



**Conserving our Natural Heritage**  
**County Waterford Local Biodiversity Action Plan**

**Ag Sabháil ár nOidhreacht Nadúrtha**  
**Plean Bithéagsúlachta Chontae Phort Láirge**

**2008 - 2013**



## Acknowledgements

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## Dr. Tom Higgins, Mayor

As County Mayor I am proud to be associated with the publication of this Local Biodiversity Action Plan. This plan is the first such plan for biodiversity in County Waterford and provides for an integrated and partnership approach to conserving and enhancing our biodiversity.

The Biodiversity Plan is the result of a consultative process involving the County Heritage Forum, agencies and organisations charged with protecting natural heritage and the community. The Strategic Policy Committee for Cultural Heritage and the Council have now endorsed the Plan and undertaken to support and facilitate its implementation.

On behalf of Waterford Co. Council I wish to thank the members of the Heritage Forum, the many agencies and individuals who made submissions to the plan and to the Heritage Council who provided support for preparing the plan and I look forward to its implementation over the next five years.

## An Dr. Tomás Ó hUiginn, Méara

Mar Mhéara an Chontae, tá mé bródúil as baint a bheith agam le foilsiú an Phlean Gníomhaíochta um Bithéagsúlacht Áitiúil seo. Seo an chéad phlean dá leithéad seo do bhithéagsúlacht i gContae Phort Láirge agus déanann sé socrú i dtaobh chur chuige comhtháite agus comhpháirtíochta ar mhaithe lenár mbithéagsúlacht a chaomhnú agus a fheabhsú.

Cuireadh an Plean Bithéagsúlacht seo le chéile tar éis dul i mbun próisis chomhairligh leis na rannpháirtithe seo a leanas: Fóram Oidhreachta an Chontae agus gníomhairí agus eagraíochtaí a bhfuil sé de chúram orthu an oidhreacht nádúrtha agus an pobal a chosaint. Tá an Coiste um Beartais Straitéiseacha d'Oidhreacht Chultúrtha agus an Chomhairle tar éis tacú leis an bPlean agus tá siad tar éis gealladh go dtabharfaidh siad tacaíocht agus éascú do chur i bhfeidhm an phlean.

Ar son Chomhairle Contae Phort Láirge, ba mhaith liom buíochas a ghabháil le baill an Fhórait Oidhreachta, na hiliomad gníomhairí agus daoine aonarach a chur aighneachtaí isteach ar an bplean agus an Chomhairle Oidhreachta a thug tacaíocht d'ullmhúchán an phlean agus tá mé ag súil le cur i bhfeidhm an phlean seo sna cúig bliana amach romhainn.



## Mr. Ray O'Dwyer County Manager

The diversity of County Waterford's natural heritage is evident from the many accounts of flora and fauna that have been documented since the 12<sup>th</sup> century: from Giraldus Cambrensis to Dr. Charles Smith, William Thompson, Richard Ussher and more recently the extensive and valuable work of Michael O'Meara. We are fortunate to live in a county with such a wide variety of habitats and species but also to have people who realised the significance of this diversity and had the foresight to keep account of species and their conservation status. Recent developments in policy and legislation for biodiversity thus complement the practice of recording nature and wildlife in the county. The establishment of the National Biodiversity Data Centre in Waterford is an exciting development in the promotion of biodiversity awareness and research.

I am delighted that Waterford Co. Council has adopted this Plan to deliver practical action to conserve and manage our biodiversity. Our identity as a county and its attractiveness as a place in which to live and work is sustained by the distinctive natural landscape around us which provide the setting for our biodiversity. This Plan is evidence of a commitment to ensure the maintenance and protection of our biodiversity and work with other agencies in a shared responsibility for this task. By highlighting the many other living things that we share our county with we realise the importance of incorporating biodiversity into the management of our natural resources. I believe much can be achieved by the local authority, one of the many stakeholders involved in this plan and look forward to the delivery of biodiversity projects in County Waterford in the next five years.

## Ré Ó Duibhir, Bainisteoir an Chontae

Tá an éagsúlacht a bhaineann le hoidhreacht nádúrtha Chontae Phort Láirge soiléir le feiscint ó na cuntais ar fad atá tugtha ar fauna agus flora ón 12<sup>ú</sup> aois i leith: ó Giraldus Cambrensis go dtí an Dr. Charles Smith, William Thompson, Richard Ussher agus, níos déanaí obair fhairsing agus luachmhar Michael O'Meara. Tá an t-ádh linn go bhfuilimid inár gcónaí i gcontae ina bhfuil an méid sin cineálacha de ghnáthoga agus speicis, agus tá an t-ádh linn chomh maith go raibh daoine ann a thuig cé chomh tábhachtach is a bhí an éagsúlacht seo agus a raibh an fadbhreathnaitheacht acu chun cuntas a choimeád ar na speicis agus a stádas caomhantais. Tá na forbairtí a deineadh le déanaí i bpolasaí agus i reachtaíocht i gcomhair bithéagsúlachta mar chomhlánú ar an gcleachtas atá ann taifead a dhéanamh ar dhúlra agus ar fhiadhúlra an chontae. Is forbairt spreagúil í bunú an Ionaid Náisiúnta le Sonraí Bithéagsúlachta i bPort Láirge maidir le Taighde agus Feasacht na mBithéagsúlachta a chur chun cinn.

Tá áthas orm gur ghlac Comhairle Contae Phort Láirge leis an bPlean seo ar mhaithe le gníomhaíocht phraiticiúil a thabhairt isteach chun ar mbithéagsúlacht a chaomhnú agus a bhainistiú. Cothaíonn an tírdhreach nádúrtha faoi leith atá timpeall orainn ár n-aitheantas mar chontae agus tarraingt an chontae mar áit le cónaí agus le hobair ann, rudaí a fheidhmíonn mar bhunús dár mbithéagsúlacht. Fianaise is ea an plean seo go bhfuil tiomantas ann cothabháil agus caomhnú ár mbithéagsúlacht a chinntiú, chun comhoibriú le gníomhairí eile chun freagracht chomhroinnte a ghlacadh don tasc seo. Trí aibhsiú a dhéanamh ar an mbeatha ar fad lena roinnimid ár gcontae, tuigimid cé chomh tábhachtach is atá sé an bithéagsúlacht a ionchorprú isteach i mbainistíocht ár n-acmhainní nádúrtha. Creidim gur féidir leis an údarás áitiúil, atá ar cheann de na hiliomad páirtithe leasmhara atá páirteach sa phlean seo, an-chuid a bhaint amach agus táim ag súil le teacht chun cinn na dtionscadal bithéagsúlachta i gContae Phort Láirge sna cúig bliana amach romhainn.



## A vision for biodiversity in County Waterford

**This is the first Biodiversity Action Plan for County Waterford. Its aim is to contribute to the conservation and enhancement of natural heritage in Waterford for the benefit of people and wildlife in the county. The plan is underpinned by the international Convention on Biological Diversity, which has 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.**

In today's world of rapid development and human population growth, the pressures on our natural resources are ever increasing. Globally, nationally and in County Waterford, this is seen in habitat removal and damage, the introduction of non-native invasive species to new areas, and loss of species and habitats. To continue as we are without thought to the future would be to leave a poorer environment for future generations of our own species and the many other species with which we share the county.

This plan for County Waterford shares the goals of the Convention, and translates them into actions that will help to conserve Waterford's biodiversity into the future, to the benefit of both people and wildlife. Three main strands of action are found in the plan: (i) carrying out research and surveys to fill in gaps in our knowledge; (ii) raising awareness of Waterford's natural heritage; and (iii) implementing measures that will actively conserve and enhance the natural heritage of the county.

As such, the plan recognises and draws together the wide range of ongoing work that is already being carried out by Waterford County Council and other state and semi-state bodies, non-governmental organisations and voluntary groups, businesses and farmers, and individuals, who are contributing to the knowledge and conservation of County Waterford's biodiversity. By bringing these together, the plan can help to identify, co-ordinate and prioritise the important actions for County Waterford.

Acting to conserve and enhance biodiversity is an ongoing process, of which this plan is a part. The very process by which this document is drawn together helps to define a vision of how we want Waterford's biodiversity to stand in the future.

# 1. Introduction

## The landscape of County Waterford

Waterford possesses a diverse landscape, from the uplands of the Comeraghs and Knockmealdowns to the coastal cliffs; from the fast-flowing upper reaches of the Colligan River, to the sluggish tidal waters of the Brickey. Most of the county is underlain by acid rock types such as sandstone, slate and volcanic rocks, with limestone found in the Brickey and Blackwater valleys. Soils too are predominantly of acid types, though in general the lowland areas are very suitable for agriculture. On a broad scale Waterford is linked to its neighbouring counties by such features as the shared uplands of the Knockmealdowns and the river corridors and estuaries of the Suir and Blackwater.

The variety in landscape is inextricably linked to the range of natural heritage found in the county. Blanket bog with its species adapted to wet acid conditions is found in the Comeragh and Monavullagh mountains, while saltmarsh is found along the slow-flowing tidal reaches of the Brickey. At the time of the arrival of the first farmers most of Waterford would have been covered with broadleaf woodland; this is now much more limited in extent, with the best examples being found in places like the Nire Valley and Glendine. The woodlands are linked by the network of hedges planted by our more recent ancestors and retained by today's farmers, where woodland plants and animals can survive. The rivers provide a diverse range of habitats, from their fast-flowing upland courses, home to tiny mosses and liverworts which survive in the damp rocky crevices, to the deep, slow-moving lowland waters where reeds and marsh vegetation are used by insects, birds and fish.

### The Convention on Biological Diversity

*defines biodiversity as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.'*

## What is biodiversity?

'Biological' means 'of living organisms'. 'Diversity' means 'variety'. *Biodiversity* is short for 'biological diversity' and is a word used to mean the *variety of all living things on earth*. The '*natural heritage*' of Waterford encompasses all the biodiversity found in the county.

Biodiversity includes the whole variety of plants, animals and micro-organisms found on earth, of which there are millions of species. A species is usually taken as the basic unit of biological classification, and a generally accepted definition of a species is 'a group of organisms capable of interbreeding and producing fertile offspring', e.g. the red squirrel is a species.

Within species, there is also genetic diversity which we see expressed as different varieties, subspecies, breeds etc. For example, the Irish stoat has been found here for at least 35,000 years and is sufficiently different to stoats elsewhere so as to be considered a unique Irish subspecies.

On the broader scale, populations of different species living in any one area form communities which interact with each other and with the physical environment to give rise to habitats and ecosystems. For example, the River Blackwater ecosystem is an interaction between the water which provides the aquatic environment, the different soil types which affect the amounts of minerals and nutrients in the water, the community of plant species along the bank and in the river that take up nutrients and provide food for insects and birds, and the different fish that feed on some of those insects, plants, and each other. Human beings are part of this ecosystem and constantly interact with it, for example as we abstract water from it for daily use; put nutrients and other substances into it through our waste water, fertilisers and road run-off; use it as an amenity for fishing, boating and walking; and alter drainage patterns along it to facilitate our use of the floodplain for development and agriculture.

When talking about biodiversity and actions to conserve it, we generally mean the variety of life that is naturally found in any one area, i.e. our *native* biodiversity. In Ireland, native species are usually taken as those which arrived here under their own steam without any help from humans. In general most of our native species have colonised Ireland since the last glaciation roughly 10,000 years ago and over thousands of years have grouped naturally to form our native ecosystems, e.g. oak-birch-holly woodland. In the intervening period some species which would have been very unlikely to colonise Ireland by themselves have either accidentally or deliberately made their way into Ireland with human help; for example, sycamore trees were introduced around the 16<sup>th</sup> century and have since spread into native woodlands over the space of a few hundred years. Many of the plants and invertebrates that have evolved to live in our native woodlands cannot survive where sycamore has taken over, and this results in a loss of diversity.

## Why is biodiversity important?

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. It is easy to forget the relevance of biodiversity to our everyday lives.

One of the most obvious uses of biodiversity is in the provision of food – vegetables, fruit, grains, meat, and dairy products – where the diversity of living organisms, adapted to the climate and local conditions in any region, sustains



human life. Over the thousands of years since the beginning of farming, we have learned to breed plants and animals to improve our diet, developing different varieties with higher yields, greater disease resistance, and adaptations to local conditions. It is the natural diversity within different species that has allowed us to do this – for example if the genetic make-up of all wheat was fixed, it would not be possible to have both winter and spring varieties. One of the issues in the use of biodiversity for food is that we have come to rely on a very small number of species and varieties for worldwide food production. This makes our crops and stock vulnerable to disease and changes in local climate. Many of the wild species varieties not used in cultivation have come to have their populations reduced through, for example, habitat loss and damage, because they are not seen to be of economic importance. The loss of any species or variety means the loss of a potential future opportunity to sustain human life, because it means that an option for adaptation has been removed.

#### **‘Goods and Services’**

*provided by biological diversity include:*

- *provision of food, fuel and fibre e.g. fish, livestock and crop varieties*
- *provision of shelter and building materials e.g. timber for construction*
- *provision of medicines*
- *purification of air and water*
- *detoxification and decomposition of wastes*
- *stabilisation and moderation of the Earth's climate*
- *moderation of floods, droughts, temperature extremes 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*

Higher biodiversity also controls the spread of certain diseases, for example a virus needs to adapt itself with every new species it encounters. As well as food, living organisms give us fuel, fibre, building materials and medicines, e.g. wood, cotton and aspirin.

Biodiversity provides many ecosystem services that are often not readily visible. It plays a part in regulating the chemistry of our atmosphere and water supply. Biodiversity is directly involved in recycling nutrients and providing fertile soils. Insect pollination of crops is essential for food production. It also has leisure, cultural and aesthetic value - many people derive value from biodiversity through

leisure activities such as enjoying a walk in the countryside, birdwatching or natural history programs on television. Biodiversity inspires musicians, painters, sculptors, writers and other artists.

#### **Biodiversity and climate change**

*It is now accepted by the majority of the scientific community that rapid global climate change, influenced by human activities, is already taking place. The potential effects of this on biodiversity are wide-ranging and difficult to predict. Ways that climate change may affect species and ecosystems include:*

- *Changes in phenology, i.e. the timing of biological events such as flowering periods or hibernation periods*
- *Changes in species distribution (including arrival of non-native species and potentially loss of species where suitable climatic conditions disappear).*
- *Changes in composition of communities of species*
- *Changes in ecosystem function*
- *Loss of physical space due to sea level rise and increased storminess*

#### **Why a biodiversity action plan?**

Unfortunately the rapid development of the human population has had a proportionate effect in reducing biodiversity, by causing habitat loss and damage and an accelerated rate of species extinction. This was recognised on a global level at the “Earth Summit” at Rio de Janeiro in Brazil in 1992 at the UN Conference on Environment and Development, where a strategy for sustainable development was agreed. At the conference the signing took place of the Convention on Biological Diversity (CBD) by over 150 countries, including Ireland. Ireland then ratified the CBD in 1996.

One of the main mechanisms by which the CBD is implemented by the participating countries is through the drawing up of national biodiversity plans, and by the integration of biodiversity concerns into all sectors. Ireland’s first National Biodiversity Plan was published in 2002 and was reviewed in 2008.

In the National Biodiversity Plan it is recognised that local authorities have a potentially key role in providing for the conservation and sustainable use of biodiversity at a local level. While national plans and programmes guide many higher-level initiatives, the key to conserving local biodiversity is through local-level action and awareness-raising. As such, the National Biodiversity Plan requires each local authority to (i) prepare a Local Biodiversity Plan in consultation with relevant stakeholders, and (ii) to designate a contact officer for natural heritage conservation matters in its area. Addressing the requirements of the National Biodiversity Plan is an action of the County Waterford Heritage Plan. Under Aim 3:



Promote co-operation between various groups and individuals interested in heritage – **Action 3.0.3 seeks to ‘Establish a Biodiversity Working Group and meet the requirements of the National Biodiversity Plan’.**

This plan includes the first review of the principal biodiversity features of the county, the identification of significant gaps in our knowledge of this, and the prioritisation of actions to protect and enhance the natural heritage of County Waterford.

### **The process by which the plan was developed**

The process to develop the County Waterford LBAP was initiated by the setting up in 2005 of the Biodiversity Working Group of the County Waterford Heritage Forum. In May 2007 the Heritage Council commissioned nine ecological consultants to assist eighteen local authorities around the country in the preparation of LBAPs with the assistance of funding from the Department of Environment, Heritage and Local Government. County Waterford was one of the counties that availed of this opportunity to progress their plan.

From June to November 2007, the consultant appointed to County Waterford gathered background information, consulted with the main agencies, NGOs and other stakeholders in the county and compiled the first draft of the plan for review by the Heritage Forum and other consultees. Comments on the first draft were collated and a second draft submitted to the county. This process was guided by the Heritage Council’s “Guidelines for the production of Local Biodiversity Action Plans”. The final draft was then prepared for publication by Waterford County Council.

The plan runs for five years. Towards the end of this period the actions achieved and new knowledge gained will be reviewed, to help identify and prioritise actions for the next plan.

### **Plan structure**

This document can be broken down into five main parts:

- (i) What is biodiversity and why should we look after it?
- (ii) What policies and legislation are in place to protect biodiversity?
- (iii) What biodiversity do we have in County Waterford and what do we know about it?
- (iv) What do we not know enough about, and what is threatening County Waterford biodiversity?
- (v) What are the actions that can help fill the gaps and address the threats, while raising awareness of what we have and how to look after it?

### **Who is the plan for?**

Biodiversity is used by all of us in one way or another – growing or buying food, walking in the town park or hiking in the mountains, cutting our hedges, building timber-framed houses – so while this plan will be led by Waterford County Council and its partners, we all have a role to play in discovering and protecting the natural heritage of Waterford.

Action for biodiversity is a process. This plan forms part of that process, by identifying the main gaps and prioritising actions that can fill them. In doing so new gaps that were previously unknown will come to light, and this process will help formulate new actions in the future.

## 2. Policies and legislation

### Biodiversity and the Local Authority

The role and responsibilities of local authorities are wide ranging including functions such as planning, environment, water services, roads, housing and community and enterprise. Each section of the Local Authority has a potential impact on the biodiversity of the county through its work practices and policies.

### Planning

The planning process directs the use of land and natural resources and has a significant influence on the management of our environment and biodiversity. Identifying the presence of habitats and species as part of development management and forward planning and strategic environmental assessment and appropriate assessment of development plans ensures the incorporation of biodiversity into the planning process. This is currently focused on protected habitats and species of national and international importance, where referral of applications in or near protected sites to NPWS is a statutory obligation which helps protect these special biodiversity features. There is a need to identify and include habitats and species of county importance in this system to help maintain the special character of the Waterford landscape.

### Waterford County Development Plan 2005-2011

Chapter 8 of the Waterford County Development Plan 2005-2011 sets out the Local Authority's position on biodiversity.

### Section 8.5 Biodiversity states:

"...Waterford County Council is committed to the principles set out in the National Biodiversity Plan, the overall objective of which, is to secure the conservation, including where possible the enhancement, and sustainable use of biological diversity in Ireland and to contribute to conservation and the sustainable use of biodiversity globally".

### The Council's Policy E8 National Biodiversity Plan

is "to implement the National Biodiversity Plan when assessing proposals, and to provide for the protection, conservation and enhancement of wildlife habitats and Designated Sites, where they are considered to be of importance in their own right or as part of a network of habitats or as a corridor or link between habitats"; and

**Policy E12 Protection of mature trees** is "to seek the protection of mature trees, and development that requires the felling of such trees will be discouraged".

Provision of guidance by the Planning Section on estate and rural design, including sections on biodiversity and boundary treatments, informs best practice for those planning to build in Waterford.

### Environment

The Local Agenda 21 Partnership Fund provides for projects on the theme of Biodiversity, as it is a fundamental part of sustainable development. Control of permits and licencing for waste disposal by this section, as well as enforcement, helps protect sensitive habitats. Provision of better information for the section on the location of locally important habitats would avoid habitat damage and loss and so avoid costly clean-up bills.

### Water Services

Provision of adequate waste water treatment has a direct positive impact on biodiversity in aquatic ecosystems, such as the upgrading of infrastructure through the Grouped Villages Sewerage Schemes. Waterford County Council encourages the use of integrated constructed wetlands at the final stage of treatment where appropriate, as this provides additional habitats for aquatic species as well as improving water quality. Assessment of potential impacts on ecology as part of site selection and design of new treatment facilities helps ensure that sensitive features are not damaged.

### Housing

Green spaces around Local Authority housing can be enhanced for biodiversity and help in community-building, for example in tree-planting or putting up bird- and bat-boxes. Regeneration of urban areas for housing may need to consider issues such as bats in old buildings or green 'corridors' such as rivers. Design of new schemes provides opportunities to retain existing features of biodiversity interest, and enhance them with appropriate landscaping.

### Roads and infrastructure

While larger infrastructure projects are subject to environmental impact assessment, including ecology, smaller improvement and maintenance works are not necessarily screened for impacts on biodiversity. There are potential opportunities for biodiversity enhancement for example along road re-alignments where native species can be planted and in the nature and timing of works for strengthening bridges where bats are present.

### Local Area Engineers

As these oversee many of the works around the county, they are well placed to help maintain and enhance biodiversity, both as part of ongoing works and through involvement in enhancement projects such as coastal protection at Tramore Dunes and biodiversity planting along roadsides.

### Community and Enterprise

As the section that hosts the County Development Board, this presents challenges and opportunities in facilitating

economic, social and cultural (including natural heritage) development, while ensuring that the special character of County Waterford is maintained, by ensuring that projects in the county do not lead to environmental damage.

### Horticulture

By working with biodiversity on the ground, the County Council horticulturalists help maintain and enhance the environment of public spaces in the county, for example through use of the Neighbourhood Scheme at Newtown and Dungarvan and by sensitive management of local authority green spaces.

### Legislation relating to biodiversity

The principal legislation relating to biodiversity in Ireland is the following:

- Wildlife Act, 1976, as amended by the Wildlife (Amendment) Act, 2000
- The European Union (Natural Habitats) Regulations, SI 94/1997
- The European Communities (Conservation of Wild Birds) Regulations, SI 291/1985
- Flora Protection Order, 1999
- Planning and Development Acts, 2000-2006
- Strategic Environmental Assessment Directive (2001/42/EC) as transposed into Irish legislation by the European Communities (Environmental assessment of Certain Plans and Programmes) Regulations, S.I. No. 435 of 2004 and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No 436 of 2004
- Fisheries (Consolidation) Act 1959 and amendments

### Wildlife Act, 1976, as amended by the Wildlife (Amendment) Act, 2000

The Wildlife Act, 1976 and its amendment of 2000 are the principal statutory provisions providing for the protection of wildlife in Ireland, and for the control of activities which may impact adversely on the conservation of wildlife. The Minister for the Environment, Heritage & Local Government is charged under various sections of the Act, with a large number of licensing functions which are discharged on behalf of the Minister by the National Parks and Wildlife Service (NPWS, formerly Dúchas).

The conservation of biodiversity in Ireland has been strengthened and expanded by EU law, most notably by the EU Birds and Habitats Directives and also by the Environmental Impact Assessment (EIA) Directive (85/337/EEC). The transposition into Irish law of the Habitats Directive represented a fundamental shift in nature conservation policy and law.

The current list of plant species protected by section 21 of the Wildlife Act, 1976 is set out in the Flora (Protection) Order, 1999, which supercedes orders made in 1980 and 1987. It is illegal to cut, uproot or damage the listed species in any way, or to offer them for sale. This prohibition extends to the taking or sale of seed. In addition, it is illegal to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found and is not confined to sites designated for nature conservation.

### Planning and Development Acts 2000- 2006

The physical planning system in Ireland dates essentially from 1963. The Planning Acts have recently been consolidated and revised as The Planning and Development Acts, 2000-2006. Under the Planning Acts, each Local Authority has a responsibility to determine policy in its area through the making of a Development Plan and for applying that policy, through planning control, in deciding on planning applications and enforcing planning decisions. Both the process of drawing up Development Plans and of development control are open and allow for the involvement of third parties. Development, with certain exceptions, is subject to development control under the Planning Acts and the local authorities grant or refuse planning permission for development, including ones within protected areas.

There is a range of exemptions from the planning system. Use of land for agriculture is generally outside the planning system. Peat extraction and afforestation, other than above certain thresholds, are also generally exempt from planning (Schedule 2 Planning and Development Regulations 2001). Additionally, Environmental Impact Assessment (EIA) is required for a range of classes of large scale projects. Under planning legislation, Development Plans must include mandatory objectives for the conservation of the natural heritage and for the conservation of European sites and any other sites which may be prescribed.

There are also discretionary powers to set objectives for the conservation of a variety of other elements of the natural heritage; for example, under Part XIII, the Local Authority can declare areas of special amenity, having any regards to benefits for nature conservation.

### Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is defined as “the formal systematic and comprehensive process of evaluating the effects of a proposed policy, plan or programme or its alternatives including the written report on the findings of the evaluation, and using the findings in publicly accountable decision making”. The SEA process which involves preparation of an Environmental Report must include objectives for the protection of biodiversity, flora and fauna, assess the impacts of the proposed plan or policy on these environmental objectives and also set indicators for biodiversity to monitor the impacts of the



proposed plan or policy on the environmental objectives. The SEA process has been used in County Waterford to assess the likely significant effects of the Wind Energy Strategy on the environment and highlighted the need for increased measures to protect the Freshwater Pearl Mussel.

**Fisheries Act**

The Fisheries Boards are charged with ensuring the observance of the Fishery Acts, Bye-Laws and Orders. Their purpose is to ensure the protection and conservation of our fishery resource. The Boards' responsibilities cover

both inland waterways and out to the twelve mile limit off the coast.

Section 8 (i) of the Fisheries (Amendment) Act 1999 states that a regional fisheries board shall "in the performance of its functions, have regard to the need for the sustainable development of the inland fisheries resource (including the conservation of fish and other species of fauna and flora habitats and the biodiversity of inland water ecosystems) and as far as possible ensure that its activities are carried out so as to protect the national heritage, within the meaning of the Heritage Act, 1995."

### 3. Overview of Biodiversity of County Waterford

This section is set out in two parts: special biodiversity features of the county; and natural heritage of local interest. A summary of the main information available is presented here. More detailed information is given in the Appendices and background material used is referenced in the Bibliography.

#### Special biodiversity features of the county

Waterford contains a variety of habitats and species which are of special conservation interest, by virtue of being nationally or internationally important. These range from blanket bog on the uplands of the Comeraghs to the river valley of the Blackwater, and includes the coastal habitats, as well as species like the Chough.

Habitats and species that are rare and threatened throughout Europe are listed under the EU Habitats Directive, which obliges EU member states to designate Special Areas of Conservation (SACs) to protect them. SACs in Waterford have been designated for habitats such as coastal heath and sea cliffs, alluvial woodland, mountain cliffs and corrie lakes, oak woodland, estuaries, salt marsh and sand dunes.

Coastal heath and sea cliffs of international importance are found at Ardmore Head and Helvick Head where notable seabird colonies also occur. The Tramore Back Strand and dunes ecosystem is a good example of the transition from strandline vegetation to fixed dune habitats.

The saltmarsh found here is of the lagoon type, which is the rarest in Ireland. As well as its significance for internationally-important numbers of Brent Geese, this area supports seven other wetland birds in nationally-important numbers: Golden Plover, Grey Plover, Lapwing, Dunlin, Sanderling, Black-tailed Godwit and Bar-tailed Godwit. The intertidal mudflats and sandflats have an interesting fauna including molluscs, Lugworms and Ragworms, with Eelgrass beds used by feeding wildfowl.

Helvick Head SPA has a nationally-important flock of Kittiwakes and a regionally-important population of Guillemots, as well as breeding Chough and Peregrine Falcon.

Wet alluvial woodland is another habitat that is very rare in Europe. It is found along the Suir especially near Fiddown, and on the Blackwater system particularly below Cappoquin.

Blanket bog, some of which is actively growing, is found on the plateau and shallower slopes of the Comeragh mountains, along with large areas of heath and upland grassland. Actively-growing bog is now extremely rare in

Europe, and Ireland holds about 60% of the European extent of this habitat, so we clearly have a responsibility to maintain this habitat for future generations. It is estimated that the amount of active bog in Ireland is now 1% of the original resource, and that this is disappearing at a rate of 3% per annum. This habitat is very fragile and is easily damaged through drainage, turf-cutting, trampling or vehicle damage, which disrupt the hydrology and vegetation of the bog.

Many other internationally-important species are found within or along the rivers, including Lampreys, Crayfish, Salmon, Twaite Shad, Otter, Frog and Freshwater Pearl Mussel. Habitats and species dependent on aquatic ecosystems in Waterford are primarily threatened by less than adequate water quality due to issues such as nutrient enrichment (eutrophication), siltation, and drainage, with issues such as recreational use and aquaculture arising in coastal areas.

#### Nature Conservation Designations

**Special Areas of Conservation** – SACs are the prime conservation areas in Ireland, and are designated under the EU Habitats Directive, as they contain species and/or habitats that are considered in need of protection on a European level. There are nine SACs in County Waterford.

**Special Protection Areas** - the EU Birds Directive requires the designation of SPAs for certain bird species, including those that are rare and vulnerable, those that occur regularly as migrants, and to cover wetlands which attract large numbers of migratory birds. There are six SPAs in County Waterford.

**Natural Heritage Areas** – this is the basic national designation for wildlife in Ireland. Statutory designation of NHAs was enabled by the Wildlife (Amendment) Act 2000. Around 148 bogs throughout the country have been given statutory protection; in addition there are 630 proposed NHAs which are of importance for biodiversity and will be designated on a phased basis over the coming years. There are 28 proposed NHAs in County Waterford.

**Nature Reserves** – these are areas of importance for wildlife, which are protected under Ministerial Order. Co. Waterford has one community-owned Nature Reserve, Fenor Bog.

See fig 1 & 2 on the following page

Fig.1 Proposed Natural Heritage Areas in County Waterford

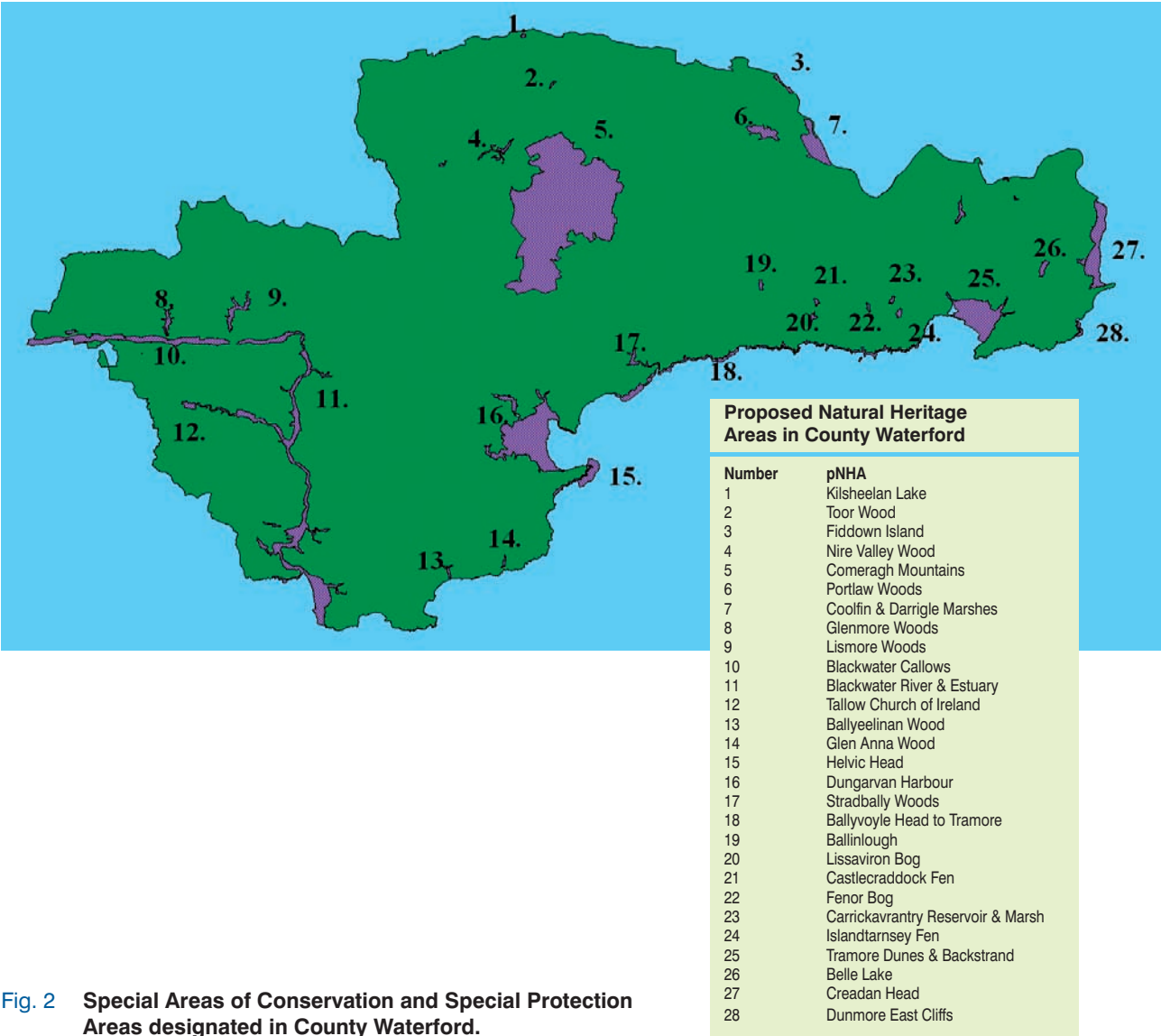


Fig. 2 Special Areas of Conservation and Special Protection Areas designated in County Waterford.







Otter (Brian White) • Pine Marten (Andrew Kelly) • Red Squirrel (Brian White)

Bird species listed on Annex I of the EU Birds Directive and occurring in Waterford include Hen Harrier, Peregrine Falcon, Merlin, Golden Plover, Nightjar, Brent Goose, Kingfisher and Chough. A recent survey of national Chough populations found this species to have declined in Waterford by about 16% since 1992, while nationally it had declined by 8%. This coastal species relies on extensively-managed coastal grassland in which it searches for invertebrates to feed on.

Another species listed in the Red Data Book is the Barn Owl, which has declined by over 50% in the past 25 years. Notable birds occurring in Waterford include Little Egret, Yellowhammer and Skylark. The latter two species are associated with mixed farmland, particularly where it is farmed less intensively. Grouse are found in the Waterford uplands. Concern for the Irish population of Red Grouse has been expressed in recent times due to an apparent 70% decline in their breeding range, resulting in the admission of Red Grouse to the 'Red List' of Birds of Conservation Concern in Ireland in 1999. A national survey of Red Grouse was carried out by BirdWatch Ireland for the NPWS in 2007-2008, and included surveys in the Comeraghs and Knockmealdowns.

Three wetland areas of international importance under the Ramsar convention are found in the county: Dungarvan Harbour, Tramore Backstrand, and Blackwater Estuary. The designations on these sites overlap with the SAC/SPA areas. Also found in the county is the Irish Hare, a species listed on the Irish Red Data Book for Mammals, Annex V of the Habitats Directive and the Bern Convention. Data from the Hare Survey of Ireland, completed in 2007, shows that while hares are widespread and common in Ireland generally, there was a very low number of records for Waterford with the animal apparently only being recorded from one 10km square in the west of the county; however the survey report also stressed that hare populations can fluctuate hugely from year to year, and that assessing the status of the population over a short time period is difficult. The Irish Hare is the subject of a national Species Action Plan, and one example of an action in that plan is **(5.6.1.) "Inform local authorities and statutory agencies of the presence of Irish hare in their areas of responsibility and ensure that they are aware of the potential risks to Irish hare that could be caused through inappropriate land management or development"**.

Current records for Pine Marten seem to show that the species is increasing across the country. Its recorded distribution in Waterford appears to be stable to slightly increased since 1980. It has shown an increase in south Kilkenny and south Tipperary but given the barrier of the River Suir, it is not possible to say whether these populations are linked to that found in Waterford.

Key river corridors in Waterford were covered by the national Otter survey, which was completed in 2005 and which recorded Otters and their signs at a number of sites in the county. They are widespread in the Suir and Blackwater catchments. The continued success of their population in the county depends on good water quality and availability of resting, breeding and feeding habitat. Otters are protected under Annexes II and IV of the Habitats Directive.

The bat species recorded for the county include Common and Soprano Pipistrelles, Daubenton's, Brown Long-eared, Whiskered, Leisler's and Natterer's Bats. All Irish bat species are listed under Annex IV of the Habitats Directive and Appendix II of the Bern convention, and are strictly protected. Currently bat records for the county are concentrated in the east of the county, which is probably due to a lack of recording in other areas, rather than poor bat populations. Older records show that the commoner species have been also recorded in the past from other parts of the county. The All-Ireland Species Action Plan for bats sets out actions for bat conservation on an all-Ireland basis. An example of an action relevant to bats in Waterford is **(5.2.5) "By 2009 provide householders with support, advice and, where appropriate, with assistance, to best manage their bat roosts"**. A survey of bats in bridges was carried out in the county in 2008 as part of the Heritage Plan.

Badgers and Hedgehogs are listed in the Irish Red Data Book for Mammals and under Appendix III of the Bern Convention and are strictly protected. They both appear to be widespread and common in Waterford. Stoats are protected under the Wildlife Act 1976 and its Amendment of 2000. Stoats are found throughout the county.

Red Squirrels are widespread in Waterford, as recorded by the 2007 Irish Squirrel Survey; however north Waterford is a 'frontier' area for Grey Squirrel. A small number of recent records for greys in the north Waterford area indicates that they have crossed the Suir from South Tipperary/Kilkenny.



Harbour (Common) Seal (Dominic Berridge) • Dolphins (Dr. Liam Lysaght)

The range of the Red Squirrel nationally has been shrinking and this appears to be linked to the spread of the non-native Grey Squirrel.

The 2003 Harbour (Common) Seal population assessment found a notable gap in seal populations on the south coast. Only one record, with a total of one seal, was recorded from Waterford, and this was at Dungarvan. Older records show this species occurring at Creadan Head, Dunmore East, Waterford Harbour, Ardmore and Ballinacourty. Though no Grey Seals were recorded for Waterford during the Harbour Seal survey, they have previously been recorded for almost all of the county's coastline and the Irish Whale and Dolphin Group have recorded groups of this species including during 2007.

All Irish coastal waters within the economic exclusive zone (out to the 200-mile limit) were declared a sanctuary for whales and dolphins in 1991. Whales and dolphins are regularly seen off the Waterford coast, and sometimes are found stranded on the shoreline. At least fourteen species are known to occur in the area, including Bottle-nosed and Common Dolphins, and Minke, Fin and Humpback Whales. All whales and dolphins are protected.

Nationally and regionally important habitats and species are found in proposed Natural Heritage Areas, and some of these overlap with or are included within the international conservation areas described above. As well as including some of the habitat types mentioned above, these areas contain many small wetlands, such as Belle Lake, Ballinlough, Carrickavrantry Reservoir, Kilsheelan lake, Islandtarsney Fen, Lissaviron Bog and Fenor Bog. The latter is a National Nature Reserve under community ownership. Creadan Head is a proposed NHA for coastal heath habitat, while the old Church of Ireland church at Tallow is protected as it contains a nursery roost of Leisler's Bats.

Several species of rare and protected plants are known to occur in County Waterford, including Opposite-leaved Pondweed, Killarney Fern, and Bird Cherry. Detailed records are held by the County Recorder of the Botanical Society of the British Isles, who has compiled a **Flora of County Waterford**, published in 2008 and accessible on the internet. This maps the distribution of plants in the county on a tetrad (2km x 2km) basis. Waterford is one of

the few counties fortunate enough to have a detailed County Flora such as this publication.

### Ecological networks and habitat fragmentation

*Human modification of the environment fragments natural habitats, creating a mosaic of natural, semi-natural and highly modified areas. This fragmentation takes place through loss, isolation and reduction in size of patches of habitats. This leads to loss of species and changes in the way that ecosystems work.*

*Maintaining patches and linear linkages of (semi-) natural habitats in the landscape helps maintain biodiversity. For example, Ireland has a relatively low level of woodland cover compared to other European countries; in parts of the country where woodland is scarce, hedgerows provide a habitat for trees, shrubs, ferns, insects, birds and animals that would normally be found in woodland. This allows these species to survive and to move between woodland patches. Other ecological corridors include rivers and streams, and the coastline.*

*Identifying ecological network features as part of spatial planning is an important step in maintaining them.*

As well as protected areas, Waterford contains examples of special habitats that are not under any designation. In particular heath in the uplands of the Knockmealdowns corresponds to the EU Annex I habitat type of Dry Heath yet has no specific protection. In addition, there are many smaller wetlands, lakes and reservoirs that contain semi-natural habitats and some may be of regional importance for specialist species such as Reed Warbler, and various moths and dragonflies. The first country-wide survey of Areas of Scientific Interest by An Foras Forbatha was carried out in the 1970s. Most sites which were identified for Waterford have subsequently been included in NHAs and/or SACs, except for the Annestown Valley.

Marsh Fritillary butterfly has been known to occur at a few locations in Waterford in the past, but has not been recently found in the county. This species is listed under Annex II of





Bluebells (Brian White) • Foxglove (Bernadette Guest) • Oakleaf (Brian White)

the EU Habitats Directive due to its decline in Europe. Ireland is one of its last strongholds in Europe. The Butterfly species is under threat due to drainage and loss of habitat. Its larval food-plant is Devil's-bit Scabious, which is found in wet and dry grassland and peatlands, including some fens.

Other invertebrates of note include eight species that are not known to occur anywhere else in Ireland outside of County Waterford - Brown Earwig, a Woodlouse, Hoary Footman Moth, Rosy Footman Moth, Carpenter Bumble Bee, Field Cuckoo Bumble Bee, Speckled Bush Cricket, Roesel's Bush Cricket and two species of Beetle *Curtonotus convexiusculus* and *Timarcha tenebricosa*.

### Biodiversity of local interest

Most of County Waterford's land cover lies outside areas designated for nature conservation and provides an essential resource in maintaining a diversity of species and habitats throughout the county, linking local biodiversity features throughout the landscape. Linear features such as hedgerows and streams provide 'ecological corridors' along which species can move, for example badgers commute along hedgerows to forage, and seeds of aquatic plants spread along streams and wet ditches.

### Hedgerows and banks

Hedgerows, with or without grassy banks, are a significant feature of the Waterford landscape.

As well as being valuable as mini-woodland habitat for a variety of plants, animals and birds, hedgerows act as a link between other habitats, particularly woodlands. Hedgerow loss occurs through, among other reasons, the removal of roadside boundaries to facilitate sightlines for new developments, and agricultural intensification. The amount of hedgerows in Waterford has not been quantified, nor has any research been carried out on their species composition or structure, in recent times.

New planting, or planting on the line of a hedgerow that was removed in the past, is an option under REPS. Many farmers are taking up this option; however the demand for whitethorn and other native hedging appears to have outstripped the supply of stock grown from Irish material, resulting in widespread planting of, for example, whitethorn grown in nurseries in continental Europe. While this is the

same species as our own whitethorn (*Crataegus monogyna*), it is not adapted to Irish conditions and is likely to be slightly genetically different to Irish stock. Two principal issues arise from this: the imported material may be more susceptible to disease in Irish conditions; and cross-pollination between imported and native stocks will dilute the genetic diversity of our native whitethorn.

A feature of Waterford field boundaries, particularly along roadsides, is the dry-stone 'wall-bank', a wide bank retained by vertically-stacked stones, often sandstone. As with hedgerows, these are a man-made feature; however they often host semi-natural vegetation such as grasses, mosses and ferns, and are important for local wildlife. Their extent and species composition has not been documented, and they are at some risk of removal at new development sites.

### Woodlands

Waterford has an average to slightly above average coverage of native woodland, with many good examples such as Toor Wood, Lismore and Glenmore. The county was surveyed in 2007 as part of the National Survey of Native Woodland in Ireland, and the final report of this survey including details on woodlands found in Waterford, was produced in 2008.

Many of the 'champion' trees of Waterford, as listed on the Tree Register of Ireland, are found in demesnes.

Most of these are non-native species and so are of more limited use to Irish wildlife; however they are of local ecological value and impart high amenity value to the landscape.

Coillte controls 19,560 hectares of land in Waterford, of which approximately 86% is under conifer plantation. Approximately 7% is under mixed, broadleaf and scrub cover, while the remainder comprises wetlands, marginal areas, and 'bare plantable/unplantable' areas. Coillte has carried out surveys to determine areas of land under their control that have current value or future potential for biodiversity, with a target of managing 15% of the total area for biodiversity. 12% of the forest estate was found to be suitable for inclusion in biodiversity areas, spread over 90 sites. 28 of these sites overlap with existing designated nature conservation areas. Coillte has its own biodiversity action plans in place for working around sensitive features,





Arable farming (Bernadette Guest) • Meadow vegetation (Bernadette Guest) • Forest field visit (Dr. Shelia Donegan)

covering Lesser Horseshoe Bat (not found in Waterford), Freshwater Pearl Mussel, and Hen Harrier.

In addition, the BioForest project, carried out to obtain a comprehensive picture of the biodiversity of conifer and broadleaf forest plantations at different stages of development, had two study sites in Waterford. The main groups surveyed were plants, spiders, hoverflies and birds, and data was collected on soil type and geology at each site.

Woodland planting is increasing in Ireland and incentives to plant broadleaf and native species have increased in recent years e.g. Native Woodland Scheme and Neighbourwood Scheme. This is, in general, good news for biodiversity; however care must be taken to ensure that other important semi-natural habitats are not lost to forestry plantation, that appropriate species are used, and that forestry planting and management do not cause negative impacts to other species or habitats.

### Grassland and arable land

The majority of County Waterford's heritage lies in or beside farmland of one sort or another. Many of our semi-natural habitats, especially grasslands, are a result of past farming practices. Up to the last 50 years or so, farming in Ireland was small scale and extensive, with very low inputs of chemical fertiliser or pesticides. Pressure for intensification driven by the demand for cheap food, fostered by technical progress and financed by the Common Agricultural Policy encouraged bigger fields, less diverse farming enterprises, and high inputs of chemical fertiliser to maximise yields. In recent years the pendulum has swung back to less intensive and more diverse operations, under schemes such as REPS. This may not last due to new imperatives for food and energy security. More sophisticated methods may be required to balance biodiversity and food production.

Grassland covers large parts of Waterford, and much of this is improved agricultural grassland, which is generally of low conservation interest as it contains a relatively small number of plant species and so is generally of low benefit to other wildlife. The exception to this is where wildfowl such as geese or swans use the intensive pasture for feeding while on migration. A similar type of grassland is found in some gardens, parks and other amenity areas,

where grassy areas have been reseeded and are managed intensively, resulting in a low diversity of plant species.

Semi-improved or unimproved grassland is of greater value for biodiversity. The extent of semi-natural grasslands in Waterford, outside of designated nature conservation areas, is generally unknown. This habitat is not easy to spot as close examination of the grasses and herbs present is usually needed to determine what type of grassland is present. Wet grassland can be relatively simple to find as it usually contains rushes. Given the soils present in the county, wet and acid grasslands are likely to be the most widespread, where they have not been heavily improved. Calcareous grassland is less common, as limestone rock and soils are of limited extent in the county. Some calcareous grassland areas were encountered as part of the recording for the **Flora of County Waterford**, and it was noted that these are quite vulnerable due to their small size, encroachment by scrub, or reclamation and improvement. An example of species-rich grassland is found at Knockanore graveyard.

Arable land is found in the more fertile parts of the Waterford lowlands. Arable land was once associated with a variety of 'weed' species, many of them introduced to Ireland by earlier farmers for example around the time of the Iron Age, when Cornflower, Darnel Grass and Corn Marigold came in, probably with imported grain. Along with native species such as Bladder Campion, these species rely on open and disturbed habitats to survive, as they cannot survive in more dense grassland. Intensification of arable production with increased fertiliser, herbicide and pesticide usage and ploughing for winter crops has seen many arable weeds disappear. Excluding hedgerows, the main area of biodiversity value in arable lands is the headland or field margin, where rank unmanaged grassland is often found. The seed-heads of the grasses provide winter feeding for farmland birds, and animals such as hares can use the long grass to commute or lie up during the day. As well as on field margins, this type of grassland is found along roadsides and laneways.

### Water and Wetlands

All life needs water to some extent, and a natural supply of clean water is crucial for properly functioning wetland ecosystems. Wetlands and aquatic systems are among the most diverse on the planet. They are sensitive to changes such as nutrient enrichment (eutrophication) and drainage.



Frog (Brian White) • Fenor Bog (Bernadette Guest) • Freshwater Pearl Mussel (Dominic Berridge)

The Ramsar Convention defines wetlands as: “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, areas of marine water the depth of which at low tide does not exceed six metres”.

### Rivers, lakes and ponds

The main channels of the Suir and Blackwater, as well as some of their tributaries and wetlands along their banks, are candidate Special Areas of Conservation where they pass through Waterford, as described above. However there are other rivers, streams, drains, lakes and ponds in Waterford which are not designated for nature conservation. Lakes and wetlands are relatively few in Waterford, compared with some counties, making these areas all the more important for the species and habitats that they contain.

A survey of 21 wetlands in County Waterford was carried out in 2006 as an action of the Heritage Plan. Habitats found included reedswamp, wet woodland, marsh, lake and reservoir, as well as small areas of fen, bog, wet heath, wet grassland, streams and ditches. The report considered two of the wetlands to be of national value, seven to be significant at county level, nine of high local value, and three of moderate local value. As only one of the wetlands surveyed has any existing nature conservation protection, they are vulnerable to activities such as drainage, infilling and reclamation, afforestation, pollution, and invasion by alien plant species. Extrapolating from this study, it is likely that other as-yet undocumented semi-natural habitats are to be found in the county, and that steps need to be taken to raise awareness of the value of semi-natural habitats and how to look after them.

Water quality, along with drainage and infilling, is one of the primary factors affecting aquatic systems. This is recognised by the EU Water Framework Directive (2000/60/EC), adopted by Ireland in 2003, and to be implemented with a goal of achieving ‘good status’ for all waters by 2015. To this end, Ireland has been divided into ‘River Basin Districts’ which are grouped so that management of water resources can be achieved on a logical, catchment-based principle. Waterford lies mainly within the South Eastern River Basin District (Barrow and Suir catchments), with the west of the county lying in the South Western River Basin District (Blackwater catchment).

Achieving ‘good status’ will mean not only benefits for the human population in terms of clean, safe water, but also will help enhance the aquatic environment for the other species, many of them sensitive, that rely on a properly-functioning aquatic system to survive. Waterford County Council is represented on the River Basin District Management Plans where it is working to quantify, assess and improve the waters of the county.

### Peatlands

Peatlands include bogs and fens, both of which are characterised by the accumulation of plant material (peat) over time, due to the waterlogged and oxygen-poor conditions. As such, peatlands act as ‘carbon sinks’, that is, the carbon taken up by the plants when growing is accumulated in the peat; when peat is drained, cut or burned, the greenhouse gases carbon dioxide and methane are released back into the atmosphere. Fens are groundwater-fed peatlands, while bogs are fed by rainfall. Landcover data based on satellite imagery shows approximately 3.5% of Waterford as being under peat bogs. Much of this is concentrated in the uplands as mountain blanket bog. The more intact examples are protected as SACs or NHAs, such as the blanket bog in the Comeraghs or the fen-type habitats of Fenor Bog, with smaller peatlands outside these areas. Waterford lies outside the main area for raised bogs in Ireland, which is concentrated in the midlands.

The 2007 *Study of the Extent and Conservation Status of Springs, Fens and Flushes in Ireland* located 1 fen in Waterford which is not included in any nature conservation area, at Ballymacague. This site was surveyed as part of the Waterford Wetlands Study. These habitats are sensitive to damage from groundwater abstraction, drainage, infilling and pollution.

### Heath

Heath is characterised by open, shrubby vegetation, often with heather and/or dwarf gorse, usually on infertile acid or calcareous soils, or on shallow peat. It is a common habitat in the Waterford uplands, and along the coast. All types of heath found in Waterford correspond to habitat types listed under Annex I of the EU Habitats Directive, whether they lie within areas designated for nature conservation or not – for example, much of the Knockmealdowns is in dry heath.





*Beautiful Demoiselle Damselfly (Brian White) • Marsh Fritillary (Dominic Berridge)*

### Other habitats

Public parks operated by Waterford County Council contain habitats such as grassland, trees and rivers. They are constantly managed through planting, mowing and other maintenance; however they all seem to have good potential for biodiversity and in general planting policy emphasises the use of native species where possible. In particular, two areas are managed under the NeighbourWood Scheme, which is administered by the Forest Service. This scheme provides funding for the management of wooded habitats for their amenity value, while maximising their biodiversity potential. For example, management in Newtown Woods is focused on facilitating public access, enjoyment and education; maintaining traditional activities by re-coppicing old sycamore stools; and enhancing biodiversity by increasing the proportion of native tree species in new planting, and putting up bird- and bat-boxes.

Built land, towns and gardens can be valuable for biodiversity; for example bats often roost in buildings, as do barn owls. Infrastructure such as canals and railways, for example the disused sections of the Waterford-Dungarvan and Waterford-Tramore lines, can act as ecological corridors and be important for local habitats and species. Re-use of these lines for recreation such as walking provides an opportunity for provision of interpretive material on the biodiversity to be found along them.

### Other species groups

When we think of natural heritage, biodiversity or nature, we tend to think of the things we can see or recognise easily – trees, flowering plants, birds, large mammals – but these are only a fraction of the millions of species found around the globe. Smaller species or those that are more difficult to identify are actually more numerous, and equally or even more important for ecosystem functions, such as bacteria, fungi, insects and other invertebrates, mosses and lichens. A large amount of information on such groups has been collected by Michael O'Meara through the *Fauna of Waterford* series, including spiders, woodlice, dragonflies, butterflies and moths (Lepidoptera), with additions to the series to include beetles, slugs and snails, and mayflies. The presentation of the collected information in booklets and CD format is a unique resource for the county, particularly for use in schools or as a baseline for information-gathering on these less well-known species groups. This work is supplemented by that of groups such as Moths Ireland, Butterfly Ireland and Dragonfly Ireland.

### Lichens

Lichens are a compound organism in which a fungus lives together in a mutually-beneficial symbiosis with an alga and/or cyanobacteria. Approximately 130 types of lichen have been recorded from Waterford, out of 1050 recorded from Ireland. Most of these records were collected in a few 10km squares. The first phase of a project under way to map Irish lichens was completed in 2008.

### Bryophytes

A total of 399 species of moss have been recorded from the county. The total number of moss and liverwort species known to occur in Ireland is 759. A new Red Data Book of Irish bryophytes is in preparation.

### Invertebrates

Waterford is home to approximately 28 species of butterfly, out of a total of 31 resident and 3 migrant species known to occur in Ireland. As well as the protected Marsh Fritillary and the more common species, uncommon species have been recorded recently from the county including Brimstone, Small Blue and Purple Hairstreak. Brimstone caterpillars feed on Buckthorn, which occurs on limestone soils. Purple Hairstreak larvae feed on oak leaves; this species is difficult to spot as it spends much of its time in the canopy of oak woodland.

Of 22 species of dragonflies and damselflies resident in Ireland, 17 have been recorded from Waterford. It is likely that wider survey would expand the list of species for the county. Of those known to occur, two are less common, the Keeled Skimmer and Black-tailed Skimmer. Dragonflies and damselflies are species of wetlands, particularly rivers, lakes, ponds, fens, flushes and springs.

Recording of other groups has found some unusual records for Waterford, for example a Barred Hook-tip moth was found in Beech woodland at WIT, Carriganore, in August 2007, the first known site in the Republic of Ireland for this species.

### Awareness

Some awareness-raising and education on aspects of biodiversity is facilitated by the Heritage Office of Waterford County Council, with the partners on the Waterford Heritage Forum e.g. County Wetlands Survey, seminar on upland vegetation management, exhibitions and public lectures as well as through national initiatives such as the Notice Nature campaign, Heritage in Schools, Green Schools and Tidy Towns.



## 4. Information deficiencies and threats to biodiversity

### Information deficiencies and threats to biodiversity

In order to decide what actions are needed for biodiversity in County Waterford, we must look at the key issues affecting it. These can be loosely categorised in terms of where we need more information, where biodiversity is under pressure, and where we need greater awareness. As this is the first biodiversity action plan for County Waterford, the following are the priority issues identified during the preparation of the plan.

### Where we need more information

The first part of this plan described the different biodiversity features of County Waterford **as far as we understand them**. There is a good amount of information available on some habitats and species in the county, but there are other areas where we don't know enough, or where the information cannot be easily used because it is scattered. Without this data, we cannot make informed decisions about which habitats or species need conservation action.

### Habitats outside designated areas

While many high nature value habitats in County Waterford are designated for nature conservation, we have very little information on coverage of certain habitats outside designated areas. Some data is available but is scattered among different organisations or reports, for example native woodlands, wetlands, forestry biodiversity areas, and environmental/ecological impact assessments. There is no up-to-date information on the coverage of semi-natural grasslands or hedgerows.

### Coverage of habitat types

Digital habitat mapping on a county level is a very useful tool for identifying issues and priorities for biodiversity, and is being gradually rolled out throughout the country. County Waterford currently has no such mapping in place and so is at a disadvantage when it comes to quantifying the biodiversity resource in the county and fulfilling national and EU obligations for maintaining biodiversity.

### Publications and reports

There are many publications, reports and articles on the biodiversity of the county. Many titles are listed in Michael O'Meara's **A bibliography of the Flora and Fauna of Waterford** (2001, updated 2007). These titles are generally not centrally available in the county – for example articles in scientific journals – or can be hard to find, such as ecological reports carried out as part of environmental impact assessments.

### Local authority land

Local authorities can lead the way in best practice management of natural heritage; however this is only possible when we know what we have. Some Waterford

County Council staff have a good working knowledge of the biodiversity in their area. This needs to be captured and augmented with more detailed ecological information to help guide management of local authority land in a way that maximises the benefits for biodiversity.

### Less visible species-groups

As in many counties, data on groups such as mosses, lichens, moths and dragonflies is not as well covered as for larger or more easily-seen species. Some of these gaps are being covered through nationally co-ordinated survey work, much of which is just beginning such as the lichen-mapping project. This presents an opportunity for the county to ensure that information gathered in Waterford is as useful and relevant as possible.

### Where biodiversity is under pressure

County Waterford is a living landscape and the many ways we use it have an impact on its natural heritage. Loss of habitats, damage and pollution, loss of species and introduction of non-native species can all reduce the biodiversity of the county. By identifying the key threats, we can prioritise actions to address them.

### Damage to areas of high biodiversity value

County Waterford has a good diversity of special habitats and species, some of which are designated for nature conservation. Both designated and undesignated areas are under pressure due to the way we use them. Ireland is obliged to produce conservation management plans for designated nature conservation sites; to date (2008) the only site in Waterford with a published plan is Ardmore Head. The Management Planning and Support Unit of NPWS is progressing management plans for all designated sites on a phased basis, starting with SACs.

In coastal areas, sensitive habitats such as Saltmarsh are vulnerable to infilling and dumping and need to be protected as they have low percentage cover in the county. Sand dunes, shingle beaches, coastal heath and species-rich grassland are also easily damaged by unmanaged recreational use. Preparation of an integrated coastal zone management plan for the Tramore area provides an excellent opportunity to pilot best practice in coastal biodiversity protection and enhancement. Sensitive aquatic species, for example the Freshwater Pearl Mussel which is under threat of extinction, are suffering from impacts such as inputs of excessive nutrients and silt into rivers. The local authority, as a member of the relevant River Basin Districts, is well placed to build protection of this species into its relevant sections and participate in catchment management plans which are in preparation for Freshwater Pearl Mussel.

In the uplands of the Comeraghs, Monavullagh and Knockmealdowns, fragile ecosystems are damaged by



*Himalyan Balsam (Will Woodrow) • Chinese Mitten Crab (Dominic Berridge) • Japanese Knotweed (Will Woodrow)*

inappropriate or unmanaged recreational use, such as all-terrain vehicles being driven on bog and heath, or erosion due to walking in popular areas. Whereas it is recognised that controlled burning of heather between September and February is necessary for both sheep and wildlife uncontrolled heather fires in spring and summer threaten nesting birds, while forestry management has implications for birds such as Hen Harrier and Nightjar. As a highly scenic area within close range of Waterford and other urban centres, the uplands are under pressure from development and associated infrastructure. This is currently addressed through the County Development Plan, and will be further informed by the County Landscape Character Assessment and Strategic Environmental Assessment, for example in relation to wind energy policy. There is currently no umbrella group or project to address the many issues affecting biodiversity in the Waterford uplands in a co-ordinated way.

### Wetlands

Wetlands are of limited extent in the county. A number of wetlands surveyed in County Waterford in 2006 were found to be of high nature conservation value. Wetlands are vulnerable to operations such as drainage and infilling, and indeed in 2005 the European Court judged Ireland on the illegal infilling of wetlands, including sites in Waterford. Since then there have been improvements in licencing and enforcement of waste disposal. The principal threat lies in not knowing where sensitive wetlands are. This has been partly addressed through the wetlands survey, though the information in this report needs to be made widely available throughout the local authority.

### Loss of hedgerow habitat

Nationally, and to some extent in Waterford, hedgerows and the plants, animals and birds that use them are under threat due to removal as part of new development or agricultural improvement, disturbance such as cutting during the bird-nesting season, damage such as cutting with inappropriate machinery or cutting too short, and use of imported plant stocks for new hedgerow planting. The extent of these issues is unquantified in Waterford. Many of the issues arise due to lack of awareness of best practice, though implementation and follow-up of local authority policy relating to hedgerows and development is also a factor.

### Local wildlife sites

As shown by the County Waterford Wetland Survey, areas of rich biodiversity exist outside of areas designated for nature conservation. As described above, survey and mapping of habitats in the county would provide some information on where these are. The availability of such information can be used in the assessment of future plans and programmes, to help avoid unnecessary and costly delays which can arise if important biodiversity features are discovered late in the planning process, and to ensure that the unique character of the Waterford landscape is maintained. For example, an Indicative Forest Strategy is to be developed to ensure best practice in afforestation in the county. The Forest Service are very much guided by county development plans in their day to day decisions. The provision of a list or map of sites of local biodiversity importance, defined and delineated on a sound scientific basis (i.e. habitat survey) can be used to inform the decision-making process in forestry planning.

### Invasive species

Our local biodiversity is threatened by invasive species such as Rhododendron in woodland and heath habitats, Japanese Knotweed, Himalayan Balsam and Giant Hogweed along watercourses, while Chinese Mitten Crab has recently been found in the Waterford estuary. Control of invasive species becomes more costly the longer the species are *Japanese Knotweed* left unchecked. There is reasonably good information on problem areas for such species in the county; however there is currently no comprehensive plan for their control. A review of invasive species in Ireland, the pathways by which they spread, and recommendations for strategies for their control was produced in 2004. This has prompted a new project to be set up in 2007, the All-Ireland Invasive Species Initiative, which is seeking to implement the recommendations and co-ordinate action on invasive species control.

### Management and co-ordination of biodiversity issues

The main body with statutory responsibility for directly protecting biodiversity is the National Parks and Wildlife Service, who currently have one wildlife ranger covering County Waterford as part of the Southern Division. With the relatively small resources available, the regional staff of NPWS have to focus on issues relating to designated areas, particularly SACs and SPAs, and protected species. Even within this the staffing resources are not adequate to





*Hawthorn Hedgerow (Catherine Keena) • Kale and Cereal plot grown for seed-eating birds (Bernadette Guest)*

address all the issues arising on a day-to-day basis. Other agencies such as the EPA or Southern Regional Fisheries Board have a degree of input into biodiversity issues, but from the perspective of their own sectoral interest. This all has implications for the maintenance and enhancement of biodiversity in the county. In particular, the lack of a co-ordinated approach or clearing-house has serious implications for local biodiversity features, as they often fall through the cracks.

### **Where we need greater awareness**

‘Biodiversity’ can seem like an abstract concept or something that is found far away, like the rainforests of South America, but it is around us every day. Raising awareness and providing information on the natural heritage of County Waterford is one of the most important ways of safeguarding the future of the habitats and species we share the county with, especially by identifying the key issues that need to be highlighted.

### **General awareness**

Impacts on biodiversity such as habitat loss and fragmentation often arise more due to a lack of understanding or appreciation of the importance and value of biodiversity than through intentional damage. As well as policies and legislation to control such activities, education and awareness-raising play a vital role in helping conserve our natural heritage. Opportunities for incorporating biodiversity awareness are found, for example, in schemes such as Tidy Towns, Green Schools and Local Agenda 21 projects.

### **Biodiversity awareness in Waterford County Council**

Most sectors in the local authority have some effect on biodiversity, such as management of green areas, waste water treatment or small-scale road-works. Key staff in different sections are willing to work with biodiversity in mind. In some sections biodiversity is built in to their principal operations, while in others the opportunity to work with and enhance biodiversity has not yet been recognised. The two main areas where the local authority can improve awareness within its own organisation are (i) staff training in biodiversity issues and (ii) introduction of guidance and policies in relation to key biodiversity issues.

### **Biodiversity and development**

Waterford County Council has an obligation to take biodiversity into account when drawing up or considering

plans or proposals for development. This includes both statutorily protected nature conservation sites and the wider countryside. Flora, fauna and habitats are often considered inadequately or at a late stage of proposals, which can lead to costly delays. This arises primarily due to insufficient knowledge of the key biodiversity concerns that should be scoped for at the early stages of any proposal. This applies equally to single houses or large-scale public and private developments. Guidance on implications of biodiversity for development is currently minimal and somewhat dispersed.

### **Biodiversity and farming**

Much of the natural heritage of County Waterford is found on farms. Current schemes for farming which take biodiversity into account include REPS, FEPS and the NPWS farm plan scheme for protected areas. Restrictions associated with designated areas, commonage plans and pollution control measures have contributed to a negative perception of biodiversity among some farmers. Traditional management practices which maintain important habitats such as semi-natural grassland, or species populations such as seed-eating birds, have largely been lost to intensification driven by the Common Agricultural Policy. There is huge scope for maintaining and enhancing biodiversity on farms in Waterford, if guidance is provided to farmers to help them make informed choices. REPS and FEPS are one platform where this is being addressed, and greater information on semi-natural habitat types and their appropriate management is needed for farmers and REPS planners to ensure that existing habitats are managed appropriately for biodiversity. Guidance and information for non-REPS farmers could help tap in to their store of knowledge to help conserve local wildlife habitats.





## 5. The Action Plan – actions for biodiversity in Waterford

*NPWS, Dungarvan Birdlife ( Bernadette Guest) • Outdoor Science Week at Fenor Bog, (Dr. Shelia Donegan) • Pine Marten ( Dr. Peter Turner)*

### Actions in this plan are designed to

- Address priority information gaps in the county
- Increase understanding and raise awareness of biodiversity at various levels
- Maintain and/or enhance biodiversity through management practices in key areas

The 2006-2010 Heritage Plan for Waterford contains a number of actions which relate to biodiversity, and where proposed actions in the Biodiversity Plan overlap with those of the Heritage Plan, they are marked as **HP** plus the number of the action in the Heritage Plan.

### Existing action for biodiversity

The Department of Environment, Heritage and Local Government oversees the production of action plans for habitats and species at a national level. To date, the department has produced species action plans for all bat species , Corncrake, Pollan, Irish Hare, Otter, Red Squirrel, Irish Lady's Tresses Orchid and Killarney Fern while a draft plan is in preparation for Freshwater Pearl Mussel. In addition, a National Strategy for Plant Conservation in Ireland is in place.

Other agencies and departments have produced action plans relevant to their sectoral interests. Coillte has produced plans for Hen Harrier, Freshwater Pearl Mussel, and Lesser Horseshoe Bat (the latter is not known to occur in County Waterford).

# Examples of existing projects relevant to biodiversity in County Waterford

Table 1

Project	Relevant features covered	Principal relevant agencies / individuals involved
South Eastern and South Western River Basin Management Plans	River catchments in the county including water quality, indicator species and regional water management issues, including shared boundaries with other counties.	Waterford Co. Co., Waterford City Council, South Tipperary Co. Co., Kilkenny Co. Co., Cork Co. Co.
Constant effort watches of cetaceans	Regular watches by volunteers at Helvic and Ram heads to determine relative abundance, and seasonal and geographical changes in abundance of whales and dolphins.	Irish Whale and Dolphin Group
Waterford Breeding Bird Atlas 2006-2011	Mapping at 2x2km tetrads the occurrence and status of breeding and summering birds throughout County Waterford.	BirdWatch Ireland Waterford branch
Bird Atlas 2007-2011	Joint project to map all of Ireland and Britain's birds during both the winter and the breeding season.	BirdWatch Ireland
Irish bat distribution 2007-2011; car-based bat monitoring scheme	Improve coverage of bat records using a network of volunteers and professional ecologists.	Bat Conservation Ireland
Flora of County Waterford	2x2km tetrad records of plants for Waterford based on survey by BSBI county recorder in book and web format.	BSBI Waterford County recorder; National Biodiversity Data Centre
Water Beetles of Ireland	Recording water beetles including some sites in Co. Waterford.	National Biodiversity Data Centre
National Vegetation Database	Collation all of the vegetation sampling unit data that has been collected over years onto a single database, which ultimately could lead to the development of a national vegetation classification for Ireland.	National Biodiversity Data Centre
Butterfly monitoring programme, Moth digitisation project	Monitoring and digitisation of butterfly and moth records in Co. Waterford.	Butterfly Ireland, Moths Ireland, National Biodiversity Data Centre
Waterford Wildlife	Website and series of publications on the wildlife of the county and city with up-to-date records.	Michael O'Meara
All-Ireland Invasive Species Initiative	Co-ordination of knowledge and expertise for invasive species monitoring and control, develop measures for control.	NPWS, National Biodiversity Data Centre
Application of genetics to wildlife monitoring	Studying wild animal populations, particularly pine marten, using forensic DNA techniques.	Molecular Ecology Research Group at Waterford Institute of Technology
Indicative Forest Strategy	GIS-based system providing high-level, national guidance in relation to the suitability of land for afforestation.	Forest Service
Something Fishy	Primary school programme for teachers and pupils on water, fish habitats and conservation, fish and fishing.	Southern Regional Fisheries Board
Sea Trout Management Programme for River Colligan	Management programme for the catchment to conserve Sea Trout populations.	Southern Regional Fisheries Board



## Actions for biodiversity in County Waterford 2008 - 2013

*Kidney Vetch (Mike Trewby) • Sea Thrift (Mike Trewby) • Common Blue Butterfly (Dr. Liam Lysaght)*

### Objective 1. Addressing information gaps

These actions are designed to address the most urgent gaps in our knowledge of County Waterford biodiversity

Action Ref. No (Heritage Plan Action No.)	Action	Priority	Partners
1.1	Commission a county grassland survey, targeting semi-natural grasslands e.g. calcareous grassland, coastal and cliff grassland and identify threats to these habitats and suggestions for future management.	O	National Parks and Wildlife Service Waterford Co. Council Heritage Forum
1.2 (1.2.4)	Publish the Waterford Wetlands Study.	S	Waterford Co. Council Heritage Forum
1.3 (1.2.5)	Commission a county hedgerow survey, based on same 10km grid squares as the Countryside Bird Survey.	L	Waterford Co. Council Heritage Forum The Heritage Council
1.4	Commission a biodiversity audit of local authority land/parks and identify opportunities for enhancement of biodiversity.	M	Waterford Co. Council Heritage Forum
1.5	Initiate a county habitat map by collating existing information e.g. Native Woodland Survey, Grasslands Survey, Wetlands Survey, EIS reports, NPWS management plans on a dedicated layer in the county GIS system.	M	Waterford Co. Council Heritage Forum The Heritage Council National Parks and Wildlife Service, EPA, Teagasc
1.6	Identify natural heritage sites of county importance in the context of Local Area Plans and Development Plans.	S	Waterford Co. Council Heritage Forum
1.7 (2.1.10)	Collate and index EISs and smaller ecological impact assessments.	M	Waterford Co. Council
1.8	Support digitisation of data collated through the Flora of County Waterford.	O	National Biodiversity Data Centre BSBI
1.9	Promote and encourage participation in the National Butterfly Monitoring Scheme, Bee recording and monitoring and other schemes as piloted by the National Biodiversity Data Centre.	O	National Biodiversity Data Centre. Heritage Forum Waterford Co. Council

O = Ongoing S = Short term M = Medium term L = Long term



## Objective 2 Raising awareness

These actions are designed to raise awareness of what biodiversity is and why it is important, particularly in critical sectors

Action Ref. No (Heritage Plan Action No.)	Action	Priority	Partners
2.1 (2.1.1)	Maintain and update a biodiversity web page on the Waterford County Council website with links to other biodiversity websites and relevant biodiversity reports.	S	Waterford Co. Council
2.2 (4.2.1)	Provide biodiversity training for local authority staff and elected representatives to inform best practise for biodiversity in Waterford County Council.	S	Waterford Co. Council Heritage Forum Heritage Council
2.3	Provide demonstration sites of best practise for biodiversity in a range of habitats e.g. salt marsh, roadside verges, linear walkways.	S	Waterford Co. Council NRA Heritage Forum
2.4 (4.1.18)	Based on the county hedgerow survey, produce guidelines and information on planting, trimming and retention of hedges, especially aimed at new houses in rural areas.	M	Waterford Co. Council Heritage Forum Teagasc Irish Wildlife Trust
2.5	Provide guidance for developers, the public and local authority staff on integrating biodiversity conservation into the development process.	S	Waterford Co. Council Heritage Forum
2.6	Install information signage for special habitats at access points e.g. Ardmore Head, Mahon Falls, Tramore and other appropriate locations.	M	Waterford Co. Council Heritage Forum NPWS
2.7	Install signage on biodiversity at forest amenity areas.	M	Coillte
2.8 (4.1.22)	Organise practical training and information seminars for entrants to Golden Mile Competition on aspects of care and conservation of natural heritage.	S	Waterford Co. Council Heritage Forum Community Groups
2.9	Review policies on biodiversity/natural heritage in review of County Development Plan to ensure comprehensive protection of biodiversity in the planning process.	S	Waterford Co. Council Heritage Forum
2.10	Organise and support events to celebrate Biodiversity Day in County Waterford.	O	Waterford County Council, Heritage Forum, National Biodiversity Data Centre
2.11	Raise awareness on farmland birds – produce an information and guidance booklet for farmers on Chough, Yellowhammer, Skylark and Barn Owl, detailing appropriate management techniques to help these species.	M	Waterford Institute of Technology Irish Wildlife Trust Waterford Co. Co IFA, ICMSA, ICA, Teagasc, BirdWatch Ireland, Irish Wildlife Trust.

O = Ongoing S = Short term M = Medium term L = Long term

### Objective 3 Maintaining and enhancing biodiversity

These are priority actions for active management of critical biodiversity features of the county.

Action Ref. No (Heritage Plan Action No.)	Action	Priority	Partners
3.1 (4.1.24)	Introduce measures to protect and enhance coastal biodiversity as part of Integrated Coastal Zone Management at Tramore	S	Waterford Co. Council Heritage Forum Heritage Council NPWS, BirdWatch Ireland, Irish Wildlife Trust CoastWatch
3.2 (3.0.7)	Seek to protect the biodiversity of the Comeragh/Monavullagh uplands through implementation of a landscape-scale designation, facilitated by an uplands forum.  - Review types of designations and best practice suitable to the 'living' landscape of the uplands, which includes farmed, private and commonage land - Present options and carry out stakeholder consultation - Produce recommendations for type and location of designation	M	Waterford Co. Council Community & Voluntary Forum, Irish Uplands Forum, NPWS, IFA, ICMSA, ICA Irish Wildlife Trust
3.3	Develop an awareness programme and provide information to the public on prevention and management of invasive species in County Waterford.	S	Waterford County Council, National Biodiversity Data Centre, All-Ireland Invasive Species Initiative Waterford Institute Technology
3.4	Support ecological survey of and consultation process in seeking NHA status for the Knockmealdown uplands.	L	NPWS, Waterford County Council, South Tipperary County Council
3.5	Ensure compliance with the Catchment Plan for Freshwater Pearl Mussel populations in the South East Region in partnership with other local authorities.	O	Waterford Co. Council Coillte South East Regional Authority NPWS
3.6 (4.1.32)	Support development of a native tree and shrub section from locally-sourced seed in a local nursery	M	Forest Service, Teagasc
3.7	Liaise with Waterford City Council to ensure that habitats and species along the administrative boundary are looked after in a coherent way.	S	Waterford Co. Council Waterford City Council
3.8	Establish a Co. Waterford squirrel group to survey and monitor squirrels, promote red squirrel friendly management of woodlands, promote education and awareness of red squirrels and to instigate grey squirrel control programmes if necessary; in conjunction with the All-Ireland Species Action Plan for Red Squirrel	O	Heritage Forum/Heritage Officer, Molecular Ecology Research Group of Waterford Institute of Technology, Coillte, NPWS
3.9	Record and collate information on upland fires with a view to informing future management.	S	Waterford County Council Fire Service
3.10	Promote sustainable management of the uplands by addressing fire and grazing issues with a view to improving local water quality, and the ecological and amenity values of the uplands.	S	Waterford County Council Fire Service Teagasc, Hill Sheep Farmers' Assoc.; Dept of Agriculture, NPWS.

O = Ongoing S = Short term M = Medium term L = Long term



## Monitoring and review of the plan

*Saltmarsh, River Brickey (Bernadette Guest) • Small Tortoiseshell ((Dr. Liam Lysaght)) • Furze or Gorse ((Dr. Liam Lysaght))*

Progress on implementing the plan will be monitored by checking against the indicators listed below.

### Overall administration of the plan

- Number of actions from the plan that are implemented
- Funding sourced for implementation of the plan, from both the Local Authority and other sources
- Number of meetings of the Biodiversity Working Group held

### Addressing information gaps

- Number of new data sets gathered
- Number of gaps filled and previously unknown gaps identified

### Raising awareness

- Number of events/programmes organised
- Number of people attending events
- Range of sectoral interests of partners/participants represented
- Percentage of Waterford County Council staff and Elected Members receiving training and contributing to biodiversity actions

### Maintaining and enhancing biodiversity

- Number of actions implemented
- Range of sectoral interests of partners/participants represented
- Measured success of different actions based on their own specific indicators (may only be apparent beyond the life of this plan)

### Review

The plan will be subject to a mid-term review and evaluation in 2010 by the Biodiversity Working Group of the County Heritage Forum and a final evaluation in 2013. These evaluations will inform how the next Waterford Biodiversity Action Plan is drawn up.



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[www.treecouncil.ie/tree\\_register\\_of\\_ireland.htm](http://www.treecouncil.ie/tree_register_of_ireland.htm)

[www.butterflyireland.com](http://www.butterflyireland.com)

[www.mothsireland.com](http://www.mothsireland.com)

[www.habitas.org.uk/dragonflyireland/](http://www.habitas.org.uk/dragonflyireland/)

<http://eunis.eea.europa.eu/sites.jsp>



# Appendix 1 Nature conservation areas in County Waterford

## Special Areas of Conservation

NPWS Site code	Site name	Habitats & species present which are listed in the Annexes of the Habitats Directive
002123	Ardmore Head	Dry coastal heath and sea cliffs.
000072	Blackwater River (Cork/Waterford)	Estuary, mudflats, shingle banks, salt meadows, floating river vegetation, old oak woods, alluvial woodland, Yew woodland, Freshwater Pearl Mussel, White-clawed Crayfish, Shad, Lampreys, Salmon, Otter, Killarney Fern.
001952	Comeragh Mountains	Blanket bog, dry, wet and alpine heath, rocky slopes, oligotrophic lakes, floating river vegetation, Shining Sickle moss.
002324	Glendine Wood	Semi-natural woodland with rare assemblages of ground flora.
000665	Helvick Head	Vegetated sea cliffs and dry heath.
002137	Lower River Suir	Salt meadows, floating river vegetation, marginal river vegetation, old oak woods, alluvial woodland, yew woods, Shad, Lampreys, Freshwater Pearl Mussel, White-clawed Crayfish, Salmon, Otter.
000668	Nire Valley Woods	Old oak woodlands and dry heath.
002162	River Nore and River Barrow (Waterford Estuary)	Estuary, mudflats, salt meadows, floating river vegetation, dry heath, marginal river vegetation, petrifying springs, old oak woods, alluvial woods, White-clawed Crayfish, Freshwater Pearl Mussel, Whorl snail, Shad, Lampreys, Salmon, Otter, Killarney Fern.
00671	Tramore Dunes and Back Strand	Mudflats and sandflats, shingle banks, salt meadows, embryonic, white and fixed dunes.

## Special Protection Areas

NPWS Site code	Site name	Main Annex I bird species
004027	Tramore Backstrand	Golden Plover, Bar-tailed Godwit.
004032	Dungarvan Bay	Great Northern Diver, Bar-tailed Godwit, Golden Plover.
004094	Blackwater Callows	Whooper swan, Bewick's Swan, Golden Plover, Kingfisher.
004028	Blackwater Estuary	Little Egret, Golden Plover, Bar-tailed Godwit, Sandwich Tern, Roseate Tern, Common Tern.
004192	Helvick Head Coast	Peregrine, Chough.
004193	Mid Waterford Coast	Peregrine, Chough.

## proposed Natural Heritage Areas

NPWS Site code	Site name	Main conservation features
1691	Ballin Lough	Shallow, nutrient- rich lake in hills, surrounded by reeds.
1692	Ballyeelinan Wood	Wooded valley by the sea with fast stream and waterfall Undisturbed northern end with oak.
1693	Ballyvoyle Head to Tramore	23 kilometres of coast with cliffs and coastal dry heaths. Important for breeding birds including Cormorants, Choughs, Peregrine Falcons and Guillemots.
659	Belle Lake	Shallow lake with marginal and submerged plant communities of note: also wintering waterfowl.
0072	Blackwater River & Estuary	Drowned river valley with wet woodland and good floodplain marshes. Wintering birds at Kinsalebeg and Youghal.
0073	Blackwater River callows	The river valley above Cappoquin, with flooding grassland, abandoned river channels and considerable importance for winter birdlife.
0660	Carrickavrantry Reservoir & Marsh	Artificial lake with water of exceptional clarity and a rich variety of aquatic plants, many of them rare in the county.
1695	Castlecraddock Fen	Interesting swamp vegetation in a shallow, peaty basin.
0399	Coolfin and Darrigal Marshes	Damp marshy fields around Coolfin used by wintering waterfowl Locally important for wintering Greylag Geese and Whooper Swans.
2116	Creadan Head	Coastal heath in good condition.
1897	Curraun Bog, Farbreaga and Coum Eag	Valuable fragments of blanket bog and heath vegetation at southern end of Comeraghs.
0664	Dunmore East Cliffs	Large kittiwake (gull) colonies on several cliffs, well studied.
0663	Dungarvan Harbour	Large estuarine bay, which dries out considerably at low tide giving mudflats. Some marginal saltmarshes and sandy beaches but birdlife is the main interest, with major wintering flocks.
1697	Fenor Bog (Also a Nature Reserve)	Small acidic marsh with interesting wetland communities.
0402	Fiddown Island	Alluvial Woodland, mudflats and river channel.
1698	Glen Anna Wood	Deep gorge running to the coast below Ballymacart with nutrient- rich woodland.
1933	Glenmore Woods	Oak woodland in a side branch of the Blackwater valley. Good vegetational development with small numbers of introduced species.
0666	Islandtarsney Fen	Reedswamp and other vegetation of interest, relatively rare in the south-east.
1701	Kilsheelan Lake	Nutrient- rich lake with large bird and fish populations including breeding carp.

**Proposed Natural Heritage Areas contd.**

<b>NPWS Site code</b>	<b>Site name</b>	<b>Main conservation features</b>
1702	King's Channel	Saltmarsh fringe to the Suir River estuary below Waterford. Good vegetational development with some rare species.
0667	Lismore Woods	Species- rich woodland of oak and hazel, probably surviving since ancient times. Some introduced shrubs, Rhododendron and Cherry Laurel.
1705	Lissaviron bog	Acidic peaty marsh with patches of Bulrush and Meadowsweet.
0668	Nire valley woods	Semi-natural patches of woodland on the western slopes of the Comeragh Mts. Full range of wildlife though some introduced species also.
0669	Portlaw Woods	An important semi-natural woodland on both sides of the Clodiagh river, dominated by Oak. Some introduced shrubs, e.g. Rhododendron and Cherry Laurel.
1707	Stradbally Woods	Mature estate woodland along the valley of the River Tay.
0670	Tallow Church (Disused Church of Ireland)	Large and important bat roost occurs in the roof of this disused church.
1708	Toor Wood	Small deciduous woodland with oak and ash, surrounded by conifers. Some exotic species.
1952	Comeragh Mountains	Diverse range of habitats including blanket bog, heath, upland grassland, scree, exposed rock, lakes and streams. Many corries with associated oligotrophic lakes



## Appendix 2 List of consultees who contributed to the plan

	Representative	Organisation/Section
<i>Heritage Forum</i>	Mr. Cyril Saich Mr. John O'Halloran Mr. Jim Shine Ms. Suzanne Campion Mr. Andrew Cox Mr. Harry Gray Mr. Tom Ahearne Ms. Eileen O'Callaghan Mr. Paddy O'Brien Mr. Niall O'Brien	National Parks & Wildlife Service Coillte Birdwatch Ireland/ Dungarvan Museum Southern Regional Fisheries Board Environmental NGOs IFA ICMSA ICA Teagasc Community Forum
<i>Waterford County Council</i>	Mr. Ray O'Dwyer Mr. Brian White Mr. Donal Brady Ms. Jane O'Neill Ms. Bernadette Guest Mr. Ross O'Shea Ms. Ann Kiely Mr. Colum Flynn Mr. Richie Walsh Mr. Eoin Dullea	County Manager Director of Services, Community & Enterprise County Librarian Area Engineer Heritage Officer Planning Housing Sanitary Services Planning Horticulturalist
<i>Others</i>	Mr. Dominic Berridge Dr. Liam Lysaght Dr. Eugenie Regan Mr. Jack Bergin Dr. Peter Turner Mr. Paul Green Mr. Paul Walsh Ms. Rita Byrne Mr. Michael O'Meara Mr. Andrew Malcolm Mr. Kevin Collins Mr. Pat Neville Mr. Kevin Collins Ms. Siobhan Egan Dr. Sinead Cummins Mr. Geoff Hamilton Ms. Anja Murray Mr. Jimmy Taaffe Dr. Stephen McCormack Mr. Charles Keane	National Parks and Wildlife Service National Biodiversity Data Centre National Biodiversity Data Centre Waterford Institute of Technology Waterford Institute of Technology County Botanical Recorder Waterford Birds Fenor Bog group Waterford Wildlife Irish Whale and Dolphin Group Forest Service Coillte Tipperary BirdWatch BirdWatch Ireland BirdWatch Ireland Irish Squirrel Survey An Taisce Waterford LEADER Partnership Entomologist Cappoquin Estate

## Appendix 3 Glossary of Terms

**Annex I** Natural habitat types of community interest whose conservation requires the designation of Special Areas of Conservation

**Annex II** Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation

**Annex III** Criteria for selecting sites eligible for identification as sites of community importance and designation as Special Areas of Conservation

**Annex IV** Animal and plant species of community interest in need of strict protection

**Annex V** Animal and plant species of community interest whose taking in the wild and exploitation may be subject to management measures

**Appropriate Assessment** Assessment of the impacts of land use plans on SACs and SPAs as provided for under Article 6 of the 1992 Habitats Directive

**Biodiversity** biological diversity – the variety of life in all its forms. The Convention on Biological Diversity gives a formal definition of biodiversity as: “biological diversity means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”.

**BWI** BirdWatch Ireland

**SAC** Special Areas of Conservation (SAC) are the prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. The legal basis on which SACs are selected and designated is the EU Habitats Directive. The Directive lists certain habitats and species that must be protected within SACs, these include raised bogs and blanket bogs.

**Earth Summit** United Nations Conference on Environment and Development (Rio 1992) (also UNCED)

**EIA** Environmental Impact Assessment of projects

**EPA** Environmental Protection Agency

**FEPS** Forest Environment Protect Scheme – provides REPS farmers opportunities to create woodlands

**IPCC** Irish Peatland Conservation Council

**IUCN** The World Conservation Union

**I-WeBS** The Irish Wetland Bird Survey (I-WeBS) is the scheme that monitors wintering water birds in Ireland. The survey runs from September to March each winter.

**IWDG** Irish Whale and Dolphin Group

**LBAP** Local Biodiversity Action Plan

**Natura 2000** Network of protected sites (SPAs and SACs) established under European legislation, and referred to in the Habitats Directive

**NHA** Natural Heritage Area - designation under the Wildlife (Amendment) Act 2000.

The basic designation for wildlife is the Natural Heritage Area (NHA). This is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.

**NPWS** National Parks and Wildlife Service

**pNHA** proposed NHAs, were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. These sites are of significance for wildlife and habitats.

**Ramsar site** Name given to wetlands of international importance after an international convention held in Ramsar, Iran in 1971

**Red Data Books** List species of conservation concern. The International Union for the Conservation of Nature and Natural Resources (IUCN) Red List Categories and Criteria were developed to objectively assess and prioritise species for conservation purposes. A review of these categories and criteria was completed in 1998 and 1999 (IUCN Red list categories and criteria Version 3.1). Most countries have produced their own Red lists and Red data books of species using both IUCN categories and incorporating local and national knowledge of species.

**REPS** Rural Environment Protection Scheme

**SEA** Strategic Environmental Assessment of plans and programmes

**SAC** Special Area of Conservation (SAC) are the prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. The legal basis on which SACs are selected and designated is the EU Habitats Directive. The Directive lists certain habitats and species that must be protected within SACs, these include raised bogs and blanket bogs.

**SPA** Special Protection Area - designation under the Birds Directive

**Water Framework Directive** sets a framework for comprehensive management of water resources in the European Community, within a common approach and with common objectives, principles and basic measures

## Appendix 4 Members of County Waterford Heritage Forum

Cllr. Lola O'Sullivan	Waterford County Council (CHAIR)
Cllr. Mary Greene	Waterford County Council (VICE CHAIR)
Cllr. Paddy O'Callaghan	Waterford County Council
Cllr. Bernard Leddy	Lismore Town Council
Mr. Tom Ahearne	Irish Creamery Milk Suppliers Association
Ms. Suzanne Campion	Southern Regional Fisheries Board
Mr. Andrew Cox	Environmental Non Government Organisation Grouping
Mr. Enda Flynn	Community Forum
Mr. Stan Flynn	LEADER/Development
Mr. Harry Gray	Irish Farmers Association nominee
Mr. Niall O'Brien	Community Forum
Mr. Paddy O'Brien	Teagasc
Ms. Eileen O'Callaghan	Irish Countrywoman's Association/Rural organisations
Ms. Maeve O'Callaghan	National Monuments Service
Mr. John O'Halloran	Coillte
Mr. Micheál Maranán	Community Forum
Mr. Cyril Saich	National Parks and Wildlife Service
Mr. James Shine	Museum Sector and BirdWatch Ireland

## Members of Cultural and Heritage Strategic Policy Committee

Cllr. Lola O'Sullivan	Waterford County Council
Cllr. Tom Higgins	Waterford County Council
Cllr. Kevin Wilkinson	Waterford County Council
Cllr. Brendan Mansfield	Waterford County Council
Mr. Michael O'Riordan,	Dungarvan Town Council
Cllr. Joe Conway,	Tramore Town Council
Cllr. Bernard Leddy,	Lismore Town Council
Mr. Jimmy O'Gorman,	Cultural Development. Group
Mr. Niall O'Brien,	Community Forum
Mr. Micheál Ó Maranán,	Community Forum
Mr. Stan Nangle,	Community Forum
Ms. Máire Uí Bhroin,	Childcare Committee
TMr. om Sutton	LEADER







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