

South Dublin County Council

Habitats Directive Assessment

Ecological Survey and Screening of a proposed housing development at Ballyboden Road, Rathfarnham, Co. Dublin



**for Appropriate Assessment in accordance with the requirements of
Article 6(3) of the EU Habitats Directive**

Draft Report

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SECTION 1

1.1. INTRODUCTION

This document represents South Dublin County Council's Appropriate Assessment (AA) Screening Report for a proposed housing development at Ballyboden Road, Rathfarnham, Co. Dublin.

This report has been prepared in accordance with the requirements of Article 6(3) of the Habitats Directive (Directive 92/43/EEC). Council directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna – 'The Habitats Directive' was transposed into Irish law by the European Community (Natural Habitats) Regulations 1997 (S.I. No. 94/1997).

The aim of the European Habitats Directive (Council Directive 92/43/EEC on the conservation of wild habitats and of wild fauna and flora) is to create a network of protected wildlife sites across Europe, which are to be maintained at a favourable conservation status¹. Each member state must designate their most important natural areas as Special Areas of Conservation (SAC).

The Directive specifies the scientific criteria on the basis of which SAC sites must be selected and very strictly curtails the grounds that can be used as justification for damaging a site. The network of sites is referred to as NATURA 2000 and includes SACs (Special Areas of Conservation) for protected habitats and species and SPAs (Special Protection Areas) for birds.

The European Habitats Directive (Council of the European Communities 1992) was transposed into Irish legislation by the European Communities (Natural Habitats) Regulations, 1997 and amended in 1998, 2005 and 2011.

The Natural Habitats Regulations amend the Planning Acts 2000-2010 and require planning authorities when considering an application for a development that is likely to have a significant effect on the SAC/SPA, to ensure that an appropriate assessment of the implications of the development for the conservation status of the site is undertaken.

¹ The conservation status of a **habitat** can be taken as "favourable" when its natural range and area it covers within that range is stable or increasing and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future.

The conservation status of a **species** can be taken as "favourable" when population dynamics data on the species concerned indicate that it is maintaining itself on a long term basis as a viable component of its natural habitats, the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future and there is and will continue to be a sufficiently large habitat to maintain its populations on a long-term basis. Article 1 (i) of the Habitats Directive 92/43/EEC.

The only justifications for damaging a qualifying "priority" site are "considerations relating to human health and public safety, to beneficial consequences of primary importance of the environment, or further to an opinion from the European Commission, to other imperative reasons of overriding public interest" (IROPI), but this can only be allowed after an assessment is made in line with the Article 6 procedure, and there are no other alternatives and an agreement is reached with the European Commission.

The European Parliament, in a communication to the European Council in September 2000, states: The implementation of the European Habitats Directive and Birds Directive, both with respect to species conservation and with respect to the establishment of the Natura 2000 network, is one of the most important tools for achieving the objectives of the Convention on Biological Diversity in the European Union and member states (European Parliament 2000).

Article 6 of the Habitats Directive provides a strict assessment procedure for any plan or project not directly connected with or necessary to the management of a designated European site but which has the potential to have implications for the site in view of the site's conservation objectives.

Article 6 (3) of the 'Habitats' Directive 92/43/EEC states that;

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the sites conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, If appropriate, after having obtained the opinion of the general public.

Article 6(4) states:

'if, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of economic or social nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

Article 6(3) therefore requires that an "appropriate assessment" be undertaken for any plan or project which is not necessary for the management of a Natura 2000 site and which has the potential to have an impact on the integrity of a Natura 2000 site *i.e.* a Special Area of Conservation (SAC) or a Special Protection Area for Birds (SPA), or on the conservation objectives of such a site.

Following guidance issued by the Department of Environment, Heritage and Local Government, 2010 (*Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*), plans and projects requiring to be considered for AA screening include:

- Regional Planning Guidelines (RPGs);
- City and County Development Plans (CDPs) and any material amendments/variations;
- Development Plans by Town Councils (TCDPs) and any amendments/variations;
- Local Area Plans (LAPs) and any amendments; and
- Planning Schemes in respect of Strategic Development Zones (SDZs).

In effect, the Commission's ruling requires a robust and thorough application by all consent authorities, including planning authorities, of the requirement to undertake an appropriate assessment of the ecological implications of any plan or project, or material variation of a plan or project, whether within or outside of a designated site, which may impact upon its stated conservation objectives.

1.2. METHODOLOGY

This Screening Statement for Appropriate Assessment Report has been prepared with regard to the following guidance documents where relevant:

- *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission Environment Directorate General, 2001)
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC* (EC Environment Directorate General, 2000)
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities Circular NPW 1/10 & PSSP 2/10*
- *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*. (Department of Environment, Heritage and Local Government, 2010 revision)
- *Guidelines for Good Practice, Appropriate Assessment of Plans under Article 6(3) Habitats Directive* (International Workshop on Assessment of Plans under the Habitats Directive, 2011)
- *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC*. Clarification of the Concepts of Alternative Solutions, Imperative Reasons of Over-riding Public Interest, Compensatory Measures, Overall Coherence. Opinion of the European Commission (European Commission, January 2007)

There are four stages in an Appropriate Assessment as outlined in the European Commission Guidance Document (2001), summarised below:

• Stage 1: Screening

The first step to establishing if an appropriate assessment is required is referred to as 'screening' and its purpose is to determine on the basis of a preliminary assessment and objective criteria if the plan or project, alone or in combination with other plans or projects, could have a significant effect on a Natura 2000 site in view of the sites conservation objectives. The process identifies any likely impacts upon a Natura 2000 Site, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

• Stage 2: Appropriate Assessment

This step considers the impact of the project or plan on the integrity of the Natura 2000 Site, either alone or in combination with other plans or projects, to the site's structure and function and its conservation objectives. Additionally, where there are deemed to be adverse impacts, an assessment of the potential mitigation of those impacts is considered.

- **Stage 3: Alternative Solutions**

This stage examines alternative means of achieving the objectives of the project or plan that aim to avoid adverse impacts on the integrity of the Natura 2000 site.

- **Stage 4: Imperative Reasons of Overriding Public Interest**

This stage is the main derogation process outlined in Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project which will have adverse effects on the integrity of a Natura 2000 site to proceed.

This report was based on a desk-top study drawing on information sources which included the following: NPWS on-line data for Natura 2000 sites; Ordnance Survey of Ireland mapping and aerial photography; and geological, hydrological and soils data available from GSI. The site was surveyed on 7th October 2015.

This report consists of one stage in Appropriate Assessment; the Screening for Appropriate Assessment (Stage 1). Neither **Stage 2. Appropriate Assessment**, **Stage 3. Assessment of Alternative Solutions** nor **Stage 4. Assessment where no alternative solutions exist and where adverse impacts remain** were applicable in this instance, as the proposed development of the lands at Ballyboden Road will not adversely affect the integrity of any Natura 2000 site.

SECTION 2 SCREENING MATRIX

2.1 DESCRIPTION OF THE PLAN OR PROJECT

2.1.1 Description of the Proposed Development.

South Dublin County Council proposes to build a new housing development on lands at Ballyboden Road, Rathfarnham, Co. Dublin. The lands proposed for development are the former site of a house (since demolished) and are currently abandoned and becoming overgrown by scrub.

2.1.2 Description of the receiving environment at Ballyboden Road.

The proposed site at Ballyboden Road is currently abandoned and becoming overgrown by scrub. A horse belonging to residents from Owendoher Haven which adjoins the site was grazing the land. The site was visited on the 7th October 2015.

The main areas of interest to biodiversity on the site include the boundary drainage ditch, treelines, hedgerow, mature trees, area of scrub and shrubs whilst the area of rough grassland also provides foraging for rabbits and a variety of bird species. A photographic record of the survey is presented in **Appendix 1**.

The main species present include Monterey cypress (*Cupressus macrocarpa*.), wild cherry (*Prunus avium*), horse chestnut (*Aesculus hippocastanum*), sycamore (*Acer pseudoplatanus*), birch (*Betula pubescens*), willows (*Salix* sp.), elder (*Sambucus nigra*), ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), blackthorn (*Prunus spinosa*), Wych elm (*Ulmus glabra*), beech (*Fagus sylvatica*), and a variety of other non-native and ornamental species.

A drainage ditch is found along the northern boundary of the site and this was mostly unvegetated as a result of deep shade. To the south of the site is the Owendoher River.

The main interest in the site from a protected faunal perspective is therefore potentially for otter which may use the Owendoher River and drainage ditch within the site, badgers and bats (which may roost in mature trees on the site and use the site for foraging and commuting).

2.1.3 Bat Survey

Desktop Review

Consultation with Bat Conservation Ireland has identified that several species of bats have been recorded within the 10km square in which the proposed housing development is located. These include Leisler's bat (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), Natterer's bat (*Myotis nattereri*), Daubenton's bat (*Myotis daubentonii*) and Brandt's/whiskered bat (*Myotis mystacinus/brandtii*). There are also records of an unidentified *Myotis* species (*Myotis* sp. and probably one of the above three) and an unidentified pipistrelle species (*Pipistrellus* sp. and probably one of the above two). These records include both detector records and records of known roosts.

Visual Inspection

There are no buildings present on the site that offer potential for roosting bats.

Trees within the site were assessed for their potential to support roosting bats. The most significant of these was the mature beech and ash trees within the site – these have a variety of rot holes, crevices and cracks for bats to roost in. Other trees with good ivy cover also offer some potential.

Detector Survey

The detector survey confirmed the presence of three species of bats foraging over the site – these were the Leisler's bat which was detected on two occasions flying across the site, while the boundary treelines and shrubs provided rich foraging for several common pipistrelle and soprano pipistrelle bats. No roosts were confirmed on site.

Conclusion

A bat derogation licence is therefore not required for the proposed development as part of planning permission. Recommendations for retaining/improving biodiversity within the site for both bats and other fauna are presented in **Section 5**.

2.1.4 Otter Survey

A survey for signs of otters along the drainage ditch within the site was conducted during the site visit. No signs of otter such as spraints, tracks, slides, etc. were observed and no otter holt was present. It is possible that otters may on occasion use the site as they are known from the Owendoher River.

Conclusion

An otter derogation licence is therefore not required for the proposed development as part of planning permission. Recommendations for retaining/improving biodiversity within the site for mammals are presented in **Section 5**.

2.1.5 Badger Survey

There was no evidence of badgers using the site but some areas of dense scrub could not be accessed adequately. It is therefore recommended that an ecologist is present when these areas are being cleared.

2.2 ASSESSMENT OF RELEVANCE OF PROPOSED DEVELOPMENT TO NATURA 2000 SITES

In line with the European Commission Methodological Guidance (EC (2001)) and the DoEHLG Guidance (DoEHLG (2010)) a review of all Natura 2000 sites that could be potentially affected by the proposed project was made using the NPWS online map viewer. These included any Natura 2000 sites within or adjacent to the site on Ballyboden Road, Rathfarnham, Co. Dublin, and any Natura 2000 sites within the likely zone of impact of the proposed development (a 15km radius) including those downstream.

The lands at Ballyboden Road, Rathfarnham, Co. Dublin, are not currently designated for any nature conservation purposes and there are no Natura 2000 sites located either within or directly adjacent to the lands.

Best practice recommends assessing Natura 2000 sites located within 15km of a proposed plan or project. Those Natura 2000 sites occurring within a 15km radius of the lands at Ballyboden Road, Rathfarnham, Co. Dublin are detailed in **Table 2.2** below. These include;

- Glenasmole Valley SAC (Site Code: 001029)
- Wicklow Mountains SAC/SPA (Site Code: 002122/004040)
- South Dublin Bay SAC (Site Code: 000210)
- North Dublin Bay SAC (Site Code: 000206)
- Knocksink Wood SAC (Site Code: 000725)
- Ballyman Glen SAC (Site Code: 000713)
- North Bull Island SPA (Site Code: 004006)
- Sandymount Strand/Tolka Estuary SPA (Site Code: 004024)
- Dalkey Islands SPA (Site Code: 004172)
- Rockabill to Dalkey Islands SAC (Site Code: 003000)

Table 2.2. Natura 2000 sites within 15km of the location of the proposed development on lands at Ballyboden Road, Rathfarnham, Co. Dublin.

Site Code	Site Name and Designation	Approximate distance from Rathfarnham	Conservation Interest (summarised from site synopsis)
002122	Wicklow Mountains SAC	4.7km S	<ul style="list-style-type: none"> • (3130) Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoeto-Nanojuncetea</i> • (3160) Natural dystrophic lakes and ponds, • (4010) Northern Atlantic wet heaths with <i>Erica tetralix</i>, • (4030) European dry heaths, • (4060) Alpine and Boreal heaths, • (6230) Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas, • (7130) Blanket bog (*active only), • (8110) Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>), • (8210) Calcareous rocky slopes with chasmophytic vegetation, • (8220) Siliceous rocky slopes with chasmophytic vegetation, • (9990) Blanket bog (not active), • (1355) Otter (<i>Lutra lutra</i>), • Peregrine falcon (<i>Falco peregrinus</i>), • Merlin (<i>Falco columbarius</i>)
004040	Wicklow Mountains SPA	4.7km S	<ul style="list-style-type: none"> • Peregrine falcon (<i>Falco peregrinus</i>), • Merlin (<i>Falco columbarius</i>), • Ring Ouzel (<i>Turdus torquatus</i>), • Red Grouse (<i>Lagopus lagopus</i>).
000210	South Dublin Bay SAC	8.1km NE and downstream	<ul style="list-style-type: none"> • (1140) Mudflats and sandflats not covered by seawater at low tide
004024	South Dublin Bay/Tolka Estuary SPA	8.1km NE and downstream	<ul style="list-style-type: none"> • Brent goose (<i>Branta bernicla hrota</i>), • Sandwich Tern (<i>Sterna sandvicensis</i>), • Roseate Tern (<i>Sterna dougallii</i>), • Common Tern (<i>Sterna hirundo</i>), • Arctic Tern (<i>Sterna paradisaea</i>), • Oystercatcher (<i>Haematopus ostralegus</i>), • Ringed Plover (<i>Charadrius hiaticula</i>), • Knot (<i>Calidris canuta</i>), • Sanderling (<i>Calidris alba</i>), • Dunlin (<i>Calidris alpina</i>), • Bar-tailed Godwit (<i>Limosa lapponica</i>).
001209	Glenasmole Valley SAC	5.4km SW	<ul style="list-style-type: none"> • (6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>) (*important orchid sites) • (6410) <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) • (7220) Petrifying springs with tufa formation (<i>Cratoneurion</i>)

Site Code	Site Name and Designation	Approximate distance from Rathfarnham	Conservation Interest (summarised from site synopsis)
000725	Knocksink Wood SAC	9.6km SE	<ul style="list-style-type: none"> • (7220) Petrifying springs with tufa formation (<i>Cratoneurion</i>) • (910E0) Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)
000206	North Dublin Bay SAC	12km NE	<ul style="list-style-type: none"> • (1140) Mudflats and sandflats not covered by seawater at low tide • (1210) Annual vegetation of drift lines • (1310) <i>Salicornia</i> and other annuals colonizing mud and sand • (1320) <i>Spartina</i> swards (<i>Spartinion maritimae</i>) • (1330) Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) • (1395) Petalwort (<i>Petalophyllum ralfsii</i>) • (1410) Mediterranean salt meadows (<i>Juncetalia maritimi</i>) • (2110) Embryonic shifting dunes • (2120) Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) • (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes) • (2190) Humid dune slacks
004006	North Bull Island SPA	12km NE	<ul style="list-style-type: none"> • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) • Shelduck (<i>Tadorna tadorna</i>) • Teal (<i>Anas crecca</i>) • Pintail (<i>Anas acuta</i>) • Shoveler (<i>Anas clypeata</i>) • Oystercatcher (<i>Haematopus ostralegus</i>) • Golden Plover (<i>Pluvialis apricaria</i>) • Grey Plover (<i>Pluvialis squatarola</i>) • Knot (<i>Calidris canutus</i>) • Sanderling (<i>Calidris alba</i>) • Dunlin (<i>Calidris alpina</i>) • Black-tailed Godwit (<i>Limosa limosa</i>) • Bar-tailed Godwit (<i>Limosa lapponica</i>) • Curlew (<i>Numenius arquata</i>) • Redshank (<i>Tringa totanus</i>) • Turnstone (<i>Arenaria interpres</i>) • Black-headed Gull (<i>Larus ridibundus</i>) • Wetlands & Waterbirds
000713	Ballyman Glen SAC	11.8km SE	<ul style="list-style-type: none"> • (7220) Petrifying springs with tufa formation (<i>Cratoneurion</i>) • (7230) Alkaline fens
004172	Dalkey Islands SPA	13.4km E	<ul style="list-style-type: none"> • Roseate Tern (<i>Sterna dougallii</i>) • Common Tern (<i>Sterna hirundo</i>) • Arctic Tern (<i>Sterna paradisaea</i>)
003000	Rockabill to Dalkey Islands SAC	13.4km E	<ul style="list-style-type: none"> • (1170) Reefs • (13510) Harbour porpoise (<i>Phocoena phocoena</i>)

There are no Natura 2000 sites located either within or directly adjacent to the lands at Balyboden Road. There are no direct ecological links (source-pathway-receptors) between the lands at Rathfarnham and any of the Natura 2000 sites outlined above. It is unclear if the site is hydrologically linked to any of the sites via the small drain on site which would drain to the Owendoher River. This is ultimately a tributary of the River Dodder and the Natura 2000 sites in Dublin Bay. As negative impacts on these Natura 2000 sites are highly unlikely by virtue of distance the proposed development at Rathfarnham will have no direct relevance to these protected sites.

There are no other designated biodiversity areas affected by the development at Rathfarnham that have a recognised European Union or International protection status. Some of the Natura 2000 sites and a number of other sites in the area are also designated as proposed Natural Heritage Areas, these include:

- Glenasmole Valley pNHA (Site Code: 001029),
- Royal Canal pNHA (Site Code: 002103),
- Liffey Valley pNHA (Site Code: 00128),
- Grand Canal pNHA (Site Code: 002104),
- Dodder Valley pNHA (Site Code: 000991),
- Lugmore Glen pNHA (Site Code: 001212),
- Slade of Saggart and Crooksling pNHA (Site Code: Glen 000211),
- Fitzsimon's Wood pNHA (Site Code: 001753),
- South Dublin Bay pNHA (Site Code: 000210),
- Booterstown Marsh pNHA (Site Code: 001205),
- North Dublin Bay pNHA (Site Code: 000206),
- Santry Demesne (Site Code: 000178),
- Dalkey Coastal Zone and Killiney Hill pNHA (Site Code: 001206),
- Loughlinstown Wood pNHA (Site Code: 001211),
- Dingle Glen pNHA (Site Code: 001207),
- Ballybetagh Bog pNHA (Site Code: 001202),
- Ballyman Glen pNHA (Site Code: 000713),
- Powerscourt Woodland pNHA (Site Code: 001768),
- Glencree Valley pNHA (Site Code: 001755),
- Great Sugarloaf pNHA (Site Code: 001769),
- Dargle River Valley pNHA (Site Code: 001754).

There are no ecological or hydrological links between the development site at Rathfarnham and these or any other pNHA beyond that of the watercourse mentioned above.

SECTION 3 DESCRIPTIONS OF NATURA 2000 SITES

There are no Natura 2000 sites located within or adjacent to the site at Rathfarnham. The Natura 2000 sites located within 15km of the site are listed in **Table 2.2** above and the full site synopsis for each site is presented in **Appendix 2**. A summary of the main elements of interest for each of these sites follows:

Wicklow Mountains SAC (Site Code: 002122) is an important complex, extensive, upland site covering much of the Wicklow Mountains and a portion of the Dublin Mountain range. Within the boundaries of South Dublin County, the SAC encompasses the mountains of Ballymorefinn, Corrig, Kilakee, and Cruagh, stretching south to the summit of Kippure Mountain at the border with County Wicklow. While the entire SAC lists ten habitats listed in Annex I of the EU Habitats Directive, the vegetation within the South Dublin County portion of the site mainly provides good examples of the typical upland habitats of heath, blanket bog and upland grassland. Several rare, protected plant and animal species also occur in this SAC.

Main Conservation Objectives:

1. To maintain the Annex 1 habitats for which the SAC has been selected at favourable conservation status:– Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*; Natural dystrophic lakes and ponds; Northern Atlantic wet heaths with *Erica tetralix*; European dry heaths; Alpine and Boreal heaths; Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and sub mountain areas, in Continental Europe); Blanket bog; Siliceous scree of the montane to snow levels; (*Androsacetalia alpinae* and *Galeopsietalia ladani*); Calcareous rocky slopes with chasmophytic vegetation; Siliceous rocky slopes with chasmophytic vegetation; Old sessile oak woods with *Ilex* and *Blechnum* in British Isles.
2. To maintain the Annex 2 species for which the SAC has been selected at favourable conservation status: - *Lutra lutra*
3. To maintain the extent, species richness and biodiversity of the entire site.
4. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

Wicklow Mountains SPA (Site Code: 004040) is an extensive upland site, comprising a substantial part of the Wicklow Mountains (See Appendix 2 for full site description). The site, which is within the Wicklow Mountains National Park, is fragmented into about twenty separate parcels of land. Much of the site is State-owned and managed for nature conservation based on traditional land uses for the uplands. The site is of high ornithological importance as it supports very good examples of upland and woodland bird communities, several of which are very rare at a national level. Two species, Ring Ouzel and Red Grouse, are Red-listed and their status is of high conservation concern.

Main Conservation Objective:

To maintain the special conservation interests for the SPA at favourable conservation status – Merlin, Peregrine.

South Dublin Bay SAC (Site Code 000210) lies south of the River Liffey and extends from the South Wall to the west pier at Dun Laoghaire (See Appendix 2 for full site description). It is a fine example of a coastal system with extensive sand and mudflats. South Dublin Bay is also an internationally important bird site.

Main Conservation Objectives:

1. To maintain the Annex 1 habitats for which the SAC has been selected at favourable conservation status: - Mudflats and sandflats not covered by seawater at low tide.
2. To maintain the extent, species richness and biodiversity of the entire site.
3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

South Dublin Bay and River Tolka Estuary SPA (Site Code 004024) comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included (See Appendix 2 for full site description).

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex. It is of international importance for Light-bellied Brent Goose and of national importance for nine other waterfowl species. As an autumn tern roost, it is also of international importance. Furthermore, the site supports a nationally important colony of Common Tern. All of the tern species using the site are listed on Annex I of the E.U. Birds Directive, as are Bar tailed Godwit and Mediterranean Gull.

Main Conservation Objective:

To maintain the special conservation interests for the SPA at favourable conservation status – Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Golden Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull, Roseate Tern, Common Tern, Arctic Tern, and Wetland and Waterbirds.

Glenasmole Valley SAC (Site Code: 001209) contains a high diversity of habitats and plant communities and lists three habitats listed on Annex I of the EU Habitats Directive: petrifying springs with tufa formation, semi-natural dry grassland and scrubland facies on calcareous substrate (*Festuco-Brometalia*) (important orchid sites), and *Molinia* meadows on calcareous, peaty, or clayey-silt-laden soils (*Molinion caeruleae*). Both petrifying springs and orchid-rich calcareous grasslands also qualify as Priority Habitats under the Habitats Directive. The presence of four Red Data Book plant species further enhances the value of the site as does the presence of populations of several mammal and bird species of conservation interest. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin.

Main Conservation Objectives:

1. To maintain the Annex 1 habitats for which the SAC has been selected at favourable conservation status – *Petrifying springs with tufa formation, Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites), *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
2. To maintain the extent, species richness and biodiversity of the entire site.
3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

Knocksink Wood SAC (Site Code: 000725) is a wooded valley outside Enniskerry Village. A notable feature of the woodlands in Knocksink Wood are the frequent and extensive springs and seepage areas. (See Appendix 2 for full site description). These petrifying springs are listed as a priority habitat on Annex I of the EU Habitats Directive. Associated with the springs and the river are stands of wet alluvial forest, also a habitat listed with priority status on Annex I of the EU Habitats Directive. The site contains a numbers of rare and scarce plants including some which are legally protected and has one of the most diverse woodland

invertebrate faunas in Ireland, incorporating wet woodland organisms threatened internationally within the EU.

Main Conservation Objectives:

1. To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected: - (7220) * Petrifying springs with tufa formation (*Cratoneurion*); * Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno Padion*, *Alnion incanae*, *Salicion albae*).
2. To maintain the extent, species richness and biodiversity of the entire site.
3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

North Dublin Bay SAC (Site Code 000206) covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head (See Appendix 2 for full site description). The North Bull Island is the focal point of this site. This SAC site is an excellent example of a coastal site with all the main habitats represented. It holds good examples of ten habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several wintering bird species have populations of international importance, while some invertebrates on the site are of national importance. The site also contains a numbers of rare and scarce plants including some which are legally protected.

Main Conservation Objectives:

1. To maintain the Annex I habitats for which the SAC has been selected at favourable conservation status:– Mudflats and sandflats not covered by seawater at low tide; Annual vegetation of drift lines; Salicornia and other annuals colonising mud and sand; Atlantic salt meadows (*Glaucopuccinellietalia maritima*); *Petalophyllum ralfsii*; Mediterranean salt meadows (*Juncetalia maritimi*); Embryonic shifting dunes; Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); Humid dune slacks
2. To maintain the extent, species richness and biodiversity of the entire site.
3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

North Bull Island SPA (Site Code: 004006) covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. (See Appendix 2 for full site description). A well-developed and dynamic dune system stretches along the seaward side of the island, supporting various types of dunes and a large dune slack with a rich flora. Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl.

The site is of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for wetland and waterbirds.

Main Conservation Objective:

To maintain the special conservation interests for the SPA at favourable conservation status – Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Grey Plover, Golden Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone, Black-headed Gull, and Wetland and Waterbirds.

Ballyman Glen SAC (Site Code: 000713) is a small glen which extends across the Dublin/Wicklow border and supports areas of alkaline fen and petrifying springs, which are both habitats listed on Annex I of the EU Habitats Directive. The site also contains a rich diversity of sedges and orchids (See Appendix 2 for full site description).

Main Conservation Objectives:

1. To maintain or restore the favourable conservation condition of the Annex I habitats for which the SAC has been selected: - Petrifying springs with tufa formation (*Cratoneurion*); and alkaline fens.
2. To maintain the extent, species richness and biodiversity of the entire site.
3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

Dalkey Islands SPA (Site Code: 004172) consists of a number of islands off Sorrento Point in Dalkey. The site is of special conservation interest for the following tern species: Roseate Tern, Common Tern and Arctic Tern and is both a breeding and a staging site for *Sterna* terns. (See Appendix 2 for full site description).

Main Conservation Objective:

To maintain the special conservation interests for the SPA at favourable conservation status – Roseate tern, common tern and Arctic tern.

Rockabill to Dalkey Island SAC (Site Code: 003000) is a newly designated SAC which was created to protect offshore reefs and the harbour porpoise.

Main Conservation Objective:

To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected – reefs and harbour porpoise. (See Appendix 2 for full site description).

SECTION 4 ASSESSMENT OF POTENTIAL IMPACTS

4.1 ASSESSMENT OF PROPOSED DEVELOPMENT AT EDMONDSTOWN ROAD, RATHFARNHAM.

The potential impacts of the proposed development at Ballyboden Road, Rathfarnham on nearby Natura 2000 sites are assessed using the following factors:

- size and scale
- land-take
- distance from the Natura 2000 site or key features of the site
- resource requirements (water abstraction etc.)
- emissions (disposal to land, water or air)
- excavation requirements
- transportation requirements
- duration of construction, operation, decommissioning, etc.
- reduction of habitat area
- disturbance to key species
- habitat or species fragmentation
- reduction in species density
- changes in key indicators of conservation value (water quality etc.)
- climate change
- key relationships that define the structure of the sites

- key relationships that define the function of the site

Brief description of the project or plan	Development of a new housing development at Ballyboden Road.
Brief description of the Natura 2000 sites	<p>There are no Natura 2000 sites either within or directly adjacent to the proposed development site at Ballyboden Road, Rathfarnham. Natura 2000 sites occurring within and just outside of a 15km radius from the site include the following which are described briefly in Section 3 and in detail in Appendix 2:</p> <ul style="list-style-type: none"> • Glenasmole Valley SAC (Site Code: 001029) • Wicklow Mountains SAC/SPA (Site Code: 002122/004040) • South Dublin Bay SAC (Site Code: 000210) • North Dublin Bay SAC (Site Code: 004006) • South Dublin Bay/Tolka Estuary SPA (Site Code: 004024) • Knocksink Wood SAC (000725) • Ballyman Glen SAC (000713) • North Bull Island SPA (004006) • Dalkey Islands SPA (004172) • Rockabill to Dalkey Islands SAC (003000)
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 sites	The development of the site at Ballyboden Road will have no impacts on any Natura 2000 site and there are no cumulative elements expected which are likely to give rise to impacts on Natura 2000 sites
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of: <ul style="list-style-type: none"> • size and scale; • land-take; • distance from the Natura 2000 site or key features of the site; • resource requirements (water abstraction etc.); • emissions (disposal to land, water or air); excavation requirements; • transportation requirements; • duration of construction, operation, decommissioning, etc.; • other 	<p>The proposed development is not within or directly adjacent to any Natura 2000 site, therefore there will no impacts arising from the project regarding size and scale or land-take.</p> <p>The proposed development site is over 4.6km distant from the nearest Natura 2000 site (Wicklow Mountains SAC). Apart from the Dublin Bay Natura 2000 sites, there are also no potential ecological or hydrological links to the other Natura 2000 sites listed in Table 2.2.</p> <p>The site will be serviced by the existing city water mains, there are no requirements to abstract water from any Natura 2000 site or potential hydrological impacts on same.</p> <p>All wastewater from the development will be</p>

	<p>treated in the existing wastewater mains.</p> <p>Due to the location of the proposed development at distance from any Natura 2000 site, there are also no impacts to Natura 2000 sites expected from transportation, duration of construction, operation, or decommissioning of any element of the development.</p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> • reduction of habitat area • disturbance to key species; • habitat or species fragmentation; • reduction in species density; • changes in key indicators of conservation value (water quality etc.); • climate change 	<p>Due to the distance of the proposed development from any Natura 2000 site and the expected implementation of South Dublin Council Development Plan policies and objectives relating to the maintenance and protection of water quality, there are no changes expected to any Natura 2000 site relating to habitat or species reduction, changes to key indicators of conservation value, or to climate change</p>
<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> • interference with the key relationships that define the structure of the site • interference with key relationships that define the function of the site 	<p>There will be no impacts on the Natura 2000 site as a whole in terms of interference with the key relationships that define the structure of the site or interference with key relationships that define the function of the site.</p>
<p>Provide indicators of significance as a result of the identification of effects set out above in terms of:</p> <ul style="list-style-type: none"> • Loss • Fragmentation • Disruption • Disturbance • Change to key elements of the site (e.g. water quality etc.) 	<p>There will be no impacts to Natura 2000 sites relating to loss, fragmentation, disruption, disturbance, or changes to key elements of the site.</p>
<p>Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.</p>	<p>There will be no direct, indirect, or cumulative impacts from the proposed development on Natura 2000 sites.</p>

SECTION 5 CONCLUSIONS & RECOMMENDATIONS

5.1 Screening Assessment Conclusion

This screening report has evaluated the proposed development of a housing development by South Dublin County Council at Ballyboden Road, Rathfarnham, to determine whether or not significant negative impacts on Natura 2000 sites are likely to arise by virtue of its construction and use. The report finds that the project will not, either individually or in combination with other plans and projects, give rise to significant effects on the integrity of any Natura 2000 site.

The Appropriate Assessment procedure for this proposed Plan is therefore concluded at this Screening Stage and a detailed (Stage 2) Appropriate Assessment is not required.

5.2 Biodiversity Measures

General recommendations for conserving and improving biodiversity within the site are presented below:

1. Lighting should be designed and installed with controlled targeting a priority:

It is recommended that lighting should be directional to ensure that it can be restricted to the grounds of the housing development and not overspill onto any of trees and shrubs which form the boundaries of the site and are used by foraging bats. This can be achieved in a number of ways including low mounting position, cowls, low intensity, direction of light, etc.

2. Planting of native species:

The development will include new landscaping proposals including the planting of trees and shrubs. This should include the use of native and local plant species such as hawthorn, blackthorn, hazel, Wych elm, mountain ash, alder, willows, oak, ash, broom, elder and gorse. Species used should be native and of local origin.

Climbers such as honeysuckle (*Lonicera periclymenum*) are beneficial to moths and other nocturnal insects while shrubs such as Hebe and Buddleja are beneficial to daytime and some night insects.

Landscaping proposals should consider providing nectar rich flowers for insects across the season. Suitable spring flowers include: bluebell, bugle, crab apple, daffodil, flowering cherry and currant, forget-me-not (*Myosotis*), hellebore (*Helleborus corsicus*, *H. foetidus*), *Pulmonaria*, rhododendron, rosemary, *Viburnum*, thrift (*Armeria maritima*). Early-summer flowers include; *Aquilegia*, *Astilbe*, *Campanula*, comfrey, everlasting sweet pea (*Lathyrus latifolius*), fennel, foxglove, *Geranium*, *Potentilla*, snapdragon, *Stachys*, teasel, thyme, Viper's bugloss (*Echium vulgare*), *Verbascum*. Late-summer flowers include; *Angelica*, *Aster*, cardoon, Cornflower (*Centaurea*), dahlia (single-flowered), *Delphinium*, *Eryngium*, Fuchsia, globe thistle (*Echinops*), heather, ivy, lavender, penstemon, scabious, sedum, *Verbena bonariensis*.

3. Provision of roosting and nesting opportunities:

Nesting and roosting opportunities should be provided for both bats and birds within the site. These can include nest boxes, bat boxes and the incorporation of specialised bricks/pre-constructed opportunities in walls. These should be specified by an ecologist at detailed design stage.

4. Pond creation:

The creation of a pond could also be beneficial in attracting wildlife to the site and would enhance the aquatic habitats already provided by the drainage ditch and adjoining Owendoher River. For a naturalistic effect, make a pond with an informal, curved outline. To attract the widest range of wildlife, create areas of shallow water (around 2-3cm deep), which are essential for the lifecycles of frogs, dragonflies and water beetles, and will also make it easier for creatures like hedgehogs and birds to bathe. Deeper areas (up to 1m) are essential too, as frogs overwinter in the muddy depths, breathing through their skin. Suitable species for planting within the pond include:

Marginals - Yellow flag iris (*Iris pseudacorus*), Marsh marigold (*Caltha palustris*), Water plantain (*Alisma plantago-aquatica*), Water forget-me-not (*Myosotis scorpioides*), Brooklime (*Veronica beccabunga*), Bogbean (*Menyanthes trifoliata*), Ragged robin (*Lychnis flos-cuculi*).

Emergents - Greater spearwort (*Ranunculus lingua*), Branched bur-reed (*Sparganium erectum*), Purple loosestrife (*Lythrum salicaria*), Water mint (*Mentha aquatica*).

Underwater - Water soldier (*Stratiotes aloides*), Hornwort (*Ceratophyllum demersum*).

5. Protection measures for retained trees and other vegetation:

Detailed consideration has been given in designing the housing scheme to retain boundary trees, scrub and hedgerows within the site as green infrastructure for wildlife. The treeline at the northern edge of the site with an associated drainage ditch is of high importance for biodiversity and both features should be retained in full and enhanced with appropriate planting. Trees adjoining the Owendoher Lodge housing development and Tigean House are also of importance and should be protected and retained in full.

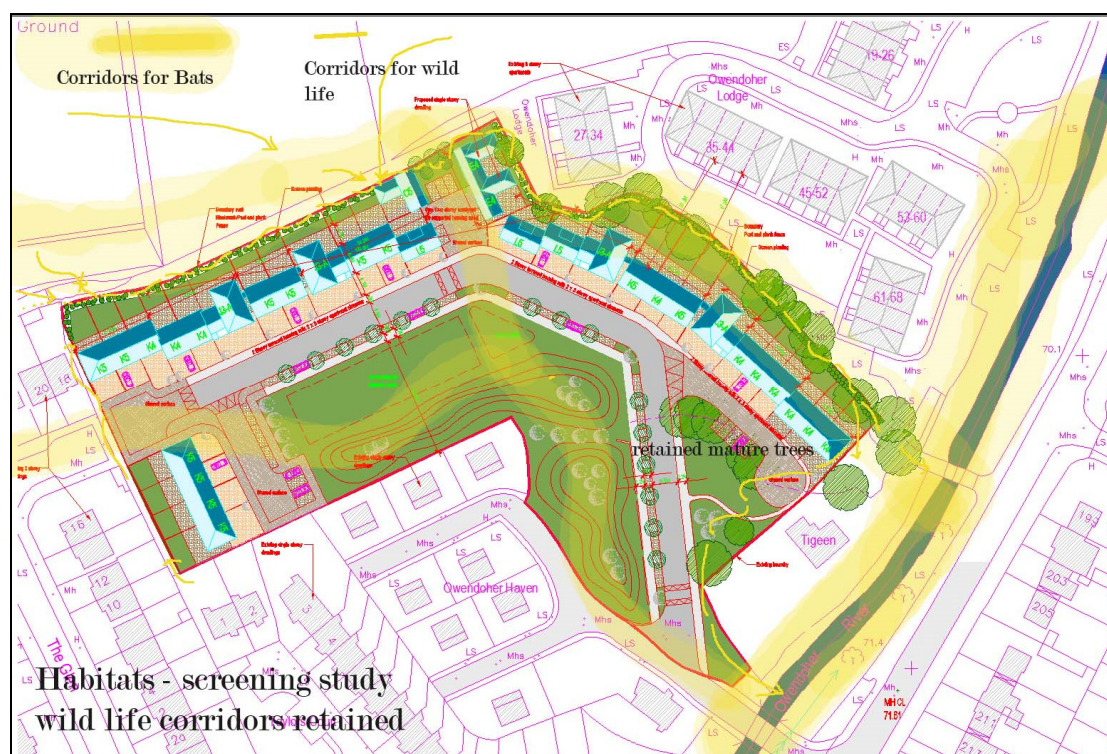


Figure 2. Green infrastructure within the site.

Protective measures should be implemented for retained trees to ensure that the roots and branches of boundary vegetation and any internal trees and shrubs that are to be retained are protected during the construction works. Fencing to BS 50837/2012 should be erected to

protect retained trees and vegetation prior to the commencement of any site clearance works and be signed off by an appropriately qualified ecologist/arborist.

6. Mammal access to the site:

Access for mammals to the site should be retained – both foxes and rabbits are present on site and otter may visit the site from the nearby watercourse on occasion.

7. Protective measures for roosting bats:

A bat specialist should be present during the tree felling to advise on how best to take down those trees that have potential to support roosting bats and to deal with any bats found.

8. Protective measures for badgers:

It is possible that badgers may be present in areas of dense scrub within the site that could not be physically accessed. It is therefore recommended that an ecologist is present during site clearance works to check these areas as they are opened up for any mammal use and to advise accordingly.

APPENDIX 1. PHOTOGRAPHIC RECORD



Plate 1. Looking west across the site over the grassland area.



Plate 2. Looking east across the site from the grassland area to the central hedgerow and Owendoher Lodge.



Plate 3. Willows along the drainage ditch and treeline on the northern boundary of the site.



Plate 4. Mature trees such as this ash offer roosting potential for bats within the site.



Plate 5. The northern boundary of the site contains a mature treeline adjoining a drainage ditch – this area is used by bats and is of importance as green infrastructure within the site.



Plate 6. Drainage ditch at the base of the northern site boundary.



Plate 7. Mature trees associated with the former dwelling on the site.



Plate 8. Some areas of dense scrub in the north-east and south-east corner of the site could not be fully accessed.

APPENDIX 2. NATURA 2000 SITE DESCRIPTIONS (as listed in Table 2.2)

SITE SYNOPSIS

SITE NAME: WICKLOW MOUNTAINS

SITE CODE: 002122

This site is a complex of upland areas in Counties Wicklow and Dublin, flanked by Blessington Reservoir to the west and Vartry Reservoir in the east, Cruagh Mt. in the north and Lybagh Mt. in the south. Most of the site is over 300m, with much ground over 600m and the highest peak of Lugnaquilla at 925m.

The Wicklow Uplands comprise a core of granites flanked by Ordovician schists, mudstones and volcanics. The form of the Wicklow Glens is due to glacial erosion. The Wicklow Mountains are drained by several major rivers including the Dargle, Liffey, Dodder, Slaney and Avonmore. The river water in the mountain areas is often peaty, especially during floods.

The topography is typical of a mountain chain, showing the effects of more than one cycle of erosion. The massive granite has weathered characteristically into broad domes. Most of the western part of the site consists of an elevated moorland, covered by peat. The surrounding schists have assumed more diverse outlines, forming prominent peaks and rocky foothills with deep glens. The dominant topographical features are the products of glaciation. High corrie lakes, deep valleys and moraines are common features of this area. The substrate over much of the area is peat, usually less than 2m deep. Poor mineral soil covers the slopes and rock outcrops are frequent

The vegetation over most of the site is a mosaic of heath, blanket bog and upland grassland (mostly on peaty soil, though some on mineral soil), with stands of dense Bracken (*Pteridium aquilinum*) and small woodlands mainly along the rivers. Mountain loughs and corrie lakes are scattered throughout the site. The site supports many habitats that are listed on Annex I of the E.U. Habitats Directive.

The two dominant vegetation communities in the area are heath and blanket bog. Heath vegetation, with both wet and dry heath well represented, occurs in association with blanket bog, upland acid grassland and rocky habitats. The wet heath is characterised by species such as Ling (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Cottongrasses (*Eriophorum* spp.), Tormentil (*Potentilla erecta*), Mat-grass (*Nardus stricta*), Bent grasses (*Agrostis* spp.) and bog mosses (*Sphagnum* spp.). In places the wet heath occurs in conjunction with flush communities and streamside vegetation, and here species such as Heath Rush (*Juncus squarrosus*) and *Carex* spp. are found. Dry heath at this site is confined to shallow peaty soils on steep slopes where drainage is better and particularly in sheltered conditions. It is characterised by species such as Ling, Gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). In places the heath grades into upland grassland on mineral soil, some examples of which correspond to the E.U. Habitats Directive Annex I priority habitat species-rich *Nardus* grassland.

Blanket bog is usually dominated by Cottongrasses, Ling and bog mosses (*Sphagnum* spp.). On steeper slopes there is some flushing and here Purple Moor-grass, Heath Rush, and certain *Sphagnum* species become more common. The Liffey Head blanket bog is among the best of its kind in eastern Ireland, with deep peat formations and an extensive system of dystrophic pools developed among the hummocks and hollows on the bog surface. The vegetation is largely dominated by Ling and Cross-leaved Heath, with Cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*) and Bog Asphodel (*Narthecium ossifragum*). In drier areas, Bilberry and Cowberry (*Vaccinium vitis-idaea*) are common, while the scarce Bog Rosemary (*Andromeda polifolia*) is also found. Blanket bog

occurs over extensive areas of deeper peat on the plateau and also on gentle slopes at high altitudes. Peat erosion is frequent on the peaks - this may be a natural process, but is likely to be accelerated by activities such as grazing.

Due to the underlying rock strata, the water of the rivers and streams tends towards acidity. The water is generally oligotrophic and free from enrichment. The lakes within the area range from the high altitude lakes of Lough Firrib and Three Lakes, to the lower pater-noster lakes of Glendalough, Lough Tay and Lough Dan. Spectacular corrie lakes (such as Loughs Bray (Upper and Lower), Ouler, Cleevaun, Arts, Kellys and Nahanagan) exhibit fine sequences of moraine stages. The deep lakes are characteristically species poor, but hold some interesting plants including an unusual form of Quillwort (*Isoetes lacustris* var. *morei*), a Stonewort (*Nitella* sp.) and Floating Bur-reed (*Sparganium angustifolium*). The Red Data Book fish species Arctic Char has been recorded from Lough Dan, but this population may now have died out.

Alpine vegetation occurs on some of the mountain tops, notably in the Lugnaquilla area, and also on exposed cliffs and scree slopes elsewhere in the site. Here alpine heath vegetation is represented with species such as Crowberry (*Empetrum nigrum*), Cowberry, Dwarf Willow (*Salix herbacea*), the grey-green moss *Racomitrium lanuginosum* and scarce species such as Mountain Clubmoss (*Diphasiastrum alpinum*), Firmoss (*Huperzia selago*), and Starry Saxifrage (*Saxifraga stellaris*). Some rare arctic-alpine species have been recorded, including Alpine Lady's-mantle (*Alchemilla alpina*) and Alpine Saw-wort (*Saussurea alpina*).

Small areas of old oak wood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalur, near L. Tay and L. Dan, with native Sessile Oak (*Quercus petraea*) 100-120 years old. On wetter areas, wet broadleaved semi-natural woodlands occur, which are dominated by Downy Birch (*Betula pubescens*). Mixed woodland with non-native tree species also occurs.

The site supports a range of rare plant species, which are listed in the Irish Red Data Book: Parsley Fern (*Cryptogramma crispa*), Marsh Clubmoss (*Lycopodiella inundata*), Greater Broom-rape (*Orobancha rapum-genistae*), Alpine Lady's-mantle, Alpine Saw-Wort, Lanceolate Spleenwort (*Asplenium billotii*), Small White Orchid (*Pseudorchis albida*) and Bog Orchid (*Hammarbya paludosa*). The latter three species are legally protected under the Flora (Protection) Order, 1999. The rare Myxomycete fungus, *Echinostelium colliculosum*, has been recorded from the Military Road.

Mammals and birds which occur are typical of the uplands. Deer are abundant, mainly hybrids between Red and Sika Deer. Other mammals include Hare, Badger and Otter, the latter being a species listed on Annex II of the E.U. Habitats Directive. Pine Marten has recently been confirmed as occurring within the site. Among the birds, Meadow Pipit, Skylark, Raven and Red Grouse are resident throughout the site. Wheatear, Whinchat and the scarce Ring Ouzel are summer visitors. Wood Warbler and Redstarts are rare breeding species of the woodlands. Dipper and Grey Wagtail are typical riparian species. Merlin and Peregrine Falcon, both Annex I species of the EU Birds Directive, breed within the site. Recently, Goosander has become established as a breeding species.

Large areas of the site are owned by NPWS, and managed for nature conservation based on traditional landuses for the uplands. The most common landuse is traditional sheep grazing. Other land uses include turf-cutting, mostly hand-cutting but some machine-cutting occurs. These activities are largely confined to the Military Road, where there is easy access. Large areas which had been previously hand-cut and are now abandoned, are regenerating. In the last 40 years, forestry has become an important landuse in the uplands, and has affected both the wildlife and the hydrology of the area. Amenity use is very high, with Dublin city close to the site.

Wicklow Mountains is important as a complex, extensive upland site. It shows great diversity from a geomorphological and a topographical point of view. The vegetation provides examples of the typical upland habitats with heath, blanket bog and upland grassland covering large, relatively undisturbed areas. In all ten habitats listed on Annex I of the EU Habitats Directive are found within the site. Several rare, protected plant and animal species occur.

12.10.2001

SITE SYNOPSIS

SITE NAME: WICKLOW MOUNTAINS SPA

SITE CODE: 004040

This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. The underlying geology of the site is mainly of Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area was subject to glaciation and features fine examples of glacial lakes, deep valleys and moraines. Most of site is over 300 m, with much ground being over 600 m; the highest peak is Lugnaquilla (925 m). The substrate over much of site is peat, with poor mineral soil occurring on the slopes and lower ground. Exposed rock and scree are features of the site.

The dominant habitats present are blanket bog, heaths and upland grassland. The bog habitat is usually dominated by Ling (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*) and Bog Asphodel (*Narthecium ossifragum*). Bog mosses (*Sphagnum* spp.) are well represented. On shallower peats, dry heath is represented by such species as Ling, Gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). Fine examples of native Oak woodlands are found in the Glendalough area, and include Sessile Oak (*Quercus petraea*) trees of 100-120 years old. Glendalough Lake is a good example of an oligotrophic system.

The site supports good examples of both upland and woodland bird communities. The open peatlands provide excellent foraging habitat for Merlin (5-10 pairs) and Peregrine (c. 10 pairs). The Merlins nest in old crows nests, whilst the Peregrines nest on cliffs and crags. Other birds of the open peatlands and scree slopes include Ring Ouzel, now a very rare bird in Ireland, and Red Grouse. The Wicklow uplands are the only regular location in Ireland where Goosander breeds, with the Glendalough lakes being a regular site. This species was proved to be breeding only as recently as 1994 and it is now well established. Whinchat, a localised species in Ireland, breeds within the site.

The Glendalough Oak woods are a regular location for several rare breeding passerines. Redstart is recorded most years and 1-2 pairs probably breed. Wood Warbler is another annual visitor, with perhaps up to 5 pairs in some years. Recently, Garden Warbler has been recorded, whilst Blackcap has a very strong breeding population.

The site, which is within the Wicklow Mountains National Park, is fragmented into about twenty separate parcels of land. Much of the site is State-owned and managed for nature conservation based on traditional landuses for the uplands. The most common landuse is traditional sheep grazing. Other land uses include turf-cutting, mostly by hand though some machine-cutting also occurs. Grazing by sheep and deer in the woodlands can be damaging as it prevents or reduces regeneration. Dublin City is close to the site and amenity use is very high; if not properly controlled, recreational activities could cause disturbance to some bird species.

This site is of high ornithological importance as it supports very good examples of upland and woodland bird communities. Several of the species which occur are very rare at a national level. Two species, Ring Ouzel and Red Grouse, are Red-listed and their status is of high conservation concern. Also of note is that Merlin and Peregrine are both listed on Annex I of the E.U. Birds Directive.

25.8.2004

SITE SYNOPSIS

SITE NAME: SOUTH DUBLIN BAY

SITE CODE: 000210

This site lies south of the River Liffey and extends from the South Wall to the west pier at Dun Laoghaire. It is an intertidal site with extensive areas of sand and mudflats, a habitat listed on Annex I of the E.U. Habitats Directive. The sediments are predominantly sands but grade to sandy muds near the shore at Merrion gates.

The main channel which drains the area is Cockle Lake. There is a bed of Eelgrass (*Zostera noltii*) below Merrion Gates which is the largest stand on the east coast. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are distributed throughout the area at a low density. Furoid algae occur on the rocky shore in the Maretimo to Dún Laoghaire area. Species include *Fucus spiralis*, *F. vesiculosus*, *F. serratus*, *Ascophyllum nodosum* and *Pelvetia canaliculata*. Lugworm (*Arenicola marina*) and Cockles (*Cerastoderma edule*) and other annelids and bivalves are frequent throughout the site. The small gastropod *Hydrobia ulvae* occurs on the muddy sands off Merrion Gates.

South Dublin Bay is an important site for waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. The principal species are Oystercatcher (1215), Ringed Plover (120), Sanderling (344) and Dunlin (2628), Redshank (356) (average winter peaks 1996/97 and 1997/98). Up to 100 Turnstones are usual in the south bay during winter. Brent Geese regularly occur in numbers of international importance (average peak 299). Bar-tailed Godwit (565), a species listed on Annex I of the EU Birds Directive, also occur.

Large numbers of gulls roost in South Dublin Bay, e.g. 4,500 Black-headed Gulls in February 1990; 500 Common Gulls in February 1991. It is also an important tern roost in the autumn, regularly holding 2000-3000 terns including Roseate Terns, a species listed on Annex I of the E.U. Birds Directive. South Dublin Bay is largely protected as a Special Protection Area. At low tide the inner parts of the south bay are used for amenity purposes. Bait digging is a regular activity on the sandy flats. At high tide some areas have windsurfing and jet-skiing.

This site is a fine example of a coastal system with extensive sand and mudflats, a habitat listed on Annex I of the E.U. Habitats Directive. South Dublin Bay is also an internationally important bird site.

25.2.2000

SITE SYNOPSIS

SITE NAME: SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA

SITE CODE: 004024

The South Dublin Bay and River Tolka Estuary SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included.

In the south bay, the intertidal flats extend for almost 3 km at their widest. The sediments are predominantly well-aerated sands. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. The landward boundary is now almost entirely artificially embanked. There is a bed of Dwarf Eelgrass (*Zostera noltii*) below Merrion Gates which is the largest stand on the east coast. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are distributed throughout the area at a low density. The macro-invertebrate fauna is well-developed, and is characterised by annelids such as Lugworm (*Arenicola marina*), *Nephtys* spp. and Sand Mason (*Lanice conchilega*), and bivalves, especially Cockle (*Cerastoderma edule*) and Baltic Tellin (*Macoma balthica*). The small gastropod Spire Shell (*Hydrobia ulvae*) occurs on the muddy sands off Merrion Gates, along with the crustacean *Corophium volutator*.

Sediments in the Tolka Estuary vary from soft thixotrophic muds with a high organic content in the inner estuary to exposed, well-aerated sands off the Bull Wall. The site includes Booterstown Marsh, an enclosed area of saltmarsh and muds that is cut off from the sea by the Dublin/Wexford railway line, being linked only by a channel to the east, the Nutley stream. Sea water incursions into the marsh occur along this stream at high tide. An area of grassland at Poolbeg, north of Irishtown Nature Park, is also included in the site.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull, Roseate Tern, Common Tern and Arctic Tern. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of the SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex – all counts for wintering waterbirds are mean peaks for the five year period 1995/96-99/2000. Although birds regularly commute between the south bay and the North Bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. An internationally important population of Light-bellied Brent Goose (525) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at Merrion. Light-bellied Brent Goose is also known to feed on the grassland at Poolbeg.

The site supports nationally important numbers of a further nine species: Oystercatcher (1,263), Ringed Plover (161), Golden Plover (1,452), Grey Plover (183), Knot (1,151), Sanderling (349), Dunlin (2,753), Bar-tailed Godwit (866) and Redshank (713). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (397) and Turnstone (75).

South Dublin Bay is a significant site for wintering gulls, especially Black-headed Gull (3,040), but also Common Gull (330) and Herring Gull (348). Mediterranean Gull is also

recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter. Both Common Tern and Arctic Tern breed in Dublin Docks, on a man-made mooring structure known as the E.S.B. dolphin – this is included within the site. Small numbers of Common Tern and Arctic Tern were recorded nesting on this dolphin in the 1980s. A survey of the dolphin in 1999 recorded Common Tern nesting here in nationally important numbers (194 pairs). This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important Common Tern sites in the country with over 400 pairs recorded here in 2007.

The south bay is an important tern roost in the autumn (mostly late July to September). Birds also use the Dalkey Islands to the south. The origin of many of the birds is likely to be the Dublin breeding sites (Rockabill and the Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. More than 10,000 terns have been recorded, consisting of Common, Arctic and Roseate terns. The wintering birds within this site are now well-monitored. More survey, however, is required on the wintering gulls and the autumn terns.

Boooterstown Marsh supports an important population of Borrer's Saltmarsh-grass (*Puccinellia fasciculata*), a rare, Red Data Book species that is listed on the Flora (Protection) Order, 1999.

The South Dublin Bay and River Tolka Estuary SPA is of international importance for Light-bellied Brent Goose and of national importance for nine other waterfowl species. As an autumn tern roost, it is also of international importance. Furthermore, the site supports a nationally important colony of Common Tern. All of the tern species using the site are listed on Annex I of the E.U. Birds Directive, as are Bar-tailed Godwit and Mediterranean Gull.

1.5.2008

SITE SYNOPSIS

SITE NAME: GLENASMOLE VALLEY

SITE CODE: 001209

Glenasmole Valley in south Co. Dublin lies on the edge of the Wicklow uplands, approximately 5 km from Tallaght. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin. The non-calcareous bedrock of the Glenasmole Valley has been overlain by deep drift deposits which now line the valley sides. They are partly covered by scrub and woodland, and on the less precipitous parts, by a herb-rich grassland. There is much seepage through the deposits, which brings to the surface water rich in bases, which induces local patches of calcareous fen and, in places, petrifying springs, a priority habitat listed on Annex I of the EU Habitats Directive.

Examples of calcareous fen and flush areas occur between the two reservoirs, where sedges (*Carex flacca* and *Carex panicea*) are joined by such species as Grass of Parnassus (*Parnassia palustris*), Few-flowered Spike-rush (*Eleocharis quinqueflora*), Zig-zag clover (*Trifolium medium*) and the scarce Fen Bedstraw (*Galium uliginosum*).

Orchid-rich grassland occurs in the drier parts of this site and in places grades into *Molinia* meadow, both of these habitats are listed on Annex I of the EU Habitats Directive. Species recorded in these habitats include Frog Orchid (*Coeloglossum viride*), Northern Marsh-orchid (*Dactylorhiza purpurella*), Fragrant Orchid (*Gymnadenia conopsea*), Marsh Helleborine (*Epipactis palustris*), Early-purple Orchid (*Orchis mascula*) and Greater Butterfly Orchid (*Platanthera chlorantha*).

Two Red Data Book species have also been found here, Green-winged Orchid (*Orchis morio*) and Small-white Orchid (*Pseudorchis albida*). The sward includes Sweet Vernal-grass (*Anthoxanthum odoratum*), Creeping Bent (*Agrostis stolonifera*) and Crested Dog's-tail (*Cynosurus cristatus*). Other species which occur are Common Bird's-foot-trefoil (*Lotus corniculatus*), Kidney Vetch (*Anthyllis vulneraria*), Common Restharrow (*Ononis repens*), Yellow-wort (*Blackstonia perfoliata*) and Autumn Gentian (*Gentianella amarella*).

Woodland occurs in patches around the site. On the east side of the valley, below the northern lake, a Hazel (*Corylus avellana*) wood has developed on the unstable calcareous slopes and includes Ash (*Fraxinus excelsior*), Downy Birch (*Betula pubescens*), Goat Willow (*Salix caprea*) and (Irish) Whitebeam (*Sorbus hibernica*). Spring Wood-rush (*Luzula pilosa*), Wood Speedwell (*Veronica montana*) and Brambles (*Rubus fruticosus* agg.) are included in the ground flora.

Wet semi-natural broad-leaved woodland is also found around the reservoirs and includes Alder (*Alnus glutinosa*) and Willow (*Salix* spp.) with Yellow Iris (*Iris pseudacorus*), Horsetail (*Equisetum* spp.), Brambles and localised patches of Japanese Knotweed (*Reynoutria japonica*), an introduced species.

The lake shore vegetation is not well developed, which is typical of a reservoir. There are occasional patches of Canary-grass (*Phalaris arundinacea*) and Purple-loosestrife (*Lythrum salicaria*), which are more extensive around the western shore of the northern lake, along with Common Marsh-bedstraw (*Galium palustre*) and Water Mint (*Mentha aquatica*). Other vegetation includes Shoreweed (*Littorella uniflora*) and the scarce Water Sedge (*Carex aquatilis*).

As well as the Green-winged Orchid and Small-white Orchid, two other threatened species which are listed in the Irish Red Data Book also occur in the site, Yellow Archangel (*Lamiastrum galeobdolon*) and Yellow Bird's-nest (*Monotropa hypopitys*).

The site provides excellent habitat for bat species, with at least four species recorded: Pipistrelle, Leisler's, Daubenton's and Brown Long-eared Bat. Otter occurs along the river and reservoirs. These habitats also support Kingfisher, an Annex I species under the EU Birds Directive.

Glenasmole Valley contains a high diversity of habitats and plant communities, including three habitats listed on Annex I of the EU Habitats Directive. The presence of four Red Data Book plant species further enhances the value of the site as does the presence of populations of several mammal and bird species of conservation interest.

03.09.2001

SITE SYNOPSIS

SITE NAME: KNOCKSINK WOOD

SITE CODE: 000725

Knocksink Wood is situated in the valley of the Glencullen River north-west of Enniskerry. The fast-flowing Glencullen River winds its way over granite boulders along the valley floor. The steep sides of the valley are mostly covered with calcareous drift.

Some of the slopes are dominated by Sessile Oak (*Quercus petraea*) with a sparse shrub layer of Holly (*Ilex aquilinum*) and Hazel (*Corylus avellana*), while on the ground there is a carpet of Great Wood-rush (*Luzula sylvatica*). Other areas are characterised by mixed woodland, with Oak, Ash (*Fraxinus excelsior*), Beech (*Fagus sylvatica*), Sycamore (*Acer pseudoplatanus*) and the occasional conifer occurring.

The ground flora includes Ivy (*Hedera helix*) and Brambles (*Rubus fruticosus* agg.), and often luxuriant ferns, such as Hart's Tongue (*Phyllitis scolopendrium*), Soft Shield-fern (*Polystichum setiferum*), and mosses. Lichens occur abundantly on some trees.

A notable feature of the slopes are the frequent and extensive springs and seepage areas within the woodland. These petrifying springs are listed as a priority habitat on Annex I of the EU Habitats Directive. Associated with the springs and the river are stands of wet alluvial forest, also a habitat listed with priority status on Annex I of the EU Habitats Directive. The wet woodland is dominated by Ash and Alder (*Alnus* spp.) and is assigned to the group Carici remotae-Fraxinetum. Other species which occur include Willow (*Salix* spp.), Birch (*Betula pubescens*) and Hazel. Islands in the river and open gravelly areas provide further habitat diversity.

A number of scarce or rare plants occur within the site including Blue Fleabane (*Erigeron acer*), Ivy-leaved Bellflower (*Wahlenbergia hederacea*) and Yellow Archangel (*Lamium galeobdolon*).

This site has one of the most diverse woodland invertebrate faunas in Ireland, incorporating wet woodland organisms threatened internationally within the EU.

Vertebrates noted in the vicinity, either by tracks, sett or sight, include Red Squirrel, Badger, Rabbit and Deer. The woodland supports large populations of birds, including many common passerines (Robin, Blackbird, Song Thrush, Wren, Chaffinch) and crows, such as Rook, Hooded Crow, Magpie, Jackdaw and Raven. A Buzzard has been noted in the area and Dipper are occasionally seen in the river.

The importance of this site lies in the diversity of woodland habitats which occur. The presence of rare or threatened plants and invertebrates adds to the interest. Much of this site has been designated a Statutory Nature Reserve and there is presently an educational centre within the site.

7.8.2003

SITE SYNOPSIS

SITE NAME: NORTH BULL ISLAND SPA

SITE CODE: 004006

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses.

A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (*Ammophila arenaria*) is dominant on the outer dune ridges. Species of the fixed dunes include Wild Pansy (*Viola tricolor*), Kidney Vetch (*Anthyllis vulneraria*), Bird's-foot Trefoil (*Lotus corniculatus*), Pyramidal Orchid (*Anacamptis pyramidalis*) and, in places, the scarce Bee Orchid (*Ophrys apifera*). A feature of the dune system is a large dune slack with a rich flora, usually referred to as the 'Alder Marsh' because of the presence of Alder (*Alnus glutinosa*) trees. The water table is very near the surface and is only slightly brackish. Sea Rush (*Juncus maritimus*) is the dominant species, with Meadowsweet (*Filipendula ulmaria*) and Devil's-bit Scabious (*Succisa pratensis*) being frequent. The orchid flora is notably diverse in this area.

Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. On the lower marsh, Glasswort (*Salicornia europaea*), Common Saltmarsh-grass (*Puccinellia maritima*), Annual Seablite (*Suaeda maritima*) and Greater Sea-spurrey (*Spergularia media*) are the main species. Higher up in the middle marsh Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*) and Thrift (*Armeria maritima*) appear. Above the mark of the normal high tide, species such as Common Scurvygrass (*Cochlearia officinalis*) and Sea Milkwort (*Glaux maritima*) are found, while on the extreme upper marsh, Sea Rush and Saltmarsh Rush (*Juncus gerardi*) are dominant.

The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Tasselweed (*Ruppia maritima*) and small amounts of Eelgrass (*Zostera* spp.) are found in the lagoons. Common Cord-grass (*Spartina anglica*) occurs in places. Green algal mats (*Enteromorpha* spp., *Ulva lactuca*) are a feature of the flats during summer. These sediments have a rich macro-invertebrate fauna, with high densities of Lugworm (*Arenicola marina*) and Ragworm (*Hediste diversicolor*). Mussels (*Mytilus edulis*) occur in places, along with bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. The small gastropod *Hydrobia ulvae* occurs in high densities in places, while the crustaceans *Corophium volutator* and *Carcinus maenas* are common. The sediments on the seaward side of North Bull Island are mostly sands and support species such as Lugworm and the Sand Mason (*Lanice conchilega*). The site includes a substantial area of the shallow marine bay waters.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone and Black-headed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular

attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. It also qualifies for international importance as the numbers of three species exceed the international threshold – Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bar-tailed Godwit (1,529) (all waterfowl figures given are average maxima for the five winters 1995/96 to 1999/00). The site is the top site in the country for both of these species. A further 14 species have populations of national importance – Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Ringed Plover (139), Golden Plover (1,741), Grey Plover (517), Knot (2,623), Sanderling (141), Dunlin (3,926), Curlew (937), Redshank (1,431) and Turnstone (157). The populations of Pintail and Knot are of particular note as they comprise more than 10% of the respective national totals. Species such as Grey Heron, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser and Greenshank are regular in winter in numbers of regional or local importance. Gulls are a feature of the site during winter, especially Black-headed Gull (2,196). Common Gull (332) and Herring Gull (331) also occur here. While some of the birds also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter. The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

The site has five Red Data Book vascular plant species, four rare bryophyte species, and is nationally important for three insect species. The rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and its presence here has recently been re-confirmed. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. A well-known population of Irish Hare is resident on the island.

The main landuses of this site are amenity activities and nature conservation. The North Bull Island is one of the main recreational beaches in Co. Dublin and is used throughout the year. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrounding intertidal flats. North Bull Island is also a Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site. Much of the SPA is also a candidate Special Area of Conservation. The site is used regularly for educational purposes and there is a manned interpretative centre on the island.

The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Light bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the E.U. Birds Directive, notably Golden Plover and Bar-tailed Godwit, but also Ruff and Short-eared Owl.

22.5.2008

SITE SYNOPSIS

SITE NAME: BALLYMAN GLEN

SITE CODE: 000713

Ballyman Glen is situated approximately 3 km north of Enniskerry. It is orientated in an east-west direction with a stream running through the centre. The glen is bounded mostly by steeply sloping pasture with Gorse (*Ulex europaeus*) and areas of wood and scrub.

This site is a candidate SAC selected for alkaline fen and petrifying springs, both habitats listed on Annex I of the EU Habitats Directive.

The glen contains a small strip of fen, which runs along the county boundary and extends into County Dublin. This fen is very alkaline and is associated with petrifying spring/seepage areas that have given rise to thick deposits of marl. The vegetation of the main part of the fen is dominated by Greater Tussock-sedge (*Carex paniculata*), Tall Fescue (*Festuca arundinacea*), Butterworts (*Pinguicula vulgaris* and *P. lusitanica*), Black Bog-rush (*Schoenus nigricans*) and Broad-leaved Cottongrass (*Eriophorum latifolium*). The site is particularly notable for its orchids, which includes Early Marsh-orchid (*Dactylorhiza incarnata*), Narrow-leaved Marsh-orchid (*D. traunsteineri*) and Marsh Helleborine (*Epipactis palustris*). In addition, twenty species of sedge have been recorded in the area, including the scarce Long-stalked Yellow-sedge (*Carex lepidocarpa*). The fen area is being invaded by Downy Birch (*Betula pubescens*). Associated with the fen, and also with the woodland elsewhere in the site, are petrifying springs. These lime-encrusted seepage areas are rich in bryophytes including such diagnostic species as Great Horsetail (*Equisetum telmateia*), *Cratoneuron commutatum* and *C. filicinum*.

Wet woodland and scrub occur along the margins of the stream for most of the length of the glen, extending outwards in areas to create inaccessible and species-rich patches of woodland. The canopy is dominated by Alder (*Alnus glutinosa*), Willow (*Salix* spp.) and Ash (*Fraxinus excelsior*). The woodland has a dense shrub layer which includes Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaeus*), and a diverse ground flora with Marsh Hawks-beard (*Crepis paludosa*), Sanicle (*Sanicula europaea*), Herb-Robert (*Geranium robertianum*), Bugle (*Ajuga reptans*), Horsetails (*Equisetum* spp.), Meadowsweet (*Filipendula ulmaria*) and some sedges (*Carex* spp.).

Areas of marsh are found in the wetter areas by the stream, particularly at the western end of the site.

There is an area of broad-leaved woodland on the steeper southern slopes of the glen. Common species occurring here are Ash and Sycamore (*Acer pseudoplatanus*), with Brambles (*Rubus fruticosus* agg.) colonizing the more open areas.

An area of land that slopes towards the fen has been used as a landfill site for domestic refuse. The site is also used as a clay pigeon shoot and shattered clay pigeons are scattered throughout the area. Fens are rare in Wicklow/Dublin and this is one of only two sites in Wicklow for the Narrow-leaved Marsh-orchid. The fen vegetation is well developed, with an unusually large number of sedge species present. The presence of alkaline fen and of petrifying spring/seepage areas on the site is particularly notable, as these habitats are listed, the latter with priority status, on Annex I of the EU Habitats Directive.

30.10.2002

SITE SYNOPSIS

SITE NAME: DALKEY ISLANDS SPA

SITE CODE: 004172

The site comprises Dalkey Island, Lamb Island and Maiden Rock, the intervening rocks and reefs, and the surrounding sea to a distance of 200 m. Dalkey Island, which is the largest in the group, lies c. 400 m off Sorrento Point on the Co. Dublin mainland from which it is separated by a deep channel. The island is low-lying, the highest point of which (c. 15 m) is marked by a Martello Tower. Soil cover consists mainly of a thin peaty layer, though in a few places there are boulder clay deposits.

Vegetation cover is low-growing and consists mainly of grasses. Dense patches of Bracken (*Pteridium aquilinum*) and Hogweed (*Heracleum sphondylium*) occur in places. Lamb Island lies to the north of Dalkey Island, and at low tide is connected by a line of rocks. It has a thin soil cover and some vegetation, mainly of grasses, Nettles (*Urtica dioica*) and Hogweed. Further north lies Maiden Rock, a bare angular granite rock up to 5 m high that is devoid of higher plant vegetation.

This site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Roseate Tern, Common Tern and Arctic Tern.

Dalkey Islands SPA is both a breeding and a staging site for *Sterna* terns. There is a good history of nesting by terns though success has been variable over the years. Common Tern is the most common species, usually outnumbering Arctic Tern by at least 3:1. Up to 1988, the range given for Common Tern was 15-53 pairs, and for Arctic Tern 'a few' pairs. Also, Roseate Tern attempted nesting in 1986, with 2 pairs recorded. A tern conservation scheme, coordinated by BirdWatch Ireland / National Parks and Wildlife Service, began in 1995, with wardening, nestbox deployment and monitoring being carried out. The ultimate aim was to attract Roseate Tern to breed.

Numbers of terns increased in subsequent years, though numbers and breeding success is still variable between years. In 2003 62 pairs of Common Tern and 24 pairs of Arctic Tern were recorded. Of great significance is that Roseate Tern has returned, with 5 pairs recorded in 2003 and 11 pairs in 2004 - this is one of only three known sites in the country for this rare species. The site, along with other parts of south Dublin Bay, is used by the three tern species as a major post-breeding/pre-migration autumn roost area. Birds are present from about late-July to September, with c. 2,000 individuals of all three species being recorded. The origin of the birds is likely to be the Dublin breeding sites (Rockabill and Dublin Docks) though the numbers recorded suggests that birds from other sites, perhaps outside the State, are also present.

The site also has breeding Great Black-backed Gull (7 pairs in 2001), Shelduck (1-2 pairs) and Oystercatcher (1-2 pairs). Herring Gull bred in large numbers in the past but is now very scarce (14 pairs recorded in 1999). The site is known to be frequented in winter by Turnstone and Purple Sandpiper but recent count data are not available.

Dalkey Islands SPA is of particular importance as a post-breeding/pre-migration autumn roost area for Roseate Tern, Common Tern and Arctic Tern. The recent nesting by Roseate Tern is highly significant. All three tern species using the site are listed on Annex I of the E.U. Birds Directive.

14.5.2009

SITE SYNOPSIS

SITE NAME: ROCKABILL TO DALKEY ISLAND

SITE CODE: 003000

This site includes a range of dynamic inshore and coastal waters in the western Irish Sea. These include sandy and muddy seabed, reefs, sandbanks and islands. This site extends southwards, in a strip approximately 7 km wide and 40 km in length, from Rockabill, running adjacent to Howth Head, and crosses Dublin Bay to Frazer Bank in south county Dublin. The site encompasses Dalkey, Muglins and Rockabill islands.

The area selected for designation represents a key habitat for the Annex II species harbour porpoise, within the Irish Sea. Population survey data show that porpoise occurrence within the site boundary meets suitable reference values for other designated sites in Ireland. The species occurs year-round within the site and comparatively high group sizes have been recorded. Porpoises with young (i.e. calves) are observed at favourable, typical reference values for the species. Casual and effort-related sighting rates from coastal observation stations are significant for the east coast of Ireland and the latter appear to be relatively stable across all seasons. The selected site contains a wide array of habitats believed to be important for harbour porpoise including inshore shallow sand and mud-banks and rocky reefs scoured by strong current flow. The site also supports Harbour seal (*Phoca vitulina*) and Grey seal (*Halichoerus grypus*), for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenose dolphin (*Tursiops truncatus*) has also occasionally been recorded in the area. A number of other marine mammals have been recorded in this area including minke, fin and killer whales and Risso's and common dolphins.

Reef habitat is uncommon along the eastern seaboard of Ireland due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. A detailed survey of selected suitable islands has shown areas with typical biodiversity for this habitat both intertidally and subtidally. Species recorded in the intertidal included *Fucus spiralis*, *Fucus serratus*, *Pelvetia canaliculata*, *Ascophyllum nodosum*, *Semibalanus balanoides* and *Necora puber*. Subtidally, a wide range of species include *Laminaria hyperborea*, *Flustra foliacea*, *Alaria esculenta*, *Halidrys siliquosa*, *Pomatoceros triqueter*, *Alcyonium digitatum*, *Metridium senile*, *Caryophyllia smithii*, *Tubularia indivisa*, *Mytilus edulis*, *Gibbula umbilicalis*, *Asterias rubens*, and *Echinus esculentus*. These Reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms.

This site is of conservation importance for reefs, listed on Annex I, and Harbour Porpoise, listed on Annex II, of the E.U. Habitats Directive.

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