



Cork City Biodiversity Action Plan 2009-2014



NATURE IN CORK CITY



Foreword

Message from the Lord Mayor



Cllr. Brian Bermingham
Lord Mayor

I am delighted to introduce the first ever Biodiversity Action Plan for Cork City. The Cork City Biodiversity Action Plan identifies the amazing wealth of wildlife and nature that exists in Cork City. The plan also sets out actions to raise awareness and help to protect and enhance Cork City's natural heritage.

I would like to acknowledge the hard work of the Cork City Biodiversity Working Group, Dr. Lesley Lewis consultant, the Cork City Heritage Officer Ms Niamh Twomey and all those who gave their time and energy to producing this document. I look forward to the implementation of the actions in this Biodiversity Action Plan over the next five years.

Message from Manager



Mr Joe Gavin
City Manager

I welcome the production of the Cork City Biodiversity Action Plan 2009-2014. The Plan provides for practical action for the care and management of Cork City's natural heritage. I believe that this in turn will improve the quality of life for those living, working and visiting the City.

The development of this Plan marks the culmination of a lot of hard work and co-operation by many individuals and groups. I would like to congratulate and commend all those involved in the development of this plan. I look forward to the implementation of the plan and to seeing many successful projects over the coming years.

Acknowledgements

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Cork City Council also wishes to thank all those who participated in the development of this plan through the provision of information or by making observations.

Thanks also to the following people who kindly contributed images for the plan: Mr Denis MacGarry, Mr Jim Wilson (www.irishwildlife.net), Mr Tony O Mahony, Dr Padraig Whelan, Mr Conor Kelleher, Cork County Bat Group, Dr. Michelle Cronin, Coastal Marine Resource Centre (CMRC) and The Dept of Environment, Heritage and Local Government.



Blue Tit (*Parus caeruleus*) in car side view mirror



Harbour Seal (*Phoca vitulina*)

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Common dogviolet (*Viola riviniana*)

Introduction - The Importance of Biodiversity



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).

Biodiversity means the variety of life on earth. The term 'biodiversity' was coined by the American zoologist Edward O. Wilson and is simply an abbreviation of the term 'biological diversity'.

Biodiversity encompasses the wide range of living things in the world from the smallest insect in our gardens to the largest whales in the ocean. It includes all living plants and animals whether rare or common and also includes the genetic variation between species which determines their uniqueness.

Biodiversity also includes the variety of ecosystems that occur in the world from forests and mountains to agricultural landscapes and the urban environment. It also takes into account the interconnectedness and interdependence of all living things. Biodiversity is a primary indicator of the health of our surroundings and is inextricably linked to the welfare of human beings as it is the basis for all that we eat, drink and breathe.

Thus the term biodiversity is an attempt to represent in a single word the rich tapestry of life on earth.

Cork City's Unique Natural Heritage

Did you know?
The total number of species on our planet is estimated to be as many as 15 million but scientists have only actually identified 1.7 - 1.8 million.

When thinking about biodiversity our minds may be drawn towards images of wild, open and rugged landscapes but aspects of biodiversity surround us all in the urban environment. We share our city, not only with other humans, but with plants, birds and other animals who regard it as home just as much as we do, and in many cases were there before we were.

One of Ireland's oldest cities, Cork's rich and unique natural heritage is derived largely from its topography, layout and physical setting upon low islands in the estuarine marshes of the lower Lee Valley. Indeed the name 'Cork' derives from the Irish corcach or 'marsh'. The Lee and other watercourses that flow through the city support an immense variety of wildlife while also providing a corridor for the movement of these species of wildlife between the surrounding countryside and urban areas.

The city sits at the head of a natural deep harbour. The Lee estuary, Douglas estuary and Lough Mahon are integral parts of Cork Harbour and support a diversity of coastal and intertidal habitats and a variety of flora and fauna. Cork Harbour is considered internationally important and recognised as one of the most important sites in the country for waterbirds. It is now thought that the harbour may also be home to a resident population of Bottlenose Dolphins (*Tursiops truncatus*) and the citizens of Cork have been amazed in the past as by the marine mammals such as the Orca Whale (*Orcinus orca*) that venture up the River Lee.

Cork Lough is noted for its waterbird communities and is afforded protection as a Wildfowl Sanctuary. However it is also important for fish and invertebrates and much more, truly providing an urban sanctuary for wildlife and humans alike.

Cork's built heritage and modern built environment provides habitat for flowering plants, mosses, lichens and invertebrates and in many cases, roosting, resting, foraging and breeding

'The most wonderful mystery of life may well be the means by which it created so much diversity from so little physical matter'

E. O. Wilson
1992



habitats for birds and bats. The stonewalls within the city are home to one of Ireland's rarest native plant species Little Robin (*Geranium purpureum*); and the docklands are home to a highly protected and spectacular bird-of-prey the Peregrine Falcon (*Falco peregrinus*).

Many wild species are elusive and in the case of city-dwelling bat species, virtually unseen unless special effort is made to observe them. However, a large number of species are adapted to live in close association with humans and the urban environment. The city is dotted with parks, green spaces, gardens, cemeteries and graveyards which all play a significant role in providing habitats for local biodiversity.

Why is Biodiversity important?

Biodiversity plays an important role in our everyday lives and is a source of economic, intellectual, cultural and human wellbeing.

Biodiversity provides the food we eat through both the provision of crop plants and their insect pollinators. It also provides direct economical benefits (e.g. farming, forestry, fisheries, manufacturing, tourism and pharmaceuticals). In addition, elements of biodiversity purify our air, decompose our wastes, contain our water supplies, help moderate flooding and form part of important nutrient cycles.

Our natural environment provides a living laboratory for the natural sciences of biology, ecology and geology while providing natural wonders that enthrall and amaze our children. In addition, natural landscapes have provided inspiration for arts and literature enjoyed by many. It also contributes greatly to our tourism industry.

Our natural environment influences our social and mental wellbeing. Imagine our gardens without birds on the bird table, a summer day without swallows dancing through the air or Sunday afternoon walks without the calming flow of the River Lee and the green freedom of the Lee Fields. Wildlife and our urban green spaces provide a sense of 'well being' and give people and communities pride in where they spend time. They are not only part of Cork City's heritage but part of our shared global heritage and should be safeguarded for future generations.

We take many aspects of biodiversity for granted but now, through the Biodiversity Plan initiative, we can all play a part in learning about, appreciating and conserving Cork City's biodiversity.

Legislative Background

The Convention on Biological Diversity was one of several initiatives to arise from the 'Earth Summit' in Rio de Janeiro in 1992. Ireland was one of 150 signatories to the Convention and it has since been ratified by 188 countries, highlighting the world-wide concern that human activities are impacting natural ecosystems and species at an unprecedented rate. 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. Uniquely, while seeking to halt biodiversity loss, the convention also acknowledges that ecosystems, species and genetic variation are used by humans but stresses that this should be in a sustainable way only.

Ireland's National Biodiversity Plan
The Convention on Biological Diversity was translated into an Irish context through the publication of the National Biodiversity Plan in 2002. The plan sets out the strategy for conserving and enhancing Ireland's biodiversity through a series of actions. At a local level, the plan highlights the key role that Local Authorities can play in promoting local nature heritage and one action requires "each Local Authority to prepare a Biodiversity Plan in consultation with relevant stakeholders"

Principal National and International Legislation

The government agency responsible for the conservation of habitat and species in Ireland is the National Parks and Wildlife Service, part of the Department of the Environment, Heritage and Local Government. Its main focus is the protection of rare or sensitive sites and species that are important under national and/or international law.

The most important national legislation is the **Wildlife Act, 1976 as amended by the Wildlife (Amendment) Act, 2000**. This act, considerably strengthened by the 2000 amendment, makes provisions that are directly related to the protection of biodiversity and provides important statutory protection for **Natural Heritage Areas (NHA)**. NHAs are areas deemed worthy of protection because of the importance of habitats or species present.

The two most important international directives for nature conservation are the **EU Habitats Directive (92/43/EEC)** and the **EU Birds Directive (79/409/EEC)**. These form the legislation behind **Special Areas of Conservation (SAC)** - prime wildlife areas designated for habitats and species and **Special Protection Areas (SPA)** - sites of international conservation importance for birds.

Ireland has a variety of other conservation designations and has also ratified several International Conventions such as the Ramsar, Bonn and Bern. These are listed in Appendix 1.

Thus the conservation of Ireland's biodiversity is underpinned by both global and national measures with the overall target being to achieve by 2010 "a significant reduction of the current rate of biodiversity loss at the global, regional and national level"



Song thrush
(*Turdus philomelos*)



Why does Cork City need a Local Biodiversity Action Plan?

Valuing our Natural Heritage

A recent study by the Heritage Council 'Valuing Heritage in Ireland' found that there has been strong growth in people's attitudes and concerns towards protecting our heritage. Over 68% of those surveyed agreed that protecting natural heritage for recreation purposes is vital for the protection of human health while 65% agreed that protecting biodiversity is vital for the environment www.heritagecouncil.ie

It is widely acknowledged that global biodiversity is under threat and recognised that action should be taken at, not only global and national levels, but at local levels as well, in order to understand, promote and ultimately conserve and wisely use biodiversity.

On a local level, while we may know about those areas given legal conservation protection, undesignated areas that are important for local wildlife and biodiversity may not be known or fully appreciated. Even small patches of semi-natural habitat can form part of larger networks linked by rivers, streams, hedgerows or treelines that are of major importance for both habitats and species. While parks and urban green spaces form important recreational areas they also abound with biodiversity, often unseen. Even built spaces provide habitats for a multitude of species such as bats, insects, birds and flora.

The Cork City Biodiversity Action Plan is the first step in addressing questions such as what are the habitats and species that occur within Cork City?. What is the status or viability of these habitats and species?. What are the threats and opportunities for these habitats and species? and what can we do to ensure that biodiversity will still be there for future generations?

A major aim of the Cork City Biodiversity Action Plan is to engage people from a wide spectrum, to pool knowledge and resources and work forward from this point with a collaborative effort to identify and understand the biodiversity resources we have and how we can best conserve them for future generations.

'The loss of a keystone species is like a drill accidentally striking a powerline. It causes lights to go off all over'

E. O. Wilson
1992

What is a local Biodiversity Action Plan ?

Provides a framework for the conservation of biodiversity and coordinates new and existing conservation initiatives.

Translates international and national biodiversity obligations into effective local actions.

Assists sustainable planning and development and provides a framework that is complementary to the Local Development Plan and Local Heritage Plan.

Aims to raise public awareness and stimulate involvement in the conservation of biodiversity.

Collects and collates information information on local biodiversity.

Did you know?

There is more proof than ever that climate change is a reality. The Intergovernmental Panel on Climate Change (IPCC) published a report in November 2007 outlining a stark vision of changes that will occur if humanity fails to tackle rising green-house emissions. Some of our most treasured elements of biodiversity are likely to be early casualties. However, humanity still has time to stave off the worst effects of global warming if action is taken quickly.

Threats to Biodiversity

- Climate Change
- Habitat Loss and fragmentation
- Pollution
- Overexploitation
- Introduction of non-native species
- Disease

Aims and Objectives of the Cork City Biodiversity Action Plan

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

To promote the appreciation and enjoyment of Cork City's biodiversity amongst the people of the city and to identify, understand and conserve the biodiversity of the city for future generations.

The Objectives of the Cork City Biodiversity Plan are:

Objective 1 To identify measures to protect and enhance the biodiversity of Cork City.

Objective 2 To research and disseminate information on the biodiversity of Cork City.

Objective 3 To promote interest and knowledge of Cork City's biodiversity through training and education.

Objective 4 To raise awareness and enjoyment of Cork City's biodiversity and encourage participation and partnership amongst all.



Foxes (*Vulpes vulpes*) in urban garden



Designated sites for Nature Conservation within Cork City

The habitats, flora and fauna of several areas within Cork City's boundary are deemed worthy of protection under national and international legislation.

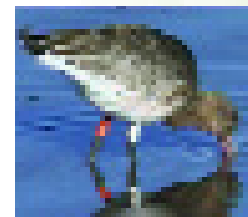
Douglas Estuary and western section of Lough Mahon

Douglas Estuary is a proposed **Natural Heritage Area** (pNHA 1046) and is a large area that includes the Douglas River Estuary itself together with the western intertidal area of Lough Mahon (including Ringmahon Strand, Lakeland Strand) as far as Blackrock Castle. In addition to intertidal mudflats, the designated area contains several habitats that are rare and important in the city and which are also deemed of national importance. One example is the habitat 'reed and large sedge swamp' which comprises areas of the tall Common Reed (*Phragmites australis*). Saltmarsh also occurs, which is a band of vegetation occurring in the intertidal zone, between land and sea, comprising uniquely-adapted plants that can cope with not only the twice-daily inundation of the tide but also the light and drying effects of the air when the tide is out. Areas of brackish/freshwater marsh also occur in the very inner sections of Douglas Estuary (near Joe McHugh Park), a rare habitat nowadays in the city and perhaps a remnant of the city's marshy origins while an artificial lagoon created by the old railway bridge (along the northern shore of Douglas Estuary) is a man-made, yet important habitat for many species. These habitats all support a diversity of birds, mammals and invertebrates that for the large part, go un-noticed from day to day. For example, the first Irish record of the moth Twin-spotted Wainscot (*Archanara geminipuncta*) was from the reedbed at the head of Douglas Estuary.

A more obvious and characteristic group of animals that use Douglas Estuary are the wading birds and wildfowl collectively called 'waterbirds' that flock to Cork Harbour and Douglas Estuary each winter. Many of these species have migrated long distances from Arctic breeding grounds. The main reason for their presence is the plentiful supply of invertebrate prey that live within the intertidal mudflats that become exposed and available to eat when the tide is out. Great numbers of waterbirds visit Cork Harbour each winter and the area is classed of international importance with waterbird numbers exceeding 25,000 each winter. Douglas Estuary, important in itself and designated as a **Wildfowl Sanctuary**, is an integral part of Cork Harbour and together with mudflats around Blackrock Castle and Dunkettle are included within the area designated as the **Cork Harbour Special Protection Area**, one of the most important wintering grounds for waterbirds in Ireland.

In terms of bird numbers, Douglas Estuary is extremely important and supports significant proportions of Golden Plover (*Pluvialis apricaria*) and Bar-tailed Godwit (*Limosa lapponica*). These species are given special protection under Annex I of the Birds Directive, together with others including Shelduck (*Tadorna tadorna*), Black-tailed Godwit (*Limosa limosa*) and Lapwing (*Vanellus vanellus*). As well as the intertidal mudflats, semi-natural habitats adjacent to the estuary, including grassland fields, are also important for feeding and roosting birds.

Did you know?
Icelandic-breeding Black-tailed Godwits (*Limosa limosa*) migrate to spend winter in Britain, Ireland and the Iberian Peninsula. Of the total population of around 50,000, 2% spend winter in Cork Harbour.



Black Tailed Godwit
(*Limosa limosa*)

Globally, 2500 godwits have been marked with an individual combination of coloured plastic rings on their legs. Observers all over Europe report sightings of these birds. In this way hundreds of individual birds movements have been tracked over the last 10 years. This phenomenal dataset has revealed that these long lived migratory shorebirds return year after year to the same estuary and has enabled researchers to identify important sites for conservation.

Atlantic Salmon (*Salmo salar*) leaping up weir



Cork Lough

Did you know?
Cork Harbour Bird Atlas - <http://corkharbourbirds.ucc.ie/> contains information on 25 years of bird counts undertaken by volunteers across Cork Harbour including Douglas Estuary. This interesting resource was created by the Coastal and Marine Resources Centre of UCC.

Further inland, **Cork Lough** is a shallow freshwater lake of around 6 hectares in size, surrounded by amenity grassland and trees. The southern section of the Lough is dominated by an island covered in willow trees. The Lough is a proposed **Natural Heritage Area** and a **Wildfowl Sanctuary** and, apart from being an important public amenity area, is a true biodiversity gem within the heart of the city.

The most visible biodiversity feature of the Lough is the wildfowl. While the island provides safe refuge and roosting places, many birds interact regularly with humans and provide people with a chance to get up really close to nature. In total, 82 bird species have been recorded from the Lough; numbers of regular and resident birds enhanced by occasional records of rare or unusual species. The Lough's proximity to the coast and to Kinsale Road Landfill Site often results in the area being visited by many different gulls, with fourteen different gull species having been recorded there to date. The Lough is truly a special place and attracts and amazes both serious bird watchers and local children alike.

Another important element of the Lough's biodiversity are fish. Historically famous for its fishery value and today a popular angling spot, species range from Eels (*Anguilla anguilla*) that were probably present naturally, to more recent introductions such as Carp (*Cyprinus carpio*) and Pike (*Essox lucius*).

The dominant fish species within the Lough are Carp which were introduced in the 1950's and which now have a high angling amenity value. Indeed, the Irish record Carp, weighing 29lb 14oz, was caught by Sidney Kennedy at Cork Lough in 1998.

Did you know?
The Cork Lough Integrated Management Study (CLIMS) recently undertaken by UCC aims to develop a phosphorus budget for Cork Lough. Phosphorus levels are currently high and linked to poor water quality - the results of this Cork City Council funded project will enable a management plan to be developed for the Lough which will ultimately enhance its value for both biodiversity and amenity purposes.

Designated Sites Just Beyond the City Boundaries

We must acknowledge the proximity of important biodiversity areas that occur just outside the City boundaries and therefore fall within the county's jurisdiction, but play an important part in the lives of City people. Not all of these places will be formally protected but are important biodiversity areas in a local context.

Of the designated areas just outside the city boundary, Cork Harbour is probably the most important as one of the biggest natural harbours in the world and forming the backdrop to the city and many other towns and villages. In terms of its biodiversity, Cork Harbour is the most important site on the south coast; supporting internationally important numbers of waterbirds and designated as a **Special Protection Area**, as mentioned earlier, but also acknowledged as a **Ramsar Site** and an **Important Bird Area**. The harbour also boasts a total and impressive nine **Natural Heritage Areas**: Cuskinny Marsh, Douglas Estuary, Dunkettle Shore, Lough Beg, Monkstown Creek, Owenboy Estuary, Rockfarm Quarry (Little Island), Rostellan Lough, Aghada Shore and Poulabine Inlet and Whitegate Bay. Great Island Channel (North Channel) is considered of international importance in terms of its habitats and is a candidate **Special Area of Conservation** under the EU Habitats Directive.

The natural habitats and species of Cork Harbour continue to survive amongst the urban development, industry and shipping. The flora and fauna range from those attached to, or living within or on the bottom sediments of the seabed (known as benthos), to tiny, microscopic plants that live in the water column (known as phytoplankton) to the larger and more obvious fish, birds and marine mammals such as the Common Dolphin (*Delphinus delphis*). All have an important part to play in the marine food chain and natural cycling of the harbour and many aspects of this biodiversity are important from an economic standpoint, for example, sea fisheries and aquaculture.

Birds of Cork Lough (Regularly observed/resident species)

Black-headed Gull (<i>Larus ridibundus</i>)	Mallard (<i>Anas platyrhynchos</i>)
Canada Goose (<i>Branta Canadensis</i>)	Mediterranean Gull (<i>Larus melanocephalus</i>)
Common Gull (<i>Larus canus</i>)	Moorhen (<i>Gallinula chloropus</i>)
Coot (<i>Fulica atra</i>)	Mute Swan (<i>Cygnus olor</i>)
Cormorant (<i>Phalacrocorax phalacrocorax</i>)	Oystercatcher (<i>Haematopus ostralegus</i>)
Goldeneye (<i>Bucephala clangula</i>)	Pochard (<i>Aythya ferina</i>)
Great Black-backed Gull (<i>Larus marinus</i>)	Shelduck (<i>Tadorna tadorna</i>)
Grey Heron (<i>Ardea cinerea</i>)	Shoveler (<i>Anas clypeata</i>)
Greylag Goose (<i>Anser anser</i>)	Snipe (<i>Gallinago gallinago</i>)
Herring Gull (<i>Larus argentatus</i>)	Teal (<i>Anas crecca</i>)
Lesser Black-backed Gull (<i>Larus fuscus</i>)	Tufted Duck (<i>Aythya fuligula</i>)
Little Grebe (<i>Tachybaptus ruficollis</i>)	

The Fish of Cork Lough (Regularly observed/resident species)

Carp (<i>Cyprinus carpio</i>)	Pike (<i>Essox lucius</i>)
Eel (<i>Anguilla anguilla</i>)	Rudd (<i>Scardinius erythrophthalmus</i>)
Perch (<i>Perca fluviatilis</i>)	Tench (<i>Tinca tinca</i>)



Starling (*Sturnus vulgaris*) nesting in wall

From its source at Gougane Barra on the Cork/Kerry border to the Cork City Waterworks, near the Lee Fields, the River Lee is designated as a **Salmonid River** under the EU Freshwater Fish Directive, under which Ireland is obliged to protect the species via the maintenance of good water quality. The Lee is 65km long and drains an area of about 1,200 km² and defines a major part of the county as well as the city landscape. The northern banks of the River Lee and associated habitats, just upstream of the City boundary are also part of the proposed Lee Valley **Natural Heritage Area** which supports a range of semi-natural habitats including wet and dry broadleaved woodland and freshwater marsh. The River Lee adds a unique element to the biodiversity of Cork City with many rare or protected species found along its length including Brook and Sea Lampreys (*Lampetra planeria* and *Petromyzon marinus*), Kingfisher (*Alcedo atthis*) and Salmon (*Salmo salar*).



Overview of Other City Habitats and Species

Cork County Bat Group is a voluntary organization which aims to promote the conservation of bat species in Cork City and county. This includes undertaking practical conservation projects, educating the general public, raising awareness of bat ecology and conservation issues, undertaking bat surveys and gathering data on bat distribution.

In Cork City there is a wealth of wildlife that lives alongside people within the city. Biodiversity is everywhere and is not confined to protected or managed areas but is underneath people's noses a lot of the time and most people do not realise it.

Perhaps surprising for an urban environment, Cork City supports many species that are classified as protected under international or national legislation or because their populations are threatened or rare. Protected species that occur within Cork City are listed in Appendix 3 and include mammals, amphibians, fish, birds and plants. Appendix 3 also highlights when species are listed as 'species of conservation concern' (e.g. bird species) or when species are found within Red Data Books (species considered rare, threatened or internationally important).

Six bat species are found within Cork City. Although it is sometimes possible to catch a glimpse of bats during long summer evenings when they swoop through the air to catch their insect prey, most bat activity goes on at night and completely unknown to people. All bat species are protected under both international and national legislation (Appendix 1) and their activity is recorded using special 'bat detectors' that pick up their high-frequency echo-location signals.

Watercourses add to the biodiversity value of the city, from the River Lee to the smaller Curragheen, Bride, Twopot, Glasheen, Glenamought and Tramore. Riverside habitats especially those bordered by woods or parks are of high biodiversity value. Some of these watercourses have been modified by humans over the years yet still provide the freshwater environment that is essential for many species to live or feed in (e.g. the Dipper (*Cinclus cinclus*), Grey Wagtail (*Motacilla cinerea*) and Grey Herons (*Ardea cinerea*) and a unique corridor for the movement and migration of species, of which the very survival of some depends upon (e.g. Salmon (*Salmo salar*) and Lamprey species).

The protected mammal Otter (*Lutra lutra*) breeds and rears its young alongside the Lee in the very heart of the city as does the introduced mammal species Mink (*Mustela vison*). One of the City's bat species Daubenton's Bat (*Myotis daubentoni*) hunts for its prey along watercourses, and river bank (*riparian*) habitats support a range of plant species that are unique and reliant on the aquatic environment and in turn provide feeding habitats for many other species such as insects.

Freshwater marsh habitat occurs in waterlogged places and is found close to Curragheen River and within the Lee fields and the Glen Recreation Area. These areas are often small and scattered but support water-loving plants that are unique to this habitat type, together with species that live or feed upon them. These habitats are often remnants of what existed before the city's development and as such are remnants of extremely valuable habitat.

Man-made habitats within the city boundary are also important biodiversity areas. People share their gardens with a range of wildlife from birds and invertebrates such as bees and butterflies to less conspicuous species that would rather remain hidden, such as Hedgehogs (*Erinaceus europaeus*), House mouse, (*Mus musculus*) and Brown rats (*Rattus norvegicus*) and even foxes (*Vulpes vulpes*). These species move around between gardens using hedgerows and vegetated areas and have very little interaction with people at all. These urban green spaces, however small, are therefore of importance as they form part of a network of green spaces across the city including gardens, parks, graveyards, amenity walks, old railway lines and patches of woodland and scrub within which animals and plants continue to thrive.

Did you know? Common (or Harbour) seals (*Phoca vitulina*) have been observed swimming up the River Lee as far as the Cork College of Commerce. Common along the west coast of Ireland, these seals are occasionally observed within Cork Harbour, most likely coming in to prey on fish.

Many bird species live in close proximity to people in the city and some, such as Robins (*Erithacus rubecula*), Song Thrushes (*Turdus philomelos*) and Blackbirds (*Turdus merula*) positively benefit from human activities such as digging gardens to expose worms and grubs, as well as the provision of bird tables and feeders. Insects also benefit from the relatively sheltered and warm microclimate of the built environment, and butterflies, bees, wasps are plentiful, the former particularly attracted to the purple *Buddleja* or 'Butterfly bush' which is introduced but nevertheless an aspect of the urban biodiversity.

Parks and public amenity areas form a major part of the urban green space and can be extremely rich in birds and other wildlife. These areas often contain mature trees of special value and interest due to their longevity and habitat value. Some parks have been created on areas of open space that once supported a semi-natural habitat and this habitat may still survive in certain areas. A particularly good example of public amenity area meeting valuable natural habitat is the Lee Fields where for a city environment, people can get close to natural habitats and the species that live there. In addition there is potential to promote biodiversity in plans for new parks such as those proposed for the Cork Docklands area.



Brown long eared Bat (*Plecotus auritus*)

Bats of Cork City (Regularly observed/resident species)

- Whiskered Bat (*Myotis mystacinus*)
- Daubenton's Bat (*Myotis daubentoni*)
- Common Pipistrelle Bat (*Pipistrellus pipistrellus*)
- Soprano Pipistrelle Bat (*Pipistrellus pygmaeus*)
- Leisler's Bat (*Nyctalus leisleri*)
- Brown Long-eared Bat (*Plecotus auritus*)

Did you know? Otters (*Lutra lutra*), a highly protected mammal species are known to breed beside the River Lee in Cork City.

It is not just green spaces that are important for biodiversity. Many of urban areas thought of as wastelands, marginal land or derelict areas from an industrial past, can be rich in wildlife, especially for those species that thrive as pioneers in colonising bare or newly disturbed areas. However the same principal can sometimes act as a detriment to biodiversity. 'Alien' or introduced species can often gain a foothold in these environments and if successful, can out-compete local and native species. In this way species such as Japanese Knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and others have become part of the city flora and are difficult to control. Public awareness is important here and every one can do their bit in slowing the spread of these detrimental species.



Ponds and lakes within the city are relatively few in number and therefore of great importance because of the aquatic wildlife they can support. Examples include Atlantic Pond and the pond and associated wet areas within the Glen Recreation Area. Even in the smallest pond, aquatic life finds a way and there is a fascinating range of wildlife from dragonflies and frogs, pond skaters and snails to a plethora of microscopic life forms.

Did you know?
Staff and students at UCC have been recording bird species that occur within their Distillery Fields campus and adjacent River Lee for many years. To date they have recorded 67 species

A seemingly harsh place to live but a type of habitat nonetheless is the built environment which includes walls, roofs, gravestones, bridges and other expanses of rock. Here lichens may grow into large brightly-coloured shapes, for example the orange of *Xanthoria* species, while some plants find the ideal substratum for their growth. In this regard, Cork City has a special example; Little-Robin (*Geranium purpureum*) is a nationally rare plant and grows on calcareous walls within the city. Furthermore, Cork City is the centre of its national distribution making the plant of particular local significance. Similarly Round-leaved Crane's-bill (*Geranium rotundifolium*) has its headquarters in Cork City and Cork Harbour and has many small wall-top populations across Cork City. The larvae of the Marbled Green Moth (*Cryphia muralis*) feed on lichen growing on walls around Blackrock and the city centre. This is also a species of local distribution and those found in Cork City may be a distinct local form.

WHY IS JAPANESE KNOTWEED A PROBLEM?

- It is an alien, invasive species-defined as a species that has become established outside of its natural geographic range.
- In Ireland it has no natural competitors and can successfully out-compete native species.
- It constitutes a threat to natural and semi-natural habitats and biodiversity and can also damage buildings and roadways.
- It is difficult to get rid of because the plant can re-grow from very small fragments of plant material.
- Simply cutting it down will only serve as to increase its spread.
- It is a major problem in other countries too. Removal is costly e.g. its removal from the London site of the 2012 Olympics is estimated at several hundreds of thousands of pounds sterling.

Cork City's Species and Habitats of Special Conservation Importance

As part of the Local Biodiversity Action Plan process there is a need to identify the important aspects of biodiversity within the city for which there is a particular conservation priority. To this effect, a set of criteria have been developed which are used to identify species and habitats of special conservation importance (called priority species and habitats) that occur within Cork City. These criteria were applied to all habitats and species known to be present within the city for which information was available. While we know a significant amount about the biodiversity of Cork City we must acknowledge that there are information gaps, undiscovered areas and species, and unknown pressures and threats. As a result, this priority list must be viewed as preliminary and as a 'starting point' in determining conservation priorities for Cork City. It is likely that the list will change and evolve over time as new information becomes available. The current lists of species and habitats of special conservation importance within Cork City is shown in Appendix 4.

Ways we can help our local Biodiversity

WAYS IN WHICH CORK CITY COUNCIL CAN PROTECT AND ENHANCE OUR LOCAL BIODIVERSITY:

- Plant native plant and tree species.
- Safeguard species of national and local significance that occur on its land.
- Reduce the use of chemical pesticides and herbicides to a practicable minimum.
- Put up bat and bird boxes in suitable sites.
- Protect bat roosts when repairing bridges.
- Introduce grass cutting regimes that enhance local biodiversity e.g. infrequently mow along edges connecting to shrubs.
- Plant areas as wildflower meadows using native species.
- Include a biodiversity element in the Tidy Districts competition.

GET INVOLVED:

- Check out Notice Nature - Ireland's first public awareness campaign on biodiversity. See www.noticenature.ie
- Join a local interest group, for example, the Cork County Bat Group, County Nature Trust or the Irish Wildlife Trust (see Appendix 6).
- Record your wildlife data online: e.g. the Heritage Council's Biodiversity Watch Programme www.biology.ie

SCHOOLS:

- 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. www.greenschoolsireland.org

IDEAS FOR LOCAL RESIDENTS ASSOCIATIONS:

- Undertake your own biodiversity audit - record species and habitats within your local area.
- Record 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.
- Plant a few native trees, shrubs or plants that attract wildlife.

CREATE A WILDLIFE-FRIENDLY GARDEN

Examples include:

- Plant a native tree and shrub species (e.g. Hawthorn to provide berries for birds).
- 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 using native species.
- Create a pond.
- Don't be too tidy - leave a few unmown or unmanaged areas - you may be surprised what turns up there



Preparation of the Cork City Biodiversity Action Plan

The production of the Cork City Biodiversity Action Plan is a first for the City and a partnership approach has been adopted throughout its development.

Initially, the Heritage Council in association with Cork City Council commissioned a consultant ecologist to undertake a body of work in the preparation of the plan (consultation, information review and preparation of report). This work was undertaken in accordance with published guidelines and guidance from the Heritage Council.

A Biodiversity Working Group was established by Cork City Council. This group consists of representatives from local government, government departments and agencies, academic institutions, environmental non-governmental organisations, local development organisations and local interest groups (See Appendix 2). The first meeting of the Biodiversity Working Group provided an opportunity for these different agencies and organisations to discuss topics and issues relating to the biodiversity of Cork City. The group initially identified action areas and met again later in the process to finalise and agree actions to be included in the plan and thus implemented over the next 5 years.

Public consultation was an important part of developing the Cork City Biodiversity Action Plan. Submissions were initially invited through the circulation of a 'biodiversity questionnaire' to various local organisations, individuals and interest groups and all interested parties were encouraged to express their views and opinions. Following the review of the draft plan by the City Council and Biodiversity Working Group, the plan also entered a period of public consultation and further submissions and comments were invited from the public. Final amendments to the plan were discussed and agreed with the Biodiversity Working Group and the plan was submitted to the City Council for ratification and adoption.

The Biodiversity Action Plan was prepared with due consideration of the National Biodiversity Plan, the City Development Plan 2004-2009, the Cork City Heritage Plan 2007-2012, and other relevant local and national policies and legislation.

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 therefore require input from all sections of society.

It is therefore essential to the success of the Local Biodiversity Action Plan process that partnerships are forged between national and local government, government agencies, business, educational institutions, the voluntary sector and many more. The relationship between Cork City Council and Cork County Council is also of paramount importance.

The Biodiversity Action Plan acknowledges the very important ongoing work being carried out by the many organisations, community groups and individuals who are involved in biodiversity-related projects and who promote a better understanding of nature and biodiversity in the city. It is hoped that the Biodiversity Plan will add value to, support and encourage this very important work already being carried out throughout the city. The Biodiversity Action Plan supports working in partnership with these organisations in order to help implement this plan. The ultimate success of the plan depends on shared ownership by all partner organisations and their long-term commitment to its implementation.

Did you know?
The Heritage Council's Biodiversity Watch Project (www.heritagecouncil.ie) allows you to enter sightings of the plants and animals you see in your local environment - perhaps in a local park or woodland or seashore



Black-headed Gull (*Larus ridibundus*) on quay walls



Biodiversity Actions for Cork City

The following tables outline the actions of the Cork City Biodiversity Action Plan. Actions have been listed under each of the four main objectives of the plan. Potential partners for actions have been identified where possible but in many cases additional partners need to be identified.

Objective 1

To identify measures to protect and enhance the biodiversity of Cork City.

Seeks to carry out a range of measures which will help to prioritise, protect and enhance the species, habitats and local Biodiversity of Cork City.		
No.	Actions	Potential Partners
1.1	Review priorities and set targets for the biodiversity of Cork City	Cork City Council, Biodiversity Working Group.
1.2	Identify and map priority habitats and species for conservation action	Cork City Council, Biodiversity Working Group, other partners as identified.
1.3	Carry out a survey of trees and semi-natural woodland within the city boundary and identify trees in need of protection e.g. Tree Preservation Order (TPO).	Cork City Council, Biodiversity Working Group.
1.4	Develop a Greening of Cork programme incorporating projects such as "Incorporating biodiversity into the design of an urban space", "Encourage wildlife friendly initiatives eg wild flower meadows using native species", "erecting bird and bat boxes" and other initiatives.	Cork City Council, Biodiversity Working group, Failte Ireland, Tidy Towns, Local businesses, local natural heritage groups as identified.
1.5	Encourage biodiversity projects that aim to raise awareness, promote the care of and collect biodiversity information of the harbour, rivers, streams and other watercourses within Cork City.	Cork City Council, Biodiversity Working Group, other partners as identified.
1.6	Implement the recommendations of the current research project 'Cork Lough Integrated Management Study (CLIMS)' with regards the management and improvement of water quality and environmental conditions at Cork Lough for fauna, flora and recreation users.	Cork City Council Biodiversity Working Group.

Objective 2

To research and disseminate information on the biodiversity of Cork City.

Acknowledges the need to collect and collate information on the City's biodiversity and to make this information available to the public and decision makers.		
No.	Actions	Potential Partners
2.1	Liaise with and support the work of existing groups and organisations already engaged with research and data collection in order to share information and exchange knowledge	Cork City Council, Biodiversity Working Group, other partners as identified.
2.2	Identify gaps in biodiversity information through reviewing and analysing existing data.	Cork City Council, Biodiversity Working Group, other partners as identified.
2.3	Continue the collection of new and existing biodiversity datasets for Cork City and ensure a link to the National Biodiversity Data Centre.	Cork City Council, Biodiversity Working Group, other partners as identified.
2.4	Develop a coordinated programme of survey, mapping and monitoring of species and habitats within Cork City. eg: The Glen, Cork Lough etc.	Cork City Council, Biodiversity Working Group, other partners as identified.
2.5	Promote the use of existing on-line databases for recording of city biodiversity data amongst individuals, communities and other interested parties.	Cork City Council, Biodiversity Working Group, other partners as identified.
2.6	Ensure that copies of all Environmental Impact Statements received by Cork City Council are stored (preferably on CD or digitally) in a central location.	Cork City Council, Biodiversity Working Group.

Objective 3

To promote interest and knowledge of Cork City's biodiversity through training and education.

Seeks to provide education and training on biodiversity issues as well as promoting best practice in Local Authorities, the public and decision makers.		
No.	Actions	Potential Partners
3.1	Promote the use of Cork City's green spaces by primary and post primary schools for educational purposes.	Cork City Council, Biodiversity Working Group and other partners as identified.
3.2	Promote and support existing educational programmes eg Life time Learning, Green Schools Programme etc	Cork City Council, Biodiversity Working Group, Schools and Colleges, Green Schools Programme and similar initiatives, Department of Education and Science and other relevant institutions.
3.3	Liaise with third level educational institutions on developing and promoting biodiversity-related projects	Cork City Council, Biodiversity Working Group UCC, CIT, VEC, 3rd level education institutions Department of Education and Science and other relevant institutions.
3.4	Promote best practice in relation to biodiversity within the Local Authority, developers and the general public	Cork City Council, Biodiversity Working Group and other partners as identified.
3.5	Support the provision of training on biodiversity issues for community groups, professionals, biodiversity interest groups and Local Authority personnel	Cork City, Biodiversity Working Group, Cork Environmental Forum and other partners as identified.



Objective 4

To raise awareness and enjoyment of biodiversity in Cork City and encourage participation and partnership amongst all.

Aims to raise awareness of biodiversity in Cork City and to acknowledge that we all have a part to play in protecting our local biodiversity for the future.

No.	Actions	Potential Partners
4.1	Continue the Biodiversity Working Group and encourage participation from non-governmental bodies, private industry and other sectors.	Cork City Council, Biodiversity Working Group.
4.2	Identify funding opportunities and seek and develop new biodiversity partnerships within sectors such as business, commerce etc.	Cork City Council, Biodiversity Working Group, Failte Ireland, Tidy Towns, local businesses.
4.3	Encourage the inclusion of biodiversity elements in existing and new events e.g. Tidy Town/ District competitions.	Cork City Council, Biodiversity Working group, Cork Environmental Forum, Failte Ireland, Tidy Towns, Local businesses, local natural heritage groups as identified.
4.4	Encourage and facilitate community groups, residents associations and other organisations to develop and cooperate on local biodiversity projects.	Cork City Council, Biodiversity Working Group and Cork Environmental Forum.
4.5	Continue to update and maintain the Biodiversity page on the City Heritage Website i.e. www.corkcityheritage.ie	Cork City Council, Biodiversity Working Group.
4.6	Prepare a series of high quality publications on Biodiversity e.g. 'a guide to enjoying the wildlife and wild places of Cork City'.	Cork City Council, Biodiversity Working Group.
4.7	Raise awareness and promote 'Biodiversity Week' and facilitate the holding of biodiversity-related events.	Cork City Council, Cork Bat Group, UCC, County Nature Trust and Cork Environmental Forum
4.8	Improve and promote access and enjoyment of the River Lee and smaller rivers within the city.	Cork City Council, Port of Cork, various maritime interest groups, DEHLG, others as identified.
4.9	Create a slogan and identify a flagship species to raise awareness of Cork City's unique biodiversity.	Cork City Council, Biodiversity Working Group, local schools.
4.10	Promote special and unique areas of local biodiversity such as The Lough, Blackrock Harbour and Douglas Estuary.	Cork City Council, Biodiversity Working Group and special interest groups e.g. anglers, bird and bat groups.
4.11	Investigate the feasibility of developing urban allotments.	Cork City Council, Biodiversity Working Group, Cork Environmental Forum and other partners as identified.

Monitoring and Review

The Cork City Biodiversity Action Plan sets out a series of actions for biodiversity to be undertaken within the city over a five-year period. It is essential to the success of the plan that its progress and outputs are monitored and evaluated. The Cork City Biodiversity Action Plan recognises that this is only the first step in a process that will develop and evolve both nationally and locally, over time. To this end, the Biodiversity Working Group will meet and agree a method by which the progress of the plan can be monitored and evaluated during its lifetime and thereafter meet annually to review its progress.

A second National Biodiversity Action Plan is proposed, therefore future monitoring and review of the Cork City Biodiversity Action Plan will consider recommendations made in this second national plan.

Implementation of the Plan

The Cork City Biodiversity Action Plan is a partnership plan with many stakeholders sharing responsibility for its implementation. Most actions of this plan will require financial support as well as administrative and professional support. Cork City Council has agreed to support the delivery of the plan in partnership with other organisations and individuals over the next five years as resources permit. The Biodiversity Working Group will seek the participation of key partners in the delivery of the actions identified in the plan. In addition, potential sources of funding will be identified and sought from various sources in order to implement the actions from this plan.





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
- European Communities (Natural habitats) Regulations, 1997 – 2005
- Flora (Protection) Order 1999 (SI No 94 of 1999)
- 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)
- Birds Directive (Council Directive 79/409/EEC)
- 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
- Convention on the Conservation of European Wildlife and Natural Habitats (Berne 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
- European Landscape Convention, 2000
- 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 2

Biodiversity working group members

Mr Liam Casey	Amenity and Culture Dept, Cork City Council
Cllr Catherine Clancy	City Councillor
Dr Margaret Desmond	Cork Branch, Irish Wildlife Trust
Ms Louise Harrington	Cork County Bat Group
Mr John Harte	South Western Regional Fisheries Board
Dr Tom Kelly	Dept Zoology, Ecology & Plant Science, UCC
Mr John Lynch	County Nature Trust
Mr Danny O’Keeffe	National Parks and Wildlife Service
Mr Michael O’Sullivan	Cork Chamber of Commerce
Mr Patrick Treacy	Cork Environmental Forum
Ms Niamh Twomey	Heritage Officer, Cork City Council

Long headed Poppy (*Papave dubium*)



Protected Species within Cork City

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	Bonn Convention	Bern Convention	Habitats/Example Locations
MAMMALS							
Hedgehog	<i>Erinaceus europaeus</i>		✓	✓		Appendix III	Widespread in woodland, hedgerow and scrub habitats.
Pygmy Shrew	<i>Sorex minutus</i>		✓	✓		Appendix III	Common & widespread in grassland, hedgerows, woodland etc.
Red Squirrel	<i>Sciurus vulgaris</i>		✓				Woodland species but will venture into city limits along treelines.
Irish Stoat	<i>Mustela erminea</i>		✓			Appendix III	Wide range of habitats (e.g. agricultural grassland, woodland, hedgerows).
Otter	<i>Lutra lutra</i>	Annex II & IV	✓	✓		Appendix II	Watercourses and coastline e.g. River Lee.
Whiskered Bat	<i>Myotis mystacinus</i>	Annex IV	✓		Appendix II	Appendix II	Known from several locations in Co. Cork.
Daubenton's Bat	<i>Myotis daubentoni</i>	Annex IV	✓	✓	Appendix II	Appendix II	Widely distributed across Ireland but relatively few roosts are known. Most numerous records are from Co. Cork.
Common Pipistrellus Bat	<i>Pipistrellus pipistrellus</i>	Annex IV	✓	✓	Appendix II	Appendix III	Common & widespread.
Soprano Pipistrelle Bat	<i>Pipistrellus pygmaeus</i>	Annex IV	✓	✓	Appendix II	Appendix II	Common & widespread.
Leisler's Bat	<i>Nyctalus leisleri</i>	Annex IV	✓	✓	Appendix II	Appendix II	Relatively common in Ireland but scarce in Europe.
Brown Long-eared Bat	<i>Plecotus auritus</i>	Annex IV	✓	✓	Appendix II	Appendix II	Widely distributed across Ireland and across Co.Cork.
REPTILES							
Common Lizard	<i>Lacerta vivipara</i>		✓				Considered widespread and common throughout Ireland.
AMPHIBIANS							
Common Frog	<i>Rana temporaria</i>	Annex V	✓	✓		Appendix III	Considered widespread and common throughout Ireland.
Common Newt	<i>Triturus vulgaris</i>		✓				Little known.
FISH							
Brook Lamprey	<i>Lampetra Planeri</i>	Annex II		✓			River Lee and tributaries.
Sea Lamprey	<i>Petromyzon marinus</i>	Annex II		✓			Shallow inshore waters, estuaries and accessible rivers e.g. Cork Harbour & River Lee.
Atlantic Salmon	<i>Salmo salar</i>	Annex II,V	✓			✓	Widespread in rivers e.g. River Lee and tributaries.



Protected Species within Cork City

All bird species are protected under the Wildlife Act (1976) and Wildlife (Amendment) Act, 2000. Bird species shown here are those that are found within Cork City that are either listed on Annex I of the EU Birds Directive or are listed on BirdWatch Ireland's 'Birds of Conservation Concern', although the latter does not infer protection.

BIRDS			
	EU Birds Directive	Birds of Conservation Concern (BoCCI)	Status
Great Northern Diver	I		Winter only, Cork Harbour, only occasional within city boundaries.
Black-necked Grebe		Red-listed	Vagrant. Lower Cork Harbour during winter; only very occasional within city boundaries.
Great Crested Grebe		Amber-listed	Winter only, Douglas Estuary.
Little Grebe		Amber-listed	e.g. Atlantic Pond, Cork Lough
Cormorant		Amber-listed	Resident breeding species in Ireland. Commonly observed e.g. Douglas Estuary & River Lee.
Mute Swan		Amber-listed	Cork Lough
Little Egret	I		Resident breeding species in Cork harbour and regularly observed in Douglas Estuary.
Shelduck		Amber-listed	Resident breeding species in Ireland; observed during winter in Douglas Estuary.
Wigeon		Amber-listed	Winter visitor, Douglas Estuary.
Teal		Amber-listed	Common winter visitor, Douglas Estuary.
Pintail		Red-listed	Winter only, Cork Harbour, very occasional within city boundaries.
Pochard		Amber-listed	Winter only, Cork Lough.
Shoveler		Red-listed	Winter only, Cork Lough.
Scaup		Amber-listed	Scarce winter visitor.
Tufted Duck		Amber-listed	Winter only, e.g. Douglas Estuary, Cork Lough.
Goldeneye		Amber-listed	Winter only, e.g. Douglas Estuary, Cork Lough.
Hen Harrier		Amber-listed	Vagrant; very occasional observation.
Kestrel		Amber-listed	Resident breeding species in Ireland.
Merlin	I	Amber-listed	Winter only, occasional observation.
Peregrine Falcon	I		Resident breeding species, Docklands.
Water Rail		Amber-listed	Resident breeding species in Ireland; localised.
Coot		Amber-listed	Uncommon breeding species. Localised e.g. Cork Lough.
Oystercatcher		Amber-listed	Douglas Estuary.
Grey Plover		Amber-listed	Winter visitor, e.g. Douglas Estuary.
Ringed Plover		Amber-listed	Mainly observed in winter. e.g. Douglas Estuary.
Golden Plover	I	Red-listed	Winter visitor, e.g. Douglas Estuary.
Lapwing		Red-listed	Winter visitor, e.g. Douglas Estuary.
Knot		Red-listed	Winter visitor, e.g. Douglas Estuary.
Dunlin		Amber-listed	Winter visitor, e.g. Douglas Estuary.
Redshank		Red-listed	Winter visitor, e.g. Douglas Estuary.
Black-tailed Godwit		Amber-listed	Winter visitor, e.g. Douglas Estuary.
Bar-tailed Godwit		Amber-listed	Winter visitor, e.g. Douglas Estuary.
Greenshank	I	Amber-listed	Winter visitor, e.g. Douglas Estuary.



Protected Species within Cork City

BIRDS			
	EU Birds Directive	Birds of Conservation Concern (BoCCI)	Status
Common Sandpiper		Amber-listed	Passage migrant & occasional summer record.
Curllew		Red-listed	Winter visitor, e.g. Douglas Estuary.
Woodcock		Amber-listed	Winter only, very occasional record.
Snipe		Amber-listed	Resident breeding species in Ireland; localised during winter e.g. Douglas Estuary.
Black-headed Gull		Red-listed	e. g. Douglas Estuary, River Lee.
Herring Gull		Red-listed	e.g. Douglas Estuary, Cork Lough.
Common Gull		Amber-listed	Winter only, e.g. Cork Harbour.
Mediterranean Gull		Amber-listed	e. g. Cork Lough, Cork Harbour.
Lesser Black-backed Gull		Amber-listed	e.g. Cork Lough, Cork Harbour.
Common Tern	I	Amber-listed	Summer visitor & passage migrant, breeds in Cork Harbour.
Arctic Tern	I	Amber-listed	Summer visitor & passage migrant.
Black Guillemot		Amber-listed	Vagrant; occasional observation only.
Stock Dove		Amber-listed	Resident breeding species; under-recorded.
Barn Owl	I	Red-listed	Resident breeding species in Ireland, occasional sighting in city boundaries.
Short-eared Owl	I	Amber-listed	Vagrant, occasional observations.
Swift		Amber-listed	Summer visitor, breeding species.
Kingfisher	I	Amber-listed	Resident breeding species e.g. River Lee.
Skylark		Amber-listed	Resident and localised breeding species.
Sand Martin		Amber-listed	Summer visitor, breeding species.
Swallow		Amber-listed	Summer visitor, breeding species.
House Martin		Amber-listed	Summer visitor, breeding species.
Spotted Flycatcher		Amber-listed	Uncommon summer visitor, occasional observations only.
Starling		Amber-listed	Resident breeding species in Ireland.
House Sparrow		Amber-listed	Resident breeding species in Ireland.
Linnet		Amber-listed	Resident breeding species in Ireland.
Yellowhammer		Red-listed	Occasional observations.

Plant species are shown here with regards their protected status under the Flora Protection Order, 1999. Species listed on the Flora Red Data list are also shown, although the latter does not infer protection.

PLANTS			
		Flora Protection Order, 1999	Red Data Book
Little Robin	<i>Geranium purpureum</i>		✓
Round-leaved Crane's-bill	<i>Geranium rotundifolium</i>		✓
Small Cudweed	<i>Filago minima</i>	✓	✓

Cork City's species and habitats of special conservation importance

Species - Criteria for selection

There are currently no national guidelines for prioritising species or habitats of special local conservation importance. Therefore we have developed 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).

Threat Criteria

- A** A1 Endemic, globally threatened species (listed on IUCN Red-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 Cork City and known to be in regional or national decline.
- E** Species of conservation concern which are regularly observed within Cork city boundaries and for which Cork City is important for maintaining the population at regional and/or national level.
- F** Species considered of special Cork significance e.g. of cultural value in Cork (e.g. flagship species) and species that are considered good indicators of their habitats.

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

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

****** Highlights species afforded protection under the EU Habitats Directive and EU Birds Directive.

NB The current priority list is based on the information review (to end of 2007) 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, potential or likely criteria are shown in brackets ().



PRIORITY SPECIES IN CORK CITY

Species	Criteria
MAMMALS	
Hedgehog <i>Erinaceus europaeus</i>	(B3)
Red Squirrel <i>Sciurus vulgaris</i>	A1, B3, C, E, F
Stoat <i>Mustela erminea hibernica</i>	B3
Otter <i>Lutra lutra roensis</i> **	A, B3, F
Whiskered Bat <i>Myotis mystacinus</i> **	B3, (C), (D)
Daubenton's Bat <i>Myotis daubentoni</i> **	B3, (C), (D), F
Common Pipistrelle Bat <i>Pipistrellus pipistrellus</i> **	(B3)
Soprano Pipistrelle Bat <i>Pipistrellus pygmaeus</i> **	(B3)
Leisler's Bat <i>Nyctalus leisleri</i> **	(B3), E
Brown Long-eared Bat <i>Plecotus auritus</i> **	(B3)
FISH	
Brook Lamprey <i>Lampetra planeri</i> **	B3, (C)
Sea Lamprey <i>Petromyzon marinus</i> **	B3, (C)
Atlantic Salmon <i>Salmo salar</i> **	B3, (C), F
BIRDS	
Great Crested Grebe <i>Podiceps cristatus</i>	B3, E
Little Grebe <i>Tachybaptus ruficollis</i>	B2
Cormorant <i>Phalacrocorax phalacrocorax</i>	B3
Shelduck <i>Tadorna tadorna</i>	B3, E
Wigeon <i>Anas penelope</i>	B3, E
Pochard <i>Aythya ferina</i>	B3, E
Shoveler <i>Anas clypeata</i>	B1, C
Goldeneye <i>Bucephala clangula</i>	B3
Teal <i>Anas crecca</i>	B2, E
Water Rail <i>Rallus rallus</i>	B2, D
Coot <i>Fulica atra</i>	B2, B3
Oystercatcher <i>Haematopus ostralegus</i>	B3
Grey Plover <i>Pluvialis squatarola</i>	B3
Golden Plover <i>Pluvialis apricaria</i> **	B1, C, E
Lapwing <i>Vanellus vanellus</i>	B1, C, E
Knot <i>Calidris canutus</i>	B1, C, E
Dunlin <i>Calidris alpina</i>	B3
Redshank <i>Tringa totanus</i>	B1, C, E
Greenshank <i>Tringa nebularia</i>	B3
Black-tailed Godwit <i>Limosa limosa</i>	A, B3, E
Bar-tailed Godwit <i>Limosa lapponica</i> **	B3, E
Curlew <i>Numenius arquata</i>	B1, C, E
Black-headed Gull <i>Larus ridibundus</i>	B1, C
Herring Gull <i>Larus argentatus</i>	B1, C
Common Gull <i>Larus canus</i>	B2
Lesser Black-backed Gull <i>Larus fuscus</i>	B3
Common Tern <i>Sterna hirundo</i> **	B3, E
Swift <i>Apus apus</i>	B2
Kingfisher <i>Alcedo atthis</i> **	B2, F
INVERTEBRATES-DD	
MOTHS	
Marbled green <i>Cryphia muralis</i>	E
Twin-spotted Wainscot <i>Archana geminipuncta</i>	E

PRIORITY SPECIES IN CORK CITY	
Species	Criteria
BUTTERFLIES	
Holly Blue <i>Celastrina argiolus</i>	E
Gatekeeper <i>Pyronia tithonus</i>	B3, E
CRUSTACEANS	
Sand shrimp <i>Gammarus chevreuxi</i>	(D), E
FLOWERING PLANTS	
Little Robin <i>Geranium purpureum</i>	B3, C, E, F
Round-leaved Crane's-bill <i>Geranium rotundifolium</i>	B3, C, E, F
Small Cudweed <i>Filago minima</i>	B3, C, D, E
FUNGI-DD	

Habitats - Criteria for selection

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 regional or national level and therefore examples in Cork City are important at a regional or 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 local level and hence their conservation is of great local significance.
C	Habitats which are important for assemblages of key species/species of conservation concern.
D	Other important factors - e.g. habitats of special city 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.

PRIORITY HABITATS IN CORK CITY	
	Criteria
FRESHWATER	
Artificial lakes and ponds (FL8)	B, D
Watercourses (FW1 & FW2)	B, C, D
Reedbeds (FS1)	A, B, C
Brackish-freshwater marsh (FS2/GM1)	A, B
Freshwater swamp/marsh (FS/GM1)	B
GRASSLAND HABITATS	
Semi-natural grassland (GS)	B
WOODLAND HABITATS	
Semi-natural woodland (WN)	B
Dry calcareous grassland	A, B, D
COASTAL HABITATS	
Lagoons (CW1)	A, B, C
Saltmarsh (CM1, CM2)	A, B, C
MARINE HABITATS	
Littoral sediments (LS)	C, D

Habitat codes in brackets refer to habitat types as per the Heritage Council's Habitat Classification of Ireland (Fossitt, 2000)



Consultation Submissions

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- Mr Colin Barton, Cork Ecology.
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- Mr Rodney Daunt, County Nature Trust.
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- Ms Joanne Goodyear.
- Mr Geoff Hamilton, Irish Squirrel Project.
- Mr Féidhlim Harty, individual.
- Ms Becca Hayhow, University of East Anglia.
- Mr Charlie Hickey, individual.
- Ms Jacqi Hodgson, Cork Environmental Forum.
- Mr Conor Kelleher, Cork County Bat Group.
- Mr Sidney Kennedy, Cork Anglers Association.
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- Mr Ross Macklin, Atkins & Cork Anglers Association.
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- Ms Evelyn Mitchell, Docklands Directorate, Cork City Council.
- Mr Declan O'Donnell, National Parks & Wildlife Service.
- Dr Paul O'Donoghue, Atkins.
- Ms Birgit O'Driscoll, Local Area Green Schools Coordinator.
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- An Taisce
- BirdWatch Ireland
- Coastal & Marine Resources Centre, UCC
- County Nature Trust
- Cork Environmental Forum
- Failte Ireland
- Irish Wildlife Trust
- National Parks & Wildlife Service
- South Western Regional Fisheries Board
- University College Cork

Useful contact details

<p>Bat Conservation Ireland Office 8, Unit 8D, Dunshaughlin Business Park, Co Meath. Tel: (0)46 924 2886 or (0)1 801 1474 www.batconservationireland.org</p>	<p>Irish Wildlife Trust IWT Sigmund Business Centre, 93A Lagan Road, Dublin Industrial Estate, Glasnevin, Dublin 11. Tel: 01 8602839. www.iwt.ie</p>
<p>Birdwatch Ireland 1 Springmount, Newtownmountkennedy, Co Wicklow. Tel: (0)1 281 9878 www.birdwatchireland.ie</p>	<p>Irish Whale and Dolphin Group Sightings Co-ordinator, Pádraig Whooley, Dereen, Rossmore, Clonakilty, Co. Cork. Tel: (0)23 387 61 www.iwdg.ie</p>
<p>Cork Environmental Forum c/o P.Treacy, Development Officer, Ballyduff, Cloyne, Co. Cork. Tel/Fax: (0)21 465 1734 www.cef.ie</p>	<p>ENFO – The Environmental Information Service 17 Andrew St., Dublin 2. Lo Call 1890 200 191 www.enfo.ie</p>
<p>The Heritage Council Áras na hOidhreachta, Church Lane, Kilkenny. Tel: (0)56 777 0777 www.heritagecouncil.ie</p>	<p>Cork Branch of the IWT Contact: Gill Weyman, Dromavane, Enniskeane, County Cork. Tel: (0)87 228 2040</p>
<p>Irish Seed Savers Capparoo, Scarriff, Co. Clare. Tel: (0)61 921 866 www.catalase.com</p>	<p>Native Woodland Trust Stoneybrook, Kiltel, Co.Kildare. www.nativewoodtrust.ie</p>
<p>Butterfly Ireland www.butterflyireland.com</p>	<p>County Nature Trust http://countynaturetrust.tripod.ie</p>
<p>Dragonfly Ireland http://birdweb.net/dragonfly.html</p>	<p>Environmental Protection Agency Cork Inniscarra, Co. Cork. Tel: (0)21 487 5540 www.epa.ie</p>
<p>Cork County Bat Group c/o Conor Kelleher, 'Northants', Spring Lane, Carrigagulla, Ballinagree, Macroom, Co. Cork. Tel: (0)21 733 9247 www.corkcountybatgroup.ie</p>	<p>National Parks & Wildlife Service (NPWS) Department of the Environment Heritage and Local Government (DEHLG) 7 Ely Place, Dublin 2. Tel. (0)1 888 2000 www.npws.ie & www.noticenature.ie</p>



Alien Species	A species occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal.
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.
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.
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.
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 Conservation of Nature. 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.
Lagoon	Enclosed bodies of standing brackish water that are partly or wholly separated from the sea by banks of sand, shingle or rock. Can be natural or man-made.
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.
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.
Saltmarsh	The upper vegetated portions of intertidal mudflats.
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.