

# Guidelines for the production of Local Biodiversity Action Plans

(draft)



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## **1. GUIDELINES FOR THE PRODUCTION OF LOCAL BIODIVERSITY ACTION PLANS**

This guidance note is intended to provide some background information on the Convention on Biological Diversity, and to assist Local Authorities in the preparation of Local Biodiversity Action Plans. The preparation of Local Biodiversity Action Plans is part of an overall process that the government has initiated to address heritage concerns and to fulfill international obligations under the Convention on Biological Diversity and Agenda 21 through the publication of the National Heritage Plan and the National Biodiversity Plan. The Local Biodiversity Action Plans are a complementary component of the Local Heritage Plans, a process that has already commenced in many local authority areas, under the guidance of the Heritage Council.

## **2. BIOLOGICAL DIVERSITY**

Biological diversity, or biodiversity, is the term given to the variety of life on Earth and the natural patterns it forms. The biodiversity we see today is the result of billions of years of evolution, shaped by natural processes and, increasingly, by the influence of humans. It forms the web of life of which we are an integral part and upon which we so fully depend.

This diversity is often understood in terms of the wide variety of plants, animals and micro-organisms. So far, about 1.75 million species have been identified, mostly small creatures such as insects. Scientists reckon that there are actually about 13 million species, though estimates range from 3 to 100 million.

Biodiversity also includes genetic differences within each species, for example, between varieties of crops and breeds of livestock. Chromosomes, genes, and DNA, the building blocks of life, determine the uniqueness of each individual and each species.

Yet another aspect of biodiversity is the variety of ecosystems that occur, such as deserts, forests, wetlands, mountains, lakes, rivers, and agricultural landscapes. In each ecosystem, living creatures, including humans, form a community, interacting with one another and with the air, water, and soil around them.

It is the combination of life forms and their interactions with each other and with the rest of the environment that has made Earth a uniquely habitable place for humans. Biodiversity provides a large number of 'goods and services' that sustain our lives.

‘Goods and Services’ provided by biological diversity include:

- provision of food, fuel and fibre eg fish, livestock and crop varieties
- provision of shelter and building materials eg timber for construction
- provision of medicines
- purification of air and water
- detoxification and decomposition of wastes
- stabilization and moderation of the Earth's climate
- moderation of floods, droughts, temperature extremes and the forces of wind
- generation and renewal of soil fertility, including nutrient cycling
- pollination of plants, including many crops
- control of pests and diseases
- maintenance of genetic resources as key inputs to crop varieties and livestock breeds, medicines, and other products
- cultural and aesthetic benefits
- ability to adapt to change

### **3. LOSS OF BIODIVERSITY**

Species, habitats and ecosystems, the planet’s whole natural heritage, is under an ever-increasing threat. Many species and habitats are in decline and in some cases their future is endangered. Irreversible losses have already occurred, with many species having already become extinct, and the rate of extinctions is increasing. The extinction of one species results in the irreversible loss of a unique suite of genetic adaptations that have been acquired typically over very long time scales of hundreds of thousands of years.

Undoubtedly human behaviour now causes, directly and indirectly, considerable loss of biological diversity. Globally, the degradation of biological diversity is principally due to habitat destruction, the introduction of non-native species and overexploitation. The relative effects of these three factors varies in time and location. In Ireland today, habitat degradation and loss is the main factor eroding biodiversity, including through changes in agricultural practices, poorly managed afforestation, drainage, pollution and the impacts of invasive species. The influence of climatic change is becoming increasingly important.

### **4. INTERNATIONAL CONTEXT**

In 1992, the largest-ever meeting of world leaders took place at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil where a comprehensive strategy for "sustainable development" was agreed, meeting our needs while ensuring that we leave a healthy and viable world for future generations. An historic set of agreements was signed at the "Earth Summit", including two

binding agreements, the Convention on Climate Change, which targets industrial and other emissions of greenhouse gases such as carbon dioxide, and the Convention on Biological Diversity, the first global agreement on the conservation and sustainable use of biological diversity. The biodiversity treaty gained rapid and widespread acceptance. Over 150 governments signed the document at the Rio conference, and since then more than 180 countries have ratified the agreement. Ireland signed the Convention on Biological Diversity in 1992 and ratified it in 1996.

## **5. THE CONVENTION ON BIOLOGICAL DIVERSITY (CBD)**

The Convention has three main goals:

- the conservation of biodiversity,
- sustainable use of the components of biodiversity, and
- sharing the benefits arising from the commercial and other utilization of genetic resources in a fair and equitable way

The Convention is comprehensive in its goals, and deals with an issue so vital to humanity's future, that it stands as a landmark in international law. It recognizes, for the first time, that the conservation of biological diversity is "a common concern of humankind" and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use. It also covers the rapidly expanding field of biotechnology, addressing technology development and transfer, benefit-sharing and biosafety. Importantly, the Convention is legally binding; countries that ratify it are obliged to implement its provisions.

The Convention reminds decision-makers that natural resources are not infinite and sets out a new philosophy for the 21st century, that of sustainable use. While past conservation efforts were aimed at protecting particular species and habitats, the Convention recognizes that ecosystems, species and genes must be used for the benefit of humans. However, this should be done in a way and at a rate that does not lead to the long-term decline of biological diversity.

The Convention also offers decision-makers guidance based on the precautionary principle that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat. The Convention acknowledges that substantial investments are required to conserve biological diversity. It argues, however, that conservation will bring us significant environmental, economic and social benefits in return. Stakeholder involvement in decision making is also an important element of the Convention.

Some of the many issues dealt with under the Convention include:

- measures and incentives for the conservation and sustainable use of biological diversity
- access to genetic resources
- access to and transfer of technology, including biotechnology
- technical and scientific cooperation
- impact assessment
- education and public awareness
- provision of financial resources
- national reporting on efforts to implement treaty commitments

## 6. IMPLEMENTATION OF THE CONVENTION

Implementation of the Convention on Biological Diversity is inherently integrative and cross-sectoral in character. It requires that biological diversity considerations be integrated into a wide range of policy areas, both at the international and the national level.

While the Convention on Biological Diversity was agreed in 1992, there is an ongoing process to further elaborate what is needed to implement it. Work is progressed by a number of means, with the ultimate responsibility for implementation resting with the Conference of Parties (COP). The COP takes decisions which define further obligations which countries must fulfil as well as setting out what is required at the international level. The COP has adopted a thematic or 'ecosystem approach' for implementation of the Convention as well as furthering consideration of specific articles. This has entailed *inter alia* the adoption of programmes of work for forest biological diversity, marine and coastal biological diversity, agricultural biological diversity and the biological diversity of inland waters as the framework for applying the principles of the Convention to specific ecosystems.

A key means of measuring progress in the implementation of the Convention is through the analysis of national reports which Parties have to submit under the Convention. The first national reports were submitted to the fourth meeting of the COP in 1998 and the second national reports were submitted in 2001. National thematic reports on selected issues have also been submitted by many Parties. Ireland has submitted its first and second National Reports, as well as thematic reports on alien species and on forest biodiversity, which can be found on the website of the CBD (see section 24).

There are many major challenges to implementing the Convention on Biological Diversity and promoting sustainable development, and these include:

- meeting the increasing demand for biological resources caused by population growth and increased consumption, while considering the long-term consequences of our actions

- increasing our capacity to document and understand biodiversity, its value, and threats to it
- building adequate expertise and experience in biodiversity planning.
- improving policies, legislation, guidelines, and fiscal measures for regulating the use of biodiversity
- adopting incentives to promote more sustainable forms of biodiversity use.
- promoting trade rules and practices that foster sustainable use of biodiversity
- strengthening coordination within governments, and between governments and stakeholders
- securing adequate financial resources for conservation and sustainable use, from both national and international sources
- making better use of technology
- building political support for the changes necessary to ensure biodiversity conservation and sustainable use
- improving education and public awareness about the value of biodiversity

## **7. PREPARATION OF NATIONAL STRATEGIES OR PLANS UNDER THE CONVENTION**

A key provision of the Convention is the preparation of national biodiversity strategies or plans, and the integration of biological diversity concerns into all relevant sectors. This obligation is contained in Article 6 of the Convention, which sets out the general measure for conservation and sustainable use.

*Article 6A* requires each Contracting Party to ‘develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adopt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting Party concerned.’

*Article 6B* requires each Contracting Party to ‘integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross sectoral plans, programmes and policies’.

## **8. PUBLICATION OF THE NATIONAL BIODIVERSITY PLAN**

In response to Ireland’s commitment towards implementation of the Convention on Biological Diversity, the Irish government published the National Biodiversity Plan in April 2002. This plan sets out a series of actions that are intended to promote and assist in the conservation of Ireland’s biological diversity, at a national and local level. The integration of biodiversity concerns into sectoral activities is in its initial stages through the preparation of guidelines to assist Departments and relevant state agencies in the preparation of their Biodiversity Action Plans. An Interdepartmental Biodiversity Steering Group has already been established, and it is also intended to establish a national Biodiversity Forum, representative of all stakeholders.

The National Biodiversity Plan has a section dealing with providing for biodiversity at local level, under which there are two specific actions for Local Authorities:

**Action 10.** Each Local Authority to prepare a local Biodiversity Plan in consultation with relevant stakeholders.

**Action 11.** Each Local Authority to designate a contact officer for natural heritage conservation matters in its area.

The section on 'Providing for Biodiversity at Local Level' states –

*It is essential that action is also taken at the local level for the conservation of biodiversity. Local Authorities have potentially a key role here being in the best position to promote heritage conservation generally into local plans and programmes. To provide for the conservation and sustainable use of biodiversity at the local level, two key measures will be put in place, namely, the preparation and adoption of Local Biodiversity Action Plans and the designation of Natural Heritage Officers in all Local Authorities. The primary functions of these officers will be to promote and ensure the conservation of the natural heritage at the local level. The principal means of achieving this will be the formulation of the Local Biodiversity Plan by each Local Authority which will normally be prepared as part of integrated Local Heritage Plans. The initial focus of Local Biodiversity Plans will be on the identification and assessment of the local biodiversity resource.*

## **9. WHAT IS A LOCAL BIODIVERSITY ACTION PLAN?**

There are existing initiatives at the local area, often in conjunction with local authorities, which contribute to the conservation of biological diversity at the local level. The initiation of the Local Biodiversity Action Plan process is a way of ensuring that these and any new actions for local biodiversity are undertaken in the context of an overall framework, with individual projects contributing towards a common set of objectives and targets. The Local Biodiversity Action Plan should recognise existing initiatives, support new ones, and identify and prioritise areas where more actions are needed. In such a way, national and international targets for the conservation of biodiversity can be achieved while at the same time addressing local priorities .

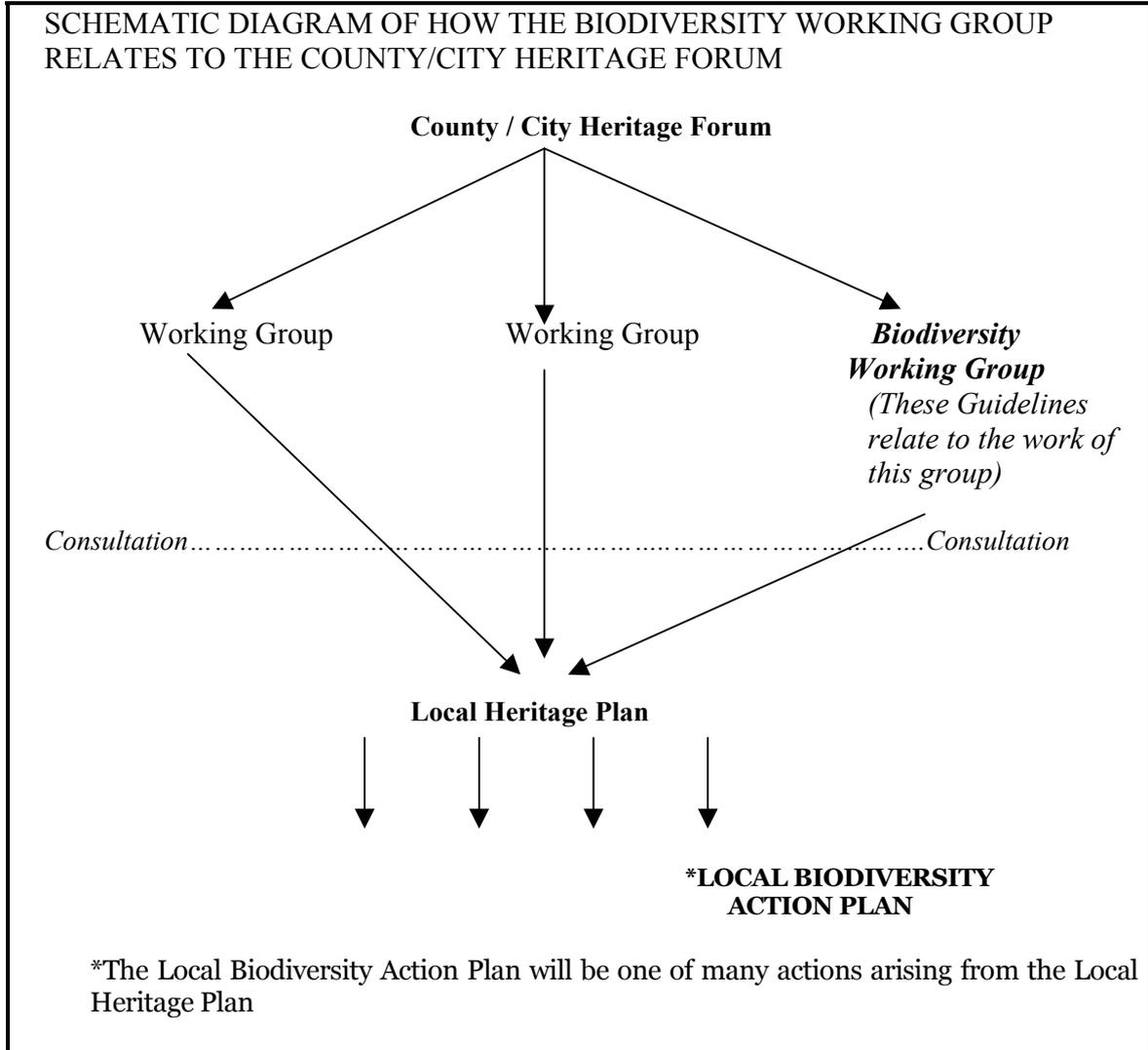
### **The main functions of a Local Biodiversity Action Plan are:**

- To translate international, European and Irish policies and obligations into effective action on the ground
- To conserve biodiversity of national and local importance
- To provide a framework for the conservation of biodiversity and to coordinate existing and new initiatives
- To assist sustainable planning and development, and provide a framework that is complementary to the County Development Plan and Local Agenda 21 initiatives
- To raise public awareness of and involvement in the conservation of biodiversity
- To collect and collate information on the biodiversity of the area

- To provide a basis for monitoring the success of conservation of biodiversity at a local, regional and national level

#### **10. RELATIONSHIP BETWEEN THE LOCAL BIODIVERSITY ACTION PLAN AND THE LOCAL HERITAGE PLAN**

Following the publication of the National Biodiversity Plan, it is now Government policy for the Local Authorities to take the lead role in the production of Local Biodiversity Action Plans. As there is also a requirement for Local Authorities to prepare a Local Heritage Plan, and guidelines on this process already exist, it is anticipated that the Local Biodiversity Action Plan will become an integral component of the Local Heritage Plan. To avoid duplication, it is anticipated that each Local Heritage Plan will include a commitment to produce a Local Biodiversity Action Plan. The importance of biodiversity as part of our heritage, as well as its importance through the many goods, services and economic functions, it provides must be recognised. The production of the Local Biodiversity Action Plan will be undertaken by a Biodiversity Working Group, set up under the auspices of the Heritage Forum. National co-ordination of this process is provided by the Heritage Council.



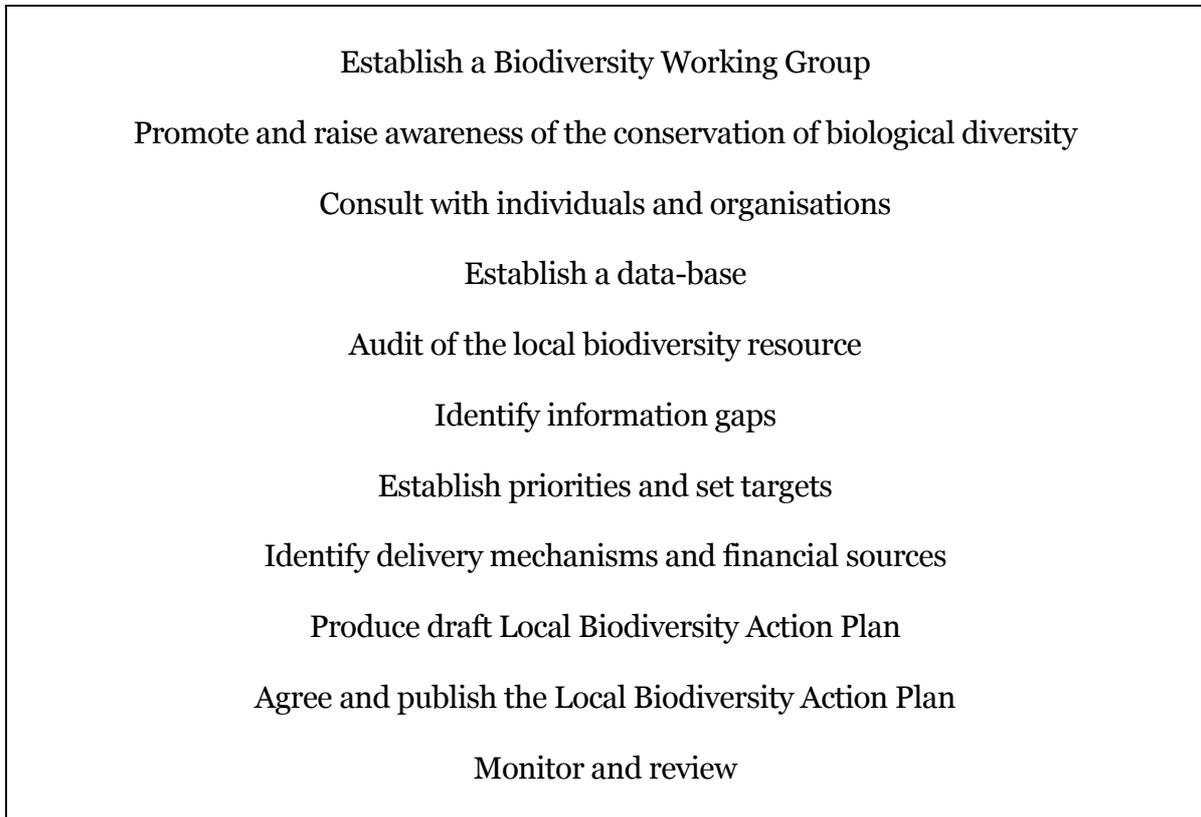
## 11. MAIN ELEMENTS IN THE LOCAL BIODIVERSITY ACTION PLAN PROCESS

The process of developing a Local Biodiversity Action Plan involves several distinct elements. Analysis and evaluation of the biological diversity resource is clearly a major part of the process, resulting in detailed proposals for action within a specific period of time. In parallel with this is the development of an effective partnership with key players to identify appropriate delivery and funding mechanisms. A third component is the programme for monitoring the effectiveness of the overall plan in achieving local targets. Underpinning all this is the need for an adequate database at the local level, which will ultimately complement the national biological data management system.

While there are several distinct elements in the Local Biodiversity Action Plan process, and some of these follow a logical sequence of steps, work on different elements need not commence sequentially. Actions aimed at conservation of local biological diversity

can commence immediately, with all of the initiatives being drawn together in the draft Local Biodiversity Action Plan.

The main elements of the process are as follows:



## **12. ESTABLISH A BIODIVERSITY WORKING GROUP**

The Local Biodiversity Action Plan forms a component of, and is complementary to, the Local Heritage Plan process. Overall responsibility for the production of the Local Biodiversity Action Plan should lie with the Heritage Officer, though this may be facilitated by the appointment or designation of additional staff to assist the process. A Biodiversity Working Group should be established under the auspices of the Local Heritage Forum, to drive the process forward. Membership of the Biodiversity Working Group may come from a wide range of sectors including:

- local government
- land owners
- state agencies, in particular Dúchas
- conservation and environmental non-government organisations
- local businesses
- community groups
- educational establishments.

- representatives from sectoral organisations

Different partners will play different roles in contributing to the success of the Biodiversity Action Plan process. In identifying potential members of the working group, priority should be given to those who have greatest potential to contribute the success of the biodiversity action plan process. Once the key members of the working group have been identified, and the work of the group underway, additional members can be brought on board to provide support for specific tasks.

The identification of potential members of the working group and their respective roles will have to take a variety of factors into account and these include:

- knowledge of local biodiversity and sources of information to inform decisions on the conservation of biological diversity
- influence over landowners and land managers
- promotion of nature conservation
- influence on policies affecting nature conservation
- leverage – ie. ability to influence and enlist others in nature conservation issues
- potential for an increased contribution to nature conservation issues through partnerships
- manage or are involved in existing initiatives that involve biodiversity

### **13. PROMOTE AND RAISE AWARENESS OF THE CONSERVATION OF BIOLOGICAL DIVERSITY**

One of the first tasks of the biodiversity working group will be to familiarise itself with the principles underlying the Convention on Biological Diversity and the key objectives it contains. The group will also need to familiarise itself with the National Biodiversity Plan, which translates the international issues into actions at the national level. Time should be spent on discussing how these principles and objectives might be translated into action at the local level, and what implications this might have for the members of the working group and the organisations they represent.

Once this initial groundwork has been done, and the group is familiar with the objectives of the Convention on Biological Diversity, then the working group must promote the need for action for the conservation of biological diversity, and to raise awareness in the wider community of the Local Biodiversity Action Plan process that has been initiated. It is essential that as many people and organisations as possible are aware of the Local Biodiversity Action Plan process as their participation and support will be key to eventual implementation. Events such as workshops, presentations and competitions could be held and publicity through radio slots, newspaper coverage, *etc* will help promote the Local Biodiversity Action Plan process.

#### **14. CONSULTATION**

In order to ensure the widest possible involvement of the community in the Local Biodiversity Action Plan process, it is recommended that individuals and organisations not directly involved in the Working Group be consulted. This should take the form of a general call for submissions on the issues and concerns of the general public in relation to the conservation of biological diversity. However, there will also be some individuals and organisations that are not represented on the Biodiversity Working Group whose views, advice and experience would be of benefit to the process. Once identified, these individuals or groups should be contacted separately and invited to make specific observations or proposals to assist the process. Consultation with these individuals and groups can help to estimate levels of support and future participation, as well as resources and expertise available. Effort should be made to keep all participants and contributors to the process informed of any progress made, especially if they are not directly represented on the Working Group.

#### **15. ESTABLISH A DATA-BASE**

A useful starting point for a Local Biodiversity Action Plan is to collate existing information and to establish a data-base at the local level on the state of knowledge of the local biological diversity. This will contain information of relevance to the local area, and could be built upon and added to, as the amount of information at the local level increases. Clearly information on designated sites will comprise a significant component of this data-base, but the focus of the local data-base should be to generate and make accessible information on the biological diversity of the wider countryside, outside designated sites.

The Heritage Council intends to create a database of sources of information on biological data, which the Local Biodiversity Action Plans can draw upon. The Heritage Council will endeavour to co-ordinate data management systems to ensure that a consistent approach will be adopted by the individual local authorities. The intention is also to establish a National Biological Records Centre, which will provide national co-ordination and advice on the establishment of local data management systems.

#### **16. AUDIT OF THE LOCAL BIODIVERSITY RESOURCE**

To build upon the compilation of information on the local biodiversity resource, a stock taking of the main habitats and species that occur within the area, or have occurred in the area in the relatively recent past should be done. This should identify features that are of -

- 1.** international and national interest, or
- 2.** locally distinctive, or locally rare and therefore of local conservation interest.

An audit of the local biological diversity resource need not be a major undertaking. In its simplest form it can comprise a list of species and habitats that fall into the two

categories shown above, which over time can be added to as more information becomes available. However, ideally an audit should involve a review of selected key habitats and species, together with any information available on historical or current population/extent trends and status. Should there be insufficient information available to do a thorough audit of the biodiversity resource at this stage, data collection should be prescribed as a priority target in the Local Biodiversity action Plan itself.

Despite the difficulties that may arise in undertaking a biodiversity audit of the local authority area, the value of such an audit should not be underestimated, as it is the first step in providing an objective and factual basis for identifying priorities by the Biodiversity Working Group. It will also form the basis upon which a monitoring programme can be developed.

### **Aspects of international and national biological diversity interest**

Aspect of Ireland's biological diversity which are of international and national interest include:–

- Species listed in Red Data Books (Appendix 1)
- Species and habitats listed for special conservation measures under the EU Birds and Habitats Directives (Appendix 2)
- Protected areas – SACs, SPAs, pNHAs, Nature Reserves, National Parks, Refuges for Fauna, Salmonid waters
- Species afforded protection under the Flora Protection Order (Appendix 1)
- Species included in the Red List of Birds of Conservation Concern (Appendix 3)
- Local breeds on the Food and Agriculture Organisation's list of endangered species

### **Aspect of local biological diversity interest**

Those aspects of biodiversity that are of local importance for conservation will depend on the part of the country under consideration. Members of the Biodiversity Working Group and other local experts who are most familiar with their local area, are best placed to identify these aspects of local biodiversity, at least at the initial stages of the process. The selection of species and habitats considered to be of local importance will reflect the knowledge, understanding and interest of the local community, and this local perspective is to be encouraged. However, as Species and Habitat Action Plans are produced at the national level, and formal national targets and actions for selected

species and habitats are agreed, the process at the local level will need to be flexible to allow these national targets to be translated into action at the local level.

Aspect of Ireland's biological diversity that may be of local interest include:

- Sites identified in the joint environmental NGO Special Area of Conservation 'Shadow List',
- Broad habitat groups of particular importance for wildlife:
  - Freshwater swamp,
  - Semi-natural grasslands,
  - Freshwater marsh
  - Heath
  - Bogs
  - Fens and flushes
  - Semi-natural woodland,
  - Scrub,
  - Hedgerows,
  - Coastland.
- Bird species included on the amber list of birds of conservation importance
- Species that are not widely distributed within the local authority area, but which are not of national conservation concern
- Local varieties of fruit, grain and vegetables and local breeds of animal
- Other species and habitats of particular interest to the Biodiversity Working Group *eg* species that are particularly characteristic of an area could serve as flagship species

## 17. IDENTIFY INFORMATION GAPS

It is inevitable that there will be significant gaps in our knowledge on aspects of biological diversity at the local level. At this early stage in the Local Biodiversity Action Planning process it is unrealistic to expect these information gaps to be filled, yet an appreciation of the extent to which information is lacking is an important element in the introduction of policies and programmes which address the conservation of biological diversity. The identification of information gaps will emerge from the collation of existing information and the biodiversity audit. The Biodiversity Working Group will also need to be aware of any surveys that are currently being undertaken or are planned by other agencies or organisations.

Once information gaps are identified, a concerted effort should be made to ensure that some of these gaps are filled. The filling of these information gaps should comprise some of the key actions in the Local Biodiversity Action Plan.

Ways in which the information gaps could be filled include:

- data on habitats and species be collected as part of existing initiatives e.g. incorporate habitat mapping as an element of the Local Area Plan or include habitat mapping as an element of Landscape Character Assessment
- avail of the Wildlife Grant Scheme of the Heritage Council to undertake specific surveys
- linking with national initiatives (eg Networks for Nature's national hedgerow survey, Forest Service's Forest Inventory, National Lowland Grassland Survey, etc)
- initiate new recording and mapping projects (eg. Local Parish Natural Heritage Survey currently being undertaken by Carlow County Council).

## **18. ESTABLISH PRIORITIES AND SET TARGETS**

The biodiversity inventory or audit will identify a large range of habitats and species within the local authority area that are of importance for conservation. This list will invariably be far too long for action all at once. It is for this reason that it is necessary to prioritise the actions that should take place first, and what targets should be set.

Ideally, in identifying priorities for action, a balance should be struck between actions targeted at species and habitats of national importance, and those that are locally distinctive elements of the area. How the specific actions are identified is a matter for each Biodiversity Working Group, and will be dependent on factors such as the interests of the individual members, the enthusiasm and capability of the group, and the resources obtained for implementing actions.

Of crucial importance is that clear priorities are set, including realistic targets, and the progress with implementation of plan is monitored closely so that the process can be built upon in subsequent plans. Also as the production of national action plans develops, national targets and actions will need to be reflected in the local plans. The enforcement of all statutory obligations by local authorities with respect to species and habitat protection should also be a priority.

In establishing priorities and targets, the Biodiversity Working Group should be cognisant of the need for these to be realistic as well as ambitious. Some of these actions may just relate to undertaking an inventory of an aspect of biodiversity for which there is poor information, and the target may simply be the completion of the

survey. Other actions may be more far reaching, for example, seeking to implement a series of habitat enhancement measures for a locally important bird species.

One of the most effective ways to achieve action for local biodiversity is to prepare habitat or species action plans. The level of detail in these action plans will vary depending on the habitat type or species, according to the level of information available, and also according to how ambitious the plan is. Nevertheless, the individual habitat or species plans should follow a standard format, to include, as a minimum the following:

- habitat/species description
- current status and extent
- current factors causing threat to population and/or habitat
- current action or initiatives at national level
- Statutory obligations
- setting local objectives or targets including a timeframe
- proposed actions at local level with key partners and timeframe
- funding available.

An example of the kind of habitat action plan that could be produced is provided below (p. 18). Depending on the circumstances in individual counties and the level of participation and expertise, the Biodiversity Working Group may wish to have action plans under thematic areas such as Education and Awareness or Coastal and Marine. In addition, a section which includes measures that reduce the ecological impact on global biodiversity could be included.

## **19. STRUCTURE OF A LOCAL BIODIVERSITY ACTION PLAN**

Although the overall structure of a Local Biodiversity plan will vary depending on the decisions of the Biodiversity Working Group, it is imperative that it is user-friendly, clear and consistent. Examples of the type of information that could be provided in the Local Biodiversity action Plan are shown below:

- Vision statement/Overall aim
- Introduction – what is biodiversity?  
why should we conserve biodiversity?  
why is a Local Biodiversity Action Plan needed?  
conservation of biodiversity in Ireland to date
- The need for widespread participation and community involvement can be emphasised with concrete examples provided as to how people can help.
- The criteria used in the selection of species and habitats should be described
- List of habitats and species in the local authority area
- The Habitat and Species Action Plans and any sectoral action plans, including targets, actions, timeframe, key partners, and approximate costs and potential funding sources

## **20. IDENTIFY DELIVERY MECHANISMS AND FINANCIAL SOURCES**

A range of agencies and partners will be able to play their part in implementing the actions outlined in the Local Biodiversity Action Plan. Some actions may require little additional funding if, for example, they can be done on a voluntary basis or involve adapting existing management measures at no extra cost. Others, however, will require funding. There are likely to be many opportunities for availing of existing financial sources or instruments to achieve biodiversity objectives outlined in the Local Biodiversity Action Plan, such as the Heritage Council Wildlife Grant Scheme. There will also be other priority actions that will require separate funding sources. Local businesses or local organisations may wish to sponsor certain actions. The Biodiversity Working Group should identify potential financial sources and the most effective means of delivery of the prioritised actions.

It will be the responsibility of the individual partners to pledge their support and commitment for the objectives and actions identified for the conservation of biodiversity at the local level. Nevertheless, it is important for the Biodiversity Working Group to identify how it feels partners can contribute most effectively and efficiently towards the overall process. These proposals will then be considered formally by the relevant partner with the production and circulation of the draft Local Biodiversity Action Plan. However, an approximate estimate of how much funding will be required and how that funding will be delivered should be identified before publication of the Local Biodiversity Action Plan.

## **Example of a habitat action plan for ancient or species-rich hedgerows**

### **Habitat**

Hedgerows, particularly those with a variety of plant and tree species are of particular importance for biological diversity in the countryside. The most species rich hedgerows are usually the oldest ones, and townland boundary and roadside hedgerows are particularly important for this reason.

Species-rich hedgerows are important habitats in their own right, and they also act as wildlife corridors for many species, allowing dispersal and movement between other habitats. Hedgerows are not only important for biodiversity, but have a farming, landscape, archaeology and cultural value.

### **Current status**

Audit: X km of townland boundary Xkm of species rich hedgerows

Change in extent: unknown

### **Threats**

Townland boundary loss has occurred but the rate of loss has not been high. There has, however, been significant loss of species rich hedgerows, particularly in more intensively farmed areas and in periphery of urban centres. The ecological quality has probably deteriorated due to neglect, inappropriate management, lack of maintenance, use of herbicides and increased livestock densities, particularly of sheep.

### **Current Actions**

National hedgerow survey by Networks for Nature

### **Statutory obligations**

Wildlife (Amendment) Act, 2000. Cutting of hedgerows, except for reasons of public safety, is prohibited from 1<sup>st</sup> March to 31<sup>st</sup> August.

### **Targets**

To identify the location and extent of ancient and species-rich hedgerows within the county by 2004

Halt all loss of townland boundaries by 2005

Achieve favourable conservation status of 25% of ancient hedgerows by 2006

### **Actions**

Support the national hedgerow survey by Networks for Nature to identify the location and extent of ancient and species-rich hedgerow within the county

Promote workshops for hedgerow cutting contractors to promote the widespread use of biodiversity-friendly cutting regimes – hold at least 2 workshops by end 2003

Produce a booklet to raise awareness of the heritage value of ancient and species-rich hedgerows by June 2004

Review planning conditions attached to proposed developments to encourage retention of species rich hedgerows by April 2004

Actions for species and habitats could be prescribed under a number of headings depending on how ambitious the plan is. These could include Policy and Legislation, Habitat/Species Management, Education Awareness and Publicity, and Research and Monitoring, or any others deemed necessary by the Biodiversity Working Group.

### **Funding sources**

Avail of Heritage Council wildlife grant to survey the extent and location of ancient and species rich hedgerows within the county

Local business to sponsor one workshop

Other categories in the Local Biodiversity Action Plan could include 'Ecology and management' and 'Local importance'.

## **21. PRODUCE DRAFT LOCAL BIODIVERSITY ACTION PLAN**

In addressing the above steps, very significant progress will have been made in establishing the groundwork necessary for the production of a Local Biodiversity Action Plan. At this stage, it is important to produce a draft Action Plan, to set the work done to date in context, to set out clear achievable targets for action over a five-year period, and to galvanise the support of all of the local partners in meeting these targets.

The draft Local Biodiversity Action Plan should be submitted to the Local Authority for consideration, and seek the Council's response to how it will contribute to the overall objectives of the Plan. The draft Action Plan should be placed on public display for a given timescale, with an invitation for the general public to make observations. The Local Authority should also send a copy of the draft Plan to all of the partners in the process, inviting their support for the plan, and also seeking a clear commitment from the partners on how they will contribute to achieving the objectives in the draft Plan.

## **22. AGREE AND PUBLISH THE LOCAL BIODIVERSITY ACTION PLAN**

When the formal responses from the partners and general public are received, the draft Local Biodiversity Action Plan will need to be amended to incorporate these responses. Only at this stage will it become apparent as to what can realistically be achieved over the lifetime of the plan.

The final Local Biodiversity Action Plan should be published and used to promote the objectives of the conservation of biological diversity. It should be emphasised that the publication of the Plan is only one step of a continuous process and that momentum, participation and commitment must be maintained to ensure the effective implementation of the Plan.

## **23. MONITOR AND REVIEW**

The conservation of biological diversity at the local level is an ongoing process, and the initiation of the Local Biodiversity Action Plan process is only the first significant landmark in this process, to be built upon by subsequent Action Plans. It will take time to prepare the groundwork necessary to produce an effective Local Biodiversity Action Plan, so the working group should strive to have the Local Biodiversity Action Plan completed within two years of the establishment of the group.

Each Local Biodiversity Action Plan should be for a five-year period, and it is imperative that progress with its implementation is monitored and reviewed. To do this, a review should be undertaken after three years, with the purpose of redoubling efforts or making modifications where necessary. This review should also allow the framing of the next Local Biodiversity Action Plan to commence. A shorter annual

review report should also be prepared by the Heritage Officer to the Working Group, local authority and Heritage Council.

A review strategy should be set out whilst drafting the plan. As targets are met, new targets will be required. Where targets have not been met, the causes should be identified and alternative actions should be decided upon. For example, funding may not be provided where it was originally expected and alternative sources will need to be identified and actions and targets modified accordingly.

A report on the review process should be prepared and presented to the Local Authority, the Heritage Council, other partners and the Department of Environment and Local Government.

### **Example of how a Local Authority might contribute to a Local Biodiversity Action Plan**

As the lead partner in the production of the Local Biodiversity Action Plan, the local authority may consider, for example, making the following commitment as its contribution towards achieving the objectives of the plan:

**1. Managing its own land and activities to maximise its contribution to biological diversity by –**

- identify all land within designated sites owned by Local Authorities
- introducing grass cutting regimes that are compatible with biodiversity enhancement
- planting native trees as determined by the local landscape character
- using tree stocks from local seed sources (if available)
- safeguarding and managing species of national significance which occur on its land
- ensuring that biodiversity surveys are undertaken to inform changes to land use or when undertaking development
- managing water courses and their margins to benefit biological diversity
- ensuring that construction and design of culverts & bridges allow for passage of aquatic life
- producing and implementing management plans for locally important sites in its ownership
- reducing the use of pesticides and herbicides to a minimum
- erecting bird and bat boxes as part of local authority development works
- introducing cutting regimes to enhance biological diversity of hedgerows and roadside verges
- protecting bat roost when repairing bridges

**2. Influencing, involving and informing others;**

- through development control safeguard and enhance the area's biodiversity
- incorporate habitat mapping as part of the Local Area Plan process
- encourage contractors and consultants to adopt the principles of biodiversity enhancement in designing development sites and implementing best practice
- provide guidance on the source of advice and delivery mechanism
- through demonstration and projects involve the local community in the decision-making process
- provide incentives, through the criteria for grant support of projects
- discourage the canalisation or culverting of water courses in development proposals
- produce interpretative material
- promote the distinctiveness and quality of the area's biodiversity
- create support mechanisms for others to undertake action
- support the voluntary sector in its efforts
- establish partnerships to steer local biodiversity action
- encourage practical and awareness raising education initiatives in association with the voluntary sector

## 24. FURTHER INFORMATION

Further information on the Convention on Biological Diversity is available on the Convention's web site <http://www.biodiv.org/>

First and Second National Reports of Ireland, thematic reports on Alien and Invasive Species and Forest Ecosystems, Ireland's National Biodiversity Plan and Irish contact points for the CBD can be found at <http://www.biodiv.org/world/map.asp?lg=O&ctr=ie>

The EU Biodiversity Clearing House mechanism can be found at <http://biodiversity-chm.eea.eu.int/>

Useful references:

- *National Biodiversity Plan*, (2002) Government of Ireland
- *National Heritage Plan*, (2002) Government of Ireland
- *A methodology for Local Authority Heritage Officers on the Preparation of County/city Heritage Plans*, (2001) The Heritage Council
- *A Guide to the Convention on Biological Diversity*, (1994). I.U.C.N., Gland and Cambridge.
- *A Guide to the Habitats in Ireland*. (2000) The Heritage Council.
- *Biodiversity in Ireland* (2001) The Environmental Protection Agency.
- *The Irish Red Data Book: 1 Vascular Plants*. T.G.F. Curtis & H.N. McGough (1988) Government Stationery Office.
- *Threatened Mammals, Birds, Amphibians and Fish in Ireland. Irish Red Data Book 2: Vertebrates*. A. Whilde (1993) HMSO, Belfast.
- *Red Data Books of Britain & Ireland: Stoneworts*. N.F. Stewart & J.M. Church (1992) JNCC, Peterborough.
- *Birds of Conservation Concern in Ireland*. Newton, S. Donaghy, A. Allen, D. & Gibbons, D. (1999) *Irish Birds* **6**:333-344.
- *The Millennium Atlas of Butterflies in Britain and Ireland*. Asher, J. et al (2001). University Press, Oxford.
- *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991*. D.W.Gibbons, Reid, J.B & Chapman, R.A. (1993) T.& A.D. Poyser.
- *Evaluation of Environmental Designations in Ireland* (second edition). The Heritage Council (1997)
- *Irish Peatland Conservation Plan 2000*. (1996) Irish Peatland Conservation Council.
- *New Atlas of the British and Irish Flora*. Preston, C.D. et al. (2002) Botanical Society of the British Isles.

## **APPENDIX 1. CHECKLIST OF PROTECTED SPECIES IN IRELAND**

### KEY TO TABLE:

- EU HD** - EU Habitats Directive (Council Directive 92/43/EEC)
  - II** - Annex II animal and plant species
  - IV** - Annex IV animal and plant species
  - V** - Annex V animal and plant species
  
- EU BD** - EU Birds Directive (Council Directive 79/409/EEC)
  - I** - Annex I bird species
  
- WA** - Wildlife Act (1976) & Wildlife (Amendment) Act (2000)
  - P** - Protected species
- FPO** - Flora Protection Order (date)
  
- RDB** - Red Data Book Category
  - Ex** - Extinct
  - E** - Endangered
  - V** - Vulnerable
  - R** - Rare
  - I** - Indeterminate
  - II** - Internationally Important
  
- - species not listed
- # - status unknown

		EU HD	EU BD	RDB	WA	Bern	Bonn	Preferred habitat type(s)	Geographic distribution
<b>MAMMALS</b>									
Whiskered Bat	<i>Myotis mystacinus</i>	IV	-	I	P	II	-	Summer roosts in buildings	Widespread
Natterer's Bat	<i>Myotis nattereri</i>	IV	-	I	P	II	-	Summer roosts in buildings	Widespread
Daubenton's Bat	<i>Myotis daubentoni</i>	IV	-	II	P	II	-	Bridges, buildings, caves, trees	Widespread
Leisler's Bat	<i>Nyctalus leisleri</i>	IV	-	II	P	II	-	Summer roosts in buildings	Widespread
Pipistrelle	<i>Pipistrellus pipistrellus</i>	IV	-	II	P	III	-	Summer roosts in buildings	Widespread
Brown Long-eared Bat	<i>Plecotus auritus</i>	IV	-	II	P	II	-	Summer roosts in buildings	Widespread
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	II, IV	-	II	P	II	-	Summer roosts in buildings	West and SW only
Grey Seal	<i>Halichoerus grypus</i>	II, V	-	-	P	-	-	Rocky shores and cliffs	Coastal only
Common Seal	<i>Phoca vitulina</i>	II, V	-	-	P	-	-	Sheltered shores	Coastal only
Bottle-nosed Dolphin	<i>Tursiops truncatus</i>	II, IV	-	-	P	-	-	Open sea	Coastal only
Harbour Porpoise	<i>Phocaena phocaena</i>	II, IV	-	-	P	-	-	Open sea	Coastal only
Otter	<i>Lutra lutra</i>	II, IV	-	II	P	II	-	Watercourses, coast	Widespread
Badger	<i>Meles meles</i>	-	-	II	P	III	-	Woodland and many others	Widespread
Irish Hare	<i>Lepus timidus hibernicus</i>	V	-	II	P	III	-	Grassland, heathland, bog	Widespread
Hedgehog	<i>Erinaceus europaeus</i>	-	-	II	P	III	-	Woodland, scrub, hedgerow	Widespread
Pine Marten	<i>Martes martes</i>	V	-	II	P	III	-	Woodland, scrub	Mainly west and midlands
Pygmy Shrew	<i>Sorex minutus</i>	-	-	-	P	-	-	Diverse	Widespread
Red Squirrel	<i>Sciurus vulgaris</i>	-	-	-	P	-	-	Woodland	Widespread
Irish Stoat	<i>Mustela erminea hibernica</i>	-	-	-	P	-	-	Diverse	Widespread
Red Deer	<i>Cervus elaphus</i>	-	-	-	P	-	-	Woodland, upland	Widespread
Fallow Deer	<i>Dama dama</i>	-	-	-	P	-	-	Woodland	Widespread
Sika Deer	<i>Cervus nippon</i>	-	-	-	P	-	-	Woodland, upland	Widespread
Ship Rat	<i>Rattus rattus</i>	-	-	R	-	-	-	Buildings	Lambay Island only
<b>BIRDS</b>									
								<b>Breeding habitat (except where stated)</b>	
Red-throated Diver	<i>Gavia stellata</i>	-	I	R	P	II	-	Breeds upland lakes	Donegal only
Black-necked Grebe	<i>Podiceps nigricollis</i>	-	-	R	P	II	-		Extinct
Storm Petrel	<i>Hydrobates pelagicus</i>	-	I	II	P	II	-	Offshore islands	Coastal only
Leach's Petrel	<i>Oceanodroma leucorhoa</i>	-	I	-	P	#	#	Offshore islands	Coastal only
Gadwall	<i>Anas strepera</i>	-	-	R	P	III	II	Lowland lakes	Localised
Pintail	<i>Anas acuta</i>	-	-	R	P	III	II	Lowland lakes	Localised
Garganey	<i>Anas querquedula</i>	-	-	R	P	III	II	Lowland lakes	Localised
Shoveler	<i>Anas clypeata</i>	-	-	R	P	III	II	Lowland lakes and rivers	Localised
Pochard	<i>Aythya ferina</i>	-	-	R	P	III	II	Lowland lakes and rivers	Localised
Common Scoter	<i>Melanitta nigra</i>	-	-	E	P	III	II	Lowland lakes	Mainly west
Goosander	<i>Mergus merganser</i>	-	-	R	P	III	II	Rivers	Localised
Bewick's Swan	<i>Cygnus columbianus bewickii</i>	-	I	-	P	#	#	Grassland (winter only)	
Whooper Swan	<i>Cygnus cygnus</i>	-	I	II	P	II	II	Grassland (winter only)	
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>	-	I	II	P	III	II	Grassland, bog (winter only)	
Barnacle Goose	<i>Branta leucopsis</i>	-	I	II	P	II	II	Grassland, islands (winter only)	Mainly west coast
Light-bellied Brent Goose	<i>Branta bernicla hrota</i>	-	-	II	P	III	II	Estuary (winter only)	Coastal only
Hen Harrier	<i>Circus cyaneus</i>	-	I	E	P	III	II	Moorland, forestry, upland	Mainly south
Merlin	<i>Falco columbarius</i>	-	I	R	P	II	II	Moorland, forestry, upland	
Peregrine	<i>Falco peregrinus</i>	-	I	II	P	II	II	Rock cliffs, quarries	Widespread
Grey Partridge	<i>Perdix perdix</i>	-	-	E	P	III	-	Farmland, bog	Localised
Corncrake	<i>Crex crex</i>	-	I	E	P	II	-	Farmland	Localised
Golden Plover	<i>Pluvialis apricaria</i>	-	I	V	P	III	II	Upland, bog	West and NW
Dunlin	<i>Calidris alpina</i>	-	-	V	P	III	II	Upland, bog, coastal	

Black-tailed Godwit	<i>Limosa limosa</i>	-	-	R	P	III	II	Lowland wet grassland	Shannon callows
Greenshank	<i>Tringa nebularia</i>	-	-	R	P	III	II	Blanket bog	West and NW
Red-necked Phalarope	<i>Phalaropus lobatus</i>	-	I	E	P	II	II	Coastal marsh	NW Mayo only
Sandwich Tern	<i>Sterna sandvicensis</i>	-	I	-	P	#	#	Coastal islands	Coastal only
Roseate Tern	<i>Sterna dougallii</i>	-	I	E	P	II	II	Coastal islands	Coastal only
Common Tern	<i>Sterna hirundo</i>	-	I	-	P	#	#	Coastal and lake islands	
Arctic Tern	<i>Sterna paradisaea</i>	-	I	-	P	#	#	Coastal islands	Coastal only
Little Tern	<i>Sterna albifrons</i>	-	I	V	P	II	-	Shingle beaches	Coastal only
Barn Owl	<i>Tyto alba</i>	-	-	I	P	II	-	Buildings	Widespread
Short-eared Owl	<i>Asio flammeus</i>	-	I	R	P	II	-	Coastal (winter only)	
Nightjar	<i>Caprimulgus europaeus</i>	-	I	E	P	II	-	Upland, diverse	Localised
Ring Ouzel	<i>Turdus torquatus</i>	-	-	R	P	III	-	Upland	Localised
Wood Warbler	<i>Phylloscopus sibilatrix</i>	-	-	R	P	II	-	Woodland	Localised
Bearded Tit	<i>Panurus biarmicus</i>	-	-	R	P	II	-	Reedswamp	Localised
Tree Sparrow	<i>Passer montanus</i>	-	-	I	P	III	-	Buildings	Localised
Twite	<i>Carduelis flavirostris</i>	-	-	I	P	III	-	Upland and coastal	Mainly west
Corn Bunting	<i>Miliaria calandra</i>	-	-	E	P	III	-	Coastal scrub	Probably extinct as breeding species
Kingfisher	<i>Alcedo atthis</i>	-	I	-	P	#	#	Lowland river and lake	Widespread
Chough	<i>Pyrrhocorax pyrrhocorax</i>	-	I	II	P	II	-	Coastal cliffs and caves	Mainly W and S coasts
<b>FISH</b>									
River Lamprey	<i>Lampetra fluviatilis</i>	II, V	-	I	-	III	-	Shallow inshore waters & accessible rivers	Unknown: north, south and south-east
Brook Lamprey	<i>Lampetra planeri</i>	II	-	I	-	III	-	Sandy, gravelly rivers and streams (limest.)	Unknown: north, n-west, south and s-east
Sea Lamprey	<i>Petromyzon marinus</i>	II	-	I	-	III	-	Deep offshore waters, shallow estuar. & riv.	Unknown: north, south and south-east
Sturgeon	<i>Acipenser sturio</i>	II, IV	-	-	-	-	#	<b>no information</b>	
Atlantic Salmon (freshwater)	<i>Salmo salar</i>	II, V	-	II	-	III	-	Rivers	Widespread and abundant
Allis Shad	<i>Alosa alosa</i>	II, V	-	E	-	III	-	Shallow coastal waters, estuaries, rivers	Unknown: north-west and south-east
Twaite Shad	<i>Alosa fallax fallax</i>	II, V	-	V	-	III	-	Sea, lower reaches of slow-flowing rivers	Unknown: south east coast
Killarney Shad	<i>Alosa fallax killarnensis</i>	II, V	-	E	-	III	-	Lakes	Kerry (Killarney lakes)
Arctic Charr	<i>Salvelinus alpinus</i>	-	-	V	-	-	-	Cool, stony, oligotrophic freshwater lakes	Mainly western lakes, some central and eastern
Pollan	<i>Coregonus autumnalis pollan</i>	V	-	E	-	III	-	Freshwater lakes	L. Neagh and Erne, possibly L. Ree and Derg
Smelt	<i>Osmerus eperlanus</i>	-	-	V	-	-	-	Estuaries and lower reaches of large rivers	Unknown: possibly R. Shannon and south coast
<b>REPTILES</b>									
Common Lizard	<i>Lacerta vivipara</i>	-	-	-	P	-	-	Little or no information	
<b>AMPHIBIANS</b>									
Natterjack Toad	<i>Bufo calamita</i>	IV	-	E	P	II	-	Coastal sand dunes	Kerry
Common Frog	<i>Rana temporaria</i>	V	-	II	P	III	-	Wetlands	Widespread and common throughout Ireland
Smooth newt	<i>Triturus vulgaris</i>	-	-	-	P	-	-	Little or no information	
<b>CRUSTACEANS</b>									
White-clawed Crayfish	<i>Austropotamobius pallipes</i>	II, V	-	-	P	#	#		
<b>INSECTS</b>									
Marsh Fritillary	<i>Euphydryas aurinia</i>	II	-	-	-	#	#		
<b>MOLLUSCS</b>									
Kerry Slug	<i>Geomalacus maculosus</i>	II, IV	-	-	P	#	#		
Semi-aquatic snail	<i>Vertigo angustior</i>	II	-	-	-	#	#		
Semi-aquatic snail	<i>Vertigo geyeri</i>	II	-	-	-	#	#		



Blue Fleabane	<i>Erigeron acer</i>	-	-	-	V		Eskers + dry calcareous grassland	Central + S.Eastern Ireland
Slender Cotton Grass	<i>Eriophorum gracile</i>	-	+	+	RV		Wet acid bogs + lake margins	West Galway, v. rare
Dropwort	<i>Filipendula vulgaris</i>	-		-	R		Rocky, limestone heaths	S Galway, N Clare, v. rare
Alder Buckthorn	<i>Frangula alnus</i>	-		-	R		Rocky and boggy habitats	Mainly in west
Narrow-leaved Hemp Nettle	<i>Galeopsis angustifolia</i>	-	+	+	V		Eskers, arable fields,waste places	Mainly in South-east
Wood Cranesbill	<i>Geranium sylvaticum</i>	-	-	-	V		Scrub, meadows,damp woods, rock-ledges	Antrim
Little Robin	<i>Geranium purpureum</i>	-	-	-	V		Old walls + roadsides	South coast, v.rare
Round-leaved Cranesbill	<i>Geranium rotundifolium</i>	-	-	-	V		Roadsides, walls + hedges	Cork + Wexford
Opposite-leaved Pondweed	<i>Groenlandia densa</i>	-	+	+	V		Slow-flowing + standing water, estuarine mud	Limerick,Laois,Dublin,Antrim
Oak Fern	<i>Gymnocarpium dryopteris</i>	-	-	-	V		Shady, rocky montane habitats	Clare, Wicklow, Sligo, Leitrim, Antrim
Limestone Fern	<i>Gymnocarpium robertianum</i>	-	+	+	V		Limestone rocks and scree	Mayo, v. rare
Bog Orchid	<i>Hammarbya paludosa</i>	-	+	+	RV		Wet acid bogs	Single sites throughout Ireland, v. rare
Hoary Rockrose	<i>Helianthemum canum</i>	-	-	-	R		Limestone rocks and pasture	Clare and Galway, v. local
Common Rockrose	<i>Helianthemum nummularium</i>	-	+	+	R		Grassland overlying limestone	1 site in Donegal
Holy-grass	<i>Hierochloa odorata</i>	-	-	-	R		Wet meadows and marshes	1 site Lough Neagh, Antrim
Meadow Barley	<i>Hordeum secalinum</i>	-	+	+	V		Damp coastal and inland grasslands	East and south-east, rare
Wood barley	<i>Hordelymus europaeus</i>	-	-	-	IN		Shady river glen	Apparently extinct
Water-violet	<i>Hottonia palustris</i>	-	-	-	R		Ponds, ditches and marshes	2 sites in Down (intr. Tipperary and Meath)
Irish Hydrilla	<i>Hydrilla verticillata</i>	-	+	+	V		Lakes	1 lake in Galway
Hen-bane	<i>Hyoscyamus niger</i>	-	-	-	R		Sandhills, sandy open areas and wasteground	Mainly east coast, v. rare
Canadian St John's Wort	<i>Hypericum canadense</i>	-	+	+	R		Wet, boggy lake margins and heaths	2 sites in Mayo and Cork
Hairy St John's Wort	<i>Hypericum hirsutum</i>	-	+	+	V		River banks and shady places	East, v. rare
Smooth Cat's-ear	<i>Hypochoeris glabra</i>	-	-	-	IN		Sand dunes	4 sites in Derry and 1 in Antrim
Willow-leaved Inula	<i>Inula salicina</i>	-	+	+	V		Stony limestone shores	Lough Derg, Clare
Round-fruited Rush	<i>Juncus compressus</i>	-	-	-	R		Alluvial grassland	Meath, Roscommon, Longford, increasing
Fluellen	<i>Kickxia elatine</i>	-	-	+	V		Arable fields of root crops near coast	South and west, rare
Yellow Archangel	<i>Lamium galeobdolon</i>	-	-	-	R		Woods and hedges	Mainly south-east, locally abundant
Sea Pea	<i>Lathyrus japonicus</i>	-	+	+	IN		Mainly maritime sands and shingles	1 site in Kerry (possibly Mayo and Donegal) v. rare
Scot's Lovage	<i>Ligusticum scoticum</i>	-	-	-	R		Maritime cliffs and rocky shores	North-west, rare
Mudwort	<i>Limosella aquatica</i>	-	+	-	R		River, lake, reservoir and turlough margins	West, v. local
Slender Cudweed	<i>Logfia minima</i>	-	+	+	R		Sandy and gravelly places	Mainly south and east, rare
Darnel	<i>Lolium temulentum</i>	-	-	-	Ex*		Cultivated fields and waste ground	Apparently extinct
Hairy Birdsfoot Trefoil	<i>Lotus subbiflorus</i>	-	+	+	R		Dry and rocky grasslands near coast	West Cork and Wexford, v. rare
Marsh Clubmoss	<i>Lycopodiella/Lepidotis inundata</i>	-	+	-	R		Lake margins and wet bogs	Mainly west and north, v. rare
Small Cow-wheat	<i>Melampyrum sylvaticum</i>	-	-	-	V		Upland woodlands	North-east, v. rare
Penny Royal	<i>Mentha pulegium</i>	-	+	+	V		Damp sandy places	3 sites: 1 in Cork, Mayo and Antrim/Derry border
Oyster Plant	<i>Mertensia maritima</i>	-	+	+	R		Gravelly seashores and shingle beaches	North and north-east coasts, v. rare
Recurved Sandwort	<i>Minuartia recurva</i>	-	+	+	R		Bare siliceous soils	2 sites in south-west
Lesser Snapdragon	<i>Misopates orontium</i>	-	+	+	V		Cultivated fields	2 sites in south and south-east
Yellow Bird's-nest	<i>Monotropa hypopitys</i>	-	-	-	R		Mainly beech and pine woods	2 sites in Galway and 1 in Wexford
Slender Naiad	<i>Najas flexilis</i>	II, IV	+	+	RV		Lacustrine lakes and deep water	West, rare but J207increasing
Corky-fruited Water Dropwort	<i>Oenanthe pimpinelloides</i>	-		+	R		Damp grassland	Clare, rare
Wood Cudweed	<i>Omalotheca sylvatica</i>	-	+	+	R		Upland pastures and damp sandy places	Mainly north, rare
Green-winged Orchid	<i>Orchis morio</i>	-	-	+	V		Meadows, pastures and sandhills	Mainly in centre and east, rare (delisting?)
Birdsfoot	<i>Ornithopus perpusillus</i>	-	-	+	R		Dry sandy and gravelly places	South and east coasts, v. rare
Greater Broomrape	<i>Orobanche rapum-genistae</i>	-	-	-	R		Parasite of <i>Ulex</i> and <i>Cytisus</i>	South and east coasts, v. rare
Serrated Wintergreen	<i>Orthilia secunda</i>	-	-	-	E		Bogs and wet mountain ledges	1 site in Fermanagh
Cottonweed	<i>Otanthus maritimus</i>	-	+	+	E		Sandy seashores and stable shingle	2 sites in Wexford
Round Prickly-headed Poppy	<i>Papaver hybridum</i>	-	+	+	E		Sandy and gravelly places	1 site in Dublin
Pillwort	<i>Pilularia globulifera</i>	-	+	+	RV		Margins of acid lakes and rivers	Mainly west coast, v. rare
Alpine Meadow-grass	<i>Poa alpina</i>	-	-	-	R		Mountain cliff edges	3 sites in west (Kerry and Sligo), v. rare

Swamp Meadow-grass	<i>Poa palustris</i>	-	-	-	R		Damp places along rivers and canals	Mainly in north, rare
Sea Knotgrass	<i>Polygonum maritimum</i>	-	-	+	R		Sandy seashore	1 site in Waterford
Alpine Bistort	<i>Polygonum viviparum</i>	-	+	+	IN		Mountain ridges and summits	Kerry and north-west, rare
Holly Fern	<i>Polystichum lonchitis</i>	-	-	-	R		Basic rock on mountain cliffs	West, v. rare
Shrubby Cinquefoil	<i>Potentilla fruticosa</i>	-	-	-	R		Rocky places subject to flooding	West, locally frequent
Small White Orchid	<i>Pseudorchis albida</i>	-	+	+	V		Upland pastures and heaths	North, v. rare
Tufted Salt-marsh Grass	<i>Puccinellia fasciculata</i>	-	+	+	R		Salt marshes, muddy inlets and estuaries	South and east coasts, v. rare
Intermediate Wintergreen	<i>Pyrola media</i>	-	-	-	R		Woods, shady glens, heaths and rocky places	North and west, rare
Round-leaved Wintergreen	<i>Pyrola rotundifolia ssp. maritima</i>	-	+	+	RV		Damp hollows in dunes	1 site in Wexford
Three-lobed Water Crowfoot	<i>Ranunculus tripartitus</i>	-	-	+	R		Nutrient-poor, temporary pools and ditches	South-west, v. rare
River Water-Crowfoot	<i>Ranunculus fluitans</i>	-	-	-	R		Rivers	1 site in Antrim
Northern Yellowcress	<i>Rorippa islandica</i>	-	-	-	R		Turloughs	Clare and Galway, v. rare
Cloudberry	<i>Rubus chamaemorus</i>	-	-	-	V		Montane moorland	1 site in Tyrone
Golden Dock	<i>Rumex maritimus</i>	-	-	-	R		Pools, lake margins and wet hollows	4 sites: 1 in Cork, Wexford, Limerick and Sligo
Tea-leaved Willow	<i>Salix phylicifolia</i>	-	-	-	R		Wet mountain cliffs and streamsides	West and north, v. rare
Wild Sage	<i>Salvia verbenaca</i>	-	-	-	R		Dry sandy banks and waste places near coast	Southern half, from Dublin to Galway, rare
Great Burnet	<i>Sanguisorba officinalis</i>	-	+	+	V		Lake shores and dry banks	Mayo, Antrim and Down, v. rare
Alpine Saw-wort	<i>Saussurea alpina</i>	-	-	-	R		Mountain cliffs and ledges over 300m	Mainly in west from Donegal to Kerry, v. rare
Yellow Saxifrage	<i>Saxifraga aizoides</i>	-	-	-	R		Damp rocky places	North-west, rare
Meadow Saxifrage	<i>Saxifraga granulata</i>	-	+	+	E		Sandhills and pastures near coast	East, v. rare (note: introduced in places)
Hart's Saxifrage	<i>Saxifraga hartii</i>	-	+	+	R		Sea cliffs	1 site in Donegal
Yellow Marsh Saxifrage	<i>Saxifraga hirculus</i>	II, IV	+	+	E		Wet bogs	2 sites: 1 in Mayo and Antrim, v. rare
Alpine Saxifrage	<i>Saxifraga nivalis</i>	-	+	+	R		Mountaincliffs and damp rocks	1 site in Sligo
Purple Saxifrage	<i>Saxifraga oppositifolia</i>	-	-	-	R		Mountain rocks	North and west, rare
Triangular Club Rush	<i>Scirpus triquetus</i>	-	+	+	V		Muds bordering tidal rivers	Limerick, locally abundant
Annual Knawel	<i>Scleranthus annuus</i>	-	+	-	-		Dry sandy waste places and roadsides	Mainly north-east, rare
Green Figwort	<i>Scrophularia umbrosa</i>	-	-	-	V		River banks and lake shores	1 site in Derry (possibly Dublin/Kildare)
Cornish Moneywort	<i>Sibthorpia europaea</i>	-	-	-	R		Streamsides and damp grassland	Kerry, occasional
Moss Champion	<i>Silene acaulis</i>	-	-	-	R		Mountain slopes and cliffs	North-west, rare
Kerry Lily	<i>Simethis planifolia</i>	-	+	+	V		Dry heathy ground near the sea	1 site in Kerry
Drooping Lady's Tresses	<i>Spiranthes romanzoffiana</i>	-	+	+	R		Damp meadows, lake shores, boggy ground	South-west, west, north-east, rare and v. local
Woundwort	<i>Stachys officinalis</i>	-	+	+	V		Open woods, hedges and grasslands	Scattered throughout, v. rare and local
Gotlandian Dandelion	<i>Taraxacum gotlandicum</i>	-	-	-	R		Sandhills	1 site in Clare
Shepherd's Cress	<i>Teesdalia nudicaulis</i>	-	-	-	R		Sandy lake shores	Scattered in north and south-west, v. rare
Killarney Fern	<i>Trichomanes speciosum</i>	II, IV	+	+	RV		Damp, dark, sheltered places	Mainly in west, isolated eastern sites, rare
Clustered Clover	<i>Trifolium glomeratum</i>	-	+	+	V		Sandy/gravelly ground near coast	East and south, v. rare
Subterranean Clover	<i>Trifolium subterraneum</i>	-	+	+	V		Sandy/gravelly banks	2 sites in Wicklow
Globe Flower	<i>Trollius europaeus</i>	-	+	+	V		Mainly lake shores and river banks	4 sites: 2 in Donegal and 2 in Fermanagh
Spotted Rock-rose	<i>Tuberaria guttata</i>	-	-	-	R		Rocky, maritime heathland	West and south-west, v. local
Bitter Vetch	<i>Vicia orobus</i>	-	+	+	V		Thickets and rocky ground	West, centre and north-east, rare
Hairy Violet	<i>Viola hirta</i>	-	+	+	V		Dry limestone banks, rocky ground, and scrub	South half of country, rare
Pale Heath Violet	<i>Viola lactea</i>	-	+	+	V		Heathy ground	South half, rare
Fen Violet	<i>Viola persicifolia</i>	-	-	-	R		Damp grassland subject to flooding	Clare & Galway (poss. Fermanagh), v. local
Spring Vetch	<i>Vicia lathyroides</i>	-	-	-	R		Sandy ground near the sea	East and north, rare
Paradoxical Rock Sea Lavender	<i>Limonium paradoxum</i>	-	-	-	-		Maritime cliffs	1 site in Donegal
<b>MOSES</b>								
A moss	<i>Bryum calophyllum</i>	-	+	-	-			
A moss	<i>Bryum marratii</i>	-	+	-	-			
A moss	<i>Catocopium nigratum</i>	-	+	-	-			
Shining sicklemoss	<i>Drepanocladus vernicosus</i>	II	+	-	-			



**APPENDIX 2. EU ANNEX I HABITATS OCCURRING IN IRELAND**  
**(From Annex I from Council Directive 92/43/EEC amended by 97/62/EC)**

**Code Natura 2000 Code**  
**\* Priority Habitat**

<b>Code</b>	<b>Short title</b>	<b>Full title</b>
<b>COASTAL AND HALOPHYTIC</b>		
1110	Sand banks	Sandbanks which are slightly covered by sea water all the time
1130	Estuaries	Estuaries
1140	Tidal mudflats	Mudflats and sandflats not covered by sea water at low tide
1150 *	Lagoon	Coastal lagoons
1160	Large shallow inlets and bays	Large shallow inlets and bays
1170	Reefs	Reefs
1210	Drift lines	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks	Perennial vegetation of stony banks
1230	Sea cliffs	Vegetated sea cliffs of the Atlantic and Baltic coasts
1310	<i>Salicornia</i> mud	<i>Salicornia</i> and other annuals colonising mud and sand
1320	Spartinion	<i>Spartina</i> swards ( <i>Spartinion maritimae</i> )
1330	Atlantic salt meadows	Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )
1410	Mediterranean salt meadows	Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )
1420	Halophilous scrub	Mediterranean and thermo-Atlantic halophilous scrubs ( <i>Sarcocornetea fruticosi</i> )

**COASTAL SAND DUNES AND CONTINENTAL DUNES**

2110	Embryonic shifting dunes	Embryonic shifting dunes
2120	Marram dunes (white dunes)	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)
2130 *	Fixed dunes (grey dunes)	Fixed coastal dunes with herbaceous vegetation (grey dunes)
2140 *	Decalcified <i>Empetrum</i> dunes	Decalcified fixed dunes with <i>Empetrum nigrum</i>
2150 *	Decalcified dune heath	Atlantic decalcified fixed dunes ( <i>Calluno-Ulicetea</i> )
2170	Dunes with Creeping Willow	Dunes with <i>Salix repens</i> ssp. <i>argentea</i> ( <i>Salicion arenariae</i> )
2190	Dune slack	Humid dune slacks
21A0 *	Machair	Machairs (*in Ireland)

**FRESHWATER HABITATS**

3110	Lowland oligotrophic lakes	Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> )
3130	Upland oligotrophic lakes	Oligotrophic to mesotrophic standing waters with
3140	Hard water lakes	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.
3150	Natural eutrophic lakes	Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation
3160	Dystrophic lakes	Natural dystrophic lakes and ponds
3180 *	Turloughs	Turloughs
3260	Floating river vegetation	Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation
3270	Eutrophic tall herbs	Rivers with muddy banks with <i>Chenopodium rubri</i> p.p. and <i>Bidenton</i> p.p. vegetation

**TEMPERATE HEATH AND SCRUB**

4010	Wet heaths	Northern Atlantic wet heaths with <i>Erica tetralix</i>
4030	Dry heaths	European dry heaths
4060	Alpine and Boreal heaths	Alpine and Boreal heaths

**SCLEROPHYLLOUS SCRUB (MATORRAL)**

5130	Juniper scrub	<i>Juniperus communis</i> formations on heaths or calcareous grasslands
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**NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS**

6130	Calaminarian grassland	Calaminarian grasslands of the <i>Violetalia calaminariae</i>
6210	* Orchid-rich calcareous grassland	Semi-natural dry grasslands and scrubland facies on
6230	* Species-rich <i>Nardus</i> upland grassland	Species-rich <i>Nardus</i> grasslands, on siliceous
6410	<i>Molinia</i> meadows	<i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinia caerulea</i> )
6430	Eutrophic tall herbs	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
6510	Lowland hay meadows	Lowland hay meadows ( <i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i> )

**RAISED BOGS, MIRES AND FENS**

7110	* Raised bogs (active)	Active raised bogs
7120	Raised bog (degraded)	Degraded raised bogs still capable of natural regeneration
7130	* Blanket bog (*if active only)	Blanket bog (*if active only)
7140	Transition mires and quaking bogs	Transition mires and quaking bogs
7150	Rhynchosporion	Depressions on peat substrates of the Rhynchosporion
7210	* Calcareous fens	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>
7220	* Petrifying springs	Petrifying springs of the tufa formation (Cratoneurion)
7230	Alkaline fens	Alkaline fens

**ROCKY HABITATS AND CAVES**

8110	Siliceous scree	Siliceous scree of the montane to snow levels ( <i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i> )
8120	Eutric scree	Calcareous and calcschist screes of the montane to alpine levels ( <i>Thlaspietea rotundifolii</i> )
8210	Calcareous rocky slopes	Calcareous rocky slopes with chasmophytic vegetation
8220	Siliceous rocky slopes	Siliceous rocky slopes with chasmophytic vegetation
8240	* Limestone pavements	Limestone pavements
8310	Caves not open to the public	Caves not open to the public
8330	Marine caves	Submerged or partially submerged sea caves

**FORESTS**

91A0 Old oak woodlands

Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

91D0 \* Bog woodland

Bog woodland

91E0 \* Alluvial forests

Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-padion, Alnion incanae, Salicion albae)

91J0 \* Yew woods

*Taxus baccata* woods of the British Isles

**Annex I priority habitats = 16**

**Annex I non-priority habitats = 43**

**Total Annex 1 habitats occurring in Ireland = 59**

## APPENDIX 3: BIRD SPECIES OF CONSERVATION CONCERN

### RED LIST SPECIES

Black-necked Grebe	<i>Podiceps nigricollis</i>
Common Scoter	<i>Melanitta nigra</i>
Hen Harrier	<i>Circus cyaneus</i>
Red Grouse	<i>Lagopus lagopus</i>
Grey Partridge	<i>Perdix perdix</i>
Quail	<i>Coturnix coturnix</i>
Corncrake	<i>Crex crex</i>
Lapwing	<i>Vanellus vanellus</i>
Curlew	<i>Numenius arquata</i>
Red-necked Phalarope	<i>Phalaropus lobatus</i>
Roseate Tern	<i>Sterna dougallii</i>
Barn Owl	<i>Tyto alba</i>
Nightjar	<i>Caprimulgus europaeus</i>
Ring Ouzel	<i>Turdus torquatus</i>
Chough	<i>Pyrrhocorax pyrrhocorax</i>
Twite	<i>Carduelis flavirostris</i>
Yellowhammer	<i>Emberiza schoeniclus</i>
Corn Bunting	<i>Miliaria calandra</i>

#### APPENDIX 4: TREES AND SHRUBS CONSIDERED NATIVE TO IRELAND

Alder	<i>Alnus glutinosa</i>
Arbutus, the Strawberry Tree	<i>Arbutus unedo</i>
Silver Birch	<i>Betula pendula</i>
Downy Birch	<i>Betula pubescens</i>
Hazel	<i>Corylus avellana</i>
Hawthorn	<i>Crataegus monogyna</i>
Broom	<i>Cytisus scoparius</i>
Spindle	<i>Euonymus europaeus</i>
Alder Buckthorn	<i>Frangula alnus</i>
Ash	<i>Fraxinus excelsior</i>
Ivy	<i>Hedera helix</i>
Holly	<i>Ilex aquifolium</i>
Juniper	<i>Juniperus communis</i>
Privet	<i>Ligustrum vulgare</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Crab Apple	<i>Malus sylvestris</i>
Sessile Oak	<i>Quercus petraea</i>
Pedunculate Oak	<i>Quercus robur</i>
Scots Pine	<i>Pinus sylvestris</i>
Aspen	<i>Populus tremula</i>
Bird Cherry	<i>Prunus padus</i>
Wild Cherry	<i>Prunus avium</i>
Sloe, Blackthorn	<i>Prunus spinosa</i>
Purging Buckthorn	<i>Rhamnus cathartica</i>
Dog Rose	<i>Rosa canina</i>
Burnet rose	<i>Rosa pimpinellifolia</i>
Bramble	<i>Rubus fruticosus</i>
Willow spp.	<i>Salix</i> spp.
Elder	<i>Sambucus nigra</i>
Rowan or Mountain Ash	<i>Sorbus aucuparia</i>
Whitebeam spp.	<i>Sorbus aria</i> <i>S. rupicola</i> <i>S. devoniensis</i> <i>S. latifolia</i> , <i>S. anglica</i> <i>S. hibernica</i> .
Yew	<i>Taxus baccata</i>
Common (or European) Gorse	<i>Ulex europeus</i>
Western (or Mountain) Gorse	<i>Ulex gallii</i>
Wych Elm	<i>Ulmus glabra</i>
Guelder Rose	<i>Viburnum opulus</i>

