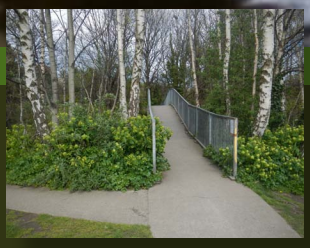

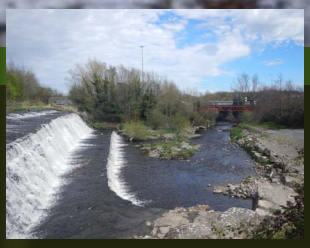

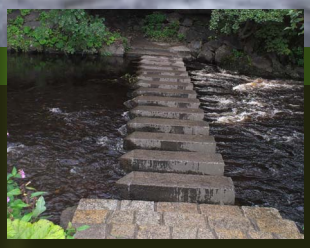

Dodder Greenway

SCREENING FOR APPROPRIATE ASSESSMENT

JUNE 2017

ROD
ROUGHAN & O'DONOVAN

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

Údarás Náisiúnta Iompair
National Transport Authority

Comhairle Contae Átha Cliath Theas
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dlr
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Dodder Greenway

Screening for Appropriate Assessment

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1. INTRODUCTION

1.1 Introduction

ROD Environmental were appointed by South Dublin County Council to undertake a Screening for Appropriate Assessment for the proposed Dodder Greenway (hereafter referred to as the "Project"), in order to enable the competent authority, to comply with Article 6(3) of Council Directive 92/43/EEC (the Habitats Directive). The Project is neither connected to nor necessary for the management of any Natura 2000 site. This Stage 1: Screening for Appropriate Assessment was carried out to ascertain the likelihood of significant effects on Natura 2000 sites arising from the Project.

During preparation of the screening stage, the statutory consultee National Parks & Wildlife Service (NPWS) provided data on site designations and species of nature conservation interest. Our focus was on potential direct, indirect or cumulative effects on sites of European importance for nature conservation, *i.e*. Natura 2000 sites. It must be noted that whilst two separate Part VIII applications will be made for this scheme, to avoid potential '*project-splitting*' this single Screening for Appropriate Assessment was carried out as per the requirement of the NPWS for the entire Project.

It is the considered view of the authors of this Screening for Appropriate Assessment that the Project will not have any adverse impact on the integrity of any European site and that there is no reasonable scientific doubt in this regard.

1.2 The Requirement for an Assessment under Article 6

The Project is subject to the requirement to screen for Appropriate Assessment pursuant to Regulation 42(1) of the Habitats Regulations and Part XAB: Section 177U(1) of the Planning and Development Act, 2000 (as amended).

According to Regulation 42(1) of the European Communities (Birds and Natural Habitats) Regulations, 2011-2015, the competent authority has a duty to:

- Determine whether the proposed Project is directly connected to or necessary for the management of one or more Natura 2000 sites; and, if not,
- Determine if the Project, either individually or in combination with other plans or projects, would be likely to have a significant effect on the Natura 2000 site(s) in view of best scientific knowledge and the Conservation Objectives of the site(s).

This report contains a Screening for Appropriate Assessment and is intended to assess and address all issues regarding the construction and operation of the Project and to inform and allow the competent authority to comply with the Habitats Directive. Article 6(3) of the Habitats Directive defines the requirements for assessment of projects and plans for which likely significant effects on Natura 2000 sites may arise.

1.3 Legislative Context

The European Communities (Birds and Natural Habitats) Regulations, 2011-2015 (the Habitats Regulations) transpose into Irish law Directive 2009/147/EC (the Birds Directive) and Council Directive 92/43/EEC (the Habitats Directive) and list habitats and species that are of international importance for conservation and require protection. This protection is afforded in part through the designation of sites that represent significant examples of habitats that support populations of listed species within a European context, known as Natura 2000 sites.

Sites designated for bird species are classed as Special Protection Areas (SPAs) and sites designated for other protected species and/or habitats are classed as Special Areas of Conservation (SACs). Together, SPAs and SACs comprise the Natura 2000 network of protected sites.

Bird species listed on Annex I of the Birds Directive (Special Conservation Interests) and habitats and/or species listed on Annexes I and II, respectively, of the Habitats Directive (Qualifying Interests) have full European protection in Natura 2000 sites. Species listed on Annex IV of the Habitats Directive are protected wherever they occur, whether inside or outside the Natura 2000 network.

Annex I habitats that occur outside of SACs are still considered to be of national and international importance and, under Regulation 27(4)(b) of the Habitats Regulations, public authorities have a duty to avoid the pollution or deterioration of these habitats.

1.4 Stages of an Article 6 Assessment

The European Commission's *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* (EC, 2001) promotes a staged process, as set out below, the need for each stage being dependent on the outcomes of the preceding stage.

1. Screening for Appropriate Assessment
2. Appropriate Assessment
3. Assessment of Alternative Solutions
4. Assessment where no alternative solutions exist and adverse impacts remain, *i.e*. the Imperative Reasons of Overriding Public Interest test, and compensatory measures.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. Stage 1 of the process is referred to as Screening for Appropriate Assessment and identifies whether the Project, either on its own or in combination with other plans of projects, would be "*likely to have a significant effect*" upon any European site, *i.e*. any Natura 2000 site. A likely effect is one that cannot be ruled out on the basis of objective information.

The test is a '*likelihood*' of effects rather than a '*certainty*' of effects. The test of significance is where a plan or project could undermine the site's

Conservation Objectives (See Section 1.5). In view of best scientific knowledge and the site's Conservation Objectives, Screening is undertaken without the inclusion of mitigation, except where it is specifically intrinsic to the design of the plan or project[1'2]

If effects are considered likely to be significant, potentially significant or uncertain, or if the Screening process becomes overly complicated, the process must proceed to Stage 2: Appropriate Assessment, with the preparation of a Natura Impact Statement to inform the Appropriate Assessment that is to be conducted by the competent authority.

The European Court of Justice has made a relevant ruling in relation to when an Appropriate Assessment is required and its purpose[3]:

"*Any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects" and that the plan or project may only be authorised "where no reasonable scientific doubt remains as to the absence of such effects*".

Stage 2 includes detailed impact prediction and assessment of the likely effects on the Natura 2000 sites(s) in question and the proposal of specific mitigation measures, where necessary. If adverse impacts on the integrity of a European Site cannot be ruled out, then the process continues to Stage 3 and assesses whether alternative solutions exist. If no alternatives exist and impacts on Natura 2000 sites are unavoidable, then a proposed plan or project can only be implemented where there are imperative reasons of overriding public interest, as detailed in Article 6(4) of the Habitats Directive.

1.5 Classification and Conservation Objectives

Special Conservation Interests and Qualifying Interests are the bird species, habitats or other species for which a Natura 2000 site has been classified as a Special Protection Area or a Special Area of Conservation, respectively. Each Special Conservation Interest or Qualifying Interest in each Natura 2000 site is assigned a **Conservation Objective**. These are referred to, but not defined, in the Habitats Directive.

A Conservation Objective is the specification of the overall target for the species and/or habitat types for which a Natura 2000 is designated in order for it to contribute to maintaining or reaching '***favourable conservation status***' of the habitats and species concerned. Conservation Objectives are set by the National Parks & Wildlife Service for each Special Conservation Interest or Qualifying Interest of each Natura 2000 site and endorsed by the Irish

[1] *Killross and Rossmore Properties v An Bord Pleanala, the State and Eirgrid [2014]*
[2] *Harte District Council v Secretary of State for Communities & Local Government [2008] U.K*
[3] Case C-127/02 ECR I-7405 *Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse vereniging tot Bescherming van Gogels v Staatssecretaris van Landbouw, Naturbeheer en Visserij (Waddenzee) [2004]*

Government. They form the basis of assessing the potential effects of plans and projects on Natura 2000 sites.

The National Parks and Wildlife Service have produced site-specific Conservation Objectives for some Natura 2000 sites. The potential for likely significant effects on the Natura 2000 was assessed in view of the relevant Conservation Objectives during the Screening stage and is presented in the Screening Matrix (See Section 3.3). The matrix shows potential pathways of risk between the Project and the Special Conservation Interest and/or Qualifying Interest of each site and considers the likely effects on the relevant Conservation Objectives with regard to their respective Attributes and Targets.

1.6 Scope of the Screening for Appropriate Assessment

This Screening for Appropriate Assessment report has been prepared in accordance with current guidance (DEHLG, 2010) and includes the following details:

Description of the Project

- Location of the Project and distances from Special Conservation Interests and/or Qualifying Interests of Natura 2000 sites, including a map of the Project in relation to Natura 2000 boundaries;
- The size, scale, area of the Project in relation to Natura 2000 sites and projected level of activity, class of activity and frequency; and,
- Details of construction works including duration, materials and physical changes as detailed for the Project and any possible impacts that the proposed construction may have on the defining structure and function of the Natura 2000 sites.

Potential Impacts on Natura 2000 sites with respect to Conservation Objectives

- The impact of the proposed construction/operation on the defining structure and function of Natura 2000.

Section 3.2.3 of DEHLG (2010) states that the specific approach to Screening for Appropriate Assessment, *i.e*. determining which Natura 2000 sites to include for assessment, depends on the nature, size and location of the project and the sensitivities of the ecological receptors, as well as the potential for in combination effects, while cognisant of the Precautionary Principle.

1.7 Main Sources of Consultation

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive);
- Department of Environment, Heritage and Local Government (DoEHLG) (2010) Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities;

- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Birds Directive). Official Journal of the European Union, L20/7;
- European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 47/2011);
- NPWS (2010) Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular Letter NPWS 1/10 & PSSP 2/10. Department of Environment, Heritage and Local Government, Dublin;
- National Parks & Wildlife Service (2013) The Status of EU Protected Habitats and Species in Ireland. Volume 2 & 3: Article 17 Assessments. Department of Arts, Heritage and Gaeltacht;
- EC (2000) Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC. Environment Directorate-General of the European Commission;
- EC (2001) 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. Environment Directorate-General of the European Commission;
- IFI (2016) Guidelines on protection of fisheries during construction works in and adjacent to waters. Inland Fisheries Ireland; and,
- Part XAB of the Planning and Development Act, 2000 (as amended).

2. DESCRIPTION OF THE PROJECT

The Project is being developed in co-operation by South Dublin County Council, Dublin City Council and Dun Laoghaire Rathdown County Council. The existing network of footpaths and footbridges along the River Dodder (hereafter referred to the 'Dodder') are considered an important recreational resource. A Feasibility Study (Roughan & O'Donovan, 2015) was carried out to investigate the viability of developing the Project and found the development of the Greenway to be viable and consistent with Planning Policy. A strategy for the construction of the Greenway was proposed which seeks to maximize the use of the existing network of built surfaces, footpaths and foot bridges. Such an approach will allow the Greenway to be considered as both a transportation corridor and a linear park along the Dodder. The Feasibility Study highlighted the need for care and consideration of environmental constraints along and within the Dodder in the development of the Greenway. The Project is not directly connected with or necessary for the management of any European Site.

2.1 General Description of the Proposed Greenway

The proposed Dodder Greenway is being developed to be a Greenway of international renown and to be on a par with the best greenways in the world. Although developed as a combination of off road and on road it utilises existing facilities within the Dodder Valley as much as possible to connect the linear parkland along the route. The Greenway route is approximately 17km in length and passes along the Dodder Valley from Orwell / Terenure through the outer suburbs of Tallaght to rural and upland Dublin to the entrance to the Bohernabreena reservoirs at Glenasmole.

The function of the proposed Greenway is manifold while the main elements of the proposed Greenway can be summarised as follows:

(i) The Greenway route passes along the Dodder Valley from the River Liffey at Sir John Rogerson's Quay to the entrance to the Bohernabreena reservoirs at Glenasmole.

(ii) It connects the existing cycle and pedestrian facilities in Dublin city centre such as the Sutton to Sandycove (S2S) Cycleway and Walkway and the Grand Canal Premium Cycle Route with the Dublin Mountain Way at Bohernabreena;

(iii) It will provide for improved connectivity to communities, facilities and local business along the Dodder Valley corridor with a dedicated signage strategy;

(iv) Where commuting currently exists and demand is anticipated to continue, the scheme either ensures it is facilitated in a pedestrian priority environment with additional capacity for safe use at junctions or provide an alternative route for commuting cyclists where required;

(v) The Greenway will generally consist of a shared 3-4m wide bound surface on the off road sections, tying into suitable bound surfacing for the on road sections. It is proposed to utilise enhanced variations to reflect local context;

(vi) Works will include widening and upgrade to existing paths, construction of new paths, the construction of a number of new bridges, upgrade of existing bridges and underpasses, cantilever boardwalk structures, junction upgrades, etc.;

(vii) The upgrade and creation of new entrances to the Greenway;

(viii) Improved landscape treatment to provide a coherent and legible Greenway along the proposed Greenway;

(ix) Ecological enhancements including species rich grassland management, the planting of native trees and the provision of bat boxes;

(x) Bat friendly public lighting will be provided both in new areas and in upgrading sections of existing lighting;

(xi) CCTV will be provided at a number of locations including each of the bridges; and

(xii) Drainage measures including swales, signage, markings and ancillary works.

2.2 Location

The Project is located alongside the River Dodder for the majority of its length, linking the River Liffey at John Rogerson's Quay to Fort Bridge at the entrance to the Bohernabreena Reservoirs at Glenasmole. The River Dodder flows from Kippure Ridge in the Dublin/Wicklow Mountains to Glenasmole Valley where the Bohernabreena Reservoirs are located. The Dodder then flows north-east through Tallaght and then Firhouse. From Firhouse the Dodder travels through Rathfarnham, Templeogue, Rathgar, Milltown, Clonskeagh, Donnybrook, and finally Ballsbridge before it enters the Liffey near Ringsend. There is a weir located upstream from Ballsbridge and the river becomes tidal from approximately this location. The location of the proposed Greenway is shown in Figure 1.

The footprint of the proposed Greenway is almost entirely along existing footpaths and cycletracks which will be upgraded and widened. The existing land use along the route is predominantly parkland. The remaining sections of the Greenway are through existing built areas of the city and suburbs, primarily either constructed as shared surfaces on existing roads or along realigned sections of roads as combined footpath/cycletracks. A small portion of the Greenway is proposed as a cantilevered boardwalk over the River Dodder itself.

2.3 General Layout

The proposed Greenway may be one of a number of Greenways and/or cycleways, forming a network of non-motorized transportation routes throughout the city, or indeed regionally or nationally. The proposed Greenway alignment consists primarily of upgrading existing off road paths, cycleways and tracks subject to negotiation of low bridges and junctions. The layout will generally consist of a 4m wide shared footpath/ cyclepath.

The proposed Greenway is 17km in length. The majority of the Greenway is proposed within the curtilage of existing parks and road ways; with the

accompaniment of carriageway, surface drainage, public lighting, underground utilities, existing footpaths, grass verges, trees etc. On some sections of the road an existing cycle track or cycle lane exists (e.g. Dodder Rd. Lower, Milltown Park). Other sections of the proposed Greenway have discontinuous lengths of cycle track (e.g. R114). Where the Greenway is proposed through parklands it follows the line of the existing footpaths where possible. Sections of the proposed Greenway in the Dodder Valley Park have been completed or require only minor alterations to markings. The bridge at Old Bawn is a Recorded Monument. The Greenway will remain within the curtilage of the existing roadway at this location.

Key components in the design of Greenway will consist of:

- Surfacing/Paving
- Kerbing
- Sustainable drainage solutions
- Local Details and Variants
- Signage (directional)
- Furniture
- Lighting
- Planting and ecological enhancement measures

Some on road sections are also proposed where access along the Dodder is not feasible in the short term. The Project will utilise existing footpaths where the Greenway traverses linear parklands. A number of footbridges over the Dodder are proposed which will allow the Greenway to progress adjacent to the river, avoiding key ecological receptors, linking communities and providing access from adjacent areas. Typically these bridges will consist of a 4.4m wide clear span structure which will be designed to match the existing visual environment. Lighting design for the Project will be devised to avoid significant impacts on Bat species within the Dodder corridor while balancing the need for adequate lighting in urban areas.

Construction Sequence/Duration

The construction of the Project will be phased as funding is made available. The sequence and timing for the works will be structured to allow environmental factors to be accommodated at appropriate stages. The Project is expected to be in the order of nine months in duration. Access to the works will make use of existing public roads and private tracks. Lightweight machinery including excavators, dumpers and pavers will be used in the construction of the Project.

A detailed Ecological Impact Assessment (EcIA) for the entire Project has been submitted in support of the Part VIII applications. All works near watercourses or waterbodies will adhere to generic best practice guidance in minimising any potential impacts during site preparation and construction stages (IFI, 2016).

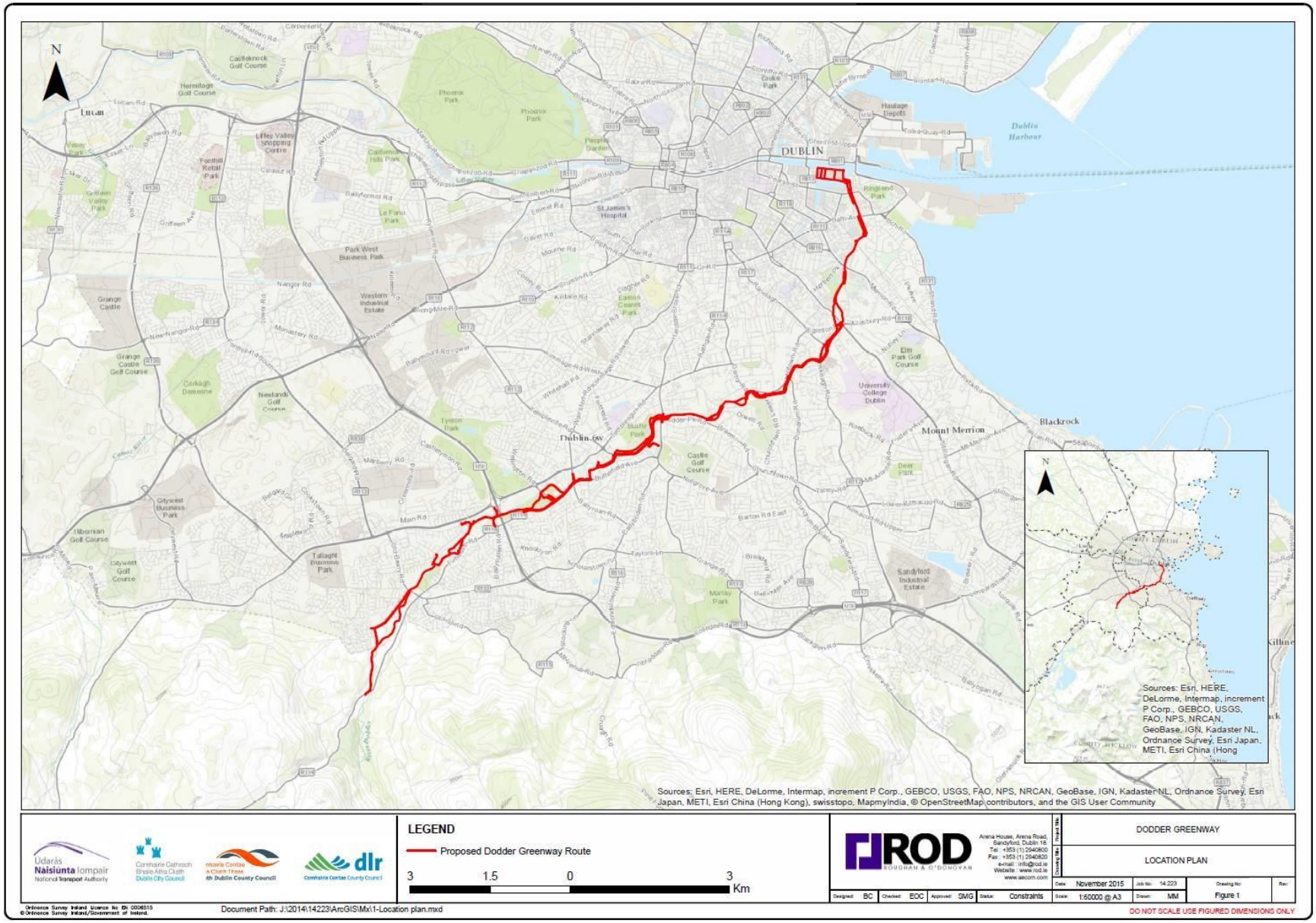

Figure 1 – Location of the Site

2.4 Ecological Asssessment

In order to examine baseline ecological conditions and determine the presence and proximity of any Special Conservation Interests or Qualifying Interests of Natura 2000 sites in relation to the Project, data relating to the ecology of the Project area and protected sites potentially affected by the Project were obtained from statutory and non-statutory consultees, through a comprehensive desk study and multidisciplinary ecological walkover surveys. An extensive catalogue of Environmental surveys and reports have produced for various sections of the Dodder and detailed summaries of these reports (ROD-AECOM, 2013) were reviewed as part of this assessment.

The desk study was undertaken throughout the period from March to June 2016 and included reviews of reporting commissioned under Article 17 of the Habitats Directive (NPWS, 2013), Site Synopses, Standard Data Forms and Conservation Objectives for Natura 2000 sites, and the National Biodiversity Data Centre (NBDC) online database (NBDC, 2016). A data request for protected species records was submitted to National Parks & Wildlife Service and received. The results of the desk study were used to inform the design of the multidisciplinary ecological walkover surveys.

Multidisciplinary ecological walkover surveys were conducted by suitably qualified Ecologists from ROD between March and August 2016. The multidisciplinary walkover surveys were designed to examine baseline conditions and determine the presence and proximity of: any Special Conservation Interests/Qualifying Interests of Natura 2000 sites in relation to the Project; protected species subject to the requirements of Article 12 to 16 of the Habitats Directive; and, listed species subject to restrictions pursuant the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011. A habitat and Invasive Alien Plant Species survey of the entire route was undertaken and habitats present were classified in accordance with *A Guide to Habitats in Ireland* (Fossitt, 2000) and mapped following *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al*., 2011). Protected species surveys followed best practice guidelines (TII, 2008; 2009). The entire watercourse was surveyed for Otter and other protected mammals in March 2016. Although not applicable to the Screening for Appropriate Assessment, Bats were considered to be especially vulnerable to localised potential habitat modification as a result the Project (e.g. lighting) and 50 hours of specialised Bat transect surveys were undertaken May to August 2016 to inform the Ecological Impact Assessment. These included walked transects, back-tracking and lamping.

Consultation, desk study and field surveys identified four Natura 2000 sites, and a number of the Qualifying Interests and Special Conservation Interests of these sites, as being of particular interest in relation to the Screening for Appropriate Assessment. Full results of the ecological assessment are contained in Ecological Impact Assessment for the Project.

The information gathered during the consultation, desk study and field surveys was used to inform the Screening for Appropriate Assessment process, in particular, in the identification of pathways of risk between the Project and the Qualifying Interests and Special Conservation Interests of the Natura 2000

Sites and assessment of the likely significant effects of the Project in view of the Conservation Objectives of the Natura 2000 Sites.

3. NATURA 2000 Sites

3.1 Natura 2000 Sites in the Likely Zone of Impact

Section 3.2.3 of the *Guidance for Planning Authorities* (DEHLG, 2010) outlines the procedure for selecting the Natura 2000 sites to be subject to Screening. It states that Natura 2000 sites potentially affected should be identified and listed, bearing in mind the potential for direct, indirect and/or cumulative effects. It also states that the specific approach to Screening in each case is likely to differ depending on the scale and likely effects of the plan or project. However, it advises that the following sites should generally be included:

- All Natura 2000 sites within or immediately adjacent to the plan or project area;
- All Natura 2000 sites within the likely zone of impact of the plan or project; and,
- In accordance with the Precautionary Principle, all Natura 2000 sites for which there is doubt as to whether or not they might be significantly affected.

The "likely zone of impact" of a plan or project is the geographic extent over which significant ecological effects are likely to occur. In the case of plans, DEHLG (2010) recommends that this zone extend to a distance of 15 km in all directions from the boundary of plan area. In the case of projects, however, the guidance recognises that the likely zone of impact must be established on a case-by-case basis, with reference to the following key variables:

- The nature, size and location of the project;
- The sensitivities of the ecological receptors; and,
- The potential for cumulative effects.

For example, in the case of a project that could affect a watercourse, it may be necessary to include the entire upstream and/or downstream catchment in order to capture all Natura 2000 sites with water-dependent Qualifying Interests or Special Conservation Interests.

Potential pathways of risk are considered to exist where construction or operational phases of development occur in immediate proximity to sensitive habitats or where works have any hydrological connectivity to sensitive water bodies and watercourses. The Project aims to link the '*Sea to the Mountains*' so a catchment wide scale is appropriate. Following the guidance provided in DEHLG (2010) and taking into account the key variables outlined above, the likely zone of impact for the Project was defined as the area within:

- A 3km buffer from the footprint of the proposed Greenway.

ArcView software was used in conjunction with publicly available Ordnance Survey Ireland mapping and National Parks & Wildlife Service shapefiles to identify the boundaries of Natura 2000 sites in relation to the likely zone of impact (Table 1; Figure 2).

It was determined that four Natura 2000 Sites occur within the likely zone of impact.

Table 1 Proximity of Dodder Greenway to Natura 2000 Sites

Natura 2000 Site	Site Description	Closest Proximity
South Dublin Bay and River Tolka Estuary SPA [004024] Area: 2,194.11 ha	The South Dublin Bay and River Tolka SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dún 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.	The SPA is located 750 m to the east of the Project.
South Dublin Bay SAC (Site code: 000210) Area: 742.12 ha	This site lies south of the River Liffey in Co. Dublin, 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. 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.	The SAC is located 750 m to the east of the Project.
Glenasmole Valley SAC (Site code: 001209) Area: 149.3 ha	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.	The SAC is located 100 m south of the Project.
Wicklow Mountains SAC (Site code: 002122) Area: 32,945.71 ha	Wicklow Mountains SAC is a complex of upland areas in Counties Wicklow and Dublin, flanked by the Blessington reservoir to the west and Vartry reservoir in the east, Cruagh Mountain in the north and Lybagh Mountain in the south. Most of the site is over 300m, with much ground over 600m. Most of the western part of the site consists of 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 2 m deep. Poor mineral soil covers the slopes, and rock outcrops are frequent. 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 SAC is located 2.6 km south of the Project.

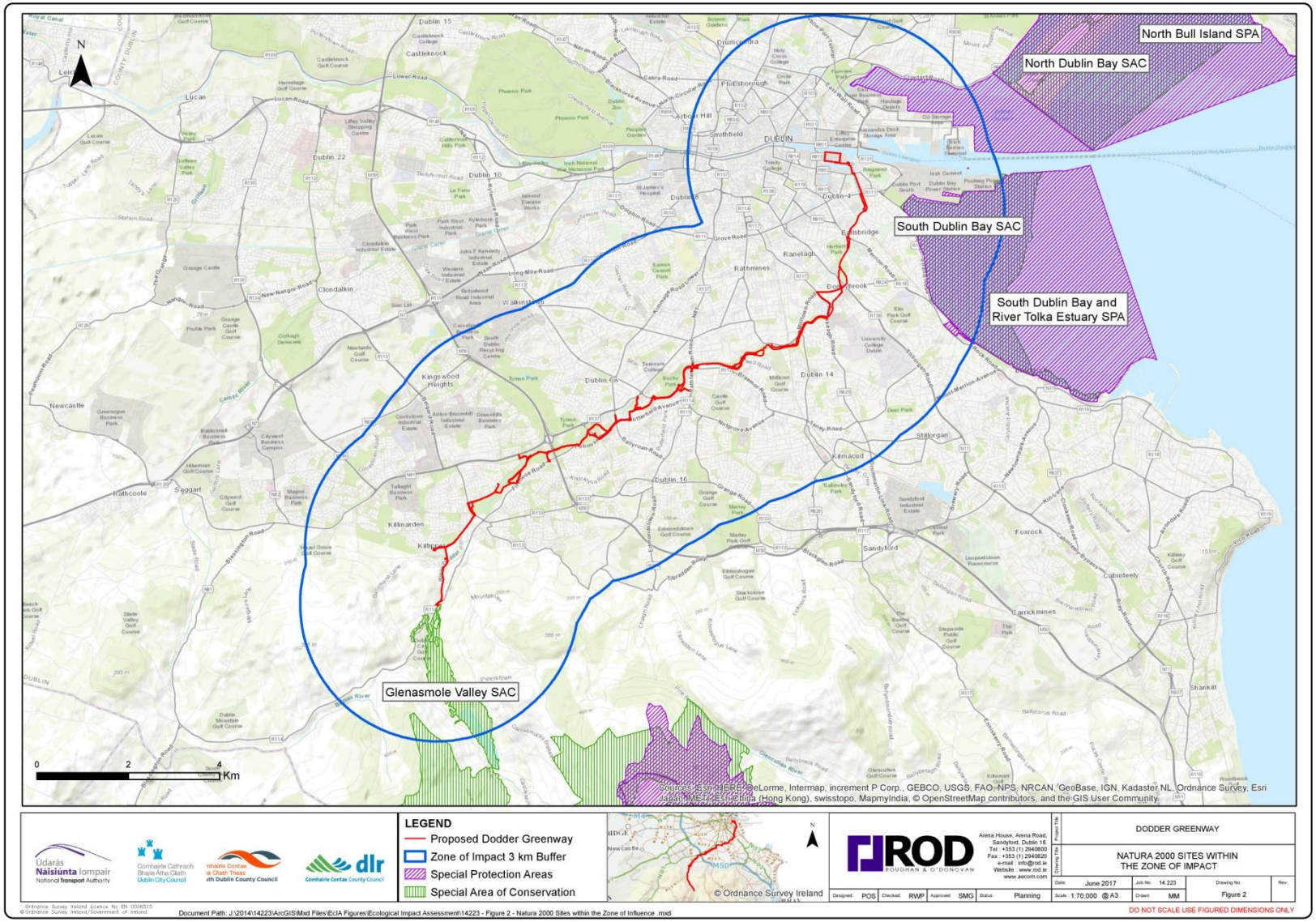

Figure 2 – Location of Natura 2000 in the likely zone of impact

3.2 Potential Risk to Special Conservation Interests or Qualifying Interests

In Ecological and Environmental Impact Assessment, for an impact to occur there must be a risk enabled by having a "source", *e.g.* construction works at a proposed development site, a "receptor", *e.g.* a Natura 2000 site or other ecologically sensitive feature, and a pathway between the source and the receptor, *e.g.* a watercourse connecting a proposed development site to an SAC. The risk of the impact does not automatically mean that it will occur or that it will be significant. However, identification of the risk does mean that there is a possibility of ecological or environmental damage occurring, with the level and significance of the impact depending upon the nature and exposure to the risk and the characteristics of the receptor.

In the case of the construction and operation of the Dodder Greenway, sources of risk are considered to include the loss and/or fragmentation of habitats, noise, vibration, lighting, pollution and mobilisation of sediment. Pathways that may convey these risks to ecological receptors include physical proximity, air, water and ecological interactions. The ecological receptors relevant to the Screening for Appropriate Assessment are the Special Conservation Interests and Qualifying Interests and of the Natura 2000 sites listed in Table 1. The Screening Matrix (Section 3.3) below identifies the Special Conservation Interests and Qualifying Interests that are potentially connected, either directly or indirectly, by a pathway of risk to a source of risk at the Project.

3.3 Potential Effects on Conservation Objectives

As explained in Section 1.3, each Special Conservation Interests or Qualifying Interests in each Natura 2000 site is assigned a Conservation Objective of either restoration or maintenance of its "favourable conservation condition", as described by a set of Attributes with corresponding Targets that must be met if the specific Conservation Objective for that Special Conservation Interests or Qualifying Interests is to be achieved. The restoration and maintenance of the favourable conservation condition of habitats and species within Natura 2000 sites contributes to the overall conservation status of those habitats and species at a national level. Favourable conservation condition is described in more generic terms below.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing;
- the specific structures and functions necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and,
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved 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 probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Site specific Conservation Objectives for the Dublin Bay South and River Tolka Estuary SPA and the South Dublin Bay SAC have been published and are listed in full in Appendix B. Site specific Conservation Objectives for the Wicklow Mountains SAC and the Glenasmole Valley SAC have currently not been developed, however generic objectives apply. The potential for likely significant effects on these Natura 2000 sites is assessed in view of the relevant Conservation Objectives in the Screening Matrix (Section 3.3) below. Where potential pathways of risk between the Project and the Special Conservation Interests or Qualifying Interests are identified, the likely effects on the relevant Conservation Objectives are assessed with regard to their respective Attributes and Targets

For the purposes of the Screening (Table 5), Conservation Objectives for European Otter present in the Wicklow Mountains SAC [002122] have been derived from Conservation Objectives for European Otter (in similar conditions) in other SACs for which site specific Conservation Objectives have been developed, as recommended by the NPWS. In this case the Conservation Objectives reference is Galway Bay SAC [000268]

As set out in Article 6(3) of the Habitats Directive and as per the 2011 Regulations, a likely effect of any plan or project on any Natura 2000 site is deemed to be significant if, in view of best scientific knowledge, it would, either individually or in combination with other plans or projects, compromise and/or delay the achievement of one or more of the Conservation Objectives of that site.

3.4 South Dublin Bay and River Tolka Estuary SPA [004024]

The site is a Special Protection Area (SPA) selected for the following species listed on Annex I of the E.U. Birds Directive (* = priority; numbers in brackets are Natura 2000 codes):

Table 2: Special Conservation Interest (SCI) of the South Dublin Bay and River Tolka Estuary SPA. Source: All data from Article 12 Eionet (2015) or Colhoun & Cummins (2013) unless Specifically Referenced

SCI	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the SCI?*	Conservation Objective	Attribute	Target	Likely Significant Effect
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	*c. 750m*	Brent Geese have a circumpolar distribution breeding in the extreme high Arctic in all northern countries. The range extends from Greenland to Svalbard and northern Russia, continuing through Alaska to the Canadian Arctic Archipelago. The Canadian breeding population winters almost entirely in Ireland. The winter distribution in Ireland is wholly coastal with large estuaries and areas of intertidal mudflats with fine sediments the preferred habitat. Current national wintering population estimates are c.36, 380 individuals. 24 SPAs are designated for this species in the Member State. The baseline wintering population size in the South Dublin Bay and River Tolka Estuary SPA is c. 368 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Light-bellied Brent Goose in the South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Light-bellied Brent Goose, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Oystercatcher (*Haematopus ostralegus*) [A130]	*c. 750m*	The global distribution of Oystercatchers is quite discontinuous. In Iceland and northern Europe, they breed largely in coastal areas, while occurrence is more continuous in lowland areas of Ukraine and Russia, extending to parts of central Asia. Oystercatchers breeding in Europe and central Asia generally move south to winter in coastal areas elsewhere in Europe, the Middle East, and east and west Africa. Current national population estimates are c.45,480 wintering individuals. 16 SPAs are designated for this species in the Member State. The baseline wintering population size in the South Dublin Bay and River Tolka Estuary SPA is c. 1145.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Light-bellied Brent Goose in the South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Oystercatcher, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Ringed Plover (*Charadrius hiaticula*) [A137]	*c. 750m*	Ringed Plover are found across the northern hemisphere. The winter as far south as Africa and many are resident in Ireland all year round. The species generally breeds on the coasts of Eurasia and Arctic Canada, but also breed at inland sites in Western Europe. Current national population estimates are c.1045 pairs. 15 SPAs are designated for this species in the Member State. The baseline wintering population size in the South Dublin Bay and River Tolka Estuary SPA is c. 161 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Light-bellied Brent Goose in the South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Ringed Plover, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.

SCI	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the SCI?*	Conservation Objective	Attribute	Target	Likely Significant Effect
Grey Plover (*Pluvialis squatarola*) [A141]	*c. 750m*	Grey Plovers have a very restricted global distribution. They have an almost circumpolar breeding range, occurring in the high Arctic from the Kanin Peninsula east to the Bering Sea. In North America, they occur from Alaska to the western side of Baffin Island. Globally, there are five recognised biogeographic populations. Of these, birds occurring in Europe belong to the East Atlantic Flyway population which comprises those breeding in the western Russian high Arctic. These birds winter from the Wadden Sea, along the Atlantic coasts of Europe south to West Africa. Current national population estimates are 2,850 wintering individuals. 21 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 183 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Grey Plover in the South Dublin Bay and River Tolka Estuary SPA. As per Rogerstown Estuary SPA [004015]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Grey Plover, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Knot (*Calidris canutus*) [A143]	*c. 750m*	Knots are found in many regions of the world, although they are highly localised within each region. The breeding distribution is circumpolar, with the species nesting in the high Arctic. After the breeding season, they migrate through temperate coastal regions in the northern hemisphere to wintering grounds in the southern hemisphere. They undertake some of the longest migrations of any bird species. Current national wintering population estimates are 22,120 individuals. 13 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 1151 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Knot, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Sanderling (*Calidris alba*) [A144]	*c. 750m*	The Sanderling is a very high-Arctic breeding wader with a circumpolar breeding distribution. Its range extends from the northernmost parts of the Canadian Arctic archipelago, through north and north-eastern Greenland to the Taimyr Peninsula and islands off the north coast of Siberia. The birds that winter in western Europe are thought to mostly originate from Siberia. Since circa 1986, Sanderling numbers at the mostly estuarine WeBS sites have fluctuated considerably. Current national wintering population estimates are 5,280 individuals. 15 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 349 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Sanderling, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Dunlin (*Calidris alpina*) [A149]	*c. 750m*	Dunlin have a wide global distribution around the Arctic, and are found in nearly all Arctic regions. In Europe, they also extend south to temperate regions where they are found in wetland habitats. Breeding Dunlin are characteristic of moorland and upland habitats and this is reflected in the species' breeding distribution. Current national wintering population estimates are 44,380 individuals. 23 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 2753 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Dunlin, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.

SCI	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the SCI?*	Conservation Objective	Attribute	Target	Likely Significant Effect
Bar-tailed Godwit (*Limosa lapponica*) [A157]	*c. 750m*	The Bar-tailed Godwit breeds in Arctic regions of Eurasia, from northern Scandinavia, through high latitudes of Russia to the west coast of Alaska. It winters in north-western Europe south to southern Spain and Portugal. Bar-tailed Godwits are almost entirely coastal in their winter habits, feeding mainly on worms both on sandy and muddy shores. As a mid- to high-Arctic nesting species, significant between-year population changes might be expected as a consequence of variation in weather and predation pressures on breeding areas. Current national wintering population estimates are 11,890 individuals. 24 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 866 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Bar-tailed Godwit, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Redshank (*Tringa totanus*) [A162]	*c. 750m*	The Eastern Atlantic Flyway population of the nominate race of Redshank winters from the North Sea countries through the western part of the Mediterranean to West Africa. Both *T. totanus* and *T. robusta* Redshank populations are classified as declining. At least some of this decline is attributable to changes in agricultural practices and loss of important wetland sites. Current national wintering population estimates are c.19,400 individuals. 21 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is c. 713 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Redshank, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	*c. 750m*	The black-headed gull is the most widely distributed seabird breeding in Ireland, with similar numbers breeding inland as on the coast. The majority of the breeding population is resident throughout the year. Black-headed gulls breed throughout the middle latitudes of the Palaearctic and have recently formed a breeding outpost in north eastern North America. Habitats such as wetlands, bogs, marshes and artificial ponds are favoured breeding sites, but dry areas adjacent to water are also used. Current national population estimate is 1,617 individuals. 19 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 3040 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Black-headed Gull, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Roseate Tern (*Sterna dougallii*) [A192]	*c. 750m*	Roseate terns breed on the Atlantic coasts of Europe and North America and winter in the Caribbean and West Africa. The species has been in long term decline. Current national population estimate is 1333 pairs. 4 SPAs are designated for this species in the Member State, including the most important European breeding population on Rockabill. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 200-500 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Roseate Tern, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.

SCI	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the SCI?*	Conservation Objective	Attribute	Target	Likely Significant Effect
Common Tern (*Sterna hirundo*) [A193]	*c. 750m*	The Common Tern has a circumpolar distribution and can be found breeding in most of Europe, Asia and North America except the extreme north and south. It winters further south, being found along the coast and inland of South America down to the Falkland Islands (Islas Malvinas), along the coast of Africa excluding the north, along parts of the Arabian Peninsula and the whole coast of India, and throughout much of south-east Asia and Australasia (excluding New Zealand). 13 SPAs are designated for this species in the Member State. Current national population estimate is 4740 breeding pairs. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 2000-3000 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Common Tern, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Arctic Tern (*Sterna paradisaea*) [A194]	*c. 750m*	The Arctic Tern has a circumpolar range, breeding in the Arctic and subarctic regions of Europe, Asia and North America as far south as Brittany, France and Massachusetts (USA). It is a trans-equatorial migrant, and can be found wintering throughout the Southern Ocean to the edge of the Antarctic ice and the southern tips of South America and Africa. 16 SPAs are designated for this species in the Member State. The baseline population size in the South Dublin Bay and River Tolka Estuary SPA is 1000-2000 individuals.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Arctic Tern, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.
Wetland and Waterbirds [A999]	*c. 750m*	Owing to the importance of wetlands to many of the bird species listed on Annex I of the Birds Directive occurring in Ireland (both wintering and year-round), this habitat and associated waterbirds are cited as an SCI of this SPA.	Given the distance between this Special Conservation Interest and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Wetland and Waterbirds, the Project will not compromise the maintenance of the favourable conservation condition of this Special Conservation Interest within the South Dublin Bay and River Tolka Estuary SPA.

3.5 South Dublin Bay SAC [000210]

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

Table 3: Qualifying Interests of the South Dublin Bay SAC. Source: All data from Article 17 Reports NPWS (2013) unless Specifically Referenced

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Attribute	Target	Likely Significant Effect
Mudflats and sandflats not covered by seawater at low tide [1140]	c. 750 m	This habitat is found exclusively between the low water and mean high water marks. It is often part of the Annex I habitats Large shallow and bay and Estuaries but can occur independently. The fundamental building block of this habitat is sediment ranging from around 1 micron to 2 mm. The finer silt and clay sediments are dominant in mud flats and the larger sand fractions are associated with areas exposed to significant wave energy. The fine sediment of intertidal mudflats is most often associated with rivers. Biological communities found in this habitat are very similar to those found in estuaries (above). 42 SACs are designated for mudflats and sandflats not covered by seawater at low tide in the Member State. It is estimated that a total of 53,700 ha of 1140 occurs within the Natura 2000 network. This habitat forms c. 94% (697.59 ha) of the South Dublin Bay SAC, equivalent to c. 1.3% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Inadequate and "improving". The major pressures on this habitat in Ireland include pollution to surface waters, fishing and harvesting of aquatic resources and bottom culture.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC.	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Mudflats and sandflats not covered by seawater at low tide, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the South Dublin Bay SAC.

3.6 Glenasmole Valley SAC [001209]

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

Table 4: QIs of the Glenasmole Valley SAC. Source: All data from Article 17 Reports NPWS (2013) unless Specifically Referenced

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites) [6210]	*1.2km south of the Project* *Orchid-rich grassland occurs in the drier parts of this site and in places grades into Molinia meadow.*	This habitat comprises species-rich plant communities found on shallow, well-drained calcareous substrates. It is considered a priority habitat only if it is an important orchid site. The Annex I habitat includes a mixture of grasses and herbs, with calcicole species typically frequent. It usually occurs on obvious geological features such as eskers, outcropping limestone rock and in association with limestone pavement. The Burren and Aran Islands (Clare/Galway) and Dartry Mountains (Sligo/Leitrim) are particularly important areas within the State for this Annex I habitat. The 6210 habitat is comprised of a diverse group of plant communities belonging to the *Bromion-erecti*, including the *Carex flacca – Succisa pratensis* community. 33 SACs are designated for this habitat in the Member State. It is estimated that a total of 777ha of this habitat occurs within the Natura 2000 network. This habitat forms 20% (29.86 ha) of the Glenasmole Valley SAC, equivalent to c. 4% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Bad. Pressures acting on this habitat include succession to scrub and problematic native species (e.g. bracken).	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) in the Glenasmole Valley SAC. as per the Galway Bay Complex SAC [000268]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites), the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Glenasmole Valley SAC.
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]	*3.4km south of the Project* *The areas of Molinia meadows at the site occur associated with the grasslands on the valley sides, and in particular in seepage and flushed areas.*	This habitat 6230 is restricted to siliceous substrates in upland areas (montane and submontane zone). 6230 has probably always been a rare habitat within Irish uplands and it relies on extensive grazing, usually sheep, to maintain the habitat over almost all of its range. When 6230 grassland is identified it can often occur in a mosaic with heath. Mineral flushing is usually required to create a habitat that supports a more species-rich community that conforms to the Annex I habitat as described in the interpretation manual of EU habitats (European Commission 2007). Both a calcareous (calcareous flushing) and non-calcareous sub-community of 6230 have been identified in Ireland. 14 SACs are designated for this habitat in the Member State. It is estimated that a total of 219ha of this habitat occurs within the Natura 2000 network. This habitat forms c. 5% (7.46ha) of the Glenasmole Valley SAC, equivalent to c. 3% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Bad. Pressures acting on this habitat include succession to scrub, abandonment of pastoral systems, and abandonment of mowing.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Molinia meadows on calcareous, peaty or clayey-silt laden soils (Molinion caeruleae) in the Glenasmole Valley SAC. As per the Lower River Shannon SAC [002165]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Glenasmole Valley SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Petrifying springs with tufa formation (*Cratoneurion*) [7220]	*2.4km south of the Project* *Tufa depositing springs along the valley sides, and some have substantial tufa mounds and banks. Tufa formation is also known from small streams within the woodland at the site*	Petrifying spring vegetation have been defined as springs and seepages where tufa is actively deposited and where characteristic species of bryophytes are dominant or abundant. Characteristic bryophyte species are *Palustriella commutata*, *P. falcata*, *Eucladium verticillatum*, *Pellia endiviifolia*, *Cratoneuron filicinum*, *Bryum pseudotriquetrum* and *Didymodon tophaceus*. Characteristic vascular plants are *Festuca rubra*, *Carex panicea* and *Equisetum telmateia*. Petrifying springs may occur as (i) clearly defined spring heads with consolidated tufa, (ii) spring heads with an associated tufaceous flush, or (iii) seepage areas with tufa formation. The last-named type often occurs within alkaline fens and the vegetation forms a continuum between the two habitat types so that petrifying springs are not clearly demarcated from the surrounding fen vegetation. Three subtypes of petrifying spring vegetation can be distinguished depending on the setting of the spring: woodland springs; coastal springs; and springs of inland, open habitats. 19 SACs are designated for this habitat in the Member State. Accurate information for the coverage of 7220 within the Natura 2000 network is not available. This habitat forms c. 1.0% (1.49 ha) of the Glenasmole Valley SAC. The overall conservation status of this habitat is considered to be Inadequate but "stable". Major pressures/threats include landfill, land reclamation and drying out.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in the Glenasmole Valley SAC. as per the River Barrow and River Nore SAC [002162]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Petrifying springs with tufa formation (*Cratoneurion*) the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Glenasmole Valley SAC.

3.7 Wicklow Mountains SAC [002122]

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

Table 5: QIs of the Wicklow Mountains SAC. Source: All data from Article 17 Reports NPWS (2013) unless Specifically Referenced

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea* [3130]	*At least 9.1km diagonal distance south east of the Project.*	This habitat includes Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) occurs in lakes with circum-neutral waters in catchments with mixed geology. Peatland is often widespread in the catchments, with base-rich influences coming from basalt, limestone, marble, sedimentary deposits or calcareous coastal sand. The Annex II macrophyte *Najas flexilis* is a character species of this habitat. The co-occurrence of *Potamogeton perfoliatus* and *Isoetes lacustris* is also characteristic. Ireland is a stronghold for the habitat, where it is widespread particularly along the western fringe. 9 SACs are designated for this habitat in the Member State. It is estimated that a total of 710ha of this habitat occurs within the Natura 2000 network. This habitat forms c. 1% (329.46ha) of the Wicklow Mountains SAC, equivalent to c. 46% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Favourable. Pressures acting on this habitat include eutrophication, acidification and peatland damage.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea in the Wicklow Mountains SAC, as per the Connemara Bog Complex SAC [002034]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea,* the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Natural dystrophic lakes and ponds [3160]	*At least 9.1km south of the Project*	Dystrophic lakes and ponds are mainly associated with areas of Atlantic and upland blanket bog, and wet heath. As for other ombrotrophic bog habitats, the habitat is species poor botanically, but has relatively greater invertebrate species richness. Low species richness is, however, not synonymous with low conservation value, as many of the species are strongly associated with and sometimes restricted to the dystrophic habitat. Dystrophic lakes and ponds are variable across their Irish range, with altitude, geology, and distance from the sea the most likely drivers of the variation (van Groenendael *et al*., 1979, Drinan, 2012). While individual sites are typically species poor, among-site variation means that the habitat displays higher species richness at landscape and regional scales. Furthermore, the invertebrate fauna is characterised by some rare and threatened species, such as the endangered downy emerald dragonfly. In terms of macroinvertebrate species richness, dystrophic lakes and ponds are dominated by Coleoptera (water beetles), followed by Trichoptera (caddisfly larvae) and Heteroptera (aquatic bugs, such as water boatmen). 10 SACs are designated for this habitat in the Member State. It is estimated that a total of 1042ha of this habitat occurs within the Natura 2000 network. This habitat forms c. 1% (329.46ha) of the Wicklow Mountains SAC, equivalent to c. 32% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be inadequate declining. Pressures acting on this habitat include water quality impacts from peatland drainage and conifer forest.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Natural dystrophic lakes and ponds in the Wicklow Mountains SAC. as per the Connemara Bog Complex SAC [002034]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Natural dystrophic lakes and ponds, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Northern Atlantic wet heaths with *Erica tetralix* [4010]	*At least 3.6km south of the Project*	This habitat is a highly variable habitat that is intermediate in many regards between dry heath and blanket bog, generally occurring on gently sloping, poorly-draining ground on shallow or intermediate peat depths (typically less than 50 cm deep). It is dominated by a mixture of *Molinia caerulea, Erica tetralix, Trichophorum germanicum or Calluna vulgaris,* although not all of these species need to be present. Dwarf shrubs may be scarce or absent in degraded examples of wet heath characterised by dominance of *Trichophorum germanicum* or *Molinia caerulea*. 39 SACs are designated for this habitat in the Member State. It is estimated that a total of 77151ha of this habitat occurs within the Natura 2000 network. This habitat forms c. 25% (8236.43ha) of the Wicklow Mountains SAC, equivalent to c. 14% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Bad. Pressures acting on this habitat include overgrazing and trampling, afforestation and development of wind farms.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of Northern Atlantic wet heaths with Erica tetralix in the Wicklow Mountains SAC. as per the Connemara Bog Complex SAC [002034]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Northern Atlantic wet heaths with *Erica tetralix*, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.
European dry heaths [4030]	*At least 20.4km south east of the Project*	Dry heaths comprise vegetation dominated by ericaceous dwarf shrubs and usually occur on well-drained, nutrient-poor and acidic mineral soils or shallow peats on sloping ground (typically less than 50 cm deep). *Calluna vulgaris* is usually the main species but *Erica cinerea*, *Ulex gallii* and *Vaccinium myrtillus* may also be important components. Dry heaths occur from sea level up to around 400 m. 48 SACs are designated for Dry heaths in the Member State. It is estimated that a total of 63,074 ha of Dry heaths occurs within the Natura 2000 network. This habitat forms c. 15% (4,941.86 ha) of the Wicklow Mountains SAC, equivalent to c. 7.8% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Bad but "stable". Pressures acting on this habitat include burning and sheep grazing.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of European dry heaths in the Wicklow Mountains SAC. as per the Connemara Bog Complex SAC [002034]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing European dry heaths, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Alpine and Boreal heaths [4060]	*At least 7.6km south of the Project*	Habitat 4060 Alpine and Boreal heath consists of two distinct communities in Ireland: i) The upland community occurs on the exposed summits and upper slopes of mountains on acidic substrate. It typically occurs from around 350-400 m upwards, but can occur at lower altitudes in more exposed locations. The vegetation is characterised by low-growing, wind-clipped dwarf shrubs, with *Calluna vulgaris* typically the most frequent, and by the abundance of *Racomitrium lanuginosum*. The definition of this habitat has been revised since the 2000-2006 reporting period in that whilst the presence of arctic-alpine species indicates high quality examples of this community, it is not deemed a requisite; ii) The lowland community comprises *Dryas* heath on limestone in the Burren. The vegetation is characterised by mats of *Dryas octopetala* accompanied by species typical of calcareous grassland. 33 SACs are designated for Dry heaths in the Member State. It is estimated that a total of 13,561 ha of the habitat occurs within the Natura 2000 network. This habitat forms c. 1% (329.46 ha) of the Wicklow Mountains SAC, equivalent to c. 3% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Bad. Pressures acting on this habitat include overgrazing, pasture abandonment and encroachment of scrub and acidification.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of Alpine and Boreal heaths in the Wicklow Mountains SAC. as per the Galtee Mountains SAC [000646]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Alpine and Boreal heaths, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.
Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230]	*At least 23.5km south of the Project*	The Annex I habitat 6230 is restricted to siliceous substrates in upland areas (montane and submontane zone). 6230 has probably always been a rare habitat within Irish uplands and it relies on extensive grazing, usually sheep, to maintain the habitat over almost all of its range. When 6230 grassland is identified it can often occur in a mosaic with heath. Mineral flushing is usually required to create a habitat that supports a more species-rich community that conforms to the Annex I habitat as described in the interpretation manual of EU habitats (European Commission 2007). Both a calcareous (calcareous flushing) and non-calcareous sub-community of 6230 have been identified in Ireland. 9 SACs are designated for Dry heaths in the Member State. It is estimated that a total of 219 ha of the habitat occurs within the Natura 2000 network. This habitat forms c. 1% (329.46 ha) of the Wicklow Mountains SAC, however this figure does not conform to the Article 17 report and it is likely the area described in the Nature 2000 form is indicative of 1% of the area of the SAC. The overall conservation status of this habitat is considered to be Bad. Pressures acting on this habitat include problematic native species (e.g. bracken) and succession to scrub.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)* in the Wicklow Mountains SAC. as per the Galtee Mountains SAC [000646]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe), the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Blanket bogs (* if active bog) [7130]	*At least 4.7km south of the Project*	Vegetation types of upland and lowland blanket bog conforming to Annex I habitat 7130 have been detailed by Fossitt (2000) while Perrin et al. (2013a.) describe several communities from the work to date of the National Survey of Uplands Habitats though it should be noted that the principle lowland blanket bog SACs have not yet been assessed. In Ireland they may be broadly divided into upland and lowland communities. The peat is typically more than 50 cm deep and often 1-2 m deep in the uplands or up to 7 m deep in the lowlands. Blanket bogs generally occur on level ground or gentle slopes although upland blanket bog can occasionally occur on steeper ground up to 40 degrees in the wettest districts. Active bog contains a significant area of vegetation that is normally peat-forming. For blanket bog this includes not only *Sphagnum* spp. and other bryophyte species but also *Eriophorum* spp. and some of the other vascular plant species. Conversely, inactive blanket bog should be defined as areas of blanket peat lacking a significant area of peat-forming species although there are no specific guidelines in this regard. Due to the difficulties in differentiating between active and inactive blanket bog and because, with the exception of the NSUH, none of the data sources used have distinguished between these types, the assessment presented within this document is jointly made for both active and inactive blanket bog. 50 SACs are designated for Dry heaths in the Member State. It is estimated that a total of 144,829 ha of the habitat occurs within the Natura 2000 network. This habitat forms c. 25% (8236 ha) of the Wicklow Mountains SAC, equivalent to c. 6% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Bad. The primary pressure on this habitat is overgrazing or past overgrazing with current grazing levels impeding recovery.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of Blanket bogs in the Wicklow Mountains SAC. as per the Connemara Bog Complex SAC [002034]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Blanket bogs (*if active bog), the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110]	*At least 9.1km south of the Project*	Siliceous scree consists of accumulations of siliceous rock fragments on slopes below upland cliffs or on exposed / frost-shattered mountain summits or ridges. Rocks may vary in size from large blocks (also known as talus) that can be very stable down to smaller fragments that can be highly mobile. Areas of loose rock on summits or plateaux exposed by erosion of high altitude blanket bog and areas akin to fell-field are not included. Whilst there is no strict altitudinal threshold, this habitat is limited to examples of scree occurring in an upland landscape context. The vegetation may be very sparse and can comprise chiefly of bryophyte and lichen assemblages, but calcifuge ferns (e.g. *Dryopteris dilatata*, *Hymenophyllum wilsonii* or *Saxifraga spathularis* are typically present. 3 SACs are designated for the habitat in the Member State. It is estimated that a total of 1890ha of the habitat occurs within the Natura 2000 network. This habitat forms c. 1% (329.46 ha) of the Wicklow Mountains SAC, however this figure does not conform to the Article 17 report and it is likely the area described in the Nature 2000 form is indicative of 1% of the area of the SAC. The overall conservation status of this habitat is considered to be Inadequate. The primary pressure on this habitat is sheep grazing although is it of medium importance due to the inaccessibility of many areas containing the habitat.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) in the Wicklow Mountains SAC. as per the Galtee Mountains SAC [000646]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Project and potential areas containing Blanket bogs (* if active bog), the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Calcareous rocky slopes with chasmophytic vegetation [8210]	*At least 9.1km south east of the Project.*	The habitat consists of vertical or near vertical exposures of calcareous bedrock with cracks, fissures and overhangs that support chasmophytic vegetation. In may also occur on wet siliceous cliffs where there is some base-enrichment from the water or where the siliceous rock has been metamorphosed. Chasmophytic vegetation is characterised by calcicole ferns (e.g. *Asplenium viride, Cystopteris fragilis*), saxifrages (*Saxifraga oppositifolia, Saxifraga aizoides*) and saxicolous bryophytes (e.g. *Tortella tortuosa, Orthothecium rufescens*) which are present due to the specific habitat conditions provided by the rock face and fissures. Areas of heath, grassland or tall herb communities growing on the rock face or on ledges are not included. The definition of this habitat has been revised since the 2000-2006 reporting period (NPWS 2007) in that whilst the presence of arctic-alpine species indicates high quality examples of this community, it is not deemed a requisite. 12 SACs are designated for the habitat in the Member State. It is estimated that a total of 243ha of the habitat occurs within the Natura 2000 network. This habitat forms c. 1% (329.46 ha) of the Wicklow Mountains SAC, however this figure does not conform to the Article 17 report and it is likely the area described in the Nature 2000 form is indicative of 1% of the area of the SAC. The overall conservation status of this habitat is considered to be Inadequate. The primary pressure on this habitat is sheep grazing.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of Calcareous rocky slopes with chasmophytic vegetation in the Wicklow Mountains SAC. as per the Galtee Mountains SAC [000646]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Calcareous rocky slopes with chasmophytic vegetation, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.
Siliceous rocky slopes with chasmophytic vegetation [8220]	*At least 17.7km south of the Project*	Siliceous rocky slopes consist of vertical or near vertical exposures of siliceous bedrock with cracks, fissures and overhangs that support chasmophytic vegetation. Chasmophytic vegetation is characterised by calcifuge ferns (e.g. *Dryopteris dilatata, Hymenophyllum wilsonii*), saxifrages (*Saxifraga spathularis*) and saxicolous bryophytes (e.g. *Andreaea* spp., *Racomitrium heterostichum*) which are present due to the specific habitat conditions provided by the rock face and fissures. Areas of heath, grassland or tall herb communities growing on the rock face or on ledges are not included. 15 SACs are designated for the habitat in the Member State. It is estimated that a total of 1613ha of the habitat occurs within the Natura 2000 network. This habitat forms c. 1% (329.46 ha) of the Wicklow Mountains SAC, however this figure does not conform to the Article 17 report and it is likely the area described in the Nature 2000 form is indicative of 1% of the area of the SAC. The overall conservation status of this habitat is considered to be Inadequate. The primary pressure on this habitat and increased use of the uplands for recreational activities.	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To restore the favourable conservation condition of Siliceous rocky slopes with chasmophytic vegetation in the Wicklow Mountains SAC. as per the Galtee Mountains SAC [000646]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Siliceous rocky slopes with chasmophytic vegetation, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]	*At least 8.2km south east of the Project.*	Old sessile oak woods are defined in the interpretation manual of EU habitats as "acidophilous *Quercus petraea* woods, with low, low-branched, trees, with many ferns, mosses, lichens and evergreen bushes". Three indicative species are listed: *Quercus petraea*, *Ilex aquifolium* and *Blechnum* ssp. (*sic*). A wider interpretation that also includes woods with Q. × *rosacea* and Q. *robur* may also be used. 40 SACs are designated for Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles in the Member State. It is estimated that a total of 3,899 ha of 91A0 occurs within the Natura 2000 network. This habitat forms c. 1.0% (329.46 ha) of the Wicklow Mountains SAC, equivalent to c. 8.5% of the entire national Natura 2000 contribution for this QI. The overall conservation status of this habitat is considered to be Bad and "improving".	Given the distance between this QI and the Project, no complete impact source-pathway-receptor chain could be identified. Potential impacts are not anticipated and are therefore screened out.	To maintain the favourable conservation condition of Old sessile oak woods with Ilex and Blechnum in the British Isles in the Wicklow Mountains SAC. as per the Connemara Bog Complex SAC [002034]	The detailed Attributes and Targets for this Conservation Objective (NPWS, 2011) were reviewed as part of the Screening process.		No Likely Significant Effect – Given the nature of the works and the distance between the Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, the Project will not compromise the maintenance of the favourable conservation condition of this Qualifying Interest within the Wicklow Mountains SAC.
European Otter *Lutra lutra* [1355]	*At least 30m to River Dodder.*	The Otter is a large carnivore with a long, slim body, short legs with webbed feet and a tapered tail. Adult males can reach 1 m in length and 10 kg in weight. Dramatic declines occurred in many European populations during the latter half of the 20th Century. As a result, Otter became extinct in several countries. However, Ireland has remained a strong-hold for the species. Otter are protected under Annex II and IV of the Habitats Directive and under the Wildlife Acts, 1976-2012. The species is listed in the Irish Red Data Book as Near Threatened. A Regulation 39 Threat Response Plan has been progressed for this species in the Member State (NPWS, 2009). 45 SACs are designated for this species in the Member State, estimated to support 468–660 of the country's 7,218–10,186 breeding females. The most recent estimate of population size within the Wicklow Mountains SAC is not determined but is considered to be less than 2% of the national population. The SAC is nonetheless considered to be of "good value" for the conservation of Otter. The overall conservation status of the species is considered Favourable, with road mortalities constituting the major pressure at present.	Otter in freshwater and riverine habitats can occupy large home ranges. In low density areas these can be of tens of kilometers in size. The closest proximity to suitable connected riparian habitat from the Project to the SAC is c.5.6km. Despite this distance the Dodder is considered an important and key feature for Otter movement within the catchment. As a precaution it is considered that an impact source-pathway-receptor chain may exist and should be tested in view of the Conservation Objectives for Otter in this case.	To maintain or restore the favourable conservation condition of European Otter in the Wicklow Mountains SAC as per the Galway Bay Complex SAC [000268]	Distribution	No significant decline	No LSE –. There is little evidence of disturbance to Otter as a result of recreation (NPWS, 2009) which is a potential hazard during the operational phase. The scale and nature of the Project coupled with the crepuscular nature of Otter means there will be no significant effect on Otter distribution within the SAC during construction or operation as a result of the Project. Generic best practice (NRA, 2008) will be employed to limit temporary disturbance along the Dodder during the construction phase.
					Extent of terrestrial habitat	No significant decline	No LSE – No land take of SAC.
					Extent of river habitat	No significant decline.	No LSE –There will be no significant effects on the extent of river habitat as a result of the Project.
					Extent of lake habitat	No significant decline.	No LSE – The Project will not include any land take of lake habitat therefore there will be no significant effects as a result of the Project.
					Couching sites and holts	No significant decline	No LSE – There will be no decline in Otter couching sites and holts sites within the SAC as a result of the Project.
					Fish biomass available	No significant decline	No LSE – Generic best practice (IFI, 2016; NRA, 2008) will be adhered to throughout the construction phase ensuring that there will be no significant indirect effects on fish biomass in the Dodder as a result of the Project.

Qualifying Interest	Nearest Proximity (km)	Proximity, Extent & Character	Do potential pathways of risk exist between the project and the Qualifying Interest?*	Conservation Objective	Target	Attribute	Likely Significant Effect
					Barriers to connectivity	No significant increase.	No LSE – Generic best practice (IFI, 2016; NRA, 2006) will be adhered to throughout the construction phase ensuring no barriers to connectivity. Use of the Greenway will be restricted to pedestrians and cyclists and likely to be limited to daylight hours. No significant residual effects on the connectivity of habitat for within the SAC are expected due to the crepuscular habit of Otter. There will be no increase in barriers of connectivity for Otter as a result of the Project.

*In ecological and environmental impact assessment, for an impact to occur there must be a risk enabled by having a 'source' (e.g. construction works at a proposed development site), a 'receptor' (e.g. a SAC or other ecologically sensitive feature), and a pathway between the source and the receptor (i.e. a watercourse which connects the proposed development site to the SAC). The risk of the impact does not automatically mean it will occur, or that it will be significant. However, identification of the risk does mean that there is a possibility of ecological or environmental damage occurring, with the level and significance of the impact depending upon the nature and exposure to the risk and the characteristics of the receptor.

4. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

4.1 Assessment Criteria

The assessment questions listed below have been sourced from EC Guidance 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 (2001):

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 site:

The Dodder Greenway will be constructed along the River Dodder from Ringsend to Fort Bridge. The Project will be constructed along existing paths and road as well newly constructed paths and boardwalks. The nearest Natura 2000 Site to the Project is the Glenasmole Valley SAC which begins 100m upstream of the Project southern limit. The Project is considered unlikely to give rise to any significant impacts on the Conservation Objectives of any 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:

No element of the works will result in the loss, fragmentation or disturbance on Special Conservation Interest / Qualifying Interests or have subsequent impacts on habitat modification. No indirect effects of the Project through changes in any water resources hydrologically connected to any Natura 2000 site are expected (See Table 6 for Overview).

Describe any likely significant changes to the site:

No element of the Project is likely to result in significant changes to any Annex I habitat; cause a reduction in the area of any Qualifying Interest, or habitat used by a Special Conservation Interest or Qualifying Interest within any of the Natura 2000 Sites in proximity; or, cause any direct or indirect damage to the physical quality of the environment within any Natura 2000 Site.

Describe any likely impacts on the Natura 2000 site as a whole:

The Project will not involve any land take within any Natura 2000 Site. No element of the Project will cause direct or indirect damage to the size or characteristics of any Natura 2000 Site, nor will any element of the Project interfere with any known mitigation measures currently in place for other plans and projects.

Provide indicators of significance as a result of the identification of the effects above:

Taking into consideration the scale of the proposed Project and the Special Conservation Interest / Qualifying Interest for which the Natura 2000 Sites within the likely zone of impact are designated, significant effects on these habitats are highly unlikely. The narrow construction envelope of the Project, short duration of phased works and low intensity of operation are unlikely to give rise to significant indirect or residual impacts on QI/SCI of any Natura 2000 Site.

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:

No element of the construction or operational phases of the Dodder Greenway has potential to affect the Conservation Objectives of any Natura 2000 site. The assessment demonstrates that there is confidence that no direct, indirect or cumulative impacts of construction works will result on any Natura 2000 site. Closest proximities of all Special Conservation Interests / Qualifying Interests in relation to the likely zone of impact have been identified and any source-pathway-receptor chain evaluated, therefore no gaps exist in regard to baseline data with the Natura 2000 Sites.

4.2 Consideration of Potential Cumulative Impacts

A key requirement of the Habitats Directive is to determine whether the plan or project is likely to have a significant effect when considered in combination with other plans and projects. The main driver for addressing plans in combination is to ensure that cumulative effects are captured. For example, the effects of a plan on water quality may be insignificant when considered alone, but when combined with the effects of increased pollution from other plans or projects, may lead to significant adverse impacts on site integrity. To that end, the "in-combination test" is about addressing "cumulative effects".

Determining which plans and projects to consider requires a pragmatic approach given the nature and scale of development proximity to Natura 2000 sites and the potential pathways of risk. Current best practice and available guidance suggests a staged approach, as follows:

- If it can be clearly demonstrated that the plan will not result in any effects at all that are relevant to European site integrity, then the plan should proceed without considering the in-combination test requirement in the Screening further; or,
- If there are identified effects arising from the plan, even if they are perceived as minor and not likely to have a significant effect on the European site alone, then these effects must be considered in combination with the effects arising from other plans and projects.

Elements of the Project that have individually been screened out as having no or inconsequential effects on any European site or because those elements are too general in nature do not require an in-combination assessment since, clearly, they will either have no cumulative effects.

In the case of proposed Dodder Greenway, there will be no change to habitats supporting species listed as Special Conservation Interests or Qualifying Interests in any Natura 2000 site. It is considered that the scale of the works and implementation of generic straightforward best practice control measures will avoid all impacts on European sites. There is no potential for cumulative impacts arising in combination with any other plans or projects and therefore no potential for in combination effects on the integrity of the European Sites.

5. CONCLUDING STATEMENT

5.1 Screening Conclusion

On the basis of the Screening assessment and application of the Precautionary Principle, indicators of significance show that there is no potential for short term or long term interference with any Natura 2000 site. It has been concluded that no potentially significant or uncertain effects on Special Conservation Interests / Qualifying Interests and their respective Conservation Objectives are likely to arise from the Project.

It has been concluded, in view of the best scientific knowledge and the Conservation Objectives of the Natura 2000 sites within the Likely Zone of Impact, that the works, on their own or in combination with other plans or projects, do not have the potential to give rise to likely significant effects on the Special Conservation Interests / Qualifying Interests of the sites.

Significant effects are not likely to arise as a result of construction works and direct impacts can be objectively ruled out. In our opinion, the overall conclusion is that the construction of the Dodder Greenway can be "*screened out*".

The rationale for the determination has regard to the structure and function of features of interest at Natura 2000 sites, notably that:

- No areas of habitat important for the survival of the Qualifying Interests/ Special Conservation Interests within any Natura 2000 site will be modified, fragmented, destroyed or isolated; and,
- No potentially meaningful proportion of the Qualifying Interests/ Special Conservation Interests of any Natura 2000 site may be impacted through loss, damage or deterioration in habitat quality.

Therefore, in our opinion, a Stage 2: Appropriate Assessment will not be required to inform the Project either alone or in combination with other plans or projects, with respect to any Natura 2000 site and its Conservation Objectives.

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APPENDIX A

NPWS Site Synopsis & Conservation Objectives

ISSN 2009-4086

National Parks and Wildlife Service

Conservation Objectives Series

South Dublin Bay SAC 000210

An Roinn
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Series Editor: Rebecca Jeffrey

ISSN 2009-4086

Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved 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, and
- 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 probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

000210	South Dublin Bay SAC
1140	Mudflats and sandflats not covered by seawater at low tide

Please note that this SAC overlaps with South Dublin Bay and River Tolka Estuary SPA (004024). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	2006
Title :	A survey of intertidal mudflats and sandflats in Ireland
Author :	Aquafact
Series :	Unpublished report to NPWS
Year :	2013
Title :	South Dublin Bay SAC (site code 210) Conservation objectives supporting document- marine habitat V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	2012
Title :	Intertidal survey of South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS

Spatial data sources

Year :	Interpolated 2013
Title :	2006, 2011 intertidal surveys
GIS Operations :	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data. Expert opinion used as necessary to resolve any issues arising
Used For :	1140, marine community types (maps 3 and 4)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	High water mark (HWM) and low water mark (LWM) polyline feature classes converted into polygon feature classes and combined; EU Annex I Saltmarsh and Coastal data erased out if present
Used For :	Marine community types base data (map 4)

1140 Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated using OSi data as 720ha
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community, subject to natural processes. See map 4	Based on an intertidal survey undertaken in 2011 (MERC, 2012). See marine supporting document for further information
Community structure: *Zostera* density	Shoots/m²	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes	Based on an intertidal survey undertaken in 2011 (MERC, 2012). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community type in a natural condition: Fine sands with *Angulus tenuis* community complex. See map 4	Based on intertidal surveys undertaken in 2006 (Aquafact, 2006) and 2011 (MERC, 2012). See marine supporting document for further information

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Department of Arts, Heritage and the Gaeltacht

MAP 1:
SOUTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000210; version 3
County Dublin

0 0.25 0.5 0.75 1 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

N

Map Version 1
Date: Aug 2013

SPA 004024

SAC 000210

SPA 004024

Legend

- South Dublin Bay SAC 000210
- South Dublin Bay and River Tolka Estuary SPA 004024
- OSi Discovery Series County Boundaries

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Department of Arts, Heritage and the Gaeltacht

MAP 2:
SOUTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
ADJOINING / OVERLAPPING
DESIGNATIONS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE: SAC 000210; version 3
SPA 004025; version 2
County Dublin

0 0.25 0.5 0.75 1 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
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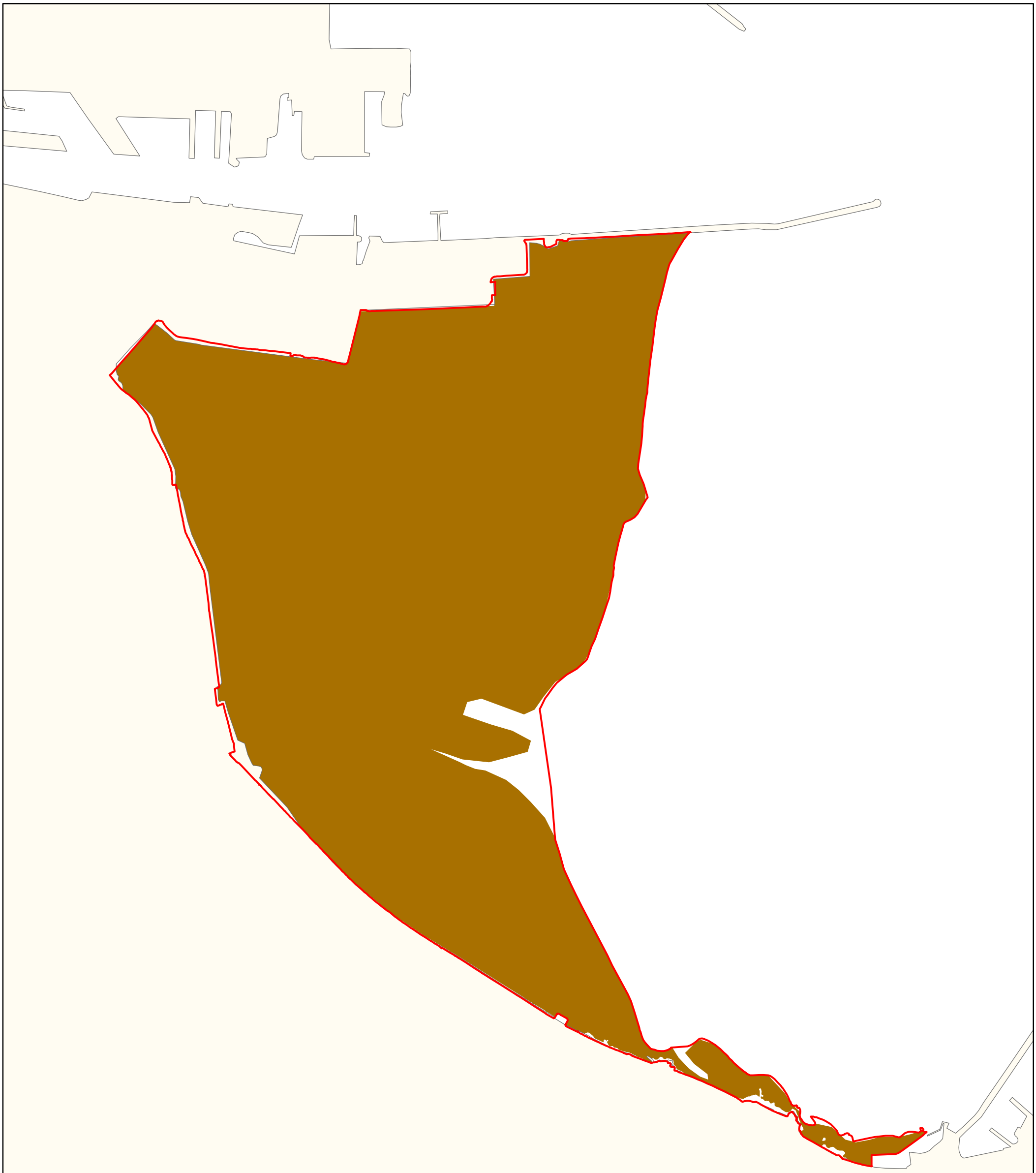
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

N

Map Version 1
Date: Aug 2013



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Arts, Heritage and the Gaeltacht

MAP 3:
SOUTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
TIDAL MUDFLATS AND SANDFLATS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000210; version 3
County Dublin

0 0.25 0.5 0.75 1 km

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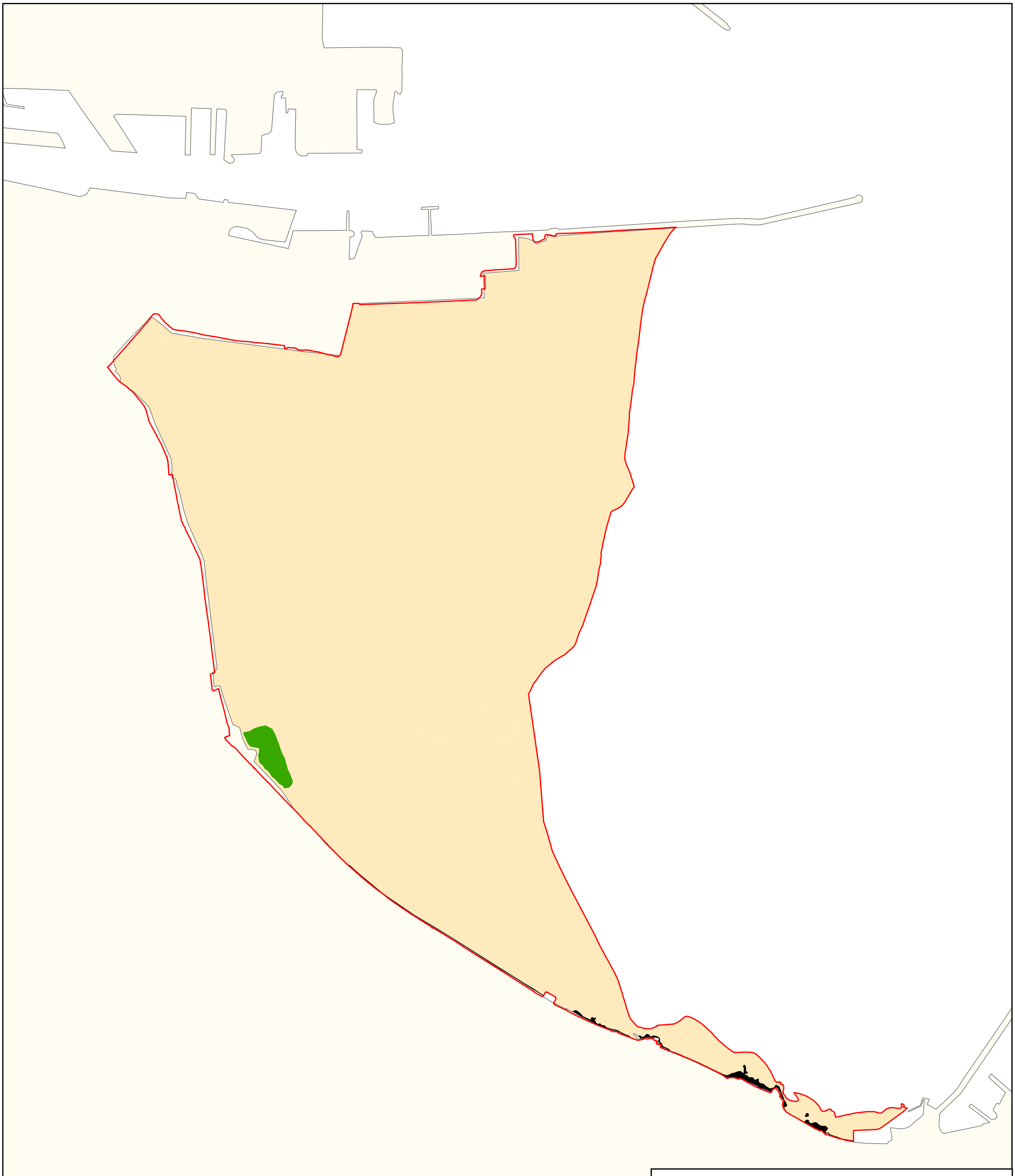
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar
comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis
le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

N

Map Version 1
Date: Aug 2013



Legend

SAC 000210

OSi Discovery Series County Boundaries

Marine Community Types

Fine sands with *Angulus tenuis* community complex

Intertidal reef community

Zostera-dominated community

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Department of Arts, Heritage and the Gaeltacht

MAP 4:
SOUTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
MARINE COMMUNITY TYPES

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000210; version 3
County Dublin

0 0.25 0.5 0.75 1 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
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Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

N

Map Version 1
Date: Aug 2013

Conservation objectives for Glenasmole Valley SAC [001209]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved 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, and
- 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 probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

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:

Code	Description
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (* important orchid sites)*
6410	*Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)
7220	Petrifying springs with tufa formation (Cratoneurion)*

* denotes a priority habitat

Citation: *NPWS (2015) Conservation objectives for Glenasmole Valley SAC [001209]. Generic Version 4.0. Department of Arts, Heritage and the Gaeltacht.*

Conservation objectives for Wicklow Mountains SAC [002122]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

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- 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 probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

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:

Code	Description
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea
3160	Natural dystrophic lakes and ponds
4010	Northern Atlantic wet heaths with *Erica tetralix*
4030	European dry heaths
4060	Alpine and Boreal heaths
6230	Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)*
7130	Blanket bogs (* if active bog)
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)

8210 Calcareous rocky slopes with chasmophytic vegetation
8220 Siliceous rocky slopes with chasmophytic vegetation
91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
* denotes a priority habitat

Code	Common Name	Scientific Name
1355	Otter	*Lutra lutra*

Citation: *NPWS (2015) Conservation objectives for Wicklow Mountains SAC [002122]. Generic Version 4.0. Department of Arts, Heritage and the Gaeltacht.*

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National Parks and Wildlife Service

Conservation Objectives Series

South Dublin Bay and River Tolka Estuary SPA 004024

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Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

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A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

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- 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 probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

004024	South Dublin Bay and River Tolka Estuary SPA
A046	Light-bellied Brent Goose *Branta bernicla hrota*
A130	Oystercatcher *Haematopus ostralegus*
A137	Ringed Plover *Charadrius hiaticula*
A141	Grey Plover *Pluvialis squatarola*
A143	Knot *Calidris canutus*
A144	Sanderling *Calidris alba*
A149	Dunlin *Calidris alpina alpina*
A157	Bar-tailed Godwit *Limosa lapponica*
A162	Redshank *Tringa totanus*
A179	Black-headed Gull *Chroicocephalus ridibundus*
A192	Roseate Tern *Sterna dougallii*
A193	Common Tern *Sterna hirundo*
A194	Arctic Tern *Sterna paradisaea*
A999	Wetlands

Please note that this SPA overlaps with South Dublin Bay SAC (000210). It adjoins North Bull Island SPA (004006) and North Dublin Bay SAC (000206). See map 2. The conservation objectives for this site should be used in conjunction with those for overlapping and adjacent sites as appropriate.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	2014
Title :	North Bull Island SPA (site code: 4006) and South Dublin Bay and River Tolka Estuary SPA (site code: 4024) Conservation objectives supporting document V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	1995
Title :	Seabird monitoring handbook for Britain and Ireland: a compilation of methods for survey and monitoring of breeding seabirds
Author :	Walsh, P.; Halley, D.J.; Harris, M.P.; del Nevo, A.; Sim, I.M.W.; Tasker, M.L.
Series :	JNCC, Peterborough
Year :	2008
Title :	Autumn roosting by terns in south Dublin Bay
Author :	Merne, O.J.; Madden, B.; Archer, E.; Porter, B.
Series :	Irish Birds 8: 335-340
Year :	2010
Title :	Terns roosting in Dublin Bay, autumn 2010
Author :	Merne, O.J.
Series :	Irish Birds 9: 126-128
Year :	2014
Title :	BirdLife International Seabird Ecology and Foraging Range Database
Author :	BirdLife International
Series :	http://seabird.wikispaces.com
Year :	2014
Title :	Dublin Bay Birds Project - Dublin Port Tern Conservation Project; report for the 2014 season
Author :	Newton S.; Tierney N.; Whelan R.
Series :	BirdWatch Ireland and Dublin Port Company

Spatial data sources

Year :	2014
Title :	NPWS SPA boundary data
GIS Operations :	SPA boundary polygons divided into two classifications (wetlands, terrestrial) based on line identified by expert judgement. Expert opinion used as necessary to resolve any issues arising
Used For :	Wetlands (map 3)

A046 Light-bellied Brent Goose *Branta bernicla hrota*

To maintain the favourable conservation condition of Light-bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A130 Oystercatcher *Haematopus ostralegus*

To maintain the favourable conservation condition of Oystercatcher in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by oystercatcher, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part four of the conservation objectives supporting document

A137 Ringed Plover *Charadrius hiaticula*

To maintain the favourable conservation condition of Ringed Plover in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by ringed plover, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of conservation objectives supporting document

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A141 **Grey Plover *Pluvialis squatarola***

Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species.

Attribute	Measure	Target	Notes

A143 Knot *Calidris canutus*

To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by knot, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A144 Sanderling *Calidris alba*

To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by sanderling, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A149 Dunlin *Calidris alpina alpina*

To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by dunlin, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A157 Bar-tailed Godwit *Limosa lapponica*

To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by bar-tailed godwit, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A162 Redshank *Tringa totanus*

To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by redshank, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A179 Black-headed Gull *Chroicocephalus ridibundus*

To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by black-headed gull other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A192 Roseate Tern *Sterna dougallii*

To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Passage population: individuals	Number	No significant decline	Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording) it was rarely possible to identify the terns to species level but the majority of the birds appear to have been common terns (*Sterna hirundo*), with smaller numbers of Arctic and roseate terns (*S. paradisaea, S. dougallii*) (sandwich, little and black terns (*S. sandvicensis, S. albifrons, Chlidonias niger*) were also recorded) (Merne et al., 2008; Merne 2010). At least 645 roseate tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of roseate tern using this SPA may be significantly higher
Distribution: roosting areas	Number; location; area (hectares)	No significant decline	Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually join the birds roosting in the main area (Merne et al., 2008)
Prey biomass available	Kilogrammes	No significant decline	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season, roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small, schooling marine fish, very rarely small crustaceans. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater

Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of roseate tern among the post-breeding aggregation of terns	Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing

A193 Common Tern *Sterna hirundo*

To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). For more information on the history and recent population estimates of the tern colony at this SPA see Newton et al. (2014)
Productivity rate: fledged young per breeding pair	Mean number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). For more information on the history and recent population estimates of the tern colony at this SPA see Newton et al. (2014)
Passage population: individuals	Number	No significant decline	Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording), it was rarely possible to identify terns to species level but the majority of the birds appear to have been common terns (*Sterna hirundo*), with smaller numbers of Arctic and roseate terns (*S. paradisaea, S. dougallii*); (sandwich, little and black terns (*S. sandvicensis, S. albifrons, Chlidonias niger*) were also recorded) (Merne et al., 2008; Merne 2010). At least 4,887 common tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of common tern using this SPA may be significantly higher
Distribution: breeding colonies	Number; location; area (Hectares)	No significant decline	The common tern breeding colony in Dublin Bay is primarily sited on an artificial structure known as the 'ESB Dolphin' (see Newton et al., 2014)
Distribution: roosting areas	Number; location; area (Hectares)	No significant decline	Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay, primarily between the Martello Towers of at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually joined the birds roosting in the main area (Merne et al 2008)
Prey biomass available	Kilogrammes	No significant decline	During the breeding season, common terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small fish, crustaceans, insects and occasionally squid. Key habitats: forage in/over shallow coastal waters, bays, inlets, shoals, tidal-rips, drift lines, beaches, saltmarsh creeks, lakes, ponds or rivers. Foraging range: max. 37km; mean max. 33.81km; mean 8.67km (Birdlife International, 2014). Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). Foraging ranges between post-breeding roost sites and feeding areas may be greater than the estimates given for the breeding season

Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	During the breeding season, common terns can make extensive use of marine waters adjacent to their breeding colonies. Foraging range: max. 37km; mean max. 33.81km; mean 8.67km (Birdlife International, 2014). Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest the bird were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). Foraging ranges between post-breeding roost sites and feeding areas may be greater than the estimates given for the breeding season
Disturbance at breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population	The common tern breeding colony in Dublin Bay is primarily sited on an artificial structure known as the 'ESB Dolphin' (see Newton et al., 2014)
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns	Merne et al (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al 2008; Merne 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing

A194 Arctic Tern *Sterna paradisaea*

To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Passage population	Number of individuals	No significant decline	Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording) it was rarely possible to identify the terns to species level but the majority of the birds appear to have been common terns (*Sterna hirundo*), with smaller numbers of Arctic and roseate terns (*S. paradisaea, S. dougallii*); (sandwich, little and black terns (*S. sandvicensis, S. albifrons, Chlidonias niger*) were also recorded) (Merne et al., 2008; Merne 2010). At least 200 Arctic tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of Arctic tern using this SPA may be significantly higher
Distribution: roosting areas	Number; location; area (hectares)	No significant decline	Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually join the birds roosting in the main area (Merne et al., 2008)
Prey biomass available	Kilogrammes	No significant decline	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season Arctic terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small fish, crustaceans and other invertebrates. Key habitats: forage in/over open waters and shallow bays, rocky shores, tidal flats, shoals, tide rips and ocean fronts. Foraging range: max. 20.6km, mean max. 12.24km, mean 11.75km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater

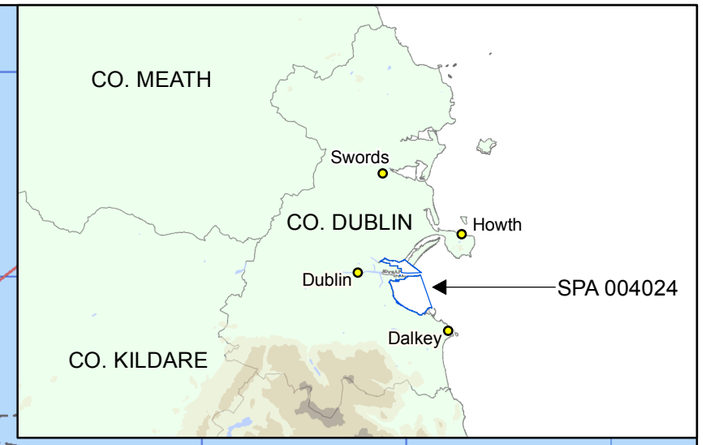
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest the birds were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season Arctic terns can make extensive use of marine waters adjacent to their breeding colonies. Foraging range: max. 20.6km, mean max. 12.24km, mean 11.75km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of Arctic tern among the post-breeding aggregation of terns	Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A999 Wetlands

To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192 hectares, other than that occurring from natural patterns of variation. See map 3	The wetland habitat area was estimated as 2,192ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document



Legend

South Dublin Bay and River Tolka Estuary SPA 004024

An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht

MAP 1:
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA
CONSERVATION OBJECTIVES
SPA DESIGNATION

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SPA 004024; version 2. CO. DUBLIN

0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059214. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

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Map Version 1
Date: Sep 2014

SAC 000206

SPA 004006

SAC 000210

SPA 004024

Legend

- South Dublin Bay and River Tolka Estuary SPA 004024
- North Bull Island SPA 004006
- North Dublin Bay SAC 000206
- South Dublin Bay SAC 000210
- OSi Discovery Series County Boundary

An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht

MAP 2:
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA CONSERVATION OBJECTIVES ADJOINING / OVERLAPPING DESIGNATIONS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SPA 004006; version 2, SPA 004024: version 2.
SAC 000206: version 3, SAC 000210: version 3.
CO. DUBLIN

0 1 2 3 km

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059214. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

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Map Version 1
Date: Sep 2014

Legend

South Dublin Bay and River Tolka Estuary SPA 004024

OSi Discovery Series County Boundary

Wetlands and Waterbirds

Wetlands

Terrestrial

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Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

MAP 3:
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA CONSERVATION OBJECTIVES WETLANDS AND WATERBIRDS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SPA 004024; version 2. CO. DUBLIN

0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059214. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

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Map Version 1
Date: Sep 2014

SITE SYNOPSIS

Site Name: South Dublin Bay SAC

Site Code: 000210

This site lies south of the River Liffey in Co. Dublin, 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. 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.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1140] Tidal Mudflats and Sandflats

The bed of Dward Eelgrass (*Zostera noltii*) found below Merrion Gates is the largest stand on the east coast. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are distributed throughout the area at a low density. Fucoid 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.*

Several small, sandy beaches with incipient dune formation occur in the northern and western sectors of the site, notably at Poolbeg, Irishtown and Merrion/ Booterstown. The formation at Booterstown is very recent. Drift line vegetation occurs in association with the embryonic and incipient fore dunes. Typically drift lines occur in a band approximately 5 m wide, though at Booterstown this zone is wider in places. The habitat occurs just above the High Water Mark and below the area of embryonic dune. Species present are Sea Rocket (*Cakile maritima*), Frosted Orache (*Atriplex laciniata*), Spear-leaved Orache (*A. prostrata*), Prickly Saltwort (*Salsola kali*) and Fat Hen (*Chenopodium album*). Also occurring is Sea Sandwort (*Honkenya peploides*), Sea Beet (*Beta vulgaris* subsp. *maritima*) and Annual Sea-blite (*Suaeda maritima*). A small area of pioneer saltmarsh now occurs in the lee of an embryonic sand dune just north of Booterstown Station. This early stage of saltmarsh development is here characterised by the presence of pioneer stands of glassworts (*Salicornia* spp.) occurring below an area of drift line vegetation. As this is of very recent origin, it covers a small area but ample areas of substrate and shelter are available for the further development of this habitat.

Lugworm (*Arenicola marina*), Cockles (*Cerastoderma edule*) and annelids and other 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), Dunlin (2628) and Redshank (356) (average winter peaks 1996/97 and 1997/98). Up to 100 Turnstones are usual in the south bay during winter. Brent Goose regularly occur in numbers of international importance (average peak 299). Bar-tailed Godwit (565), a species listed on Annex I of the E.U. 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 wind-surfing 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.

SITE SYNOPSIS

Site Name: Glenasmole Valley SAC

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.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[6210] Orchid-rich Calcareous Grassland*
[6410] *Molinia* Meadows
[7220] Petrifying Springs*

At this site, examples of calcareous fen and flush occur between the two reservoirs, where sedges (including *Carex flacca* and *C. 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*). Tufa depositing springs are long-known from the site, along the valley sides, and some have substantial tufa mounds and banks. Tufa formation is also known from small streams within the woodland at the site. Within the hazel woods, and associated with the springs and flushes, a distinctive flora with Marsh Hawk's-beard (*Crepis paludosa*) and luxuriant stands of Great Horsetail (*Equisetum telmateia*) has developed.

Orchid-rich grassland occurs in the drier parts of this site and in places grades into *Molinia* meadow. Orchids 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 further orchid species, both Red Data Book-listed, have also been found here, Green-winged Orchid (*Orchis morio*) and Small-white Orchid (*Pseudorchis albida*). Common grasses in the sward include 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*). While much of the calcareous grassland has been improved to some extent for agriculture, a suite of typical species still remain.

The areas of *Molinia* meadows at the site occur associated with the grasslands on the valley sides, and in particular in seepage and flushed areas. Typical and indicative species include Greater Bird's-foot-trefoil (*Lotus uliginosus*), Tormentil (*Potentilla erecta*), Purple Moor-grass (*Molinia caerulea*), Sharp-flowered Rush (*Juncus acutiflorus*), Adder's-tongue (*Ophioglossum vulgatum*), Meadow Thistle (*Cirsium dissectum*) and Fen Bedstraw. As noted above, orchids are frequent in the grasslands at this site.

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 other species such as 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 Bramble (*Rubus fruticosus* agg.) are present in the ground flora.

Wet semi-natural broadleaved woodland is also found around the reservoirs and includes Alder (*Alnus glutinosa*) and willow (*Salix* spp.), with Yellow Iris (*Iris pseudacorus*), horsetails (*Equisetum* spp.), Bramble and localised patches of Japanese Knotweed (*Reynoutria japonica*), an introduced and invasive species.

The lake shore vegetation is not well developed, which is typical of a reservoir. There are occasional patches of Reed 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 occur in the site, Yellow Archangel (*Lamiastrum galeobdolon*) and Yellow Bird's-nest (*Monotropa hypopitys*). Small-white Orchid is legally protected under the Flora (Protection) Order, 1999.

The site provides excellent habitat for bats, with at least four species recorded: Pipistrelle, Leisler's, Daubenton's and Brown Long-eared. Otter occurs along the river and reservoirs.

The site supports Kingfisher, an Annex I species under the E.U. Birds Directive.

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

SITE SYNOPSIS

Site Name: Wicklow Mountains SAC

Site Code: 002122

Wicklow Mountains SAC is a complex of upland areas in Counties Wicklow and Dublin, flanked by the Blessington reservoir to the west and Vartry reservoir in the east, Cruagh Mountain in the north and Lybagh Mountain in the south. Most of the site is over 300 m, with much ground over 600 m. The highest peak is 925 m at Lugnaquilla. 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 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 2 m deep. Poor mineral soil covers the slopes, and rock outcrops are frequent. 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 site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[3130] Oligotrophic to Mesotrophic Standing Waters
[3160] Dystrophic Lakes
[4010] Wet Heath
[4030] Dry Heath
[4060] Alpine and Subalpine Heaths
[6230] Species-rich *Nardus* Grassland*
[7130] Blanket Bogs (Active)*
[8110] Siliceous Scree
[8210] Calcareous Rocky Slopes
[8220] Siliceous Rocky Slopes
[91A0] Old Oak Woodlands

[1355] Otter (*Lutra lutra*)

The vegetation over most of Wicklow Mountains SAC is a mosaic of heath, blanket bog and upland grassland (mostly on peaty soil, though some on mineral soil), stands of dense Bracken (*Pteridium aquilinum*), and small woodlands mainly along the rivers. Mountain loughs and corrie lakes are scattered throughout the site.

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 Heather (*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 sedges (*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 Heather, 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.

Blanket bog is usually dominated by cottongrasses, Heather and bog mosses. 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 Heather 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.

Due to the underlying rock strata, the water of the rivers and streams is acid rather than alkaline. 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*).

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 heath species such as Crowberry (*Empetrum nigrum*) and Cowberry, and others such as 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 oakwood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalure, near Lough Tay and Lough Dan, with native Sessile Oak (*Quercus petraea*) trees, many of which are 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. Parsley Fern (*Cryptogramma crispa*), Marsh Clubmoss (*Lycopodiella inundata*), Lanceolate Spleenwort (*Asplenium billotii*), Small-white Orchid (*Pseudorchis albida*) and Bog Orchid (*Hammarbya paludosa*) are all legally protected under the Flora (Protection) Order, 1999. Greater Broomrape (*Orobanche rapum-genistae*), Alpine Saw-wort and Alpine Lady's-mantle are listed in the Irish Red Data Book. The rare Myxomycete fungus *Echinostelium colliculosum* has been recorded from the Military Road.

The Red Data Book fish species Arctic Char has been recorded from Lough Dan, but this population may now have died out.

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, both Annex I species of the E.U. Birds Directive, breed within the site. Recently, Goosander has become established as a breeding species.

Large areas of the site are owned by the National Parks and Wildlife Service (NPWS) and are managed for nature conservation based on traditional land uses of upland areas. The most common land use is traditional sheep grazing, but others include turf cutting, mostly hand-cutting but some machine-cutting also 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 land use 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. Peat erosion is frequent on the peaks. This may be a natural process, but is likely to be accelerated by activities such as grazing.

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, eleven habitats listed on Annex I of the E.U. Habitats Directive are found within the site. Several rare or protected plant and animal species occur, adding further to its value.

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*), *Nephthys* 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.

Booterstown 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.

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