

Screening Report for Appropriate
Assessment of a
Proposed
Large Residential Development
at the Junction of Sallynoggin Road
Lower and Glenageary Avenue,
Glenageary, Co Dublin

Compiled by OPENFIELD Ecological Services

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Introduction

Biodiversity is a contraction of the words 'biological diversity' and describes the enormous variability in species, habitats and genes that exist on Earth. It provides food, building materials, fuel and clothing while maintaining clean air, water, soil fertility and the pollination of crops. A study by the Department of Environment, Heritage and Local Government placed the economic value of biodiversity to Ireland at €2.6 billion annually (Bullock et al., 2008) for these 'ecosystem services'.

All life depends on biodiversity and its current global decline is a major challenge facing humanity. In 1992, at the Rio Earth Summit, this challenge was recognised by the United Nations through the Convention on Biological Diversity which has since been ratified by 193 countries, including Ireland. Its goal to significantly slow down the rate of biodiversity loss on Earth has been echoed by the European Union, which set a target date of 2010 for *halting* the decline, however this was not achieved. In 2010 in Nagoya, Japan, governments from around the world set about redoubling their efforts and issued a strategy for 2020 called 'Living in Harmony with Nature' however none of these targets were achieved. In December 2022, the Kunming-Montreal Global biodiversity framework was agreed with the headline of 'living in harmony with nature'. This has set ambitious goals to not only protect, but restore, nature, including by protecting 30% of land and sea by 2030.

In 2023 the Irish Government is expected to incorporate the goals set out in this framework, along with its commitments to the conservation of biodiversity under national and EU law, in the fourth national biodiversity action plan.

The main policy instruments for conserving biodiversity in Ireland have been the Birds Directive of 1979 and the Habitats Directive of 1992. Among other things, these require member states to designate areas of their territory that contain important bird populations in the case of the former; or a representative sample of important or endangered habitats and species in the case of the latter. These areas are known as Special Protection Areas (SPA) and Special Areas of Conservation (SAC) respectively. Collectively they form a network of sites across the European Union known as Natura 2000. A report into the economic benefits of the Natura 2000 network concluded that "there is a new evidence base that conserving and investing in our biodiversity makes sense for climate challenges, for saving money, for jobs, for food, water and physical security, for cultural identity, health, science and learning, and of course for biodiversity itself" (EC, 2013).

Unlike traditional nature reserves or national parks, Natura 2000 sites are not 'fenced-off' from human activity and are frequently in private ownership. It is the responsibility of the competent national authority to ensure that 'good conservation status' exists for their SPAs and SACs and specifically that Article 6(3) of the Habitats Directive is met. Article 6(3) states:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in

combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Sections 177U and 177V of the Planning and Development Act 2000 sets out the purpose of AA Screening is as follows:

A screening for appropriate assessment shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

The test at stage 1 AA Screening is that:

The competent authority shall determine that an appropriate assessment of a proposed development is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

The test at stage 2 (Appropriate Assessment) is:

Whether or not the proposed development, individually or in-combination with other plans or projects would adversely affect the integrity of a European site.

However, where this is not the case, a preliminary screening must first be carried out to determine whether or not a full AA is required. This screening is carried out by Dun Laoghaire Rathdown County Council.

Screening for Appropriate Assessment

Article 6(3) of the Habitats Directive states:

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

The purpose of Stage 1 Screening for Appropriate Assessment is to determine whether it is necessary to carry out a Stage 2 full Appropriate Assessment (AA).

Section 177U(1) provides that a screening for appropriate assessment of a proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

Section 177U(4) provides that the competent authority shall determine that an appropriate assessment of a proposed development is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

Dun Laoghaire Rathdown County Council's determination as to whether an Appropriate Assessment is required must be made on the basis of objective information and must be recorded.

Where an Appropriate Assessment is required, an applicant for planning permission must prepare and submit a Natura Impact Statement.

This Appropriate Assessment Screening Report (AASR) has been prepared in accordance with the provisions of Article 6(3) of the Habitats Directive and Section 177U of the 2000 Act.

The Purpose of this document

This document provides for the screening of a proposed development on the site at Glenageary Avenue, Co. Dublin, and its potential effects in relation to Natura 2000 sites (SACs and SPAs). Under the Planning and Development Acts, the Local Authority cannot grant planning permission where significant effects may arise to a Natura 2000 site. In order to make that decision the development must be screened for AA. This report provides the necessary information to allow Dun Laoghaire Rathdown County Council's to carry out this screening.

About OPENFIELD Ecological Services

OPENFIELD Ecological Services is headed by Pádraic Fogarty who has worked for 25 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. Since its inception in 2007 OPENFIELD has carried out numerous EclAs for Environmental Impact Assessment (EIA), Appropriate Assessment in accordance with the EU Habitats Directive, as well as individual planning applications. Pádraic is a full member of the Institute of Environmental Management and Assessment (IEMA).

Guidance

This AA Screening Report has been undertaken in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPW 1/10 & PSSP 2/10;
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2001);
- *Communication from the Commission on the precautionary principle* (European Commission, 2000); and,
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019).
- *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2021).

Methodology

The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled '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' (Oxford Brookes University, 2001). Chapter 3, part 1, of this document deals specifically with screening while Annex 2 provides the template for the screening/finding of no significant effects report matrices to be used.

In accordance with this guidance, the following methodology has been used to produce this screening statement:

Step 1: Management of the Site

This determines whether the project is necessary for the conservation management of the site in question.

Step 2: Description of the Project

This step describes the aspects of the project that may have an impact on the Natura 2000 site.

Step 3: Characteristics of the Site

This process identifies the conservation aspects of the site and determines whether negative impacts can be expected as a result of the plan. This is done through a literature survey and consultation with relevant stakeholders – particularly the National Parks and Wildlife Service (NPWS). All potential effects are identified including those that may act alone or in combination with other projects or plans.

Using the precautionary principle, and through consultation and a review of published data, it is normally possible to conclude at this point whether potential impacts are likely. Deficiencies in available data are also highlighted at this stage.

Step 4: Assessment of Significance

Assessing whether an effect is significant or not must be measured against the conservation objectives for the Natura area in question.

If this analysis shows that significant effects are likely then a full AA will be required.

The steps are compiled into a screening matrix, a template of which is provided in Appendix II of the EU methodology.

Mitigation measures cannot be taken into account in an AA screening assessment

A full list of literature sources that have been consulted for this study is given in the References section to this report while individual references are cited within the text where relevant.

Screening Template as per Annex 2 of EU methodology:

This plan is not necessary for the management of the site and so Step 1 as outlined above is not relevant.

Brief description of the project

The proposed development will consist of a new neighbourhood centre to include apartments, commercial and retail units, public plaza, childcare facility and all associated residential amenity spaces.

The proposed development includes:

a) *Construction of 138 no. residential apartment units (37 no. 1-bedroom units, 68 no. 2-bedroom (4 person units), 6 no. 2-bedroom (3 person units) and 27 no. 3-bedroom units) in 2 no. interlinked blocks at third to fifth floor level (ranging in height from four to seven storeys over basement level) consisting of:*

i. *Block A (5-6 storeys) comprising 41 no. apartments (8 no. 1-bedroom units, 17 no. 2-bedroom (4 person) units, 2 no. 2-bedroom (3 person) units and 14 no. 3-bedroom units).*

ii. *Block B (4-7 storeys) containing 97 no. apartments (29 no. 1-bedroom units, 51 no. 2-bedroom (4 person) units, 4 no. 2-bedroom (3 person) units and 13 no. 3-bedroom units).*

Each residential unit has associated private open space in the form of a balcony/terrace.

b) *Residential amenity areas of approx. 342 sqm are proposed in the form of resident support services, concierge services, co-working space, social/activity spaces and gym at the ground floor level of Blocks A and B.*

c) *Open Space (approx. 2,806.6 sqm) is proposed in the form of (a) public open space (c. 1,848.4 sqm) in the form of a public plaza accommodating outdoor seating, planting, pedestrian footpaths and cyclist links and (b) residential/communal open space (approx. 958.2 sqm) including c. 750.6 sqm at surface level (incl. playground), roof terrace at fifth floor level of link between Blocks A and Block B (c. 151 sqm) and roof terrace (c. 56.6 sqm) at fifth floor level of Block B. 1.8 m opaque screens are proposed around both roof gardens.*

d) *Commercial and retail uses at ground floor level of Blocks A and B (c. 996 sqm) to include (a) 2 no. restaurants (c. 267 sqm and 295 sqm) in Block A, (b) a retail – clothing unit (c. 142 sqm), (c) retail - florist unit (c. 66 sqm), (d) retail - pharmacy unit (c. 126 sqm) and (e) hairdresser unit (c. 100 sqm) all in Block B.*

e) *Childcare facility (c. 263 sqm) with dedicated open space and children's play area (c. 39.5 sqm) at ground floor level of Block B.*

f) *Basement areas (total approx. 3,411 sqm) are proposed on one level and include car and bicycle parking areas, waste management and plant areas. An ESB substation (approx. 31.7 sqm) is proposed at surface level at the top of the basement ramp accessed off Glenageary Avenue. Commercial bin stores (c. 47.9 sqm) are proposed to be located at ground floor level of both Blocks A and B.*

- g) *A total of 80 no. car parking spaces at basement level are proposed to include 3 no. accessible parking spaces, 2 no. GoCar spaces and 17 no. EV charging spaces. 5 no. motorcycle parking spaces are also proposed at basement level.*
- h) *A set down area/loading bay is proposed at surface level at Sallynoggin Road and 2 no. set down areas/loading bays including 1 no. accessible car parking space are proposed at surface level at Glenageary Avenue.*
- i) *A total of 310 no. bicycle parking spaces to include 254 no. bicycle parking spaces at basement level including 10 no. cargo bicycle spaces and 56 no. bicycle parking spaces including 16 no. cargo bicycle spaces at surface level.*
- j) *The development shall be served via a new vehicular access point to the basement level from Glenageary Avenue. New pedestrian and cyclist access points will be provided onto Sallynoggin Road and Glenageary Avenue from the site.*
- k) *Removal of existing cycle path and footpath and dropped kerb pedestrian crossing at Glenageary Avenue to be reinstated by soft landscaping and replaced by a new shared cyclist and pedestrian raised table crossing point located on Glenageary Avenue linking to the existing signalised crossing on the R118. Existing 1.2 m pedestrian crossing on Glenageary Avenue to be widened to 2 m.*
- l) *Emergency services/servicing access is proposed from Sallynoggin Road and Glenageary Avenue.*
- m) *All associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposal; permeable paving; all landscaping works; green roofs; roof plant room and general plant areas; photovoltaic panels; landscaped boundary treatment; footpaths; public lighting; and electrical services.*

The site location is shown in figures 1 and 2 while the proposed layout is given in figure 3.

It is planned to construct a residential development on the site at Glenageary Avenue as previously described. This will involve a construction phase to include new surface water drainage infrastructure and connection to electricity and wastewater networks.

The main phases of this project include:

- Site clearance and preparation.
- A construction phase using standard building materials.
- Construction will include a new surface water drainage infrastructure and connection to electricity and wastewater networks.
- An operation phase whereby the new homes will be occupied.

The development site is not located within or directly adjacent to any Natura 2000 site (SAC or SPA). This part of south Dublin is a built-up residential and commercial zone and is predominantly composed of artificial surfaces. Mapping from the Environmental Protection Agency (EPA) shows that the Kill-o-the-Grange Stream (also referred to as the Deansgrange Stream) flows c.1.5km to the south-west of the site boundary. The Kill-o-the-Grange Stream is a very short water courses which discharges into the Irish Sea south of Killiney.

There are no alien invasive plant species as listed under Schedule 3 of SI no. 477 of 2011. There are no water courses, bodies of open water or habitat which could be classified as wetlands. Overall the lands can be described as being of local biodiversity value. There are no habitats listed on Annex I of the Habitats Directive. The development site is not suitable for regularly occurring populations of wintering/wetland/wading birds which may be associated with Natura 2000 sites in Dublin Bay or elsewhere.

The Kill-o-the-Grange Stream can be found approximately 1.5km to the south-west of the development site boundary. It is a highly modified water body but is open as it flows through Clonkeen Park and is an important feature for local biodiversity. The point at which it enters the Irish Sea is south of Dublin Bay and so is not directly connected with any Natura 2000 site.

Any inert construction and demolition waste will be removed by a licenced contractor and disposed of in accordance with the Waste Management Act.



Figure 2 – Development site boundary

Currently there is no attenuation of rain run-off and this is likely to soak through open ground (where it exists) or enter public sewers. In accordance with the Greater Dublin Strategic Drainage Study this project will incorporate sustainable drainage systems (SUDS) that will appreciably reduce the current run-off rate. According to the Infrastructure Report prepared for this development application by AECOM:

“Green roof and bioretention provide treatment for the impermeable surfaces on the roofs, steps and footpath areas which drain to these SuDS features. The road carriageway and parking, external to the undercroft car park, are proposed as permeable paving, to treat the runoff at source.

All surface water from the site will discharge to the public network after flowing through the proposed petrol interceptor, where hydrocarbons are removed.”

These measures will ensure that the flow leaving the site will be maintained at a ‘greenfield rate’. These are standard measures which are included in all

development projects and have not been included here to avoid or reduce an effect to any Natura 2000 site. This is confirmed in the judgment recently issued from the ECJU (Case C-721/21, Eco Advocacy CLG v An Bord Pleanála) which confirms that where standard measures are included in the application they cannot be considered as mitigation in an AA context. Surface water will discharge to an existing surface water sewer.

Foul wastewater from the proposed development will be sent to the wastewater treatment plant at Ringsend in Dublin. Emissions from the plant are currently not in compliance with the Urban Wastewater Treatment Directive (UWTD). In April 2019 Irish Water was granted planning permission for an upgrade to the Ringsend facility. This will see improved treatment standards and will increase network capacity by 50%, with works being completed on a phased basis. According to Irish Water upgrading will see compliance with the UWTD by the end of 2023 and, when the project is completed in 2025, network capacity will increase by 50%.

There are no other discharges from this operation. Fresh water supply for the development will be via a mains supply. This may originate in the Poulaphouca Reservoir, which is a Special Protection Area.

There are no point air emissions from the site while some dust and noise can be expected during the construction phase.



Figure 3 – Proposed layout (ground floor) plan

Brief description of Natura 2000 sites

In assessing the zone of influence of this project upon Natura 2000 sites the following factors must be considered:

- Potential impacts arising from the project
- The location and nature of Natura 2000 sites
- Pathways between the development and the Natura 2000 network

It has already been stated that the site is not located within or directly adjacent to any Natura 2000 site. For projects of this nature an initial 15km radius is normally examined. All Natura 2000 sites within 15km of the development site are included in this analysis.

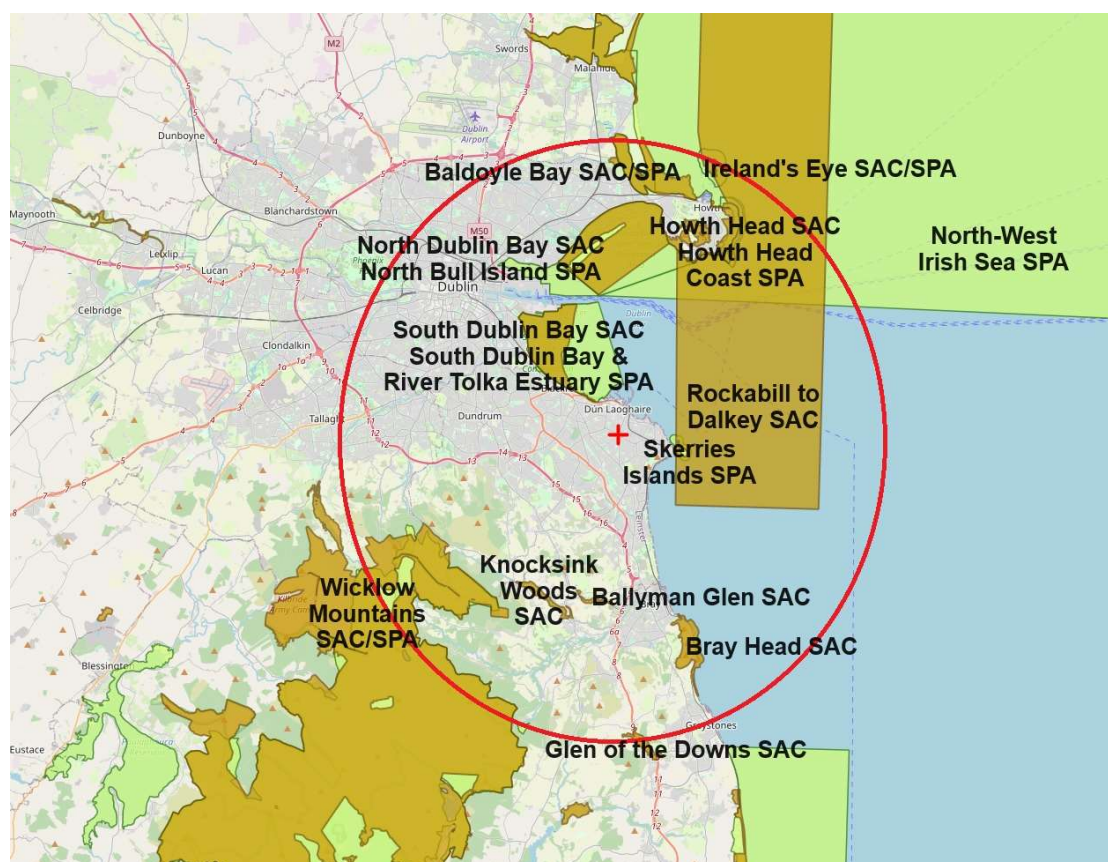


Figure 4 – Approximate 15km radius around the proposed development site (red cross) (www.epa.ie).

Baldoye Bay SAC/SPA

This SAC (site code: 0199) is the estuary of the Sluice and the Mayne Rivers that is largely enclosed by a sand spit that stretches from Portmarnock to Howth. At low tide it has large areas of exposed mud and sediment that support rich invertebrate communities. There are a number of habitats here that are listed in the EU's Habitats Directive Annex I while there are two plants recorded from the Bay that are protected under the Flora Protection Order: Borrer's Saltmarsh-grass *Puccinellia fasciculata* and Meadow Barley *Hordeum secalinum*.

The reasons why the bay falls under the SAC designation are set out in the qualifying interests. They are either habitat types listed in Annex I or species listed in Annex II of the Habitats Directive. This information is provided by the National Parks and Wildlife Service (NPWS) and is shown in table 1 below. In this case the SAC is designated only for protected habitat types. Status is based on the NPWS national assessments under Article 17 of the Habitats Directive and unless otherwise stated do not refer to the status within the SAC in question.

Table 1 – Qualifying interests for the Baldoyle Bay SAC (from NPWS)

Code	Habitats	Status
1140	Mudflats and sandflats	Inadequate
1310	Salicornia and other annuals colonizing mud and sand	Favourable
1330	Atlantic salt meadows	Inadequate
1410	Mediterranean salt meadows	Inadequate

- Tidal mudflats (1140). This is an intertidal habitat characterised by fine silt and sediment. Most of the area in Ireland is of favourable status however water quality and fishing activity, including aquaculture, are negatively affecting some areas.
- Salicornia mudflats (1310): This is a pioneer saltmarsh community and so is associated with intertidal areas. It is dependent upon a supply of fresh, bare mud and can be promoted by damage to other salt marsh habitats. It is chiefly threatened by the advance of the alien invasive Cordgrass *Spartina anglica*. Erosion can be destructive but in many cases this is a natural process.
- Atlantic and Mediterranean salt meadows (1330 & 1410): these are intertidal habitats that differ somewhat in their vegetation composition. They are dynamic habitats that depend upon processes of erosion, sedimentation and colonisation by a typical suite of salt-tolerant organisms. The main pressures are invasion by the non-native *Spartina anglica* and overgrazing by cattle and sheep.

Site specific conservation objectives for this SAC have been published (NPWS, 2012a) and can be summarised as:

Mudflats (code 1140)

Permanent habitat area stable or increasing (estimated at 409 hectares); estuarine muds dominated by polychaetes and crustaceans community complex maintained in a natural condition.

Salicornia mudflats (1310)

Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica*.

Atlantic/Mediterranean Salt Meadows (1330/1410)

Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica*.

The Baldoyle Bay SPA (site codes: 4016) is composed of estuarine habitats. They are some of the most productive in the world and the nutrients that are deposited here fuel primary and secondary production (levels in the food chain) that in turn provide food for internationally significant numbers of wintering birds (Little, 2000). It had a mean of 5,780 birds between the winters of 2006/07 and 2010/11 (Crowe et al., 2012). Specifically, it has a number of species which are 'features of interest' of the SPA, along with 'wetlands and waterbirds'. Table 2 details these.

Table 2 – Features of Interest for the Baldoyle Bay SPA (from NPWS)

Species	National Status ¹	SPA Status ²
<i>Branta bernicula hrota</i> Light-bellied brent goose	Amber (Wintering)	Favourable
<i>Charadrius hiaticula</i> Ringed plover	Green	Intermediate unfavourable
<i>Limosa lapponica</i> Bar-tailed godwit	Amber (Wintering)	Highly unfavourable
<i>Pluvialis apricaria</i> Golden plover	Red (Breeding & Wintering)	Unfavourable
<i>Pluvialis squatarola</i> Grey plover	Amber (Wintering)	Unfavourable
<i>Tadorna Tadorna</i> Shelduck	Amber (Breeding & Wintering)	Favourable
Wetlands & Waterbirds		

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast. The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.

¹ Birds of Conservation Concern in Ireland. Colhoun & Cummins, 2013

² Conservation Objectives Supporting Document. Version 1. National Parks & Wildlife Service. 2012.

- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Golden Plover.** In winter these birds are recorded across the midlands and coastal regions. They breed only in suitable upland habitat in the north-west. Wintering abundance in Ireland has changed little in recent years although it is estimated that half of its breeding range has been lost in the last 40 years.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Shelduck.** The largest of our ducks, Shelduck both breed and winter around the coasts with some isolate stations inland. Its population and range are considered stable.

Of those species with unfavourable status in the SPA, Ringed Plover and Bar-tailed Godwit have exhibited losses at Baldoye Bay while the national population remains stable or has increased. It is therefore reasonable to assume that local factors are leading to declines. The NPWS list a number of factors that may be contributing to this including human disturbance (walkers with or without dogs) and nutrient enrichment (pollution). The latter effect is exhibited by algal mats, typically Sea-lettuce *Ulva* sp. which covers the sediment surface at low tide. This is good for those species which feed on Sea-lettuce but bad for those which cannot reach their favoured prey under the mats.

Site specific conservation objectives have been published for this SPA (NPWS, 2013a) and are similar for each bird species. They can be summarised as:

Birds (similar for all species)

Long term population trend stable or increasing; there should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation.

Wetlands

The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 263ha, other than that occurring from natural patterns of variation

North Dublin Bay SAC/North Bull Island SPA

The North Dublin Bay SAC (site code: 0206) is focussed on the sand spit on the North Bull island. The qualifying interests for it are shown in table 3. The status of the habitat is also given and this is an assessment of its range, area, structure and function, and future prospects on a national level and not within the SAC itself.

Table 3 – Qualifying interests for the North Dublin Bay SAC

Code	Habitat/Species	Status
1140	Mudflats and sandflats not covered by seawater at low tide	Inadequate
1320	Salicornia and other annuals colonizing mud and sand	Favourable
1330	Atlantic salt meadows	Inadequate
1410	Mediterranean salt meadows	Inadequate
1210	Annual vegetation of drift lines	Inadequate
2110	Embryonic shifting dunes	Inadequate
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Inadequate
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)	Bad
2190	Humid dune slacks	Inadequate
1395	<i>Petalophyllum ralfsii</i> Petalwort	Favourable

- **Annual vegetation of drift lines (1210)** This habitat of the upper shore is characterised by raised banks of pebbles and stones. They are inhabited by a sparse but unique assemblage of plants, some of which are very rare. The principle pressures are listed as gravel extraction, the building of pipelines and coastal defences.
- **Embryonic shifting dunes (2110).** As their name suggests these sand structures represent the start of a sand dune's life. Perhaps only a meter high they are a transient habitat, vulnerable to inundation by the sea, or developing further into white dunes with Marram Grass. They are threatened by recreational uses, coastal defences, trampling and erosion.
- **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120).** These are the second stage in dune formation and depend upon the stabilising effects of Marram Grass. The presence of the grass traps additional sand, thus growing the dunes. They are threatened by erosion, climate change, coastal flooding and built development.
- **Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130 – priority habitat).** These are more stable dune systems, typically located on the landward side of the mobile dunes. They have a more or less permanent, and complete covering of vegetation, the quality of which depends on local hydrology and grazing regimes. They are the most endangered of the dune habitat types and are under pressure from built developments such as golf courses and caravan parks, over-grazing, under-grazing and invasive species.
- **Humid dune slacks (2190).** These are wet, nutrient enriched (relatively) depressions that are found between dune ridges. During winter months or wet weather these can flood and water levels are maintained by a soil layer

or saltwater intrusion in the groundwater. There are found around the coast within the larger dune systems.

- **Petalwort (1395).** There are 30 extant populations of this small green liverwort, predominantly along the Atlantic seaboard but also with one in Dublin. It grows within sand dune systems and can attain high populations locally.

Mudflats (code 1140)

Permanent habitat area stable or increasing (estimated at 578 hectares); Maintain the extent and high quality of the *Mytilus edulis*-dominated community, subject to natural processes; Conserve the following community types in a natural condition: Fine sand to sandy mud with *Pygospio elegans* and *Crangon crangon* community complex; Fine sand with *Spio martinensis* community complex.

Atlantic/Mediterranean Salt Meadows (1330/1410)

Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica*.

Annual vegetation of drift lines (code: 1210)

Habitat areas stable or increasing subject to natural variation; no decline in habitat distribution; maintain physical and vegetation structure without any physical obstructions, maintain vegetation structure and composition subject to natural variations.

Embryonic shifting dunes (code: 2110)

Habitat areas stable or increasing subject to natural variation; no decline in habitat distribution; maintain physical and vegetation structure without any physical obstructions, maintain vegetation structure and composition subject to natural variations.

Salicornia and other annuals colonising mud and sand (code: 3110)

Habitat area stable or increasing; no decline in habitat distribution; maintain physical and vegetation structure.

Fixed Coastal Dunes/Shifting Dunes (2130/2120)

Maintain habitat area and distribution including physical structure (functionality and sediment supply, percentage of bare ground, sward height). Maintain vegetation structure as measured by zonation, vegetation cover, typical species and sub-communities. Absences of the invasive *Hippophae rhamnoides*.

Humid dune slacks (code: 2190)

Area increasing, subject to natural processes including erosion and succession; No decline or change in habitat distribution, subject to natural processes; Maintain the natural circulation of sediment and organic matter, without any physical obstructions; Maintain natural hydrological regime;

Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession; Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground; Maintain structural variation within sward; Maintain range of subcommunities with typical species; Maintain less than 40% cover of creeping willow (*Salix repens*); Negative indicator species (including non-natives) to represent less than 5% cover.

Petalwort *Petalophyllum ralfsii* (code: 1395)

No decline in known populations. No decline in population, estimated at 5,824 thalli. No decline in area of suitable habitat. Maintain hydrological conditions; maintain open, low vegetation, with a high percentage cover of bryophytes (small acrocarps and liverwort turf) and bare ground.

The North Bull Island SPA (site code: 0206) is largely coincident with the North Dublin Bay SAC with the exception of the terrestrial portion of Bull Island. Table 4 lists its features of interest

Table 4 – Features of interest for the North Dublin Bay SPA

North Bull Island SPA	National Status
Light-bellied Brent Goose <i>Branta bernicla hrota</i>	Amber (Wintering)
Oystercatcher <i>Haematopus ostralegus</i>	Amber (Breeding & Wintering)
Teal <i>Anas crecca</i>	Amber (Breeding & Wintering)
Pintail <i>Anas acuta</i>	Red (Wintering)
Shoveler <i>Anas clypeata</i>	Red (Wintering)
Shelduck <i>Tadorna tadorna</i>	Amber (Breeding & Wintering)
Golden Plover <i>Pluvialis apricaria</i>	Red (Breeding & Wintering)
Grey Plover <i>Pluvialis squatarola</i>	Amber (Wintering)
Knot <i>Calidris canutus</i>	Amber (Wintering)
Sanderling <i>Calidris alba</i>	Green (Wintering)
Dunlin <i>Calidris alpina</i>	Red (Breeding & Wintering)
Black-tailed Godwit <i>Limosa limosa</i>	Amber (Wintering)
Bar-tailed Godwit <i>Limosa lapponica</i>	Amber (Wintering)
Curlew <i>Numenius arquata</i>	Red (Breeding & Wintering)
Redshank <i>Tringa totanus</i>	Red (Breeding & Wintering)
Turnstone <i>Arenaria interpres</i>	Green (Wintering)

Black-headed Gull <i>Larus ridibundus</i>	Red (Breeding)
Wetlands & Waterbirds	

- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Teal.** In winter this duck is widespread throughout the country. Land use change and drainage however have contributed to a massive decline in its breeding range over the past 40 years.
- **Pintail.** Dabbling duck wintering on grazing marshes, river floodplains, sheltered coasts and estuaries. It is a localised species and has suffered a small decline in distribution in Ireland for unknown reasons.
- **Shoveler.** Favoured wintering sites for this duck are inland wetlands and coastal estuaries. While there have been local shifts in population and distribution, overall their status is stable in Ireland.
- **Knot.** These small wading birds do not breed in Ireland but gather in coastal wetlands in winter. Their numbers have increased dramatically since the mid-1990s although the reasons for this are unclear.
- **Sanderling.** This small bird breeds in the high Arctic and winters in Ireland along sandy beaches and sandbars. Its wintering distribution has increased by 21% in the previous 30 years.
- **Dunlin.** Although widespread and stable in number during the winter season, the Irish breeding population has collapsed by nearly 70% in 40 years. Breeding is now confined to just seven sites in the north and west as habitat in former nesting areas has been degraded.
- **Black-tailed Godwit.** Breeding in Iceland these waders winter in selected sites around the Irish coast, but predominantly to the east and southern halves. Their range here has increase substantially of late.
- **Curlew.** Still a common sight during winter at coastal and inland areas around the country it breeding population here has effectively collapsed. Their habitat has been affected by the destruction of peat bogs, afforestation, farmland intensification and land abandonment. Their wintering distribution also appears to be in decline.
- **Redshank.** Once common breeders throughout the peatlands and wet grasslands of the midlands Redshanks have undergone a 55% decline in distribution in the past 40 years. Agricultural intensification, drainage of wetlands and predation are the chief drivers of this change.
- **Turnstone.** This winter visitor to Irish coasts favours sandy beaches, estuaries and rocky shores. It is found throughout the island but changes may be occurring due to climate change.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.

Site specific conservation objectives have been published for this SPA (NPWS, 2015a) and are similar for each bird species. They can be summarised as:

Birds (similar for all species)

Long term population trend stable or increasing; there should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation

Wetlands

The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,713 hectares, other than that occurring from natural patterns of variation

The **South Dublin Bay and Tolka Estuary SPA** (side code: 4024) is largely coincident with the South Dublin Bay SAC boundary with the exception of the Tolka Estuary. These designations encompass all of the intertidal areas in Dublin Bay from south of Bull Island to the pier in Dun Laoghaire. Wintering birds in particular are attracted to these areas in great number as they shelter from harsh conditions further north and avail of the available food supply within sands and soft sediments. Table 6 lists the features of interest.

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast. The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.
- **Sanderling.** This small bird breeds in the high Arctic and winters in Ireland along sandy beaches and sandbars. Its wintering distribution has increased by 21% in the previous 30 years.
- **Dunlin.** Although widespread and stable in number during the winter season, the Irish breeding population has collapsed by nearly 70% in 40 years. Breeding is now confined to just seven sites in the north and west as habitat in former nesting areas has been degraded.
- **Knot.** These small wading birds do not breed in Ireland but gather in coastal wetlands in winter. Their numbers have increased dramatically since the mid-1990s although the reasons for this are unclear.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.
- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.
- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.

- **Roseate Tern.** This tern breeds at only a few stations along Ireland's east coast. Most of these are in decline although at Dublin their colony is increasing.
- **Common Tern.** This summer visitor nests along the coast and on islands in the largest lakes. Its breeding range has halved in Ireland since the 1968-1972 period.
- **Arctic Tern.** These long-distance travellers predominantly breed in coastal areas of Ireland. They have suffered from predation by invasive mink and are declining in much of their range.
- **Redshank.** Once common breeders throughout the peatlands and wet grasslands of the midlands Redshanks have undergone a 55% decline in distribution in the past 40 years. Agricultural intensification, drainage of wetlands and predation are the chief drivers of this change.

Bird counts from BirdWatch Ireland are taken from Dublin Bay as a whole and are not specific to any particular portion of the Bay. Dublin Bay is recognised as an internationally important site for water birds as it supports over 20,000 individuals. Table 5 shows the most recent count data available³.

Table 5 – Mean count of birds species (qualifying interests of SPAs) for Dublin Bay from the Irish Wetland Birds Survey (IWeBS) from 2010 - 2020

Species	Mean
Light-bellied Brent Goose	3,453
Sanderling	500
Dunlin	5,951
Knot	5,093
Black-headed Gull	3,340
Ringed Plover	176
Oystercatcher	3,419
Bar-tailed Godwit	1,965
Grey Plover	328
Roseate Tern	0
Common Tern	23
Arctic Tern	0
Redshank	2,050
Teal	1,335
Pintail	184
Shoveler	101
Black-tailed Godwit	2,038
Curlew	882

³ <https://fl.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c>

Turnstone	272
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There were also internationally important populations of particular birds recorded in Dublin Bay (i.e. over 1% of the world population): Light-bellied brent geese *Branta bernicla hrota*; Black-tailed godwit *Limosa limosa*; Knot *Calidris canutus* and Bar-tailed godwit *L. lapponica*.

Table 6 – Features of interest for the South Dublin Bay & River Tolka Estuary SPA (EU code in square parenthesis)

South Dublin Bay and Tolka Estuary SPA
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]
Grey Plover (<i>Pluvialis squatarola</i>) [A140]
Knot (<i>Calidris canutus</i>) [A143]
Sanderling (<i>Calidris alba</i>) [A144]
Dunlin (<i>Calidris alpina</i>) [A149]
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]
Redshank (<i>Tringa totanus</i>) [A162]
Black-headed Gull (<i>Croicocephalus ridibundus</i>) [A179]
Roseate Tern (<i>Sterna dougallii</i>) [A192]
Common Tern (<i>Sterna hirundo</i>) [A193]
Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Wetlands & Waterbirds [A999]

Site specific conservation objectives have been published for this SPA (NPWS, 2015b) and are similar for each bird species. They can be summarised as:

Birds (similar for all species)

Long term population trend stable or increasing; there should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation

Wetlands

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

The **South Dublin Bay SAC** (side code: 0210; approximately 800m from the site) is concentrated on the intertidal area of Sandymount Strand. It has four qualifying interests: mudflats and sandflats not covered by seawater at low tide (1140), annual vegetation of drift lines (1210), *Salicornia* and other annuals colonising mud and sand (1310) and Embryonic shifting dunes (2110).

- **Annual vegetation of drift lines (1210)** This habitat of the upper shore is characterised by raised banks of pebbles and stones. They are inhabited by a sparse but unique assemblage of plants, some of which are very rare. The principle pressures are listed as gravel extraction, the building of pipelines and coastal defences.
- **Embryonic shifting dunes (2110).** As their name suggests these sand structures represent the start of a sand dune's life. Perhaps only a meter high they are a transient habitat, vulnerable to inundation by the sea, or developing further into white dunes with Marram Grass. They are threatened by recreational uses, coastal defences, trampling and erosion.
- **Tidal mudflats (1140).** This is an intertidal habitat characterised by fine silt and sediment. Most of the area in Ireland is of favourable status however water quality and fishing activity, including aquaculture, are negatively affecting some areas.
- ***Salicornia* mudflats (1310):** This is a pioneer saltmarsh community and so is associated with intertidal areas. It is dependent upon a supply of fresh, bare mud and can be promoted by damage to other salt marsh habitats. It is chiefly threatened by the advance of the alien invasive Cordgrass *Spartina anglica*. Erosion can be destructive but in many cases this is a natural process.

Site specific conservation objectives have been set out for mudflats in this SAC (NPWS, 2013c) and are summarised as:

Mudflats (code 1140)

Permanent habitat area stable or increasing (estimated at 720 hectares); Maintain the extent of the *Zostera*-dominated community, subject to natural processes; Conserve the high quality of the *Zostera*-dominated community, subject to natural processes; Conserve the following community type in a natural condition: Fine sands with *Angulus tenuis* community complex.

For other qualifying interests, only generic conservation objectives are available.

Howth Head SAC and Howth Head Coast SPA.

The Howth Head SAC (site code: 0202) is designed for two qualifying interests: vegetated sea cliffs and dry heath.

- **Vegetated sea cliffs (1230)** These coastal habitats can be composed of hard or soft material which in turn influences the rate at which erosion occurs. Vegetation can be sparse but composed of a variety of specially adapted species. It is nationally assessed as of intermediate status.
- **Dry heath (4030)**: This is a community of heather shrubs that occurs on well-drained, acidic, nutrient-poor mineral or peaty soils. Pressures on this habitat arise from high levels of sheep grazing, as well as afforestation, mining and quarrying. Unregulated burning is also identified as an important threat to the structure of this habitat. It is nationally assessed as of bad status.

Howth Head is also a pNHA and is home to a number of threatened plant species as well as locally rare or noteworthy habitats, such as patches of blanket bog. Site specific conservation objectives have been published for this SAC. These include maintaining the habitat extent, condition, vegetation composition, and community diversity for the two habitats listed as qualifying interests.

Site specific conservation objectives have been published for this SAC (NPWS, 2016) and are summarised here:

Vegetated sea cliffs (code: 1230)

Habitat areas stable or increasing subject to natural processes; no decline in habitat distribution; No alteration to natural functioning of geomorphological and hydrological processes, including groundwater quality, due to artificial structures; maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession; maintain vegetation structure, composition.

European Dry Heaths (4030)

Habitat area stable or increasing subject to natural processes; no decline in habitat distribution; maintain soil nutrient status within natural range; maintain vegetation composition and structure (including negative indicator species and absence of burning); less than 10% disturbed/bare ground.

The Howth Head Coast SPA (code: 4133) is home to large colonies of breeding seabirds, particularly Kittiwake, the SPAs only feature of interest. These vocal seagulls spend most of their time at sea, returning to favoured coastal sites for breeding. Nesting is on suitable rocky cliffs around the Irish coast. These Irish colonies are considered stable (Balmer et al., 2013).

Generic conservation objectives only are available for this SPA (NPWS, 2022a).

Rockabill to Dalkey Island SAC (site code: 0300).

This is a recently designated off-shore (i.e. marine) SAC. It has two qualifying interests which are reefs and Harbour Porpoise *Phocoena phocoena*. Conservation objectives for this SAC have been published to maintain or

restore the area of habitat and status of the population to 'favourable conservation status'.

- Reefs can be intertidal or subtidal features and are characterised by hard or rocky substrates. The main pressures that have been identified by the NPWS are commercial fishing, aquaculture, water pollution and commercial/recreational uses of the marine environment. Nationally their status is assessed as 'bad' (NPWS, 2013).
- Harbour porpoise This is the smallest cetacean species regularly occurring in Irish waters. It is commonly found in residential pods close to the shore and it is not considered threatened in Irish waters. Its status nationally is 'good'.

Specific conservation objectives are provided for this SAC (NPWS, 2013d) and are summarised as:

Reefs (code: 1170)

The permanent habitat area and distribution of the habitat are stable or increasing; the biological composition is conserved.

Harbour Porpoise (code: 1351)

Species range within the site should not be restricted by artificial barriers to site use; Human activities should occur at levels that do not adversely affect the harbour porpoise community at the site.

Dalkey Islands SPA (site code: 4172) is protected for its breeding colonies of three tern species:

- **Roseate Tern.** This tern breeds at only a few stations along Ireland's east coast. Most of these are in decline although at Dublin their colony is increasing.
- **Common Tern.** This summer visitor nests along the coast and on islands in the largest lakes. Its breeding range has halved in Ireland since the 1968-1972 period.
- **Arctic Tern.** These long-distance travellers predominantly breed in coastal areas of Ireland. They have suffered from predation by invasive mink and are declining in much of their range.

Generic conservation objectives only are available for this SAC (NPWS, 2022b).

Ireland's Eye SAC/SPA

Ireland's Eye is an uninhabited island 1.5km north of Howth harbour. Its southern side is gently sloping however steep cliffs descend to the seas on its northern and eastern coasts. The thin soil and maritime influence provide

habitat for an assemblage of notable plant species, including the rare Sea-Kale *Crambe maritima*. The SAC (site code: 2193) has two qualifying interests: vegetated sea cliffs and perennial vegetation of stony banks. The latter habitat is nationally of intermediate status. It is a habitat of the high tide line characterised by loose stones and shingle. It is a highly dynamic feature, being continually reshaped by tides and waves. It can be home to very rare plants and a number of coastal nesting birds. Site specific conservation objectives have been published for this SAC. These include maintaining the habitat extent, condition, vegetation composition, and community diversity for the two habitats listed as qualifying interests.

Specific conservation objectives are provided for this SAC (NPWS, 2017a) and are summarised as:

Perennial vegetation of stony bank (code: 1220)

Habitat areas stable or increasing subject to natural variation; no decline in habitat distribution; maintain physical and vegetation structure without any physical obstructions, maintain vegetation structure and composition subject to natural variations.

Vegetated sea cliffs (code: 1230)

Habitat areas stable or increasing subject to natural processes; no decline in habitat distribution; No alteration to natural functioning of geomorphological and hydrological processes, including groundwater quality, due to artificial structures; maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession; maintain vegetation structure, composition.

The Ireland's Eye SPA (code: 4117) is centred on the island's value as a large seabird colony. It is one of only six number of locations where Gannets *Morus bassanus* regularly breed in Ireland. The features of interest for the SPA are given in table 7.

Table 7 – Features of Interest for the Ireland's Eye SPA (from NPWS)

Species	National Status
<i>Phalacrocorax carbo</i> Cormorant	Amber (Breeding & Wintering)
<i>Larus argentatus</i> Herring Gull	Red (Breeding)
<i>Rissa tridactyla</i> Kittiwake	Amber (Breeding)
<i>Uria aalge</i> Guillemot	Amber (Breeding)
<i>Alca torda</i> Razorbill	Amber (Breeding)

- **Cormorant.** Wintering populations of this large, fish-eating bird have increased in Ireland since the early 1980s. Breeding also occurs widely

along the coast and inland waterways. It is amber-listed due to a moderate decline in numbers.

- **Herring Gull.** This large gull breeds predominantly around the Irish coast and only occasionally inland. Numbers at these colonies have fallen by 60% since 1969, a decline which is attributed to a number of sources including a reduction in available food at landfill, botulism and predation.
- **Guillemot.** This member of the auk family is found only near land during the breeding season. They nest on suitable rocky outcrops and cliffs where there is protection from predators. The population at four of Ireland's largest colonies is estimated to have increased by 22% over the past decade.
- **Razorbill.** This member of the auk family breeds exclusively at suitable coastal sites, where there are rocky cliffs to provide protection from predators. Indications are that populations at Irish colonies are stable.

Generic conservation objectives only are available for this SPA (NPWS, 2022c).

Glen of the Downs SAC (site code: 0719)

This glacial valley is bisected by the N11 Dublin to Wexford road but the valley on either side is clothed in semi-natural woodland. This is the subject of the SAC's sole qualifying interest and priority habitat: old oak woodland (code: 91A0). This is a very rare habitat type in Ireland and at a national level is assessed as being in 'bad' status. The forest is also home to rare or notable fungi and invertebrates (NPWS, 2013).

Site specific conservation objectives have been published for this SAC (NPWS, 2020). These can be summarised as:

Old sessile oak woods (91A0)

Habitat area stable or increasing, subject to natural processes; No decline in habitat distribution subject to natural processes; woodland area stable or increasing; Total canopy cover at least 30%; median canopy height at least 11m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20 cm; bryophyte cover at least 4%; Maintain diversity and extent of community types; Seedlings, saplings and pole age-classes of target species for 91A0 woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy; At least 19 stems/ha of dead wood of at least 20cm diameter; No decline in veteran trees, maintain woodland structure and vegetation.

Bray Head SAC (site code: 0714). This coastal site encompasses the high plateaux between the towns of Bray and Greystones. Much of this habitat consists of dry heath along with dry calcareous grassland, which are important for their vegetation communities. The coastal cliffs provide habitat for significant numbers of sea birds, particularly during the breeding season, as well as Peregrine *Falco peregrinus*, which is listed under Annex I of the Birds Directive. Bray Head falls within the Natura 2000 network of European sites due to two habitat types: vegetated sea cliffs (code 1230), and dry heath (code 4030). The 'site synopsis' states "the heath and grassland habitats at this site are

threatened by reclamation for agriculture and also by frequent burning. The site is a popular recreational area and is especially used by walkers”.

- **Vegetated sea cliffs (1230)** These coastal habitats can be composed of hard or soft material which in turn influences the rate at which erosion occurs. Vegetation can be sparse but composed of a variety of specially adapted species.
- **Dry heath (4030)**: This is a community of heather shrubs that occurs on well-drained, acidic, nutrient-poor mineral or peaty soils. Pressures on this habitat arise from high levels of sheep grazing, as well as afforestation, mining and quarrying. Unregulated burning is also identified as an important threat to the structure of this habitat.

Site specific conservation objectives have been published for this SAC (NPWS, 2017b) and are summarised as:

Vegetated sea cliffs (code: 1230)

Habitat areas stable or increasing subject to natural processes; no decline in habitat distribution; No alteration to natural functioning of geomorphological and hydrological processes, including groundwater quality, due to artificial structures; maintain range of sea cliff habitat zonation including transitional zones, subject to natural processes including erosion and succession; maintain vegetation structure, composition.

European Dry Heaths (4030)

Habitat area stable or increasing subject to natural processes; no decline in habitat distribution; maintain soil nutrient status within natural range; maintain vegetation composition and structure (including negative indicator species and absence of burning); less than 10% disturbed/bare ground.

Knocksink Wood SAC (site code: 0725)

This important woodland site is located near Enniskerry, Co. Wicklow and is within the valley of the Glencullen River. It has mature stands of Oak forest with two important habitats at a European level: alluvial wet woodland, and petrifying springs; both listed on Annex I of the Habitats Directive. The Wood is also of note for its bird and mammal fauna and its particularly rich community of invertebrates.

Knocksink is a National Nature Reserve and so is of significance for a range of wildlife as well as being of amenity value. It should be reiterated that the AA process strictly looks at potential effects to the SAC in light of the conservation objectives which have been set.

Table 8 – Qualifying interests for the Knocksink Wood SAC (from NPWS)

Code	Habitats/Species	Status
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7220	Petrifying springs	Inadequate
21E0	Alluvial forests	Bad
91A0	Old Oak Woodland	Bad

- **Alluvial Wet Woodland (91E0 – priority habitat):** This is a native woodland type that occurs on heavy soils, periodically inundated by river water but which are otherwise well drained and aerated. The main pressures are identified as alien invasive species, undergrazing and overgrazing. Pollution from agricultural land may also be significant.
- **Petrifying Springs (7220 – priority habitat):** These are very localised habitats that arise from the precipitation of excess calcium carbonate in supersaturated running water. They are associated with characteristic bryophytes. They are vulnerable to changes in water quality, flow regime and intensification of land use practices.
- **Old Oak Woodlands (91A0):** This native woodland type is typified by Sessile Oak *Quercus patrea*, Holly *Ilex aquifolium* and Hard Fern *Blechnum spicant*. Its range is much reduced from historic levels while the principle threats are alien invasive species and overgrazing by deer but also cattle, goats and sheep.

Specific conservation objectives are provided for this SAC (NPWS, 2021) and are summarised as:

Petrifying springs – priority habitat (7220)

Habitat area stable or increasing subject to natural variations; no decline in habitat distribution; maintain appropriate hydrological regimes; maintain oligotrophic and calcareous water quality conditions; maintain vegetation composition: typical species.

Alluvial forests (91E0)

Habitat area stable or increasing; no decline in habitat distribution, woodland structure maintained in terms of structure and height, vegetation community diversity and extent, level of natural regeneration, number of veteran trees and dead wood; maintain the hydrological regime; no decline in tree cover, absence of negative indicator species.

Old sessile oak woods (91A0)

No decline in native tree cover; variety of native species present; negative indicator species absent, i.e. Beech *Fagus sylvatica*, Rhododendron *Rhododendron ponticum* and Cherry Laurel *Prunus laurocerasus*.

Ballyman Glen SAC (site code: 0713)

This internationally important site consists of wet fen vegetation with petrifying springs. These are rare habitats in Dublin and this site is noted for its particularly rich diversity of orchids and sedges. Its qualifying interests are shown in table 9.

Table 9 – Qualifying interests for the Ballyman Glen SAC (from NPWS)

Code	Habitats/Species	Status
7220	Petrifying springs	Inadequate
7230	Alkaline fen	Bad

- **Alkaline Fens (7230):** Threats of ‘high importance’ are groundwater abstractions, land reclamation, diffuse groundwater pollution, land abandonment/under-grazing. These fen systems are often a complex mosaic of habitats, with tall sedge beds, reedbeds, wet grasslands, springs and open-water often co-occurring at a given fen site. Their integrity is reliant upon a stable, high water table; calcareous/low-nutrient water supply; and controlled mowing and/or grazing.

Site specific conservation objectives have been published (NPWS, 2019) and are summarised as:

Petrifying springs – priority habitat (7220)

Habitat area stable or increasing subject to natural variations; no decline in habitat distribution; maintain appropriate hydrological regimes; maintain oligotrophic and calcareous water quality conditions; maintain vegetation composition: typical species.

Alkaline Fen (7230)

Habitat area stable or increasing; no decline in habitat distribution; maintain ecosystem function in terms of soil nutrient status, hydrology, water quality (nutrient status); maintain plant community diversity, maintain vegetation composition in terms of vascular plants, brown mosses, positive indicator species, and negative indicator species. Maintain physical structure in terms of area of bare ground, drainage and indicators of local distinctiveness.

Wicklow Mountains SAC & SPA (site codes: 2122 & 4040)

Wicklow Mountains is a large area and is designated as both an SAC and SPA as well as being a National Park. It is an upland area underlain with granite and is an important amenity and recreational area, as well as being of high conservation value. Its qualifying interests are shown in table 10 while its ‘features of interest’ are given as Merlin *Falco columbarius* (breeding) and Peregrine *Falco peregrinus* (breeding).

Table 10 – Qualifying interests for the Wicklow Mountains SAC (site code: 4040)

Habitats	Status
Active Blanket bog	Bad
Atlantic wet heath	Bad
European dry heath	Bad
Old oak woodland	Bad
Siliceous rocky slopes	Inadequate
Calcareous rocky slopes	Inadequate
Siliceous scree	Inadequate
Alpine and Boreal heath	Bad
Natural dystrophic lakes	Inadequate
Oligotrophic lakes	Inadequate
Species rich <i>Nardus</i> grassland	Bad

- **Active Blanket Bog (7130)** This is a very widespread habitat in Ireland found on uplands and lowlands along the Atlantic seaboard. Active blanket bog is peat forming, principally indicating the presence of *Sphagnum* sp. mosses but also other species. Degraded bog, where there is now forestry or bare peat, are excluded as they are not considered 'active'.
- **Atlantic wet heath (4010)** This is a heather dominant habitat that is intermediate between dry heath and blanket bog, and is frequently found in association with these two. Grazing and trampling by sheep is identified as the greatest threat to the status of the habitat but non-native invasive species such as *Rhododendron* and the moss *Campylopus introflexus* also impact negatively upon the habitat.
- **Dry heath (4030)**: This is a community of heather shrubs that occurs on well-drained, acidic, nutrient-poor mineral or peaty soils. Pressures on this habitat arise from high levels of sheep grazing, as well as afforestation, mining and quarrying. Unregulated burning is also identified as an important threat to the structure of this habitat.
- **Alpine and Boreal Heath (4060)** This habitat occurs on exposed mountain tops with acid substrate where stunted growths of heather are found. It is also found in the Burren, Co. Clare at low altitudes.
- **Siliceous Scree (8110)** This is a mountainous habitat characterised by expanses of shattered siliceous rock from small, mobile stones to stable boulders. Vegetation is sparse and frequently dominated by moss or lichen communities.
- **Calcareous or Siliceous Rocky Slopes (8210 & 8220)** These are vertical or near vertical slopes of calcareous or siliceous rock with cracks and fissures that are home to unique communities of plants. Climate change is considered to be the greatest threat where specialist arctic-alpine plants are to be found.
- **Upland Oligotrophic lakes (3130)**. These are naturally low nutrient status lakes that in Ireland are associated with expanses of blanket bog. They are threatened by eutrophication (excessive input of nutrients) and peatland drainage.

- **Dystrophic lakes (3160)** These are naturally low oxygen, nutrient poor, acid lakes that occur in association with peatland habitats. They have low species diversity but some of these species are uniquely associated with this habitat.
- **Camalinarian Grassland (6130).** This unusual grassland community is found in Ireland on the sites of previous extraction works such as old mines. Certain bryophyte and vascular plants, including some notable rarities, thrive in conditions of high heavy metal concentrations, such as copper, lead or zinc.
- **Otter (1355)** This aquatic mammal lives its entire life in and close to wet places, including rivers, lakes and coastal areas. They will feed on a wide variety of prey items. Despite local threats from severe pollution incidents and illegal fishing, its population is considered stable and healthy, and so is assessed as being of 'good' status.

Generic conservation objectives only are available for this SPA (NPWS, 2022d).

Site specific conservation objectives have been published for the SAC (NPWS, 2017c) and are summarised as:

Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) (3110)

Habitat area stable or increasing, no decline in habitat distribution, typical species present and in good condition, vegetation composition correctly distributed and in good condition, Maintain appropriate natural hydrological regime necessary to support the habitat; Restore appropriate lake substratum type, extent and chemistry to support the vegetation; restore water transparency; Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species; Restore appropriate water quality to support the habitat, including high chlorophyll a status; Maintain appropriate water quality to support the habitat, including high phytoplankton composition status; Restore/maintain trace/absent attached algal biomass (<5% cover) and high phytobenthos status; Maintain high macrophyte status; Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes; Restore/maintain appropriate water colour to support the habitat;

Restore/maintain appropriate organic carbon levels to support the habitat; Restore/maintain appropriate turbidity to support the habitat; Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3110.

Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea* (3130)

Habitat area stable or increasing, no decline in habitat distribution, typical species present and in good condition, vegetation composition correctly distributed and in good condition, Maintain appropriate natural hydrological regime necessary to support the habitat; Restore appropriate lake substratum type, extent and chemistry to support the vegetation; restore water

transparency; Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species; Restore appropriate water quality to support the habitat, including high chlorophyll a status; Maintain appropriate water quality to support the habitat, including high phytoplankton composition status; Restore/maintain trace/absent attached algal biomass (<5% cover) and high phytobenthos status; Maintain high macrophyte status; Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes; Restore/maintain appropriate water colour to support the habitat; Restore/maintain appropriate organic carbon levels to support the habitat; Restore/maintain appropriate turbidity to support the habitat; Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3130.

European Wet Heaths (4010)

Habitat area stable or increasing subject to natural processes; no decline in habitat distribution; maintain soil nutrient status within natural range; maintain vegetation composition and structure (including negative indicator species and absence of burning); less than 10% disturbed/bare ground.

European Dry Heaths (4030)

Habitat area stable or increasing subject to natural processes; no decline in habitat distribution; maintain soil nutrient status within natural range; maintain vegetation composition and structure (including negative indicator species and absence of burning); less than 10% disturbed/bare ground.

Alpine and Boreal Heaths (4060)

Habitat area stable or increasing subject to natural variations; no decline in habitat distribution; maintain vegetation composition in a favourable status (including non-native and negative indicator species); less than 10% disturbed/bare ground; indicators of local distinctiveness maintained.

Calaminarian grasslands of the *Violetalia calaminariae* (6130)

No decline in habitat area subject to natural processes; no decline in habitat distribution; Maintain adequate open ground; Maintain high copper (Cu) levels in soil; Maintain low and open vegetation; Maintain diversity and populations of metallophyte bryophytes.

Species-rich *Nardus* grasslands (6230)

No decline in habitat area subject to natural processes; no decline in habitat distribution; Maintain soil nutrient status within natural range; Maintain variety of vegetation communities, subject to natural processes; Number of positive indicator species present at each monitoring stop is at least seven; At least two high quality indicator species for base rich examples of the habitat and at least one for base-poor examples of the habitat; Species richness at each monitoring stop at least 25; Cover of non-native species less than or equal to 1%; Cover of negative indicator species individually less than or equal to 10%

and collectively less than or equal to 20%; Cover of *Sphagnum* species less than or equal to 10%; Cover of *Polytrichum* species less than or equal to 25%; Cover of shrubs, bracken (*Pteridium aquilinum*) and heath collectively less than or equal to 5%; Forb component of forb:graminoid ratio is 20- 90%; Proportion of the sward between 5cm and 50cm tall is at least 25%; Cover of litter less than or equal to 20%; Cover of disturbed bare ground less than or equal to 10%; Area of the habitat showing signs of serious grazing or disturbance less than 20m²; No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat.

Blanket bogs (7130)

Area stable or increasing, subject to natural processes; No decline, subject to natural processes; Maintain soil nutrient status within natural range; At least 99% of the total Annex I blanket bog area is active; Natural hydrology unaffected by drains and erosion; Maintain variety of vegetation communities, subject to natural processes; Number of positive indicator species present at each monitoring stop is at least seven; Cover of bryophytes or lichens, excluding *Sphagnum fallax*, at least 10%; Cover of each of the potential dominant species less than 75%; Total cover of negative indicator species less than 1%; Cover of non-native species less than 1%; Cover of scattered native trees and shrubs less than 10%; Less than 10% of the *Sphagnum* cover is crushed, broken and/or pulled up; Last complete growing season's shoots of ericoids, crowberry (*Empetrum nigrum*) and bog-myrtle (*Myrica gale*) showing signs of browsing collectively less than 33%; No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning; Cover of disturbed bare ground less than 10%; Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%; Less than 5% of the greater bog mosaic comprises erosion gullies and eroded areas; No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat.

Siliceous scree (8110)

Area stable or increasing, subject to natural processes; No decline, subject to natural processes; Maintain soil nutrient status within natural range; Cover of bryophytes and non-crustose lichen species at least 5%; Proportion of vegetation composed of negative indicator species less than 1%; Proportion of vegetation composed of non-native species less than 1%; At least one positive indicator species present in vicinity of each monitoring stop in block scree; Total cover of grass species and dwarf shrubs less than 20%; Total cover of bracken (*Pteridium aquilinum*), native trees and shrubs less than 25%; Live leaves of forbs and shoots of dwarf shrubs showing signs of grazing or browsing collectively less than 50%; Ground disturbed by human and animal paths, scree running, vehicles less than 10%; No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat.

Calcareous rocky slopes with chasmophytic vegetation (8210)

Area stable or increasing, subject to natural processes; No decline, subject to natural processes; Maintain soil nutrient status within natural range; Number of ferns and Saxifraga indicators at each monitoring stop is at least one; Number of positive indicator species at each monitoring stop is at least three; Proportion of vegetation composed of non-native species less than 1%; Total cover of bracken (*Pteridium aquilinum*), native trees and shrubs less than 25%; Live leaves of forbs and shoots of dwarf shrubs showing signs of grazing or browsing collectively less than 50%; No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat

Siliceous rocky slopes with chasmophytic vegetation (8220)

Area stable or increasing, subject to natural processes; No decline, subject to natural processes; Maintain soil nutrient status within natural range; Number of ferns and Saxifraga indicators at each monitoring stop is at least one; Number of positive indicator species at each monitoring stop is at least three; Proportion of vegetation composed of non-native species less than 1%; Total cover of bracken (*Pteridium aquilinum*), native trees and shrubs less than 25%; Live leaves of forbs and shoots of dwarf shrubs showing signs of grazing or browsing collectively less than 50%; No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat

Old sessile oak woods (91A0)

No decline in native tree cover; variety of native species present; negative indicator species absent, i.e. Beech *Fagus sylvatica*, Rhododendron *Rhododendron ponticum* and Cherry Laurel *Prunus laurocerasus*.

Otter

No significant decline in distribution; no significant decline in terrestrial/estuarine/freshwater/lake habitat; no significant decline in couching sites or holts; no decline in available fish biomass;

At its nearest point the **Poulaphouca Reservoir SPA** (site code: 4063) is located approximately 26km from the site of the proposed development. Its 'features of interest' include the Greylag Goose *Anser anser* and the Lesser Black-backed Gull *Chroicocephalus ridibundus*.

- **Greylag Goose.** Wintering Greylag Geese are very scattered in Ireland and occur on both coastal in inland sites. Their population has expanded greatly in their more northerly ranges (Iceland and Scotland) and this has coincided with losses elsewhere.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.

Generic conservation objectives only are available for this SPA (NPWS, 2022e).

The North-West Irish Sea SPA (site code: 4236)

This is a large SPA that was designated in July 2023 and extends for 2,333km² from Dublin Bay in the south to the southern tip of Dundalk Bay in the north. It encompasses marine and coastal areas while bordering a number of other SPAs in this region.

Table 5 – Qualifying interests for the North-West Irish Sea SPA (EU code in square parenthesis)

South Dublin Bay and Tolka Estuary SPA
Roseate Tern (<i>Sterna dougallii</i>) [A192]
Common Tern (<i>Sterna hirundo</i>) [A193]
Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Little Tern (<i>Sterna albifrons</i>) [A195]
Common Scoter (<i>Melanitta nigra</i>) [A065]
Red-throated Diver (<i>Gavia stellata</i>) [A001]
Great Northern Diver (<i>Gavia immer</i>) [A003]
Fulmar (<i>Fulmarus glacialis</i>) [A009]
Manx Shearwater (<i>Puffinus puffinus</i>) [A013]
Shag (<i>Phalacrocorax aristotelis</i>) [A018]
Cormorant (<i>Phalacrocorax carbo</i>) [A017]
Little Gull (<i>Larus minutus</i>) [A177]
Kittiwake (<i>Rissa tridactyla</i>) [A188]
Black-headed Gull (<i>Croicocephalus ridibundus</i>) [A179]
Common Gull (<i>Larus canus</i>) [A182]
Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]
Herring Gull (<i>Larus argentatus</i>) [A184]
Great Black-backed Gull (<i>Larus marinus</i>) [A187]
Puffin (<i>Fratercula arctica</i>) [A204]

Razorbill (<i>Alca torda</i>) [A200]
Guillemot (<i>Uria aalge</i>) [A199]

Conservation objectives for this SPA have been published (NPWS, 2023). For each species it states there should be no significant decline in the breeding/non-breeding population, maintain spatial distribution including distribution of foraging habitat, maintaining disturbance events that do not significantly affect the population and ensuring barriers to connectivity to not significantly affect the population.

Pathway Analysis

There is no direct natural hydrological connection from the development site to Dublin Bay. There is an indirect pathway to Dublin Bay through the foul sewers *en route* to the Ringsend WWTP.

There is no surface water pathway to Natura 2000 sites in Dublin Bay. The Kill-O-the-Grange Stream discharges to the Irish Sea. While there are Natura 2000 sites offshore from this point, the enormous dilution effect in the Irish Sea means there is no pathway for potential pollutants to reach these sites (the Rockabill to Dalkey Island SAC or the Dalkey Islands SPA).

Sampling of water quality in Dublin Bay (and presented in the Annual Environmental Report for the WWTP) indicates that the discharge from the wastewater treatment plant is having an observable effect in the 'near field' of the discharge. This includes the inner Liffey Estuary and the Tolka Estuary, but not the coastal waters of Dublin Bay. This indicates that potential effects arising from the treatment plant are confined to these areas, and that the zone of influence does not extend to the coastal waters or the Irish Sea.

There are consequently pathways to a number of Natura 2000 sites. There are hydrological links to the South Dublin Bay and River Tolka Estuary SPA (site code: 4024), the South Dublin Bay SAC (site code: 0210), the North Bull Island SPA (site code: 4006) and the North Dublin Bay SAC (site code: 0206). The Poulaphouca Reservoir SPA (site code: 4063), from which drinking water supply for this development may originate, is also considered to fall within the zone of influence of this project.

Table 14 – Summary table of Natura 2000 sites

Natura 2000 sites found to lie within the zone of influence of the project
North Dublin Bay SAC
North Bull Island SPA
South Dublin Bay SAC

South Dublin Bay and River Tolka Estuary SPA
North-West Irish Sea SPA
Poulaphouca Reservoir SPA
Natura 2000 sites examined but found not to lie within the zone of influence of the project
Baldoyle Bay SAC
Baldoyle Bay SPA
Howth Head SAC
Howth Head Coast SPA
Rockabill to Dalkey SAC
Dalkey Islands SPA
Ireland's Eye SAC
Ireland's Eye SPA
Glenasmole Valley SAC
Knocksink Wood SAC
Ballyman Glen SAC
Wicklow Mountains SAC
Wicklow Mountains SPA
Bray Head SAC
Glen of the Downs SAC

Data collected to carry out the assessment

The development site is entirely composed of habitats which are of low/local ecological significance. It is located in a built-up area of Dublin and is not close to any water course. It is connected to a number of Natura 2000 sites via wastewater run-off.

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to have attained 'good ecological status' by 2015. This includes estuarine waters and Dublin Bay was originally located within the Eastern River Basin District. In 2009 the first River Basin Management Plan (RBMP) was published to address pollution issues and included a 'programme of measures' which was to be completed. This plan was approved in 2010 while the second RBMP was published in 2018. A third plan is due for publication in 2023. The development site is not located directly adjacent to any surface water course while the status

of the Kill-O-The-Grange stream (water body code: IE_EA_10K020200) is 'poor'.

The coastal water off the south Dublin coast (Southwestern Irish Sea - Killiney Bay; water body code: IE_EA_100_0000) however is 'high' status.

Near the outfall of the Ringsend wastewater treatment plant in Dublin Bay, water status is 'good' with the exception of the River Tolka Estuary which is 'moderate'.

These classifications indicate that water quality in the wider Dublin Bay area (water body code: IE_EA_090_0000) and Irish Sea coast is currently meeting the requirements of the WFD. The Tolka Estuary (water body code: IE_EA_090_0200) however is 'poor' while the Lower Liffey Estuary (water body code: IE_EA_090_0300) is 'moderate'.

Details from the NPWS site synopsis report and the most recent data from BirdWatch Ireland's Wetlands Bird Survey (IWeBS) indicate that Dublin Bay is of international importance for wintering birds meaning that it regularly holds a population of over 20,000 birds. Total counts from IWeBS are shown in table 5.

Of the species listed as qualifying interests of the South Dublin Bay and River Tolka Estuary SPA and the North Bull Island SPA eleven: Curlew, Dunlin, Redshank, Shoveler, Oystercatcher, Grey Plover, Knot, Golden Plover, Bar-tailed Godwit, Black-tailed Godwit and Black-headed Gull are listed as of high conservation concern, and on BirdWatch Ireland's red list (Gilbert et al., 2021).

In 2020 the NPWS published a report entitled 'The monitoring and assessment of six EU Habitats Directive Annex I Marine Habitats' (Sally & Hewett, 2020). This report specifically assessed the status of the habitat: mudflats and sandflats not covered by seawater at low tide (1140) which is a qualifying interest of the North Dublin Bay SAC and the South Dublin Bay SAC. Table 22 of this report assessed the status of this habitat within both SACs as 'favourable'.

In June 2018 Irish Water applied for (and subsequently received) planning permission for works to the Ringsend Wastewater Treatment (WwTP) facility. As part of this application an Environmental Impact Assessment Report (EIAR) was submitted. Sections 5 and 6 of this EIAR related to Marine Biodiversity and Terrestrial Biodiversity respectively and each contained a section on the 'do-nothing scenario'. These review the effects to biodiversity in Dublin Bay in the absence of the upgrade works and so are relevant to this response. Extracts from these sections include:

"If the Proposed WwTP Component is not constructed, the nutrient and suspended solid loads from the plant into Dublin Bay will continue at the same levels and the impact of these loadings should maintain the same level of effects on marine biodiversity. [...]"

If the status quo is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay [our emphasis]. Previous studies suggest that the outer and south bays are largely unaffected by the nutrient inputs from the WwTP at Ringsend and from the Liffey and Tolka rivers. Therefore, the sandy communities found in those areas will likely remain dominated by the same assemblage of *Nephtys*, tellinids and other pollution-sensitive species, albeit subjected to natural spatial and seasonal variations.

However, the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WwTP. These areas will likely continue to be colonised by opportunistic taxa tolerant of organic enrichment. There is a possibility that an increase in the nutrient outputs from the plant due to the operational overload and storm water discharges could result in a decline in the biodiversity of these communities as a result of low oxygen availability caused by increased organic enrichment. Considering the existing situation, it is possible that through the future oversupply of DIN to the area impacted by the existing outfall, benthic production could be adversely impacted due to hypoxic or even anoxic conditions. An increase in the cover of opportunistic macroalgae could lead to further deterioration in the lagoons in the North Bull as they add to the organic load on the benthos and further increase the BOD. These events, although localised, could deteriorate the biological status for Dublin Bay as a whole. **Nonetheless, it is unlikely, as existing historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna** [our emphasis]. Although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area. (section 5.7.1) [...]

If there is no change to the treatment process at Ringsend WwTP then the terrestrial environment adjacent to the site will remain largely unchanged [our emphasis]. [...]

If the Proposed WwTP Component is not implemented, there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay [...]. The sandy communities found in South Dublin Bay will likely remain dominated by the same assemblage of the polychaete worm *Nephtys caeca*, Cockle *Cerastoderma edula*, tellinids and other pollution-sensitive species, albeit subjected to natural spatial and seasonal variations. **Bird populations in these areas will be unaffected by the discharge from the WwTP** [our emphasis].

If the Proposed WwTP Component is not implemented, there is a possibility that an increase in the nutrient outputs from the plant due to operational overload and storm water discharges could result in a decline in the biodiversity of invertebrate communities in the Tolka Estuary and North Bull Island channel as a result of low oxygen availability caused by increased organic enrichment. An increase in the cover of opportunistic macroalgae could lead to further

deterioration in the lagoons in the North Bull as they add to the organic load on the benthos and further increase the BOD. These events, although localised, could deteriorate the biological status for Dublin Bay as a whole. **It is unlikely that they would have any significant impact on the waterbird populations that forage on invertebrates in Dublin Bay** [our emphasis] (section 6.5.1).

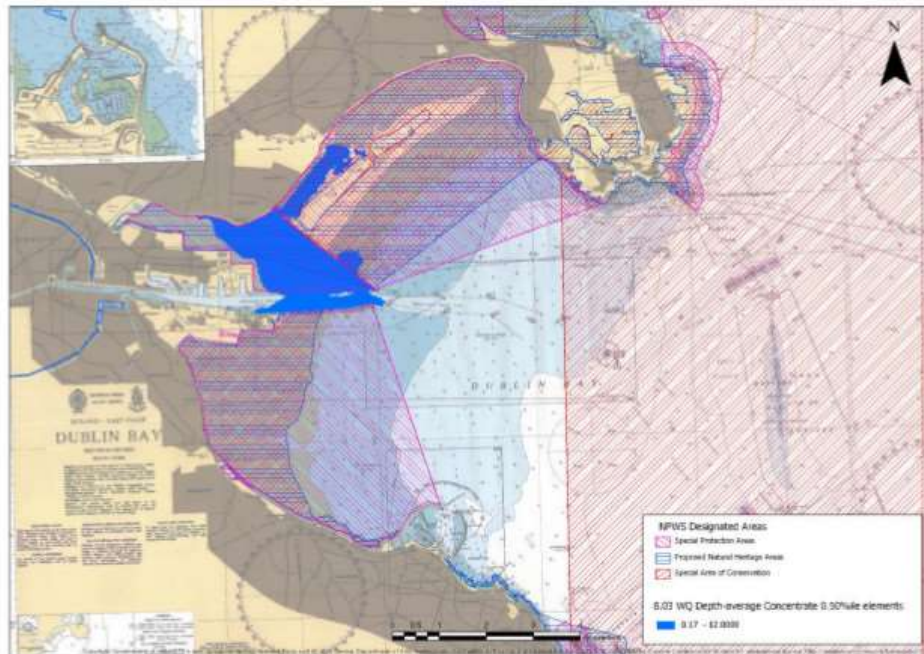


Figure 5-16: Extent of the Zone of Influence (in blue) of the effluent from the Proposed WwTP Component on the predicted modelled output for Winter depth averages 50%ile for Dissolved Inorganic Nitrogen (DIN)

Figure 5 – Extract from the EIAR prepared by Irish Water (2018) showing the zone of influence of the Ringsend WWTP outfall pipe.

A graphic from the EIAR prepared by Irish Water in 2018 showed the zone of influence of the discharge from the Ringsend WwTP and this indicated that effects from the discharge do not extend to the south side of the bay. This is reproduced in figure 5.

The Assessment of Significance of Effects

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.

In order for an effect to occur there must be a pathway between the source (the development site) and the receptor (the SAC or SPA). Where a pathway does not exist an impact cannot occur.

The proposed development is not located within, or adjacent to, any SAC or SPA.

Habitat loss

The development site is approximately 2.1km from the boundary of the South Dublin Bay and River Tolka estuary SPA/SAC as the crow flies and the intervening land is occupied by residential development and transport links. Because of the distance separating the two areas there is no pathway for loss or disturbance of habitats which are qualifying interests of Natura 2000 sites or other semi-natural habitats that may act as ecological corridors for important species associated with the qualifying interests of the Natura 2000 sites.

Habitat disturbance/Ex-situ impacts

This development is unlikely to increase disturbance effects to birds in Dublin Bay given its distance from these sensitive areas.

The habitats on the development site are not suitable for regularly occurring populations of wintering/wetland/wading birds which may be qualifying interests of Natura 2000 sites in Dublin Bay or elsewhere. No ex-situ impacts are likely to arise.

Hydrological pathways

There is a pathway from the development site via wastewater water flows to Dublin Bay via the Ringsend wastewater treatment plant. There is no surface water pathway to Natura 2000 sites in Dublin Bay.

Pollution during operation - wastewater

The Ringsend plant is licenced to discharge treated effluent by the EPA (licence number D0034-01) and is managed by Irish Water. It treats effluent for a population equivalent (P.E.) on average of 1.65 million however weekly averages can spike at around 2.36 million. This variation is due to storm water inflows during periods of wet weather as this is not separated from the foul network for much of the older quarters of the city, including at the subject site. The Annual Environmental Report for 2022, the most recent available, indicated that there were a number of exceedences of the emission limit values set under the Urban Wastewater Treatment Directive and these can be traced to pulse inflows arising from wet weather. In April 2019 Irish Water was granted planning permission to upgrade the Ringsend plant. This will see improved treatment standards and will increase network capacity by 50%.

While the issues at Ringsend wastewater treatment plant are being dealt with in the medium term evidence suggests that some nutrient enrichment is benefiting wintering birds for which SPAs have been designated in Dublin Bay (Nairn & O'Hallaran eds, 2012). Additional loading to this plant arising from the operation of this project is not significant as the best available scientific data suggests that pollution through nutrient input is not affecting the conservation objectives of the South Dublin Bay and River Tolka Estuary SPA.

Pollution during operation – surface water

New surface water attenuation measures are designed so that there will be no effect to the quantity and quality of surface water leaving the site. These are standard design measures and are not considered to provide mitigation for any negative effect to a Natura 2000 site. No significant effects can occur to any SAC or SPA arising from this source.

Pollution during construction

During the site clearance and construction phases some sediment may become entrained in rain run-off. Pollution sources will be controlled through the use of best practice site management however this is not mitigation in an AA context as they are not intended to reduce or avoid any effect to a Natura 2000 site, and there is, in any case, no pathway from this source to Natura 2000 sites.

During the construction phase it can be expected that some dust emission will occur. It is difficult to quantify this but is likely to be localised and temporary in nature. Dust deposition can impact upon ecosystems through blocking the stomata of leaves, thus retarding plant growth. Research has found however that this impact is localised in nature and typically occurs where there are significant dust emissions (Bell & Treeshow, 2002). Given the distance to Natura 2000 sites and the lack of natural vegetation in the vicinity of the site, this is not considered significant.

Abstraction

Best available scientific data suggests that abstraction is not affecting the conservation objectives for Greylag Geese or Black-headed Gulls at the Poulaphouca Reservoir. Nationally the Greylag Goose has undergone a significant increase over 30 years in its wintering population in Ireland. The recently published Bird Atlas 2007-11 shows that there has been a decrease in the Poulaphouca numbers however. This source suggests that the decline, which also occurred in a number of other sites in Ireland, “may be linked with a northerly redistribution of the Icelandic wintering population” (Balmer et al., 2013).

No significant effects are likely to arise to the Poulaphouca Reservoir SPA arising from this project.

Are there other projects or plans that together with the project or plan being assessed could affect the site?

Potential in combination effects were identified based on projects which are permitted or planned in the immediate vicinity of the development site as well as through the catchment of the Ringsend wastewater treatment plant. While not considered necessary to list these individually, these include new development on brown-field sites, infrastructure projects such as roads and drainage, as well as new developments on green-field sites. Development in the city is based upon forward planning by the four local authorities in Co. Dublin and their associated development plans. Each of these plans has been subject to Screening for Appropriate Assessment and, where relevant, a full Appropriate Assessment has been carried out to ensure adverse effects to Natura 2000 sites do not occur.

The impacts from built development in this area include loss of habitat, additions to drainage infrastructure, particularly wastewater and surface water, and the in combination effects of pollution arising from multiple construction projects happening at the same time.

Implementation of the WFD will ensure that improvements to water quality in Dublin Bay and the River Liffey are maintained. Water quality in the River Dodder has improved in recent years and this trend is expected to continue. Environmental water quality can be impacted by the effects of surface water run-off from areas of hard standing. These impacts are particularly pronounced in urban areas and can include pollution from particulate matter and hydrocarbon residues, and downstream erosion from accelerated flows during flood events. In this case there will be no increase to the area of hard standing, while the use of SUDS will ensure that positive impacts to surface water quality/quantity will occur.

In March 2005 the Greater Dublin Drainage Study (GDDS) was published as a policy document designed to provide for future drainage infrastructure. The implementation of this policy will see broad compliance with environmental and planning requirements in an integrated manner. This is likely to result in a long-term improvement to the quality and quantity of storm water run-off in the capital.

There are no permitted or proposed developments which could act in combination with the subject proposal to result in significant effects to Natura 2000 sites.

Conclusion and Finding of No Significant Effects

In carrying out this AA screening, mitigation measures have not been taken into account. Standard best practice construction measures have not been taken into account where these are to be implemented for the purposes of mitigating any effects on the environment which could have a potential impact on any European Sites.

On the basis of the screening exercise carried out above, it can be concluded that the possibility of any significant impacts on any European Sites, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

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