



ACTIONS FOR BIODIVERSITY 2011-2016

IRELAND'S NATIONAL BIODIVERSITY PLAN



An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

Cover: "Bog Cotton on Enismore Bog" by Jimmy Deenihan, T.D. Painted at Cill Rialaig,



ACTIONS FOR BIODIVERSITY 2011-2016

Ireland's Vision for Biodiversity

“That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally.”



Minister's Foreword



We live in a country with a rich natural heritage. As Minister for Arts, Heritage and the Gaeltacht, I am privileged to get to see many of the best wildlife areas during my work, but I have always had a strong interest in nature and have spent a lot of time walking in the mountains and bogs around my home in Kerry.

Biodiversity provides us with food, clean water, building materials and other essentials that we simply cannot live without. It underpins vital economic sectors such as agriculture and tourism. For those reasons alone we should strive to protect what we have.

This plan has been prepared against a background of growing urgency at international and European level biodiversity against increasing pressures and loss. The United Nations has recognised the urgency and declared the period 2011-2020 as "The Decade on Biodiversity". Every country has an international obligation to join this cause. However, the effects of actions taken may not be seen for many years so if we are to put things right we must start now.

Raising awareness of the issues is a vital step in meeting our objectives with regard to halting biodiversity loss and protecting our ecosystems. If we can inform and influence the key stakeholders, be it farmers, the business sector or the wider public, of the connection between biodiversity and the services they rely on, we will improve the success of the actions we must take. It is particularly important to raise that awareness with children, as they will bring that with them throughout their lives and help pass on the key messages. In my former career as a teacher, it gave me great pleasure to organise events such as nature walks, in order to open children's eyes to our natural environment and its importance. Therefore I am particularly pleased with the actions to be carried out to improve awareness in the education sector.

In the current economic climate it is also essential to research and highlight the economic value attached to biodiversity and ecosystem services. We need to take decisions in many sectors in a way which takes into account what impacts we might have on such services, and we know only too well that it costs much less to put the appropriate actions to protect biodiversity in place now than try to replace or restore them in the future.

It gives me great pleasure, therefore, to publish Actions for Biodiversity 2011-2016, Ireland's Second National Biodiversity Plan, containing 102 actions towards understanding and protecting biodiversity in Ireland and overseas.

I want to thank the staff in my Department for their work on this Plan, as well as all those who made submissions in the Public Consultation Process. I am looking forward to the challenge of driving the implementation of this Plan over the coming years in a spirit of co-operation with farmers, foresters, fishermen, environmental and state organisations and others who need to be involved.

A handwritten signature in blue ink that reads "Jimmy Deenihan". The signature is written in a cursive, flowing style.

**Jimmy Deenihan, T.D.,
Minister for Arts, Heritage and the Gaeltacht**

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International Biodiversity

European Biodiversity Clearing House Mechanism:
<http://biodiversity-chm.eea.europa.eu/>

Convention on Biological Diversity: <http://www.cbd.int/>

Article 17 Portal: <http://bd.eionet.europa.eu/article17>

TEEB Initiative on Economics of Ecosystems and Biodiversity: <http://www.teebweb.org/>

Global Biodiversity Information Facility www.gbif.org

Millennium Development Goals:
<http://www.un.org/millenniumgoals/>

Ramsar Convention on Wetlands: <http://www.ramsar.org/>

Bonn Convention on Migratory Species:
<http://www.cms.int/>

International Treaty on Plant Genetic Resources for Food and Agriculture: <http://www.planttreaty.org/>

Convention on Trade in Endangered Species (CITES):
<http://www.cites.org/>

Implementation of CITES (Convention on Trade in Endangered Species) in Ireland:
<http://www.npws.ie/legislationandconventions/cites/citesintheeuireland/>

Bern Convention on the Conservation of European Wildlife and Natural Habitats:
<http://www.coe.int/t/dg4/cultureheritage/nature/Bern/>

Access and Benefit Sharing provisions of the Convention on Biological Diversity: <http://www.cbd.int/abs/>

EU Biodiversity

European Environment Agency
<http://www.eea.europa.eu/themes/biodiversity>

European Commission
http://ec.europa.eu/environment/nature/index_en.htm

National Biodiversity

National Parks and Wildlife Service: www.npws.ie

Notice Nature: <http://www.noticenature.ie/>

National Biodiversity Data Centre:
<http://www.biodiversityireland.ie/>

National Biodiversity Research Platform:
<http://www.biodiversityresearch.ie/>

The Heritage Council: www.heritagecouncil.ie

Further Information on Local Biodiversity Action Plans:
<http://www.heritagecouncil.ie/wildlife/heritage-council-initiatives/local-biodiversity-action-plan/>

Department of Agriculture, Food and the Marine :
<http://www.agriculture.gov.ie/>

Department of Environment, Community and Local Government: <http://www.environ.ie/en/>

Department of Communications, Energy and Natural Resources:
<http://www.dcenr.gov.ie/>

Invasive Species Ireland www.invasivespeciesireland.com

Irish Legislation: www.irishstatutebook.ie

Environmental Protection Agency: www.epa.ie

Bord Na Móna: www.bordnamona.ie

Marine Institute: <http://www.marine.ie/Home/>

Teagasc <http://www.teagasc.ie/>
COFORD Forestry Research <http://www.coford.ie/>

Coillte: <http://www.coillte.ie/>

Inland Fisheries: <http://www.fisheriesireland.ie>

Office of Public Works: <http://www.opw.ie>

Irish Aid: <http://www.irishaid.gov.ie/>

Lists most of Ireland's Environmental NGOs

<http://www.ien.ie/membership/>

Landowner Organisations

The Irish Farmers' Association: <http://www.ifa.ie/>

Irish Creamery Milk Suppliers Association:
<http://www.icmsa.ie/>

Irish Cattle and Sheep Farmers Association:
<http://www.icsaireland.com/>

Macra na Féirme: <http://www.macra.ie/>

Irish Timber Growers Association: <http://www.itga.ie/>

1. INTRODUCTION





Biodiversity – Why Does it Matter?

Biological diversity or “biodiversity” means the variety of all life forms on Earth. We as human beings are an integral part of biodiversity and we can influence it in a positive or negative way. Biodiversity provides us with food, fuel, medicines and other essentials that we simply cannot live without and is a critical component of the services that nature provides free of charge to all of human society. In the words of Ban Ki-moon, Secretary General of the United Nations,

“...biodiversity underpins the functioning of the ecosystems on which we depend for food and fresh water, health and recreation, and protection from natural disasters. Its loss also affects us culturally and spiritually. This may be more difficult to quantify, but is nonetheless integral to our well-being.”

It is generally accepted that we all have a moral duty to endeavour to look after the planet and its habitats and species for our own benefit and that of future generations.

What is Ireland’s biodiversity?

The National Biodiversity Data Centre recently published an inventory of the country’s biodiversity in a report entitled “*State of Knowledge, Ireland’s Biodiversity 2010*”. More than 31,000 species occur in Ireland, 60% of which are invertebrates. Only 10% are “familiar” species such as plants, birds and mammals. It is estimated that there are at least 7,000 species of algae and fungi that have yet to be discovered in Ireland.

Much of Ireland’s richest biodiversity is in the marine environment. As well as a great range of invertebrate communities, we have high numbers of whale and dolphin species, large seabird breeding colonies, cold water coral communities in the deep seas and many species at the northern or southern limit of their distributional range.

Ireland is also an important staging post and destination for migratory birds and holds significant populations of birds rare elsewhere in Europe as well as internationally important wetland bird communities.



Photo: Robert Thompson

Many of our habitats are internationally important due to their scarcity elsewhere in Europe and the unique species communities found within them, despite Ireland having a lower diversity of flora and fauna compared with continental Europe, due to its geographic isolation and glacial history.

We have very few unique or endemic species, much fewer than would be expected on an island. However some species, that probably occurred in Ireland before the last glaciation and survived, have unique characteristics here. Examples of these include the Irish Hare and the Killarney Shad.

In addition to biodiversity many important ecosystems exist which provide a variety of services to us for free which bring many benefits to society and the economy; there are four main categories:

- Provisioning services (production of food and water, etc.)
- Regulating services (e.g. the control of climate and disease)
- Supporting services (e.g. nutrient cycling and crop pollination)
- Cultural services (such as spiritual and recreational benefits)

Is our biodiversity in good health?

Ireland is one of 193 countries who are parties to the Convention on Biological Diversity (hereafter known as the Convention or CBD) along with the other EU Member States and the EU itself. In 2002, the Parties to the Convention, including Ireland, committed themselves to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national levels as a contribution to poverty alleviation and to the benefit of all life on Earth. In 2006 the European Commission set out a target of halting biodiversity loss by 2010; a target that has not been reached.

In its recent assessment, the Commission states that Europe is seeing the constant loss, degradation and fragmentation of natural habitats and entire ecosystems are also being pushed to the point of collapse. Globally, the picture is far worse: biodiversity and ecosystem services are being lost at an alarming rate. Maintaining the functionality of ecosystems has become increasingly

urgent. Current trends are bringing us closer to a number of potential tipping

points that could catastrophically reduce the capacity of ecosystems to provide these essential services. The ecological footprint of humanity exceeds the biological capacity of the Earth by a wider margin than it did at the beginning of this Millennium.

However, the EU assessment pointed to significant progress in some areas, such as towards the completion of the Natura 2000 network of Protected Areas. This is a European network of important ecological sites made up of Special Protection Areas (SPAs), established under the EU Birds Directive (79/409/EEC), and Special Areas of Conservation (SACs), established under the EU Habitats Directive.

Nationally, although significant progress has been made in the past decade, biodiversity loss has not been halted in Ireland. The status of many of our habitats and some of our species is judged to be poor or bad.

According to the Third Global Biodiversity Outlook, issued by the CBD in 2010, the five principal pressures directly driving biodiversity loss (habitat change, overexploitation, pollution, invasive alien species and climate change) are either constant or increasing in intensity. There are many indications that biodiversity continues to decline throughout the world. These include:

- Extensive fragmentation and degradation of forests, rivers and other ecosystems have led to loss of biodiversity and ecosystem services;



Irish Hare
Photo: Eddie Dunne



Buff Tailed Bumble Bee
Photo: NPWS

- Crop and livestock genetic diversity continues to decline in agricultural systems;
- Species that have been assessed for extinction risk are on average moving closer to extinction. Amphibians face the greatest risk and coral species are deteriorating most rapidly in status. It is estimated that nearly a quarter of the world's plant species are threatened with extinction;
- The abundance of vertebrate species fell by nearly a third between 1970 and 2006, and continues to fall globally;
- Natural habitats in most parts of the world continue to decline in extent and integrity. Freshwater wetlands, sea ice habitats, salt marshes, coral reefs, seagrass beds and shellfish reefs are all showing serious declines, although there has been significant progress in slowing the rate of loss for tropical forests and mangroves in some regions.



Connemara National Park
Photo: NPWS

Biodiversity and Human Wellbeing

The World Health Organisation emphasises that good human health and productive livelihoods depend upon ecosystem products and services, such as availability of fresh water, fresh air, food and fuel sources. Biodiversity loss can have significant direct human health impacts if ecosystem services are no longer adequate to meet social needs. In addition, significant medical and pharmacological discoveries are made through greater understanding of the biodiversity in Ireland and worldwide. Biodiversity loss may limit discovery of potential treatments for many diseases and health problems. Health promotion, health research, health monitoring, disease prevention, community health

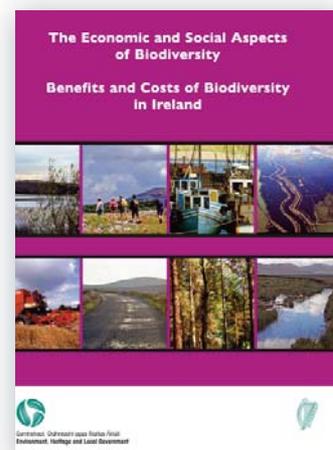
and the costs of public health management are all positively affected by ecosystem goods and services and put at risk by biodiversity loss and ecosystem change.

Economic Value of Biodiversity

Biodiversity, ecosystems and natural resources are our natural capital. Ireland's National Recovery Plan 2011 - 2014 together with 'Building Ireland's Smart Economy' (2008), recognise that economic prosperity depends on maintaining and enhancing our assets, including natural capital. Ireland is currently facing a difficult economic climate and the restoration of the national economy is a priority. In such circumstances the need to put forward the clear link between biodiversity and ecosystem services and economic benefit has never been more important. The spectrum of environmental issues under biodiversity conservation underpins some important economic sectors, supporting employment and local communities.

According to the United Nations Food and Agriculture Organisation, 40% of the world's economy is based directly or indirectly on the use of biological resources. This provides one of the most compelling reasons for the protection of ecosystems, habitats and species.

From an Irish perspective, biodiversity and ecosystem services have a clear link to supporting our agricultural sector (e.g. clean water, soil and pollination services, etc.). In 2008 an Irish study 'The Economic and Social Benefits of Biodiversity', the value of national ecosystem services, in terms of their productive output and human utility, was estimated at over €2.6 billion per year. In agriculture, the value of soil biota for nutrient assimilation and recycling is placed at €1 billion per year, but greater reliance on pollination could give an additional value of €220m per year. Baseline pest control is worth €20m per year before savings on pesticides of an estimated €2m per year. The public utility benefits of sustainable farming have been put at a minimum of €150m per year. The level of ecosystem services from forestry is valued at €55m per year, but could rise to €80m per year if



Fishing boats in Kilalla Bay.
Photo: NPWS



more environmentally sensitive forestry is practiced, and more if broadleaf forestry is expanded.

The quayside fish catch was estimated to be worth €180m per year, but could be twice this amount if fish stocks were managed sustainably. Aquaculture and the seaweed industry are valued at over €50m per year, excluding the assimilation value of waste by rivers. A tentative value of the ecosystem services provided by biodiversity to freshwater resources is placed at up to €385m per year.

These are conservative estimates, based on available data. The true value is probably far greater. However, the figures clearly show that healthy ecosystems are worth conserving for their economic value alone. The costs of neglect and subsequent restoration of damaged ecosystems would be considerably more.

The tourism sector is another key element in Ireland's economy and an area currently being targeted for growth. Organisations such as Fáilte Ireland have been working on bringing natural heritage more to the forefront of the tourism experience and on promoting environmental sustainability. Surveys of tourists consistently show that the natural beauty and culture of Ireland are key reasons for visiting. Biodiversity and ecosystems play an important role in keeping that image alive; Ireland has key assets such as protected structures, sites of scenic and scientific importance and National Parks which can be utilised to further support tourism efforts.

The Economics of Ecosystems and Biodiversity Initiative (TEEB) is an ongoing project under the CBD to examine and promote the economic aspects of protecting biodiversity. Publications include guidance for policy makers in order to foster sustainable development and better conservation of ecosystems and biodiversity and the role of economic incentives in shaping environmental behaviour.

The Ecosystem Approach

"Ecosystem" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. (Article 2 of the Convention on Biological Diversity)

The Ecosystem Approach is the primary framework for action under the Convention on Biological Diversity and is defined as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It is

based on the application of appropriate scientific methodologies focused on levels of biological organisation which encompass the essential processes, functions and interactions among organisms and their environment. It recognises that humans, with their cultural diversity, are an integral component of ecosystems. This approach will be implemented over time in management practices in relation to key ecosystems.

The objectives and actions in this Plan are, as far as possible, consistent with this approach. The Ecosystem Approach comprises twelve principles.



Connemara National Park
Photo: NPWS

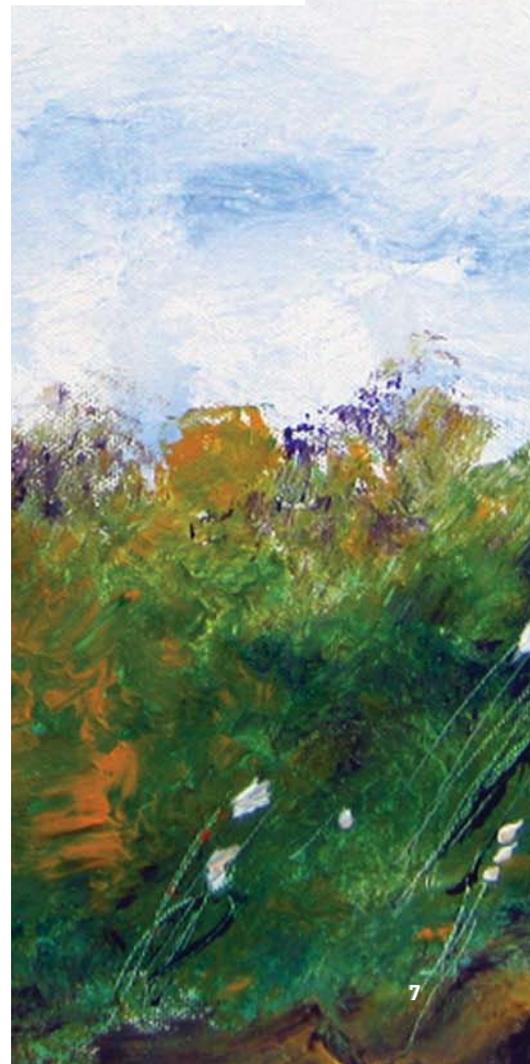
THE 'ECOSYSTEM APPROACH'

1. The objectives of management of land, water and living resources are a matter of societal choice.
2. Management should be decentralised to the lowest appropriate level.
3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
4. Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:
 - (i) reduce those market distortions that adversely affect biological diversity;
 - (ii) align incentives to promote biodiversity conservation and sustainable use; and
 - (iii) internalise costs and benefits in the given ecosystem to the extent feasible.
5. Conservation of ecosystem structure and functioning, to maintain ecosystem services, should be a priority target of the ecosystem approach.
6. Ecosystems must be managed within the limits of their functioning.
7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
8. Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.
9. Management must recognise that change is inevitable.
10. The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
11. The ecosystem approach should consider all forms of relevant information, including scientific, indigenous and local knowledge, innovations and practices.
12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines.



Blackcap
Photo: Robert Thompson

2. STRATEGY



RECENT EVENTS

As set out in Chapter 1, the commitment to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national levels was not reached. Therefore the Parties to the Convention on Biological Diversity agreed new objectives in Nagoya, Japan, in October 2010 around a strategic plan for the period 2011 to 2020 “Living in Harmony with Nature” (see below).

In December 2010 the EU Environment Ministers endorsed the results of the Nagoya conference and called on the EU Commission to ensure that the relevant targets of the CBD Strategic Plan are implemented through a future European biodiversity strategy and that the relevant targets of the CBD Strategic Plan be integrated through every ongoing policy reform process at EU level, e.g. the Common Fisheries Policy and the Common Agricultural Policy.

The EU Commission recently published new Biodiversity Strategy, in the communication entitled “Our life insurance, our natural capital: an EU biodiversity strategy to 2020”. In June 2011, the EU Environment Ministers endorsed the strategy.



Convention on Biological Diversity

2.1 Global Action on Biodiversity

The Convention on Biological Diversity is a global agreement which sets out commitments for maintaining the diversity and functionality of the world’s ecosystems as countries proceed with economic development. The Convention established three main goals: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits from the use of genetic resources.

The Convention covers all ecosystems, species and genetic resources and recognises that they must be used for the benefit of humanity, but insists that this should be done in a way and at a rate that does not lead to the long-term decline of biological diversity. It underlines the importance of the precautionary principle where, if there is a threat of significant loss of biological diversity, lack of scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat. Substantial

investment is needed to conserve biological diversity but the Convention argues that conservation will bring us significant environmental, economic and social benefits in return.

The Convention requires Ireland and other contracting parties to take measures for the conservation and sustainable use of biological diversity. The Convention is a framework and does not contain lists of sites and species to be conserved; each country decides how it will meet the Convention’s overall goals and objectives. Ireland’s main obligations as a Party are listed below. Countries are obliged to prepare national strategies or plans periodically in order to achieve the Convention’s goals and objectives. Countries are also required to submit national reports on the biodiversity status, trends and threats within their jurisdictions and the effectiveness of their national biodiversity plans in meeting the goals and objectives of the Convention; Ireland submitted its 4th National Report in 2010.

IRELAND’S MAIN OBLIGATIONS UNDER THE UN CONVENTION ON BIOLOGICAL DIVERSITY

As a contracting party to the Convention, Ireland is committed to measures to conserve biodiversity under the following themes:

- Conservation of ecosystems, habitats and species in their natural surroundings, both inside and outside protected areas (in situ conservation)
- Conservation of the components of biological diversity outside their natural habitats (ex situ conservation)
- Impact assessment
- Identification and monitoring
- Sustainable use of ecosystems, species and other biological resources
- Adoption of incentive measures
- Research and training
- Public awareness and education
- Policies and mechanisms for equitable sharing of benefits of genetic resources
- Facilitating access and transfer of technology
- Exchange of information
- Technical and scientific cooperation
- Access to and safe use of biotechnology
- Provision of financial resources to achieve the Convention’s objectives, both nationally and to developing countries



New Strategic Plan for the Convention – 2050 Vision and 2020 Mission

The 10th Conference of the Parties to the Convention in Nagoya, Japan in October 2010 adopted the new strategic plan for the period 2011 to 2020 “Living in Harmony with Nature”. The plan has a long-term vision for 2050, as well as a mission for 2020.

LIVING IN HARMONY WITH NATURE

The Vision: *“By 2050, biodiversity is valued, conserved and restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”*

The Mission of the CBD Strategic Plan is to ensure a coherent implementation of the Convention on Biological Diversity and achievement of its three objectives by taking *“effective and urgent action to halt the loss of biodiversity to ensure that, by 2020, ecosystems are resilient and continue to provide essential services, thereby securing the planet’s variety of life and contributing to human well-being and poverty eradication”*.

The Mission has 20 headline targets for 2020, organised under five Strategic Goals which identify the different aspects of approaching the issue of biodiversity loss. These are:

- Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- Reduce the direct pressures on biodiversity and promote sustainable use
- Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- Enhance the benefits to all from biodiversity and ecosystem services
- Enhance implementation through participatory planning, knowledge management and capacity building

The goals and targets provide a framework for the establishment of national targets. The United Nations has also decided, in order to further drive progress, to designate the period 2011-2020 as the UN Decade on Biodiversity.



2.2 EU Action on Biodiversity

As a member of the European Union, Ireland contributes to the work of conserving biodiversity in the entire territory of the 27 Member States. Since Ireland’s policies and legislation on biodiversity are strongly influenced by the EU, this Plan must address not just national but also wider European issues. In 2010, the EU adopted a new vision and headline target for biodiversity as follows:

EU VISION AND HEADLINE TARGET

The EU has articulated its **long-term vision** as *“by 2050 EU Biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity’s intrinsic value and for their essential contribution to human well-being and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided”*.

The EU has also published its **Headline Target** for progress by 2020 as ‘to halt the loss of biodiversity and the degradation of ecosystems in the EU by 2020, restore them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss’.

EU Biodiversity Strategy to 2020

The EU Commission published, in 2011, a communication on the new EU Biodiversity Strategy, entitled “Our life insurance, our natural capital: an EU biodiversity strategy to 2020”. This Communication identifies 6 Target Areas for action:

- Full implementation of the nature directives
- Maintain and restore ecosystems and their services
- Increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity
- Ensure the sustainable use of fisheries resources
- Combat invasive alien species
- Help avert global biodiversity loss

The most important elements in the EU actions are the nature directives. The Birds Directive and the Habitats Directive require Member States to conserve valuable or threatened habitats and species, in particular by establishing the Natura 2000 network of sites.

The full implementation of these Directives, along with others, such as the Water Framework Directive and Marine Strategy Framework Directive, will contribute enormously to biodiversity conservation. More detail on these Directives can be found in the relevant sections of Chapter 3.

2.3 Relationships to other Strategies and Themes

There are important relationships between action on biodiversity and other international and national strategies, plans and thematic issues, as follows.

Climate Change

Climate Change and biodiversity are inextricably linked. While climate change is likely to become one of the most significant drivers of biodiversity loss, biodiversity itself can support efforts to reduce the negative effects of climate change. Conserved or restored habitats can remove carbon dioxide from the atmosphere, thus helping to address climate change by storing carbon. Moreover, conserving intact ecosystems can help reduce the disastrous impacts of climate change such as flooding, landslides and storm surges.

Climate change is already forcing biodiversity to adapt either through shifting habitat, changing life cycles, or the development of new physical traits. Increasing the adaptive capacity of species and ecosystems in the face of accelerating climate change will need to be achieved by reducing non-climatic stresses, such as pollution, over-exploitation, habitat loss and fragmentation, and invasive alien species.

Under the Kyoto Protocol Ireland agreed to a target of limiting its greenhouse gas emissions to 13% above 1990 levels by the first commitment period 2008-2012 as part of its contribution to the overall EU target. Ireland ratified the Kyoto Protocol on the 31 May 2002, along with the EU and all other Member States, and is legally bound to meet the challenging greenhouse gas emissions reduction target.

The National Climate Change Strategy 2007 - 2012 sets out a range of measures, building on those already in place under the first National Climate Change Strategy (2000) to ensure Ireland reaches its target under the Kyoto Protocol. The Strategy provides a framework for action to reduce Ireland's greenhouse gas emissions.

Work is also being carried out on a National Climate Change Adaptation Framework which considers the adaptation of species and habitats to changing climate.

Sustainable Development

Sustainable Development policies can have a significant impact on biodiversity. It is usually defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The EU Amsterdam Treaty made Sustainable Development a core task of the European Community.

"Making Ireland's Development Sustainable", a five-year review of the original 1997 Strategy, was produced in 2002. Ireland has committed to publishing a renewed National Sustainable Development Strategy and this work is currently under way.

Other Conventions

Ireland is a signatory to a number of International Nature Conventions including the UN Convention on Trade in Endangered Species (CITES), the Bonn Convention (on conservation of migratory species of wild animals), and the RAMSAR Convention (on wetlands).

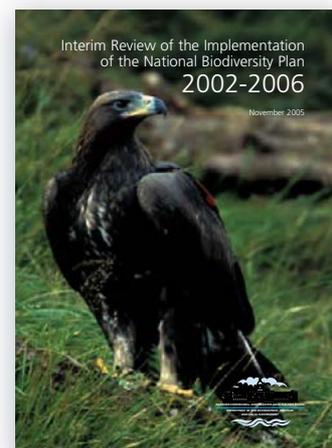
Sectoral Policies

The EU Common Agricultural Policy (CAP) and the EU Common Fisheries Policy (CFP) are of particular importance to Ireland's action on biodiversity loss (see Chapter 3.3). National policies and plans for spatial planning, agriculture, forestry, fisheries, extractive industries, transport, tourism and overseas development are also relevant.

2.4 Development of this Plan

In 2002, Ireland published its first National Biodiversity Plan which contained 91 actions. The implementation of that Plan was reviewed as part of the process of developing this document and a summary of the review is contained within the "Interim Review of the Implementation First National Biodiversity Plan", available on www.npws.ie.

Actions for Biodiversity 2011-2016 builds upon the achievements since 2002. It focuses on actions that were not fully completed and addresses emerging issues. It has been developed along the lines of other plans referenced, in particular



the EU Biodiversity Action Plan and the CBD Strategic Plan and takes account of their aims, objectives and targets outlined above.

Government Departments and State agencies representing all the relevant sectors were consulted on a series of draft action points in advance of the preparation of this Plan, in parallel with a comprehensive public consultation process.

2.5 Ireland's Vision for Biodiversity

THE VISION:

“That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally.”

The Overarching Target of this Plan, based on the actions which follow is:

“That biodiversity loss and degradation of ecosystems are reduced by 2016 and progress is made towards substantial recovery by 2020.”

This Vision and Overarching Target combine to set a significant challenge for Ireland in taking the appropriate measures to halt the decline in our biodiversity as well as contributing to global action. The task is of such magnitude that it will carry over to the next Biodiversity Plan in the second part of the decade, which will continue this work.

The measures Ireland will take in the overall strategy of *Actions for Biodiversity 2011-2016* are presented in a series of **Strategic Objectives**. These objectives are explored in Chapter 3 which includes a series of relevant targets, actions, indicators and outcomes relevant to each Strategic Objective.

The **Targets** will be met through a set of **Actions** that will be taken and which are listed under the appropriate Target. **Indicators and Outcomes** will be used to identify and monitor progress on individual Targets. Explanatory and background text is provided at the beginning of each Section and under each Target, where appropriate.

STRATEGIC OBJECTIVES

OBJECTIVE 1:

To mainstream biodiversity in the decision making process across all sectors

OBJECTIVE 2:

To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity

OBJECTIVE 3:

To increase awareness and appreciation of biodiversity and ecosystems services

OBJECTIVE 4:

To conserve and restore biodiversity and ecosystem services in the wider countryside

OBJECTIVE 5:

To conserve and restore biodiversity and ecosystem services in the marine environment

OBJECTIVE 6:

To expand and improve on the management of protected areas and legally protected species

OBJECTIVE 7:

To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services

Monitoring and Review of the Plan

This is a plan of actions accompanied by targets; targets are a means by which we move from words to action and from action to measurable results. The targets in this Plan bring accountability and demonstrate that the Government is making a long-term commitment to biodiversity conservation that it recognises to be pivotal to the nation and the world at large. The Convention defines good targets as measurable, time-bound and outcome-orientated, in other words, they are focused on real world results.

A set of biodiversity headline indicators will be adopted and applied that will inform the public and decision-makers on the state and trends of biodiversity, pressures on biodiversity and the effectiveness of key policy measures. The complete set of indicators that will be used to measure



Windfarm at Bellacorick
Photo: Jim Moore

progress towards meeting the objectives and targets of this Plan are listed in the Appendix. It is planned that the headline indicators will be in place and capable of informing policy decisions by 2012.

The Biodiversity Working Group consisting of representatives from the relevant Government Departments and other agencies will be involved in the ongoing implementation and monitoring of the Plan. This Working Group will meet regularly to monitor progress on the actions set out in the Plan and to further discuss and develop details of the implementation of actions. It is also intended to establish a new Minister-led Steering Group to oversee overall progress (see Action 1.3).

A mid-term review of implementation of this plan will be carried out by 2014, overseen by the Department of Arts, Heritage and the Gaeltacht in conjunction with the relevant organisations. This process will also feed into the development of the next National Biodiversity Plan, which will be finalised and adopted by 2016.

2.6 The Key Players

There is a broad range of organisations involved in tackling the issue of biodiversity loss; from central Government Departments, State agencies and local authorities, the research community, national and local NGOs and, indeed, communities and individuals.

Responsibility for biodiversity matters is now vested in the Minister for Arts, Heritage and the Gaeltacht. This includes the enforcement of wildlife legislation, designation and protection of Natura 2000 sites (Special Areas of Conservation and Special Protection Areas), management of State-owned National Parks and Statutory Nature Reserves, scientific research and monitoring programmes, preparation of species action plans, etc.

The Department of the Environment, Community and Local Government has responsibility for environmental issues such as planning and development, water quality and climate change.

The Department of Agriculture, Food and the Marine is responsible for policies and funding programmes in the areas of agriculture, food, fisheries, forestry and rural environment.

The Department of Communications, Energy and Natural Resources is responsible through its agencies for the conservation and management of freshwater fish and some marine fisheries, as well as for renewable energy and for the operations of Bord na Móna.

A number of other Departments have responsibility for, or involvement in, issues which crossover with biodiversity concerns, e.g. An Garda Síochána and Customs are involved in enforcement of certain key legislation in the area of illegal trade and importation, and these are outlined throughout the actions set out in the Plan.

State bodies with a role in biodiversity include the Environmental Protection Agency, Marine Institute, Inland Fisheries Ireland, Teagasc (the Agricultural and Food Development Authority), the Heritage Council (the State Advisory Body on Heritage), which operates the National Biodiversity Data Centre in addition to its advisory and funding roles, Coillte and the Office of Public Works, which includes the National Botanic Gardens.

Local authorities play a key role in biodiversity conservation through the planning system, the wide range of environmental services they provide and through the network of biodiversity and heritage officers and their implementation of plans and programmes.

Landowners and farmers are in many aspects the most important players in biodiversity issues. Their representative organisations include the Irish Farmers' Association, the Irish Creamery Milk Suppliers Association, the Irish Cattle and Sheep Farmers Association, Macra na Feirme, the Irish Landowners' Organisation and the Irish Timber Growers Association.

Universities and Institutes of Technology are centres of research and training in the field of biodiversity. Alignment of research needs with outputs is being advanced through the National Platform for Biodiversity Research.

A wide range of national NGOs are involved in the area of biodiversity including An Taisce, Birdwatch Ireland, the Irish Whale and Dolphin Group, Bat Conservation Ireland, the Irish Peatland Conservation Council and the Irish Wildlife Trust. Many local organisations and groups also carry out important biodiversity related work.

The Biodiversity Forum was set up to advise on the content and implementation of the first National Biodiversity Plan. The Forum includes representatives of landowners, farmers, industry, natural heritage, environmental NGO's, Universities and Institutes of Technology. It considered the draft 2nd. plan and advised on its development. It is expected that the Forum will continue in its role.

Funding for Biodiversity Conservation

Funding is allocated in the area of biodiversity from different sources and in various ways. Dedicated funding is provided under the annual Exchequer allocation to relevant Government Departments. State bodies with a biodiversity role also receive Exchequer funding or grants. In the current climate, scarcer resources will be under competing demand and prioritisation will be a key action.

The European Union provides funds towards national agri-environment schemes under the EU Common Agricultural Policy. These schemes are operated by the Department of Agriculture, Marine and Food. The EU also provides funds for other Irish programmes with relevance to biodiversity, such as the Water Services Investment Programme. EU LIFE-Nature, the EU's financial instrument supporting environmental and nature conservation projects, has co-funded many projects in Ireland. These include bog restoration, the reintroduction of the Golden Eagle and BurrenLIFE, a major farming and conservation initiative in the Burren, Co. Clare.

The Multi-Annual Financial Framework for the EU was issued in July 2011 by the Commission. It is envisaged that funding for biodiversity will be delivered primarily via the main funding instruments (e.g. CAP) and through external action funding. This means that the integrated model for co-financing biodiversity and Natura 2000, as introduced in the context of the 2007-2013 financing framework, is expected to continue.

This entailed integrating biodiversity goals into different existing EU funds or instruments, including the European Agricultural Fund for Rural Development (EAFRD), European Fisheries Fund (EFF), Structural Funds (i.e. the European Fund for Regional Development – ERDF and the European Social Fund – ESF), the Cohesion Fund, the European financial instrument for the environment (LIFE+) and the 7th European Framework Programme for Research and Development (FP7).

The EU's approach to financing the Natura 2000 Network is currently under review. In its Spring 2010 Council, Environment Ministers emphasised the need to put in place adequate finance and effective management and restoration measures for Natura 2000. The Commission plans to issue a new Communication on financing Natura 2000, expected in 2011.

Reform of the Common Agricultural Policy (CAP) is also being examined at present, with a new CAP to be put in place post-2013. The targeted allocation of funding under CAP for biodiversity benefits will be particularly important in Ireland due to the level of agricultural practice.

Local authorities avail of financial support from State bodies such as the Heritage Council for biodiversity-related projects and the Heritage Officer and Biodiversity Officer programmes. The Heritage Council has also provided grants towards research and survey work, education and conservation and management.

Biodiversity Research is delivered via a number of organisations such as the EPA and Marine Institute and funding is provided through various channels, but particularly through the National Development Plan. The EU funds scientific research, currently through the FP7 programme.

The Exchequer provides grants for some NGO and local community projects, including some provided through LEADER programmes. Such projects may also receive financial support from EU LIFE, INTERREG and other EU funding programmes, as well as from international NGOs, and private and corporate funding.

One of the strategic objectives of this Plan is to engage the public at large in conserving biodiversity through a targeted educational and awareness-raising programme. In this regard, it is hoped that a number of private individuals will voluntarily undertake, or continue with, actions to conserve biodiversity.

Outlook in the Current Climate

Biodiversity and heritage, like most areas of Government expenditure, are likely to see funding levels reduced in the short-term and this will have an impact on the staffing, funding and work programmes for many of the organisations listed above. This makes work prioritisation a key action for all areas of the Plan.

While all organisations face a challenge with regard to mobilising resources, this will also, however, provide an impetus for all such organisations to examine how they currently implement actions for biodiversity and the opportunities which exist for pooling resources and working together. Partnerships are frequently employed to operate programmes and carry out actions for biodiversity conservation. The Government regards partnerships as essential for the successful completion of a number of actions in the new National Biodiversity Plan. In most cases, partnerships will be between State agencies and the European Union. Other partnerships will be between State agencies and farming organisations, local authorities, third level research institutions, non-government organisations and local community groups.



Glenveagh National Park
Photo:NPWS

3. ACTIONS FOR BIODIVERSITY



3.1 TAKING RESPONSIBILITY

OBJECTIVE 1:

To mainstream biodiversity in the decision making process across all sectors

3.2 STRENGTHENING KNOWLEDGE AND RAISING AWARENESS

OBJECTIVE 2:

To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity

OBJECTIVE 3:

To increase awareness and appreciation of biodiversity and ecosystems services

3.3 PROTECTING AND RESTORING BIODIVERSITY IN IRELAND

OBJECTIVE 4:

To conserve and restore biodiversity and ecosystem services in the wider countryside

OBJECTIVE 5:

To conserve and restore biodiversity and ecosystem services in the marine environment

OBJECTIVE 6:

To expand and improve on the management of protected areas and legally protected species

3.4 PROTECTING AND RESTORING BIODIVERSITY INTERNATIONALLY

OBJECTIVE 7:

To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services

3.1 Taking Responsibility

OBJECTIVE 1: To mainstream biodiversity in the decision making process across all sectors

Background

The first strategic objective of Actions for Biodiversity is to bring biodiversity into decision-making on a more general basis than heretofore. It is crucial that relevant sectors are more aware of biodiversity considerations and take them into account in their policies and operations.

All sectors must be engaged to ensure protection and restoration of biodiversity. There has been progress in relation to raising awareness about biodiversity among the public, within certain sectors and in some Government Departments and agencies. However, much remains to be done to increase this level of awareness to, for example, that which currently exists for climate change. It is essential that Irish society values biodiversity in order to engender support for, and participation in, necessary conservation measures.

TARGET 1: Shared responsibility for the conservation of biodiversity and the sustainable use of its components is fully recognised, and acted upon, by all sectors

Mainstreaming

Actions will be undertaken to raise awareness within Government Departments, local authorities and state agencies of the implications of policy and decisions on biodiversity. As a starting point, a Minister-led Biodiversity Steering Group will be established to drive these issues, in tandem with the Interdepartmental Working Group on Biodiversity, consisting of representatives of the relevant Departments and Agencies. In this manner, the relevant organisations will be involved in ongoing monitoring of the Plan as well as the mid-term review.

It is envisaged under the plan that relevant Government Departments and State agencies (in particular those involved with agriculture, forestry, fisheries, regional policy and planning, tourism, health, enterprise and employment, transport, research and education) will prepare, with stakeholders, sectoral Biodiversity Action Plans in line with the aims of the National Biodiversity Plan to ensure and

promote the conservation and sustainable use of biodiversity. A skilled facilitator will be assigned to assist and advise these organisations in production of their Plans.

In addition, Ireland will introduce in legislation a biodiversity duty on public bodies to ensure that conservation and sustainable use of biodiversity are taken into account in all relevant plans and programmes and all new legislation. Furthermore, public bodies will need to take biodiversity concerns into account in day-to-day activities.

Relevant Departments will also ensure that future legislation takes into consideration any requirements regarding biodiversity conservation. There will also be a review of key existing legislation, overseen by the Department of Arts, Heritage and the Gaeltacht to determine the need for further provisions to conserve biological diversity.

Local Action

The Ecosystem Approach has at its core the concept of local decision-making on management of biodiversity. Under the first National Biodiversity Plan (NBP), local action was highlighted as being very important in tackling biodiversity loss and it put forward the idea of local authorities drafting specific action plans. In 2010, twenty-six Local Biodiversity Action Plans had either been finalised or drafted and local authorities had appointed 28 heritage officers and 4 biodiversity officers. Some of the Action Plans will be reviewed and new plans prepared during the period of this Plan.

Locally-led action is crucial in protecting biodiversity and ecosystems services and biodiversity conservation at local level should be encouraged and these plans are the main mechanism to achieve this. A guidance document, to assist local authorities in the preparation of a Local Biodiversity Action Plan, was published under the previous NBP.

Biodiversity and heritage officers have been key to the development of biodiversity awareness in local authorities throughout the State. Under this Target, each local authority is asked to designate or continue to have an officer for natural heritage conservation matters.

Further Implementation of Existing Measures

The EU Nature Directives [Birds Directive (79/409/EEC) and Habitats Directive (92/43/EEC), Environmental Impact Assessment (EIA) Directive (85/337/EEC as amended by 97/11/EC), and Strategic Environmental Assessment (SEA) Directive (Directive 2001/42/EC) all require the consideration of potential development impacts on biodiversity. There needs to be improved coherence at national level between various plans and programmes affecting biodiversity and it must be ensured that decision-making at regional and local levels is consistent with high-level commitments for biodiversity.

Better planning at national, regional and local levels holds the key to preventing, minimising and offsetting potential negative impacts of development on biodiversity. Substantial amendments to the planning code have been made to ensure protection of Natura 2000 sites and species listed in the Habitats and Birds Directives. Further guidance documents on other specific areas (e.g. renewables, aquatic tourism, etc.) are also planned.

The Strategic Environmental Assessment (SEA) process supports the objective of making biodiversity concerns central to decision-making. The purpose of SEA is to ensure that projects or actions carried out under plans and programmes do not cause, or lead to, environmental damage. SEAs carried out so far in Ireland include recent local authority development plans and regional plans, River Basin Management Plans and Frontier Exploration Licences. The Government considers that the full implementation of the SEA Directive is critical to ensuring that all development is sustainable and protects biodiversity.

It is also crucial that all development plans (e.g. National Development Plan, Rural Development Plan and including climate change adaptation and mitigation measures) comply with environmental legislation, including the nature directives, so as to prevent or minimise any potential damages to biodiversity.

Under the EU Nature Directives, Ireland must contribute to the Natura 2000 network of sites for the protection of Europe's most valuable and threatened habitats and species (see under Objective 6). A key protection mechanism is the requirement to assess the possible implications of any plan or project on a Natura 2000 site before that plan or project is allowed to proceed. The assessment must take into consideration the possibility of "in-combination" effects with other plans and projects. The concept of "plan" and "project" under these Directives is extremely broad and is not limited to development planning and development management.

Implementation of other key Directives, such as the Water Framework and Marine Strategy Framework Directives (see under Objective 5) will reduce pressure on biodiversity by protecting the quality of our water, air and soils and reducing diffuse pollution (e.g. from pesticides, nitrates).

The Environmental Liability Directive has been substantially transposed into Irish law through the Environmental Liability Regulations (SI 547 of 2008). A Bill is currently at an advanced stage which will incorporate these Regulations and the remaining outstanding issues to allow for its full implementation. The principal aims of the



Marsh Fritillary
Photo: Robert Thompson



Directive are to prevent and remedy damage to waters and lands or damage to natural habitats and protected areas. It reinforces the “polluter pays principle” making any operator, as defined in the Regulations, that causes environmental damage legally and financially liable for the damage caused and subsequent remediation through the liability regimes. Ireland will fully implement the Directive and develop appropriate guidance to ensure that biodiversity and ecosystem goods and services are appropriately protected.

Procurement

The Government intends to adopt a policy of ‘green procurement’ in order to integrate environmental concerns into all public sector procurement. The European Commission defines green procurement as: *“a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured.”* To that end, the Government will publish Ireland’s first National Action Plan for green public procurement in 2011.

Economic Value of Biodiversity

As set out in Chapter 1, the economic value of biodiversity needs to be further examined and integrated in state policies and processes. The Economics of Ecosystems and Biodiversity Initiative recommends a range of measures that can be taken by governments to integrate biodiversity into national accounting. Ireland is one of many countries that could use such guidelines to integrate biodiversity values into national accounting and work will begin to examine the possibility of how this can best be implemented in Ireland.

A recent report from the Convention on Biological Diversity on the role of economic incentives in shaping environmental behaviour concludes that the removal of subsidies which lead to environmentally damaging practices, and the promotion of incentive schemes that promote positive ones, can produce economic and environmental benefits if they are coordinated and well-implemented.

Reforming perverse incentives, in particular environmentally harmful subsidies that under-price natural resources or encourage unsustainable increases in production, has multiple benefits. It discourages environmentally harmful behaviour, may remove wider economic distortions, and, in the case of harmful subsidies, may free up scarce fiscal resources. Removal or mitigation of perverse incentives can also reduce the need to introduce positive incentive measures.



Overgrazing at Sheefry Hills
Photo Maria Long

ACTIONS**Mainstreaming**

- 1.1 Relevant Government Departments and State agencies to prepare sectoral Biodiversity Action Plans in line with the National Biodiversity Plan to ensure and promote the conservation and sustainable use of biodiversity.
- 1.2 Raise awareness of the implications of policy and decisions on biodiversity and the requirements to engage in the preparation of biodiversity action plans.
- 1.3 Establish Minister-led Steering Group and a Biodiversity Working Group to advance implementation of this Plan.
- 1.4 Include in legislation a biodiversity duty to ensure that conservation and sustainable use of biodiversity are taken into account in all relevant plans and programmes and all new legislation.
- 1.5 Review key existing legislation to determine the need for further provisions to conserve biological diversity.
- 1.6 Ensure that all development plans comply with environmental legislation and in particular with the nature directives so as to prevent and minimise any potential damages to biodiversity.

Local Actions

- 1.7 Each local authority to publish a Local Biodiversity Action Plan or review existing plans.
- 1.8 Each local authority to designate a suitably qualified officer for natural heritage conservation matters in its area.

Further Actions

- 1.9 Fully implement the SEA Directive.
- 1.10 Fully implement the Environmental Liability Directive and issue appropriate guidance.
- 1.11 Continue to publish appropriate guidance to local authorities regarding biodiversity.
- 1.12 Develop and use the means to integrate the economic value of biodiversity and ecosystems into national accounts, national and local development strategies and planning processes. (See also Action 3.9).
- 1.13 Publish and implement the National Action Plan for Green Public Procurement (See also Actions under Target 21).
- 1.14 Identify and take measures to ensure that incentives and subsidies do not contribute to biodiversity loss, and develop positive incentive measures, where necessary, to assist the conservation of biodiversity.

INDICATORS AND OUTCOMES

- Number of biodiversity action plans created in Government Departments or sectors and extent of implementation
- Enactment of biodiversity duty
- Review of legislation completed
- Number of Local Authority Biodiversity Action Plans reviewed or prepared and extent of implementation
- Proportion of local authorities with officers for natural heritage
- Number and scope of guidance documents relating to biodiversity issued to planning authorities
- Extent to which the economic value of biodiversity is integrated in national accounts, national and local development strategies and planning processes
- Publication and implementation of National Action Plan on Green Public Procurement
- Number and effectiveness of positive incentives developed
- Number of incentives which are adverse to biodiversity identified but remaining in place
- Number of adverse incentives removed

TARGET 2: Legislation in support of tackling biodiversity loss in Ireland strengthened

Legislative support is essential to underpin actions to tackle biodiversity loss. *Actions for Biodiversity 2011-2016* commits to significant developments in this area, in addition to the biodiversity duty outlined under Target 1.

By 2013, legislation will be published to provide a legal underpinning for National Parks. In addition, a consolidated Wildlife Bill will be published by 2014, in order to provide for a more structured accessible approach to wildlife legislation. A new Forestry Bill is being prepared which will integrate biodiversity conservation into forest management.

ACTIONS

- 2.1 By 2013 publish legislation to provide a legal basis for National Parks.
- 2.2 Publish a Bill by 2014 to consolidate the Wildlife Act.
- 2.3 Introduce legislation to reduce further the risk to wildlife caused by the use of poisons in the environment.
- 2.4 Introduce revised forest legislation which will support the conservation, protection and sustainable management of forest biological diversity.

INDICATORS AND OUTCOMES

- Number of legislative instruments above introduced



Wicklow Mountains National Park
Photo: NPWS

3.2 Strengthening Knowledge and Raising Awareness

OBJECTIVE 2: To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity

Strengthening Knowledge

Up to date scientific knowledge is essential for an informed assessment of the status of biodiversity, for insight into the causes of biodiversity loss and for developing the means to halt or reverse losses.

Information on the location, extent and condition of natural habitats and species in Ireland is necessary for informed conservation management. It is also fundamental for the stock assessment of Ireland's 'natural capital' and the ecosystem goods and services this capital provides.



Stoat
Photo: Mike Brown

The previous National Biodiversity Plan sought to build up the biodiversity knowledge base in order to inform decision-making. A prioritised and coordinated programme of inventories, surveys and research was to be prepared, in particular for habitats and species listed in the EU Habitats and Birds Directives as well as certain endangered or threatened species about which little was known, or which were otherwise of conservation importance. *Actions for Biodiversity* will continue to build on the achievements made to date and will address areas of survey and research that have yet to be completed.

In recent years, major surveys have been carried out on marine and terrestrial habitats and research programmes are being implemented for many protected species. This research will give us a better understanding of the ecology and conservation status of these species and will contribute to the knowledge base that will enable effective conservation measures to be taken under this Plan.

Monitoring and assessment are essential to achieve an understanding of the 'health' of habitats and species, especially those that are legally protected. The first major

assessment of EU-protected habitats and species was published in 2008, based on the most comprehensive national surveys undertaken to date. The assessment revealed that many Irish species of flora and fauna have a moderately satisfactory conservation status but a majority of habitats have a poor or bad overall status. A priority, therefore, is to implement a series of actions that will halt biodiversity loss and assist recovery.

IRELAND'S BIODIVERSITY: TRENDS AND THREATS

The vastly improved collection of data on biodiversity in the last decade has allowed us to build up a more accurate picture of the major pressures and threats to Ireland's biodiversity. These are similar to those faced by many other European countries and comprise direct damage, over-grazing, unsustainable exploitation (such as over-fishing), pollution and invasion by alien species. Pressures from agriculture and commercial afforestation have reduced slightly in the last few years, and pressures from housing and infrastructural development have also declined since the economic recession began in 2008.

Despite the overall improvement in water quality for the period 2004-2006, deterioration in the highest water quality waters is the major threat to biodiversity in freshwater ecosystems. The over-fishing of marine fish species is a major cause for concern.

A more detailed description of the current status, trends and threats to Ireland's biodiversity is contained in Ireland's 4th report to the Convention. It can be accessed at <http://www.cbd.int/doc/world/ie/ie-nr-04-en.pdf>

A summary of the work on research and monitoring carried out since 2002 is contained within the 'Interim Review of the Implementation of the National Biodiversity Plan 2002-2006', available on www.npws.ie.

Building on the work to date, Ireland must continue in its efforts to strengthen knowledge in this area in order to better understand the existing situation and future challenges. Ireland will enhance research and progress assessments on status, trends and distribution of all habitats and species of European Community interest and of additional habitats and species of national importance.

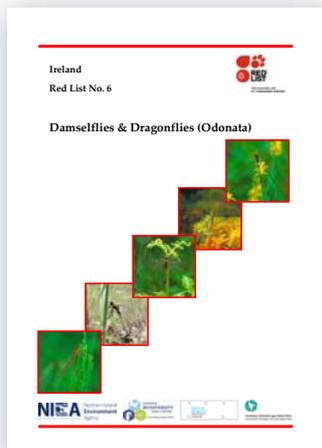
TARGET 3: Knowledge on biodiversity and ecosystem services has substantially advanced our ability to ensure conservation, effective management and sustainable use by 2016

Further work will include the gathering of data for reporting on the status of relevant habitats and species; preparing Irish Red Data Lists for important species groups; the preparation of a Bird Atlas by 2014; the preparation of a Mammal Atlas by 2016; undertaking national baseline surveys of habitats for which information is currently lacking (or out of date), and surveys and research on marine habitats and benthic species, particularly in areas designated as SACs and SPAs.

Information on the location, extent and condition of natural habitats and species in Ireland is essential for good conservation management. It is also fundamental for the assessment of Ireland's 'natural capital' and ecosystem goods and services. Broad scale land use mapping, such as CORINE, is insufficiently detailed to meet this purpose.

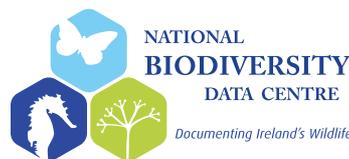
It is therefore necessary to complete a national habitat map; and to underpin such mapping, to produce a comprehensive national vegetation classification. This would build upon the Heritage Council's Guide to Habitats in Ireland and would be of value in landscape character assessments.

A set of biodiversity headline indicators will be adopted and applied that will inform the public and decision-makers on the state and trends of biodiversity, pressures on biodiversity and the effectiveness of key policy measures. It is planned that the headline indicators will be in place and capable of informing policy decisions by 2012.



Improved access to data allows decisions to be made by policy makers, planners and others based on the best available up-to-date information. Such information can be difficult and expensive to acquire and update; therefore it is necessary to ensure it can be put to as many uses as possible. Ireland will promote the use of

common data standards and tools to allow organisations to manage and share their data in a seamless way, and allow the data to be used for multiple purposes. The principle of 'interoperability' is in line with the spirit of the EU INSPIRE Directive: 'collect once, use often'.



The National Biodiversity Data Centre (NBDC) plays a key role in this area. The Centre acts as a central hub for the exchange of data between Government departments and State agencies, research institutions, non-governmental organisations and, crucially, volunteer recorders – in that regard the plan aims to support and encourage the volunteer network which provides such important data.

Biodiversity Research

A more integrated approach to biodiversity research is needed in Ireland. Individual researchers seek funding through a variety of mechanisms both within Ireland and through EU Framework Programmes, often without reference to which projects are already underway. This can lead to overlap between projects within the university research community and with NGOs and to a knowledge gap with regard to the overall picture of the research being carried out at any one time and therefore perhaps duplication of funding efforts. The development of an Irish Strategic Policy on an integrated approach to biodiversity research funding is an essential step in developing research capacity and training to support the implementation of biodiversity policy.

To improve the process of defining national biodiversity research needs, the National Platform for Biodiversity Research was re-launched in 2008; co-funded by the National Parks and Wildlife Service and the Environmental Protection Agency and administered by a secretariat. It facilitates improved communication between funding agencies, scientists, policy makers and other interested stakeholders. This is achieved by systematically examining the gaps in the research required to inform policy needs through a series of focused expert workshops. The Platform also forms part of a wider network of biodiversity platforms throughout Europe that link with the European Platform for Biodiversity Research Strategy and other European and international biodiversity networks.

It has already examined and prioritised biodiversity research gaps across a range of habitats and species and has recommended areas where this prioritisation should be focused. The Biodiversity Knowledge Programme for Ireland (funded and published by NPWS and the EPA) was published in 2006 and outlines in detail the priority biodiversity research requirements for Ireland and the funding measures required to implement them. In addition the National Biodiversity Data Centre recently published the 'Knowledge Gaps' relating to biodiversity conservation in Ireland. These documents help guide the planning of future action in this area.

As set out in both Chapter 2 and under Target 1, the economic value of ecosystems and biodiversity is a subject of growing importance and more detailed research on it is needed in Ireland. Work will be undertaken in this area generally and also to tie into actions under Target 1.

Research will also be undertaken to enhance knowledge of the most significant direct and indirect causes of biodiversity loss and to develop and test prevention and mitigation options in that regard.

The existing forest research programme on forest biodiversity, carbon accounting and the interaction of climate change and forest systems will be continued in order to strengthen our understanding in that area.

Work is underway to establish the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). This will be an interface between the scientific community and policy makers that aims to build capacity for and strengthen the use of science in policy making. The concept was welcomed by the 10th Conference of the Parties to the Convention on Biological Diversity and subsequently the United Nations General Assembly passed a resolution requesting that the United Nations convene a plenary meeting to fully operationalise IPBES at the earliest opportunity.

Inventory of Genetic Resources

Steps aimed at conserving a number of Ireland's Crop Wild Relative species have been undertaken in recent years. Most of the efforts to date have focused on the identification of old varieties and the *ex situ* conservation of key species, mainly through development and management of genebanks.

For example, Genetic Heritage Ireland, in conjunction with the Irish Seed Savers Association, initiated the Irish Cereal Varieties Project to repatriate Irish cereal varieties and to promote their *in situ* and *ex situ* conservation. This project

has acquired seed from many named Irish varieties and also some un-named collections which may prove to be landrace material (a local variety of plant species developed largely through natural processes).

In addition, the National Biodiversity Data Centre has recently launched the Crop Wild Relatives website and database, which provide information on the conservation status, habitat, distribution and use of 102 important crop wild relatives growing in Ireland. Continued support is required to collate and update the information on important genetic resources for food and agriculture.

Taxonomy

Taxonomy provides basic understanding about the components of biodiversity. The majority of organisms are insects, plants, fungi and micro-organisms, which require expert skills for correct identification. Inadequate taxonomic information and infrastructure, coupled with declining taxonomic expertise, needs to be addressed to allow us to make informed decisions about the conservation of biodiversity.



Bisporrella citrina
Photo: Robert Thompson



Black Darter Dragonfly
Photo: Robert Thompson

ACTIONS

- 3.1 Enhance research and progress assessments on status, trends and distribution of all habitats and species of Community interest and of additional habitats and species of national and regional importance.
- 3.2 Continue to update the National Vegetation Database and use it to develop a refined Vegetation Classification System for Ireland.
- 3.3 Establish a working group by 2011 to progress the development of a national terrestrial and marine habitat map by 2015.
- 3.4 Adopt and apply a set of headline biodiversity indicators by 2012.
- 3.5 Establish and continue to promote common data standards and quality assurance procedures in line with the INSPIRE Directive and other data standards to enable interoperability of key biodiversity databases and inventories by 2015.
- 3.6 Based on these standards and procedures, develop a shared information system for biodiversity which makes data freely available to all interested users, streamlines reporting and supports policy evaluation and development at national, regional and global levels by 2015.
- 3.7 Support and encourage the volunteer network that carries out biological recording.
- 3.8 Continue and expand on the work of the National Platform for Biodiversity Research guided by the recommendations of the Platform expert working group.
- 3.9 Carry out further and more detailed research on the economic value of ecosystems and biodiversity in Ireland.
- 3.10 Enhance knowledge of the most significant direct and indirect causes of biodiversity loss; develop and test prevention and mitigation options.
- 3.11 Continue the existing forest research programme on forest biodiversity, carbon accounting and the interaction of climate change and forest systems.
- 3.12 Continue to update, identify and create inventories of important genetic resources for food and agriculture, both *in situ* and *ex situ* as appropriate, in particular those genetic resources whose survival is threatened and which may not have been identified or quantified to date.

- 3.13 Enhance the capacity to build and maintain the human resources, systems and infrastructure needed to identify, obtain, collate and curate the biological specimens that are the basis for taxonomic knowledge.

INDICATORS AND OUTCOMES

- Number of Red Lists published
- Bird Atlas prepared
- Mammal Atlas published
- Number of habitats and species for which good data exists and status assessments undertaken
- Vegetation Classification System developed
- Data standards improved and quality assurance in place
- National Platform for Biodiversity Research is operational
- Number of ongoing research and survey programmes on biodiversity
- Economic value of biodiversity researched sufficiently to allow integration into accounting process as per Action 1.12
- Forest research programmes continuing
- Number of threatened genetic resources identified
- Number of species groups for which taxonomic expertise is adequate in the State/is not adequate

OBJECTIVE 3: To increase awareness and appreciation of biodiversity and ecosystem services**TARGET 4: Enhanced appreciation of the value of biodiversity and ecosystem services amongst policy makers, stakeholders and the general public****Raising Awareness**

According to research published by the Heritage Council in 2010, public awareness levels of biodiversity have not improved since 2007. The third strategic objective is therefore to raise public awareness of biodiversity issues. There is greater agreement in 2010 on the economic value of biodiversity as opposed to softer, recreational issues that emerged strongest in 2007 but the public remains confused about the relationship between climate change and biodiversity loss. These results demonstrate that there is a clear need to promote an increase in public awareness of biodiversity issues, including continuation of 'Notice Nature', Ireland's official campaign to promote biodiversity.

It has not proven easy to raise awareness amongst the general public thus far but biodiversity is better understood among the sectors involved directly in utilisation of biological resources, for example, in the agriculture, fishing and forestry sectors. In particular, agri-environmental schemes such as REPS and AEOS have resulted in a much greater awareness of biodiversity issues among some 60,000 participating farmers. Aside from the measures taken under the scheme, the awareness generated will be vital to the success of a range of conservation actions on farmland, since farmers manage many of the terrestrial sites of biodiversity importance.

**Actions on Awareness**

In 2009, a biodiversity awareness fund was established under the Environment Fund, allowing funding of awareness publications, programmes and events. This was particularly active in 2010, marking the International Year of Biodiversity. There are also education, participation and awareness programmes under other initiatives such as the Water Framework Directive, which should facilitate protection of biodiversity.

A number of organisations will continue to be involved in education and awareness-raising on biodiversity issues. These include the Department of Arts, Heritage and the Gaeltacht and its 'Notice Nature' campaign and Education Centres, the Environmental Protection Agency, the Heritage Council, the National Botanic Gardens and the National Biodiversity Data Centre. RTÉ, the national broadcasting station, broadcasts nature programmes on a regular basis and the production of certain programming has been supported. Non-governmental organisations (NGOs), as well as many local community groups and dedicated individuals, will also continue to make a most important contribution to public awareness of, and participation in, biodiversity conservation.



Schools will continue to participate in education on biodiversity issues, through the national curriculum and through partnerships with State and local authorities, NGOs and community groups. Examples of effective partnerships include the Green-Schools programme, which is ongoing and is organised by An Taisce and the 'Something Fishy' programme operated by Inland Fisheries Ireland and the BT Young Scientist and Technology competition.

Future Actions

Further action is needed to raise awareness, but there is scope to build on the actions taken to date. Increased awareness and understanding of biodiversity issues will be key to increasing proactive behaviour and to buy-in to many of the actions outlined in this plan.

Engagement with relevant sectors and stakeholder participation will be key in reaching our targets and therefore the aim will be to enhance training, communication, cooperation and concerted action between all relevant sectors, (government, landowners, business, farming, forestry, scientific and conservation communities, etc.) in support of biodiversity conservation.

Further work is needed to include biodiversity and ecosystem goods and services into relevant courses in secondary and third level education, particularly in areas which benefit most from, or impact on, biodiversity, e.g. agriculture, food, tourism, engineering and planning as well as medicine, healthcare, enterprise and business studies.

The Tourism sector can also play an important role in building awareness and appreciation of Ireland's natural heritage. As so often happens, it can take an external perspective to make a person aware of the richness of their culture and heritage and, in this regard, the appreciation of overseas visitors for our biodiversity can play a vital role in encouraging Irish awareness and pride. Fáilte Ireland has been gradually working on bringing natural heritage more to the forefront of the tourism experience and on promoting environmental sustainability. Biodiversity Guidelines for the Tourism Sector were produced as part of the 'Notice Nature' campaign and further engagement between relevant organisations and Fáilte Ireland is to be encouraged in this regard.

Under Actions for Biodiversity a key action is to develop and implement a targeted education and awareness strategy for the specific purpose of improving understanding of the value of biodiversity and the importance of implementing the Convention on Biological Diversity.

It will also be important to raise awareness of *Actions for Biodiversity*, its objectives and actions. As such, there will be a communications campaign developed and rolled-out in support of its implementation.

ACTIONS

- 4.1 Enhance training, communication, co-operation and concerted action between relevant sectors in support of biodiversity conservation.
- 4.2 Work with relevant Departments and stakeholders to include biodiversity and ecosystem goods and services in relevant courses in secondary and third level education.
- 4.3 Develop and implement a communications campaign in support of full implementation of this Biodiversity Action Plan and improving public and sectoral understanding of the value of biodiversity.

INDICATORS AND OUTCOMES

- Level of public awareness of biodiversity and surrounding issues increased compared with previous years
- Number of courses which include biodiversity
- Number of schools in the Green Schools programme
- Number of participants in the Biological & Ecological Category of the Young Scientists competition
- Number of hits on Notice Nature website
- Membership of ENGO's

See also action 1.2 above.

3.3 Protecting and Restoring Biodiversity in Ireland

OBJECTIVE 4: To conserve and restore biodiversity and ecosystem services in the wider countryside

HEADLINE TARGET: In the wider countryside biodiversity loss reduced by 2016 and showing substantial recovery by 2020.

It is generally recognised that biodiversity protection must afford special attention to the sites of highest nature value and species most at risk. However, as much of our biodiversity lies outside protected areas, effective conservation and sustainable use of biodiversity and the maintenance of essential ecosystem services requires action in the wider countryside; a good example may be seen in the Burren region of Co. Clare. The Burren National Park is only a part of a much larger SAC which, in turn, is only part of the whole Burren region. The Burren Farming for Conservation programme (see below) assists the maintenance and recovery of ecosystems outside the protected area in a sustainable way and which is beneficial to the farmer and habitats both inside and outside the protected part.

The primary threat to biodiversity both within and outside protected areas is from habitat degradation, fragmentation and loss. This has largely been caused by changes in agricultural practices (such as intensification), commercial forestry, fisheries over exploitation, peat extraction, air and water pollution, invasive alien species, land clearance and development, tourism and recreational activities and climate change. Pressures on biodiversity are increasing with growth in population, use of resources and change in land use, urbanisation, road-building and infrastructure development.

TARGET 5: Optimise use of opportunities under agricultural, rural development and forest policy to benefit biodiversity.



Grey Partridge
Photo: Eddie Dunne

Background

Agriculture and forestry account for over 70% of total land use in the State. Food security and the sustainability of agriculture are of paramount importance to us all and while agricultural practice has the potential to contribute significantly to the conservation of species and habitats, it may also be very damaging. The Common Agricultural Policy (CAP) is one of the main drivers of changes in agriculture and has been adapted to better integrate biodiversity needs in recent years.

As mentioned under Target 4, agri-environmental schemes such as REPS and AEOS have also resulted in a much greater awareness of biodiversity issues among the participating farmers.

Agriculture and Biodiversity

The Rural Development Programme, a part of the National Development Plan, is based on the EU framework and “controls” proposed expenditure of over €7 billion over a seven-year period. The programme for Ireland set a number of main priorities, including ‘Improving the environment and the countryside by support for land management’.

Under this priority, measures were designed to protect and enhance natural resources and landscapes in rural areas. In so doing they would contribute to the EU priority areas of:

- Biodiversity and the preservation and development of high nature value farming and forestry systems and traditional agricultural landscapes
- Water
- Climate change

These measures contributed to the implementation of the Natura 2000 network, to the objectives laid down in Directive 2000/60/EC establishing a framework for action in the field of water policy, and to the Kyoto Protocol targets for climate change mitigation.

At the time of the publication of the previous National Biodiversity Plan, livestock headage and premia schemes encouraged farmers to maximise sheep and cattle numbers, leading to significant pressures from overgrazing and soil erosion, agricultural improvement and water pollution. The introduction of the Single Farm Payment Scheme in 2005 removed that incentive to maximise livestock numbers and this, combined with Commonage Framework Planning, has resulted in reduced pressures on biodiversity in some sensitive areas.

The principal scheme through which the Rural Development Programme addressed agri-environment matters was the Rural Environment Protection Scheme (REPS). New schemes, the Agri-Environmental Options Scheme (AEOS) and the Natura 2000 Scheme, were launched in 2010. The objectives of the schemes are to promote biodiversity, especially in Natura 2000 sites, improve water quality and combat climate change.

In 2006 the NPWS Farm Plan Scheme was launched as an alternative for farmers not participating in REPS. Whereas REPS was heavily funded by the EU, the NPWS Scheme was funded only from the national exchequer. Participating farmers enter a 5-year contract and are paid for actions favouring biodiversity in Natura 2000 sites, NHAs and commonages. In April 2010, in light of constrained finances, it was necessary to close the Farm Plan Scheme to new entrants.

Measures under market and income policy, including the Single Farm Payment scheme (decoupling) and mandatory cross-compliance, should also benefit biodiversity. The Single Farm Payment scheme, which commenced in 2005, applies to all farmers. Implementation of cross-compliance requires all applicants under the scheme to maintain all their land in 'good agricultural and environmental condition' (GAEC) and comply with 19 Statutory Management Requirements. These include requirements relating to birds, habitats, groundwater, sewage sludge and nitrates.

At the time of writing, the EU CAP reforms that will be put in place from 2013 have not been finalised. It is likely that they will include a policy shift towards better environmental and social integration. In a recent communication, "The CAP towards 2020: Meeting the food, natural resources and territorial challenges of the future" the European Commission sets out the challenges to the CAP and the conclusion that it needs to become a more sustainable, more balanced, better targeted, simpler and more effective

policy and more accountable to the needs and expectations of the EU citizens.

One of the Target Areas of the EU Biodiversity Strategy is to increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity. In this regard the Commission's proposals include enhancing direct payments and improving and simplifying GAEC standards.

From the biodiversity perspective, it is desirable that agri-environment payments should reflect any restrictions placed on farmers for the enhancement of biodiversity. It is important to avoid a sense of inequity among those members of the farming community whose land is of higher value to nature and therefore needs more sensitive management.

In an Irish context, notwithstanding much of the progress made to date as outlined above, the implementation of the CAP system of payments has not ensured fully that biodiversity has been sufficiently protected. There are concerns that, while supports and incentives are provided, there has been a decline in biodiversity both in Natura 2000 sites and in the wider countryside.

A key approach under *Actions for Biodiversity*, therefore, will be to ensure that measures in any future agri-environmental schemes provide for the protection and enhancement of ecosystem services and biodiversity throughout the State.

Food Harvest 2020

Food Harvest 2020 is the medium term strategy for the development of the agri-food, drinks, forestry and fisheries sector in Ireland. The report is a strategic vision designed to place the agri-food, fishing and forestry sector at the centre of the export led economic recovery and assure its full contribution to the smart economy. It is clear that biodiversity will play a key role in such aspirations.

Management of Commonage

In the 1980s and 1990s, many western commonages were heavily overgrazed. This was addressed, under pressure from the EU, by Commonage Framework Planning, which aimed to achieve the large-scale restoration of uplands, blanket bog and other habitats in Natura 2000 sites. These Plans were prepared and implemented, mainly in western areas and there has been substantial improvement in the condition of the sites as a result. The removal of headage payments has taken away the incentive for overgrazing and therefore, restrictions can be eased in the near future.



Kerry Cattle
Photo: NPWS

Burren Farming for Conservation Programme

The Burren Farming for Conservation Programme (BFCP) is a new agri-environmental initiative which has been designed to conserve and support the heritage, environment and communities of the Burren. Building on the findings of the BurrenLIFE Project (2005-2010), it is jointly funded by the Department of Agriculture, Food and the Marine and the Department of Arts, Heritage and the Gaeltacht.

A total of 117 Burren farmers (selected on the basis of defined environmental criteria) are taking part in Year 1 of the BFCP. A plan for each farm has been prepared by a trained advisor - though significantly, each farmer has also been able to nominate his/her ideas as to how to improve the environmental condition of his/her farm. The BFCP farm plan is revolutionary in terms of its layout, size and user-friendliness - most plans are only 3 pages long, and are composed of the bare essentials: an aerial photo of the farm, a list of the planned works and a map showing the SAC areas, listed monuments, internal field boundaries and works to be carried out on the farm.

High Nature Value Farming

High Nature Value (HNV) farming is a new and evolving approach to farming that is gaining recognition across EU Member States due to the growing awareness that biodiversity is usually higher on farmland that is managed at a lower intensity. This can include habitats and species that fall outside designation under the Habitats and Birds Directives.

In Ireland, work is on-going to identify farmland that meets the criteria of HNV, as well as the drawing up a list of suitable indicators. Pilot studies, led by the Heritage Council, are being conducted in close co-operation with farmers in the Aran Islands, Connemara and the Iveragh Peninsula in South Kerry, drawing on the model developed by the Burren Farming for Conservation Programme. The findings from the pilot projects will be used to inform the approach to the development of HNV farming in other parts of the country.

It is envisaged that such farming will become a more prominent feature of the CAP reform agenda, as the basis for funding moves to more environmentally beneficial land uses.

Forestry and Biodiversity

Forestry is regulated by the Department of Agriculture, Food and the Marine and many forestry operations such as afforestation, logging and forest road construction, require license or consent from the Department. Biodiversity issues have been increasingly integrated into national forestry policy; Sustainable Forest Management underpins all forestry policy, grant schemes, licenses, consents and other measures administered by the Forest Service. This is achieved through implementation of the National Forest Standard, Code of Best Forest Practice and a suite of environmental guidelines covering areas such as water quality, landscape, biodiversity and forest protection. Compliance with these instruments is mandatory for all forestry activities which require a license or consent from the Department of Agriculture, Food and the Marine. Substantial areas of new broadleaf planting have been established since the annual broadleaf planting targets were increased (currently at 30%). Since the Native Woodland Scheme was introduced in 2001, it has supported the creation and restoration of over 2,800 ha of native woodland.

New methods of forestry management will be considered during the lifetime of the Plan, with the aim of achieving multiple benefits (e.g. timber production, biodiversity conservation, recreation, landscape, non-timber forest products). Sustainable Forest Management will continue to be pursued and intensified under *Actions for Biodiversity*.

Genetic Diversity

Modern food production systems have led to the use of a small number of uniform and often closely related high producing breeds and species of animals and varieties of crops. This erosion in genetic diversity may reduce the ability to adapt to disease, changing climate or changing production methods.

An Advisory Committee on Genetic Resources for Food and Agriculture was established by the Department of Agriculture, Food and the Marine to advise and aid in the development and implementation of plans aimed at the identification, evaluation and conservation of unique genetic resources whose survival is being threatened or endangered.

Some actions aimed at conserving genetic resources have been taken in recent years, for example the Irish Rare Breeds Society holds records of the population and status of indigenous endangered breeds of cattle, sheep and horses. However, continued support is required to collate and update the information on important genetic resources for food and agriculture.

ACTIONS

- 5.1 Develop measures in future rural development programmes for the protection and enhancement of ecosystem services and biodiversity
- 5.2 Further develop criteria to identify High Nature Value farmland and develop measures to address threats
- 5.3 Ensure effective implementation of cross-compliance, statutory management requirements and forest service guidelines/requirements to ensure conservation of biodiversity
- 5.4 Conduct a systematic evaluation process for any agri-environmental schemes delivered, involving a robust ecological monitoring programme
- 5.5 Review the control of overgrazing and undergrazing
- 5.6 Continue the Burren Farming for Conservation Programme
- 5.7 Continue to promote the Native Woodland Scheme which features establishment and conservation elements aimed at encouraging the development and conservation of native woodlands
- 5.8 Consider and develop guidance on alternative forestry management options which aim to deliver additional biodiversity benefits
- 5.9 Strengthen measures to ensure conservation, and availability for use, of genetic diversity of crop varieties, livestock breeds and races, and of commercial tree species and promote in particular their *in situ* conservation.

INDICATORS AND OUTCOMES

- Number and effectiveness of measures developed in the National Rural Development Plan for the protection and enhancement of ecosystem services and biodiversity
- Effective system in place for identification and maintenance of High Nature Value Farmland
- Compliance rate for Statutory Management Requirements, and Forestry Guidelines/requirements
- Extent of recovery demonstrated from over-grazing and under-grazing
- Area covered by the Native Woodland Scheme
- Number of crop varieties, livestock breeds and races, and of commercial tree species conserved
- Number and area of NPWS farm plan schemes

TARGET 6: Principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2015

Clean water is crucial to all areas of life. The EU Water Framework Directive has established a new, integrated approach to the protection, improvement and sustainable use of Europe's freshwater and coastal waters. It sets environmental objectives for surface waters, groundwaters and protected areas, including those water dependent habitats and species protected under the Directives, and terrestrial ecosystems dependent on groundwater. A series of Regulations give effect to the Directive in Ireland, notable among which are those setting standards and objectives for surface waters. Any standard or objective related to Natura 2000 areas must be complied with by 2015.

The water quality standards that Ireland must achieve by 2015 under the Directive require measures to curb pollution from various sources, including measures in the National Action Programme (2008-2011) under the EU Nitrates Directive.

Although the majority of rivers were assessed in the latest EPA survey as 'salmonid quality', there has been a steady decline in the length of pristine, unpolluted channel since the 1970s. Pressures such as eutrophication and colonisation by invasive alien species show little sign of declining.

ACTIONS

- 6.1 Ensure implementation of operational monitoring programmes, publication of River Basin Management Plans and establishment and implementation of River Basin District Programmes of Measures, in line with provisions of the Water Framework Directive.
- 6.2 Continue investment in Water Service Investment Programme, and ensure biodiversity concerns are considered in the programme.
- 6.3 Significantly reduce pollutant pressures on terrestrial and freshwater ecosystems through implementation of relevant EU Thematic Strategies and Directives (e.g. Water Framework Directive, Sustainable Use of Pesticides and Nitrates).

INDICATORS AND OUTCOMES

- Number of habitats and species impacted by pollution
- Status of freshwaters as reported by EPA
- Number of schemes which enhance water quality completed under the Water Service Investment Programme

TARGET 7: Optimised benefits for biodiversity in Flood Risk Management Planning

Flooding has become an issue of widespread concern in recent years, as the frequency and severity of flood events has increased. Climate change is a factor, but ill-advised development in floodplains, the sealing of previous permeable soils by building, and the loss of natural rainfall storage through drainage of bogs and other lands accelerates runoff to rivers that can create threats to human wellbeing as well as biodiversity. Ireland will ensure that the assessment of flood risk management measures in the preparation of the Flood Risk Management Plans consider the optimisation of benefits for biodiversity through restoration of floodplains, promotion of sustainable land uses and the improvement of water retention, including the controlled flooding of certain areas where appropriate.

The Office of Public Works (OPW) carry out a range of environmental assessments relating to flood risk management in Ireland including SEAs, EIAs, assessments under Article 6 of the Habitats Directive, and specific Ecological Assessments. In addition, arterial drainage maintenance operations seek to use best practice for drainage and wildlife through the ongoing development of environmental management protocols, standard operating procedures, staff environmental training, river enhancement programmes including biodiversity monitoring and a series of published environmental research assessments in relation to designated habitats and species.

ACTIONS

- 7.1 Incorporate objectives to minimise biodiversity loss and degradation of ecosystem services, and to optimise biodiversity gains, in flood risk management plans
- 7.2 Continue to ensure that all significant drainage, including both initial drainage and maintenance drainage, is assessed for its implications for biodiversity and particularly for wetlands



Laying jute mats in Lough Corrib to smother Lagarosiphon
Photo: Joe Caffrey (IFI)

INDICATORS AND OUTCOMES

- Extent of floodplains identified for retention or restoration in Flood Risk Management Plans
- Area of restored flood plains
- Biodiversity gain from river enhancement works

TARGET 8: Harmful invasive alien species are controlled and there is reduced risk of spread of new species

Ireland's native biodiversity faces significant threats from invasive alien species. Control is a major challenge, and involves cross-sectoral and cross-border co-operation by a range of responsible bodies and landowners. Control of *Rhododendron ponticum* in native woodlands has been ongoing for many years and has met with some success. The Chub, an invasive fish species, has been successfully eradicated from Ireland, and a major control exercise is underway to control the aquatic weed *Lagarosiphon* in Lough Corrib. However, many other species have widely established, particularly in freshwaters.

In response to this issue, a joint approach was undertaken by the relevant Departments in Northern Ireland and the Republic of Ireland to establish Invasive Species Ireland. It acts as a co-ordination mechanism and provides advice and resources for stakeholders, in addition to carrying out risk assessment, policy development, education and awareness activities, research and development of invasive alien species action plans.

The subsequent report recommended a series of actions to reduce the risks of invasions, help control and manage new and established invasive species, monitor impacts, raise public awareness, improve legislation and address international obligations. The report will continue to inform the new actions under this theme (see Target 20 also). Specific measures on this issue are contained in the European Communities (Birds and Natural Habitats) Regulations, 2011 (see Target 11 below). Combating invasive alien species is also a target of the EU Biodiversity strategy which intends to strengthen EU Plant & Animal Health Regimes to support this work. Possible future EU legislation on the issue is also flagged.

ACTIONS

- 8.1 Prepare, by 2011, detailed species and pathway risk assessments and develop exclusion and contingency plans for priority pathways and high impact species that are likely to invade Ireland.
- 8.2 Continue and enhance measures for eradication, where feasible, control and containment of invasive alien species.
- 8.3 Examine options for rapid response when new invasive alien species are discovered.
- 8.4 Increase awareness within the horticultural and constructed wetlands industries of native alternatives that can be used in place of invasive alien species.
- 8.5 All public bodies will endeavour to use native species, landraces and breeds and the public will be encouraged to do so.

INDICATORS AND OUTCOMES

- Number of risk assessments developed
- Number of species eradicated, controlled and contained
- Number of new species established

TARGET 9: Effective hedgerow and scrub management ensured by 2016

Ireland has a rich hedgerow resource that is important for wildlife and needs to be managed in the interests of both farming and biodiversity. Scrub can also be an important habitat but in some situations spreads into other habitats and needs to be controlled.

The legislation regarding removal of hedgerows is currently under review. Hedges in place since or before 2009 have protection by being deemed landscape features for the purposes of Good Agricultural and Environment Condition, required for farm payments under the Single Farm Payment Scheme. Agri-environment schemes generally require protection and maintenance of hedgerows.

In contrast, in the past 2 years there has been considerable removal of scrub, due to land eligibility rules in the Single Farm Payment scheme. According to the National Forestry Inventory, hedgerows and scrub comprise 3.9% and 1.3% of the total land area respectively.



Hedgerow and treeline cutting
Photo: Fiona Devaney

Under *Actions for Biodiversity*, there will be a review of both hedgerow and scrub regulation with appropriate guidelines produced which should encourage best practice for hedgerow/scrub management for wildlife throughout the country and ensure that appropriate sanctions for unauthorised removal of hedgerows/scrub are applied.

ACTIONS

- 9.1 Review options on regulation of removal and/or management of hedgerows and scrub.
- 9.2 Production of guidance documents on scrub and hedgerow.
- 9.3 Hedgerow surveys will be continued by local authorities.

INDICATORS AND OUTCOMES

- Regulations reviewed and amended as appropriate
- Guidance documents issued
- Number of surveys published

TARGET 10: Continued rehabilitation or restoration of biodiversity elements

Ecological restoration programmes and projects in Ireland are numerous and widespread. A number of measures to restore active raised bogs are ongoing, the focus of which is to reverse the effects of turf cutting and drying out. The ending of turf cutting on designated raised bogs (see Target 17) is critical in this respect. Other specific restoration projects include work on Nature Reserves at Clara Bog, Killoconny Bog, Mongan Bog and Raheenmore Bog. A number of other raised bog sites are being restored, involving partnerships between State bodies (e.g. NPWS), voluntary conservation groups (e.g. Irish Peatland Conservation Council) and local community groups.

Bord na Móna has rehabilitated 10,000 ha of industrial cutaway peatland to date, mostly over the last 20 years. Within these rehabilitated areas natural colonisation coupled with targeted rehabilitation (drain-blocking; dam building) of former bare peat production areas results in a rich mosaic of semi-natural habitats including open water, poor fen, rich fen, scrub, grassland and heathland. This mosaic development is demonstrated on a large-scale at the Lough Boora Parklands in Co. Offaly. Re-instatement of active peatland habitats will not be possible on all cutaway bog areas, however peat-forming conditions are re-establishing at the former industrial blanket bog development at Bellacorick, Co. Mayo, which has been rehabilitated over the last 10 years.

As more areas come out of industrial peat production across the midlands, and as natural colonisation continues, biodiversity areas will also increase on the cutaway bogs. Up to 50% of the current active Bord na Móna production area requires pumped drainage category (such as the bogs along the River Shannon and River Suck) and as production stops, these areas will revert naturally to wetlands with fringe woodland habitats; while gravity drained sites (such

as the Meath, East Offaly and Kildare Bogs) will progress towards heathland, grassland and woodland habitat. All of these developments are being documented by the Bord na Móna ecological survey as outlined in Bord na Mona Biodiversity Action Plan 2010-2015

Coillte Teoranta is actively engaged in the restoration of 571 ha of raised bog at 14 sites in the midlands. A 2000 ha blanket bog restoration project was completed in 2007.

The Native Woodlands Scheme has supported the restoration and conservation of 138 native woodland sites covering 2,324 ha. Coillte recently completed a 4-year EU Life project to restore 550 ha of priority woodland habitats on nine sites in the midlands and west.

Inland Fisheries Ireland (IFI) has successfully carried out rehabilitation of numerous freshwater aquatic habitats throughout the country, to reverse the effects of arterial drainage, damage to riparian vegetation, pollution and gravel extraction in spawning areas. The focus has been to promote the recovery of stocks of native salmonid species. Much work is now completed under the Environmental River Enhancement Programme (EREP), which is an OPW project, managed jointly with IFI and includes the monitoring of biodiversity gains in the river corridor due to enhancement works on arterial drainage channels.

The re-introduction of large raptors (Golden and White-tailed Eagle and Red Kite) during the past 10 years has generated widespread positive publicity for biodiversity. Golden Eagles and Red Kites are now breeding and White-tailed Eagles are expected to breed within the next few years.



Golden Eagle Chick
Photo: Golden Eagle Trust

Other targets under *Actions for Biodiversity* contain an element of restoration, e.g. see Target 5 for information on Commonage Framework Planning and under Target 17 for species recovery actions.

ACTIONS

- 10.1 Identify areas of biodiversity value, or biodiversity hotspots, within Bord na Móna lands by 2015.
- 10.2 Continue ecological surveys, preparation of habitat maps and planning of rehabilitation for all Bord na Móna bog areas.
- 10.3 Continue to develop a network of biodiversity areas within Bord na Móna sites.
- 10.4 Continue the programme of re-introduction of large raptors.
- 10.5 Maintain target of 30% broadleaf planting in afforestation.
- 10.6 Continue to update the inventory of native woodlands, review and, where appropriate, incorporate the results of the Native Woodland Survey into the conservation and expansion of the native woodland cover.
- 10.7 Develop, adopt and implement restoration programmes for all migratory, native and indigenous fish species.

INDICATORS AND OUTCOMES

- Number of habitat maps and rehabilitation plans for all Bord na Móna bog areas
- Number of breeding eagles and kites
- Area afforested with native species
- Status of salmon, trout, eels, lamprey, shads, pollan and char

TARGET 11: Improved enforcement of Wildlife Law

The European Communities (Birds and Natural Habitats) Regulations 2011 were signed by the Minister for the Arts, Heritage and the Gaeltacht in September 2011. These regulations achieve full transposition of the Habitats and Birds Directives into Irish law and cover important additional issues such as movement and sale of invasive alien species.

As set out under Target 2, legislation will also be published to provide a legal underpinning for National Parks as well as a consolidated Wildlife Act.

In addition, measures will be taken to improve enforcement of relevant legislation and to prosecute those found to be in breach of such laws. We will enhance the role of relevant organisations (e.g. An Garda Síochána) and improve training and liaison between relevant bodies.

ACTIONS

- 11.1 Enhance the role of An Garda Síochána and Customs Officers in enforcing Wildlife Legislation, through, among other actions, the provision of specific training and guidance.
- 11.2 Ensure adequate training in Wildlife Crime detection and enforcement is provided to all NPWS enforcement staff.
- 11.3 NPWS enforcement staff will investigate along with An Garda Síochána and Revenue (Customs) officials (as appropriate) suspected and alleged wildlife crime affecting biodiversity.
- 11.4 Continue to enforce the Wildlife Acts and Regulations.

INDICATORS AND OUTCOMES

- Number of prosecutions for offences under Wildlife Law

TARGET 12: Monitoring to provide adequate data flow for reporting on biodiversity by 2016

Monitoring is a key operation in order to track trends and make required policies and decisions. Systems will be improved through the development of appropriate tools and approaches, and improve harmonisation of data flows will be examined. The effective monitoring and reporting on biodiversity will continue to be carried out.

ACTIONS

- 12.1 Use, and as necessary develop, monitoring tools, approaches and frameworks in order to establish and co-ordinate adequate harmonised data flows for the biodiversity indicators to reveal key trends.
- 12.2 Monitor conservation status of Habitats Directive habitats and species.
- 12.3 Monitor the status of species and species groups listed in the Birds Directive.

INDICATORS AND OUTCOMES

- Number of monitoring programmes in place
- Number of indicators with good quality data

OBJECTIVE 5: To conserve and restore biodiversity and ecosystem services in the marine environment

HEADLINE TARGET: In the wider marine environment, biodiversity loss reduced by 2016 and showing substantial recovery by 2020

Ireland's marine conservation policy is strongly influenced by the European Union and international conventions such as the OSPAR Convention. The EU Biodiversity Strategy also includes a Target Area on ensuring the sustainable use of fisheries resources, outlining the importance of improving the management of fished stocks and the elimination of adverse impacts on fish stocks, species, habitats and ecosystems.

Sea fishing in Ireland is mainly regulated through national measures under the direction of the EU Common Fisheries Policy (CFP). The EU acknowledges that the CFP has failed to control unsustainable fishing in the seas surrounding Europe, and the policy is in the process of being reformed. This reform and the introduction of new instruments to conserve Europe's marine natural resources are being conducted under the auspices of the EU Integrated Maritime Policy, launched in 2008.

A central instrument of the new policy is the Marine Strategy Framework Directive. The aim of the Directive, adopted in 2008, is to protect the marine environment more effectively across Europe. It aims to achieve good

environmental status of the EU seas by 2020 and to protect the resource base upon which marine-related economic and social activities depend. The Directive establishes European Marine Regions on the basis of geographical and environmental criteria. Ireland, in cooperation with other Member States, is required to develop a strategy for its marine waters, including a marine spatial plan. A detailed assessment of the state of the marine environment is required, with a definition of "good environmental status" at regional level and the establishment of clear environmental targets and monitoring programmes. Ireland must then draw up a programme of cost-effective measures, preceded by an impact assessment that includes a detailed cost-benefit analysis. The aims of the Marine Strategy Directive dovetail with those of the Water Framework Directive, which requires that surface freshwater and ground water bodies are to be in good ecological condition by 2015 and that the first review of River Basin Management Plans should take place in 2020.

The National Development Plan seeks to continue development of the aquaculture industry. It is necessary that biodiversity considerations be incorporated into any proposed development, particularly given the fact that much aquaculture activity takes place in areas of high conservation importance including Natura 2000 sites. Aquaculture is only one of many pressures on the coastal environment; others include tourism developments, recreation, housing and climate change.



Dolphins in the Shannon Estuary
Photo: Eddie Dunne

Ireland is one of fifteen countries and the European Union that are signatories to the OSPAR Convention, which aims to conserve marine ecosystems and safeguard human health in the North-East Atlantic by preventing pollution. Its key objective is to protect the marine environment from the adverse effects of human activities and contribute to the sustainable use of the seas.

Ireland has some 80 coastal and near-shore SACs and also has important SACs for coldwater coral reef sites which cover an area the size of Co. Wexford. These reefs occur between 400 and 1200 m deep along the edge of the Continental Shelf, and scientists have estimated some to be over 4,500 years old. Planning is currently under way to conduct a long-term mapping and monitoring programme at each of these sites to ensure their protection. Surveys are also being undertaken of marine sandbanks, large shallow inlets and bays, and estuaries in order to facilitate the conservation of these habitats and dependent species.

The process of designation of marine SACs and SPAs is not complete (see Action 15.1). Further proposals for marine SACs will be published in 2011 but significant work on baseline surveys of the distribution of seabirds away from breeding colonies is still required.

Since 2009, the Department of Agriculture, Food and the Marine and NPWS have been working on a programme of collection of baseline data on marine Natura 2000 areas to inform assessments of impacts of fisheries and aquaculture on these sites.

TARGET 13: Substantial progress made towards “good ecological status” of marine waters over the lifetime of this Plan

In order to reduce biodiversity loss and eventually achieve recovery, it will be necessary to identify and subsequently put in place effective measures under the marine spatial plan that Ireland is legally required to develop under the Marine Strategy Directive. These measures will be challenging and will include improving the water quality of rivers and estuaries feeding into marine waters (in line with the Water Framework Directive), reducing and eventually eliminating untreated effluent discharges directly into bays and estuaries, making effective contingency plans to protect the coastline from oil spillages, regulating fishing more effectively (through national and EU measures), ensuring that aquaculture operations are carried out in accordance with best environmental practice, and ensuring that future energy generation infrastructure does not damage marine habitats.

ACTIONS

- 13.1 Develop a marine spatial plan for Ireland.
- 13.2 By 2015, identify programmes of measures designed to achieve good environmental status as required by the Water Framework Directive and Marine Strategy Framework Directive and in line with the OSPAR Convention.

INDICATORS AND OUTCOMES

- Publication of marine spatial plan
- Publication of programme of measures to achieve good environmental status



Marine View
Photo: Eamon Kelly

TARGET 14: Fish stock levels maintained or restored to levels that can produce maximum sustainable yield, where possible no later than 2015

Fisheries at European and national level have had damaging impacts both on commercially harvested fish stocks and on non-target species and habitats. While recent years have seen progress in integrating biodiversity concerns into fisheries policy, it is too soon to judge its effectiveness. Considerable efforts are required under the Common Fisheries Policy to restore fish stocks, reduce impacts on non-target species and reduce damage to marine habitats. It is important that fishing capacity be adjusted to improve the balance with available fish stocks.

Many commercially important fish species in Irish waters are heavily exploited, with an estimated 75 per cent being harvested beyond safe biological limits. Recovery measures will require an intensification of efforts nationally and in the EU through the Common Fisheries Policy.

ACTIONS

- 14.1 Continue seeking to ensure the Common Fisheries Policy and marine fisheries provide for the conservation of fish species and marine biodiversity generally and adopt the ecosystem approach to fisheries management.
- 14.2 Continue and complete national measures to research and reduce adverse effects of marine fisheries, aquaculture, etc. on biodiversity in particular within Natura 2000 areas.
- 14.3 Prepare and implement stock recovery plans as soon as needed for any stocks outside safe biological limits, and management plans to maintain other stocks at safe biological levels as determined by the standards for Good Environmental Status in the Marine Strategy Framework Directive.
- 14.4 Adjust fishing capacity to improve balance between fishing capacity and available fish stocks.
- 14.5 Adopt and implement provisions under Common Fisheries Policy for the establishment of no-take zones that conserve biodiversity and fish stock levels.
- 14.6 Take concerted action to combat illegal, unreported and unregulated fishing.

INDICATORS AND OUTCOMES

- Effective conservation measures integrated into policies
- Number of species which are/are not being fished sustainably
- Number of prosecutions on illegal fishing

OBJECTIVE 6: To expand and improve on the management of protected areas and legally protected species

HEADLINE TARGET: Biodiversity loss of protected habitats and species halted by 2016

Conservation of Protected Areas

Protected areas are central to conservation policy. They enable us to protect key habitats and species and provide refuges for the movement and migration of species. Globally speaking, protected areas are estimated to provide livelihoods for 1.1 billion people. Protected areas are the primary source of drinking water for over a third of the world's largest cities and play a major role in ensuring global food security. It has been estimated that investment in creating and managing protected areas across the world will yield returns of the order of 25:1 to 100:1. Governments around the world are increasingly looking at protected areas not only to conserve biodiversity but also to secure vital ecosystem services and enable adaptation to the impacts of climate change.

Statutory Nature Reserves are set aside strictly for nature conservation, while our six National Parks, covering in total over 60,000 ha, are managed for both nature conservation and public recreation. Protected areas also overlap with many of the country's scenic landscapes, which are the most economically important areas for tourism and recreation.



Scragh Bog
Photo: Áine O' Connor

TARGET 15: Natura 2000 network established, safeguarded, designated by 2012 (2014 for marine SPAs) and under effective conservation management by 2016

The bulk of Ireland's areas of high biodiversity have been designated as part of the EU Natura 2000 network. Ireland's suite of Special Areas of Conservation (SACs) extends to 423 sites countrywide and the eventual number will marginally increase when further marine sites are added. Some 143 Special Protection Areas (SPAs) have already been classified in accordance with the terms of the Birds Directive. A further 10 SPAs remain to be notified by the end of 2011. All Natura sites will also be formally designated through Statutory Instrument and this process is already underway. A further 60,000 ha of boglands are designated as Natural Heritage Areas (NHAs), the designation for nationally important areas of biodiversity.

Designated areas are widely used for agriculture, forestry, aquaculture, or recreation, and are subject to regulations with the aim of protecting biodiversity while allowing for sustainable use. Designated areas used for agriculture can attract payments under various EU funded schemes. There is a widely-held view that a further refinement and targeting of such schemes is necessary if Ireland is to meet the requirements of the EU Habitats and Birds Directives, and to succeed, this will require co-operation between Government Departments, farmers and other stakeholders.

The full implementation of the EU Nature Directives is a key Target Area under the latest EU Biodiversity Strategy, which sets out actions for the complete establishment of the Natura 2000 Network and for their good management.

While much work has been carried out on management planning for designated areas, more remains to be done. Detailed conservation objectives for each site will be set, and management advice or plans will also be prepared for designated sites.

ACTIONS

- 15.1 Complete designation process for SACs and SPAs, in particular for marine coastal and offshore SACs by 2012 and marine SPAs by 2014.
- 15.2 Prepare and implement site specific conservation objectives, management advice and /or plans on Natura 2000 sites, Nature Reserves and National Parks in consultation with affected landowners and the public as appropriate.
- 15.3 Work with the EU Commission to ensure that the Community funding instruments are used to ensure adequate financing for Natura 2000; identify national priorities for co-financing; distribute funds (national and Community) to beneficiaries; monitor cost effectiveness of actions financed (in terms of biodiversity outcomes); audit expenditure.
- 15.4 Ensure that agri-environmental schemes provide targeted and costed prescriptions that will contribute to favourable conservation status in farmed designated sites.
- 15.5 Maintain the current NPWS farm plan scheme while exploring options for the most efficient delivery of targeted measures in Natura 2000 sites and NHAs.

INDICATORS AND OUTCOMES

- Number and area of SACs and SPAs remaining to be designated
- Number of sites for which management plans prepared
- Number of site conservation objectives (a) prepared and (b) achieved
- Amount of funding made available for the Natura 2000 network

TARGET 16: Sufficiency, coherence, connectivity and resilience of the protected areas network substantially enhanced by 2016 and further enhanced by 2020

Although some NHAs have been designated, a systematic programme for NHA designation has not been undertaken and some 600 areas proposed as NHAs in the 1990s have not yet been protected by this national designation, although they may be recognised in Local Authorities development plans. Such local plans may also be the best means to improve the connectivity between protected areas, thereby increasing the ability of species to withstand changes in the environment, for example as a result of climate change.

Green Infrastructure

Green infrastructure is a network of green spaces that help conserve natural ecosystems and provide benefits to human populations through water purification, flood control, carbon capture, food production and recreation. Such spaces include woodlands, coastlines, flood plains, hedgerows, city parks and street trees.

The introduction of a Green Infrastructure approach to planning policy would help to protect or improve connectivity between habitats, reducing the effects of fragmentation which can lead to permanent loss of species. In addition, the EU Commission has indicated the intention to produce an EU Green Infrastructure Strategy by 2012.

ACTIONS

- 16.1 By 2015, review previously proposed Natural Heritage Areas and designate as appropriate under the Wildlife (Amendment) Act, 2000.
- 16.2 By 2015 strengthen the coherence, connectivity and resilience (including resilience to climate change) of the protected areas network using, as appropriate, tools that may include flyways, buffer zones, corridors and stepping stones.

INDICATORS AND OUTCOMES

- Number and area of NHAs designated
- Number and area of sites that meet criteria for NHAs but are not so designated
- Fragmentation index¹

TARGET 17: No protected habitats or species in worsening conservation status by 2016; majority of habitats or species in, or moving towards, favourable conservation status by 2020

Although Ireland's designated areas have legal protection, and despite the success of some measures, the overall status of many EU listed habitats, such as bogs and woodlands, remains unfavourable. A priority is to implement a range of positive measures to assist recovery of habitats and species that have suffered declines. The main focus will be on habitats listed in Annex 1 and species listed in Annex 2 of the Habitats Directive that occur within Natura 2000 sites.

One such measure is the Government's implementation of the 2010 decision that no further turf cutting would be permitted on 31 raised bog SACs from 2010, and that cutting should cease on a further 24 raised bog SACs from the end of 2011. The situation regarding 75 raised bog NHAs will be reviewed as part of an overall examination of the management of Ireland's peatlands being undertaken by an independently chaired Peatlands Council, which will feed into a Peatlands Strategy to be completed by March 2012. The Strategy will provide a framework for the protection, conservation and restoration of designated bogs and for the use of peatlands within and outside designated sites. This measure will support other measures to restore raised bog habitats (see page 52).

The programme of measures involved will begin to bear fruit during the lifetime of this Plan but it will take at least ten years to effect substantial recovery. Indeed certain habitats, such as peatlands, will require longer restoration timescales. However, the extent and success of this and all



Bog Restoration at Oweninny Co. Mayo
Photo: Robert Thompson

¹ A measure of the extent to which a habitat is fragmented, or broken up, on a landscape scale. Fragmentation restricts the movement and genetic exchange of species and extensive fragmentation may ultimately lead to habitat loss

other measures will depend in part on the funding available through agri-environment and similar schemes. The nature and funding of these schemes should be seen in the context of further reforms of the EU CAP (see Target 5) which are motivated not only by budgetary considerations but also for reasons of food security, protection of soil and natural resources and rural development.

Conservation of Protected Species

Species conservation in Ireland concentrates mainly on legally protected species. These are protected because they are rare and/or threatened, either nationally or in the European Union. The status of most of Ireland's mammals and many bird species has been assessed as favourable. However 19 breeding bird species, as well as 6 wintering species, are listed in the Red List of Birds of Conservation Concern. A proportion of Ireland's EU-listed species were assessed as having an unfavourable overall status. This includes three species of mollusc, three species of fish and the natterjack toad. The species concerned are all dependent on freshwater for at least some parts of their

life cycles. The critical situation of some of the more sensitive species, such as the freshwater pearl mussels, underlines the urgency of improving water quality in specific areas.

A key action of the previous plan was to identify species of highest conservation concern and prepare action plans for them. Such plans outline the work to be done and strategies to be followed for the conservation of a species. They inform the policy of all Government agencies, and not just the lead department. For example, the Threat Response Plan for the Otter involves both the NPWS and the Office of Public Works (concerning drainage operations). Since wild species do not recognise political boundaries, a number of such plans are all-island Plans, involving the Northern Ireland Environment Agency. The status of many species dependent on water quality is expected to improve due to ongoing implementation of the Water Framework Directive. Appropriate measures to ensure the protection of wild birds in Special Protection Areas and in the wider countryside will also be progressed.



Natterjack Toad
Photo: Mike Brown



Roseate Tern
Photo: Alyn Walsh

Habitat restoration and or management of breeding sites to assist recovery of priority species (e.g. in Species Action Plans) has been carried out for, among others, Natterjack Toad, Otter, Roseate Tern, Little Tern, Sea Lamprey and Atlantic Salmon. A number of restoration projects are ongoing to assist recovery of protected plant species. Some of these also involve the control of invasive species such as the Giant Rhubarb (*Gunnera tinctoria*).

All species listed on Annex IV of the Habitats Directive (e.g. all bats, otter, cetaceans) are strictly protected throughout the state. Planning authorities are required to consider potential impacts on these species before making planning decisions. Better understanding of the potential impacts and how to manage them is required to ensure local authorities and other planning bodies implement this strict protection.

Ex situ Plant conservation

“Ex situ plant conservation” means conservation of species through preservation of seeds, plants, plant parts, tissues or cells which may be used for reintroductions of species into the wild to assist recovery of biodiversity. The Irish Threatened Plant Gene Bank, housed in Trinity College Botanic Gardens, has 165 collections from all over Ireland, representing 59 endangered, vulnerable and rare native plant species.

The National Botanic Gardens and the Trinity College Botanic Gardens, together with Ireland’s zoos and other private and State collections, play an important role as gene banks and living collections. The National Botanic Gardens is also the focal point for the National Strategy for Plant Conservation, modelled on the Global Strategy for Plant Conservation.

ACTIONS

- 17.1 Enforce Government decision in relation to the cessation of turf cutting on raised bogs and drawing up of peatland strategy.
- 17.2 By 2015 implement existing species action or management plans for species under threat and review and update as necessary; develop and implement additional species action or management plans for a wider range of species under threat; ensure monitoring of implementation and effectiveness of plans.
- 17.3 Informed by the draft Action plans developed by BirdWatch Ireland, identify and implement a suite of agreed measures for the protection of categories of endangered bird species in the wider countryside. This will be delivered through the engagement and participation of all relevant stake-holders across the public, private and voluntary sectors.
- 17.4 Continue to implement measures to improve the status of habitats and species assessed as “bad” in the 2007 report to the EU on the status of protected habitats and species, involving habitat action plans if necessary, and by 2015 have in place a full prioritised programme of work.
- 17.5 Provide and implement guidelines for local authorities and other planning bodies on the protection of species listed in Annex IV of the Habitats Directive.
- 17.6 By 2012 identify and subsequently fill critical gaps in *ex situ* conservation programmes for wild species, in line with best practice.

INDICATORS AND OUTCOMES

- Number of habitats and species in green, amber or red status
- Number of habitats and species that improved in status from previous cycle
- Number of protected species in *ex situ* conservation

3.4 Protecting and Restoring Biodiversity Internationally

OBJECTIVE 7: To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services

As well as the actions set out above to conserve biodiversity in Ireland, there is also a role to be played globally through the overseas aid programme; by minimising trade in endangered species; by reducing trade in commodities in cases where production causes damage to biodiversity; by Ireland’s involvement in important global issues such as climate change and access to genetic resources; and by acting as an advocate for biodiversity in international fora.

TARGET 18: Substantially strengthened support for biodiversity and ecosystem services in external assistance.

Overseas Development

Through its Overseas Development Aid Programme, administered by Irish Aid, Ireland has the opportunity to widen the scope of its activities to embrace biodiversity conservation, and in so doing, take advantage of the skills base in life sciences that Ireland possesses. Irish Aid has published an information booklet: *Biodiversity and Poverty Reduction* to accompany its Environment Policy for Sustainable Development. Key strategies for implementing this policy comprise (a) mainstreaming, where biodiversity is recognised as a critical part of sustainable development and is taken into account in all policies, programmes, activities and funding decisions; and (b) partnership, where Irish Aid works with national governments, multilateral organisations, international agencies and civil society organisations to contribute to sustainable development.

ACTIONS

18.1 Biodiversity will be made a component of Ireland’s development cooperation programme; and support to, and co-operation with developing countries shall take into account biological diversity through the application of the CBD.

INDICATORS AND OUTCOMES

- Progress on integration of biodiversity into development co-operation programme.

TARGET 19: Enhanced contribution to international governance for biodiversity and ecosystem services

As set out in Chapter 2, Ireland is a party to a number of international conventions and agreements regarding biodiversity. Ireland will continue to play a role in tackling biodiversity loss at EU and International level.

Access and Benefit Sharing (ABS)

The Convention on Biological Diversity recognises that access to genetic resources (such as wild plants imported into Ireland from developing countries) must be by prior informed consent of the country that provides these resources and based on mutually agreed terms, including fair and equitable sharing of any resulting benefits. The Tenth CBD Conference of the Parties in 2010 agreed a protocol on access to benefit sharing of genetic resources and the international implementation of this protocol will take place during the lifetime of this plan.

Currently, there is little awareness of this issue in Ireland and it will be necessary to make progress in this area. The implications of the Protocol for Ireland need to be examined prior to any national ratification; the EU-led impact assessment will inform this process.

ACTIONS

- 19.1 International agreements will be serviced to ensure that Ireland plays a role in the future of international biodiversity policy, particularly in the area of mainstreaming biodiversity and ecosystem services across all sectors.
- 19.2 Prepare for ratification of the Protocol on Access to Genetic Resources and Fair and Equitable Sharing of Benefits (ABS) and implement a national strategy, if ratified.

INDICATORS AND OUTCOMES

- Level of interaction with international agreements, committees and meetings.
- ABS Protocol Ratified
- National Strategy on ABS adopted

TARGET 20: Enhanced co-operation with Northern Ireland on common issues**Working with Northern Ireland on Biodiversity**

Ireland is a single geographic entity and therefore an all-Ireland approach is necessary to safeguard biodiversity on this island. Biodiversity does not recognise political boundaries and Ireland and Northern Ireland share the same biogeographic space with many species moving between the two territories. There is already substantial North/South dialogue and co-operation on biodiversity issues and it is envisaged that this will continue, as reflected in the actions in this chapter and previous chapters. In a reciprocal arrangement, representatives from each jurisdiction are members of the relevant Biodiversity Group/Forum.

A number of all-island plans have been published and are being implemented, including for red squirrel, bats and the Irish hare. There are also shared benefits to be gained from co-ordinating species monitoring schemes, not in the least in terms of cost and data compatibility. For example, two separate bat monitoring schemes are currently co-ordinated on an all-island basis with joint funding from NPWS and NIEA.

Invasive Species Ireland

Invasive Species Ireland is a jointly funded venture between the Northern Ireland Environment Agency and the Department of Arts, Heritage and the Gaeltacht. It acts as a co-ordination mechanism and provides advice and resources for stakeholders, in addition to carrying out risk assessment, policy development, education and awareness activities, research and development of invasive species action plans. They are currently working on harmonised Invasive Species Strategies for Northern Ireland and the Republic of Ireland.

ACTIONS

- 20.1 Ongoing communication and harmonised action on issues of common concern.
- 20.2 Produce a strategy on Invasive Alien Species in co-operation with Northern Ireland to improve harmonisation of the policy framework.
- 20.3 Further co-operation on and co-ordination on relevant actions (e.g. All-Island Species Protection Plans, species and habitats surveys and monitoring, etc.).

INDICATORS AND OUTCOMES

- A Strategy published on Invasive Alien Species and progress on implementation
- Number of Species protection plans implemented and reviewed
- Number of habitat surveys and monitoring schemes carried out

TARGET 21: Substantial reduction in impact of Irish trade on global biodiversity and ecosystem services**International Trade**

Ireland can also play a role in reducing the impact of trade on biodiversity and ecosystem services in other countries, and particularly those in the developing world. Despite the severe economic recession that began in 2008, Ireland remains a rich country, with resource consumption levels and lifestyles similar to those of many other EU countries. In the Ecological Footprint Atlas (2009), Ireland's ecological footprint is identified as the highest in the EU and third highest of the 126 countries listed, mainly due to imports and consumption rather than production or exports.

Ireland can make a significant contribution to global biodiversity by minimising or even eliminating imports (e.g. tropical timber, palm oil and biofuels, etc.) from unsustainable sources. The actions that Ireland proposes to take on timber imports is enshrined in EU legislation by way of the Forest Law Enforcement, Governance and Trade (FLEGT) and Timber Regulations, which aim to ban the placing on the market within the EU of illegally sourced timber. The FLEGT ban is due to come into effect during 2012, with the Timber Regulation to apply during 2013. Furthermore, this Plan proposes work to identify products whose imports drive deforestation and determine whether any effective means can be found to reduce the demand for and supply of such products.



Japanese Knotweed



Zebra Mussels



Chub

The latest figures available for consumption of timber are shown in the Table below.

Timber imports to Ireland by country, ranked by amount (m3)

| SOFTWOODS | HARDWOODS |
|----------------------|-------------------------|
| Sweden (364,000 m3) | Cameroon (44,507 m3) |
| Finland (165,000m3) | USA (24,151 m3) |
| Baltics (147,000 m3) | Ivory Coast (11,156 m3) |
| UK (103,000 m3) | |
| Germany (93,000 m3). | |

Source: ITGA Yearbook 2008

CITES

CITES is the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The aim of the Convention is to regulate and monitor the international trade in certain species of animals and plants, and to ensure that trade does not threaten their survival in the wild. It is an international agreement between countries

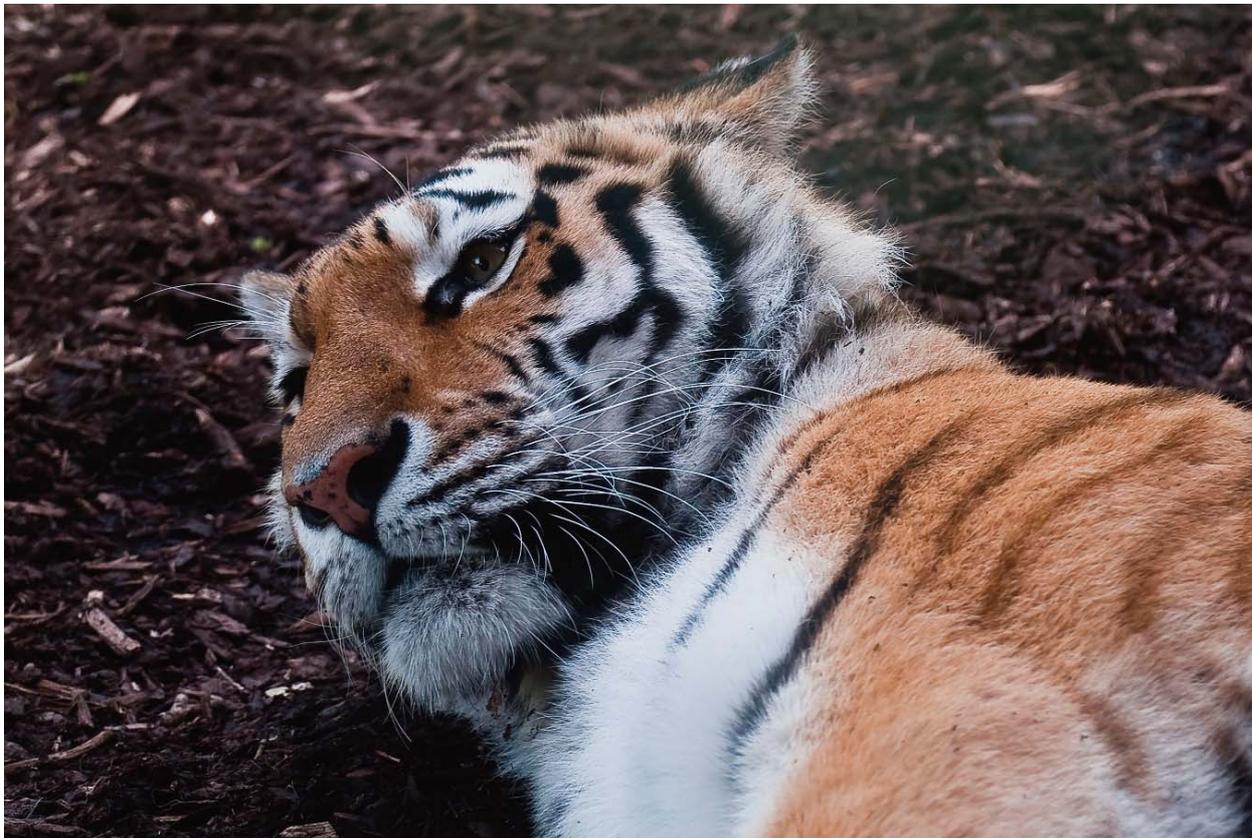
(known as Parties to the Convention) which was agreed in Washington in 1973. Over 170 Parties have signed up to the Convention and Ireland became a CITES Party in 2002. Over 4,000 animal and 25,000 plant species are included in Appendices I, II and III of CITES, which accord them varying degrees of protection.

Ireland will strive to ensure that CITES Regulations are adequately implemented and enforced, including the imposition of adequate sanctions for infringements of the Regulations.

In 2013, Ireland will, as holder of the Presidency of the EU, play a key role in the Conference of the Parties (COP) of the CITES Convention.

Data Sharing

Ireland joined the Global Biodiversity Information Facility (GBIF) in 2007, and has since begun to provide Irish data through the national portal hosted by the National Biodiversity Data Centre. This allows users throughout the world to openly share and put to use vast quantities of global biodiversity data, thereby advancing scientific



Sumatran Tiger
Photo: Meghan O'Dowd

research in many disciplines, promoting technological and sustainable development, facilitating the conservation of biodiversity and the equitable sharing of its benefits, and enhancing the quality of life of members of society.

ACTIONS

- 21.1 Identify major impacts of trade on biodiversity and adopt measures to significantly reduce (in case of negative impacts) and/or enhance (in case of positive impacts) these impacts (see also action 1.13).
- 21.2 Ensure CITES Regulations are adequately implemented and enforced.
- 21.3 Analyse options for further legislation to control imports of illegally harvested timber into Ireland. Facilitate exchange of best practice in private and public sector procurement policies favouring wood products from sustainable sources, including certifiable wood products.
- 21.4 Identify non-wood imports driving deforestation and investigate the effectiveness of any potential measures to prevent, minimise and/or mitigate this deforestation.
- 21.5 Identify and implement measures aimed at substantially reducing the impact of Ireland's ecological footprint on biodiversity.

INDICATORS AND OUTCOMES

- Number and importance of impacts of trade on biodiversity identified
- Number and effectiveness of measures adopted to reduce or enhance the impact of trade on biodiversity
- Estimates of illegally harvested wood products imported
- A reduction in the level of non-wood products, that drive deforestation, imported

APPENDIX:

LIST OF OBJECTIVES, TARGETS AND ACTIONS

OBJECTIVE 1: To mainstream biodiversity in the decision making process across all sectors

TARGET 1: Shared responsibility for the conservation of biodiversity and the sustainable use of its components is fully recognised, and acted upon, by all sectors

ACTIONS

Mainstreaming

- 1.1 Relevant Government Departments and State agencies to prepare sectoral Biodiversity Action Plans in line with the National Biodiversity Plan to ensure and promote the conservation and sustainable use of biodiversity.
- 1.2 Raise awareness of the implications of policy and decisions on biodiversity and the requirements to engage in the preparation of biodiversity action plans.
- 1.3 Establish a Minsiter-led Steering Group and a Biodiversity Working Group to advance implementation of this Plan.
- 1.4 Include in legislation a biodiversity duty to ensure that conservation and sustainable use of biodiversity are taken into account in all relevant plans and programmes and all new legislation.
- 1.5 Review key existing legislation to determine the need for further provisions to conserve biological diversity.
- 1.6 Ensure that all development plans comply with environmental legislation and in particular with the nature directives so as to prevent and minimise any potential damages to biodiversity.

Local Actions

- 1.7 Each local authority to publish a Local Biodiversity Action Plan or review existing plans.
- 1.8 Each local authority to designate a suitably qualified officer for natural heritage conservation matters in its area.

Further Actions

- 1.9 Fully implement the SEA Directive.
- 1.10 Fully implement the Environmental Liability Directive and issue appropriate guidance.
- 1.11 Continue to publish appropriate guidance to local authorities regarding biodiversity.
- 1.12 Develop and use the means to integrate the economic value of biodiversity and ecosystems into national accounts, national and local development strategies and planning processes. (See also Action 3.9).
- 1.13 Publish and implement the National Action Plan for Green Procurement (See also Actions under Target 21).
- 1.14 Identify and take measures to ensure that incentives and subsidies do not contribute to biodiversity loss, and develop positive incentive measures, where necessary, to assist the conservation of biodiversity.

INDICATORS AND OUTCOMES

- Number of biodiversity action plans created in Government Departments or sectors and extent of implementation
- Enactment of biodiversity duty
- Review of legislation completed
- Number of Local Authority Biodiversity Action Plans reviewed or prepared and extent of implementation
- Proportion of local authorities with officers for natural heritage
- Number and scope of guidance documents relating to biodiversity issued to planning authorities
- Extent to which the economic value of biodiversity is integrated in national accounts, national and local development strategies and planning processes
- Publication and implementation of National Action Plan on Green Public Procurement
- Number and effectiveness of positive incentives developed
- Number of incentives which are adverse to biodiversity identified but remaining in place
- Number of adverse incentives removed

TARGET 2: Legislation in support of tackling biodiversity loss in Ireland strengthened**ACTIONS**

- 2.1 By 2013 publish legislation to provide a legal basis for National Parks.
- 2.2 Publish a Bill by 2014 to consolidate the Wildlife Act.
- 2.3 Introduce legislation to reduce further the risk to wildlife caused by the use of poisons in the environment.
- 2.4 Introduce revised forest legislation which will support the conservation, protection and sustainable management of forest biological diversity.

INDICATORS AND OUTCOMES

- Number of legislative instruments above introduced

OBJECTIVE 2: To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity

TARGET 3: Knowledge on biodiversity and ecosystem services has substantially advanced our ability to ensure conservation, effective management and sustainable use by 2016

ACTIONS

- 3.1 Enhance research and progress assessments on status, trends and distribution of all habitats and species of Community interest and of additional habitats and species of national and regional importance.
- 3.2 Continue to update the National Vegetation Database and use it to develop a refined Vegetation Classification System for Ireland.
- 3.3 Establish a working group by 2011 to progress the development of a national terrestrial and marine habitat map by 2015.
- 3.4 Adopt and apply a set of headline biodiversity indicators by 2012.
- 3.5 Establish and continue to promote common data standards and quality assurance procedures in line with the INSPIRE Directive and other data standards to enable interoperability of key biodiversity databases and inventories by 2015.
- 3.6 Based on these standards and procedures, develop a shared information system for biodiversity which makes data freely available to all interested users, streamlines reporting and supports policy evaluation and development at national, regional and global levels by 2015.
- 3.7 Support and encourage the volunteer network that carries out biological recording.
- 3.8 Continue and expand on the work of the National Platform for Biodiversity Research guided by the recommendations of the Platform expert working group.
- 3.9 Carry out further and more detailed research on the economic value of ecosystems and biodiversity in Ireland.
- 3.10 Enhance knowledge of the most significant direct and indirect causes of biodiversity loss; develop and test prevention and mitigation options.
- 3.11 Continue the existing forest research programme on forest biodiversity, carbon accounting and the interaction of climate change and forest systems.
- 3.12 Continue to update, identify and create inventories of important genetic resources for food and agriculture, both *in situ* and *ex situ* as appropriate, in particular those genetic resources whose survival is threatened and which may not have been identified or quantified to date.
- 3.13 Enhance the capacity to build and maintain the human resources, systems and infrastructure needed to identify, obtain, collate and curate the biological specimens that are the basis for taxonomic knowledge.

INDICATORS AND OUTCOMES

- Number of Red Lists published
- Bird Atlas prepared
- Mammal Atlas published
- Number of habitats and species for which good data exists and status assessments undertaken
- Vegetation Classification System developed
- Data standards improved and quality assurance in place
- National Platform for Biodiversity Research is operational
- Number of ongoing research and survey programmes on biodiversity
- Economic value of biodiversity researched sufficiently to allow integration into accounting process as per Action 1.12
- Forest research programmes continuing
- Number of threatened genetic resources identified
- Number of species groups for which taxonomic expertise is adequate in the State/is not adequate

OBJECTIVE 3: To increase awareness and appreciation of biodiversity and ecosystems services

TARGET 4: Enhanced appreciation of the value of biodiversity and ecosystem services amongst policy makers, stakeholders and the general public

ACTIONS

- 4.1 Enhance training, communication, co-operation and concerted action between relevant sectors in support of biodiversity conservation.
- 4.2 Work with relevant Departments and stakeholders to include biodiversity and ecosystem goods and services in relevant courses in secondary and third level education.
- 4.3 Develop and implement a communications campaign in support of full implementation of this National Biodiversity Plan and improving public and sectoral understanding of the value of biodiversity.

INDICATORS AND OUTCOMES

- Level of public awareness of biodiversity and surrounding issues increased compared with previous years
- Number of courses which include biodiversity
- Number of schools in the Green Schools programme
- Number of participants in Biological & Ecological Category of the Young Scientists competition
- Number of hits on Notice Nature website
- Membership of ENGO's

See also action 1.2 above.

OBJECTIVE 4: To conserve and restore biodiversity and ecosystem services in the wider countryside

HEADLINE TARGET: In the wider countryside biodiversity loss reduced by 2016 and showing substantial recovery by 2020.

TARGET 5: Optimise use of opportunities under agricultural, rural development and forest policy to benefit biodiversity.

ACTIONS

- 5.1 Develop measures in future rural development programmes for the protection and enhancement of ecosystem services and biodiversity.
- 5.2 Further develop criteria to identify High Nature Value farmland and develop measures to address threats.
- 5.3 Ensure effective implementation of cross-compliance, statutory management requirements and forest service guidelines/requirements to ensure conservation of biodiversity.
- 5.4 Conduct a systematic evaluation process for any agri-environmental schemes delivered, involving a robust ecological monitoring programme.
- 5.5 Review the control of overgrazing and undergrazing.
- 5.6 Continue the Burren Farming for Conservation Programme.
- 5.7 Continue to promote the Native Woodland Scheme which features establishment and conservation elements aimed at encouraging the development and conservation of native woodlands.
- 5.8 Consider and develop guidance on alternative forestry management options which aim to deliver additional biodiversity benefits.
- 5.9 Strengthen measures to ensure conservation, and availability for use, of genetic diversity of crop varieties, livestock breeds and races, and of commercial tree species and promote in particular their *in situ* conservation.

INDICATORS AND OUTCOMES

- Number and effectiveness of measures developed in the National Rural Development Plan for the protection and enhancement of ecosystem services and biodiversity
- Effective system in place for identification and maintenance of High Nature Value Farmland
- Compliance rate for Statutory Management Requirements, and Forestry Guidelines/requirements
- Extent of recovery demonstrated from over-grazing and under-grazing
- Area covered by the Native Woodland Scheme
- Number of crop varieties, livestock breeds and races, and of commercial tree species conserved
- Number and area of NPWS farm plan schemes

TARGET 6: Principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2015

ACTIONS

- 6.1 Ensure implementation of operational monitoring programmes, publication of River Basin Management Plans and establishment and implementation of River Basin District Programmes of Measures, in line with provisions of the Water Framework Directive.
- 6.2 Continue investment in Water Service Investment Programme, and ensure biodiversity concerns are considered in the programme.
- 6.3 Significantly reduce pollutant pressures on terrestrial and freshwater ecosystems through implementation of relevant EU Thematic Strategies and Directives (e.g. Water Framework Directive, Sustainable Use of Pesticides and Nitrates).

INDICATORS AND OUTCOMES

- Number of habitats and species impacted by pollution
- Status of freshwaters as reported by EPA
- Number of schemes which enhance water quality completed under the Water Service Investment Programme

TARGET 7: Optimised Benefits for biodiversity in Flood Risk Management Planning.

ACTIONS

- 7.1 Incorporate objectives to minimise biodiversity loss and degradation of ecosystem services, and to optimise biodiversity gains, in flood risk management plans.
- 7.2 Continue to ensure that all significant drainage, including both initial drainage and maintenance drainage, is assessed for its implications for biodiversity and particularly for wetlands.

INDICATORS AND OUTCOMES

- Extent of floodplains identified for maintenance or restoration in Flood Relief Management Plans
- Area of restored flood plains
- Biodiversity gain from river enhancement works

TARGET 8: Harmful invasive alien species are controlled and there is reduced risk of spread of new species

ACTIONS

- 8.1 Prepare, by 2011, detailed species and pathway risk assessments and develop exclusion and contingency plans for priority pathways and high impact species that are likely to invade Ireland.
- 8.2 Continue and enhance measures for eradication, where feasible, control and containment of invasive alien species.
- 8.3 Examine options for rapid response when new invasive alien species are discovered.
- 8.4 Increase awareness within the horticultural and constructed wetlands industries of native alternatives that can be used in place of invasive alien species.
- 8.5 All public bodies will endeavour to use native species, landraces and breeds and the public will be encouraged to do so.

INDICATORS AND OUTCOMES

- Number of risk assessments developed
- Number of species eradicated, controlled and contained

TARGET 9: Effective hedgerow and scrub management ensured by 2016**ACTIONS**

- 9.1 Review options on regulation of removal and/or management of hedgerows and scrub.
- 9.2 Production of guidance documents on scrub and hedgerow.
- 9.3 Hedgerow surveys will be continued by local authorities.

INDICATORS AND OUTCOMES

- Regulations reviewed and amended as appropriate
- Guidance documents issued
- Number of surveys published

TARGET 10: Continued rehabilitation or restoration of biodiversity elements**ACTIONS**

- 10.1 Identify areas of biodiversity value, or biodiversity hotspots, within Bord na Móna lands by 2015.
- 10.2 Continue ecological surveys, preparation of habitat maps and planning of rehabilitation for all Bord na Móna bog areas.
- 10.3 Continue to develop a network of biodiversity areas within Bord na Móna sites.
- 10.4 Continue the programme of re-introduction of large raptors.
- 10.5 Maintain target of 30% broadleaf planting in afforestation.
- 10.6 Continue to update the inventory of native woodlands, review and, where appropriate, incorporate the results of the Native Woodland Survey into the conservation and expansion of the native woodland cover.
- 10.7 Develop, adopt and implement restoration programmes for salmon, sea trout and eels.

INDICATORS AND OUTCOMES

- Number of habitat maps and rehabilitation plans for all Bord na Móna bog areas
- Number of breeding eagles and kites
- Area afforested with native species
- Status of salmon, trout, eels, lamprey, shads, pollan and char

TARGET 11: Improved enforcement of Wildlife Law**ACTIONS**

- 11.1 Enhance the role of An Garda Síochána and Customs Officers in enforcing Wildlife Legislation, through, among other actions, the provision of specific training and guidance.
- 11.2 Ensure adequate training in Wildlife Crime detection and enforcement is provided to all NPWS enforcement staff.
- 11.3 NPWS enforcement staff will investigate along with An Garda Síochána and Revenue (Customs) officials (as appropriate) suspected and alleged wildlife crime affecting biodiversity.
- 11.4 Continue to enforce the Wildlife Acts and Regulations.

INDICATORS AND OUTCOMES

- Number of prosecutions for offences under Wildlife Law

TARGET 12: Monitoring to provide adequate data flow for reporting on biodiversity by 2016**ACTIONS**

- 12.1 Use, and as necessary develop, monitoring tools, approaches and frameworks in order to establish and co-ordinate adequate harmonised data flows for the biodiversity indicators to reveal key trends.
- 12.2 Monitor conservation status of Habitats Directive habitats and species.
- 12.3 Monitor the status of species and species groups listed in the Birds Directive.

INDICATORS AND OUTCOMES

- Number of monitoring programmes in place
- Number of indicators with good quality data

OBJECTIVE 5: To conserve and restore biodiversity and ecosystem services in the marine environment

HEADLINE TARGET: In the wider marine environment, biodiversity loss reduced by 2016 and showing substantial recovery by 2020

TARGET 13: Substantial progress made towards “good ecological status” of marine waters over the lifetime of this Plan

ACTIONS

13.1 Develop a marine spatial plan for Ireland.

13.2 By 2015, identify programmes of measures designed to achieve good environmental status as required by the Water Framework Directive and Marine Strategy Framework Directive and in line with the OSPAR Convention.

INDICATORS AND OUTCOMES

- Publication of marine spatial plan
- Publication of programme of measures to achieve good environmental status

TARGET 14: Fish stock levels maintained or restored to levels that can produce maximum sustainable yield, where possible no later than 2015

ACTIONS

14.1 Continue seeking to ensure the Common Fisheries Policy and marine fisheries provide for the conservation of fish species and marine biodiversity generally and adopt the ecosystem approach to fisheries management.

14.2 Continue and complete national measures to research and reduce adverse effects of marine fisheries, aquaculture, etc. on biodiversity in particular within Natura 2000 areas.

14.3 Prepare and implement stock recovery plans as soon as needed for any stocks outside safe biological limits, and management plans to maintain other stocks at safe biological levels as determined by the standards for Good Environmental Status in the Marine Strategy Framework Directive.

14.4 Adjust fishing capacity to improve balance between fishing capacity and available fish stocks.

14.5 Adopt and implement provisions under Common Fisheries Policy for the establishment of no-take zones that conserve biodiversity and fish stock levels.

14.6 Take concerted action to combat illegal, unreported and unregulated fishing.

INDICATORS AND OUTCOMES

- Effective conservation measures integrated into policies
- Number of species which are/are not being fished sustainably
- Number of prosecutions on illegal fishing

OBJECTIVE 6: To expand and improve on the management of protected areas and legally protected species

HEADLINE TARGET: Biodiversity loss of protected habitats and species halted by 2016.

TARGET 15: Natura 2000 network established, safeguarded, designated by 2012 (2014 for marine SPAs) and under effective conservation management by 2016

ACTIONS

- 15.1 Complete designation process for SACs and SPAs, in particular for marine coastal and offshore SACs by 2012 and marine SPAs by 2014.
- 15.2 Prepare and implement site specific conservation objectives, management advice and /or plans on Natura 2000 sites, Nature Reserves and National Parks in consultation with affected landowners and the public as appropriate.
- 15.3 Work with the EU Commission to ensure that the Community funding instruments are used to ensure adequate financing for Natura 2000; identify national priorities for co-financing; distribute funds (national and Community) to beneficiaries; monitor cost effectiveness of actions financed (in terms of biodiversity outcomes); audit expenditure.
- 15.4 Ensure that agri-environmental schemes provide targeted and costed prescriptions that will contribute to favourable conservation status in farmed designated sites.
- 15.5 Maintain the current NPWS farm plan scheme while exploring options for the most efficient delivery of targeted measures in Natura 2000 sites and NHAs.

INDICATORS AND OUTCOMES

- Number and area of SACs and SPAs remaining to be designated
- Number of sites for which management plans prepared
- Number of site conservation objectives (a) prepared and (b) achieved
- Amount of funding made available for the Natura 2000 network

TARGET 16: Sufficiency, coherence, connectivity and resilience of the protected areas network substantially enhanced by 2016 and further enhanced by 2020

ACTIONS

- 16.1 By 2015, review previously proposed Natural Heritage Areas and designate as appropriate under the Wildlife (Amendment) Act, 2000.
- 16.2 By 2015 strengthen the coherence, connectivity and resilience (including resilience to climate change) of the protected areas network using, as appropriate, tools that may include flyways, buffer zones, corridors and stepping stones.

INDICATORS AND OUTCOMES.

- Number and area of NHAs designated
- Number and area of sites that meet criteria for NHAs but are not so designated
- Fragmentation index²

² A measure of the extent to which a habitat is fragmented, or broken up, on a landscape scale. Fragmentation restricts the movement and genetic exchange of species and extensive fragmentation may ultimately lead to habitat loss.

TARGET 17: No protected habitats or species in worsening conservation status by 2016; majority of habitats or species in, or moving towards, favourable conservation status by 2020

ACTIONS

- 17.1 Enforce Government decision in relation to the cessation of turf cutting on raised bogs and drawing up of peatland strategy.
- 17.2 By 2015 implement existing species action or management plans for species under threat and review and update as necessary; develop and implement additional species action or management plans for a wider range of species under threat; ensure monitoring of implementation and effectiveness of plans.
- 17.3 Informed by the draft Action plans developed by BirdWatch Ireland, identify and implement a suite of agreed measures for the protection of categories of endangered bird species in the wider countryside. This will be delivered through the engagement and participation of all relevant stake-holders across the public, private and voluntary sectors.
- 17.4 Continue to implement measures to improve the status of habitats and species assessed as “bad” in the 2007 report to the EU on the status of protected habitats and species, involving habitat action plans if necessary, and by 2015 have in place a full prioritised programme of work.
- 17.5 Provide and implement guidelines for local authorities and other planning bodies on the protection of species listed in Annex IV of the Habitats Directive.
- 17.6 By 2012 identify and subsequently fill critical gaps in *ex-situ* conservation programmes for wild species, in line with best practice.

INDICATORS AND OUTCOMES

- Number of habitats and species in green, amber or red status
- Number of habitats and species that improved in status from previous cycle
- Number of protected species in *ex situ* conservation

OBJECTIVE 7: To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services

TARGET 18: Substantially strengthened support for biodiversity and ecosystem services in external assistance.

ACTIONS

- 18.1 Biodiversity will be made a component of Ireland’s development co-operation programme; and support to, and co-operation with developing countries shall take into account biological diversity through the application of the CBD.

INDICATORS AND OUTCOMES

Progress on integration of biodiversity into development co-operation programme.

TARGET 19: Enhanced contribution to international governance for biodiversity and ecosystem services

ACTIONS

- 19.1 International agreements will be serviced to ensure that Ireland plays a role in the future of international biodiversity policy, particularly in the area of mainstreaming biodiversity and ecosystem services across all sectors.
- 19.2 Prepare for ratification of the Protocol on Access to Genetic Resources and Fair and Equitable Sharing of Benefits (ABS) and implement a national strategy, if ratified.

INDICATORS AND OUTCOMES

- Level of interaction with international agreements, committees and meetings.
- National Strategy on ABS adopted

TARGET 20: Enhanced co-operation with Northern Ireland on common issues

ACTIONS

- 20.1 Ongoing communication and harmonised action on issues of common concern.
- 20.2 Produce a strategy on Invasive Alien Species in co-operation with Northern Ireland to improve harmonisation of the policy framework.
- 20.3 Further co-operation on and co-ordination on relevant actions (e.g. All-Island Species Protection Plans, species and habitats surveys and monitoring, etc.)

INDICATORS AND OUTCOMES

- A Strategy on invasive alien species published and progress on implementation
- Species protection plans implemented and reviewed

TARGET 21: Substantial reduction in the impact of Irish trade on global biodiversity and ecosystem services

ACTIONS

- 21.1 Identify major impacts of trade on biodiversity and adopt measures to significantly reduce (in case of negative impacts) and/or enhance (in case of positive impacts) these impacts (see also action 1.13).
- 21.2 Ensure CITES Regulations are adequately implemented and enforced.
- 21.3 Analyse options for further legislation to control imports of illegally harvested timber into Ireland. Facilitate exchange of best practice in private and public sector procurement policies favouring wood products from sustainable sources, including certifiable wood products.
- 21.4 Identify non-wood imports driving deforestation and investigate the effectiveness of any potential measures to prevent, minimise and/or mitigate this deforestation.
- 21.5 Identify and implement measures aimed at substantially reducing the impact of Ireland's ecological footprint on biodiversity.

INDICATORS AND OUTCOMES

- Number and importance of impacts of trade on biodiversity identified
- Number and effectiveness of measures adopted to reduce or enhance the impact of trade on biodiversity
- Estimates of illegally harvested wood products imported
- A reduction in the number of non-wood products, that drive deforestation, imported

