County Cork Biodiversity Action Plan 2009-2014

Contae Chorcaí Plean Ghníomhartha Bhithéagsulacht 2009-2014

contents

Address from the Mayor, Cllr. Noel Harrington

County Cork has a unique and distinctive natural diversity that has been shaped by its position on the southern coast of the country, its geology dominated by sandstone ridges and limestone valley floors, and the influence of the people who have settled here. This identity is of huge value to our tourism and recreation industries, but it is also a source of pride and pleasure for the people of County Cork. A healthy and functioning environment not only contributes greatly to our quality of life, but is essential to our own health and wellbeing.

Our biodiversity includes our marine waters and our coastal estuaries extending from Youghal, Ballycotton, Cork Harbour, Clonakilty and Rosscarbery, to the magnificent rocky headlands of West Cork; it is our great rivers including the Bandon, Lee and Blackwater and their many tributaries; it is the mighty uplands of the north and west of the county, including the Caha, Derrynasaggart, Boggeragh and Nagle Mountain ranges; it includes our woodlands at Glengarriff and the Gearagh as well as many more smaller woodlands; and it is our unique marine lake at Lough Hyne. Our biodiversity also includes features of our ordinary landscapes such as our hedgerows, bogs, wet fields, marshes and rough grasslands. Few other counties of Ireland boast such a range and diversity of landscapes and habitats.

We need to protect the qualities within the landscape which people are attracted to as well as dependant upon. This is essential if we and future generations are to enjoy the diverse range of habitats and species which occur in our county today. The protection of our natural environment is not isolated from our social and economic responsibilities, it is essential to achieving sustainable development and will contribute to the management of climate change. It is within this context that Cork County Council in association with its partners on the County Biodiversity Working Group, and the Heritage Council has drafted a County Biodiversity Action Plan.

This plan has been prepared to address how the wildlife resources of the County, including native plants, animals and the ecosystems that they combine to produce, will be managed and protected over the next five years. Its implementation will contribute to achieving national and international targets for the conservation of biodiversity. This is in the context of constantly accelerating rates of species extinction and habitat loss and deterioration globally.

On behalf of Cork County Council, I wish to extend a sincere thank-you to all of those who have contributed to the development of this plan through their work on the Biodiversity Working Group or through the direct contribution of data or information. I wish the Biodiversity Working Group every success with implementation of the plan.

Address from the Manager, Mr. Martin Riordan

The Biodiversity Action Plan aims to provide a framework for the conservation of nature and wildlife within the County, which will tie together the policies of national government with the issues that most affect us locally. This plan will help us to achieve many of the objectives of the Cork County Development Plan relating to the protection of our natural resources, which will benefit not only our recreation and tourism industries, but will also benefit the citizens of the County as a whole. Indeed, the Biodiversity Action Plan itself will help us shape policies and objectives for future development plans.

Through the implementation of this plan, we hope to increase our knowledge and understanding of the biodiversity of the County and to identify our most vulnerable habitats and species and the threats facing them. By doing so, Cork County Council in conjunction with its partners on the Biodiversity Working Group will be better able to focus and prioritise future action to ensure the protection of our natural resources for the coming generations.

As one of the most significant land managers in the County, the Biodiversity Action Plan also provides an opportunity for Cork County Council to examine its own work practises as well as protection of the natural resources within its care. It will help us to integrate planning for the protection of biodiversity into the Council's day-to-day operations.

The protection of our natural resources is the responsibility of us all, and requires urgent and informed action. Cork County Council will continue to work with all of our partners in the public and private arenas to implement this plan. By working together, our responsibilities for the protection of the counties biodiversity can be most efficiently achieved: Ní neart go cur le cheile.

I thank all of those who contributed to the delivery of this plan and offer the support of the management team of Cork County Council to ensure its effective implementation.

Acknowledgements

Cork County Council wishes to thank the participants on the Biodiversity Working Group, and Dr. Lesley Lewis (plan consultant) for their contributions to the development of this plan. We also wish to thank all those who participated in the development of the plan through the provision of information or through the making of observations during the consultation process.

Cork County Council wishes to acknowledge the role of the Heritage Council in initiating the Biodiversity Action Plan in association with Cork County Council and in particular the funding received from the Department of the Environment, Heritage and Local Government to assist with its development.

Cork County Council and the Biodiversity Working Group wish to thank Dr Harriet Emerson who facilitated the meetings of the Biodiversity Working Group during the process that led to the making of the Biodiversity Action Plan.

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Field Grasshopper
Chorthippus brunneus

executive summary

"Biodiversity" is a shortened version of the term "biological diversity" and simply means the variety of life on earth. It includes the whole of the natural world from species regarded as common to those critically endangered. As well as the living world, biodiversity also includes habitats, agricultural biodiversity, genetic diversity and highlights the interconnectedness and interdependence of all living things.

The 1992 United Nations Conference on Environment and Development was held in Rio de Janeiro. One landmark international agreement that resulted was the Convention on Biological Diversity (CBD). This recognised for the first time that biological diversity is "a common concern for humankind' with each country needing to take responsibility in order to halt the global loss of biodiversity. The Irish Government signed the CBD in 1992, and ratified it in 1996. In response to the obligation contained in Article 6 of the Convention, Ireland prepared its first National Biodiversity Plan which was published in 2002. This important document outlined the actions needed to sustain and enhance Ireland's biodiversity and also promoted the preparation of Local Biodiversity Action Plans (LBAPs) which, along with helping to meet national and international targets for the conservation of biodiversity, aims to address local priorities, provide a framework for the conservation of biodiversity at the local level and coordinate new and existing local biodiversity initiatives.

The Biodiversity Action Plan is County Cork's response to the national biodiversity planning process. Informed by the guidance set out in *'Guidelines for the Production of Local Biodiversity Action Plans'* drafted by the Heritage Council and published by the Department of Environment, Heritage and Local Government, this document takes into account the overall goal, objectives and principles of the National Biodiversity Action Plan, and translates them into a local County Cork context.

The overall aim of the County Cork Biodiversity Action Plan is:

to conserve and to enhance biodiversity, and to ensure that every person in the county has the opportunity to appreciate and understand its importance in our lives.

Bluebell
Hyacinthoides non-scriptus

Under this overall aim, the County Cork Biodiversity Action Plan outlines a series of actions which are listed under each of six key objectives of the plan:

- To review biodiversity information for County Cork and to prioritise habitats and species for conservation action;
- To collect data and use it to inform conservation action and decision making;
- To incorporate positive action for biodiversity into local authority actions and policy;
- To promote best practice in biodiversity management and protection;
- To facilitate the dissemination of biodiversity information;
- To raise awareness of County Cork's biodiversity and encourage people to become involved in its conservation.

Focusing on the most significant elements of County Cork's natural environment and currently-known pressures and threats upon them, 21 actions are proposed to achieve the plan's overall objectives and targets.

The implementation of the actions contained in this plan, through cooperation, partnership and close communication, will require input from all parties. One of the key principles of the local Biodiversity Action Plan process is to highlight the fact that everyone has an interest and a stake in their local biodiversity. While this plan highlights and applauds the many organisations, community groups and individuals across the county that are already involved in biodiversity-related projects, the local Biodiversity Action Plan process also aims to encourage new groups, new initiatives and new partnerships to come under the 'umbrella' of the County Cork Biodiversity Action Plan and to help drive our local plan forward.

Common Blue
Polyomatus icarus

introduction

What is biodiversity?

Biodiversity
"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" (UN Conference on Environment and Development (Earth Summit) 1992.

Notice Nature National Action for Biodiversity
Ireland's first public awareness campaign for biodiversity was announced by the Department of Environment, Heritage & Local Government in January 2007. www.noticenature.ie

The word "biodiversity" is a shortened version of the term "biological diversity" and simply means the variety of life on earth. Biodiversity is not restricted to rare or threatened species but includes the whole of the natural world from species regarded as common to those critically endangered. As well as the living world, biodiversity also includes the places where plants and animals live (habitats). Importantly, the term also seeks to highlight the interconnectedness and interdependence of all living things and also includes the genetic variation between species which determines their uniqueness.

County Cork boasts an extensive biological diversity "biodiversity" largely related to the wide variety of habitats found across the county. To the south and west, the county is bounded by nutrient-rich sea waters that bring life to 1094 km of coastline of mainland and islands that ranges from rugged sea cliffs and headlands such as Mizen Head and the Old Head of Kinsale to lower lying sandy bays and estuaries such as Ballycotton Bay and Courtmacsherry Estuary. Marine and coastal habitats abound with wildlife; marine waters off the south-west are hailed as one of the best places to observe marine mammals (whales and dolphins) in Europe while our rocky, muddy and sandy coastal habitats support important numbers of waterbirds and other wild species. Inland, the rivers Bandon, Lee and Blackwater and their valleys dominate the central part of the county and support a diversity of habitats and species, many rare and important. Habitats of the valleys and floodplains include woodlands, marshes, fens and grasslands while other lowland habitats form the agricultural and urban landscapes that have been shaped by human settlement. To the north, the county is overlooked by mountain ranges including the Ballyhouras, Boggeraghs and Mullaghareirks which adds to the county's biodiversity with habitats such as blanket bog, heath and upland grasslands and the unique species that they support.

Much of the County Cork countryside has been shaped by agriculture and a range of agricultural land uses together with varying geological influences has created a diversity of agricultural landscapes. 'High nature value farmland' is a term that has been coined to describe areas where the nature interest of the land is intimately linked to farming practices and survives because of it for example, grazing practices on heathlands.

In terms of human survival, agricultural biodiversity is an important component of biodiversity as a whole. Agricultural biodiversity has resulted from the interaction between the environment, genetic resources and the management systems and practices used by humans. It includes not only crop varieties, livestock breeds, fish species and 'wild' (non-domesticated) resources but also the components of biodiversity that support our food production such as soil microbes and insect pollinators.

Thus biodiversity equates with what we popularly know as wildlife but also encompasses the wider canvas of habitats where wildlife lives. It also includes the backdrop of the living world in terms of geology and landscape and importantly describes the variation between individual creatures at the unseen, genetic level. In short, biodiversity is an attempt to represent in a single word the natural world in all its kaleidoscopic richness.

Why is Biodiversity Important?

Biodiversity is a primary indicator of the health of our surroundings and is inextricably linked to the welfare of human beings. We depend on the ability of nature to sustain and replenish itself, to constantly renew and exchange. Biodiversity gives us many of the essentials of life - oxygen, water, food, clothing and health. It is fundamental to human existence and is essential to human survival.

Biodiversity

Agricultural Biodiversity

Encompasses the variety and variability of animals, plants and micro-organisms which are necessary to sustain key functions of the agro-ecosystems its structure and processes for, and in support of, food production and food security (Food and Agriculture Organisation of the United Nations, 1997).

- Provides the food we eat through both the provision of crop plants and their insect pollinators and other food items such as meat and fish.
- Purifies our air, decomposes our wastes and forms part of important nutrient cycles.
- Is a source of raw materials such as fuel and building materials.
- Holds our water supplies in rivers, lakes and other waterways.
- Provides important moderation of droughts, floods, temperature extremes and the forces of wind.
- Provides a wealth of resources to the tourism industry which was worth an estimated 5.9 billion euros in 2006.
- Provides the raw materials for traditional and modern medicines.

Biodiversity is also a source of material, social, intellectual and spiritual wealth. Its limitless value providing outdoor classrooms and subjects that satisfy enquiring young minds.

We are perhaps less aware of the importance biodiversity has to our everyday wellbeing. In our recreational time many of us are drawn to natural landscapes like coasts and hills but probably take for granted the immense spiritual wellbeing they bring. Most of us will interact with biodiversity on a daily basis whether it is a walk in the park or countryside, feeding our garden birds or admiring a tree or flowering plant. Biodiversity enriches our quality of life, inspires, entertains and motivates us.

But the world is losing biodiversity at an ever-increasing rate and largely from human actions. Many species and habitats are in decline and in some cases their future is endangered. Some species have already become extinct and many are likely to do so within our lifetimes. On a world scale the rate of loss is now recognised to be a cause for serious concern, requiring concerted international action to prevent continued loss of biodiversity.

We need to recognise that our lives would be poorer for the loss of biodiversity in every conceivable way and we all have a part to play in safeguarding it. So action needs to be taken at every level, from global to national to local.

Hedgehog
Erinaceus europaeus

Why a local Biodiversity Action Plan?

Countdown 2010 Global Action for Biodiversity

Nearly all countries of the world came together for the World Summit on Sustainable Development in 2002 and promised to 'achieve by 2010 a significant reduction in the current rate of loss of biological diversity.

Countdown 2010 is a powerful network of active partners working together towards the 2010 biodiversity target. Each partner commits additional efforts to tackle the causes of biodiversity loss. The secretariat - hosted by the World Conservation Union (IUCN) - facilitates and encourages action, promotes the importance of the 2010 biodiversity target and assesses progress towards 2010.

At the 1992 Earth Summit in Rio de Janeiro, the Irish Government was one of almost 150 countries that signed the Convention on Biological Diversity. This landmark international agreement recognised for the first time that biological diversity is "a common concern for humankind' with each country needing to take responsibility in order to halt the global loss of animal and plant species, through conserving and enhancing biodiversity within their own jurisdiction. In response, Ireland produced a National Biodiversity Plan in 2002, a document setting out strategies for the conservation and enhancement of Ireland's biodiversity through a series of actions. In particular, the national plan highlights the key role that Local Authorities can have in promoting biodiversity conservation and coordinating biodiversity issues at a local level. The national plan also promotes the preparation of Local Biodiversity Action Plans (LBAPs) which, along with helping to meet national and international targets for the conservation of biodiversity, aims to address local priorities, provide a framework for the conservation of biodiversity at the local level and coordinate new and existing local biodiversity initiatives.

How the County Cork Biodiversity Action Plan was prepared

Cork County Council and the Heritage Council commissioned a consultant ecologist to undertake a body of work in the preparation of the plan which included consultation, information review and preparation of a draft report. This work was undertaken in accordance with guidelines developed by the Heritage Council and published by the Department of Environment, Heritage and Local Government.

The Biodiversity Working Group established by Cork County Council for the preparation of the County Heritage Plan was reconvened. The group includes representatives from local government, government departments and agencies, academic institutions, environmental non-governmental organisations and representatives from local interest groups (See Appendix 2). This group reviewed the data collected by the consultant as well as the consultation submissions. Through a number of facilitated meetings the Biodiversity Working Group developed and agreed the aim, objectives and actions recorded in this plan.

The Biodiversity Action Plan was prepared with regard to the National Biodiversity Plan, the County Cork Heritage Plan and the County Development Plan 2003. The development of the Biodiversity Action Plan is an action of the County Heritage Plan.

Ratification of the plan

Following a public consultation process that was held in August and September, the County Biodiversity Action Plan was ratified by Cork County Council in December of 2008.

Wild Garlic-Ramsons
Allium ursinum

Ferns on a Tree, Glengarriff

Our principal designated areas:

- Natural Heritage Areas (NHA): a national designation given legal status by the Wildlife Amendment (2000) Act.

- Special Areas of Conservation (SAC): areas considered of international importance whose legal basis is the EU Habitats Directive (92/43/EEC), transposed into Irish law through the European Union (Natural Habitats) Regulations, 1997.

- Special Protection Areas (SPA): sites of international conservation importance for birds whose legal basis is the EU Birds Directive (79/409/EEC).

county cork's biodiversity

This section provides an overview of the wealth of biodiversity found within County Cork. Habitats and species of special conservation importance are found across the county, many being afforded legal protection as described below. However, the Convention on Biological Biodiversity highlights the need to protect and enhance biodiversity across the wider countryside, not just in protected areas, and hence this report highlights the major habitats found across County Cork, with which we all interact on a day-to-day basis.

Designated sites for Nature Conservation

A number of sites within County Cork have been identified as important for biodiversity and have been designated for protection under European and/or national legislation.

The government agency responsible for the conservation of habitats and species in Ireland is the National Parks and Wildlife Service, part of the Department of the Environment, Heritage and Local Government. Their main focus is the protection of rare or sensitive sites and species through implementation of national and/or international law. However, it is the responsibility of all stakeholders to ensure that important sites and species are protected.

Designated sites for nature conservation found across County Cork are listed in Appendix 4. Thirty sites across the county have been designated as **Special Areas of Conservation** (SACs) in accordance with the EU Habitats Directive due to the presence of internationally important habitats or species within the site boundary (habitats and species being listed within Annex I and II of the directive respectively). These are prime examples of habitats or wildlife conservation areas and are considered internationally and nationally important. Examples in County Cork include the River Blackwater, Glengarriff Woods and Harbour, the Gearagh and Roaringwater Bay. Habitats listed under Annex I of the Directive and that occur within County Cork's SAC's are shown in Appendix 5.

Ten sites across the county are designated as **Special Protection Areas** (SPAs) under the EU Birds Directive. These sites are internationally important for the species, range of species, and/or numbers of birds using them. Examples include Cork Harbour, Ballymacoda Bay and Kilcolman Bog. A further eight sites are proposed for designation as SPAs.

The national designation for wildlife is the **Natural Heritage Area** (NHA). County Cork has eight formally designated NHAs and a further 104 proposed NHA's covering a wide variety of habitats including bogs, lakes, river valleys and woodlands.

Lough Hyne

Located 3 miles west of Skibbereen in West Cork, Lough Hyne was designated as Europe's first Marine Nature Reserve in 1981 in recognition of, and in order to protect, the rich biodiversity that occurs within this semi-enclosed sea lough. The Lough supports many different marine habitats (e.g. cliffs, beaches, boulders and saltmarshes) and has varying environmental conditions leading to diverse communities of flora and fauna that have been the subject of scientific research by a range of institutions for over 100 years.

Protected Species

Our principal legislation covering protected species are:

Wildlife Act, 1976 and Wildlife Amendment (2000) Act, the EU Habitats Directive and the EU Birds Directive.

County Cork supports a diverse range of native species associated with terrestrial, freshwater, coastal and marine habitats. Indeed, few other Irish counties can boast such a wealth and diversity of native wildlife.

Protected species are those which are afforded legal protection. Those that occur within County Cork are listed in Appendix 6 and include mammals, reptiles, amphibians, crustaceans, insects, molluscs, fish, birds and plants. Appendix 6 also highlights bird species occurring on lists of 'species of conservation concern' and species listed in Red Data Books (species considered rare or threatened).

Many species have a particular local significance. For example, these may be species that we observe more readily in County Cork (e.g. Leisler's Bat *(Nyctalus leisler)*) than in other parts of the country, or for that matter in Europe. Or these may be species for which County Cork is especially important in maintaining the population at regional or even national level. Examples here include the particularly rare plant Spotted Rock-rose *(Tuberaria guttata)* which is found in a few locations in West Cork and the Barn Owl *(Tyto alba)*, which has undergone a serious decline across the country but for which County Cork remains a stronghold.

Common Seals
Phoca vitulina

The Irish Natural Forestry Foundation (INFF) has established the Manch Project at Manch Estate near Dunmanway. The project is designed to demonstrate sustainable establishment and management of broadleaved woodland and involves extending the original semi-native woodland, woodland restoration, field trial plots, riparian trial plots and hedgerow planting and management amongst other features. The Education Centre runs a series of courses for both children and adults and regular open days allow the public to explore up to 15 km of woodland paths.

Overview of County Cork's Habitats and Species

Freshwater Habitats

Freshwater habitats include rivers, such as the three main large rivers that flow from west to east across the county (Blackwater, Lee and Bandon) to small streams and drainage ditches to lakes and ponds that are dotted across the landscape. It is not only the waterbodies themselves, but the riverside or streamside ('riparian') habitats that are important in supporting many different communities of plants and animals. Important features include riffles and pools within a river or stream, important for invertebrates and fish, as well as bankside features such as earth banks, stands of reed, grasslands and wet woodlands which support an array of flora and fauna including birds, amphibians, insects and mammals.

As well as their intrinsic value, rivers and streams act as wildlife corridors linking different wildlife features and providing routes of passage between them. Waterways are a significant element of our landscape and vital to our every day lives. For example, the River Lee is not only an important natural habitat but also provides significant resources in terms of recreation, fisheries, tourism and water supply, amongst others. Many species are freshwater dependent and watercourses of County Cork are important for many rare and protected freshwater species including the Freshwater Pearl Mussel *(Margaritifera margaritifera)* and White-clawed Crayfish *(Austropotamobius pallipes)*.

Grassland Habitats

Grassland habitats cover a large proportion of the Cork countryside and are largely agricultural and improved in nature. Interspersed with hedgerows and pockets of woodland and scrub, these areas have important biodiversity value for a range of 'farmland' species including birds, mammals and invertebrates. 'Unimproved' or 'semi-improved' grasslands are less common and can be categorised on the basis of soil type (acidic, neutral, calcareous) and drainage status (dry or wet). Examples include acid grasslands that typically form upland grazing habitats to lowland wet grasslands subject to periodic flooding and supporting a range of moisture-loving plants. Important examples in County Cork include unimproved *Molinia caerulea* grassland (Purple Moor Grass) which forms mosaics with blanket bog across the Boggeragh and Nagle Mountains and supports local populations of the rare Marsh Fritillary butterfly *(Euphydryas aurinia)*. Rare in County Cork, calcareous grassland can support a high diversity of grass and herb species together with associated fauna including insects, while species-rich pastures and meadows such as traditional flower-rich hay meadows are becoming increasingly rare.

Spotlight on Barn Owls

Barn Owl (Tyto alba) populations have seriously declined in recent times. The reasons for the decline are not fully understood, but are most likely attributed to the loss of suitable habitat due to agricultural intensification, the loss of suitable nesting sites and the increased use of harmful second generation anti-coagulant rodenticides.

BirdWatch Ireland runs the Barn Owl Project funded by the Heritage Council, National Parks & Wildlife Service and the Department of Agriculture & Food.

This project has involved updating an earlier register of nest sites, an extensive nest box scheme and determining appropriate conservation management strategies.

Barn Owl
Tyto alba

Heathlands

REPS (Rural Environment Protection Scheme) is designed to provide incentives for farmers to carry out their activities in environmentally-friendly ways. It plays a significant role in biodiversity management and improvement across the farmed lands of Co Cork. Uptake of REPS3 Biodiversity options by Cork farmers included 1575 commitments to create new habitats covering 1275 hectares, 1103 new hedgerow plantings covering 500 km and the planting of 45,000 broadleaved trees.

Heathlands are open and uncultivated areas of land that are characterised by low growing herbs and shrubs such as heathers. Heath can be found in upland and lowland areas, inland and coastal; this habitat is well represented in County Cork on the slopes of hills and mountains with good examples found in the Ballyhoura and Caha Mountains. Wet heath often occurs in association with blanket bog and features Cross-leaved Heath *(Erica tetralix)*. Dry heath is dominated by Ling Heather *(Calluna vulgaris)*, Bell Heather *(Erica cinerea)* and Western Gorse *(Ulex gallii)* with occasional Bilberry *(Vaccinium myrtillus)*. Several heath habitat types occur within County Cork for which Ireland has an international conservation responsibility due to their restricted European and global distribution (See Appendix 5).

The protected plant Recurved Sandwort *(Minuartia recurva)* is only known from heathlands in the Caha Mountains and one other place in Ireland; heaths are also important habitats for several bird species of conservation concern such as Snipe *(Gallinago gallinago)*, Red Grouse *(Lagopus lagopus scoticus)* and Merlin *(Falco columbarius)* and many invertebrates such as the declining Small Heath Butterfly *(Coenonympha pamphilus)*.

Peatlands

In recognition of the immense biodiversity value of Ireland's native woodlands, the Native Woodland Scheme administered by the Forest Service, provides support to landowners to protect and enhance existing native woodlands and to establish new ones. Various elements are involved from the planting of new native woodland, to coppicing and provision of protective fencing around existing woodlands while also enabling compatible wood production.

Peatlands are a unique habitat formed from the remains of dead plants having accumulated in waterlogged layers for thousands of years and resulting in layers of acidic peat which is characterised by unique flora including Peat mosses (*Sphagnum* species). Ireland is famous for its extensive covering of peatlands which comprise blanket bogs, raised bogs and fens although a large proportion of their original extent has been damaged or destroyed. While raised bogs are largely confined to the midlands, County Cork does have fine examples of blanket bogs and fens.

Blanket Bogs form a carpet of peat over an area. Vegetation is often characterised by Deer Sedge *(Trichophorum cespitosus)*, Purple Moor-grass *(Molinia caerulea)*, Bog Cottons *(Eriophorum species)*, Bog Asphodel *(Narthecium ossifragum)* and a good diversity of bryophytes (liverworts and mosses) and lichens. Examples in County Cork include Derryclogher Bog on the Cork/Kerry Border and the upland blanket bogs of the Ballyhoura, Caha and Boggeragh Mountains. Bog habitats are often interspersed with other habitats including rocky outcrops and pools which add to the diversity of fauna and flora found. Although bogs can be quite hostile for animals, several species thrive in these isolated areas including the native Irish Hare *(Lepus timidus)*.

Fens differ from bogs in that they receive water from groundwater or surface water, are generally found in lowland areas and are often close to areas of open water. Fens support a mosaic of different habitats ranging from open water, reed beds to wet woodland, the diversity of habitats contributing to the rich diversity found including plants, birds, mammals, amphibians and insects. Indeed fens are one of the most biodiversity-rich habitats there is and many rare species are found in association with this habitat. Prime examples in County Cork include Ballyvergan Marsh near Youghal and Garrylucas Marsh in Garrettstown.

Woodland, Trees and Hedgerow Habitats

Woodlands can be divided into semi-natural woodlands and non-native woodland (e.g. plantation forestry). 'Ancient' woodlands, which have existed since medieval times, are now very rare in Ireland. Pockets of this habitat, when they occur, are immensely important due to their uniqueness, their ability to support rare woodland flora and fauna and because they cannot be re-created.

Woodlands support a diverse flora and fauna; from the trees and shrub communities themselves to the species that live upon them *(epiphytes)* to the ground flora, breeding birds, mammals and insects, woodlands are truly biodiversity rich and one of our most valuable eco-systems.

FEPS (Forest Environment Protection Scheme) is a scheme that encourages farmers participating in REPS to plant high nature value forestry on their farms to increase biodiversity within the farm landscape.

County Cork boasts superb examples and national treasures of woodland: Glengarriff Woods in West Cork contains prime examples of old oak woodland whereas the Gearagh, near Macroom, is recognised as the best example of alluvial forest (oak-alder swamp) that remains in Western Europe. Both of these examples are national nature reserves amongst other designations in recognition of their immense biodiversity value.

Coillte manages over 15% of it forest estate for biodiversity and nature conservation. Within County Cork, 29 woodlands have been identified as Biodiversity Areas covering an area of 5180 hectares. Management plans have been developed for these areas by ecologists.

Hedgerows and scrub can be viewed as small patches of woodland and are an important feature in the Irish agricultural landscape, providing ideal habitat for many species as well as 'wildlife corridors' that provide safe passage from one place to another. Woodlands and hedgerows are important habitats for many bat species; while mature trees may provide safe roost sites it is known that bats follow linear feature such as hedgerows when foraging at night.

Coastal habitats

Cork's coastline is very varied largely as a result of geological processes. This variation contributes to an outstanding assemblage of coastal habitats which make up one of the most important elements of the county's wildlife resource.

Our coastal habitats including that of mainland and islands, include impressive rocky sea cliffs and coastal heaths such as those found along the coastline from Three Castle to Mizen Head which supports a range of breeding seabirds Fulmar *(e.g. Fulmarus glacialis)* and the Annex I species Chough *(Pyrrhocorax pyrrhocorax)*.

Coastal lagoons, bodies of brackish water, such as Kilkeran Lake in West Cork support specialised and often rare invertebrate species. Sand dune systems such as Clonakilty and Castlefreke, support a unique flora adapted to cope with both dry conditions and salt-laden winds, from a strandline, colonised by Frosted Orache *(Atriplex laciniata)*, Sea Sandwort *(Honkenya peploides)* and Sea Rocket *(Cakile maritima)* to the more familiar Marram grass *(Ammophila arenaria)* through to longer-established 'fixed' dunes being vegetated by grasses, small herbs and orchids.

Royal Fern
Osmunda regalis

Intertidal Habitats

From the top of the shoreline to the low water mark, intertidal habitats mark the fascinating transition from land to sea. Although this zone is often no more than a few metres in vertical height, the richness in life can surpass many other habitats.

County Cork has long stretches of rocky shorelines, often inhospitable for humans but where specially adapted plant and animal communities thrive. These vary from exposed sites with mid-shores dominated by Mussels *(Mytilus edulis)* and barnacle species *(e.g. Semibalanus balanoides)* to sheltered shores with dense growths of seaweeds and diverse faunal communities comprising worms, snails, crabs, anemones and crustaceans.

Our sandy beaches are an important resource in terms of recreation but many of us may not realise the animal communities beneath our feet, burrowed into the sand when the tide is out. Pressing our feet into wet sand may reveal tiny holes formed by burrowing amphipod crustaceans or worms; other worms leave visible signs such as casts or sand tubes on the surface but this environment does not really come alive until the tide has lapped in again. Similarly, expanses of sand and mud flats of estuaries may look like barren habitats at low tide but are far from it. Burrowed into the mud can be huge densities of bivalve molluscs and worms such as the Ragworm *(Hedistediversicolor)*; much sought after by fishermen but of great importance as prey items for wading birds and waterfowl that migrate to these Irish habitats during winter to make the most of the abundant food supply. These are special places for waterbirds and Cork's prime examples, Cork Harbour, Ballymacoda Bay, Courtmacsherry Estuary and Clonakilty Bay are recognised to be of international importance.

Saltmarshes form the band of vegetation between land and sea and are characterised by a unique set of plants that distribute themselves based on their ability to cope with the inundation of seawater. Lower levels are dominated by species such as Glassworts *(Salicornia species)* whereas at higher levels Sea Thrift *(Armeria maritima)*, Sea Aster *(Aster tropolium)* and Lax-flowered Sea-lavender *(Limonium humile)* can form attractive bands of flowering plants on the upper shore as seen around Rossmore Peninsula in Cork Harbour and at Ballymacoda Bay.

The Open Sea

And finally to the open sea, where (unless lucky enough to dive), it is hard to appreciate the spectacularly rich biodiversity beneath the waters' surface.

There is very considerable variation within sub-tidal communities. The upper portion of the 'sub-littoral' zone frequently holds dense stands of kelp, these 'kelp forests' providing important habitats for fish, birds and mammals.

Deeper areas are dominated by animals rather than by algae, with this habitat being particularly interesting in sheltered coastal areas, such as Lough Hyne where gullies, submarine cliffs and ledges support diverse assemblages of sponges, corals and anemones.

As well as the diversity of fish and shellfish species that occur in our inshore waters and provide the basis of inshore fisheries, our open waters are also home to some of the most impressive animals on the planet.

Grey seals *(Halichoerus grypus)* and common Seals *(Phoca vitulina)* are two protected marine mammals that depend on the open sea but also require safe rocky land bases to haul out and breed. Rocky islets in Glengarriff Harbour support the largest colony of Commom Seals in the south-west of Ireland while Roaringwater Bay is locally and nationally important for Grey Seals.

Sherkin Island Marine Station in Roaringwater Bay amongst other projects, has run a rocky shore monitoring programme since 1975 with 69 sites surveyed annually on Sherkin Island and the islands of Roaringwater Bay and in Dunmanus Bay. Since 1995 the programme has been extended to include the coastline from Bantry Bay to Cork Harbour, increasing the number of sites to 144. This long-time study is an outstanding achievement, not only for its longevity but because of the huge long-term dataset that has been acquired, the results of importance not only for SW Ireland but for the entire Irish coastline. www.sherkinmarine.ie

County Cork offers some of the best land-based whale-watching in Europe and species such as Bottlenose Dolphin *(Tursiops truncatus)*, Harbour Porpoise *(Phocaena phocaena)*, Common Dolphin *(Delphinus delphis)*, Risso's Dolphin *(Grampus griseus)*, Fin Whale *(Balaenoptera physalus)*, Humpback Whale *(Megaptera novaeangliae)* and Minke Whale *(Balaenoptera acutorostrata)* can be observed from land-based observation posts such as Galley Head and the Old Head of Kinsale. We also know that these large and spectacular marine mammals such as Fin Whales are not merely passing by on migration but may spend up to nine months in our waters; therefore truly part of the county biodiversity resource. There may now also be a resident population of Bottlenose Dolphins in Cork Harbour. Further research is needed to determine whether these are seasonal or year-round residents, a proven resident population will be of national and international importance.

Habitats and Species of Special Conservation Significance in County Cork

A vital part of the biodiversity action plan process is the identification of habitats and species of special conservation significance within the county and particularly those for which there is a particular conservation priority.

In this first County Cork Biodiversity Action Plan we have developed a set of criteria which have been used to identify species and habitats of special conservation significance in a County Cork context. These criteria were applied to all habitats and species represented in the county for which there is readily available information. We must acknowledge however that some bias is inevitable due to varying levels of knowledge about different species or habitat groups. Therefore the species and habitats identified constitute a preliminary list and will be subject to review and updates during the lifetime of the plan as directed by a 'Priorities Review Group' to be established as an action of this plan.

The current lists of species and habitats of special conservation significance within County Cork are shown in Appendix 7 as are the criteria used for selecting them.

Crayfish
Palinarus elephas

Blue Tit
Parus caeruleus

turning plans into action

How the Plan will be implemented

Most actions of this plan will require financial as well as administrative and professional support.

Cork Co. Council is the leading partner in the implementation of the County Biodiversity Plan and has agreed to support the delivery of the plan in partnership with others over the next five years as resources permit. The Council will also support the delivery of the plan through the work of its Heritage Officer and other staff. The Council and the Biodiversity Working Group will welcome area based or locally based initiatives which will help to achieve the objectives of the plan.

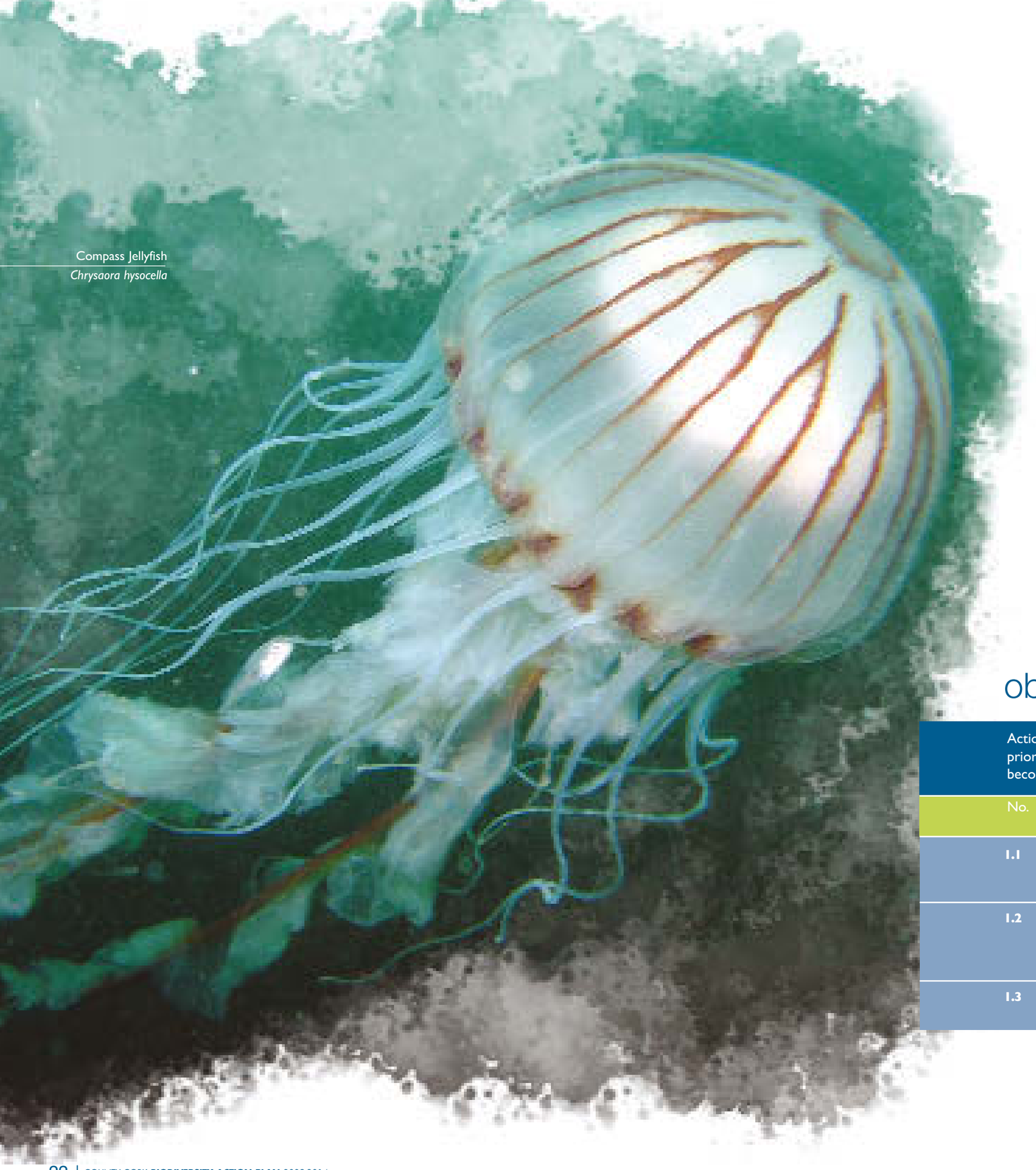
Building Biodiversity Partnerships

The Local Biodiversity Action Plan process highlights the fact that everyone has an interest and a stake in their local biodiversity. The implementation of the actions contained in this document, through cooperation, partnership and close communication, will require input from all parties.

It is essential to the success of the LBAP process that partnerships are forged between national and local government, government agencies, business, educational institutes, the voluntary sector and many more. 'Biodiversity partnerships' have already been formed (see box below) and as such the organisations involved have shown their willingness to engage in the LBAP process and to become involved as partners for specific actions.

We applaud the many organisations, community groups and individuals across the county that are already involved in biodiversity-related projects, but we welcome new groups, new initiatives and new partnerships to come under the 'umbrella' of the County Cork LBAP and to help drive our local plan forward.

Biodiversity Partners – Abbreviations and Names used in the text:	
CCC	Cork County Council
CCBG	Cork County Bat Group
CMRC	Coastal & Marine Resources Centre, University College Cork
CNT	County Nature Trust
Coillte	
SECAD	South and East Cork Area Development
FS	Forest Service
FWP	Fota Wildlife Park
INFF	Irish Natural Forestry Foundation
NPWS	National Parks and Wildlife Service
SWRFB	South Western Regional Fisheries Board
Teagasc	
WCL	West Cork Leader



Compass Jellyfish
Chrysaora hysocella

aims, objectives and actions

Aim of the County Cork Biodiversity Action Plan

To conserve and enhance biodiversity, and to ensure that every person in the county has the opportunity to appreciate and understand its importance in our lives.

A number of projects relating to biological diversity have already been initiated in the County under the auspices of the County Heritage Plan (2005-2010). These include the development of a dataset of biological information for the County, the initiation of the development of a digital habitat map and ecological dataset for the county and the delivery of a seminar on the management of wildlife. All biodiversity actions of the County Heritage Plan have been included or superceded by the actions below.

The following pages outline the actions of the County Cork Biodiversity Action Plan. Actions are listed under each of six key objectives of the plan. Lead partners and potential partners have been identified for each of the actions. However, it is likely that additional partners will be sought for the support of many or all of these actions as appropriate at the time of implementation. It is hoped that the Heritage Council and the DoEHLG will provide financial support for the implementation of many of these actions.

objective 1 To Review Biodiversity Information For County Cork And To Prioritise Habitats and Species For Conservation Action.

Actions are proposed here that address the need to review biodiversity data for County Cork, prioritise species and habitats for conservation action and update these priorities as more information becomes available.

No.	Actions	Lead Partner	Potential Partners
1.1	Complete the review of biological data commenced as part of the process of developing the biodiversity plan for the county.	Cork County Council	from Biodiversity Working Group from
1.2	Establish a 'priorities review group' to develop and agree a set of criteria for prioritising habitats and species for future action; and identify, review and prioritise habitats and species for conservation action.	Cork County Council	Biodiversity Working Group
1.3	Carry out analysis and review of the information generated by the county digital ecological dataset.	Cork County Council	from Biodiversity Working Group

objective 2 To Collect Data And Use It To Inform Conservation Action And Decision Making.

We have identified the need to collect and collate information on County Cork's biodiversity so that gaps in knowledge can be identified and information gathered can be used to inform decision-making processes.

No.	Actions	Lead Partner	Potential Partners
2.1	Continue the development of the county habitat map and GIS based ecological dataset incorporating information on habitats and species.	Cork County Council	NPWS, Biodiversity Working Group
2.2	Produce and implement four local action plans for habitats or species prioritised for conservation action under Action 1.2 within the lifetime of the Biodiversity Action Plan.	from Biodiversity Working Group	from Biodiversity Working Group

objective 3 To Incorporate Positive Action For Biodiversity Into Local Authority Actions And Policy.

The proposed actions form part of Cork County Council's commitment to the local Biodiversity Action Plan process and its overall aims.

No.	Actions	Lead Partner	Potential Partners
3.1	Develop and provide training and guidance documentation for local authority staff around environmentally sensitive management practises including the management of hedgerows and old trees, carrying out of works in or near watercourses, the control of invasive species, the protection of bat roosts and the use of herbicides and pesticides.	Cork County Council	Fisheries Boards, CCBG, INFF, NPWS, Teagasc.
3.2	Develop and implement policy in relation to the Councils own management of habitats, species and areas of biodiversity value.	Cork County Council	
3.3	Develop and provide training for planning staff in relation to biodiversity, in particular the use of the new ecological dataset and planning for biodiversity.	Cork County Council	
3.4	Carry out an audit of the biodiversity value of Local Authority managed land.	Cork County Council	
3.5	Provide training and information to Local Authority members about biodiversity.	Cork County Council	

objective 4 To Promote Best Practice In Biodiversity Management And Protection.

There is a need to encourage the use of the highest possible standards in the protection and management of our biodiversity. Actions under this objective address this issue.

No.	Actions	Lead Partner	Potential Partners
4.1	Produce and disseminate information regarding best practice (e.g. in relation to watercourse management; the control of invasive species etc).	Cork County Council	NPWS, SWRFB, Teagasc.
4.2	Support demonstration projects for positive land management to enhance biodiversity; e.g. high nature value farmland and biodiversity.	Coillte, CNT, NPWS, Teagasc	from Biodiversity Working Group, CNT

objective 5 To Facilitate The Dissemination Of Biodiversity Information.

The sharing of biodiversity information is a key component of engaging people and raising awareness of our local biodiversity. Actions aimed at facilitating information dissemination are proposed here:

No.	Actions	Lead Partner	Potential Partners
5.1	Ensure that all Environmental Impact Statements (EIS) are lodged in the County Library.	Cork County Council	
5.2	Continue to update and maintain the Biodiversity Page of the County Heritage Website.	Cork County Council	from Biodiversity Working Group
5.3	Assess feasibility of developing an on-line database for county biodiversity metadata.	Cork County Council	from Biodiversity Working Group

objective 6 To Raise Awareness Of County Cork's Biodiversity And Encourage People To Become Involved In Its Conservation.

Raising awareness is key to more people understanding, appreciating and conserving biodiversity. The Biodiversity Action Plan process also acknowledges that we all have a part to play in protecting our local biodiversity for the future. Actions relating to raising awareness amongst as many people as possible are proposed here:

No.	Actions	Lead Partner	Potential Partners
6.1	Carry out feasibility study for development of a nature education centre and seek to implement the recommendations of this.	NPWS	Cork County Council, CNT SECAD.
6.2	Promote the development of Local Biodiversity Plans/Audits by community groups and other local organisations to encourage public participation in the enhancement of local wildlife areas.	Cork County Council	from Biodiversity Working Group
6.3	Hold talks and other biodiversity awareness raising events.	from Biodiversity Working Group	
6.4	Develop and support initiatives to raise awareness of marine biodiversity.	CMRC	from Biodiversity Working Group
6.5	Explore the feasibility of appointing pilot wildlife outreach officers.	CNT	SCAD, WCL
6.6	Carry out an audit of nature education resources in County Cork and promote these in schools and to other interest groups.	Cork County Council	from Biodiversity Working Group

Fly Agaric
Amanita muscaria

Monitoring and Review

The Biodiversity Action Plan sets out a series of ambitious and challenging actions to be undertaken across the county over a five-year period. It is essential to the success of the plan that its progress and outputs are monitored and evaluated. We must also be aware that the publication of the County Cork plan marks the start of the LBAP process not the completion of it.

To this end, the Biodiversity Working Group has agreed to meet at regular intervals to monitor and review the progress of the plan. In addition, a priorities review group will be established that will meet on a regular basis to discuss and review biodiversity priorities for the county.

A second National Biodiversity Action Plan is in the process of been prepared, therefore future monitoring and review of the County Cork Biodiversity Action Plan will also consider recommendations made in this National document.

Some actions will involve the commissioning of contract work. Where appropriate, a Steering Group will be established to advise on the content of contract programmes and to oversee their delivery. Contracted consultancy work that relates to Biodiversity Action Plan actions will also be subject to peer review as part of the contract and as a mechanism of quality control.

The following indicators will be used as part of the ongoing monitoring of this plan. They will also contribute to mid-term and final evaluations.

Overall Administration of Plan

1. Number of actions implemented
   a. Funding sourced for implementation of the Plan
   b. From the Local Authority
   c. From other sources.
2. Number of meetings of Biodiversity Working Group held.
3. Number of partners engaged in support of plan.

Prioritising Habitats and Species

4. Number of meetings of Priorities Review Group held.
5. Completion and publication of three review reports at beginning, middle and end of planning period.

Collecting Information

6. Area of county habitats mapped to level II and level III of the Fossitt classification system.
7. Number of other ecological datasets incorporated into dataset.
8. Completion of four local habitat/species action plans.

Local Authority Action and Policy

9. Number of training events held.
10. Number and percentage of staff and members in attendance.
11. Number of good practise guidance notes produced.

Promoting Best Practise

12. Number of guidance notes produced.
13. Number of demonstration projects underway.

Raising Awareness

14. Number of awareness raising events held.
15. Number of community Biodiversity Plans completed.

Spider
Coleotes spp

examples of biodiversity projects & initiatives in county cork

Glengarriff Woods Nature Reserve is owned by the State and managed by the National Parks & Wildlife Service (NPWS) for nature conservation and amenity purposes. Visitors to the reserve can enjoy amenity walks through one of the best examples of old oak woodland in Ireland which is also home to some of our most rare and protected species such as Lesser Horseshoe Bats. NPWS supported by the Native Woodland scheme continue to remove areas of the introduced species *Rhododendron ponticum* from the woodland while work also continues in cooperation with Coillte to convert areas of conifer woodland to native broadleaved woodland.

Examples of biodiversity related projects at University College Cork (Department of Zoology, Ecology & Plant Science, UCC).

- The ecology of the European Hedgehog - PhD research.
- Beaufort Research Study - 'Ecosystem approach to fisheries management'.
- PLANFORBIO - Planning and management tools for biodiversity in a range of Irish forests.
- Food web dynamics and ecosystem functioning in the Gearagh woodland.
- Cork Harbour Bird Atlas - http://corkharbourbirds.ucc.ie/ contains information on 25 years of bird counts undertaken by volunteers across Cork Harbour; created by the Coastal and Marine Resources Centre of UCC.

ZEPS are linked to the National Biodiversity Data Centre and contribute to many other national Biodiversity databases.

The Neighbourwood Scheme is funded and administered by the Forest Service (Department of Agriculture and Food) and offers support to local authorities, community groups, environmental NGOs and private woodland owners to work in partnership to develop woodland amenities in or around towns, cities or villages. Cork County Council and local community groups are currently involved in the following schemes: Poulgorm Wood (Glengarriff), Ballincollig Regional Park, Rochestown and Coolagown.

The International Schools Godwit Project was devised and developed by (Cork) local wildlife expert Jim Wilson and Scoil Iosaef Naofa (Cobh) teacher Willie McSweeney. It has involved the linking of the Cobh school and students with a school in the north of Iceland (Siglufjör_ur) who share information on sightings of migratory Godwits close to their respective schools. These two classes were picked not only because they have two very enthusiastic teachers there but because both school were right in the middle of the breeding and wintering areas of the godwits The classes receive sighting information from birdwatchers of colour ringed Black-tailed Godwits seen in and around Cork Harbour and Siglufjör_ur. They then send the information to two of the study organisers, who send them the bird's migration life history showing where and when the godwits were caught and colour ringed and where and when the birds were seen after that. When the class gets godwit migration life histories each pupil "adopts" a bird and using the life history information draws lines on a map of Europe showing where it has been since it was colour ringed. The map is then put up on the wall of the class. A red dot is also placed on a

big map of Iceland showing where the Cork godwits were ringed and where the Siglufjör_ur godwits spend the winter. The classes have over 50 life histories of godwits seen in Cork Harbour or ringed in Siglufjör_ur and they hope to get even more. It is hoped that by being involved in the project in a practical way they will learn to value their environment through understanding and fun! For more information contact Jim Wilson at blanan@eircom.net

Birdwatchers across County Cork are currently involved in survey work for the **Bird Atlas 2007 - 2011 project**. This project aims to map Ireland and Britain's birds during the winter and breeding seasons. The project is a partnership between BirdWatch Ireland, the British Trust for Ornithology and the Scottish Ornithologists' Club. The results will allow us to assess changes in bird distributions since previous breeding and winter atlases. See: www.birdwatchireland.ie

The **Cork County Bat Group** is active across the county and involved in a range of national and local surveys including:

- The Irish Bat Distribution Project 2007 – 2010.
- All-Ireland Daubenton's bat waterways survey.
- Bridge survey of the Lee catchment area.

See: www.corkcountybatgroup.ie

The **County Nature Trust** is a voluntary organisation dedicated to nature conservation in the southern counties via the acquisition and/or managing of reserves for wildlife and by promoting awareness of wildlife issues through communication, research, education and training. Examples of their work include involvement in the development of management plans for Ballyannan Wood, near Midleton and Commoge Marsh near Kinsale. (http://countynaturetrust.tripod.com).

Cuskinny Marsh Nature Reserve near Cobh, is a privately owned mixture of lake, woodland, grassland and wetland habitats that are managed by BirdWatch Ireland. This is an area of local biodiversity importance and is also an important local amenity and educational venue.

Leisler's Bat
Nyctalus Leisleri

getting involved

Individuals could:

- Plant native trees and plants. See e.g. www.irishseedsavers.ie
- Use natural methods of pest and weed control as opposed to chemicals.
- Erect bird and bat boxes in suitable places.
- Put up a bird table and enjoy watching what comes to visit.
- Make a log pile in a secluded corner – this may attract hedgehogs, ladybirds and other wildlife.
- Create a wildflower patch.
- Create a pond
- Plant a few native species to help the wildlife e.g. hawthorn to provide berries for birds.

Community Groups could:

- Undertake a local biodiversity audit - record species and habitats within your local area
- Recording your wildlife data online: e.g. the Heritage Council's Biodiversity Watch Programme www.biology.ie
- Put up bird and bat boxes in your local area.
- Clean rubbish out of that local stream.
- Reduce the use of chemical herbicides in your local area.

Schools could:

- Improve wildlife habitats in your school grounds.
- Record habitats and species within your school grounds.
- Put up bird and bat boxes in suitable locations.
- Learn about biodiversity - check out the INTO/Heritage Council Heritage in Schools Programme - brings heritage specialists into primary schools to raise awareness of local heritage including biodiversity.
- Check out the Green-Schools Programme. See www.greenschoolsireland.org

Landowners could:

- Seek advice and guidance documents on biodiversity-friendly land management practises such as the control of invasive species, hedgerow management and protection of watercourses.
- Consider undertaking measures of the native Woodland Scheme.
- Reduce the use of chemical herbicides and pesticides on your land.

Local Businesses could:

- Sponsor biodiversity actions.
- Support local biodiversity initiatives
- Encourage environmentally-friendly practices throughout your business.
- Use and promote native species within your landscape design.

Cormorant Chick
Phalcrocorax carbo

appendix 1

THREATS TO BIODIVERSITY

The following is a list of activities and factors that could threaten habitats and species in County Cork. These issues were raised through the consultation process. The list is not exhaustive.

- Historic afforestation policies and methods;
- Agricultural improvement in sensitive areas;
- Inappropriate development in sensitive areas;
- Environmental impacts of aquaculture & commercial fishing;
- Overuse or inappropriate use of fungicides, herbicides, and pesticides;
- Illegal dumping;
- Land reclamation;
- Overgrazing;
- Peat extraction;
- Insensitive and inappropriate roadside/verge and hedgerow management;
- Water pollution and degradation of watercourses;
- The spread of alien invasive species e.g. Japanese Knotweed *(Fallopia japonica)*, Himalayan Balsam *(Impatiens glandulifera)*, Giant Knotweed *(Reynoutria sachalinensis)*, Grey Squirrel *(Sciurus carolinensis)* and others;
- The growing of genetically modified organisms;
- Climate change;

appendix 2

BIODIVERSITY WORKING GROUP MEMBERS

Ms. Sharon Casey	Heritage Officer, Cork Co. Council
Dr Michelle Cronin	Coastal Marine Resources Centre, UCC
Mr. Eugene Curran	Forest Service
Mr. Jerry Donovan	Teagasc
Dr. Tom Gittings	Ecologist & County Nature Trust
Mr Declan O'Donnell	National Parks & Wildlife Service
Professor John O'Halloran	University College Cork
Mr. Michael McPartland	South Western Regional Fisheries Board
Mr. Pat Roche	Coillte
Mr. Cyril Saich	National Parks & Wildlife Service
Mr. Jim Wilson	Ecologist

appendix 3

PRINCIPAL LEGISLATION RELATING TO BIODIVERSITY

NATIONAL LEGISLATION

- Wildlife Act, 1976 and Wildlife (Amendment) Act, 2000.
- Whale Fisheries Act, 1937.
- Fisheries (Amendment) Act, 1956 - 2001.
- The Forestry Acts, 1946 -1988.
- Planning and Development Acts, 2000 - 2006.
- Planning and Development (Strategic Infrastructure) Act 2006.
- The Roads Act 1993 - 2007.
- Protection of the Environment Act 2003.
- Flora (Protection) Order 1999 (SI No 94 of 1999).
- European Communities (Natural habitats) Regulations, 1997 - 2005.
- European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1989 - 2006.
- European Communities (Environmental Assessment of Certain plans and Programmes) Regulations 2004 (SI No 435 of 2004).
- European Communities (Strategic Environmental Assessment) Regulations 2004 (SI No 436 of 2004).
- Local Government (Planning and Development) Regulations, 2001 - 2007.
- European Communities (Quality of Salmonid Waters) Regulations, 1988 (S.I. No. 293/1988).

EUROPEAN DIRECTIVES

- EU Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora).
- Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds).
- Water Framework Directive (Council Directive 2000/60/EC).
- Freshwater Fish Directive (Council Directive 78/659/EC).
- EC Directive 97/11/EC (amending Council Directive 85/337/EEC) on the Assessment of the Effects of Certain Public and Private Projects on the Environment.

INTERNATIONAL AGREEMENTS AND CONVENTIONS WHICH IRELAND HAS SIGNED AND RATIFIED

- Convention on Biological Diversity 1992.
- European Landscape Convention, 2000.
- Convention on the Conservation of European Wildlife and Natural Habitats. (Bern Convention), 1979.
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), 1979.
- Convention on Wetlands of International Importance (Ramsar Convention), 1971.
- Convention on International Trade in Endangered Species (CITES), 1973.
- Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), 1992.
- Agreement on the Conservation of Bats in Europe (Bonn Convention), 1993.
- International Convention for the Regulation of Whaling, 1946.
- Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), (Bonn Convention), 1996.
- International Timber Trade Agreement 1994 (signed 1996).
- Pan-European Biological and Landscape Diversity Strategy (endorsed 1995).
- The European Network of Biogenetic Reserves, 1976.

appendix 4

DESIGNATED SITES FOR NATURE CONSERVATION IN COUNTY CORK

NOTE: The list of designated sites is correct at the time of publication but is likely to be subject to change over time.

Designated Natural Heritage Areas, Co Cork

Site Code	Site Name
1059	Hungry Hill Bog
2105	Derreennatra Cutaway
2371	Trafrask Bog
2386	Conigar Bog
2416	Pulleen Harbour Bog
2417	Leahill Bog
2447	Boggeragh Mountains
2449	Mount Eagle Bogs

proposed Natural Heritage Areas, Co Cork

Site Code	Site Name
12	Ballinvonear Pond
72	Blackwater River and Estuary
73	Blackwater River Callows
74	Awbeg Valley (Below Doneraile)
75	Awbeg Valley (Above Doneraile)
76	Ballycotton, Ballyanmona and Shanagarry
78	Ballyvergan Marsh
79	Bride/Bunaglanna Valley
80	Bull and Cow Rocks
83	Capel Island & Knockadoon Head
84	Castletownshend (Gate Lodge)
85	Glanworth Ponds
86	Dursey Island
87	Garrylucas Marsh
88	Glengarriff Lodge
92	Kilcolman Bog
94	Lee Valley
98	Loughavaul
99	Ballynaclashy House, North of Midleton

proposed Natural Heritage Areas, Co Cork *(continued)*

Site Code	Site Name
100	Old Head of Kinsale
103	Shournagh Valley
105	Sovereign Islands
107	Templebreedy National School, Crosshaven
110	Cusroe, Whiddy Island
371	Fountainstown Swamp
446	Loughs Aderry & Ballybutler
593	Kilcatherine Heath
899	Ballindangan Marsh
1028	Orthon's Island, Adrigole Harbour
1029	Araglin Valley
1034	Bandon Valley West of Bandon
1035	Bandon Valley South of Dunmanway
1036	Banteer Ponds
1037	Bateman's Lough
1039	Blarney Castle Woods
1042	Carrigshane Hill
1043	Cleanderry Wood
1044	Cloonties Lough
1046	Douglas River Estuary* (partially within Cork City Council area)
1049	Eagle Lough
1050	Eyeries Island
1051	Firkeel Gap
1052	Gallanes Lough
1053	Garrettstown Marsh
1054	Glanmire Wood
1055	Glashgarriff River
1057	Gouganebarra Lake
1060	James Fort
1062	Killaneer House Glen
1064	Leamlara Wood
1065	Lough Allua
1066	Lough Beg
1067	Lough Gal
1069	Lough Namaddara & Lough West

appendix 4 *(continued)*

proposed Natural Heritage Areas, Co Cork *(continued)*

Site Code	Site Name
1071	Owen's Island
1072	Priory Wood, Lismire
1073	Roancarrigbeg & Roancarrigmore
1074	Rockfarm Quarry, Little Island
1075	Rosscarbery Estuary
1076	Rosttellan Lough, Aghada Shore and Poulnabibe Inlet
1077	Seven Heads & Dunworly Bay
1080	Blackwater Valley
1082	Dunkettle Shore
1083	Toon Bridge Wood
1084	Whitegate Bay
1169	Brown's Farm, Togher Cross Roads
1183	Clasharinka Pond
1235	Ballyquirk pond
1248	Prohus Wood
1249	Ballincollig Cave
1284	Cappul Bridge
1408	Carrigacrump Caves
1498	Dirk Bay
1515	Bandon Valley below Inishannon
1537	Rossnahunsoge
1561	Awbeg Valley
1740	Bandon Valley (Above Inishannon)
1793	Blackwater Valley (Ballincurrig Woods)
1794	Blackwater Valley (Kilcummer)
1795	Blackwater Valley (Killathy Wood)
1796	Blackwater Valley (Cregg)
1797	Blackwater Valley (Beech Wood)
1798	Blarney Lake
1799	Ardamadame Wood
1826	Currakeel
1829	Ballinaltig Beg Pond
1854	Boylegrove Wood
1857	Blarney Bog
1873	Derryclogher (Knockboy) Bog
1887	Derreen Upper Bog
1966	Minane Bridge Marsh
1977	Sheelane Island
1978	Ballycotton Islands
1979	Monkstown Creek
1985	Kilinnikin
1986	Garnish Point
1987	Cuskinny Marsh

proposed Natural Heritage Areas, Co Cork *(continued)*

Site Code	Site Name
1990	Owenboy River
2049	Domestic Dwelling (Near Glengarriff)
2050	Cregg Castle
2086	Ballintlea Wood
2097	Conavmore, Ballyhooly (Near Fermoy)
2099	Carriganass Castle, near Kealkill
2105	Derreennatra Cutaway

candidate Special Areas of Conservation (SAC)

Site Code	Site Name
000077	Ballymacoda (Clonpriest and Pillmore)
000090	Glengarriff Harbour and Woodland
000091	Clonakilty Bay
000093	Caha Mountains
000097	Lough Hyne Nature Reserve and Environs
000101	Roaringwater Bay and Islands
000102	Sheep's Head
000106	St. Gobnet's Wood
000108	The Gearagh
000109	Three Castle Head to Mizen Head
000365	Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment
001040	Barley Cove to Ballyrisode Point
001043	Cleanderry Wood
001058	Great Island Channel
001061	Kilkeran Lake and Castlefreke Dunes
001070	Myross Wood
001230	Courtmacsherry Estuary
001547	Castletownshend
001873	Derryclogher (Knockboy) Bog
001879	Glanmore Bog
001890	Mullaghanish Bog
002036	Ballyhoura Mountains
002037	Carrigeenamronety Hill
002158	Kenmare River

appendix 4 *(continued)*

candidate Special Areas of Conservation (SAC) *(continued)*

Site Code	Site Name
002165	Lower River Shannon
002170	Blackwater River (Cork/Waterford)
002171	Bandon River
002189	Farranamanagh Lough
002280	Dunbeacon Shingle
002281	Reen Point Shingle

Special Protection Areas (SPA)

Site Code	Site Name
4021	Old Head of Kinsale
4022	Ballycotton Bay
4023	Ballymacoda Bay
4028	Blackwater Estuary
4030	Cork Harbour
4066	The Bull and the Cow Rocks
4094	Blackwater Callows
4095	Kilcolman Bog
4109	The Gearagh
4124	Soverign Islands

proposed Special Protection Areas (SPA)

4081	Clonakilty Bay
4155	Beara Peninsula
4156	Sheep's Head to Toe Head
4161	Stack's to Mullaghareirk Mountains
4162	Mullaghanish to Musheramore Mountains
4190	Galley Head to Duneen Point
4191	Seven Heads
4219	Courtmacsherry Bay

Statutory Nature Reserves

Capel Island and Knockadoon Head
Glengarriff Harbour and Woodland
Kilcolman Bog
Lough Hyne Nature Reserve & Environs
Knockomagh Wood
The Gearagh

Ramsar Sites

Ballycotton, Ballynamona & Shanagarry
Ballymacoda (Clonpriest & Pillmore)
Blackwater River and Estuary
The Gearagh
Cork Harbour

Biogenetic Site

The Gearagh

Wildfowl Sanctuaries

Ballynamona – Shanagarry
Douglas Estuary
Kilcolman Bog
Lee Resevoir
River Blackwater

Refuge For Fauna

Bull Rock
Cow Rock
Old Head of Kinsale

appendix 5 ANNEX I HABITATS FOUND WITHIN COUNTY CORK

The following table lists the Annex I habitats within County Cork, their locations with regard to sites designated as Special Areas of Conservation (SAC) and links to the Irish Habitat Classification (Fossitt 2000). Note: some of the habitats listed also occur outside of protected areas.

Habitats recorded as priority habitats under the EU Habitats Directive are asterisked *.

Link to Irish Habitat Classification (Fossitt 2000)	Annex I Habitats	Examples of candidate SACs where habitats are found
FRESHWATER HABITATS		
Dystrophic lakes FL1	Natural dystrophic lakes and ponds	Caha Mountains.
Acid oligotrophic lakes FL2	Oligotrophic waters containing very few minerals of sandy plains	Glanmore Bog.
	Oligotrophic to mesotrophic standing waters	Caha Mountains, Caherbarnagh (part of Killarney National Park).
Eroding/upland rivers FW1 / Depositing/ lowland rivers FW2	Watercourses of plain to montane levels with aquatic vegetation	The Gearagh, Glanmore Bog, Bandon River, River Blackwater.
GRASSLAND HABITATS		
Dry meadows and grassy verges GS2	Lowland hay meadows	Roaringwater Bay & Islands.
HEATH HABITATS		
Dry siliceous heath HH1 Dry calcareous heath HH2	European dry heath	Roaringwater Bay & Islands, Sheep's Head, Three Castle Head to Mizen Head, Barley Cove To Ballyrisode Point, Kenmare River, Ballyhoura Mountains, Caherbarnagh (part of Killarney National Park).
Wet heath HH3	Northern Atlantic wet heaths with *Erica tetralix*	Sheep's Head, Caha Mountains, Cleanderry Wood, Glanmore Bog, Ballyhoura Mountains.
Montane heath HH4	Alpine and boreal heaths	Caha Mountains.

appendix 5 *(continued)*

Link to Irish Habitat Classification (Fossitt 2000)	Annex I Habitats	Examples of candidate SACs where habitats are found
WOODLAND HABITATS		
Oak-birch-holly woodland WN1	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	Glengarriff Harbour & woodland, St Gobnet's Wood, The Gearagh, Cleanderry Wood, Blackwater River.
Wet pedunculate oak-ash woodland WN4	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*	Dunbeacon Shingle, Glengarriff Harbour & woodland, The Gearagh, Bandon River, Blackwater River.
PEATLAND HABITATS		
Upland blanket bog PB2	Blanket bog (*if active bog)	Caha Mountains, Glanmore Bog, Derryclogher Bog, Mullaghanish Bog, Ballyhoura Mountains, Caherbarnagh (part of Killarney National Park).
EXPOSED ROCK HABITATS		
Exposed siliceous rock ER1	Siliceous rocky slopes with chasmophytic vegetation	Caha Mountains.
COASTAL HABITATS		
Rocky sea cliffs CS1, sea stacks and islets CS2, sedimentary sea cliffs CS3	Vegetated sea cliffs of the Atlantic and Baltic coasts	Roaringwater Bay & Islands, Three Castle Head to Mizen Head, Kenmare River.
Lagoons and saline lakes CW1	*Coastal lagoons	Kilkeran Lake and Castlefreke Dunes, Farranamanagh Lough.
Embryonic dunes CD1	Embryonic shifting dunes	Clonakilty Bay, Courtmacsherry Bay, Kilkeran Lake and Castlefreke Dunes.
Marram dunes CD2	Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')	Clonakilty Bay, Barley Cove To Ballyrisode Point, Courtmacsherry Bay, Kenmare River, Kilkeran Lake and Castlefreke Dunes.
Fixed dunes CD3	*Fixed coastal dunes with herbaceous vegetation ('grey dunes')	Clonakilty Bay, Barley Cove To Ballyrisode Point, Kilkeran Lake and Castlefreke Dunes, Courtmacsherry Bay, Kenmare River.

appendix 5 *(continued)*

ANNEX I HABITATS FOUND WITHIN COUNTY CORK

Link to Irish Habitat Classification (Fossitt 2000)	Annex I Habitats	Examples of candidate SACs where habitats are found
COASTAL HABITATS		
Fixed dunes CD3	*Atlantic decalcified fixed dunes	Clonakilty Bay.
Lower saltmarsh CM1	*Salicornia* and other annuals colonising mud and sand	Ballymacoda, Barley Cove To Ballyrisode Point, Courtmacsherry Bay, Blackwater River.
Lower saltmarsh CM1	*Spartina* swards	Great Island Channel.
Lower saltmarsh CM1	Atlantic salt meadows	Ballymacoda, Barley Cove To Ballyrisode Point, Great Island Channel, Courtmacsherry Bay, Kenmare River, Blackwater River.
Upper salt marsh CM2	Mediterranean salt meadows	Barley Cove To Ballyrisode Point, Courtmacsherry Bay, Kenmare River, Blackwater River.
Shingle and gravel banks CB1	Perennial vegetation of stony banks	Barley Cove To Ballyrisode Point, Courtmacsherry Bay, Kenmare River, Dunbeacon Shingle, Reen Point Shingle, Farranamanagh Lough.
MARINE HABITATS		
Littoral Rock LR	Reefs	Lough Hyne, Roaringwater Bay & Islands, Kenmare River.
Sea Caves LR5	Submerged or partially submerged sea caves	Lough Hyne, Roaringwater Bay & Islands, Kenmare River.
Shingle & gravel shores LS1	Annual vegetation of drift lines	Clonakilty Bay, Courtmacsherry Bay.
Littoral sediments LS	Mudflats and sandflats not covered by water at low tide	Ballymacoda, Clonakilty Bay, Barley Cove To Ballyrisode Point, Great Island Channel, Courtmacsherry Bay, Blackwater River.
Estuaries MW4	Estuaries	Ballymacoda, Courtmacsherry Bay, Blackwater River.
Sea inlets and bays MW2	Large shallow inlets & bays	Lough Hyne, Roaringwater Bay & Islands, Kenmare River.

appendix 6

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

Species are shown here with regards their listing on Annex II and/or Annex IV of the EU Habitats Directive, the Bonn and Bern Conventions and within the Irish Wildlife Acts.
Species listed within Red Data Books are also highlighted but the latter does not infer protection.

		EU HABITATS DIRECTIVE	WILDLIFE ACT 1976 & WILDLIFE (AMENDMENT) ACT 2000	RED DATA BOOK	BERN CONVENTION	BONN CONVENTION	HABITATS / EXAMPLE LOCATIONS
MAMMALS							
Hedgehog	*Erinaceus europaeus*		✓		Appendix III		Widespread in woodland, hedgerow and scrub habitats.
Pygmy Shrew	*Sorex minutus*		✓	✓	Appendix III		Common & widespread in grassland, hedgerows, woodland etc.
Irish Hare	*Lepus timidus hibernicus*	Annex V	✓	✓	Appendix III		Wide variety of open habitats, e.g. grassland, upland moors etc.
Red Squirrel	*Sciurus vulgaris*		✓				Mixed broadleaved woodland.
Pine Marten	*Martes martes*	Annex V	✓	✓	Appendix III		Woodland.
Irish Stoat	*Mustela erminea hibernica*		✓		Appendix III		Wide range of habitats (e.g. agricultural grassland, woodland, hedgerows).
Badger	*Meles meles*		✓	✓	Appendix III		Woodland & farmland.
Otter	*Lutra lutra roensis*	Annex II & IV	✓	✓	Appendix II		Watercourses and coastline e.g. Blackwater River, The Gearagh, Roaringwater Bay.
Red Deer	*Cervus elaphus*		✓				Woodland.
Sika Deer	*Cervus nippon*		✓				Conifer plantations.
Fallow Deer	*Dama dama*		✓				Woodland.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

		EU HABITATS DIRECTIVE	WILDLIFE ACT 1976 & WILDLIFE (AMENDMENT) ACT, 2000	RED DATA BOOK	BONN CONVENTION	BERN CONVENTION	HABITATS / EXAMPLE LOCATIONS
MAMMALS - *continued*							
Lesser Horseshoe Bat	*Rhinolophus hipposideros*	Annex II & IV	✔	✔	Appendix II	Appendix II	Ireland is the largest national population in Europe. Restricted to western Ireland - Mayo, Galway, Clare, Limerick, Kerry & Cork. e.g. Glengarriff Woods.
Whiskered Bat	*Myotis mystacinus*	Annex IV	✔		Appendix II	Appendix II	Known from several locations in Co. Cork.
Daubenton's Bat	*Myotis daubentoni*	Annex IV	✔	✔	Appendix II	Appendix II	Widely distributed across Ireland but relatively few roots are known. Most Numerous records are from Co. Cork.
Common Pipistrelle Bat	*Pipistrellus pipistrellus*	Annex IV	✔	✔	Appendix II	Appendix III	Common & widespread.
Soprano Pipistrelle Bat	*Pipistrellus pygmaeus*	Annex IV	✔	✔	Appendix II	Appendix II	Common & widespread.
Nathusius Pipistrelle Bat	*Pipistrellus nathusii*	Annex IV	✔	✔	Appendix II	Appendix II	Recorded in Dripsey in 2005.
Leister's Bat	*Nyctalus leisleri*	Annex IV	✔	✔	Appendix II	Appendix II	Relatively common in Ireland but scarce in Europe.
Brown Longeared Bat	*Plecotus auritus*	Annex IV	✔	✔	Appendix II	Appendix II	Widely distributed across Ireland and across Co. Cork.
Natterer's Bat	*Myotis nattereri*	Annex IV	✔		Appendix II	Appendix II	Records are widely scattered throughout country but status unknown.
Grey Seal	*Halichoerus grypus*	Annex II & IV	✔				Roaringwater Bay important locally and regionally for the species.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

		EU HABITATS DIRECTIVE	WILDLIFE ACT 1976 & WILDLIFE (AMENDMENT) ACT, 2000	RED DATA BOOK	BONN CONVENTION	BERN CONVENTION	HABITATS / EXAMPLE LOCATIONS
MAMMALS - *continued*							
Common Seal	*Phoca vitulina*	Annex II & IV	✔				Kenmare River, Bantry Bay & Roaringwater Bay.
Bottlenose Dolphin	*Tursiops truncatus*	Annex II & IV	✔				Commonly seen inshore on Irish coasts e.g. Cork Harbour.
Harbour Porpoise	*Phocoena phocoena*	Annex II & IV	✔				Commonly observed around the coast e.g. Bantry Bay.
REPTILES							
Common Lizard	*Lacerta vivipara*		✔				Widespread.
AMPHIBIANS							
Common Frog	*Rana temporaria*	Annex V	✔	✔		Appendix III	Widespread.
Common Newt	*Triturus vulgaris*		✔				Widespread.
CRUSTACEANS							
White-clawed Crayfish	*Austropotamobius pallipes*	Annex II & V	✔				Freshwater e.g. rivers, streams.
INSECTS							
Marsh Fritillary	*Euphydryas aurinia*	Annex II					Damp grassy places e.g. unimproved wet grassland. Requires a specific food-plant (Devil's-bit Scabious Succisa pratensis) for its caterpillars.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

		EU HABITATS DIRECTIVE	WILDLIFE ACT 1976 & WILDLIFE (AMENDMENT) ACT, 2000	RED DATA BOOK	BONN CONVENTION	BERN CONVENTION	HABITATS / EXAMPLE LOCATIONS
MOLLUSCS							
Freshwater Pearl Mussel	*Margaritifera margaritifera*	Annex II & V	✔				Requires unpolluted well-oxygenated freshwater rivers.
Kerry Slug	*Geomalacus maculosus*	Annex II & IV	✔				Widespread on Old Red Sandstone in West Cork.
FISH							
River Lamprey	*Lampetra fluviatilis*	Annex II & V		✔			Shallow inshore waters and accessible rivers e.g. Blackwater River.
Brook Lamprey	*Lampetra planeri*	Annex II		✔			Blackwater River, Bandon River, Lee and tributaries.
Sea Lamprey	*Petromyzon marinus*	Annex II		✔			Shallow inshore waters, estuaries and accessible rivers e.g. Cork Harbour & River Lee.
Allis Shad	*Alosa alosa*	Annex II & V		✔		Appendix III	One of the rarest breeding fish species in Ireland. Spends most of its life at sea, returning to freshwater to spawn e.g. Blackwater River.
Twaite Shad	*Alosa fallax*	Annex II & V		✔		Appendix III	One of the rarest breeding fish species in Ireland. Spends most of its life at sea, returning to freshwater to spawn e.g. Blackwater River.
Atlantic Salmon	*Salmo salar*	Annex II & V		✔		Appendix III	Widespread in rivers across the country. Migrates upstream to spawn.
Smelt	*Osmerus eperlanus*			✔			One of the rarest fish in Ireland. Migrate up rivers from the sea to spawn e.g. Blackwater River.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

Bird species are shown here with regards their listing on Annex I of the EU Birds Directive. All bird species are also protected under the wildlife Act (1976) and Wildlife (Amendment) Act, 2000. Bird species that are listed on BirdWatch Ireland's 'Birds of Conservation Concern' are also shown although the latter does not infer protection.

BIRD SPECIES		EU BIRDS DIRECTIVE	BIRDS OF CONSERVATION CONCERN (BoCCI)	HABITAT NOTES / EXAMPLE LOCATIONS
BIRDS				
Arctic Tern	*Sterna paradisaea*	✔	Amber-listed	Summer visitor, coastal breeding bird.
Bar-tailed Godwit	*Limosa lapponica*	✔	Amber-listed	Common winter visitor, Migratory, wintering wader.
Black-headed Gull	*Larus ridibundus*		Red-listed	Common and widespread.
Black-necked Grebe	*Podiceps nigricollis*		Red-listed	Lower Cork Harbour during winter.
Black-tailed Godwit	*Limosa limosa*		Amber-listed	Winter visitor. Estuaries, international important numbers occur at e.g. Cork Harbour, Clonakilty Bay.
Barn Owl	*Tyto alba*		Red-listed	Has undergone major declines; Co. Cork is a stronghold with circa 25 breeding sites.
Bewick's Swan	*Cygnus columbianus bewickii*	✔	Red-listed	Winter visitor; e.g. scarce since mid 1990's.
Black Guillemot	*Cepphus grylle*		Amber-listed	Resident breeding species e.g. Cape Clear.
Brent Goose	*Branta bernicla hrota*		Amber-listed	Winter visitor e.g. Ballycotton Bay, Courtmacsherry Bay.
Chough	*Pyrrhocorax pyrrhocorax*	✔	Red-listed	Coastal resident, cliffs, headlands and islands. Distribution is west of the country.
Commom Gull	*Larus canus*		Amber-listed	Common during winter; breeding status unknown.
Common Scoter	*Melanitta nigra*		Red-listed	Small groups may be seen on passage during autumn. Scarce in winter.
Common Tern	*Sterna hirundo*	✔	Amber-listed	Summer visitor, breed in Cork Harbour.
Coot	*Fulica atra*		Amber-listed	Uncommon breeding species.
Cormorant	*Phalacrocorax phalacrocorax*		Amber-listed	Widespread, rivers, lakes and coastal.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

BIRD SPECIES		EU BIRDS DIRECTIVE	BIRDS OF CONSERVATION CONCERN (BoCCI)	HABITAT NOTES / EXAMPLE LOCATIONS
BIRDS				
Curlew	*Numenius arquta*		Red-listed	Common winter visitor. Small breeding numbers.
Cuckoo	*Cuclus canorus*		Amber-listed	Summer visitor. Declined in recent years.
Dunlin	*Calidris alpina*		Amber-listed	Common winter visitor, estuaries and bays.
Gannet	*Morus bassanus*		Amber-listed	Coastal waters; breeds on Bull Rock.
Goldeneye	*Bucephala clangula*		Amber-listed	Locally common winter visitor.
Golden Plover	*Pluvialis apricaria*	✔	Red-listed	Common winter visitor e.g. Rosscarbery & Courtmacsherry Bays.
Grasshopper Warbler	*Locustella naevia*		Amber-listed	Uncommon breeding species.
Great Crested Grebe	*Podiceps cristatus*		Amber-listed	Winter visitor e.g. Cork Harbour, uncommon elsewhere.
Great Northern Diver	*Gavia immer*	✔	Amber-listed	Winter visitor, coastal waters. Courtmacsherry Bay.
Greenland White-fronted Goose	*Anser albifrons flavirostris*	✔	Amber-listed	Winter visitor; scarce other than small numbers at kilcolman Bog Nature Reserve & SPA.
Grey Plover	*Pluvialis squatarola*		Amber-listed	Common winter visitor. Estuaries and bays.
Guillemot	*Uria aalgae*		Amber-listed	Breeding species; Old Head of Kinsale largest colony in county.
Hen Harrier	*Circus cyaneus*	✔	Amber-listed	Cork holds approx 20% of national population. e.g. Mullaghareirks, Nagles, Ballyhouras and Boggeraghs. Population stable but possible decline in east.
Jack Snipe	*Lymnocyptes minimus*		Amber-listed	Scarce winter visitor.
Kingfisher	*Alcedo atthis*	✔	Amber-listed	Common & widespread along rivers, streams.
Knot	*Calidris canutus*		Red-listed	Common winter visitor. Estuaries and bays.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

BIRD SPECIES		EU BIRDS DIRECTIVE	BIRDS OF CONSERVATION CONCERN (BoCCI)	HABITAT NOTES / EXAMPLE LOCATIONS
BIRDS				
Lapwing	*Vanellus vanellus*		Red-listed	Common winter visitor. Estuaries, bays and coastal grassland.
Little Egret	*Egretta garzetta*	✔	Amber-listed	Naturalised. Cork Harbour is the stronghold in Co Cork with 4 breeding sites.
Merlin	*Falco Columbarius*	✔	Amber-listed	Difficult to survey and little information. Bird Atlas 2007-2011 may help provide important data. Suitable habitat has declined in recent years.
Nightjar	*Caprimulgus europaeus*	✔	Red-listed	Rare passage migrant.
Peregrine Falcon	*Falco peregrinus*	✔	Amber-listed	Widespread. Dramatic declines in 1950's and 60's but has since recovered and now increasing.
Pintail	*Anas acuta*		Red-listed	Winter visitor; localised - mainly Cork Harbour.
Pochard	*Aythya ferina*		Amber-listed	Winter visitor. Localised.
Razorbill	*Alca torda*		Amber-listed	Breeding species; Old Head of Kinsale largest in country.
Red Grouse	*Lagopus lagopus scoticus*		Red-listed	Distribution restricted to North Cork mountains. Rare in Cork.
Redpoll	*Carduelis flammea*		Amber-listed	Locally common and winter visitor.
Redshank	*Tringa totanus*		Red-listed	Common winter visitor. International important numbers found in e.g. Cork Harbour.
Reed Warbler	*Acrocephalus scirpaceus*		Amber-listed	Migratory, summer visitor. Only at Ballyvergan Marsh and Ballycotton.
Red-breasted Merganser	*Mergus serrator*		Amber-listed	Coastal waters, lakes; Cork Harbour, Courtmacsherry Bay.
Red-throated Diver	*Gavia stellatus*	✔	Amber-listed	Passage migrant and winter visitor; coastal waters e.g. Ballycotten Bay, off Knockadoon Head.
Sand Martin	*Riparia riparia*		Amber-listed	Common migratory summer visitor.
Sandwich Tern	*Sterna sandvicensis*	✔	Amber-listed	Summer visitor; no recent breeding records.
Shelduck	*Tadorna tadorna*		Amber-listed	Resident and widespread; breeds in small numbers in many areas.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

BIRD SPECIES		EU BIRDS DIRECTIVE	BIRDS OF CONSERVATION CONCERN (BoCCI)	HABITAT NOTES / EXAMPLE LOCATIONS
BIRDS				
Short-eared owl	*Asio flammeus*	✔	Amber-listed	Winter visitor; coastal farmland and marshes.
Skylark	*Alauda arvensis*		Amber-listed	Uncommon breeding species, most likely declined but Bird Atlas 2007-2011 will provide important data. Lowland and coastal habitats most threatened.
Snipe	*Gallinago gallinago*		Amber-listed	Widespread; breeding status unknown.
Sooty Shearwater	*Puffinus griseus*		Red-listed	Common passage migrant late summer - autumn e.g. off Cape Clear, Galley Head.
Spotted Flycatcher	*Muscicapa striata*		Amber-listed	Uncommon, woodland habitats; has declined significantly.
Stock Dove	*Columba oenas*		Amber-listed	Considered widespread but under-recorded.
Stonechat	*Saxicola torquata*		Amber-listed	Relatively common.
Storm Petrel	*Hydrobates pelagicus*	✔	Amber-listed	Summer visitor. Breeding species e.g. Bull and Cow Rocks, Fastnet Rock.
Swallow	*Hirundo rustica*		Amber-listed	Common summer visitor.
Teal	*Anas crecca*		Amber-listed	Common winter visitor. Not known to breed.
Tufted Duck	*Aythya fuligula*		Amber-listed	Winter visitor e.g. Douglas Estuary.
Water Rail	*Rallus rallus*		Amber-listed	Localised breeding species.
Whooper Swan	*Cygnus cygnus*	✔	Amber-listed	Winter visitor; e.g. Blackwater River and callows.
Wigeon	*Anas penelope*		Amber-listed	Common winter visitor. Not known to breed.
Woodcock	*Scolopax rustocola*		Amber-listed	Difficult to survey and probably overlooked.
Yellowhammer	*Emberiza citrinella*		Red-listed	Locally common. More numerous in south and east of county.

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

Plant species are shown here with regards their listing on Annex II and/or Annex IV of the EU Habitats Directive and those that are protected under the Flora Protection Order, 1999. Species listed on the Flora Red Data list are also shown, although the latter does not infer protection.

		EU HABITATS DIRECTIVE	FLORA PROTECTION ORDER, 1999	RED DATA BOOK
RED DATA BOOK: E-ENDANGERED, V-VULNERABLE, R-RARE, I-INDETERMINABLE, DD-DATA DEFICIENT				
FLOWERING PLANTS				
Orange Foxtail	*Alopecurus aequalis*		✔	
Starved Wood-sedge	*Carex depauperata*		✔	R
Lesser Centaury	*Centaurium pulchellum*		✔	V
Slender Cottongrass	*Eriophorum gracile*		✔	R
Small Cudweed	*Filago minima*		✔	R
Little Robin	*Geranium purpureum*			V
Round-leaved Crane's-bill	*Geranium rotundifolium*			V
Meadow Barley	*Hordeum secalinum*		✔	V
Irish St John's-wort	*Hypericum canadense*		✔	R
Sea Pea	*Lathyrus japonicus*		✔	DD
Mudwort	*Limosella aquatica*		✔	R
Hairy Bird's-foot-trefoil	*Lotus subbiflorus*		✔	R
Pennyroyal	*Mentha pulegium*		✔	V

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

		EU HABITATS DIRECTIVE	FLORA PROTECTION ORDER, 1999	RED DATA BOOK
RED DATA BOOK: E-ENDANGERED, V-VULNERABLE, R-RARE, I-INDETERMINABLE, DD-DATA DEFICIENT				
FLOWERING PLANTS				
Recurved Sandwort	*Minuarta recurva*		✔	R
Weasel's-snout	*Misopates orontium*		✔	V
Green-winged Orchid	*Orchis morio*			V
Bird's-foot	*Ornithopus perpusillus*			R
Greater Broomrape	*Orobanche rapum-genistae*			R
Tufted Salt-marsh Grass	*Puccinellia fasciculata*		✔	R
Golden Dock	*Rumex maritimus*			R
Wild Clary	*Salvia verbenaca*			R
Annual Knawel	*Scleranthus annuus*		✔	
Kerry Lily	*Simethis planifolia*		✔	V
Irish Lady's Tresses	*Spiranthes romanzoffiana*		✔	R
Betony	*Stachys officinalis*		✔	V
Spotted Rock-rose	*Tuberaria guttata*			R
Pale Dog-violet	*Viola lactea*		✔	V

appendix 6 *(continued)*

PROTECTED SPECIES FOUND WITHIN COUNTY CORK

		EU HABITATS DIRECTIVE	FLORA PROTECTION ORDER, 1999	RED DATA BOOK
RED DATA BOOK: E-ENDANGERED, V-VULNERABLE, R-RARE, I-INDETERMINABLE, DD-DATA DEFICIENT				
FERNS & FERN ALLIES				
Lanceolate Spleenwort	*Asplenium obovatum*		✔	R
Fir Clubmoss	*Huperzia selago*	Annex V		
Marsh Clubmoss	*Lycopodiella inundata*	Annex V	✔	R
Killarney Fern	*Trichomanes speciosum*	Annex II &IV	✔	
BRYOPHYTES (MOSSES & LIVERWORTS)				
	Orthotrichum pallens		✔	
	Orthotrichum sprucei		✔	
	*Orthotrichum stramineum**		✔	
	Plagiochila atlantica		✔	
	Tortula wilsonii		✔	
	Sphagnum (Mosses) 22 Sphagnum species recorded within Co Cork	Annex V		

* no recent records

SPECIES AND HABITATS OF SPECIAL CONSERVATION SIGNIFICANCE WITHIN COUNTY CORK

Species - Criteria for selection

There are no national guidelines for prioritising species or habitats of special local conservation importance. Therefore the Biodiversity Working Group has agreed a set of criteria that aims to identify both species of global/national conservation concern within the local area (criteria A, B or C) and those species that are locally distinctive and are therefore of local/regional conservation concern (criteria D, E and F).

[a]Listed on the 2007 IUCN Red List within the following categories: critically endangered, endangered, vulnerable or near threatened.

THREAT CRITERIA	
A	Endemic, globally threatened species (listed on IUCNRed-Lists[a])
B	Nationally declining species: **B1** Any species which has declined by 50% or more over the past 25 years. **B2** Any species where the Irish numbers or range have declined by more than 25% in the last 25 years. **B3** Any species where data deficiency precludes listing as B1/B2 but where there is evidence of decline or a known threat: also includes e.g. restricted geographic range, highly specialised habitat requirements, pressures from disease, reduction in food supply, threats to habitat etc.
C	All nationally threatened species with native or long-established naturalised populations. Nationally threatened species are those listed as threatened in Red Data Lists, red-listed bird species and species considered as threatened by expert opinion (for groups where no red listing has been undertaken).

LOCAL SIGNIFICANCE CRITERIA	
D	Species with native or long-established naturalised populations, which are rare in Co Cork and are known to be in national or regional decline.
E	Species of conservation concern for which Co Cork holds a large proportion of the national/regional population (i.e. a species for which Co Cork is important for maintaining the population at regional or national level).
F	Species considered of special county significance e.g. of cultural value in Co. Cork (e.g. flagship species) and species that are considered good indicators of their habitats.

DD shown by a taxa grouping refers to a data deficiency in this area.

** identifies species that are afforded protection under the EU Habitats Directive or EU Birds Directive.

NB The current priority list is based on the information review and consultation undertaken to date and includes all species/taxa for which data was available. In cases where there is insufficient data to be able to confidently assign criteria to species, potential or likely criteria are shown in brackets ().

appendix 7

MAMMALS			
Hedgehog *Erinaceus europaeus*	(B)	Leisler's Bat ** *Nyctalus leisleri*	(B3), E
Irish Hare ** *Lepus timidus hibernicus*	B3, C, F	Natterer's Bat ** *Myotis nattereri*	(B3), (C), (D)
Stoat *Mustela erminea hibernica*	B3, F	Brown Long-eared Bat ** *Plecotus auritus*	(B3)
Red Squirrel *Sciurus vulgaris*	A, B3, C, E, F	Nathusis Pipistrelle Bat ** *Pipistresllu nathusii*	(B3)
Pine Marten ** *Martes martes*	B(3), F	Grey Seal ** *Halichoerus grypus*	E
Badger *Meles meles*	B3	Common Seal ** *Phoca vitulina*	E
Otter ** *Lutra lutra roensis*	A, B3, F	Bottlenose Dolphin ** *Tursiops truncates*	(B), E, F
Lesser Horseshoe Bat ** *Rhinolophus hipposideros*	B3, (C), (D), E, F	Harbour Porpoise ** *Phocoena phocoena*	A, B, C, E, F
Whiskered Bat ** *Myotis mystacinus*	B3, (C), (D)	Common Dolphin *Celphinus delphis*	(B3), E, F
Brandt's Bat ** *Myotis brandtii*	B3	Fin Whale ** *Balaenoptera physalus*	A, B3, C, E, F
Daubenton's Bat ** *Myotis daubentoni*	B3, (C), (D), F	Humpback Whale ** *Megaptera novaeangliae*	A, B3, C, E, F
Common Pipistrelle Bat ** *Pipistrellus pipistrellus*	(B3)	Minke Whale ** *Balaenoptera acutorostrata*	F
Soprano Pipistrelle Bat ** *Pipistrellus pygmaeus*	(B3)	Risso's Dolphin ** *Grampus griseus*	B3, F
MOLLUSCS			
Freshwater Pearl Mussel ** *Margaritifera margaritifera*	A, (B1), C, E, F	Kerry Slug ** *Geomalacus maculosus*	B3, E

appendix 7 *(continued)*

FISH			
River Lamprey ** *Lampetra fuluviatilis*	B3 (C)	Twaite Shad ** *Alosa fallax*	B3, C
Brook Lamprey ** *Lampetra planeri*	B3 (C)	Atlantic Salmon ** *Salmo salar*	B3, (C), F
Sea Lamprey ** *Petromyzon marinus*	B3 (C)	Smelt *Osmerus eperlanus*	B3, C, E
Allis Shad ** *Alosa Alosa*	B3, C		
CRUSTACEANS			
White-clawed Crayfish ** *Austropotamobius pallipes*	A, B3, D		
BEES			
Andrena fuscipes	B1, C, E	*Coelioxys inermis*	B3, D, E
Andrena humilis	B1, C, E	*Colletes floralis*	B1, C, D, E
Bombus bohemicus	B1, C, D	*Halictus tumulorum*	B1, C, D, E
Bombus campestris	B1, C, D, E	*Lasioglossum nitidiusculum*	B1, C, D, E
Bombus rupestris	B1, C, D, E	*Nomada goodeniana*	B1, C, D, E
Bombus lapidaries	B3, C, D, E	*Nomada panzeri*	B1, C, D, E
Bombus muscorum	B3, C, D	*Nomada striata*	B1, C, D, E
Bombus ruderarius	B1, C, D		
HOVERFLIES			
Brachyopa insensilis	(B3), C, D, E	*Microdon myrmicae*	(B3), C, D, E
Esirtalis cryptarum	(B3), C, D, E	*Parasyrphys nigritarsis*	(B3), C, D, E
Lejogaster tarsata	(B3), C, D, E	*Xanthandrus comtus*	(B3), C, D, E
Microdon analis	(B3), C, D, E	*Xylota florum*	(B3), C, D, E
WATERBEETLES			
Ochthebius marinus	B1, C, D, E	*Helophorus fulgidicollis*	B1, C, D, E
Agabus conspersus	B1, C, D, E		

appendix 7 *(continued)*

MOTHS			
Chimney Sweeper Moth *Odezia atrata*	B3, D, E	Silky Wainscot *Chilodes maritimus*	(B3), (C), D, E
BUTTERFLIES			
Marsh Fritillary ** *Euphydryas aurinia*	A, B3, C, D, E	Dark Green Fritillary *Argynnis aglaja*	B3, D
Small Heath *Coenonympha pamphilus*	B3, D	Grayling *Hipparchia semele*	B3, D, E
Gatekeeper *Pyronia tithonus*	B3, E	Wall Brown *Lasiommata megera*	(B3), D
Real's Wood White *Leptidea reali*	(B3), D	Purple Hairstreak *Quercusia quercus*	(B3), (D)
Green Hairstreak *Callophyrys rubi*	(B3), E		
DRAGONFLIES			
Black-tailed Skimmer *Orthetrium cancellatum*	(B3), D, E	Downy Emerald *Cordulia aenea*	(B3), D, E
BIRDS			
Arctic Tern ** *Sterna paradisaea*	(B3)	Chough ** *Pyrrhocorax pyrrhocorax*	B1, C, E
Balearic Shearwater ** *Puffinus maruetanicus*	A, E	Coot *Fulica atra*	(B3)
Bar-tailed Godwit ** *Limosa lapponica*	(B3), E	Common Gull *Larus canus*	B3, E
Black Guillemot *Cepphus grille*	(B3)	Cormorant *Phalacrocorax phalacrocorax*	(B3)
Black-tailed Godwit *Limosa limosa*	A, B3, E	Curlew *Numenius arquata*	B1, C, E
Barn Owl ** *Tyto alba*	B1, C, D, E	Cuckoo *Cuclus canorus*	B2, D
Bewick's Swan ** *Cygnus columbianus bewickii*	B3, D	Dunlin *Calidris alpina*	B3, E

appendix 7 *(continued)*

BIRDS			
Golden Plover ** *Pluvialis apricaria*	B2, E	Red Grouse *Lagopus lagopus scoticus*	B1, C, D
Grasshopper Warbler *Locustella naevia*	B3, (D)	Redshank *Tringa totanus*	B3, E
Great-crested Grebe *Podiceps cristatus*	B3, E	Reed Warbler *Acrocephalus scirpaceus*	B3, E
Great Northern Diver ** *Gavia immer*	(B3), E	Red-breasted Merganser *Mergus serrator*	(B3), E
Greenland White-fronted Goose ** *Anser albifrons flavirostris*	B3	Shag *Phalacrocorax aristotlis*	B2, E
Grey Plover *Pluvialis squatarola*	B3, E	Shelduck *Tadorna tadorna*	(B3), E
Guillemot *Uria aalgae*	E	Skylark *Alauda arvensis*	B2, E
Hen Harrier ** *Circus cyaneus*	B1, C, E, (F)	Snipe *Gallinago gallinago*	(B2)
Herring Gull *Larus argentatus*	B1, C, (E)	Spotted Flycatcher *Muscicapa striata*	(B2), D
Kingfisher ** *Alcedo atthis*	B2, F	Stock Dove *Columba oenas*	(B3)
Knot *Calidris canutus*	B3	Storm Petrel ** *Hydrobates pelagicus*	B3, E
Lapwing *Vanellus vanellus*	B1, C, E	Water Rail *Rallus rallus*	B3
Merlin ** *Falco columbarius*	(B3)	Whooper Swan ** *Cygnus cygnus*	B3
Peregrine Falcon ** *Falco peregrinus*	B1, E	Wigeon *Anas penelope*	B3, E
Pintail *Anas acuta*	B3, E	Woodcock *Scolopax rustocola*	B3

appendix 7 *(continued)*

BIRDS			
Yellowhammer *Emberiza citrinella*	B3		
FLOWERING PLANTS			
Annual Knawel *Scleranthus annuus*	B3, D, E	Little Robin *Geranium purpureum*	B3, C, E, F
Betony *Stachys officinalis*	B3, C, D, E	Meadow Barley *Hordeum secalinum*	B3, C, D
Bird's Foot *Ornithopus perpusillus*	B3, C, E	Mudwort *Limosella aquatica*	B3, C, E
Dittander *Lepidium latifolium*	B3, E	Orange Foxtail *Alopecurus aequalis*	B3, D, E
Fiddle Dock *Rumex pulcher*	B3, E	Pale Dog-violet *Viola lacteal*	B3, C, E
Golden Dock *Rumex maritiums*	B3, C, E	Pennyroyal *Mentha pulegium*	B3, C, D, E, F
Greater Broomrape *Orobanche rapum-genistae*	B3, C, D, E	Recurved Sandwort *Minuarta recurva*	B3, C, E
Green-winged Orchid *Orchis morio*	B3, C, D, E	Round-leaved Crane's-bill *Geranium rotundifolium*	B3, C, E, F
Hairy Bird's-foot-trefoil *Lotus subbiflorus*	B3, C, E	Sea Kale *Crambe maritime*	B3, E
Irish Lady's Tresses *Spiranthes romanzoffiana*	B3, C, D, E	Sea Pea *Lathyrus japonicus*	B3, C, E
Irish St John's-wort *Hypericum canadense*	B3, C, E	Slender Cottongrass *Eriophorum gracile*	B3, C, E
Irish Spleenwort *Asplenium onopteris*	B3, D, E	Small Cudweed *Filago minima*	B3, C, D, E
Kerry Lily *Simethis planifolia*	B3, C, E, F	Small-flowered Buttercup *Ranunculus parviflorus*	B3, E
Lesser Centaury *Centaurium pulchellum*	B3, C, E	Spotted Rock-rose *Tuberaria guttata*	B3, C, E

FLOWERING PLANTS			
Starved Wood-sedge *Carex depauperata*	B3, E	Weasel's-snout *Misopates orontium*	B3, C, D, E
Thick-leaved Stonecrop *Sedum dasphyllum*	B3, E	Wild Clary *Salvia verbenaca*	B3, C, D, E
Three-lobed Crowfoot *Ranunculus tripartitus*	B3, C, E	Wood Spurge *Euphorbia amygdaloides*	B3, E
Tufted Salt-marsh Grass *Puccinellia fasciculate*	B3, C, D, E		
FERNS AND FERN ALLIES			
Fir Clubmoss *Huperzia selago*	B3, D, E	Lanceolate Spleenwort *Asplenium obovatum*	B3, C, D, E
Killarney Fern ** *Trichomanes speciosum*	B3, E	Marsh Clubmoss *Lycopodiella inundata*	B3, C, D, E
BRYOPHYTES			
Orthorichum pallens	B3, C, (D)	*Plagiochila atlantica*	B3, C, (D)
Orthotrichum sprucei	B3, C, (D)	*Tortula wilsonii*	B3, C, (D)
Orthotrichum stramineum *	B3, C, (D)	*Sphagnum* Mosses – 22 Sphagnum species recorded within Co. Cork	B3, C, (D)
FUNGI -DD			

Habitats - Criteria for selection

Habitats are selected if they qualify under one of the following criteria (A – E):

- **A** Habitats that are considered rare, at risk or have undergone/are undergoing a high rate of decline in extent and/or quality at a national level and therefore examples in Co Cork are important at a national scale.
- **B** Habitats that are considered rare, at risk or have undergone/are undergoing a high rate of decline in extent and/or quality at a regional level and therefore examples in Co Cork are important at a regional scale.
- **C** Habitats that are considered rare, at risk or have undergone/are undergoing a high rate of decline in extent and/or quality at a local level and hence their conservation is of great local significance.
- **D** Habitats which are important for assemblages of key species/species of conservation concern.
- **E** Other important factors – e.g. habitats of special county significance, habitats subject to a significant increase in human activities which are likely to cause damage (and therefore cause a decline in habitat extent/quality in future); habitats for which there are significant gaps in knowledge within the county.

NB Criteria are assigned to habitats based on known status or trends. In cases where there is insufficient data to be able to confidently assign criteria to habitats, potential or likely criteria are shown in brackets (). Habitats for which there is a data deficiency in the county are marked **DD**.

Some of the habitats selected link with Annex I habitats on the EU Habitats Directive. Therefore some of the habitats listed are found within protected areas within the county and well as within undesignated areas. (See Appendix 5).

HABITATS OF SPECIAL CONSERVATION IMPORTANCE IN COUNTY CORK (Codes relate to the Irish Habitat Classification, Fossitt, 2000)	CRITERIA
FRESHWATER HABITATS	
Lakes and ponds (FL1, FL2, FL4, FL5)	(A, B), C
Watercourses (upland & lowland streams and rivers FW1 and FW2)	(A, B, C), D
Reedbeds (FS1)	A, B, C, D, E
Marsh (GM1)	C, DD
WOODLAND HABITATS	
Ancient and/or semi-natural woodland (WN)	A, B, C, D
Wet pedunculate oak-ash woodland (WN4)	A, B, C, D

appendix 7 *(continued)*

HABITATS OF SPECIAL CONSERVATION IMPORTANCE IN COUNTY CORK (Codes relate to the Irish Habitat Classification, Fossitt, 2000)	CRITERIA
GRASSLAND HABITATS	
Lowland hay meadows (GS2 part)	A, B, C, D
Dry calcareous grassland (GS1 part)	(B), C, D, E
Species-rich wet grassland (GS4 part)	(B), C, D, E
Molinia grassland (GS4 part)	(B), C, D, E
HEATH HABITATS	
Montane Heath (HH4)	DD
PEATLAND HABITATS	
Upland blanket bog (PB2)	(A, B), C, D, E
Cutover Bog (PB4)	(A, B), C, D, E
Lowland blanket bog	(A, B), C, D, E
Poor fen and flush (PF2)	A, B, C, D, E
Transition Mire (PF3)	A, B, C, D, E
EXPOSED ROCK	
Exposed Calcareous Rock (ER2)	D, DD
COASTAL HABITATS	
Coastal soft cliffs (part of sedimentary sea cliffs CS3)	A, B, C, D, E
Lagoons and saline lakes (CW1)	(A, B), C, D
Sand Dunes (CD1, CD2, CD3)	(A, B), C, E
Saltmarsh (CM1, CM2)	A, B, C, D, E
MARINE HABITATS	
Rocky Shores (LR)	D, E
Littoral sediments (LS)	D, E

appendix 8 CONSULTATION SUBMISSIONS

We are grateful to the following people and organisations who gave information, data, personal comments and advice during the consultation process for this Biodiversity Action Plan.

Mr Colin Barton, Cork Ecology.
Dr Simon Berrow, Irish Whale & Dolphin Group.
Mr Ken Bond, University College Cork.
Dr Gavin Burnell, University College Cork.
Dr Debbie Chapman, UCC.
Mr Anthony Cohu, West Cork.
Dr Michelle Cronin, Coastal and Marine Resources Centre, UCC.
Mr Paul Dansie, Atkins.
Mr Rodney Daunt, County Nature Trust.
Mr John Earley.
Mr Dara Fitzpatrick, County Nature Trust.
Ms Lynn Daley, Irish Natural Forestry Foundation (INFF).
Professor John Davenport, University College Cork.
Dr Tom Gittings, University College Cork.
Ms Joanne Goodyear.
Mr Geoff Hamilton, Irish Squirrel Project.
Ms Becca Hayhow, University of East Anglia.
Ms Clare Heardman National Parks & Wildlife Service.
Ms Jacqi Hodgson, Cork Environmental Forum.
Mr Conor Kelleher, Cork Bat Group.
Dr Tom Kelly, University College Cork.
Mr John Lucey, Environmental Protection Agency.
Mr John Lusby, BirdWatch Ireland.
Mr Ross Macklin, Atkins.
Ms Sarah Malone, IPCC.
Dr Rob McAllen, University College Cork.
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Dr Geoff Oliver.
Mr Tony Nagle, Irish Raptor Study Group.
Dr Ruth Ramsay, University College Cork.
Dr Eugene Ross, Institute of Technology, Tralee.
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Ms Maura Scannell.
Dr M. Sheehy-Skeffington, NUI Galway.
Mr Patrick Smiddy, National Parks & Wildlife Service.
Dr Paddy Sleeman, University College Cork.
Dr Neil Stronach, Fota Wildlife Park.
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Mr Paddy Sleeman, UCC.
Mr Padraig Whooley, Irish Whale and Dolphin Group.
Ms Mary Toomey, An Taisce.
Mr Feargal Duff.

An Taisce.
BirdWatch Ireland.
Coastal & Marine Resources Centre, UCC.
Coillte.
County Nature Trust.
Cork Environmental Forum.
South and East Cork Area Development (SECAD).
Failte Ireland.
Forest Service.
Fota Wildlife Park.
Irish Natural Forestry Foundation.
Irish Peatland Conservation Council.
Irish Wildlife Trust.
Macroom District Environmental Group.
Millstreet Country Park.
National Parks & Wildlife Service.
Skibbereen Heritage centre.
South Western River Basin District (SWRBD).
Teagasc.
West Cork Leader.

glossary

Alluvial	Relating to silty deposits transported by water, or occurring on river floodplains.
Aquaculture	The cultivation of aquatic animals, plants especially fish, shellfish and seaweed, in natural or controlled marine or freshwater conditions.
Benthic	Referring to the bottom of the waterbody. Benthic organisms live on or in the bottom sediments.
Biodiversity	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 a part; this includes diversity within species, between species and of ecosystems' (source: The Convention on Biological Diversity).
Biotic Factors	The influence of living components of the environment on organisms.
Bivalve	A mollusc that has two valves or two shells that close together.
Bern Convention	Abbreviated term for the Bern Convention on the Conservation of European Wildlife and Natural Habitats. This imposes obligations on signatories to conserve wild plants, birds and other animals.
Bog	Wetland ecosystem characterised by an accumulation of peat, acid conditions and dominance of Sphagnum moss.
Bonn Convention	Abbreviated term for the Bonn Convention on the Conservation of Migratory Species of Wild Animals. This requires the signatories to protect listed endangered migratory species.
Brackish	Slightly salty water. Mixture of freshwater and saltwater.
Bryophyte	Division of the plant kingdom including mosses, liverworts and hornworts.
Calcareous	Rich in calcium salts or pertaining to limestone or chalk.
Cetaceans	Group of marine mammals including whales, dolphins and porpoises.
Colonisation	The entry and spread of a species into an area from which it was previously absent.
Community	All the organisms that live in a particular habitat.
Coppice	Traditional form of woodland management involving the repeated cutting back of woody shoots on a cyclic rotation, the length of which can be varied to yield different produce.
Ecology	The study of the interactions between organisms and their physical, chemical and biological environment.
Ecosystem	Comprises all plants and animals together with all the chemical and physical components of the environment in which they live.
Fen	A wetland in which peat accumulates which has a permanently high water level and receives water from groundwater and surface water.

glossary *(continued)*

Habitat	Place where an organism, plant or animal lives.
Home Range	The area in which an animal normally ranges.
Indigenous	Native to Ireland.
Intertidal	The zone from the lowest to the highest tide mark.
Invasive Species	A species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.
IUCN	International Union for the Conservation of Nature and Natural Resources: World's largest conservation network and body that monitors the state of the world's species through the IUCN Red List of Threatened Species.
Keystone Species	A species whose activities have a significant role in determining community structure.
Mollusc	An animal belonging to the Phylum Mollusca such as a snail, slug or clam.
Mosaic	Complex pattern or patchwork of habitats or species.
Native Species	The native species in any particular area of interest are those which arrived, established, and survived there without direct or indirect human assistance.
Naturalised	Relating to introduced or non-native species that have invaded native communities and become successfully established.
Peatland	Any ecosystem dominated by peat e.g. bog, fen, mire.
Phytoplankton	The part of the plankton that photosynthesises – mainly single-celled algae but also includes some bacteria.
Plankton	Aggregations of small plant and animal organisms that float or drift in the water column.
Predator	An organism that kills and consumes other organisms.
Richness	A component of species diversity; the number of species present in an area.
Riffle	Shallow section of a river where water flows swiftly over coarse gravels, rocks and boulders.
Riparian	Referring to the bank of a river.
Species	The lowest unit of classification used for plants and animals. Refers to a group of populations that are genetically similar and are able to breed freely and produce fertile offspring.
Vascular Plants	Higher plants with specialised conducting tissue, including angiosperms (flowering plants), ferns and clubmosses.
Waterbirds	Waterbirds are defined as "birds that are ecologically dependent on wetlands" (Ramsar Convention, 1971). The term waterbird is considered synonymous with waterfowl and includes divers, grebes), swans, geese and ducks, gulls, terns and wading birds.