Dlr Parks and Landscape Services

Parklife

A policy for enhancing Biodiversity in Parks and Greenspaces

An action of the Dlr Local Biodiversity Action Plan 2009-2013

April 2010 (amended version)

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1.0 Introduction

With the increasing urbanisation of our towns, villages and suburbs over the last 20 years the need to accommodate nature and the changing colours of the seasons has never been greater. Greenspace is part of the infrastructure of urban and town planning and it is required to accommodate all the active and passive recreational needs of the community. Very often this creates a dichotomy conflict of demand on the one hand for intensively maintained grassland, which is perceived by many citizens as being tidy, neat and cared for. On the other hand there is the desire amongst an increasing portion of the population to accommodate trees, woodland and a more diverse less intensively maintained range of habitats.

There is also a widely held public perception that the management training and techniques of the staff in parks is soley focussed on maintaining amenity grassland on every greenspace, however Parks staff are conscious of the opportunities to diversifying the range of habitats available to wildlife and a great deal has been achieved to date (see appendix 1). In recognition of the need to clarify the role of the Parks service in enhancing the biodiversity of the County, an action was included in the Dún Laoghaire-Rathdown Biodiversity Plan 2009-2013 to prepare a biodiversity policy document.

Parklife is aimed at ensuring that the conservation and enhancement of biodiversity is reflected in Parks management policy, planning and operations. More specifically ***Parklife*** will:-

- provide guidance on legal obligation relating to the conservation of biodiversity;
- provide guidance and practical advice on best practice management for habitats and species;
- raise awareness and promote the value and benefits of biodiversity to the public.

These aims will be achieved through the implementation of a number of policies, as outlined in section 3. Council staff, contractors working on behalf of the Council, local community groups and other organisations and individuals who work in, or make use of, local parks and open spaces should give due care to the polices contained within.

This strategy has been prepared following extensive consultation with Parks staff. Mary Toomey, Biodiversity Officer facilitated this process, drafted the document and will advise on further review and updating.

2.0 The Biodiversity value of Public Greenspace

2.1 What is biodiversity?

Biodiversity refers to the variety of life on earth and includes the full range of plants and animals found on the planet. Throughout the country, the increased pace of development in recent years has placed enormous pressure on biological diversity, causing the decline of certain species, habitat loss, fragmentation and degradation.

Biodiversity is the source of a range of essential and very valuable benefits to humans including food, medicines, raw materials, employment across a variety of sectors, recreation and ecosystem services. The value and benefits provided by habitats and species and the intrinsic value of biodiversity must be recognised and promoted to ensure adequate protection or our natural heritage.

1.2 The value of parks and open spaces

In an increasingly urban county, public parks and open spaces are an important resource for biodiversity. The variety of parks and public open spaces in Dún Laoghaire-Rathdown, from areas with high quality semi-natural habitats to the more formal parks and gardens present throughout the County, support a diverse range of habitats and species.

The rare plant Bloody Crane's-bill (*Rubia peregrine*) along the sea cliffs at Killiney.

For example, Killiney, Dalkey and Roches Hills and Dalkey coastal zone supports a rich variety of animal and plant life. The woodland and scrub provide excellent habitat for a diversity of birds and several rare species of plants including Bloody Crane's-bill (*Geranium sanguineum*) and Climbing Corydalis (*Ceratocapnos claviculata*) can found along the seaward facing slopes.

Formal parks such as Blackrock Park provide important roosting and foraging areas for Brent Goose, a species of international importance. Further inland, parks such as FitzSimons Wood and Loughlinstown Park support areas of semi-natural woodland.
Parks and open spaces that contain rare or threatened habitats and species are extremely important for the conservation of biodiversity at local, national and international levels. Such sites may require a more sensitive management approach than the some of the more formal parks.

Public parks and open spaces also provide essential amenity and recreational facilities for local communities and other visitors. Parks and Landscape Services seek to maintain a sustainable balance between recreational uses and nature conservation.

Policy 1	Ensure that the management of parks and open spaces are in accordance with environmental legislation and best practice guidelines.
Policy 2	Prepare and implement conservation management plans for designated sites, larger parks and cemeteries.
Policy 3	Avoid the use of pesticides in semi-natural habitats and minimise their use elsewhere.
Policy 4	Avoid planting invasive plant species in parks and open spaces and selectively control existing populations, where appropriate.

3.0 Conservation Areas and Protected Species

Parks and Landscape Services manage four designated sites of nature conservation, three sites (Killiney Hill and Dalkey Coastal Zone, Loughlinstown Wood and FitzSimons Wood) are designated as proposed Natural Heritage Areas (pNHAs) and support species and habitats of national conservation importance. The fourth site, Dalkey Islands, has been designated as a proposed Special Protection Area (pSPA) and is of international importance for the bird populations it supports. Any proposals which have potential to impact an SPA must be subject to an Appropriate Assessment as required under the E.U. Habitats Directive 1992.

In addition to designated sites, the Parks Service manages numerous other large parks, burial grounds and greenspace of varying landscape types that provide important habitat for wildlife. This includes Marlay Demesne, Shanganagh Park, Cabinteely Park, Blackrock Park, Deerpark, Ballawley Park and Rathmichael Woods.

Many valuable amenities such as footpaths and cycle tracks that connect parks, open spaces and waterways around the county are associated with trees, shrubs and other wildlife which greatly enhance the landscape character of an area. These greenways simultaneously function as wildlife corridors. A wildlife corridor can facilitate dispersal and reduce the risk of extinction of a species due to excessive habitat fragmentation and the isolation of small fragmented populations (Good J.A. 1998). Wildlife corridors, while generally linear and narrow in nature, can also provide additional habitat in their own right for many common plants and animal species.

Wildlife corridors vary greatly in length from local corridors linking habitat patches within a site to regional corridors linking sites that may be separated by a distance of several

kilometres. For example, in a local context, hedgerows can provide valuable linkages between semi-natural habitats such as woodlands and ponds in an agricultural or urban landscape.

Policy 5	Maintain and enhance existing wildlife corridors.
Policy 6	Identify areas that would benefit from the creation of new wildlife corridors.

Table 1 below provides an overview of protected species that are legally protected under European or national legislation and may be found in parks and open spaces in Dún Laoghaire-Rathdown.

More detailed information on legal obligations and best practice guidlelines for protected species are provided in the document.

Policy 7	Implement best guidance practice in relation to protected species.

Table 1: Summary of protected species in parks and open spaces in DLR.

Species	Associated Habitats	Legislation	Further Info.
Birds			
Breeding birds	Woodland, scrub, grassland, trees, buildings, watercourses, ponds and hedgerows.	WA 1976 and 2000	App. 2
Birds listed on Annex I of the E.U. Birds Directive	Various habitats (see appendix for Annex I birds present in DLR).	BD 1979	App. 2
Mammals			
Cetaceans	Marine waters.	HD 1992 & WA 1976 and 2000	App. 3
Bats	Roost in mature trees, buildings, bridges and underground. They forage along hedges, woodland, grassland and water.	HD 1992 & WA 1976 and 2000	App. 4
Otters	Watercourses and coastal habitats.	HD 1992 & WA 1976 and 2000	App. 5
Badgers	Woodland, scrub, grassland and hedgerows.	WA 1976 and 2000	App. 6
Red Squirrels	Woodland.	WA 1976 and 2000	App. 7
Amphibians and reptiles			
Smooth Newts	Ponds, grassland, woodland, hedgerows, scrub and stonewalls.	WA 1976 and 2000	App. 8
Common Lizards	Grassland, heathland, scrub, hedgerows and stonewalls.	WA 1976 and 2000	App. 8
Fish			
Atlantic Salmon	Watercourses and marine waters.	HD 1992	App. 9
Lamprey	Watercourses and marine waters.	HD 1992	App. 10
Plants			

Plants listed on the FPO	Various habitats (see appendix for species present in DLR).	FPO 1999 & WA 1976 and 2000	App. 11

WA: Wildlife Acts, BD: Birds Directive, HD: Habitats Directive, FPO: Flora Protection Order, App: Appendix.

4.0 Parkland habitats

4.1 Grassland

Grassland habitat is to be found in parks, open spaces and along roadside verges across the county. Much of this area comprises intensively managed grassland and there are opportunities for the enhancement of this habitat by for example, altering the management regime and reducing the frequency of cutting. This would allow grasses and flowers to set seed, thereby increasing the general species diversity in grassland habitats.

There are financial and practical difficulties in dealing with the disposal of grass cuttings in urban areas. However, where practical, meadow areas will be created which will benefit insects, birds and mammals by providing shelter and food.

In addition to amenity grassland, there are several areas of semi-natural grassland in locations such as Killiney Hill, Dalkey Islands, Dalkey and Killiney coastal zone and FitzSimons Wood that are species rich and of high nature conservation importance.

Policy 8	Identify areas of existing amenity grassland where longer grass can be allowed to grow for the benefit of wildlife.
Policy 9	Identify and manage semi-natural grasslands that support rare or protected species, or a diverse assemblage of species, in a manner that ensures their long-term conservation (e.g. Killiney Hill, Dalkey Coastal Zone, Dalkey Island and FitzSimons Wood).
Policy 10	Avoid seeding off-the-shelf wildflower mixes in, or adjacent to, semi-natural grassland habitats. Sow seeds of local provenance where available.

Policy 11	Control the encroachment of bracken into areas of semi-natural grassland where appropriate (e.g. FitzSimons Wood, Rathmichael Woods, Killiney Hill and Dalkey Island).

4.2 Hedgerows

Hedgerows can be found in many of the parks and open spaces in Dún Laoghaire-Rathdown. In both urban settings and improved agricultural landscapes, hedgerows and associated features (such as trees, banks, ditches and grassy verges) create diversity in the landscape. Hedgerows are complex habitats, containing elements of woodland edge, scrub and grassland. The presence of hedgerow trees, underlying banks and adjacent ditches adds to this complexity (Bealey *et al.* 2009).

The value of a hedgerow for wildlife is influenced by the age and structure of the hedgerow, the species composition and the number of associated features. For example, tall, bushy hedges containing native species, which are well managed, will have much greater value for wildlife than unmanaged, leggy hedges with frequent gaps. Hedgerows provide food and shelter for mammals, birds, amphibians and invertebrates and are important wildlife corridors that facilitate the movement and dispersal of species.

Policy 12	Prepare a hedgerow maintenance plan for each park or district where individual hedges are cut at 3-year intervals.
Policy 13	Maintain 2m wide (minimum) buffer strips containing long grassland immediately adjacent to hedgerows.

4.3 Trees and Woodlands

Dún Laoghaire-Rathdown contains numerous small stands of woodland that vary from coniferous plantation to semi-natural woodland. Some of these woodlands are located in designated sites such as Killiney Hill, Loughlinsotwn Wood and FitzSimons Wood. Additional woodland stands can be found in other parks, open spaces and along watercourses and roadside verges.

Semi-natural woodland containing native species usually has greater value for wildlife than plantation woodland with a small number of tree species or non-native species. Increasing the structural diversity of the woodland will greatly benefit biodiversity. Woodlands with well developed ground, shrub, canopy and climbing layers tend to support a greater variety of species.

In addition, there are numerous individual trees or small groups of trees scattered throughout open space and along streetscapes across the county, which are not part of woodlands or associated with hedgerows. These trees make a significant contribution to the biodiversity of an area. They add structural diversity to an area of open space and provide food, shelter and nesting sites for insects and birds. A line of trees may provide important flight corridors and foraging habitat for bats.

Policy 14	Identify and manage areas of semi-natural woodland of high local conservation interest in a manner that ensures their long-term conservation (e.g. FitzSimons Wood, Louglinstown Wood, Killiney Hill).
Policy 15	Create a varied age and habitat structure (canopy, shrub, herb and climbing layers) in planted woodlands in the major parks.
Policy 16	Retain fallen and standing dead wood within woodland habitats where it is safe to do so.
Policy 17	Incorporate biodiversity issues into the DLR Tree Policy.
Policy 18	Identify wildlife corridors and other areas of importance for Red Squirrels and implement a conservation strategy for this species.

4.4 Watercourses

Dún Laoghaire-Rathdown contains a number of rivers and streams which make a significant contribution to the biodiversity of the county. These include the Glencullan River, the Loughlinstown River and its tributaries, the Deansgrange Stream, the Little Dargle, the River Slang and the River Dodder.


Grey Heron in Kilbogget Park

Many of these rivers and their tributaries support lamprey and salmonid fish species. They also provide important habitat for a range of aquatic invertebrates, marginal and aquatic plant species and mammals such as the Otter (*Lutra lutra*). Other species that are frequently found in the vicinity of watercourses in Dún Laoghaire-Rathdown include Daubenton's Bat (*Myotis daubentonii*), Grey Heron (*Ardea cinerea*) and more rarely, Kingfisher (*Alcedo atthis*).

Parks and Landscape Services are responsible for the management of riparian habitat along the banks sides and bank tops of watercourses in

parks and open spaces throughout the county. The Water and Waste Department are responsible for in-channel work including the clearance of debris that would result in flooding and the maintenance and monitoring of the water quality. Parks and Landscape Services frequently liaise with Water and Waste on the management of watercourses.

There are also waterbodies or ponds in Marlay Demesne, FitzSimons Wood, Blackrock Park, seasonal ponds on Roches Hill and Shanganagh Park and new ponds which have recently been created in Cabinteely Park and Kilbogget Park.


Swans on the pond in Marlay Demesne

Ponds provide excellent habitat for wildlife. The ecological community present in a pond largely depends on the nutrient status, depth, fluctuation in water levels and the relative location of the pond to other habitats of nature conservation interest. Ponds in Dún Laoghaire-Rathdown support a variety of emergent, submerged and floating plant species. The larvae of many aquatic insects, including non-biting midges, craneflies and hoverflies, live in the sediment along the bottom of the pond. Other species such as water beetles, dragonfly larvae, molluscs, amphibians and fish find refuge and food amongst aquatic vegetation. Ponds support a range of bird species, which feed on plants, molluscs, insects and fish. Ponds also provide important feeding habitats for bats such as the Daubenton's Bat (*Myotis daubentonii*).

Policy 19	Retain existing semi-natural habitat as buffer areas on river banks and adjacent to watercourses/ waterbodies.
Policy 20	Identify areas where new riparian buffer strips (comprising long grassland, scrub or woodland) can be developed.
Policy 21	Identify opportunities for the regeneration and re-profiling of sections of watercourse that have been channelised and reinforced with hard landscaping so as to create a more natural formation, where appropriate.
Policy 22	Identify suitable locations in parks and open spaces where the creation of new waterbodies, is appropriate.

Policy 23	Agree a protocol with Water and Waste Services regarding in-channel management works such as dredging, which could have potential adverse impacts on biodiversity.
Policy 24	Liaise with Water and Waste Services to ensure that the design of sustainable urban drainage features enhance the biodiversity of an area.
Policy 25	Liaise with Eastern Regional Fisheries Board regarding fisheries impacts prior to implementing works that will result in in-channel or bank side alterations to a watercourse.

4.5 Buildings and walls

Parks and Landscape Services is responsible for the management of a range of buildings and built structures in parks including Marlay House and Cabinteely House, small buildings at office depots and boundary features including stonewalls enclosing and traversing parks and open spaces.

Buildings, particularly old stone buildings such as Marlay House and Cabinteely House have very high potential for use by roosting bats and nesting birds. Birds may nest in holes in the walls, under the eves and within the roof space. Bats may nest in holes and crevices in the walls, under fascia boards, in the roof spaces (both in crevices and more openly, depending on the species), in gaps between window frames and the walls, under roofing tiles and in cellars. Where climbers such as ivy are present, both birds and bats may roost or nest in the vegetation.

Stonewalls covered in ivy also provide invertebrates such as bees and butterflies with an important nectar source during late autumn when other sources may be scarce. Stonewalls provide important habitats for a variety of lichens, mosses and ferns. Stonewalls may also be used by the common lizard (*Lacerta vivipara*).

The rock faces in Dalkey Quarry support a diversity of plant and animal species. Special consideration must be given to the management of vegetation on the quarry faces.

Policy 26	Undertake a survey to assess potential impacts on roosting bats and birds prior to carrying out any works necessary for the upkeep of built structures.

Policy 27	Incorporate bat roosting opportunities into newly built structures in parks and open spaces.
Policy 28	Retain vegetation such as ivy and ferns on buildings and stonewalls, where practical.
Policy 29	Conserve the vegetation on the rock faces of Dalkey Quarry such as the lichen and bryophyte communities and other features of biodiversity interest.

5.0 Invasive Species

In recent years, invasive species have been recognised as the 2nd greatest threat to biodiversity. An invasive species is "*any species that has been introduced to an environment where it is not native, and that has since become a threat to native flora and fauna through rapid spread and colonisation*".


Giant Hogweed (*Heracleum mantegazzianum*)

Many invasive species are problematic for both people and wildlife. A number of invasive plant species have been recorded in the County including Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*), and Giant Hogweed (*Heracleum mantegazzianum*). The Grey Squirrel is the only mammal?? which is of concern due to its damage by grazing on young plantations and more particularly its displacement of the native Red Squirrel. Killiney Hill has one of the few remaining colonies of Red Squirrel in County Dublin and the protection and expansion of this population is a key objective for the Parks Service.

6.0 Education and Awareness

Public parks and open spaces provide opportunities for people to come into direct contact with nature on a daily basis. There is excellent potential to use this resource for raising awareness and educating the general public about the value and importance of biodiversity.

Parks and Landscape Services can play an important role in educating ground staff and contractors working on behalf of the Council about legal obligations and best practice guidelines relating to biodiversity.

Policy 30	Organise and support biodiversity education initiatives in parks and open spaces to promote the value and benefits of conserving biodiversity.
Policy 31	Provide biodiversity training for staff and contractors working in parks and open spaces.
Policy 32	Establish a conservation volunteer task force to participate in practical conservation actions in parks and open spaces.

7.0 Best Practice Guidance on Protected Species

7.1 Protected species overview

Protected species generally refer to species that are legally protected under E.U. or national legislation. This includes the following legal provisions:-

1) Breeding birds and bird species protected under Annex I of the E.U. Habitats Directive 1979;
2) Flora and fauna protected under Annex II, IV and V of the E.U. Habitats Directive 1992;
3) Flora and fauna protected under The Wildlife Acts 1976 and 2000; and
4) Flora protected under the Flora Protection Order 1999.

European Legislation

Bird species listed on Annex I of the E.U. Birds Directive 1979 are afforded strict protection. Species listed in Annex II of the E.U. Habitats Directive include animal and plant species whose conservation requires the designation of Special Areas of Conservation (SACs).

The E.U. Habitats Directive prohibits the following actions in relations to protected species listed under Annex IV:

a) All forms of deliberate capture or killing of specimens of these species in the wild;
b) Deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation and migration;
c) Deliberate destruction or taking of eggs from the wild;
d) Deterioration or destruction of breeding sites or resting places.

The European Communities (Natural Habitats) Regulations 1997 transpose the E.U. Habitats Directive into Irish law. **Under Regulation 23, an offence will occur even if the disturbance to the species is accidental.** This places the onus on Local Authorities to ensure that all staff and anyone undertaking work on their behalf, which includes works of maintenance and repair, fully comply with the requirements of the Regulation.

Article 15 of the E.U. Habitats Directive requires member states to prohibit the use of all indiscriminate means capable of causing local disappearance of or serious disturbance to populations of the species of wild fauna listed in Annex V.

National Legislation

The following actions are prohibited for species protected under The Wildlife Acts of 1976 and 2000:

a) Cutting, picking, uprooting or wilfully damaging, interfering or damaging the habitat of a protected plant species;
b) The taking, of eggs or nest of breeding birds or disturbance to breeding birds while on or near a nest; and
c) To hunt or injure a protected wild animal, or to disturb or destroy the breeding place or resting place of a protected wild animal.

Protected plant species include those listed in the Flora Protection Order 1999.

7.2 Birds

Legal protection for birds

All breeding birds, their nests, eggs and fledgling are protected under The Wildlife Acts 1976 and 2000. Bird species listed on Annex I of the E.U. Birds Directive 1979 are afforded strict protection. Annex I species that may be encountered in Dún Laoghaire-Rathdown are listed in Table 3 below.

Table 3: Birds listed on Annex I of the E.U. Habitats Directive present in DLR

Common Name	Latin Name
Little Egret	*Egretta garsetta*
Peregrine Falcon	*Falco peregrinus*
Merlin	*Falco columbarius*
Red Kite	*Milvus milvus*
Hen Harrier	*Circus cyaneus*
Golden Plover	*Pluvialis apricaria*
Bar-tailed Godwit	*Limosa limosa*
Nightjar	*Caprimulgus europaeus*
Kingfisher	*Alcedo atthis*
Mediterranean Gull	*Larus melanocephalus*
Little Gull	*Larus minutus*
Roseate Gull	*Sterna dougallii*
Little Tern	*Sterna albifrons*
Sandwich Tern	*Sterna sandvicensis*
Common Tern	*Sterna hirundo*
Artic Tern	*Sterna paradisaea*
Black Tern	*Chlidonias niger*

In addition, certain habitats that are important for Annex I species or the general diversity and abundance of birds they support have been designated as pNHAs or SPAs under national and European legislation, respectively.

Best practice advice

To avoid impacts to breeding birds, the cutting and clearance of all vegetation including trees, shrubs, tall herbs and long grass should be carried out outside the bird-breeding season (March to August inclusive). Routine works involving the clearance of vegetation should be scheduled to avoid this sensitive period. Some exceptions under the Act allow vegetation to be cleared during the bird-breeding season for any works being duly carried out for reasons of public health and safety (see Wildlife Acts 1976 and 2000 for further details). The Minister may request from the person concerned details of any works carried out for public health and safety. The National Parks and Wildlife Services should be consulted prior to undertaking clearance works for reasons of public health and safety.

Where management activities or site proposals have potential to adversely impact birds listed in Annex I of the E.U. Habitats Directive or areas which provide important habitats for birds, an ecological assessment must be carried out in advance of any works to ensure that such impacts are identified and avoided. A qualified ecologist should undertake the ecological assessment.

7.3 Cetaceans

Legal protection for cetaceans

All cetaceans present in Ireland are protected under The Wildlife Acts 1976 and 2000 and Annex IV of the E.U. Habitats Directive as transposed into Irish Law through the European Communities (Natural Habitats) Regulations 1997. The four most commonly occurring species in marine areas surrounding Dún Laoghaire-Rathdown are also listed on Annex II of the E.U. Habitats Directive. This includes Common Seal (*Phoca vitulina*) Grey Seal (*Halichoerus grypus*), Harbour Porpoise (*Phocaena phocaena*) and Bottle-nosed Dolphin (*Tursiops truncates*).

The Irish Sea supports a large population of Common and Grey Seals and Grey Seals breed and rest on offshore islands around Dublin, including Dalkey Island. The Harbour Porpoise is also frequently sighted around Dublin, Scotsman's Bay and Killiney Bay. Other species such as Bottle-nosed Dolphin and Risso's Dolphin (Grampus griseus) are recorded occasionally.

Best practice advice

Where management activities or site proposals have potential to adversely impact cetaceans or areas which provide important habitats for cetaceans, an ecological

assessment must be carried out in advance of any works to ensure that such impacts are identified and avoided. Particular consideration should be given to the potential for works to disturb breeding and resting seals on Dalkey Island.

7.4 Bats

Legal protection for bats

All bat species present in Ireland and their roosting habitats are protected under The Wildlife Acts 1976 and 2000 and Annex IV of the E.U. Habitats Directive as transposed into Irish Law through the European Communities (Natural Habitats) Regulations 1997. Bat species likely to be encountered in the Dún Laoghaire-Rathdown area are listed in the Table 4 below.

Table 4: Bat species present in DLR and their typical roosting sites.

Common Name	Latin Name	Summer roosting sites	Winter hibernation site
Common Pipistrelle	*Pipistrellus pipistrellus*	Buildings, trees	Buildings, trees, more rarely underground
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Buildings, trees	Buildings, trees, more rarely underground
Nathusius' Pipistrelle	*Pipistrellus nathusii*	Limited data available	Limited data available
Whiskered Bat	*Myotis mystacinus*	Buildings, trees	Underground, more rarely in buildings
Leisler's Bat	*Nyctalus leisleri*	Buildings, trees	Buildings, trees
Natterer's Bat	*Myotis nattereri*	Buildings, trees and more rarely underground	Underground and trees
Daubenton's Bat	*Myotis daubentonii*	Bridges and buildings	Underground
Brown Long-eared Bat	*Plecotus auritus*	Buildings and trees	Buildings, trees and underground

Best practice advice

Prior to undertaking work which involves felling or pruning semi-mature and mature trees with bat potential; or internal and external structural alterations to buildings or bridges including re-pointing; an assessment of the use of these features by bats should be undertaken to ensure that potential adverse impacts are avoided. Table 5 highlights features associated with trees which may provide potential roosting opportunities for bats.

Table 5: Tree features with high bat roosting potential

Features	
All old trees	Trunk holes and crevices
Dead wood and damaged trees	Branch holes and crevices
Ivy and other dense climbers	Loose bark, splits, snags and cracks

In most cases, the assessment will require an internal and external inspection of structures during daylight, followed by evening surveys using bat detectors. Depending on the structure and number of buildings/ trees to be assessed, evening surveys may have to be carried out over several nights and will require sufficient surveyors to observe all aspects of these structures. Qualified ecologists must carry out these assessments.

In the event that bats are found to be using features on site, it will be necessary to determine which species is present, the type of roost (i.e. summer roost, maternity roost, winter roost) and to make an assessment of the size of the population. Alternatives or modifications to the works to avoid adverse impacts on bats and their roosts must be identified. In many cases it may be possible to avoid adverse impacts on roosting sites through careful design and timing of works. The appropriate timing for works will vary depending on the species and roost type present.

A derogation licence from the Minister under Regulation 23 of the European Communities (Natural Habitats) Regulations 1997 is required in order to proceed with any works to a bat roost. The derogation licence must be obtained in advance of any works taking place.

Best practice felling advice

As bats frequently move between roosting sites, felling of all trees with holes and crevices must follow best practice advice, even if bats are not recorded during surveys.

When felling trees containing features with bat roosting potential, the trees should be felled in September/ October when bats are least vulnerable and young bats are mobile. The trees must be felled in sections. Sections containing holes and crevices should be retained in tact by cutting either side of these features. Cut sections should be carefully lowered to the ground and left in situ for 24 hours to allow the bats time to move to alternative sites.

More detailed information on best practice advice in relation to bats can be found in the *Bat Mitigation Guidelines for Ireland (Kelleher and Marnell, 2006)* which is available on the National Parks and Wildlife Services website (www.npws.ie).

7.5 Otters

Legal protection for otters

Otters and their breeding and resting places are protected under The Wildlife Acts 1976 and 2000 and Annex IV of the E.U. Habitats Directive as transposed into Irish Law through the European Communities (Natural Habitats) Regulations 1997. Otters use many of the watercourses in Dún Laoghaire-Rathdown.

Best practice advice

Otters use rivers and streams for feeding and travelling and will use bank sides and riparian vegetation for breeding and resting. Otters holts (dens) may be present along bank sides or close to a watercourse. They are usually inconspicuous (e.g. they may be located at the base of an overhanging tree). Otters may also have more open resting places called couches which can be located in marginal vegetation and under scrub present along the bank sides.

Prior to undertaking works along water courses including in-channel and bank side works, the section of watercourse should be surveyed to ensure that otters are not present. A trained ecologist must carry out the survey.

If otters are found to be present, alternatives or modifications to the works must be identified. If these are not feasible, a derogation licence from the Minister under Regulation 23 of the European Communities (Natural Habitats) Regulations 1997 will be required in order to proceed with the works.

7.6 Badgers

Legal protections for badgers

Badgers and their setts are protected under The Wildlife Acts 1976 and 2000. Badgers are present in both the rural and urban sections of the county including agricultural land, parks, open spaces and large gardens.

Best practice advice

Badgers are social animals with family groups that live in setts, a series of underground tunnels and chambers. A single social group may have several setts which are used to varying degrees. The main sett is usually associated with a relatively large number of entrance holes, while outlier setts, which are used less frequently and are located within a few hundred meters of the main sett, may comprise only one or two holes. Badger setts

are common in hedgerows, woodlands, small copses, scrub and along banks and slopes. Setts are frequently located in dense vegetation and may be inconspicuous, particularly during the summer months.

Prior to undertaking works including the clearance of vegetation, alterations to ground levels or bank side modifications, a badger survey should be carried out to ensure that badgers are not present. A trained ecologist should carry out the survey.

If badger setts are present, the potential impacts of proposed works must be fully assessed to ensure that works do not adversely affect badgers, their setts or their foraging habitat. Any works that will interfere with a sett will require a derogation licence from the Minister.

Badger setts can extend for up to 50m underground from the entrance hole. No subsurface works should be carried out within a 50m radius of a badger sett. The use of machinery must be avoided within a 20m radius a sett and light disturbance such as the use of hand tools should be avoided within a 10m radius of a sett.

7.7 Red Squirrels

Legal protection for Red Squirrels

Red Squirrels are protected under the Wildlife Acts 1976 and 2000. Red Squirrels are associated with woodland habitats and they are present on Killiney Hill, Carrickgollogan and other upland habitats in the county. They are currently declining across the county due to habitat loss and fragmentation and competition from the introduced Grey Squirrel.

Best practice advice

Woodland habitats containing red squirrels should be managed on a site-specific basis to create a varied woodland structure with sufficient abundance and diversity of seeds to support the population.

Grey Squirrels out-compete Red Squirrels in broadleaved woodland habitats and where greys are present, coniferous woodland habitats can provide some refuge for Red Squirrels. In sites where the primary objective is to conserve Red Squirrels, it may be beneficial to plant a variety of coniferous species. Planting for Red Squirrels should be determined on case-by-case basis.

7.8 Amphibians and reptiles

Legal protection for amphibians and reptiles

Amphibians and reptiles including the Smooth Newt (*Triturus vulgaris*), the Common Frog (*Rana temporaria*) and the Common Lizard (*Lacerta vivipara*) are protected under The Wildlife Acts 1976 and 2000 as amended by The Protection of Wild Animals Regulation 1980.

Best Practice Advice

Newts and frogs spend most of their life on land, with adults returning to water bodies to breed in Spring (February to June inclusive). The larvae may persist in water bodies until late August/ September. The presence of high quality terrestrial habitat close to ponds is important for these species. Prior to undertaking management activities in ponds such as the removal of silt or the clearance of vegetation, the pond should be assessed for the potential presence of amphibians. If present, works should be scheduled for the winter period to avoid disturbance or injury to breeding populations.

Whilst on land amphibians require protection to prevent drying out and may be found in dense vegetation and under refugia including deadwood, rocks and rubble piles. Suitable terrestrial habitats for amphibian species include grassland, woodland, wasteground, hedgerows and bank sides. Common lizards are usually associated with drier habitats and are frequently found in heathland, grassland, around stonewalls and along coastal cliffs, but they can also be found in wet, boggy heath.

All three species hibernate on land during winter and are particularly vulnerable to disturbance at this time of year. They use a range of hibernation sites in hole and crevices in the ground including small mammal burrows, under tree roots, in log piles, in dense vegetation and in rock and rubble piles.

Adverse impacts to semi-natural habitats that are important for these species must be avoided, as should disturbance to individuals, particularly during the hibernation period (October to February inclusive). Terrestrial works which may cause disturbance to amphibians or reptiles, must therefore, be scheduled to avoid the hibernation period.

7.9 Atlantic Salmon

Legal protection for salmon

Atlantic salmon are listed under Annex II and IV of the E.U. Habitats Directive. The River Dargle is an E.U.-listed Salmonid River, and the Glencullan River which is present in Dun Laoghaire-Rathdown is a tributary of this. Several other river systems including The Carrickmines/ Loughlinstown River, The Countybrook River and The Deansgrange Stream are important for River and Sea Trout, which are also salmonid species. These systems should be treated with similar care and consideration.

Best practice advice

Salmon utilise rivers for reproductive and nursery phases, and the marine environment for adult development and rapid growth (Mills 1991). In rivers, salmon require clean, well-oxygenated water and riffle areas with coarse gravel for spawning, as well as deeper pools for nursery areas. Salmon are particularly vulnerable to siltation, changes in flow characteristics and changes in water quality that could adversely impact on the nature of spawning and nursery areas.

All in-channel and bank side works should be assessed to determine if works will adversely affect the physical or chemical nature of a watercourse. To avoid impacts to spawning stocks, all in-channel works should be carried out between May and September in consultation with the Eastern Regional Fisheries Board.

More detailed advice is provided in "*Requirements for the protection of fisheries habitat during construction and development at river sites"* which is available on the Eastern Regional Fisheries Board's website.

7.10 Lamprey

Legal protection for lamprey

Both River and Brook Lamprey are present in watercourses in Dún Laoghaire-Rathdown, although the full extent of their distribution is unknown. River Lamprey is protected under Annex II and V and Brook Lamprey under Annex II of the E.U. Habitats Directive.

Best Practice Advice

Lampreys are jawless fish that migrate up rivers to spawn in stoney or gravely patches of river. The larvae migrate back downstream to silty areas where they burrow into mud for several years until they mature as adults. Lamprey require a clear migration route from estuary to the spawning grounds, with suitable river flows and no barriers; spawning areas, suitable hiding places and clean spawning gravels; and after hatching, slower flowing nursery areas of sandy silt in fresh water (Maitland, P.S. 2003).

In-channel works such as dredging and channelisation have potential to adversely affect lamprey through the destruction of habitat. In particular, the clearance of silty areas (which are often not considered important for fisheries) could impact on the larval stages of this species.

Prior to undertaking in-channel works on a watercourse, the watercourse should be assessed for its potential suitability for lamprey, and, if present, adverse impacts must be avoided. Any works carried out in rivers supporting lamprey should be carried out in consultation with NPWS.

7.11 Protected Flora

Legal protection for flora

A number of plant species are protected under national legislation including the Flora Protection Order 1999 and the Wildlife Acts 1976 and 2000. Seven species listed on the Flora Protection Order have been recorded in Dún Laoghaire-Rathdown, although the current status of some of these species is uncertain. These are listed in the Table 6 below:

Table 6: Plants listed on the Flora Protection Order 1999, which may be present in Dún Laoghaire-Rathdown.

Common Name	Latin Name	FPO	Summary of species records in the county
Basil Thyme	*Clinopodium acinos (Acinos arvensis)*	P	A few plants recorded close to the graveyard around Tully Church (1961). This species was not found during a survey in 2009.
Narrow-leaved Hemp Nettle	*Galeopsis angustifolia*	P	Recorded around Dundrum and Cabinteely (1856), on the roadside around Ballycorus (1943) and on a Forestry Roaad around Three Rock and Two Rock Mountain (1967)
Bog Orchid	*Hammarbya paludosa*	P	Recorded around Ticknock (1837), on Two Rock Mountain (1899) and south-west of Glencullan Bridge (1963). The latter site was afforested in 1992.
Fluellen	*Kickxia elatine*	P	Recorded on the edge of a field east of Shanganagh Cemetery (1984 and 1991). This species was not found during a survey in 2009.
Slender Cudweed	*Filago minima (Logfia minima)*	P	Recorded around Three Rock Mountain (1988 and 1993). This species was not found during a survey in 2009.
Small White Orchid	*Pseudorchis albida*	P	Recorded around Three Rock Mountain in the past

Works that could disturb these species or degrade their habitat may require a licence from the Minister.

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