Commission Working Document on Better Regulation and in the Thematic Strategies for the Environment⁶⁸.

Significant progress has been made on the integration of biodiversity needs into environmental policy. The Water Framework Directive provides for improvement of the ecological quality of freshwaters towards the achievement of ‘good ecological status’. Similarly, the recent Thematic Strategy on the Marine Environment⁶⁹ and proposed Marine Strategy Directive⁷⁰ introduce an ‘ecosystem approach’ to the management of Europe’s seas, towards achievement of ‘good environmental condition’, which should reinforce the conservation and recovery of marine biological diversity and marine ecosystem services.

A wide range of environmental policies address pollutant pressures. The recent Thematic Strategy on Air Quality⁷¹ provides for the reduction of air pollutants responsible for the damaging acidification and eutrophication of a substantial proportion of EU ecosystems. The Nitrates Directive⁷² provides for the reduction of these eutrophication substances in rivers, lakes and seas. The forthcoming Thematic Strategy on the Sustainable Use of Pesticides, together with pesticides legislation, should reduce negative impacts of these products on biodiversity – notably the intended Thematic Strategy provision for definition of areas of zero or strongly reduced pesticide use. REACH⁷³ should further reduce chemical pressures on biodiversity. Freshwater biodiversity should also benefit from the requirement to achieve good ecological status of freshwater under the Water Framework Directive⁷⁴.

The Thematic Strategy on the Sustainable Use of Natural Resources aims to establish a long-term framework to reduce negative environmental impacts of resource use. It advocates in particular integration of a life-cycle approach in to policies, to consider the environmental

⁶⁵ COM (2004)431 final. Communication from the Commission to the Council and the Parliament on Financing Natura 2000.

⁶⁶ Presidency Conclusions, Brussels European Council, 19 December 2005.

⁶⁷ COM(2001) 264 final

⁶⁸ COM(2005) 466 final

⁶⁹ COM(2005) 504 final

⁷⁰ COM(2005) 505 final

⁷¹ COM(2005) 446 final

⁷² Directive 91/676/EEC of 12 December 1991,

⁷³ COM(2003) 0644 (03)

⁷⁴ Directive 2000/60/EC

impacts of resource use at all stages of the life cycle and avoid trade-offs – which would include avoiding loss of biodiversity.

The forthcoming Thematic Strategy on Soils should reduce loss of soil and terrestrial biodiversity through protecting soil organic matter and soil structure and reducing soil sealing.

Provisions for access to environmental information and participation help ensure effective implementation of all these instruments.

2.6.1.3. Integration into Agricultural policy

Substantial progress has been made in the implementation of the Common Agricultural Policy (CAP) over recent years to better integrate biodiversity requirements. This has included: an increasing use of agri-environment measures (eg. to support extensive farming favourable to biodiversity) and compensatory allowances which may benefit biodiversity; the largely indirect benefits arising for biodiversity from the application of Good Farming Practice; the growth in organic farming; and the removal of headage payments in Less Favoured Areas (which caused overgrazing and biodiversity loss); training of farmers in environmental and biodiversity measures; and the development of agri-environment indicators.⁷⁵ Food safety policy has resulted in the withdrawal from the market of dangerous active substances in plant protection products.

The 2003 CAP reform should help further mitigate the damaging trends of intensification and abandonment of high-nature value farmland, and further support the integration of biodiversity into forestry.⁷⁶ The recently adopted Rural Development Strategic Guidelines⁷⁷ are particularly supportive to biodiversity-related measures. Decoupling, modulation and cross-compliance should all provide indirect benefits to biodiversity, while agri-environment measures and payments for areas with handicaps provide opportunities of both direct and indirect benefits. It should be noted that agri-environment measures are (and will continue to be during the 2007-2013 programming period) the only obligatory measure under rural development. In addition, Member States must allocate at least 25% of the total rural development programme funding to Axis 2 measures (which includes agri-environment, support for areas with handicaps and Natura 2000 payments). However, the effectiveness of these measures in reversing the decline of farmland and forest biodiversity will very much depend on their implementation by the Member States.

The Thematic Strategy on the Sustainable Use of Pesticides should help reduce negative impacts of pesticides on biodiversity.

Progress in the integration of biodiversity into forestry has also been made through the Ministerial Conference on the Protection of Forests in Europe (MCPFE) process. This seeks to integrate biodiversity concerns into sustainable forest management. Further opportunity is provided by the forthcoming EU Forest Action Plan.

⁷⁵ See Biodiversity Action Plan for Agriculture: Implementation Report, p. 39ff

⁷⁶ See Malahide/Audit/2 – ‘Assessment of implementation, effectiveness and appropriateness of the Biodiversity Action Plan for Agriculture.’

⁷⁷ COM(2005) 304 final

2.6.1.4. Integration into Fisheries policy

Substantial progress has been made in the implementation of the Common Fisheries Policy (CFP) in recent years to better integrate biodiversity requirements. These include: the definition of precautionary limit reference points for fish mortality rates and stock biomass for most fish stocks; new technical measures to protect harvested fish stocks, concerning for example fishing gear, protection zones and minimum sizes; new technical measures to protect juvenile fish and non-target species such as sharks and cetaceans, and to protect habitats such as deep water coral reefs and *Posidonia* beds.

The recent reform of the CFP⁷⁸ should serve to further slow and reverse biodiversity loss linked to fisheries. The new CFP provides *inter alia* for: reduced fishing pressure to promote the conservation and sustainable use of commercially important fish stocks; introduction of further technical measures for the conservation and sustainable use of commercial fish stocks – including long-term management plans; introduction of further technical measures to reduce impact on non-target species and habitats; reduction of the environmental impact of aquaculture; and the introduction of Regional Advisory Councils to improve dialogue between fisheries interests, scientists and environmentalists. There is also an increasing emphasis on sustainability in the Community Fisheries Partnership Agreements with third countries. The Commission's proposals for a European Fisheries Fund⁷⁹ provide enhanced opportunity for projects with environmental benefits. However, the recent Council decision on the Financial Perspectives may result in reduced availability of environmental funds under this instrument.

There remain serious shortfalls in implementation at Member State level. The latest report CFP Compliance Scoreboard continues to reveal substantial problems in compliance including poor reporting of catch quantities, fishing effort, fleet registry obligations and environmental issues, some overruns of fishing quotas, and increasing serious infringements, in particular relating to unauthorised fishing. Council decisions relating to total annual allowable catches continue to exceed the Total Allowable Catches (TACs) recommended by scientists and proposed by the Commission.

It is too early to say whether the recent reform will be effective in enabling the recovery of Europe's severely depleted fish stocks and preventing damages to non-target species and habitats⁸⁰.

2.6.1.5. Integration into other EU internal sectoral policy

The integration of biodiversity concerns into other sectors, notably, transport and energy, regional development and tourism, has been much weaker.

Some progress has been made in the integration of biodiversity needs into Cohesion and Structural Funds. A significant proportion of projects funded under these funds is environmental, and may yield indirect benefits to biodiversity, for example by reducing pollutant pressures, and some projects directly address biodiversity needs. However, there are also frequent allegations of damages to biodiversity arising from projects supported by

⁷⁸ COM(2001) 135 final

⁷⁹ COM(2004) 497 final

⁸⁰ See Malahide/Audit/3 – 'Assessment of implementation, effectiveness and appropriateness of the Biodiversity Action Plan for Fisheries.'

structural funds.⁸¹ The new Cohesion and Structural Funds Regulations for the Financial Perspectives 2007-2013 - notably that for the European Regional Development Fund - provide opportunities for support to biodiversity-related projects which may be taken up at Member State initiative.

Strategic and environmental impact assessments^{82 83} inform decision-making on the potential impacts of certain programmes, plans and projects on biodiversity. Environmental impact assessment has been the principle instrument to inform decision-making of potential negative impacts of developments in these sectors on the environment in general and on biodiversity in particular. However, as with the nature directives, the Commission received a large number of complaints relating to alleged infringements of the EIA directive. While not all complaints are upheld, the volume of complaints tends to suggest inadequacies in implementation. Strategic Environmental Assessment should help resolve many of these problems though there are early indications that there is a long way to go before this tool fulfils its potential in relation to preventing biodiversity impacts⁸⁴. There is also need for a more proactive dialogue with these sectors.

The Environmental Liability Directive⁸⁵ provides a disincentive to damage key nature sites and provides for compensatory measures.

2.6.1.6. Biodiversity governance in the EU

Arrangements for biodiversity governance at EU and Member State levels are gradually strengthening but further progress is needed, in particular at Member State level where the primary responsibility lies for implementation. A Biodiversity Expert Group established following adoption of the EC Biodiversity Strategy and Action Plans serves to advise the Commission on their implementation, monitor progress and strengthen coordination and complementarity. At Member State level, most Member States have developed national biodiversity strategies and action plans. The governance arrangements established for the development and implementation of these strategies and plans varies between Member States, with some more effective in building multi-sectoral, national-regional-local, and public-private sector partnerships than others. A brief review of complementarity between the EC Biodiversity Strategy and Action Plans and those of Member States has found substantial shortcomings. In developing their national Biodiversity Strategies and Action Plans, few Member States have expressly addressed the need for complementarity with the EC Biodiversity Strategy and Action Plans. Complementarity, where it exists, is largely incidental. Without strong complementarity between Member State level action and Community level action, we will not reach the 2010 targets. Many Member States are however now reviewing their national strategies and action plans in the light of these targets.

Progress is being made on the development of partnerships between stakeholders for the conservation and sustainable use of biodiversity. Examples include those between hunters and bird conservation groups⁸⁶, farming and wildlife groups⁸⁷, forestry and biodiversity

⁸¹ See, for example, WWF (2006) *Conflicting EU funds: Pitting Conservation Against Unsustainable Development*. WWF Global Species Programme, Vienna

⁸² Directive 2001/42/EC, OJ L 197, 21.07.2001, p.30

⁸³ Amended Directive 97/11/EC, OJ L 073, 14.03.1997, p.5

⁸⁴ EEB (2005) *Biodiversity in Strategic Environmental Assessment – Quality of National Transposition and Application of the Strategic Environmental Assessment (SEA) Directive*.

⁸⁵ Directive 2004/35/EC, OJ L 143, 30.04.2004, p.76

⁸⁶ Witness the recent agreement between BirdLife International and FACE

partnerships⁸⁸, the Regional Advisory Councils being established for fisheries, and initiatives between the biodiversity community and the business⁸⁹ and finance⁹⁰ communities. However, these initiatives are largely recent and as yet of limited impact.

2.6.2. Progress with implementation – EU external dimension

2.6.2.1. Integration into Economic and Development Cooperation

Despite some direct funding to biodiversity projects, little progress has been made in the mainstreaming of biodiversity concerns in this policy area. This has been largely due to a change in the manner of aid delivery⁹¹. However, the Commission's Communication on Policy Coherence for Development⁹² proposes both enhancing earmarked funds for biodiversity and strengthening mainstreaming of biodiversity in development assistance. The Commission's Communication on a new EU Development Policy⁹³ has elevated environment and natural resources from a cross-cutting issue to a key theme for EU development cooperation – both for the Community and for Member States. Biodiversity is highlighted as a key element of this theme. A new provision requiring systematically the development of Country Environmental Profiles should assist the integration of biodiversity needs into Country and Regional Strategy Papers.

2.6.2.2. Enlargement and neighbourhood policy

Enlargement has extended the Natura 2000 network and other biodiversity-related aspects of the Community policy into 10 new Member States with outstanding biodiversity. Environmental concerns have been integrated (eg. through environmental impact assessments) into pre-accession funding, particularly for infrastructure. This has extended to cover loans from the European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD) as a result of the need to comply with the *acquis*. The conservation and sustainable use of biodiversity is furthermore an important element of the EU's Neighbourhood Policy.

2.6.2.3. Integration into trade policy

The Biodiversity Action Plan for Economic and Development Cooperation does not address trade issues, which are addressed in the EC Biodiversity Strategy itself. A useful start has been made on efforts to address the impact of the timber trade on tropical forests⁹⁴, but little has been done to tackle other trade-related causes of deforestation – such as the trade in palm oil and soy bean. Some progress has been achieved on wildlife trade through active engagement in the Convention on International Trade in Endangered Species.

⁸⁷ eg. Farming and Wildlife Advisory Groups in the UK, new wildlife and farming initiative of the Commission

⁸⁸ eg. under the MCPFE, <http://www.mcpfe.org/>

⁸⁹ eg. under the aegis of the World Business Council for Sustainable Development

⁹⁰ eg. the European Biodiversity Resource Initiative, http://www.ecnc.nl/Overview/Index_356.html

⁹¹ See Malahide/Audit/4 – ‘Assessment of implementation, effectiveness and appropriateness of the Biodiversity Action Plan for Economic and Development Cooperation.’

⁹² COM(2005)134final Policy Coherence for Development – Accelerating Progress towards attaining the Millennium Development Goals’

⁹³ COM(2005)311 final

⁹⁴ COM(2003) 251 final

More generally, the EU has promoted the integration of the environmental dimension into international trade (for instance through its work on trade-related sustainability impact assessments) and in global efforts to curb unsustainable production and consumption patterns – but with few concrete results for biodiversity to date. Establishing EU credibility both in this international arena and through effective actions in European territories of the Member States will support the attainment of wider EU objectives in the world trade negotiations.

2.6.2.4. International Governance for Biodiversity

The EU plays an active role in international governance for biodiversity, in particular in the CBD and related multilateral environmental agreements. Successful involvement of the EU has led to important decisions at the latest the Conferences of the Parties (COP6, COP7) to the CBD and the first Meeting of the Parties (MOP1) to the Cartagena Protocol on Bio-safety. For example, at COP6/COP7, decisions were taken related to the adoption of a Strategic Plan and a global framework with goals, targets and indicators to measure progress towards the 2010 targets. Programmes of work and guidelines were adopted for, *inter alia*, marine and coastal biodiversity, forest biodiversity, alien species, protected areas, plant conservation, sustainable use, technology transfer, access and benefit-sharing and environmental impact assessment. The EU is strongly committed to further strengthening the CBD as the key international instrument for achieving the 2010 target and will promote focus on ensuring implementation on the ground. COM (2003) 821 final describes how the European Community is implementing the CBD Bonn Guidelines on Access to Genetic Resources and Benefit-Sharing under the CBD. At MOP1 and MOP2, key decisions gave operational effect to the Cartagena Protocol, including adoption of a compliance mechanism and on documentation requirements for transboundary movement of GMOs.⁹⁵ Under the International Treaty on Plant Genetic Resources for Food and Agriculture, the EC and Member States are actively involved in the negotiation of a standard Material Transfer Agreement which will specify the conditions for the mandatory sharing of monetary benefits arising from the commercialisation of material obtained from the Multilateral System of the International Treaty.

The EC and Member States are furthermore parties to and actively implement a broad range of biodiversity-related international agreements that aim at protecting certain species, regions or ecosystems. For example, as one of the principal markets for trade in endangered species, the EU has been playing a very active role within the Convention on International Trade in Endangered Species (CITES) by strictly regulating trade in species that are most at risk and putting pressure on and incentives to range states to ensure that trade is sustainable.

Progress has also been made in creating synergies between the CBD and other biodiversity-related agreements. In the case of CITES, for example, the 2010 target has been taken up as a central objective of the convention.

2.6.3. Progress with implementation – supporting measures

2.6.3.1. Indicators, monitoring and reporting

Progress is being made on the developments of biodiversity indicators, monitoring and reporting. The establishment of a headline set of biodiversity indicators is a significant step

⁹⁵ see Council (Environment) Conclusions, Doc 10997/04, 30 June 2004 and Malahide/INF/5

forward⁹⁶ and the Commission has engaged the EEA to develop this set – which is in line with the global set developed by the CBD - under the SEBI2010 project. The farmland bird population index (best available proxy for state of biodiversity) has been selected both as a structural indicator in 2004, and as a headline sustainable development indicator in 2005. Work is in progress to develop monitoring approaches and tools and streamline reporting under the nature directives.

2.6.3.2. Assessment and research

Targeted policy-relevant assessment and research is vital to understand better the way in which natural systems function so as to better maintain the supply of goods and services. The 6th Framework Programme⁹⁷ has helped strengthen a European approach to biodiversity research and improve scientific support to policy though much more is needed in this respect.⁹⁸ The recent proposal for the 7th Framework Programme⁹⁹ provides substantial opportunity for enhanced financing of biodiversity research over the period 2007-2013, though this opportunity may be reduced if the proposed research budget is cut. This includes provision to strengthen the European Research Area for biodiversity under the Specific Programme ‘Cooperation’¹⁰⁰, and to establish a possible biodiversity research infrastructure under the Specific Programme ‘Capacities’¹⁰¹.

2.6.3.3. Awareness raising

Regarding awareness raising, the Gothenburg and Johannesburg 2010 targets, the recent review of EU biodiversity policy leading up to the Malahide conference in May 2004 under the Irish Presidency, and the issue of future financing of the Natura 2000 network, have all served to raise the profile of biodiversity issues among decision-makers. There remains a need to build on this, and in particular to build greater awareness among the wider public. The Commission and several Member States are supporting the Countdown 2010 initiative (coordinated by IUCN-The World Conservation Union) which is working to this end.

2.7. How would the problem evolve, all things being equal?

2.7.1. Changes in pressures and drivers

With business as usual, the Millennium Ecosystem Assessment indicates that most direct pressures – habitat change, climate change, over-exploitation, pollution and invasive alien species - are set to intensify worldwide over the next few decades (*Figure 17*).

For example, the Millennium Ecosystem projected habitat changes in forests and croplands under four scenarios, the nearest of which to ‘business-as-usual’ is the ‘Order from Strength’

⁹⁶ See Malahide/MP/Indicators – ‘EU headline Biodiversity Indicators’

⁹⁷ Decision no 1513/2002/EC

⁹⁸ See Malahide/Audit/1, Annex 1 - ‘Review of Research, Identification, Monitoring and Exchange of Information in the European Biodiversity Strategy’ – a report from the European Platform for Biodiversity Research Strategy’

⁹⁹ COM(2005)119final. Proposal for a Decision of the European Parliament and of the Council concerning the seventh framework programme of the European Community for research, technological development and demonstration activities (2007 to 2013).

¹⁰⁰ COM(2005)440 final

¹⁰¹ COM(2005)443 final

scenario¹⁰². Under this scenario, it projected a loss of some 5 m sq km of forest in developing countries by 2050 (set against a gain of 1-2 m sq km in industrial regions – though these are likely to be far less biologically diverse than the forests lost in developing countries) and an increase in over 10 m sq km in pasture and cropland in developing countries (*Figure 18*). And as an example of intensifying pollution pressures, humans have doubled the amount of reactive nitrogen on the continents, and some projections suggest this may further increase by roughly two-thirds by 2050 (*Figure 19*).

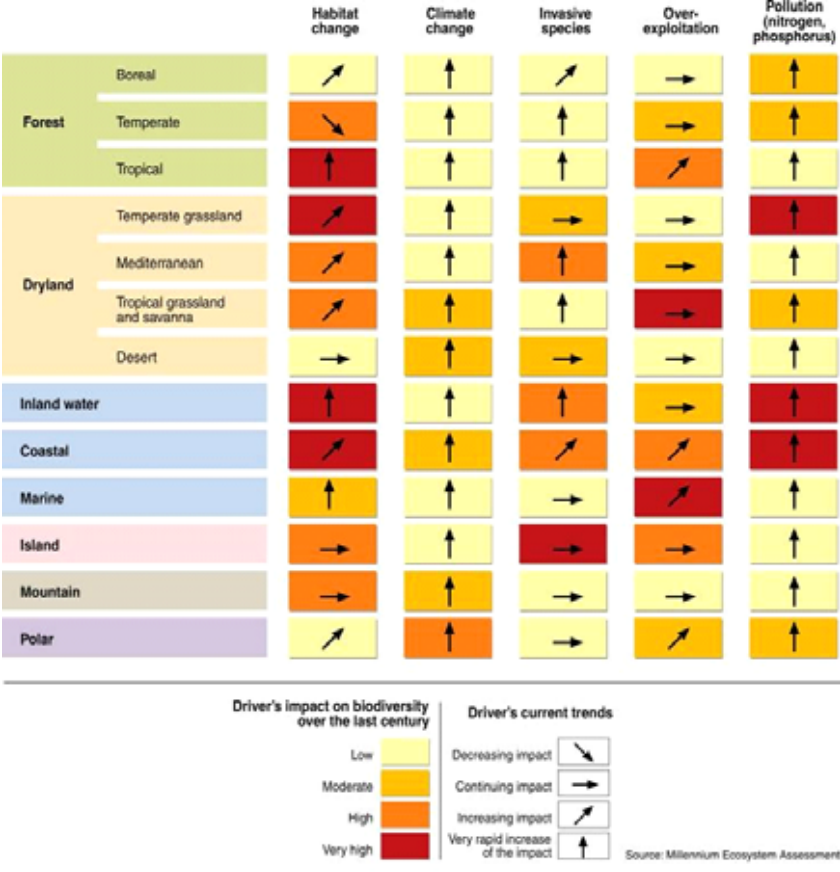
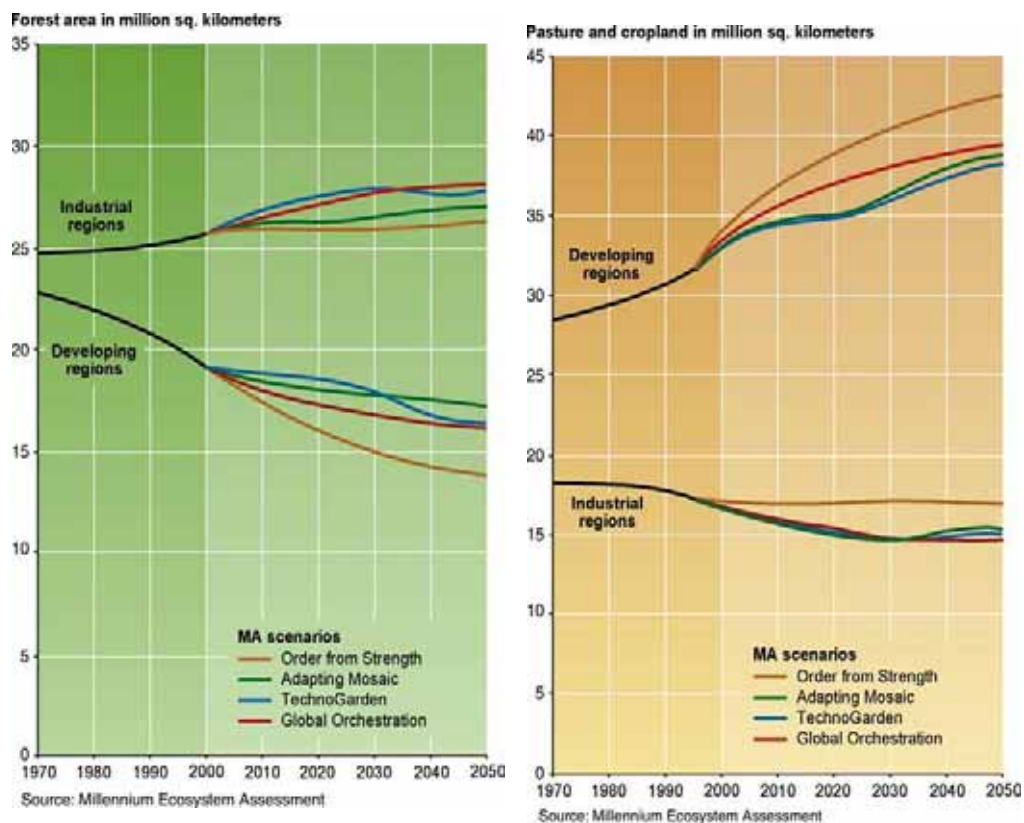


Figure 17: Changing intensity of direct drivers of biodiversity loss

102 This scenario is characterised by a regionalized and fragmented world, concerned with security and protection, emphasizing primarily regional markets, paying little attention to public goods, and taking a reactive approach to ecosystem problems.

Figure 18: Projected changes in forest area, pasture and cropland area



These increasing pressures will be driven by continuing world population growth (from around 6 billion now, to 8-10 billion by 2050) and growing per capita consumption (a two- to four-fold increase by 2050). Given that mankind already consumes around half of all global primary productivity¹⁰³, these figures indicate the sheer unsustainability of the human enterprise.

In the EU, we can expect substantial increases in demand for housing, transport infrastructure and developing world resources to underpin our economic growth and patterns of consumption¹⁰⁴. In the past two decades, the built-up area of Europe has expanded by 20%¹⁰⁵. Rapid continuing expansion of housing is expected in particular in Mediterranean coastal areas with, for example, a million more holiday homes planned on the Costa Blanca of Spain alone in the next decade.¹⁰⁶ Similarly, massive expansion of motorways, highways and high-speed railways is projected – including more than 12000 km of new motorways in the new Member States¹⁰⁷.

¹⁰³ Pimm, S.L. (2001) *The World According to Pimm – A Scientist Audits the Earth*. Mc-Graw Hill, New York.

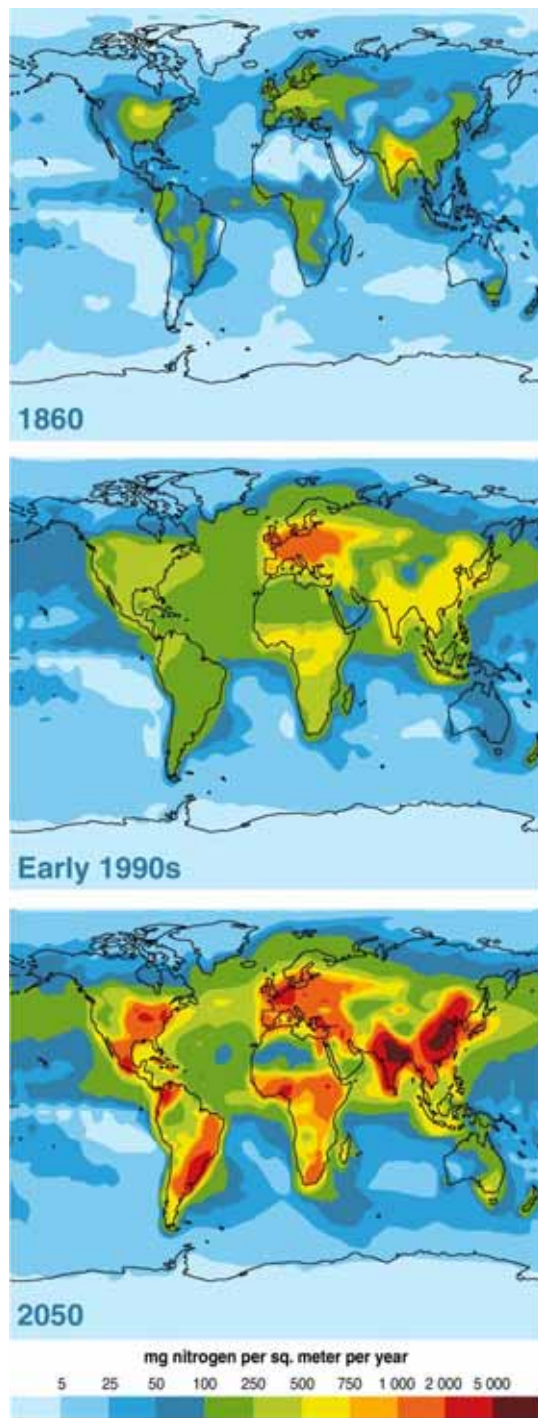
¹⁰⁴ EEA (2005) *European Environment Outlook*.

¹⁰⁵ EEA (2005) *State of the Environment Report*.

¹⁰⁶ Costa del Concrete. The downside of too much construction. *The Economist* September 17th 2005. p.35

¹⁰⁷ EEA (2005) *State of the Environment Report*.

Figure 19: Projected change in nutrient loading of ecosystems to 2050

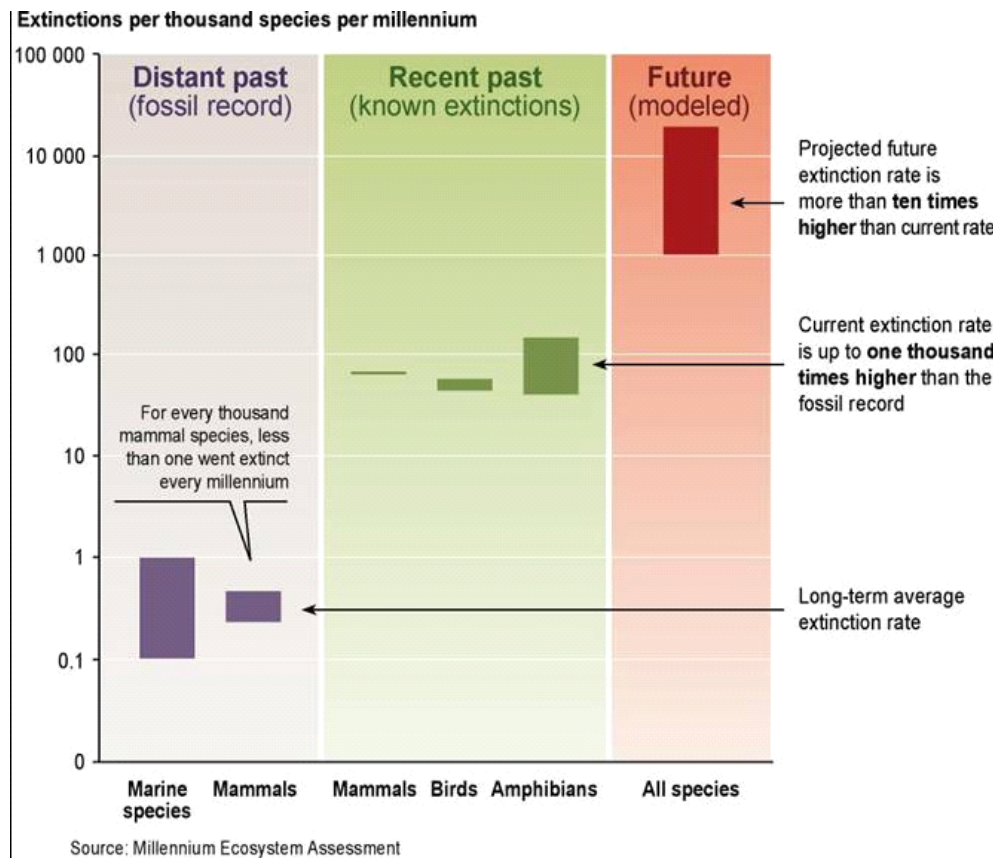


2.7.2. *Ecosystems and species*

Worldwide, all things being equal, many of the world's major biomes will continue to be converted. The Millennium Ecosystem Assessment has projected considerable further loss of natural biomes by 2050 – in particular in the tropics and in mountainous areas (see Figure 3). The growth in pressures and drivers on ecosystems, and in particular the continued large-scale conversion of ecosystems, is expected to result in a big leap in species extinctions in the next 50 years, with the projected future extinction rate being up to 10,000 times the background

rate¹⁰⁸. Indeed, many scientists believe we are in the midst of a sixth mass extinction, the first since the disappearance of the non-avian dinosaurs 65 million years ago, and the first caused by man (see *Figure 20*)¹⁰⁹.

Figure 20: Past and projected species extinctions



EU measures already in place, as described in section 2.6, offer promise to address many of these pressures and drivers and to reduce ecosystems change and species loss within the EU, though ‘business-as-usual’ would mean that this happens too slowly to meet the 2010 target.

Externally, however, the EU will continue to have little impact on global trends under the business-as-usual scenario, and there is little hope of meeting the target of significantly reducing the rate of biodiversity loss by 2010.

2.7.3. Ecosystem services

The continued loss, degradation and fragmentation of ecosystems, and the continued loss of species, will result in continuing decline of ecosystem services. This decline will undermine attainment of the Millennium Development Goals. For example, the Millennium Ecosystem

¹⁰⁸ Mace, G. (2005) *The current status of global biodiversity*. International Conference on Biodiversity, Science and Governance, Paris, 24-28 January 2005.

¹⁰⁹ Thomas, J. et al. (2004). Comparative losses of British butterflies, birds and plants, and the global extinction crisis. *Science* **303**, 1879-1881,

Assessment indicates that, under its ‘Order from Strength’ scenario (the closest to business as usual), a significant decline in human well-being, in particular in developing countries.

EU measures already in place, as described in section 2.6, offer promise to prevent and even reverse the decline in ecosystem services in the EU. Indeed, in this respect, the EU is already moving towards the more enlightened scenarios painted by the Millennium Ecosystem Assessment. These scenarios were characterised as:

- *Adapting Mosaic*: Regional watershed-scale ecosystems are the focus of political and economic activity. Local institutions are strengthened and local ecosystem management strategies are common; societies develop a strongly proactive approach to the management of ecosystems;
- *TechnoGarden*: Globally connected world relying strongly on environmentally sound technology, using highly managed, often engineered, ecosystems to deliver ecosystem services, and taking a proactive approach to the management of ecosystems in an effort to avoid problems; and
- *Global orchestration*: Globally connected society that focuses on global trade and economic liberalization and takes a reactive approach to ecosystem problems but that also takes strong steps to reduce poverty and inequality and to invest in public goods such as infrastructure and education.

Elements of all three of these scenarios may be identified in the current and emerging EU policy framework.

However, as with biodiversity loss, the EU will continue to have little impact on global decline in ecosystem services under the business-as-usual scenario. Nor will it be possible to isolate the EU from global loss of biodiversity and global decline in ecosystem services. As the Millennium Ecosystem Assessment has pointed out: the physical, economic, or social impacts of ecosystem service degradation may cross boundaries; many sectors of industrial countries still depend directly on ecosystem services; wealth cannot buffer people from changes in all ecosystem services (e.g., cultural services, air quality); and changes in ecosystems that contribute to climate change affect all people.

There is clear consensus in the Council that business-as-usual will not be enough. Less than five years remain to meet the 2010 commitments. Successive European Councils in 2003¹¹⁰ and 2004¹¹¹, while recognising that some progress is being made, have acknowledged the continuing loss of biodiversity and urged accelerated action to meet the 2010 commitments.

2.8. Does the EU have the right to act?

As stated in section 1.2, the legal basis for the conservation and sustainable use of biodiversity at the EU level is provided by the Treaty Article 174 which states that community policy on the environment shall contribute to ‘preserving, protecting and improving the quality of the environment’, based *inter alia* on the precautionary principle.

¹¹⁰ Presidency Conclusions, Brussels European Council, 20 and 21 March 2003

¹¹¹ Presidency Conclusions, Brussels European Council, 17 and 18 June 2004

The Community has a responsibility to act as a party in its own right to the CBD. Member States equally have the same responsibility as parties to the Convention.

However, much of the responsibility for implementation lies at Member State level and with regional and local-level practitioners, in particular those (such as planners, farmers, foresters, fishermen, water managers) directly engaged in decisions regarding the management of natural resources. The role of the commission should be to provide a supportive policy framework, provide guidance, facilitate, monitor and enforce where necessary.

3. OBJECTIVES

3.1. What are the aims of the Communication?

The longer-term aim is the conservation and sustainable use of biodiversity – and thereby the maintenance of ecosystem services for human well-being. The short- to medium-term aims of the Communication are:

- to reinforce EU action to halt the loss of biodiversity in the EU by 2010;
- to accelerate progress towards the recovery of habitats and natural systems in the EU over the period to 2013; and
- to optimise the EU contribution towards significantly reducing the rate of biodiversity loss worldwide by 2010.

Section 5 of this Impact Assessment proposes four key policy areas for action to meet these aims, and specifies 10 priority objectives in relation to these policy areas and 4 key supporting measures.

Halting the loss of biodiversity by 2010 is an important milestone. However, the requirement to secure the recovery of natural habitats and systems requires us to look beyond 2010 towards a longer-term vision as a framework for policy. This vision should recognise our interdependence with nature and provide a framework for a new balance between development and the conservation of the natural world. The Communication therefore also serves the purpose of opening a debate on this longer-term vision.

3.2. Has account been taken of previously established objectives?

As outlined in section 1, the development of the Communication involved an in-depth review of implementation, effectiveness and appropriateness of existing biodiversity policy. Section 2.6 above summarises the findings of this review, and these findings have been taken closely into account in identifying priority actions to 2010 and beyond.

3.3. To what extent are the objectives consistent with other EU policies?

The EU Sustainable Development Strategy sets the headline objective to ‘Protect and restore habitats and natural systems and halt the loss of biodiversity by 2010.’ The Commission’s recent proposal for a Declaration on Guiding Principles for Sustainable Development¹¹²,

¹¹² COM(2005)218final

approved by Council¹¹³, contains as a key objective ‘Safeguard the earth’s capacity to support life in all its diversity, respect the limits of the planet’s natural resources and ensure a high level of protection and improvement of the environment.’ The review of the Sustainable Development Strategy states that ‘The EU and Member States should ensure sufficient funding and management of the Natura 2000 network of protected areas, and better integrate biodiversity concerns into internal and external policies to halt the loss of biodiversity.’¹¹⁴

The services supplied by healthy and fully-functioning ecosystems support our primary industries (agriculture, forestry, fisheries, water), secondary industries (textiles, pharmaceuticals, etc.) and tertiary industries (tourism, well-being, etc.). Indeed, biodiversity is vital to the EU economy. This has already been recognised by the European Council which reaffirmed, in its conclusions on the ‘vital strands’ of the Lisbon Strategy:

‘the importance of the objective of halting the loss of biodiversity between now and 2010, in particular by incorporating this requirement in other policies, given the importance of biodiversity for certain economic sectors.’¹¹⁵

The objectives are also consistent with a range of sectoral policy including the Common Agricultural Policy, Common Fisheries Policy, Regional Policy, (external) Development Policy and Research Policy. The Action Plan specifies the existing policy instruments which relate to each target and action.

4. POLICY OPTIONS

4.1. What are the available policy approaches?

Three policy approaches have been considered:

1. ***Business as usual*** – that is, ongoing implementation of existing instruments, with no attempt to prioritise action to meet the political commitments.
2. ***EU Action Plan***: development of a focused EU Action Plan to 2010 and Beyond, addressed to the Community and to Member States, created by deconstructing the 2010 commitments into a clear set of prioritised targets and actions, and apportioning responsibility for delivery between Commission, Member States and other stakeholders.
3. ***EU Action Plan plus regulation***: as for 2, but in addition the rapid introduction of new legislation.

It is evident from the analysis in sections 2 and 3 above, which reveals the inadequacy of action to date to stem biodiversity loss, and the expected intensification of pressures and drivers of loss, that business as usual would not deliver on the political commitments to halt the loss of biodiversity in the EU and to significantly reduce the rate of loss worldwide by 2010. Business as usual would also be inconsistent with the Council calls for accelerated action. Moreover, a business-as-usual approach had no support during expert consultation, and only 2% of respondents to the internet consultation supported it.

¹¹³ Presidency Conclusions, Brussels European Council 16 and 17 June 2005

¹¹⁴ COM(2005)658 final. Communication on the Review of the SDS – A Platform for Action.

¹¹⁵ European Council, 22-23 March 2005, Presidency Conclusions

The regulatory approach was discarded because the introduction of new legislation would take several years, and so could not have any significant impact on halting biodiversity loss by 2010, and because there is as yet insufficient evidence to suggest that the existing legal framework is inadequate. None of the respondents to the web consultation called for immediate new legislation.

The Commission prefers the second approach of a focused EU Action Plan to 2010 and Beyond. This approach was strongly supported throughout the expert consultation. Indeed, the stakeholder-produced 'Message from Malahide' was effectively a first draft of such an Action Plan. It succeeded in breaking down the 2010 commitments into a clear set of priority objectives and related targets, having broad stakeholder ownership, providing a sound basis for elaboration of the final Action Plan as it appears in the Communication. Subsequently, an overwhelming 94% of respondents to the web consultation supported this approach.

4.2. Elaboration of the preferred option

4.2.1. A new approach to biodiversity policy

The preferred approach of an 'EU Action Plan to 2010 and beyond' represents an important new approach for EU biodiversity policy, in four respects.

First, it is the first time that a single plan of action has been addressed to both Community and Member States. The existing EC Biodiversity Strategy and Action Plans are a *Community* strategy and action plans, while each Member State has pursued its own national strategy and action plans. These community and Member State level strategies and action plans all take as their starting point the CBD, and so may be expected to address similar concerns, but there has been no concerted effort to ensure coherence and complementarity. The EU Action Plan, for the first time, provides a single plan of action for both community and Member States, and apportions responsibility for these actions at Community and Member State levels.

Second, the Action Plan is a single inter-sectoral and horizontal action plan, in contrast to the existing separate sectoral action plans. The Action Plan provides, in one brief document, an overview of priority actions, in all relevant sectors and horizontal policy areas.

Third, the Action Plan is oriented towards biodiversity outcomes, and has attached to it a clear set of indicators. These outcomes are, as far as possible, SMART (Specific, Measurable, Achievable, Realistic, Timed). Indicators and provisions for data flow to implement them.

Fourth, the Action Plan and its evaluation and review is specifically linked to the EU policy and budget cycle, with the express intention to optimise the impact of the findings of future evaluation and review of the Action Plan upon wider EU policy and budgetary planning (in particular the Financial Perspectives).

4.2.2. Relationship of the Action Plan to the EC Biodiversity Strategy and Biodiversity Action Plans

While the EC Biodiversity Strategy remains largely appropriate as a comprehensive response to the CBD, many of the actions in the Biodiversity Action Plans are now either partly or fully completed, or need amendment due to changing circumstances. Further, both EC Biodiversity Strategy and Biodiversity Action Plans precede the 2010 commitments, and hence give no sense of priorities to meet these commitments. Given the short time now remaining to 2010, and the continuing loss of biodiversity, there is a need for a cross-sectoral consensus on key

policy areas and priority objectives, and a clear Action Plan setting out key actions to enable EU actors to pull together towards meeting these objectives.

This EU Action Plan should be viewed as an additional instrument, which does not invalidate the EC Biodiversity Strategy and Biodiversity Action Plans, which have been adopted by Council and Parliament, nor the Member States' Biodiversity Strategies and Action Plans. Rather, these strategies and action plans may in due course and as necessary be updated taking into account the 2010 Action Plan.

4.2.3. Identification of key policy areas, priority objectives and supporting measures

Given the political commitments, and on the basis of the analysis presented in sections 2-4 above, the Commission has identified four key policy areas for action to 2010 and beyond, and ten priority objectives in relation to these (*Box 1*).

In addition, the Commission has identified five key supporting measures to support delivery of the objectives (*Box 2*).

The objectives and supporting measures take into account in particular the findings of the 2003-2004 biodiversity policy review and the Message from Malahide. They have been overwhelmingly endorsed by the web consultation, with around 95% of respondents agreeing or strongly agreeing with each of them.

The sections below explain briefly the scope of the four key policy areas, ten priority objectives and four supporting measures.

4.2.4. Scope of Policy Area 1 - Biodiversity in the EU

Action for the EU's most important habitats and species is key to halting biodiversity loss by 2010 and fostering recovery. Securing these habitats requires greater commitment from Member States to propose, designate, protect and effectively manage Natura 2000 sites. It also requires that they strengthen coherence, connectivity and resilience of the network, including through support to national, regional and local protected areas. Targeted action for threatened species under the directives is a vital complement to the site-based approach. Conservation measures comparable to those provided for by the nature directives are required in those EU outermost regions not covered by these directives¹¹⁶.

Natura 2000 and the conservation of threatened species will not be viable in the long-term without a wider terrestrial, freshwater and marine environment favourable to biodiversity. The emphasis here should be on robust and timely implementation of the most relevant aspects of environmental policy (eg. to reduce pollutants, achieve 'good ecological status' of freshwaters, 'good environmental condition' of regional seas, sustain soil conditions favourable to biodiversity) and of available measures under the Common Agricultural and Fisheries Policies, sustainable forest management and Cohesion Policy. The 2008 review of the CAP provides an important opportunity to further strengthen measures for farmland and forest biodiversity.

¹¹⁶ French Guiana, Reunion, Guadeloupe, Martinique

Box 1: Key policy areas and related priority objectives

POLICY AREA 1: Biodiversity in the EU

Objectives

- 1. To safeguard the EU's most important habitats and species.*
- 2. To conserve and restore biodiversity in the wider EU countryside.*
- 3. To conserve and restore biodiversity in the wider EU marine environment.*
- 4. To reinforce the compatibility of regional and territorial development with biodiversity in the EU.*
- 5. To substantially reduce the impact on EU biodiversity of invasive alien species and alien genotypes.*

POLICY AREA 2: The EU and global biodiversity

Objectives

- 6. To substantially strengthen effectiveness of international governance for biodiversity.*
- 7. To substantially strengthen support for biodiversity in EU external assistance.*
- 8. To substantially reduce the impact of international trade on EU and global biodiversity.*

POLICY AREA 3: Biodiversity and climate change

Objective

- 9. To support biodiversity adaptation to climate change.*

POLICY AREA 4: The knowledge base

Objective

- 10. To substantially strengthen the knowledge base for conservation and sustainable use of biodiversity, in the EU and globally.*

Beyond these community-level instruments, better planning at Member State level holds the key to preventing, minimising and offsetting negative impacts of regional and territorial development on biodiversity, thereby reconciling development with conservation.

Various measures for the prevention and control of invasive alien species are in place but some policy gaps may remain; a comprehensive strategy should be developed for this purpose.

Adequate financing – both for Natura 2000 and for biodiversity outside Natura 2000 - is essential; community co-financing (under the CAP, structural funds and Life+) is limited and Member States will need to make up the shortfall.

4.2.5. Scope of Policy Area – The EU and global biodiversity

New impetus in EU and international action is needed if the commitment to significantly reduce the rate of biodiversity loss globally by 2010 is to be met. The conservation and sustainable use of biodiversity is essential to poverty eradication in developing countries. Most of the poor are rural poor, who depend directly on natural systems for their livelihood. Moreover, the EU depends for its growth and well-being upon biodiversity in these third countries. European trade, consumption and production patterns have a strong impact on the biodiversity in third countries. Therefore, a more coherent EU approach to global biodiversity is required, which ensures synergy between actions for governance (notably, accelerated implementation of the CBD and other biodiversity-related conventions), trade (including bilateral agreements) and economic and development cooperation. Effective conservation action in the biodiversity-rich overseas countries and territories of Member States is vital to the EU's credibility in this international arena.

4.2.6. Scope of Policy Area 3 – Biodiversity and climate change

There is broad scientific and political consensus that we have entered a period of unavoidable and unprecedented climate change. Impacts on biodiversity in the EU are already measurable. Climate change has the potential – over a period of a few decades – to undermine our efforts for the conservation and sustainable use of biodiversity.

Substantial cuts in greenhouse gas emissions are clearly required to mitigate the longer-term threat to biodiversity. First, we must honour our Kyoto commitments. But in order to limit the global annual mean temperature increase to no more than 2°C above pre-industrial levels, much more ambitious emissions targets are required as part of a global effort post-2012.

However, regardless of what we achieve with emission reductions, we must help biodiversity adapt to the unavoidable climate change of the next few decades. The 'climate space' of ecosystems and species will move, triggering changes in composition, structure and function of ecosystems. Longer-term biodiversity policy will need to accommodate these changing conditions. Meeting the objectives highlighted under policy areas 1-3 will be critical in helping to reduce the vulnerability of ecosystems and species to climate change. But supporting biodiversity adaptation may also require more specific measures. In order to identify these, a first step will be to assess those habitats and species most at risk from climate change. Attention must also be paid to prevent, minimise and offset any damages to biodiversity arising from measures for climate change adaptation and mitigation.

4.2.7. *Scope of Policy Area 4 – The knowledge base*

There is a critical need to strengthen the knowledge base if we are to understand better our impact on biodiversity and ecosystem services, and refine our policy response in future. Enhanced knowledge will serve to strengthen the effectiveness of action and to further refine policy in key policy areas 1, 2 and 3. This requires strengthening the European Research Area, research infrastructures, the science-policy interface and data interoperability for biodiversity. Opportunities provided for this under the 7th Framework Programme for Research must be realised, Member States should allocate priority to biodiversity in national research programmes, and synergies between Community and nationally financed research programmes should be enhanced. The Commission will establish an EU mechanism for independent, authoritative research-based advice to inform implementation and further policy development. Internationally, the EU should identify ways and means to strengthen independent scientific advice to global policy making, inter alia by actively contributing to the 2007 evaluation of the Millennium Assessment, and the ongoing consultations on the need for improved International Mechanisms on Scientific Expertise on Biodiversity.

Box 2: Supporting measures

- 1. Ensuring adequate financing***
- 2. Strengthening EU decision-making***
- 3. Building partnerships***
- 4. Building public education, awareness and engagement***

4.2.8. *Scope of the four Supporting Measures*

Ensuring adequate financing

This involves ensuring, through Community co-financing and Member States' own resources, adequate financing of the Action Plan, notably in relation to: Natura 2000; high-nature-value farmland and forests; marine biodiversity; global biodiversity; biodiversity research, monitoring and inventory. In any case, allocation of Community financial resources related to the priority objectives and supporting measures and any actions as stated therein should take into account the budgetary constraints and be within the limits of the new Financial Perspectives.

Strengthening EU decision-making

This involves: improving coordination and complementarity between Community and Member States; ensuring new policies and budgets take due account of biodiversity needs (notably by recognising natural capital and ecosystem services); improving coherence at national level between various plans and programmes affecting biodiversity; and ensuring decision-making at regional and local level is consistent with high-level commitments for biodiversity.

Building partnerships

This involves building progressive partnerships between government, academia, conservation practitioners, landowners and users, the private sector, the finance sector, the educational sector and the media to frame solutions. It involves building on existing provisions (eg. under the Common Agricultural Policy and Common Fisheries Policy) and the development of new partnerships.

Building public education, awareness and engagement

This involves development and implementation of a communications strategy in support of the Action Plan, working closely with the Countdown 2010 initiative and implementation of the Århus Convention. Many research projects may also contribute to raising awareness.

4.3. What policy instruments and options are available?

Delivery of the objectives and supporting measures will require specific actions which are set out with targets and responsibilities in an 'Action Plan to 2010 - and Beyond' presented in *Annex 1* of the Communication.

As indicated in the review of progress to date (section 2.6 above), a wide range of policy instruments which may contribute to halting the loss of biodiversity and securing its longer-term recovery are already in place. These include a wide range of legislation (the nature directives, other environmental legislation, Common Agricultural Policy, Common Fisheries Policy, Cohesion Policy, EU Development Policy, Seventh Framework Programme for Research, etc.) as well as softer instruments such as the recent environmental Thematic Strategies. The Action Plan places emphasis on the implementation of this existing policy.

Notwithstanding this emphasis on implementation, some of the actions in the Plan address policy gaps. This may eventually lead to future legislative initiatives, but these would be the subject of separate impact assessments in due course. These policy gaps are also identified in section 5.

5. ANALYSIS OF IMPACTS

This section outlines the extent to which proposed actions are provided for by existing policy. Further details of actions and the extent to which each action is provided for by existing policy are provided in *Annex 1*. Where actions proposed are new or accelerated beyond already agreed timetables, this section outlines the likely economic, social and environmental impacts of these actions.

5.1. Impacts of proposed actions to address priority objectives

5.1.1. Objective 1: To safeguard the EU's most important habitats and species

Actions proposed and extent to which already provided for (baseline)

Key actions relate to: establishing, safeguarding, designating and effectively managing the Natura 2000 network (on land and at sea); enhancing the sufficiency, coherence, connectivity and resilience of the network; returning threatened species to favourable conservation status; achieving these same targets in Acceding Countries; and applying a similar nature-directives-type approach to the Member States' outermost regions.

These actions are largely provided for by Birds and Habitats Directives, the Strategic Environmental Assessment and Environmental Impact Assessment Directives, and the Environmental Liability Directive.

What more should be done beyond what is already being done and why?

Most of the measures specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation.

Enhancing coherence and connectivity and resilience of the Natura 2000 network may require some action beyond what is provided for in the nature directives. This involves the use of tools such as flyways, stepping stone, corridors, as well as enhancing the ability of the wider environmental matrix to support biodiversity. Much use can however be made of existing provisions, including nationally and locally designated protected areas, and more environmentally-friendly land-use practices (eg. under the Common Agricultural Policy).

Extending a nature directives-type approach to the French outermost regions is new. While the nature directives apply to the Spanish and Portuguese outermost regions (Canaries, Madeira, Azores), and are voluntarily applies by Spain to Ceuta and Melilla, they do not apply to the French outermost regions¹¹⁷, so specific support is needed for priority sites and species here. The French outermost regions are particularly rich in biodiversity and in this respect provide a show-case for the EU's commitment to the 2010 target. Support for priority sites and species in the French outermost regions would involve measures taken voluntarily and at national initiative.

Benefits and costs of any new or accelerated actions

Improved coherence, connectivity and resilience of the Natura 2000 network will have important benefits in terms of the network's ability to sustain the favourable conservation status of habitats and species, and the flow of ecosystem services, particularly in the face of climate change.

The costs of applying a nature-directives type approach to the French outermost regions would depend largely on the area of important habitats needing protection and management, and might be proportional to the costs estimated for Natura 2000 in the European territories of the Member States. The conservation and sustainable use of biodiversity in the French outermost regions will not only benefit the regions' inhabitants (through the sustained flow of ecosystem services) but also bolster EU credibility in its aspirations to play a leading role in international environmental governance.

Stakeholders affected

Stakeholders affected by implementation of the nature directives include landowners and users of terrestrial, freshwater and marine areas proposed for and designated within the Natura 2000 network, public and private sector enterprises affected by the proposal and designation of the network, and groups with interests in species protected under the directives (eg. hunters, game fishers, birdwatchers).

¹¹⁷ French Guiana, Reunion, Guadeloupe, Martinique

The stakeholders affected by any new measures to improve coherence, connectivity and resilience of the Natura 2000 network will include landowners and users and marine resource users.

The stakeholders affected by the new measure to apply nature-directives type approach to the French outermost regions are the French government, the governments of the regions, and local landowners and users.

5.1.2. Objective 2: To conserve and restore biodiversity in the wider EU countryside

Actions proposed and extent to which already provided for

Key actions relate to optimising the use of opportunities under agricultural, rural development and forest policy to benefit farmland, woodland and forest biodiversity, reducing risks to soil biodiversity, making progress towards the 'good ecological status' of freshwaters, reducing principal pollutant pressures on terrestrial and freshwater biodiversity, and ensuring that flood risk management plans benefit biodiversity.

These actions are largely provided for by the reformed Common Agricultural Policy, Rural Development Policy, forest policy (largely at Member State level), the forthcoming Thematic Strategy for Soils, the Water Framework Directive, the wide range of pollutant prevention policy and law, and the recent flood risk management proposal.

What more should be done beyond what is already being done and why?

Most of the actions specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation.

New actions may be specified in relation to soils and if so the impact of these will be specified in the impact assessment of the Thematic Strategy on Soils. New actions may also be specified in relation to forest policy in the context of the forthcoming Forest Action Plan (expected 2006) and, if so, will be addressed in the impact assessment of that Plan. New actions may also be specified in relation to agricultural and rural development policy in the context of the 2008 review. Again, if this is the case, the impact of such actions would be addressed at the time of any such proposals.

Benefits and costs of any new or accelerated actions

No new or accelerated actions requiring impact assessment at this stage.

Stakeholders affected

Farm, woodland and forest owners and users, freshwater owners and users, stakeholders engaged in rural development, those emitting or affected by principal pollutants, interest groups related to flood control measures (business, insurance industry, built property owners, landowners and users, etc.).

5.1.3. Objective 3: To conserve and restore biodiversity in the wider EU marine environment

Actions proposed and extent to which already provided for

Key actions relate to making substantial progress towards ‘good environmental status’ of the marine environment, reducing principal pollutant pressures on marine biodiversity, and optimising the use of available instruments under the Common Fisheries Policy to benefit marine biodiversity, notably to support recovery of harvested stocks and reduce impacts on non-target species and marine habitats.

These actions are largely provided for by the recent Thematic Strategy for the Marine Environment and the proposed Marine Strategy Directive, by a wide range of existing pollution prevention policy, by the reformed Common Fisheries Policy and by certain provisions of the nature directives.

What more should be done beyond what is already being done and why?

Most of the actions specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation. New actions may be proposed in due course within the context of the proposed Marine Strategy Directive and of the reformed Common Fisheries Policy. These would be the subject of impact assessment at the time of proposal. The attainment of good environmental status of regional seas under the proposed Marine Strategy Directive would also be an issue to be analysed at the appropriate administrative level according to the principle of subsidiarity.

Benefits and costs of any new or accelerated actions

No new or accelerated actions requiring impact assessment at this stage.

Stakeholders affected

Marine and coastal owners and users including fisheries vessel owners, fishermen, aquaculture and related industries, marine mineral extraction companies, shipping companies, that part of the financial sector having marine interests, coastal residents, tourists and recreational users of the marine environment.

5.1.4. Objective 4: To reinforce compatibility of regional and territorial development with biodiversity in the EU

Actions proposed and extent to which already provided for

Key actions relate to: ensuring that cohesion and structural funds contribute to sustainable development and make a positive contribution to biodiversity; minimising negative impacts on biodiversity arising from any projects funded by cohesion and structural funds or, where negative impacts unavoidable, compensating for these; ensuring that strategic environmental assessment (SEA) of plans and programmes and environmental impact assessment (EIA) of projects (including SEA and EIA in relation to territorial and sectoral development plans and Trans-European Networks, where applicable) take full account of biodiversity concerns; strengthening ecological coherence and functioning through spatial planning; improving the ecological sustainability of tourism; and taking similar actions as appropriate in Member States’ outermost regions.

These actions are largely provided for by the new Cohesion Fund and Structural Funds regulations, by the SEA and EIA Directives, and by the nature directives’ requirement for ecological coherence. The extent to which opportunities are taken up under the cohesion and

structural funds to implement projects which directly or indirectly benefit biodiversity will depend on the Member States.

Spatial planning lies largely within the competence of Member States, as do many issues relating to the sustainability of tourism.

What more should be done beyond what is already being done and why?

Most of the actions specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation.

The better application of spatial and programmatic planning, and improving the ecological sustainability of tourism, may require additional capacities and resources at Member State, regional and local levels. This is necessary in that many of the increasing pressures on biodiversity – such as the spread of housing and of transport infrastructure – are related to poor spatial planning or ecologically unsustainable tourism developments.

Benefits and costs of any new or accelerated actions

The benefits of better treatment of biodiversity concerns in spatial and programmatic planning, and in tourism development, will be considerable in terms of protecting natural capital and ecological services. Additional short-term costs may be incurred in terms of additional capacities and resources for planning, and certain developments foregone. However, medium to long-term benefits are expected to significantly outweigh these short-term costs. Overall, an investment in better planning should pay off as where these assessments have been done badly, they have often led to poor choices being made that are not profitable for society in the long run as they lead to loss of ecosystem services.

Stakeholders affected

Planners in national, regional and local government, investors, promoters and construction companies engaged in development (notably of housing, industrial facilities, communications and energy infrastructure, tourism infrastructure), land and water owners and users in areas affected by these measures, visitors to these areas.

5.1.5. Objective 5: To substantially reduce the impact on EU biodiversity of invasive alien species and alien genotypes

Actions proposed and extent to which already provided for

Key actions relate to: reviewing, at Community level, the policy framework for the prevention and control of invasive alien species and identifying and putting in place necessary measures to fill critical gaps; encouraging Member States to develop and implement national strategies for invasive alien species; reducing the spread of invasive alien species through ships' ballast; establishing an early warning system of invasive alien species; application of the Cartagena Protocol on Biosafety to ensure the protection of biodiversity from the handling, use and transfer of genetically modified organisms; and ensuring protection of biodiversity in relation to the deliberate release of genetically modified organisms (GMOs).

These actions are largely provided for by existing instruments. Action for the prevention and control of invasive alien species is called for in the 6th Environment Action Programme¹¹⁸ and is in line with the Convention on Biological Diversity's decision on invasive alien species, to which the Community and Member States are parties. Action on ships' ballast is provided for by an International Maritime Organisation convention¹¹⁹ which Member States are encouraged to ratify. The Community and Member States are party to the Cartagena Protocol. The protection of biodiversity in relation to deliberate release of GMOs is provided for by existing provisions for case-by-case authorisation of GMOs for deliberate release.

What more should be done beyond what is already being done and why?

Most of the actions specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation. Ratification of International Maritime Organisation convention relating to ships' ballast water is new and is justified in biodiversity terms given the evidence of the extent to which ship's ballast is a significant source of both invasive alien species and marine pollution.

Benefits and costs of any new or accelerated actions

Ratification of the International Maritime Organisation convention is expected to yield substantial benefits in terms of protecting biodiversity, natural capital and ecosystem services in the marine environment, and in terms of avoidance of invasive alien species control costs. These latter costs can, for certain invasive alien species, amount to billions of Euros – the classic example being the zebra mussel which clogs power station water cooling systems. Responsibility for a full assessment of impacts related to ratification lies with each Member State.

Stakeholders affected

All those impacted by, or at risk of impacts from invasive alien species, including owners and users of land, freshwater and marine resources. All those implicated in the possible transport of potential invasive alien species, including shipping, airline and other transport industries. All those implicated in the prevention and control of invasive alien species, including customs agencies. In relation to ships' ballast, shipping companies, marine users (power stations, fishing interests, coastal communities, recreational users, etc.) with interests in quality of marine ecological services.

5.1.6. Objective 6: To substantially strengthen effectiveness of international governance for biodiversity

Actions proposed and extent to which already provided for

Key actions relate to pressing for effective worldwide implementation of the CBD and its programmes of work and other related international and regional biodiversity-related agreements and promoting greater synergies between them; and enhancing integration of biodiversity into global processes with important impacts on biodiversity such as sustainable development and the Millennium Development Goals, trade, oceans and climate change.

¹¹⁸ Decision no.1600/2002/EC, OJ L 242, 10.9.2002, p.1

¹¹⁹ International Convention for the Control and Management of Ships' Ballast Water and Sediments

These actions are provided for by Community and Member States being party to the CBD and related agreements and global processes mentioned.

What more should be done beyond what is already being done and why?

The proposed actions are not new, nor are the timetables accelerated beyond those required under existing policy. However, effective implementation of these agreements and enhanced integration with related processes does imply a significant enhancement of existing resources and political commitment.

Benefits and costs of any new or accelerated actions

The benefits of more effective implementation of the CBD, greater synergies with related agreements and greater integration of related global processes should be felt in terms of reduced biodiversity loss, protection of natural capital and maintenance of ecosystem services. As mentioned in section 2, crude estimates put the annual value of these services at twice that of global Gross National Product. Estimates of the costs of preventing biodiversity loss have been put at many times less than the current cost of global farm support payments¹²⁰.

Stakeholders affected

All Parties to the CBD.

5.1.7. Objective 7: To substantially strengthen support for biodiversity in external assistance

Actions proposed and extent to which already provided for

Key actions relate to: ensuring adequate and where possible enhanced funding to programmes and projects benefiting biodiversity through earmarked funds (eg. Global Environment Facility, EC Thematic Programme for Environment and Natural Resources, Member States' earmarked funds) and through sectoral and geographical external assistance programmes and projects; and preventing negative impacts on biodiversity from external assistance programmes and projects.

These actions are provided for under the new EU Development Policy (European Consensus on Development Cooperation) as well as pre-Accession, Neighbourhood and Partnership policy. Member States have called for successful replenishment of the Global Environment Facility.

What more should be done beyond what is already being done and why?

The actions specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation.

Benefits and costs of any new or accelerated actions

No new or accelerated actions requiring impact assessment at this stage.

Stakeholders affected

¹²⁰ Figures quoted by Porritt, J. (2005). *Capitalism as if the world matters*. Earthscan.

All beneficiaries and affectees of external assistance in developing countries, countries with economies in transition, partner countries, neighbourhood countries and pre-Accession countries. All those engaged in delivering this external assistance.

5.1.8. Objective 8: To substantially reduce the impact of international trade on EU and global biodiversity

Actions proposed and extent to which already provided for

Key actions relate to: identifying trade-related impacts on biodiversity and adopting actions to reduce these; putting in place key actions to reduce the ecological impact of globalisation within the context of the World Trade Organisation Doha Declaration; full implementation of the CBD Bonn Guidelines on Access and Benefit Sharing (where not covered by other appropriate international access and benefit sharing regimes¹²¹); reducing the impact of wood and non-wood commodities which drive tropical deforestation, including through implementation of the Forest Law Enforcement Governance and Trade (FLEGT) programme; and strengthening implementation of the Convention on International Trade in Endangered Species (CITES).

These actions are largely provided for by trade-related sustainability impact assessment, the Doha Development Agenda, the CBD Bonn Guidelines, the FLEGT programme and CITES.

What more should be done beyond what is already being done and why?

Most of the actions specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation. New actions may be proposed in due course, notably within the context of the Doha Development Agenda and in relation to key commodities driving deforestation. These would be the subject of impact assessment in due course.

Benefits and costs of any new or accelerated actions

No new or accelerated actions requiring impact assessment at this stage.

Stakeholders affected

All those involved in or affected by the production, transport and consumption of goods or services addressed by these trade-related measures.

5.1.9. Objective 9: To support biodiversity adaptation to climate change

Actions proposed and extent to which already provided for

Key actions relate to: reducing greenhouse gas emissions in line with Kyoto Protocol and agreeing further ambitious measures in line with assessments of the Intergovernmental Panel on Climate Change; strengthening the resilience of biodiversity to climate change; and preventing and mitigating potential negative impacts, and enhancing positive impacts, of climate change adaptation and mitigation measures.

¹²¹ Eg. the International Treaty for Plant Genetic Resources for Food and Agriculture

Emissions reduction actions are provided for by the UN Framework Convention on Climate Change, the Kyoto Protocol, and European Council deliberations (March 2005). Ensuring resilience of EU biodiversity is required under the nature directives. Prevention of negative environmental impacts of climate change adaptation and mitigation measures is largely provided for – at various stages in the decision-making process - by policy impact assessment, Strategic Environmental Assessment and Environmental Impact Assessment provisions.

What more should be done beyond what is already being done and why?

Most of the actions specified are not new, nor are the timetables accelerated beyond those required under existing policy and legislation. However, strengthening the resilience of biodiversity to climate change may require additional measures. If so, these would be the subject of impact assessment in due course at the EU, national or local level as appropriate.

Benefits and costs of any new or accelerated actions

No new or accelerated actions requiring impact assessment at this stage.

Stakeholders affected

All entities emitting greenhouse gases and/or involved in measures to reduce emissions. All sectors, including energy, agriculture, forestry and water, engaged in climate change adaptation and mitigation measures. Biodiversity owners, managers and users.

5.1.10. Objective 10: To substantially strengthen the knowledge base for conservation and sustainable use of biodiversity, in the EU and globally

Actions proposed and extent to which already provided for

Key actions relate to: establishing an EU mechanism for independent authoritative research-based advice to inform implementation and further policy development; enhancing research on biodiversity state and trends, on pressures on biodiversity and on the effectiveness of policy responses; establishing an effective and inclusive European Research Area for biodiversity; strengthening the policy-research interface for biodiversity; and enabling interoperability of national biodiversity databases and inventories.

These actions are largely provided for by the Seventh Framework Programme for Research, but rely also on adequate support from Member States' research budgets.

What more should be done beyond what is already being done and why?

The proposed EU mechanism is a new action. This is intended to fill a gap in the science-policy interface and meet the critical need to translate research-based knowledge into policy. This gap relates to securing authoritative and independent advice, responsiveness to policy-makers needs, ability and resources to rapidly put together reports based on state-of-the-art research knowledge, and ability to convey findings effectively to top policy-makers. Current groups operating at the science policy interface – such as the European Platform for Biodiversity Research Strategy, and the various networks of excellence supported under the framework programme for research, provide important contributions to the science-policy interface, but cannot meet the full remit outlined above. The intention is not to put in place a mechanism which would replace the policy-making process, but which would support it.

The other actions specified under objective 10 are not new, nor are the timetables accelerated beyond those required under existing policy. However, implementation implies a significant increase in Member States' support to biodiversity research.

Benefits and costs of any new or accelerated actions

Enhanced understanding is crucial and will help us to meet the growing challenges. The potential benefit in terms of our ability to better protect biodiversity, natural capital and ecosystem services cannot be overestimated. The research costs are by comparison very modest.

Regarding the proposed EU mechanism, two options have been considered in discussion with the European Environment Agency:

- Option 1 would involve the establishment of a new organisation, formed through a regulation or other mechanism, which is independent of the main EU institutions, overseen and run by a new, separate governance mechanism, and funded from the EU budget. The new body would mimic many of the features of the EU agencies and in this respect would need to establish premises, staffing as well as meeting and project activities. The costs of such a body could range from Euro 3-5 million per year, depending on levels of ambition.
- Option 2 would involve establishing one or more groups of experts, depending on needs, with the European Environment Agency (in its role as the European Data Centre for Biodiversity) providing secretariat support (2-3 people) as well as links to existing monitoring and assessment initiatives (related to nature directives, 2010 target, CBD implementation, etc.) thus securing substantial synergies; these groups of independent, authoritative experts would respond to Commission requests for advice on matters relating to biodiversity and ecosystem services, ensuring coordination with ongoing research initiatives. Costs would be in the range of Euro 700,000 to 1 million per year for Secretariat, meetings and project budget.

The preferred option is option 2, which is more cost-effective and should ensure stronger synergies with existing initiatives. The potential benefits of such a mechanism – in terms of improved policies which better sustain biodiversity and ecosystem services - far outweigh the modest costs foreseen. Establishment of this EU mechanism will be subject to funding being found from existing financial resources.

Stakeholders affected

Research community, users of research findings (business, policy-makers, natural resource owners and users), all EU citizens (as beneficiaries of natural capital and ecosystem services), the global community (as beneficiaries of EU-generated knowledge in support of conservation and sustainable use of biodiversity).

5.2. Impacts of proposed actions to address the ‘supporting measures’

5.2.1. Supporting measure 1: Ensuring adequate financing

Actions proposed and extent to which already provided for

Key actions relate to: ensuring adequate community and Member States financing for Natura 2000; ensuring, at Member State initiative, adequate allocation within national Rural Development Programmes for biodiversity-related measures; ensuring adequate Community and Member States funds for fisheries measures beneficial to marine biodiversity; allocating adequate cohesion and structural funds to biodiversity-related projects; substantially increasing the flow of external assistance funds (under development, neighbourhood, partnership and pre-Accession policies) to biodiversity-related measures; ensuring adequate funds for biodiversity research, inventory and assessment; and ensuring adequate Community and Member States funding of key supporting measures including awareness raising and building partnerships.

Community funding is provided for by the decisions on the Financial Perspectives for 2007-2013. The budget reduction foreseen by the 2005 December European Council would certainly influence funding options for biodiversity in general and for Natura 2000 in particular. Notably, the competition for Rural Development funding between measures whose objective is primarily economic or social, and measures designed to achieve environmental objectives - of which the full implementation of the NATURA network is just one among several - will increase.

What more should be done beyond what is already being done and why?

Most of the actions proposed are not new, nor are the timetables accelerated beyond those required under existing policy and legislation.

Regarding Life+, Rural Development funds and Structural Funds, national implementation choices will be crucial. In accordance with the principle of subsidiarity, it is the responsibility of Member States to develop the appropriate measures in line with the strategic priorities that each Member State will set out. The challenge is in integration and coherent and co-ordinated programming – in ensuring that the best possible support for biodiversity in general and for Natura 2000 in particular, is delivered from all available funding sources. To support this, DG Environment is developing a guidance document on how to use Community funds in the period 2007-2013 for Natura 2000. The guidance document should be available mid-2006 in 20 languages, and will be followed by workshops to be organised in all 25 Member States.

Benefits and costs of any new or accelerated actions

The benefits and costs of co-financing for biodiversity in relation to the Financial Perspectives have been addressed in the impact assessments of the relevant proposals.

Stakeholders affected

All potential recipients of funding, including owners, managers and users of biodiversity resources, the research community, agencies implementing key supporting measures and potential donors including the private sector.

5.2.2. Supporting Measure 2: Strengthening EU decision-making for biodiversity

Actions proposed and extent to which already provided for

Key actions include: ensuring adequate treatment of biodiversity concerns in policy-impact assessment, and that new policy takes due account of biodiversity impacts identified; strengthening understanding of the values of natural capital and ecosystem services,

internalising these values in decision-making and expanding economic incentives for conservation and sustainable use of biodiversity; putting in place an effective mechanism to ensure coordination and complementarity of Community and Member State biodiversity strategies and action plans; better alignment of the biodiversity policy cycle with broader planning and budgetary cycles, notably to improve integration in the EU's Financial Perspectives; improving coherence at national level between various plans and programmes affecting biodiversity (including Natura 2000, river basin management planning, programmes of measures for soils, rural development plans, structural funds operational programming, and Regional Seas strategies) in order to strengthen ecological coherence and functioning; reinforcing institutional arrangements to ensure delivery of the priority actions from Member State down to local level; and ensuring compliance, control and enforcement at national, regional and local levels.

Better Regulation provides for policy impact assessment. A considerable amount of work has been done on accounting for natural capital and ecosystem services in decision-making, which is consistent with the EU's overarching goal of sustainable development. Coordination and complementarity of Community and Member States strategies and actions are a basic requirement of all that the EU does. Reinforcing alignment of the biodiversity policy cycle with broader policy and budgeting cycles is in line with the requirement to integrate environmental policy effectively into sectoral and horizontal policy. Ensuring compliance, control and enforcement is a requirement in relation to all Community law.

What more should be done beyond what is already being done and why?

The actions specified are mostly not new, nor are the timetables accelerated beyond those required under existing policy and legislation.

Benefits and costs of any new or accelerated actions

Limited increased administrative costs. Benefits in terms of more effective delivery of the Action Plan, and resulting reduced biodiversity loss, reduced loss of natural capital and reduced decline in ecosystem services potentially substantial. Integrated application of planning instruments will enable more optimal investment of resources in terms of sustainable biodiversity outcomes.

Stakeholders affected

Most societal groups.

5.2.3. Supporting measure 3: Building partnerships

Actions proposed and extent to which already provided for

Key actions relate to; building partnerships in support of Natura 2000; developing farming and biodiversity, and forestry and biodiversity partnerships; supporting effective operation of Regional Advisory Councils under the Common Fisheries Policy; establishing a biodiversity and climate change task force; developing partnerships between the biodiversity community and planners, the business sector, and the financial sector; and working closely with local and indigenous communities.

Such partnerships are largely encouraged by existing nature policy, agricultural and forest policy, fisheries policy and development cooperation policy. Working with local and indigenous communities is in line with the CBD Akwe-Kon Guidelines.

What more should be done beyond what is already being done and why?

This is largely about building on existing action. The development of partnerships has already proven beneficial in a number of areas. A good example is the Sustainable Hunting Initiative (Commission, hunters and bird conservation organisations). The Commission is now developing new partnerships for farming and wildlife, and for business and biodiversity. Regional Advisory Councils being established under the Common Fisheries Policy have potential to perform a similar function. Provision is made under Rural Development Policy for broad consultation in the preparation of Rural Development Plans. Many other initiatives are underway without Commission involvement at Member State or more local levels. There is significant scope to strengthen such partnerships and initiate new partnerships – for example between the construction industry and biodiversity organisations¹²². Such partnerships help identify win-win solutions and, where there is need for compromise, determine choices and where necessary trade-offs.

Benefits and costs of any new or accelerated actions

Partnerships involve relatively low costs and can offer significant benefits in terms of reducing conflict and the costs that can arise from such conflict. For example, conflict over the development of major infrastructure can lead to significant delays and cost over-runs which might be avoided by early dialogue between key stakeholders.

Stakeholders affected

All key stakeholder groups identified under ‘actions proposed’ above.

5.2.4. Supporting measure 4: Building public awareness and participation

Actions proposed and extent to which already provided for

Key actions include: development and implementation of a comprehensive communications strategy to communicate the Action Plan and support its implementation, including support of the IUCN-coordinated ‘Countdown 2010’ initiative and full implementation of the Århus Convention in this regard.

These actions are largely provided for by the Århus Convention itself.

What more should be done beyond what is already being done and why?

The actions involve a more determined and strategic approach to building public awareness and participation. Greater awareness will help foster political demand for conservation and sustainable use of biodiversity. Greater public participation will help capture relevant knowledge on biodiversity and mobilise resources for implementation.

Benefits and costs of any new or accelerated actions

¹²² As exemplified by the recent UK Highways Authority Biodiversity Action Plan.
<http://www.highways.gov.uk/aboutus/corpdocs/biodiversity/>

Costs of awareness-raising and participation building actions are relatively modest against potential benefits in terms of increased political demand and mobilised resources for conservation and sustainable use.

Stakeholders affected

General public.

6. COMPARING THE OPTIONS

In summary, there is broad consensus on the preferred policy approach of an EU Action Plan to 2010 and Beyond. Within this policy approach, there is also broad consensus on the priority objectives and supporting measures, and on related key actions, in order to meet the aims of the Communication. Most of these key actions are already provided for by existing policy instruments. The Action Plan to 2010 and Beyond, annexed to the Communication, differentiates for each action what needs to be done at Community level and what needs to be done at Member State level.

In relation to Member States, the applicability and relative importance of the priority objectives and supporting measures and their related actions will vary from Member State to Member State and within Member States from region to region. In line with the principle of subsidiarity, it is for Member States and regions to assess the applicability and relative importance of each, and the consequent priority afforded to addressing each. In this sense, the Action Plan presents a menu of policy options for Member States.

7. MONITORING AND EVALUATION

7.1. Core indicators of progress towards meeting the objectives

A set of headline indicators of progress towards meeting the objectives is presented in the Communication and detailed in the Communication Annex 2. These indicators have been developed in a broad consultative process and were welcomed by the Environment Council of 28 June 2004. They have been selected for their ability to communicate clear messages about state of and trends in biodiversity, pressures on biodiversity, and the effectiveness of policy responses. They are consistent with indicators proposed by the CBD, and make best use of available knowledge and monitoring frameworks in order to avoid undue administrative and cost burdens. One or two of this headline set of biodiversity indicators, or an index composed of a number of these headline indicators, will be used as structural and sustainable development indicators for reporting on progress to the European Council and in relation to the Sustainable Development Strategy.

7.2. Broad outline for monitoring and evaluation arrangements

Finally, effective implementation of the Action Plan requires monitoring, evaluation and review.

The Commission will report annually to Council and Parliament on progress in implementation of the Action Plan.

In support of the indicators, the EU will develop, at Community and Member State levels, a monitoring framework and methodologies and a shared information system which supports policy review and development and makes data available to all interested users. This will take account of opportunities opened by emerging information and communication technologies, notably in the fields of sensor networks and eco-informatics.

A mid-term evaluation of implementation and effectiveness of the Action Plan will be carried out in 2008 and will feed into the final evaluation of the 6th Environment Action Programme, the review of relevant sectoral policies (eg. agriculture, fisheries) and the mid-term review of the EU budget.

A full review of the implementation, effectiveness and appropriateness of EU biodiversity policy – with particular focus on the Action Plan - will be concluded in 2010 and again in 2013, with a view to feeding in to the preparations for the next generation of environmental policy and the next EU budget period from 2014.

The 2010 and 2013 evaluations will involve qualitative assessment of the extent to which Action Plan actions been implemented and achieved, including consideration of underlying assumptions and possible missing actions. The evaluation will be informed by quantitative data relating to a set of headline biodiversity indicators (Communication, Annex 2). The Commission will develop and implement these indicators in partnership with Member States and civil society.

IMPACT ASSESSMENT ANNEX 1

POLICY CONTEXT FOR ACTIONS IN THE EU ACTION PLAN TO 2010 AND BEYOND

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
-----	------------------------------	--

A. THE TEN PRIORITY OBJECTIVES

POLICY AREA 1: BIODIVERSITY AND THE EU

OBJECTIVE 1: TO SAFEGUARD THE EU'S MOST IMPORTANT HABITATS AND SPECIES.

HEADLINE TARGET: Biodiversity loss of most important habitats and species halted by 2010, these habitats and species showing substantial recovery by 2013.

A1.1	TARGET: Natura 2000 network established, safeguarded, designated and under effective conservation management by 2010, 2012 in marine.	Establishment, designation and management of the Natura 2000 network is provided for by Habitats Directive and Birds Directive ('the nature directives').
A1.1.1	ACTION: Accelerate efforts to <i>finalise the Natura 2000 network</i> including: complete terrestrial network of Special Protection Areas (SPA) [by 2006, 2008 for marine]; adopt lists of Sites of Community Importance (SCI) [by 2006, 2008 for marine]; designate Special Areas of Conservation (SAC) and establish management priorities and necessary conservation measures for SACs [by 2010, 2012 for marine]; establish similar management and conservation measures for SPAs [by 2010, 2012 for marine].	Habitats Directive Art. (4) requires designation as soon as possible and in any case within 6 years of adoption of biogeographic lists. Art. 6(1) requires to 'establish the necessary conservation measures involving, if need be, appropriate management plans...and appropriate statutory, administrative or contractual measures' also within 6 years. As lists have been or will be adopted in 2004-2006 (2008 marine), the deadlines proposed here for designation and management are for some lists in advance of those required by Art. 4(4). Birds Directive Art. 4(1) and 4(2) require the designation of SPAs. The deadline for this has already passed and there is therefore an urgent need to complete this task to be in conformity with the Directive. Whereas Art. 6(1) of Habitats Directive does not formally apply to SPAs, there are analogous provisions under Art. 4(1) and 4(2) of the Birds Directive requiring positive conservation and management of the sites. 2012 deadline for marine protected areas designation is consistent with World Summit for Sustainable Development target.
A1.1.2	ACTION: Ensure <i>adequate financing provided to Natura 2000</i> implementation from Community sources (notably Rural Development funds, Cohesion and Structural Funds, Pre-Accession Instrument, Life-III, Life+) and MS sources, accessible to those who manage Natura 2000 sites, with focus on optimising long-term conservation benefits as well as priority awareness raising and networking initiatives [2006 onwards].	Decisions relating to Financial Perspectives 2007-2013 including those on Rural Development, Cohesion and Structural Funds, and Life+. Wording of action is consistent with Commission proposals for Financial Perspectives and position of European Parliament. However, Council Decision on Financial Perspectives of December 2005 reduced amounts likely to be made available for Natura 2000 through these instruments. Final decision on Financial Perspectives is pending.
A1.1.3	ACTION: Transpose fully [by 2006] <i>Articles 6(2), 6(3) and 6(4) of the Habitats Directive</i> into national legislation and planning policies and ensure subsequent timely implementation; where appropriate (i.e. where development proposals cannot avoid damage to Natura 2000 sites, but proceed for reasons of overriding public interest) ensure special effort for adequate design and implementation of <i>compensatory measures</i> [2006 onwards].	Avoidance of damage and disturbance to Natura 2000 sites is required under Art. 6(2) of the Habitats Directive. Art. 6(3) provides for assessment of plans and projects potentially affecting Natura 2000 sites. Art. 6(4) provides for compensatory measures to ensure coherence of network is maintained. Art. 7 of the Habitats Directive effectively means that the provisions of Art. 6 (2,3,4) apply to all SPAs designated under the Birds Directive.
A1.1.4	ACTION: Strengthen effectiveness of <i>Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)</i> in informing decision-making (<i>inter alia</i> : take stock of effectiveness, produce guidance, tighten legal requirements as appropriate) so as to prevent, minimise and mitigate damages to Natura 2000 sites [2006 onwards]. (cf Actions A4.1.4, A4.1.6 and A4.6.1 to A4.6.4)	Strategic Environmental Assessment and Environmental Impact Assessment Directives. Decisions on certain types of plans, programmes and projects should be informed by SEA or EIA performed according to the requirements of the Directives.
A1.1.5	ACTION: Ensure full and timely application of the <i>Environmental Liability Directive</i> (ELD) as it applies to protected species and natural habitats (as defined under the directive), including preventive measures and remedial actions, as appropriate [2006 onwards].	Environmental Liability Directive, Art. 5 Preventive action, Art. 6 Remedial action.
A1.2	TARGET: Sufficiency, coherence, connectivity and resilience of the protected areas network in the EU substantially enhanced by 2010 and further enhanced by 2013 (cf objective 9, target 9.4).	Habitats Directive Art. 10 and Birds Directive Art. 4(3).
A1.2.1	ACTION: Carry out [in 2008, following next reports] scientific review of habitat types listed in annexes of nature directives, informed by 'shadow lists' of priority habitats; add to annexes any missing habitat types of Community interest, and ensure <i>all habitat types of Community interest are sufficiently represented in the Natura 2000 network</i> [by 2010].	Coordinate review, propose necessary amendments to annexes, assess sufficiency of MS proposals for any new sites in response to any amendments to annexes, adopt revised lists of SCIs where necessary.
A1.2.2	ACTION: Accelerate efforts to place <i>other designated protected areas (non-Natura 2000) of national, regional and local biodiversity importance</i> under effective conservation management [by 2010, 2012 in marine].	Raise awareness of importance and relevance of these areas in context of Action 1.2.3 below

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A1.2.3	ACTION: Assess [by 2008] and substantially strengthen [by 2010] coherence, connectivity and resilience of the protected areas network (Natura 2000 and non-Natura protected areas) by applying, as appropriate, tools which may include flyways, buffer zones, corridors and stepping stones (including as appropriate to neighbouring and other third countries), as well as actions in support of biodiversity in the wider environment (see also actions under objectives 2, 3 and 9)	Coordinate assessment, develop guidelines to strengthen coherence
A1.3	TARGET: No priority species in worsening conservation status by 2010; majority of priority species in, or moving towards, favourable conservation status by 2013.	Habitats Directive Art. 2 and Birds Directive Art. 2.
A1.3.1	ACTION: Implement [2006 onwards], at EC or MS level as appropriate, existing species action or management plans for species under threat and review and update as necessary; elaborate [2006 onwards] and implement [2007 onwards] additional species action or management plans for a wider range of species under threat - including birds, mammals, reptiles, amphibians, freshwater fish, invertebrates and plants; ensure monitoring of implementation and effectiveness of plans.	Review (timetable not specified) is provided for by Habitats Directive Art. 9 and Birds Directive Art. 15; periodic reports are required every 6 years (Habitats) and every 3 years (Birds) - next reports for both are due in 2007. Shadow lists such as 'Important Bird Areas' are already used to assess sufficiency - other available shadow lists include those for butterflies and the forthcoming Plantlife list for Important Plant Areas.
A1.3.2	ACTION: Carry out [in 2008, following next reports] scientific review of species listed in annexes of nature directives, informed by EU 'shadow lists' for major taxa and other relevant assessments of species status; add to annexes any missing species of Community interest, and ensure where appropriate that all species of Community interest are sufficiently represented in the Natura 2000 network [by 2010].	MS laws and bye-laws. At EC level, Habitats Directive Art.10 requirement for coherence provides a potential support for such non-Natura 2000 protected areas.
A1.3.3	ACTION: Identify and fill critical gaps in EU ex-situ (zoo, botanic gardens, etc.) conservation programmes for wild species , in line with best practice, with appropriate co-financing from EC and MS [2006 onwards].	Habitats Directive Art. 3 (coherence) and Art. 10 (coherence and connectivity) - assessment not specified but consistent with need to ensure coherence and connectivity.
A1.4	TARGET: All above targets applied for Acceding Countries from date of accession.	Consistent with requirements for Acceding Countries to comply with Community environmental acquis by date of accession
A1.4.1	ACTION: Expand all above actions to Romania and Bulgaria (Acceding Countries) and to any future Acceding Countries in a timely manner, i.e. to provide for full implementation of environmental <i>acquis</i> , and provide lists of Natura 2000 sites [by date of accession].	As for target
A1.5	TARGET: For those EU Outermost Regions not covered by the nature directives, valued biodiversity sites and species not in worsening conservation status by 2010; majority of valued sites and species moving towards favourable conservation status by 2013.	Member States' national legislation.
A1.5.1	ACTION: Apply nature directives-type approach for valued sites and species in those EU Outermost Regions not covered by nature directives [2006 onwards].	As for target

OBJECTIVE 2: TO CONSERVE AND RESTORE BIODIVERSITY AND ECOSYSTEM SERVICES IN THE WIDER EU COUNTRYSIDE.

HEADLINE TARGET: In wider countryside (terrestrial, freshwater, brackish water *outside* Natura 2000 network), biodiversity loss halted by 2010 and showing substantial recovery by 2013.

AGRICULTURAL & RURAL DEVELOPMENT POLICY

A2.1	TARGET: Member States have optimised use of opportunities under agricultural, rural development and forest policy to benefit biodiversity 2007-2013.	Common Agricultural Policy including market and income policy and rural development policy, forest policy. The policy basis for rural development is provided at Community level by the Community Strategic Guidelines COM(2005)304 and at Member States level by the National Rural Development Strategies. The latter Rural Development Regulation (RDR) - Council Regulation (EC)1698/2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) provides the executing framework. Forest policy is largely a Member State competence but certain aspects will be addressed by the forthcoming Forest Action Plan (due for adoption 2006).
------	---	--

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A2.1.1	ACTION: Allocate, at MS initiative, within <i>each national/regional Rural Development (RD) Programme</i> , adequate <i>Community and MS co-financing</i> to measures available under all three axes of the RD Regulation which are directly or indirectly supportive of nature and biodiversity [2006/07 and any subsequent revisions]. (cf Action B.1.1.2)	Measures available under all axes of the Rural Development policy - in particular Axis 2 - offer potential to benefit nature and biodiversity. The RDR foresees a minimum funding of 25% for Axis 2 measures. The Strategic Guidelines on Rural Development highlights potential for synergy between axes and measures to achieve Axis 2 priorities.
A2.1.2	ACTION: Apply <i>Rural Development (RD) measures</i> in the next programming period [2007-2013] to optimise long-term benefits for biodiversity - in particular for Natura 2000 areas and for other 'high nature value' farm and forest areas.	See above. Available measures include: training, and meeting standards under axis 1; less favoured areas, Natura 2000 payments, agri-environment, non-productive investments and forest-environment payments under axis 2; conservation and upgrading of the rural heritage under axis 3. Preservation of biodiversity and high nature value farming and forestry systems, and contribution to the management of the Natura 2000 network, are identified as key priorities under Axis 2 by the Community Strategic Guidelines (CSG) for Rural Development (pending adoption by Council).
A2.1.3	ACTION: Define criteria and identify [2006-07] <i>high-nature-value farmland and forest areas</i> (including the Natura 2000 network) threatened with loss of biodiversity (with particular attention to extensive farming and forest/woodland systems at risk of intensification or abandonment, or already abandoned), and design and implement measures to maintain and/or restore conservation status [2007 onwards].	See above. Work has been done on the definition of 'high-nature-value' (HNV) farmland by the EEA and JRC and the issue will be further addressed in the 2010 rural development mid-term review. There is also no agreed definition of HNV forests.
A2.1.4	ACTION: Ensure effective implementation of <i>cross-compliance</i> (which provides a baseline for most of the measures of Axis 2 of the Rural Development Regulation) in ways that benefit biodiversity [2007-2013].	Support for measures targeting the sustainable use of agricultural land under Axis 2 is conditional on meeting the same standards that are part of cross-compliance, minimum requirements for fertiliser and plant protection product use, and other relevant national mandatory requirements identified in the rural development programme. These mandatory standards include meeting the requirements of the nature directives, and obligations to protect permanent pastures and maintain land in good agricultural and environmental conditions (eg. to avoid deterioration of habitats).
A2.1.5	ACTION: Ensure that MS Rural Development Plans (RDPs) comply with environmental legislation and in particular with the nature directives so as to <i>prevent and minimise any potential damages to biodiversity</i> [2007-2013].	In principal rural development plans should comply with existing environmental legislation
A2.1.6	ACTION: Broaden <i>extension services, farm advisory systems and training</i> actions to farmers, landowners and farm workers to strengthen biodiversity-related implementation in the next rural development programming [2007 onwards], including support from the LEADER axis.	Farming advisory systems are mandatory from 2007 under Regulation 1782/2003 and are required to give advice, inter alia, on environmental (including nature and biodiversity) issues. Rural development also offers training measures (under axes 1 and 3) which may address biodiversity issues.
A2.1.7	ACTION: Ensure future ' <i>less favoured area</i> ' (LFA) regime [from 2010] under Axis 2 enhances its contribution to biodiversity and to 'high nature value' farm and forest areas.	Less Favoured Areas (LFAs) are addressed under the RDR Axis 2. The current LFA regime continues until 2010, commission to adopt report and proposals 2008 for Council decision 2009 and new regime enters force 2010.
A2.1.8	ACTION: Implement the <i>common monitoring and evaluation framework and Strategic Environmental Assessment (SEA) Directive requirements</i> where applicable for rural development programmes, including the definition of indicators in a way that impact of measures on biodiversity is assessed [2006 onwards].	RDR (Title VII on monitoring and evaluation) foresees a comprehensive environmental assessment during the whole programming period. A handbook for the common monitoring and evaluation framework is under preparation. For the assessment of environmental effects, four compulsory common indicators have to be established at programme level, of which two are directly linked to biodiversity (trends in farmland birds population and high nature value areas).
A2.1.9	ACTION: Encourage that implementation of the <i>Common Agricultural Policy first pillar benefits biodiversity</i> , notably through mandatory cross-compliance, decoupling (single farm payments) and by encouraging take-up of modulation by the Member States.	Cross compliance, decoupling and modulation are provided for under the market and income policy of the reformed Common Agricultural Policy. The single farm payment decouples farm support from production, thus removing an incentive to intensify production; in the past, such intensification has damaged biodiversity. Cross compliance sets baseline standards for environmental protection - which may benefit biodiversity - to qualify for support. The amounts resulting from modulation should be made available as additional community support for measures - including those relating to biodiversity - under rural development programming.
A2.1.10	ACTION: Consider, if appropriate, a <i>possible review of cross-compliance requirements related to the preservation of biodiversity</i> in the 2007 review of the cross-compliance system.	A review of the cross-compliance system is scheduled for 2007 under the Common Agricultural Policy.
A2.1.11	ACTION: Strengthen measures to ensure conservation, and availability for use, of <i>genetic diversity</i> of crop varieties, livestock breeds and races, and of commercial tree species in the EU, and promote in particular their <i>in situ</i> conservation [2006 onwards].	In line with Community commitment to International Treaty on Plant Genetic Resources for Food and Agriculture and the Community programme on the conservation, characterisation, collection and utilisation of genetic resources in agriculture (Council Regulation (EC) No 870/2004). The Rural Development Regulation Art. 39(5) also provides for support for the conservation of genetic resources in agriculture.

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A2.1.12	ACTION: Exploit opportunities under the CAP [2007-2013] to implement all above actions in the <i>Outermost Regions</i> .	RDR provides particular opportunity to address this in outermost regions with 85% community co-financing.
FOREST POLICY		
A2.1.13	ACTION: Ensure that the forthcoming <i>EU Forest Action Plan</i> [due 2006] addresses forest biodiversity among the priorities, in line with the EU Forest Strategy and the 6th Environment Action Programme.	Council Resolution on a forestry strategy for the European Union, point 11 with reference to biodiversity in forests.
A2.1.14	ACTION: Implement <i>Vienna Ministerial Conference resolution on forest biodiversity</i> (2003) through forest policies of MS and EU Forest Action Plan with particular reference to the CBD Expanded Programme of Work on Forest Biological Diversity [2006 onwards].	The policy context is provided by the Ministerial Conference on Protection of Forests in Europe (MCPFE) process and the Environment for Europe Ministerial process (notably Kyiv Biodiversity Resolution), as well as the CBD Expanded Programme of Work on Forest Biological Diversity.
A2.1.15	ACTION: <i>Assess potential impact on biodiversity of plans, programmes and projects for afforestation</i> (or, should the case arise, deforestation); <i>adjust accordingly</i> in order to ensure no overall long-term negative impact on biodiversity [2006 onwards].	Strategic Environmental Assessment and Environmental Impact Assessment Directives apply in some cases.
ENVIRONMENT POLICY		
A2.2	TARGET: Risks to soil biodiversity in EU substantially reduced by 2013.	The Thematic Strategy for Soils. Measures proposed under the strategy are unlikely to result in significant reduction in risks to soil biodiversity by 2010, hence the absence of any 2010 target here.
A2.2.1	ACTION: <i>Identify geographical risk areas for factors affecting soil biodiversity</i> (soil sealing, loss of organic matter, soil erosion, etc.) [by 2009].	Consistent with provisions of Thematic Strategy on Soils.
A2.2.2	ACTION: <i>Minimise soil sealing, sustain soil organic matter and prevent soil erosion</i> through timely implementation of key measures identified in the forthcoming Thematic Strategy for Soil Protection [2010 onwards].	Consistent with provisions of Thematic Strategy on Soils.
A2.3	TARGET: Substantial progress made towards 'good ecological status' of freshwaters by 2010 and further substantial progress made by 2013.	Water Framework Directive.
A2.3.1	ACTION: Ensure implementation of <i>operational monitoring programmes</i> [by 2006] and publication of <i>River Basin Management Plans</i> and establishment of <i>River Basin District Programmes of Measures</i> [by 2009] and that these Plans and Programmes of Measures are fully operational [by 2012], in line with provisions of the Water Framework Directive.	As for target
A2.4	TARGET: Principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2010, and again by 2013.	Wide range of existing legislation (see below).
A2.4.1	ACTION: Significantly <i>reduce point source pollutant pressures</i> on terrestrial and freshwater ecosystems through strengthening implementation of relevant Directives, notably on Integrated Pollution Prevention and Control, Large Combustion Plants, Waste Incineration, Urban Waste Water Treatment (cf action 3.2.1) [2006 onwards].	Directives mentioned in action.
A2.4.2	ACTION: Significantly <i>reduce airborne eutrophication and acidifying pollution</i> of terrestrial and freshwater ecosystems in line with Thematic Strategy on Air Quality [2006 onwards]; revise National Emissions Ceiling Directive [by 2007]. (cf action 3.2.2)	Thematic Strategy on Air Quality, National Emissions Ceiling Directive.
A2.4.3	ACTION: Significantly <i>reduce pollution of terrestrial and freshwater ecosystems from agricultural sources</i> (notably pesticides, nitrates) through measures in line with Thematic Strategy on the Sustainable Use of Pesticides, pesticides and biocides legislation, Nitrates Directive [2006 onwards]. (cf action 3.2.3)	In line with Thematic Strategy on the Sustainable Use of Pesticides and with pesticides and biocides legislation.
A2.4.4	ACTION: Significantly <i>reduce current exposure, and limit future exposure, of terrestrial and freshwater ecosystems to toxic chemicals</i> through measures in line with EU chemicals legislation including REACH [2006 onwards]. (cf action 3.2.4)	Water Framework Directive, wide range of EU chemicals legislation including REACH.
A2.5	TARGET: Flood risk management plans in place and designed in such a way as to prevent and minimise biodiversity loss and optimise biodiversity gains, by 2015.	Proposed Directive on Assessment and Management of Floods COM(2006)15final requires such plans by 2015 (Art 9[2]) and requires that they take into account nature conservation requirements (Art 11[1]).
A2.5.1	ACTION: As part of the preliminary flood risk assessment for each river basin, <i>assess the risks and benefits of flooding for biodiversity</i> [within 3 years of adoption of Directive].	Proposed Directive on Assessment and Management of Floods COM(2006)15final, Art.4.

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A2.5.2	ACTION: <i>Ensure Flood risk management plans for each river basin optimise benefits for biodiversity</i> through, in particular, allowing necessary freshwater input to wetland and floodplain habitats, and creating where possible and appropriate additional wetland and floodplain habitats which enhance capacity for flood water retention [by 2015].	Proposed Directive on Assessment and Management of Floods COM(2006)15final, Art.9.

OBJECTIVE 3: TO CONSERVE AND RESTORE BIODIVERSITY AND ECOSYSTEM SERVICES IN THE WIDER EU MARINE ENVIRONMENT.

HEADLINE TARGET: In wider marine environment (outside Natura 2000 network), biodiversity loss halted by 2010 and showing substantial recovery by 2013.

ENVIRONMENTAL POLICY

A3.1	TARGET 3.1: Substantial progress achieved by 2010 and again by 2013 towards 'good environmental status' of the marine environment.	The Thematic Strategy on the Protection and Conservation of the Marine Environment and proposed Marine Strategy Directive (MSD) provide for an integrated approach to deal with the conservation and sustainable use of the marine environment.
A3.1.1	ACTION: Make <i>initial assessments, determine 'good environmental status', and establish environmental targets</i> for each Marine Region in line within the timetable specified in the proposed Marine Strategy Directive [2006 onwards].	Once adopted, the MSD will provide for assessments and determination within 4 years of adoption of the Directive, and establishment of targets within 5 years.
A3.1.2	ACTION: Develop <i>programmes of measures</i> designed to achieve good environmental status in each Marine Region [by 2016 at latest, earlier where possible].	Once adopted, the MSD will provide for the development of such programmes of measures.
A3.1.3	ACTION: Ensure key biodiversity and ecosystem provisions of the Thematic Strategy for the Marine Environment are assured in the forthcoming Green Paper on a Future <i>Maritime Policy</i> for the Union and any consequent policy.	In line with Thematic Strategy
A3.1.4	ACTION: Ensure timely implementation of the <i>Water Framework Directive</i> as it applies to coastal areas [2006 onwards].	Water Framework Directive
A3.1.5	ACTION: Ensure timely implementation and review of the EU <i>Integrated Coastal Zone Management Recommendation</i> [2006 onwards].	ICZM Recommendation
A3.2	TARGET: Principal pollutant pressures on marine biodiversity substantially reduced by 2010, and again by 2013.	Wide range of pollution control legislation (see below)
A3.2.1	ACTION: Significantly <i>reduce point source pollutant pressures on marine ecosystems</i> through strengthening implementation of relevant Directives, notably on Integrated Pollution Prevention and Control, Large Combustion Plants, Waste Incineration, Urban Waste Water Treatment [2006 onwards] (cf action 2.3.1)	Directives mentioned in action.
A3.2.2	ACTION: Significantly <i>reduce airborne eutrophication and acidifying pollution of marine ecosystems</i> in line with Thematic Strategy on Air Quality [2006 onwards]; revise National Emissions Ceiling Directive [by 2007]. (cf action 2.3.2)	Thematic Strategy on Air Quality, National Emissions Ceiling Directive.
A3.2.3	ACTION: Significantly <i>reduce pollution of marine ecosystems from agricultural sources</i> (pesticides, nitrates) through measures in line with Thematic Strategy on the Sustainable Use of Pesticides, pesticides and biocides legislation, Nitrates Directive [2006 onwards]. (cf action 2.3.3)	In line with draft TS Pesticides and pesticides and biocides laws, Nitrates Directive. Opportunities to address nitrates pollution include agri-environment measures under Rural Development Policy.
A3.2.4	ACTION: Significantly reduce current exposure, and limit future exposure, of marine ecosystems to <i>toxic chemicals</i> through measures in line with EU chemicals legislation [2006 onwards]. (cf action 2.3.4)	Proposed Marine Strategy Directive, wide range of EU chemicals legislation including REACH.
FISHERIES POLICY		
A3.3	TARGET: Ecosystem approach to the protection of the seas in place and implying fisheries management measures no later than 2016.	Proposed Marine Strategy Directive
A3.3.1	ACTION: Introduce the <i>fisheries management measures</i> required in the Regional Marine Strategies adopted by Member States in line with the requirements of the Marine Strategy Directive [by 2017].	Proposed Marine Strategy Directive.
A3.4	TARGET: Substantially enhanced funding provided to environmentally-friendly fisheries management from 2007 onwards.	

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A3.4.1	ACTION: Apply new <i>European Fisheries Fund and Member State funds</i> for actions beneficial to marine biodiversity [2007 onwards]. (cf Action B1.1.3)	EFF was due for adoption December 2005 - but is unlikely to provide enhanced funds in this respect - therefore placing particular responsibility on Member States to meet this target. A regulation on environmentally friendly fishing is in preparation based on the Dundalk conference (2004), in consultation with the Advisory Committee on Fisheries and Aquaculture and Regional Advisory Councils.
A3.5	TARGET: Stock levels maintained or restored to levels that can produce maximum sustainable yield, where possible no later than 2015.	WSSD target
A3.5.1	ACTION: Prepare <i>plan of action to attain maximum sustainable yield</i> , prepare and implement <i>stock recovery plans</i> as soon as needed for any stocks outside safe biological limits, and <i>management plans</i> to maintain other stocks at safe biological levels. [2006 onwards]	Common Fisheries Policy provides for stock recovery and management plans.
A3.5.2	ACTION: Develop, adopt and implement <i>restoration programmes for diadromous species</i> (eg. trout, salmon, sturgeon). [2006 onwards]	Regulation on eels proposed; policy work ongoing on salmon, sturgeon.
A3.5.3	ACTION: <i>Adjust fishing capacity</i> to improve balance between fishing capacity and available fish stocks. [2006 onwards]	In line with Regulation 2792(2005) which requires a stabilisation of fishing capacity.
A3.5.4	ACTION: Adopt and implement provisions under CFP for the wider establishment of <i>no-take zones</i> .	Common Fisheries Policy.
A3.5.5	ACTION: Take concerted EU action to <i>combat illegal, unreported and unregulated fishing</i> . [2006 onwards]	Community Action Plan for the eradication of illegal, unreported and unregulated fishing. Also a WSSD commitment.
A3.6	TARGET: Impact of fisheries on non-target species and habitats progressively and substantially reduced from 2006 onwards.	Common Fisheries Policy, nature directives, Strategic Environmental Assessment and Environmental Impact Assessment Directives
A3.6.1	ACTION: Implement <i>technical measures</i> to help ensure favourable conservation status of marine species and habitats which are not commercially exploited, aimed at the reduction of unwanted by-catch and of damage to the benthos. [2006 onwards]	In line with process initiated at Dundalk conference 2004 - a number of initiatives in process by DG FISH.
A3.6.2	ACTION: Adopt <i>Community Plans of Action for the conservation of sharks and seabirds</i> and implement progressively thereafter.	Common Fisheries Policy, Birds and Habitats Directives, International agreements.
A3.6.3	ACTION: Identify, define, adopt <i>and enforce fisheries measures required for Natura 2000 sites</i> in the marine environment. [by date of designation]	Habitats and Birds Directives, Common Fisheries Policy.
A3.6.4	ACTION: Ensure adequate treatment of biodiversity concerns in all cases where <i>environmental impact assessment or strategic environmental assessment</i> is required in relation to fisheries or aquaculture, and ensure authorisation process and subsequent implementation take due account of EIA and SEA findings in order to prevent negative impacts on biodiversity or, where prevention is not possible, minimise, mitigate and/or compensate for these negative impacts [2006 onwards].	Strategic environmental Assessment and Environmental Impact Assessment Directives.
A3.7	TARGET: Substantially improved information and reporting on environmental integration of the Common Fisheries Policy from 2008 onwards.	Common Fisheries Policy
A3.7.1	ACTION: Make <i>periodic assessments</i> [2006 onwards] of the progress of the Common Fisheries Policy in incorporating environmental protection requirements (with particular reference to biodiversity).	Common Fisheries Policy

OBJECTIVE 4: TO REINFORCE COMPATIBILITY OF REGIONAL AND TERRITORIAL DEVELOPMENT WITH BIODIVERSITY IN THE EU.

HEADLINE TARGET: Regional and territorial development benefiting biodiversity, and negative impacts on biodiversity prevented and minimised or, where unavoidable, adequately compensated for, from 2006 onwards.

REGIONAL POLICY, SPATIAL PLANNING

A4.1	TARGET: Cohesion and structural funds contributing to sustainable development and making (directly or indirectly) a positive contribution to biodiversity, and negative impacts on biodiversity prevented or minimised or, where unavoidable, adequately compensated for, from 2006 onwards.	Cohesion Policy and Structural Funds regulations
------	---	--

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A4.1.1	ACTION: Allocate, at MS initiative, <i>cohesion and structural funds for projects directly or indirectly benefiting biodiversity</i> in appropriate operational programmes [2006 onwards]. (cf Action B1.1.4)	As for target
A4.1.2	ACTION: <i>European Social Fund (ESF) contributing to biodiversity objectives</i> through awareness-raising, capacity building, employment of the young, long-term jobless and elderly, etc. [2007 onwards] (cf Action B1.1.4)	As for target
A4.1.3	ACTION: Ensure <i>National Strategic Reference Frameworks (NRSFs) and Operational Programmes 2007-2013 fully respect environmental acquis</i> [2006 onwards]	As for target
A4.1.4	ACTION: Ensure <i>strategic environmental assessment (SEA) of Operational Programmes</i> [2006 onwards] gives adequate treatment to biodiversity concerns and that the final programmes take full account of the SEA findings in order to prevent, minimise and mitigate impacts on biodiversity and provide where possible benefits to biodiversity. (cf Action A1.1.4)	As for target
A4.1.5	ACTION: Ensure <i>environmental impact assessment (EIA) of projects co-financed by Cohesion Fund and European Regional Development Fund (ERDF)</i> , where such EIA is required, gives adequate treatment to biodiversity concerns and that final projects take full account of EIA findings in order to prevent, minimise and mitigate impacts on biodiversity and provide where possible benefits to biodiversity [2006 onwards]. (cf Action A1.1.4)	As for target
A4.1.6	ACTION: Ensure full <i>participation of civil society</i> in development of NSRF and national Operational Programmes and in SEA/EIA and ensure biodiversity interests fully represented [2006 onwards].	Structural Funds Regulations, SEA/EIA provisions for participation
A4.2	TARGET: Negative impacts of territorial plans (within each MS) on biodiversity prevented or minimised, and positive benefits optimised, from 2006 onwards.	
A4.2.1	ACTION: Ensure that all <i>those territorial plans subject to strategic environmental assessment (SEA)</i> (where deemed applicable by Member States under the SEA Directive) do not cause significant negative impacts on biodiversity (direct, indirect, cumulative) [2006 onwards].	SEA Directive
A4.2.2	ACTION: Implement policies and measures in line with Thematic Strategy for Urban Environment to <i>prevent urban sprawl</i> [2006 onwards].	Thematic Strategy for Urban Environment
A4.3	TARGET: Ecological coherence and functioning strengthened through spatial planning from 2006 onwards.	
A4.3.1	ACTION: Develop and implement <i>spatial and programmatic plans</i> that support the coherence of the Natura 2000 network (in line with the requirements of the nature directives to ensure such coherence) and maintain and/or restore the ecological quality of wider landscape [2006 onwards] (cf Action B2.5.1)	Habitats Directive Art. 10 and Birds Directive Art. 4(3) which provide for coherence of the Natura 2000 network
A4.4	TARGET: Significant increase in proportion of tourism which is ecologically sustainable by 2010 and again by 2013.	
A4.4.1	CBD <i>Guidelines on Sustainable Tourism</i> promoted, adopted and implemented as appropriate by key stakeholders [2006 onwards].	CBD Guidelines
A4.5	TARGET: All above outcomes achieved also in Outermost Regions.	
A4.5.1	ACTION: All above actions applied, as appropriate, in Outermost Regions (French Guyana, Guadeloupe, Reunion, Martinique, Canaries, Azores, Madeira) [2006 onwards].	Policy context as for all above actions, in so far as the policies apply to the outermost regions
ENVIRONMENTAL POLICY		
A4.6	TARGET: All Strategic Environmental Assessments and Environmental Impact Assessments have taken full account of biodiversity concerns (2006 onwards).	
A4.6.1	ACTION: Ensure effective treatment of biodiversity in all <i>Strategic Environmental Assessment (SEA) of programmes and plans, where such SEA is required</i> , including by promotion of best practice through the development of guidelines, recognition of good performance) - and ensure that full account is taken of the findings of the assessment (in terms of impacts on biodiversity) in the final programmes or plans [2006 onwards]. (cf Action A1.1.4)	See action 1.1.3 above

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A4.6.2	ACTION: Ensure effective treatment of biodiversity in all <i>Environmental Impact Assessment (EIA) of projects, where such EIA is required</i> , including by promotion of best practice through the development of guidelines, recognition of good performance) - and ensure that full account is taken of the findings of the assessment (in terms of impacts on biodiversity) in the authorisation procedure [2006 onwards]. (cf Action A1.1.4)	See action 1.1.3 above
A4.6.3	ACTION: Ensure all new <i>Trans-European Networks</i> provide for environmental assessment and take full account of biodiversity impacts in the design and authorisation process in the framework of the existing EU legislation [2006 onwards]. (cf Action A1.1.4)	Environmental Impact Assessment Directive
A4.6.4	ACTION: <i>Take stock of effectiveness of EIA and SEA</i> in preventing and minimising negative impacts and improving positive impacts of developments on biodiversity and consider necessary measures to improve EIA and SEA performance in this respect [by 2009]. (cf Action A1.1.4)	Strategic Environmental Assessment and Environmental Impact Assessment Directives

OBJECTIVE 5: TO SUBSTANTIALLY REDUCE THE IMPACT ON EU BIODIVERSITY OF INVASIVE ALIEN SPECIES (IAS) & ALIEN GENOTYPES.

HEADLINE TARGET: Negative impacts on EU biodiversity of IAS and alien genotypes prevented or minimised from 2010 onwards.

A5.1	TARGET: Impact of IAS on biodiversity in the EU substantially reduced by 2010 and again by 2013.	6th Environmental Action Programme calls for action on IAS. CBD Decision VI/23 on IAS.
A5.1.1	ACTION: <i>Assess, at EU level, gaps in the current legal, policy and economic framework</i> to prevent, control and eradicate IAS and mitigate their impacts on biodiversity and <i>develop a community strategy to address IAS including, where necessary and appropriate, measures to fill gaps</i> [by 2007].	As for target.
A5.1.2	ACTION: Encourage Member States to develop <i>national strategies on invasive alien species</i> [by 2007] and to implement them fully [by 2010].	As for target.
A5.1.3	ACTION: Encourage ratification and implementation by Member States of the International Convention for the <i>Control and Management of Ship's Ballast Water and Sediments</i> under the International Maritime Organisation [2006 onwards].	International Convention for the Control and Management of Ship's Ballast Water and Sediments under the International Maritime Organisation.
A5.1.4	ACTION: <i>Establish early warning system</i> for the prompt exchange of information between neighbouring countries on the emergence of IAS and cooperation on control measures across national boundaries [by 2008].	As for target.
A5.2	TARGET: Impact of alien genotypes on biodiversity in the EU significantly reduced by 2010 and again by 2013.	
A5.2.1	ACTION: <i>Fully apply the Cartagena Protocol on Biosafety</i> to ensure an adequate level of protection of biodiversity (and human health) in the field of the safe handling, use and transfer of genetically modified organisms [2006 onwards].	Cartagena Protocol on Biosafety
A5.2.2	ACTION: Ensure protection of biodiversity as part of measures to protect human health and environment in relation to the <i>deliberate release into the environment of Genetically Modified Organisms (GMOs)</i> [2006 onwards].	Environmental impact of GMOs is evaluated during the authorisation procedure under Directive 2001/18/EC or Regulation 1829/2003.

POLICY AREA 2: THE EU AND GLOBAL BIODIVERSITY

OBJECTIVE 6: TO SUBSTANTIALLY STRENGTHEN EFFECTIVENESS OF INTERNATIONAL GOVERNANCE FOR BIODIVERSITY AND ECOSYSTEM SERVICES.

A6.1	TARGET: International governance for biodiversity substantially more effective in delivering positive biodiversity outcomes by 2010.	Convention on Biological Diversity
A6.1.1	ACTION: Press for <i>effective worldwide implementation of the Convention on Biological Diversity</i> , decisions of the Conference of the Parties including thematic and cross-cutting programmes of work, and other related international and regional biodiversity agreements (eg. Bonn, Berne, AEW, Ramsar, UN Fish Stocks Agreement) and promote greater synergies between these [2006 onwards].	Convention on Biological Diversity

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A6.1.2	ACTION: Enhance <i>integration of biodiversity into global processes</i> with important impacts on biodiversity such as sustainable development and the Millenium Development Goals, trade and climate change [2006 onwards].	Convention on Biological Diversity
A6.1.3	ACTION: Promote <i>improved oceans governance</i> for conservation and recovery of marine biodiversity, ecosystem services and integration of key sectors, including in relation to areas beyond national jurisdiction; make progress towards mechanisms for establishment of Marine Protected Areas in the high seas, including by supporting the adoption of an Implementing Agreement to the UN Convention of the Law of the Sea, with the scientific support from the CBD, notably in developing criteria for identifying the areas to be protected. [2006 onwards]	UN Convention on the Law of the Sea, CBD

OBJECTIVE 7: TO SUBSTANTIALLY STRENGTHEN SUPPORT FOR BIODIVERSITY AND ECOSYSTEM SERVICES IN EU EXTERNAL ASSISTANCE.

A7.1	TARGET: Financial resources flowing annually to projects directly benefiting biodiversity has substantially increased in real terms (for period 2006-2010 compared with period 2000-2005; and again for period 2011-2013).	
A7.1.1	ACTION: <i>Ensure adequate community funds earmarked for biodiversity</i> in development cooperation (in line with European Consensus on Development Cooperation) in EC Thematic Programme for Environment and Natural Resources and ensure the use of these funds is targeted at biodiversity priorities [2007-2013]; decide [in 2006] on an adequately funded EC Thematic Programme for Environment and Natural Resources (ENRTP) in the European Neighbourhood and Partnership Instrument (ENPI) and the Development Cooperation and Economic Cooperation Instrument (DCECI) and ensure that biodiversity priorities receive an appropriate share of the total ENRTP and DCECI resources [2007-2013].	European Consensus on Development Cooperation and the 6th EAP. This Thematic Programme, while relatively small compared to the geographical programmes, provides the principal opportunity for earmarking Community public aid funds for biodiversity
A7.1.2	ACTION: Allocate adequate resources in <i>Country and Regional Strategy Programmes</i> wherever biodiversity identified as a key issue in country/regional environmental profiles [2006 onwards].	European Consensus on Development Cooperation. The CSPs and RSPs define how the bulk of Community public aid is spent. Environmental profiles ar required as a step in preparation of CSPs/RSPs and are the principal opportunity to signal biodiversity needs.
A7.1.3	ACTION: <i>Enhance MS funds earmarked for biodiversity</i> (in line with European Consensus on Development Cooperation) in MS bilateral development cooperation programmes in support of implementation of the CBD, Millenium Development Goals and other programmes relevant for biodiversity in developing countries [2006 onwards].	European Consensus on Development Cooperation. Member States' development policies.
A7.1.4	ACTION: <i>Enhance the overall contribution of EU MS for biodiversity through a substantial 4th replenishment of the GEF</i> based on the agreed policy priorities [2006/07].	European Consensus on Development Cooperation. Member States' development policies.
A7.1.5	ACTION: Enhance funds for biodiversity related actions under the <i>national and regional components of the Instrument for Pre-Accession (IPA) and the European Neighbourhood and Partnership Instrument (ENPI)</i>	Pre-accession, neighborhood and partnership policy
A7.1.6	ACTION: Enhance economic and development assistance funds available for biodiversity-related actions in the MS' <i>Overseas Countries and Territories</i> [2006 onwards] .	European Consensus on Development Cooperation. Member States' development policies.
A7.2	TARGET: EU 'mainstream' external development assistance delivering enhanced biodiversity and related livelihoods benefits, and negative impacts on biodiversity prevented or minimised, from 2006 onwards.	European Consensus on Development Cooperation commitment to strengthen mainstreaming of biodiversity in development assistance. EU Pre-Accession, Neighbourhood and Partnership policy respects Treaty Art.174. Pais Declaration on Aid Effectiveness.
A7.2.1	ACTION: <i>Prepare country and regional environmental profiles</i> with specific attention to the maintenance of biodiversity and ecosystem services (in particular in relation to livelihood concerns), and take these needs fully into account in preparation of Country Strategy Papers (CSPs) and Regional Strategy Papers (RSPs) and in equivalent MS country and regional aid programming [2006 onwards].	European Consensus on Development Cooperation.

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A7.2.2	ACTION: Systematically carry out <i>ex-ante strategic environmental assessment (SEA) of relevant strategies and programmes and environmental impact assessment (EIA) of relevant projects</i> funded by EU in partner countries and ensure actions are identified and implemented to prevent and mitigate negative impacts on biodiversity in a timely manner [2006 onwards].	European Consensus on Development Cooperation. SEA and EIA Directives.
A7.2.3	ACTION: Substantially <i>strengthen capacities in recipient countries and in Commission and MS cooperation programming</i> for these purposes, including integrating implementation of the CBD into national development strategies including Poverty Reduction Strategies [2006 onwards].	European Consensus on Development Cooperation.
A7.2.4	ACTION: Ensure that <i>projects financed by EU under the Development Cooperation and Economic Cooperation Instrument (DCECI), European Development Fund (EDF), pre-accession, neighbourhood and partnership instruments</i> delivering enhanced biodiversity benefits, and negative impacts on biodiversity prevented or minimised [2006 onwards].	Pre-accession, neighborhood and partnership policy
A7.2.5	ACTION: Ensure that projects financed by EU economic and development assistance do not cause significant negative impacts on biodiversity in the <i>MS Overseas Countries and Territories</i> [2006 onwards].	European Consensus on Development Cooperation.

OBJECTIVE 8: TO SUBSTANTIALLY REDUCE THE IMPACT OF INTERNATIONAL TRADE ON GLOBAL BIODIVERSITY AND ECOSYSTEM SERVICES.

8.1	TARGET 8.1: Impact on biodiversity of EU trade significantly reduced by 2010 and again by 2013.	
A8.1.1	ACTION: <i>Identify major impacts of trade on third countries' and EU biodiversity and adopt measures to significantly reduce (in case of negative impacts) and/or enhance (in case of positive impacts) these impacts [by 2010].</i> This will in particular be done in the context of the Commission's trade-related Sustainability Impact Assessment (SIA) Programme, that covers a number of sectoral studies (e.g. agriculture, forests and forest products as well as fisheries), in the context of multilateral (WTO, ongoing negotiations on the Doha Development Agenda) and/or regional/bilateral free trade agreements (e.g. EPAs with ACP countries).	International trade negotiations in the Doha Round in the WTO-context and in Regional Free Trade Agreements
A8.1.2	ACTION: Foster links between the WTO agreements and biodiversity-related international agreements, and ensure biodiversity taken into account as a Non-Trade Concern, in order to identify and <i>put in place key measures to reduce the ecological impact of globalisation</i> in line with the precautionary principle and with the commitment made in the context of the WTO's Doha Development Agenda to promote the objective of sustainable development (paragraph 6 of the Doha Declaration) and to enhance the mutual supportiveness of trade and environment (paragraph 31) [2006 onwards].	Doha negotiations and commitments under biodiversity related MEAs such as the CBD, Ramsar Convention, CITES etc. The need to address biodiversity as a Non-Trade Concern was set out in the initial EU submission to the Doha Round.
A8.1.3	ACTION: Promote <i>full implementation of the CBD Bonn Guidelines</i> on Access to Genetic Resources and Fair and Equitable Sharing of Benefits (ABS) arising out of their Utilisation, and other agreements relating to ABS such as the FAO International Treaty on Plant Genetic Resources for Food and Agriculture – and continue to contribute to negotiation of an international regime on ABS according to the mandate adopted at the 7 th Conference of the Parties of the CBD [2006 onwards].	Regular stock-taking of implementation of the Bonn Guidelines at CBD meetings and ongoing negotiations of an international regime on Access and Benefit-Sharing. Ongoing negotiations on the Standard Material Transfer Agreement under the International Treaty on Plant Genetic Resources for Food and Agriculture.
A8.1.4	ACTION: Maximise the proportion of EU <i>consumption of wood products</i> deriving from sustainable sources [by 2010].	Regulations (EC) No 338/97 and (EC) No 1808/2001 implementing the Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES).
A8.1.5	ACTION: In the context of action 8.1.1, identify EU <i>non-wood imports driving deforestation</i> in third countries (particularly in the context of trade related SIAs, notably on agricultural products) and adopt and implement measures to prevent, minimise and/or mitigate this deforestation [by 2010].	CBD
A8.1.6	ACTION: Put in place bilateral agreements between EU and major timber exporting countries with aim to support <i>forest law enforcement, governance and trade (FLEGT)</i> [2006 onwards].	FLEGT
A8.1.7	ACTION: Ensure <i>Fisheries Partnership Agreements</i> compatible with maintenance and recovery of stocks at levels that can produce maximum sustainable yield, and with minimising impact on non-target species and habitats [2006 onwards].	Common Fisheries Policy, Treaty Art 174

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A8.1.8	ACTION: Support capacity-building and implementation of CITES provisions to ensure that trade in CITES species is effectively regulated and controlled and not detrimental to the conservation of the species in range states [2006 onwards].	Regulations (EC) No 338/97 and (EC) No 1808/2001 implementing the Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES); European Consensus on Development Cooperation. Member States development policies.
A8.1.9	ACTION: Apply principle of prior informed consent when commercially using traditional knowledge relating to biodiversity and encourage the equitable sharing of benefits arising from the use of such knowledge [2006 onwards].	Relevant for implementation of Bonn Guidelines on Access and Benefit-Sharing and in negotiations on an international ABS regime

POLICY AREA 3: BIODIVERSITY AND CLIMATE CHANGE

OBJECTIVE 9: TO SUPPORT BIODIVERSITY ADAPTATION TO CLIMATE CHANGE.

HEADLINE TARGET: Potential for damaging impacts, related to climate change, on EU biodiversity substantially reduced by 2013.

A9.1	TARGET: 8% reduction in greenhouse gas emissions achieved by 2010.	Kyoto Protocol, IPCC assessments
A9.1.1	ACTION: Commitments made under the Kyoto Protocol respected [2006 onwards].	As for target
A9.2	TARGET: Global annual mean surface temperature increase limited to not more than 2°C above pre-industrial levels.	UN Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol (KP); Conclusions of the Brussels European Council (22 and 23 March 2005) ; COM(2005) 35 final, "Winning the Battle Against Global Climate Change"
A9.2.1	ACTION: Further ambitious measures to limit temperature increase agreed in line with the long-term Intergovernmental Panel on Climate Change (IPCC) assessments, and action against climate change post-2012 extended to all the polluting countries (with common but differentiated responsibilities) and sectors involved.	As for target
A9.3	TARGET: Climate change adaptation or mitigation measure from 2006 onwards delivering biodiversity benefits, and any negative impacts on biodiversity prevented or minimised, from 2006 onwards.	
A9.3.1	ACTION: All climate change adaptation and mitigation measures assessed to prevent negative impacts or, where prevention not possible, to minimise, mitigate and/or compensate for negative impacts and, wherever possible, provide positive benefits to biodiversity [2006 onwards].	Treaty Art 174, nature directives
A9.3.2	ACTION: Ensure that implementation of EU Biomass Action Plan takes due account in assessments, where relevant, of impacts on biodiversity, in particularly on high-nature-value farmland and forests, in order to achieve ecological sustainability of biomass production [2006 onwards].	EU Biomass Action Plan COM(2005)628 final provides for sustainability assessments.
A9.4	TARGET: Resilience of EU biodiversity to climate change substantially strengthened by 2010.	Treaty Art 174, nature directives
A9.4.1	ACTION: Develop a comprehensive programme of priority actions to support biodiversity adaptation to climate change in the EU [by 2008].	As for target
A9.4.2	ACTION: Assess [by 2008], on the basis of available scientific evidence, and substantially strengthen [by 2010] coherence, connectivity and resilience of the protected areas network (Natura 2000 and non-Natura protected areas) in order to maintain favourable conservation status of species and habitats in the face of climate change by applying, as appropriate, tools which may include flyways, buffer zones, corridors and stepping stones (including as appropriate to neighbouring and third countries), as well as actions in support of biodiversity in the wider environment (cf action 1.2.3).	Habitats Directive Art. 3 (coherence) and Art. 10 (coherence and connectivity) - assessment not specified but consistent with need to ensure coherence and connectivity.
A9.4.3	ACTION: Make a preliminary assessment of habitats and species in the EU most at risk from climate change [by 2007], detailed assessment and appropriate adaptation measures prepared [by 2009], commence implementation [by 2010].	Consistent with the aim of the nature directives to ensure biodiversity

POLICY AREA 4: THE KNOWLEDGE BASE

OBJECTIVE 10: TO SUBSTANTIALLY STRENGTHEN THE KNOWLEDGE BASE FOR CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY, IN THE EU AND GLOBALLY.

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
A10.1	TARGET: Research findings on biodiversity and ecosystem services has substantially advanced our ability to ensure conservation and sustainable use by 2010 and again by 2013.	
A10.1.1	ACTION: <u>Subject to funding being found from existing financial resources</u>, establish an <i>EU mechanism for independent, authoritative research-based advice</i> to inform implementation and further policy development.	In line with general research policy to strengthen science-policy interface and make the EU a leading knowledge based economy.
A10.1.2	ACTION: Identify ways and means to <i>strengthen independent scientific advice to global policy making</i>, <i>inter alia</i> by actively contributing to CBD consideration of the 2007 evaluation of the Millenium Ecosystem Assessment, and the ongoing consultations on the need for improved International Mechanisms on Scientific Expertise on Biodiversity.	CBD consideration is provided for following COP8 Decision. IMoSEB is a G8 initiative following January 2005 Paris Conference on Biodiversity Science and Governance
A10.1.3	ACTION: Enhance research on <i>status, trends and distribution</i> of all habitats and species of community interest and of additional habitats and species of policy relevance [2006 onwards].	Treaty Establishing the European Union Arts 163-173; Lisbon European Council (2000) objective to "make Europe the most competitive and dynamic knowledge-base economy by 2010"; Seventh Framework Programme for Research.
A10.1.4	ACTION: Enhance research on most <i>significant pressures</i> on biodiversity, develop and test <i>prevention and mitigation options</i> [2006 onwards].	As above
A10.1.5	ACTION: Develop and apply tools to measure, anticipate and improve <i>effectiveness of most important policy instruments</i> for conservation and sustainable use of biodiversity [2006 onwards].	As above
A10.1.6	ACTION: Allocate adequate <i>financial resources</i> to European and national biodiversity research and to dissemination of its results, including under the Seventh Framework Programme [2006 onwards].	As above
A10.1.7	ACTION: Establish effective and inclusive <i>European Research Area</i> for biodiversity and strengthen capacities (including infrastructures) in key disciplines, interdisciplinary and participatory science [2006 onwards].	As above
A10.1.8	ACTION: Put institutional arrangements in place to ensure <i>policy-relevant research</i> done (eg. in support of implementation of the nature directives, integration of biodiversity into sectoral policies) and <i>research outcomes are reflected where appropriate in policy development</i> [2006 onwards].	As above
A10.1.9	ACTION: Establish and promote [2006 onwards] <i>common data standards and quality assurance procedures to enable interoperability</i> of key european and national biodiversity databases and inventories [by 2008].	As above

B. THE FOUR SUPPORTING MEASURES

SUPPORTING MEASURE 1: ENSURING ADEQUATE FINANCING FOR BIODIVERSITY.

B1.1	TARGET: Adequate funding provided for Natura 2000, biodiversity outside Natura 2000 in EU, biodiversity in external assistance and biodiversity research, inventory and monitoring 2007-2013.	
B1.1.1	ACTION: Ensure <i>adequate financing provided</i> [2007-2013] to <i>Natura 2000</i> implementation through community (CAP Rural Development, Structural Funds, Life+) and MS co-financing, accessible to those who manage Natura 2000 sites, with focus on optimising long-term conservation status and benefits as well as priority awareness raising and networking initiatives. (cf Action A1.1.2)	See Objective 1, Action 1.1.2
B1.1.2	ACTION: Allocate, at MS initiative, within <i>each national/regional Rural Development (RD) Programme</i>, adequate <i>Community and MS co-financing</i> to measures available under all three axes of the RD Regulation which are directly or indirectly supportive of nature and biodiversity [2006/07 and any subsequent revisions].	See Objective 2, Action 2.1.1
B1.1.3	ACTION: Apply new <i>European Fisheries Fund and Member State funds</i> for actions beneficial to marine biodiversity [2007-2013]. (cf Action A3.4.1)	See Objective 3, Action 3.4.1
B1.1.4	ACTION: Allocate, at MS initiative, <i>cohesion and structural funds</i> for projects directly or indirectly providing biodiversity benefits in all MS operational programmes [2006 onwards]. (cf Action A4.1.1)	See Objective 4, Action 4.1.1
B1.1.5	ACTION: <i>European Social Fund (ESF) contributing to biodiversity objectives</i> through awareness-raising, capacity building, employment of the young, long-term jobless and elderly, etc. [2007 onwards]. (cf Action A4.1.2)	ESF Regulation

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
B1.1.6	ACTION: Ensure adequate <i>financing of other biodiversity measures outside Natura 2000 in the EU through other Community co-financing</i> (eg. Life+) and Member States' financing [2007-2013].	Life+ regulation
B1.1.7	ACTION: Increase in real terms international development assistance funds <i>flowing annually to projects directly benefiting biodiversity</i> [for period 2006-2010 compared with period 2000-2005; and again for period 2011-2013]. (cf Actions A7.1.1 to A7.1.6)	See Objective 7, Actions 7.1.1 - 7.1.7
B1.1.8	ACTION: Allocate adequate financial resources to <i>European and national biodiversity research</i> and to dissemination of its results, including under the Seventh Framework Programme [2006 onwards]. (cf Action A10.1.5)	See objective 10, action 10.1.4
B1.1.9	ACTION: Allocate adequate funds for <i>supporting measures</i> including promoting joined-up planning, development of partnerships, monitoring, awareness raising and institutional capacity-building for biodiversity [2007-2013].	Life+ regulation

SUPPORTING MEASURE 2: STRENGTHENING EU DECISION-MAKING FOR BIODIVERSITY.

B2.1	TARGET: EU vision on biodiversity and ecosystem services agreed and providing policy framework by 2010.	Treaty Art 174, Better Regulation
B2.1.1	ACTION: Launch, hold and conclude <i>EU debate</i> on this vision and policy framework [2007/08].	As for target
B2.1.2	ACTION: Strengthen understanding and communication of the <i>values of natural capital and of ecosystem services</i> , and the taking into account of these values in the policy framework, expand incentives for people to safeguard biodiversity [2006 onwards].	As for target
B2.2	TARGET: New policies benefit biodiversity and ecosystem services, and their negative impact on biodiversity and ecosystem services prevented or minimised, from 2006 onwards.	Treaty Art 174, Better Regulation
B2.2.1	ACTION: Integrate concerns for biodiversity and ecosystem services, given their economic important in terms of jobs and growth for some sectors such as tourism, into <i>Lisbon National Reform Programmes</i> and the development of policies and budgets under these NRPs [2006 onwards].	Lisbon strategy, Integrated Guidelines
B2.2.2	ACTION: <i>Screen all new legislative and policy proposals at EU and MS levels for potential significant impacts on biodiversity</i> in general and on ecosystem goods and services in particular, and ensure effective treatment of biodiversity concerns in policy impact assessments, in particular to ensure the maintenance of ecosystem goods and services [2006 onwards].	Treaty Art.174, Better Regulation
B2.3	TARGET: Biodiversity needs have been better integrated, as necessary, into post-2013 Financial Perspectives and any mid-term review of FP 2007-2013.	Treaty Art 174, Better Regulation
B2.3.1	ACTION: Strengthen <i>alignment of the biodiversity policy cycle with the broader EU policy and budgeting cycle</i> to enable more effective integration [2006 onwards].	As for target
B2.4	TARGET: Complimentarity of EC and MS biodiversity strategies and action plans substantially enhanced by 2010.	
B2.4.1	ACTION: <i>Re-align MS biodiversity strategies and action plans with this EU Action Plan</i> [by 2007] and strengthen mechanisms for ongoing alignment of EC and MS biodiversity strategies and action plans [2007 onwards].	ENV Council conclusions of 28 June 2004 calling for Member States to focus their national strategies and action plans on the 21010 targets
B2.4.2	ACTION: <i>Strengthen the institutional arrangements in support of coherence and complementarity</i> in the implementation of EC and MS biodiversity strategies and action plans and in particular of this Action Plan [2006 onwards].	General requirements to ensure coordination and complementarity.
B2.4.3	ACTION: <i>Strengthen mechanisms for delivery from MS level to local level</i> [2006 onwards].	
B2.5	TARGET: Effective integration of Natura 2000, rural development, river basin management and other territorial plans and programmes in support of biodiversity achieved by 2010.	

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
B2.5.1	ACTION: Strengthen proactive <i>integration of available planning instruments</i> including Natura 2000, river basin management planning, programmes of measures for soils, rural development plans - towards application of a ecosystems approach in the terrestrial and freshwater environment [2006 onwards]. (cf Action A4.3.1)	Various EU legislation (nature directives, Water Framework Directive, Soil Framework Directive, Rural Development Regulation, Cohesion Policy and Structural Funds Regulations, etc.) and national planning laws; CBD ecosystems approach.
B2.5.2	ACTION: Integrate biodiversity concerns into the <i>evaluation, monitoring and reporting mechanisms of Community-funded programmes</i> which have an impact on the conservation and recovery of biodiversity [2006 onwards].	Treaty Art 174
B 2.6	TARGET: Substantial improvement in compliance with environmental regulations by 2010 and again by 2013	
B2.6.1	ACTION: Reinforce efforts to ensure <i>compliance, control and enforcement</i> at national, regional and local levels [2006 onwards].	Member State obligation under the Treaty

SUPPORTING MEASURE 3: BUILDING PARTNERSHIPS FOR BIODIVERSITY.

B3.1	TARGET: Key stakeholder groups actively engaged in conservation of biodiversity from 2006 in each MS.	Arhus Convention
B3.1.1	ACTION: Enhance <i>communication, cooperation and concerted action</i> between Commission, Member States, landowners, scientific and conservation communities in support of Natura 2000 (including implementation of 'El Teide' Declaration) [2006 onwards].	Arhus Convention, Nature Directives
B3.1.2	ACTION: Develop <i>farming and biodiversity, forestry and biodiversity</i> partnerships, building on existing consultative processes under the Common Agricultural Policy and forest policy [2006 onwards].	Arhus Convention, Nature Directives, Common Agricultural Policy (in particular Rural Development consultative provisions), forest policy.
B3.1.3	ACTION: Establish and adequately fund <i>Regional Advisory Councils</i> for fisheries, as provided for under the Common Fisheries Policy, and support their operations [2006 onwards].	Arhus Convention; Common Fisheries Policy provides for establishment of Regional Advisory Councils
B3.1.4	ACTION: Establish a <i>Biodiversity and Climate Change Adaptation Task Force</i> at EU level [2007] to advise on measures to support biodiversity adaptation to climate change and the prevention of damaging impacts of climate change adaptation and mitigation measures on biodiversity [2007 onwards].	Biodiversity policy, Climate change policy
B3.1.5	ACTION: Develop <i>biodiversity and planning</i> partnership [2007 onwards].	Arhus Convention; consultative provisions under nature directives, strategic environmental assessment and environmental impact assessment
B3.1.6	ACTION: Develop <i>business and biodiversity</i> partnership [2006 onwards].	
B3.1.7	ACTION: Develop partnership between <i>financing sector and biodiversity</i> [2006 onwards].	Treaty Art 174 applies also to community financing institutions (EBRD, EIB).
B3.1.8	ACTION: Apply the CBD Akwe-Kwon Guidelines for <i>projects affecting terrestrial lands of indigenous and local communities</i> both within the EU MS and in Third countries [2006 onwards].	CBD Akwe-Kon Guidelines

SUPPORTING MEASURE 4: BUILDING PUBLIC EDUCATION, AWARENESS AND PARTICIPATION FOR BIODIVERSITY.

B4.1	TARGET: 10 million Europeans actively engaged in biodiversity conservation by 2010, 15 million by 2013.	Arhus Convention
B4.1.1	ACTION: Develop [2006/07] and implement [2007 onwards] a <i>communications campaign</i> in support of full implementation of this Action Plan.	As for target
B4.1.2	ACTION: Strengthen and implement IUCN <i>Countdown 2010</i> initiative [2006 onwards].	As for target
B4.1.3	ACTION: Ensure <i>public participation, related access to justice requirements of the Aarhus Convention</i> applied to projects, plans and programmes relating to or having an impact on biodiversity conservation [2006 onwards].	As for target

C. MONITORING, EVALUATION AND REVIEW

ANNUAL REPORTING

C1.1	TARGET: Annual, Mid-term and Final Reports submitted in timely fashion to Council and Parliament	
------	---	--

No.	OBJECTIVES, TARGETS, ACTIONS	POLICY CONTEXT FOR ACTIONS (The legal basis for all actions in the Treaty Art 174)
-----	------------------------------	--

C1.1.1	ACTION: <i>Submit annual report</i> on progress in implementation to Council and Parliament [starting end 2007].	No specific policy context
--------	---	----------------------------

INDICATORS

C1.2	TARGET: Indicators in place and informing policy decisions by 2010	
C1.2.1	ACTION: Adopt and apply [by 2007], at EC and MS levels, a small set of biodiversity headline indicators (see Annex 2) which inform the public and decision-makers on the state and trends of biodiversity, pressures on biodiversity and the effectiveness of key policy measures; adopt and apply at EC level a biodiversity index as a Sustainable Development Indicator and as a Structural Indicator [by 2007]	Adoption of biodiversity indicators provided for in Biodiversity Strategy; headline set welcomed by ENV Council of 28 June 2004; structural indicator called for by same council

MONITORING

C1.3	TARGET: Monitoring providing adequate data flow for implementation of indicator set, for reporting on favourable conservation status, and for broader assessment of effectiveness of this Action Plan by 2010.	
C1.3.1	ACTION: Establish reference values for favourable conservation status for Habitats and Birds Directive habitats and species to achieve a consensus of definitions across Member States [2006/07]; monitor habitats and species status in relation to these values [2007 onwards].	Habitats and Birds Directives monitoring requirements.
C1.3.2	ACTION: Use, and as necessary develop, monitoring tools, approaches and frameworks (building on those existing, including those of civil society) in order to establish and coordinate adequate harmonised data flows for the biodiversity indicators to reveal key trends [2007 onwards].	EC Biodiversity Strategy requirement to monitor progress
C1.3.3	ACTION: Develop shared information system for biodiversity monitoring and reporting in the EU, based on agreed biodiversity indicators, which makes data available to all interested users, streamlines reporting and supports policy evaluation and development at national, regional and global levels [2006 onwards].	EC Biodiversity Strategy requirement to monitor progress

EVALUATION AND REVIEW

C1.4	TARGET: Action Plan adjusted as necessary in 2010, new plan adopted in 2013	
C1.4.1	ACTION: Submit to Council and Parliament in 2009 a concise mid-term evaluation of progress towards the 2010 targets (to end 2008) and make any essential adjustments in actions to meet targets.	Extends reporting requirement provided under EC Biodiversity Strategy
C1.4.2	ACTION: Submit to Council and Parliament, in 2011, a full evaluation of extent to which EU has met its 2010 targets .	Extends reporting requirement provided under EC Biodiversity Strategy
C1.4.3	ACTION: Submit to Council and Parliament, in 2014, a full evaluation of extent to which EU has met all post-2010 targets of this Action Plan, and proposing a new Action Plan for the period of the new Financial Perspectives post-2013 .	Extends reporting requirement provided under EC Biodiversity Strategy

Key

POLICY AREA	
OBJECTIVE/SUPPORTING MEASURE	
HEADLINE TARGET	
A1.1	TARGET
A1.1.1	ACTION with related dates and/or deadlines, eg. [by 2010]

NB: The dates and/or deadlines attached to actions and targets in this Action Plan do not in any way override any deadlines for measures required under existing Community policy or legislation. Similarly, the indication in this Action Plan that an action is to be taken '2006 onwards' does not necessarily imply that this action should not already have been implemented or already be in process of implementation, in accordance with existing Community policy or legislation.