

Screening Report for  
Appropriate Assessment  
of a proposed Strategic Housing  
Development on lands on Greenhills Road  
(north of Bancroft Park, south/west of  
Hibernian Industrial Estate and east of  
Airton Road junction), Tallaght, Dublin 24

Compiled by OPENFIELD Ecological Services

Pádraic Fogarty, MSc MIEMA

for Greenhills Living Limited



[www.openfield.ie](http://www.openfield.ie)

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## **1.0 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. This target was not met but 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’. In 2011 the Irish Government incorporated the goals set out in this strategy, along with its commitments to the conservation of biodiversity under national and EU law, in the second and third national biodiversity action plans (Dept. of Arts, Heritage and the Gaeltacht, 2011; Department of Culture, Heritage and the Gaeltacht, 2017). A fourth plan is due for publication in 2022.

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 An Bord Pleanála.

### 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.

An Bord Pleanála'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.

## **2.0 The Purpose of this document**

This document provides the necessary information for an AA screening assessment to be carried out by the Board in relation to a proposed Strategic Housing Development at Greenhills Road, Tallaght, Dublin 24.

## **3.0 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).

## **4.0 Methodology**

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 any Natura 2000 site and so Step 1 as outlined above is not relevant.

#### **4.0 Step 1: Brief description of the project**

The project is described thus, as per the planning application:

*(i) demolition of existing substation and removal of existing advertisement structure on site; (ii) construction of a residential development of 197 no. apartments (79 no. one-bedroom, 105 no. two-bedroom and 13 no. three-bedroom) in 4 no. blocks (ranging in height from seven to eight storeys with ninth floor level roof garden) as follows:*

- *Block A containing 41 no. apartments (6 no. one bedroom, 34 no. two bedroom and 1 no. three-bedroom) and measuring eight storeys in height (with ninth floor roof garden);*
- *Block B containing 79 no. apartments (33 no. one bedroom, 34 no. two bedroom and 12 no. three bedroom) and measuring eight storeys in height;*
- *Block C containing 42 no. apartments (24 no. one bedroom and 18 no. two bedroom) and measuring seven storeys in height; and,*
- *Block D containing 35 no. apartments (16. no one bedroom and 19 no. two bedroom) and measuring seven storeys in height.*

*(iii) all apartments will have direct access to an area of private amenity space, in the form of a balcony, and will have shared access to internal communal amenities including 2 no. resident lounges (114.7sq.m), gym (98sq.m) external communal amenity space (1,490.8sq.m) and public open space (1,667sq.m); (iv) provision of 78 no. vehicular parking spaces (including 3 no. car-share parking spaces, 4 no. mobility parking spaces, and 8 no. electric vehicle parking spaces), 4 no. set-down vehicular parking spaces (including 1 no. mobility parking space) and 348 no. bicycle parking spaces (including 100 no. visitor*

parking spaces) at ground floor/ground level accessible via new vehicular entrance gate off access road off Greenhills Road; (v) provision of 4 no. commercial units (871.5sq.m total) and 1 no. childcare facility (329.7sq.m) with associated external amenity space (168.8sq.m) located at ground floor level; and, (vi) all ancillary works including public realm/footpath improvements, landscaping, boundary treatments, internal footpaths/access roadways, bin storage, foul and surface water drainage, green roofs, removable solar panels, ESB substation and all site services, site infrastructure and associated site development works necessary to facilitate the development.

The development site location is shown in figures 1 and 2.

The development site is not located within or directly adjacent to any Natura 2000 site (SAC or SPA). This part of Dublin lies within the suburban zone of the city while historic mapping shows buildings in this area for many years. Current land use in the vicinity is predominantly commercial and light industrial in nature along with transport arteries. The development site itself is on artificial surfaces and disused ground. There are no buildings.

The Tymon Stream flows in this area, and this is a short water course which enters the River Liffey in Dublin City Centre. It is a highly modified water body and is culverted for much of its length.

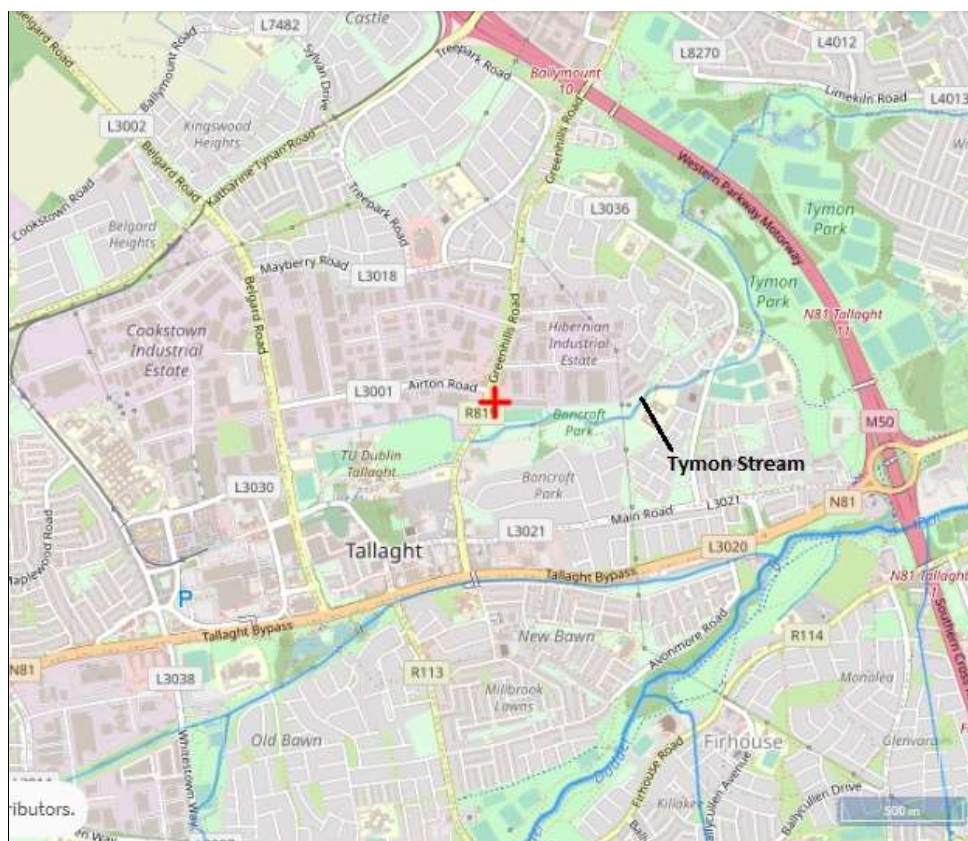


Figure 1 – Site location (red cross) and local water courses. There are no Natura 2000 sites in this view (from [www.epa.ie](http://www.epa.ie)).





**Figure 2 – recent aerial view of the subject lands and indicative site boundary (from [www.google.com](http://www.google.com)).**

The development site was surveyed for this development application on April 15<sup>th</sup> 2022, within the optimal season for general habitat survey (Smith et al., 2010). Habitats are described here as per standard classifications (Fossitt, 2000). The lands are divided in two with a northern section that is composed of **artificial surfaces – BL3** and is sealed with tarmac. The southern area is **recolonising bare ground – ED3** which is c.80% bare stones. Vegetation that has established is ruderal in nature or associated with small berms of soil to the west and south-east. Typical species are annual plants such as Colt’s-foot *Tusilago farafara*, Willowherbs *Epilobium sp.*, Ragwort *Senecio jacobaea* and Field Horsetail *Equisetum arvense*. Perennials include Cock’s-foot *Dactylis glomerata*, Brambles *Rubus fruticosus agg.* and occasional Gorse *Ulex europaeus*.

The southern boundary is characterised by a **hedgerow – WL2** which includes Hawthorn *Crataegus monogyna*, Brambles, Birch *Betula sp.*, Sycamore *Acer pseudoplatanus*, Alder *Alnus glutinosa* and some garden escapes, such as Cotoneaster *Cotoneaster sp.* and Periwinkle *Vinca minor*. Three-cornered Leek *Allium triquetrum* is growing in at least two locations to the south-east. This is an alien invasive species as listed in SI no. 477 of 2011.

There are no water courses on the development site. The Tymon Stream can be found c.80m to the south and is separated from the development site by all-weather playing pitches and open green space. The habitats on the site are not suitable for regularly occurring populations of wetland/wading/wintering birds.



The development will see the site preparation including surface clearance and a construction phase using standard building materials.

Foul effluent 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. In April 2019 Irish Water was granted planning permission to upgrade the Ringsend plant.

Contractors for the upgrade work to the plant comprising a new 400,000 population equivalent extension were appointed in February 2018. The work on this 25% increase in capacity is scheduled to be completed by 2021. In addition, it is stated that Irish Water is working on infrastructure to achieve a population equivalent of two million by the end of 2022. The upgrade to use of aerobic granular sludge (which allows for a greater amount of wastewater to be treated to a higher standard within the current plant) and other phased upgrades to achieve a population equivalent of 2.4 million is expected to be completed by 2027.

Currently there is no attenuation of surface water and this percolates to ground or discharges to the existing public surface water sewer. SuDS measures are included in the project design to maintain the quality and quantity of run-off at a 'greenfield' rate. The surface water run-off from the development will be attenuated using an underground storage tank and discharged at a restricted rate to the public surface water sewer. Additional measures include blue/green roofs, permeable paving, a rain garden, and bioretention tree pits. As such, there will be no impact to the run-off characteristics from the site. SuDS are standard measures in all development projects and are not included here to reduce or avoid any affect to a Natura 2000 site. The proposed site layout is presented in figure 3.

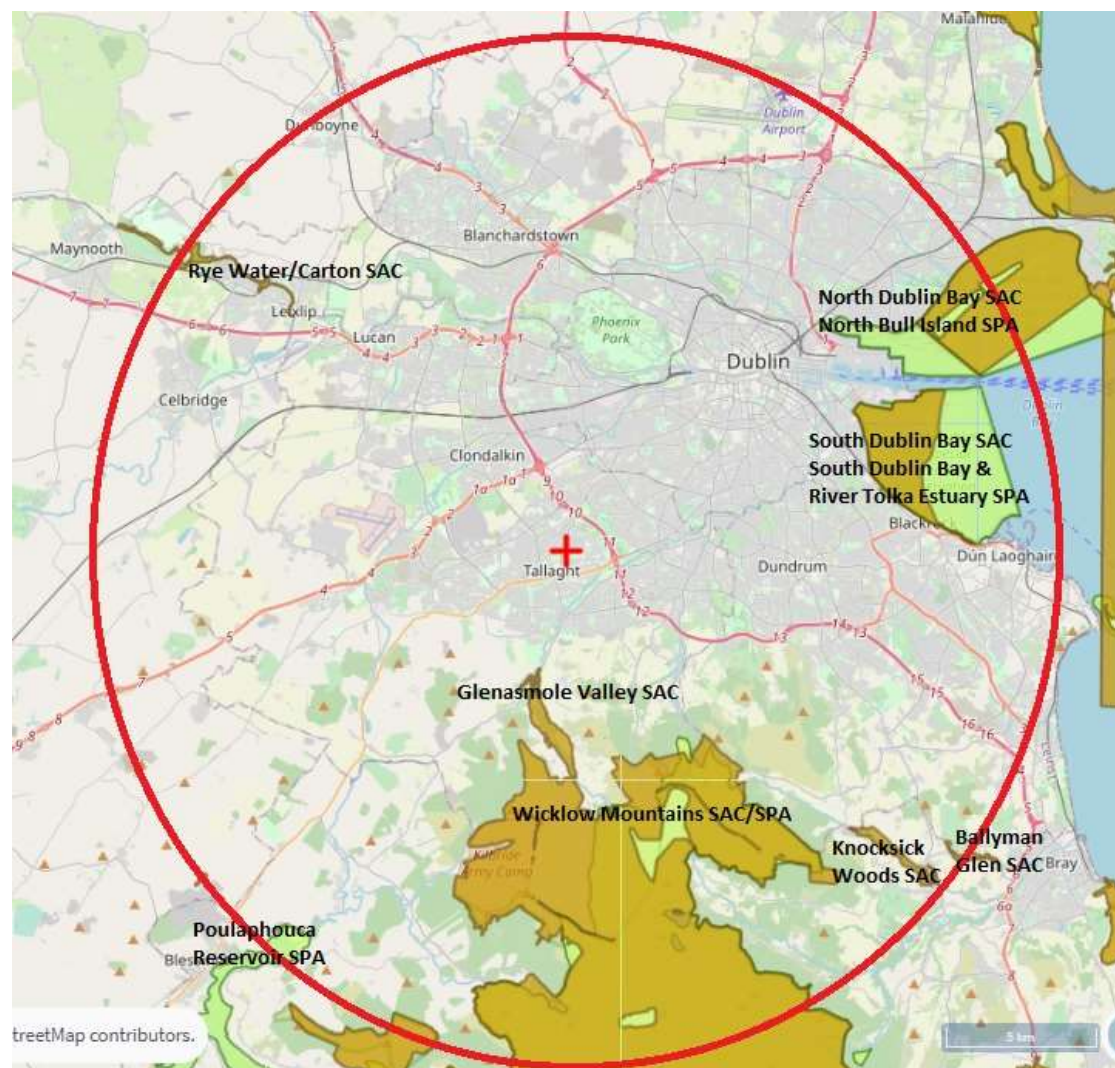


## 5.0 Brief description of Natura 2000 sites

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

- Potential impacts arising from the development
- 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. This is an arbitrary distance however and impacts can occur at distances greater than this. There are a number of Natura 2000 sites within this radius.



**Figure 4 – Approximate 15km radius around the proposed development site (red circle), the Ringsend wastewater treatment plant (green circle) and Natura 2000 sites.**

### 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 1. 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 (NPWS 2013a & 2014a).

**Table 1 – Qualifying interests for the North Dublin Bay SAC**

Code	Habitat/Species	Status
1140	Mudflats and sandflats not covered by seawater at low tide	Inadequate
1310	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	Good

- **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.

Site specific conservation objectives are available for this SAC (NPWS, 2013b) and are summarised as:

**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.

**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*.

**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 2 lists its features of interest

**Table 2 – Features of interest for the North Bull Island SPA**

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



Redshank <i>Tringa totanus</i>	Red (Breeding & Wintering)
Turnstone <i>Arenaria interpres</i>	Amber (Wintering)
Black-headed Gull <i>Larus ridibundus</i>	Amber (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

**The South Dublin Bay and Tolka Estuary SPA (side code: 4024)**

This SPA 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 (NPWS, 2015b). 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 available<sup>1</sup>.

**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

<sup>1</sup> <https://c0amf055.caspio.com/dp/f4db30005dbe20614b404564be88>

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 bernicula hrota*; Black-tailed godwit *Limosa limosa*; Knot *Calidris canutus* and Bar-tailed godwit *L. lapponica*.

**Table 3 – Qualifying interests for the South Dublin Bay & River Tolka Estuary SPA (EU code in square parenthesis)**

<b>South Dublin Bay and Tolka Estuary SPA</b>
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, 2015c) 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

The **South Dublin Bay SAC** (side code: 0210).

This SAC is concentrated on the intertidal area of Sandymount Strand (NPWS, 2015d). 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. The overall status of the habitat is inadequate and declining due to pollution from agriculture, forestry, wastewater sources and marine aquaculture.
- **Salicornia mudflats (1310)**: This is a pioneer saltmarsh community and so is associated with intertidal areas. It is dependant 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.

The **Glenasmole Valley SAC** (code: 1209) is the flooded valley of the Dodder river, dammed to provide drinking water for the city of Dublin, and covering an area of nearly 150ha. Woodland has developed around its margins while species-rich grassland is to be found on some of its slopes. A number of rare plants species, including a variety of orchids, are to be found here.

The SAC is designated only for protected habitat types and these are given in table 4.

**Table 4 – Qualifying interests for the Glenasmole Valley SAC (from NPWS)**

Code	Habitats	Status
6210	Orchid rich grassland/Calcareous grassland	Bad
6410	Molinea meadows	Bad
7220	Petrifying springs (priority habitat)	Inadequate

- **Orchid-rich grassland (6210)** This is a species rich grassland habitat found on well drained calcareous soils. It must be important for orchids in order to fall into this category. While there is evidence that an increased occurrence of flooding on some sites may be having a detrimental effect the principle threats listed are from agricultural intensification and ‘stock feeding’, i.e. overgrazing.
- **Molinea meadows (6410)** *Molinea caerulea*, the Purple Moor-grass, is typically associated with upland peatland habitats but this habit type occurs on lowland sites associated with traditional agricultural practices. The main threats that it faces are associated with changes in land use, e.g. land abandonment or intensification.
- **Petrifying Springs (7220):** 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.

Site specific conservation objectives have been published for this SAC (NPWS, 2021a) and are summarised here.

**Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (important orchid sites – priority habitat) (6210)**

Habitat area stable or increasing subject to natural processes; no decline in habitat distribution; maintain vegetation composition in a favourable status (including non-native and negative indicator species); not more than 10% bare soil; less than 20m<sup>2</sup> showing signs of serious grazing or other disturbance.

**Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) (6410)**

Habitat area stable or increasing subject to natural processes; no decline in habitat distribution; maintain vegetation composition in a favourable status (including non-native and negative indicator species); not more than 10% bare soil; less than 20m<sup>2</sup> showing signs of serious grazing or other disturbance.

**Petrifying springs – priority habitat (7220)**

Habitat area stable or increasing subject to natural variations; no decline in habitat distribution; maintain appropriate hydrological regimes; maintain appropriate levels of tufa formation; maintain nitrate level at less than 10mg/l; restore phosphate level to less than 15µg/l; maintain variety of vegetation communities, subject to natural processes; at least three positive/high quality indicator species as listed in Lyons and Kelly (2016) and no loss from baseline number; potentially negative indicator species should not be dominant or abundant; woody species should be absent in unwooded springs; invasive species should be absent; cover of algae less than 2%; field layer height between 10cm and 50cm (except for bryophyte-dominated ground <10cm); no decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes.

**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 (NPWS, 2019). 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 5 – Qualifying interests for the Knocksink Wood SAC (from NPWS)**

Code	Habitats/Species	Status
7220	Petrifying springs	Inadequate
21E0	Alluvial forests	Bad
91A0	Old oak woodlands	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, 2021b) 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 6.

**Table 6 – 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, 2019a) 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. The SAC's qualifying interests are shown in table 7 while those of the SPA are given as Merlin *Falco columbarius* (breeding) and Peregrine *Falco peregrinus* (breeding).

**Table 7 – 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 Nardus grassland	Bad
Calaminarian Grassland	Inadequate
Otter	Favourable

- **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, 2017a) 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 20m<sup>2</sup>; 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;

**Rye Water Valley/Carton SAC (site code: 1398)**

The Rye Water is a tributary of the Liffey and the SAC boundary stretches from east of Maynooth as far as Leixlip village. It flows through the Carton demesne which is wooded with specimen native and non-native trees. The river is dammed in a number of locations and this has created a series of small lakes. The SAC covers an area of nearly 73 ha.

The reasons why this area 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 8 below. The status provided refers to the status of the habitat or species at a national level and not necessarily within the SAC.

**Table 8 – Qualifying interests for the Rye Water/Carton SAC**

Code	Habitats/Species	Status
7220	Petrifying springs with Tufa formation	Intermediate
1014	Narrow-mouthed whorl snail <i>Vertigo angustior</i>	Intermediate
1016	Desmoulin's whorl snail <i>Vertigo moulinsiana</i>	Intermediate

- **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.

- **Narrow-mouthed Whorl Snail (1014)**. This whorl snail is present in a wide variety of habitats from dunes and coastal grasslands, to fens, salt-marshes and floodplains. The principle threats to its habitat derives from undergrazing and overgrazing.
- **Desmoulin's Whorl Snail (1016)** is a tiny mollusc that is particularly sensitive to changes in water level. It occurs in swamps, fens and marshes. The greatest threats have been drainage of wetlands and riparian management of canals.

Whether effects are likely to occur to the SAC must be measured against its 'conservation objectives'. Site specific conservation objectives have been published (NPWS, 2021c) and are summarised here.

#### **Petrifying springs – priority habitat (7220)**

Habitat area stable or increasing subject to natural variations; no decline in habitat distribution; maintain appropriate hydrological regimes; maintain appropriate levels of tufa formation; maintain nitrate level at less than 10mg/l; restore phosphate level to less than 15µg/l; maintain variety of vegetation communities, subject to natural processes; at least three positive/high quality indicator species as listed in Lyons and Kelly (2016) and no loss from baseline number; potentially negative indicator species should not be dominant or abundant; woody species should be absent in unwooded springs; invasive species should be absent; cover of algae less than 2%; field layer height between 10cm and 50cm (except for bryophyte-dominated ground <10cm); no decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes.

#### **Narrow-mouthed Whorl Snail (1398)**

Population restored to baseline; restore to self-sustaining population; restore area of suitable habitat, subject to natural processes; restore suitable hydrological regime, subject to natural processes;

#### **Desmoulin's Whorl Snail (code: 7230)**

No decline in distribution, occurrence in suitable habitat, density with habitat, subject to natural processes; area of suitable habitat stable or increasing, subject to natural processes; no less than 0.2ha of at least suboptimal habitat; no decline in habitat quality, subject to natural processes;

At its nearest point the **Poulaphouca Reservoir SPA** (site code: 4063) is located approximately 15km 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).

Where site specific conservation objectives have not been published, generic documents state that favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

### *Pathway Analysis*

There is no direct natural hydrological connection from the development site to Dublin Bay. There is an indirect, hydrological pathway to Dublin Bay through the foul sewer en route to the Ringsend WWTP, as well as the surface sewer via the River Poddle.

Sampling of water quality in Dublin Bay (and presented in the Annual Environmental Report for the WWTP) indicates that the discharge from the Ringsend 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 will originate, is also considered to fall within the zone of influence of this project.

**Table 9 – 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
Poulaphouca Reservoir SPA
Natura 2000 sites examined but found not to lie within the zone of influence of the project
Glenasmole Valley SAC
Knocksink Wood SAC
Ballyman Glen SAC
Wicklow Mountains SAC
Wicklow Mountains SPA
Rye Water/Carton SAC

## **6.0 Data collected to carry out the assessment**

*Describe the individual elements of the plan (either alone or in combination with other plans or projects) likely to give rise to impacts on the SAC:*

Habitats on the site are not associated with either intertidal habitats or species associated with any Natura 2000 site.

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to have attained 'good ecological status' by 2015 or, with some exceptions, by 2027 at the latest. This includes rivers, lakes, transitional and coastal waters. 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 RBMP is currently in preparation.

The development site is located within the catchment of the River Poddle (water body code: IE\_EA\_09P030800), which is extensively culverted where it flows through urban areas. It is assessed a 'poor' status under the WFD 2013-2018 reporting period. The River Poddle joins the Liffey Estuary Upper (water body code: IE\_EA\_090\_0400) at a point where it is transitional (tidal) in character. It has been assessed as 'good' status. The Liffey Estuary Lower (the boundary between the lower and upper estuaries is marked at the Custom House; water body code: IE\_EA\_090\_0300) and the coastal water beyond the estuary (Dublin Bay; water body code: IE\_EA\_090\_0000) have also been assessed as 'good status' (from [www.epa.ie](http://www.epa.ie)). The Tolka Estuary (water body code: IE\_EA\_090\_0200) is 'moderate'.

These classifications indicate that water quality across Dublin Bay, with the exception of the Tolka Estuary, is currently meeting the requirements of the WFD.

The development site is composed predominantly of artificial or highly modified surfaces within a heavily built-up area of Dublin city. It is connected to a number of Natura 2000 sites via wastewater, surface water and freshwater supply.

Of the species listed as qualifying interests for SPAs in Dublin Bay 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).

A 'supporting document' has been published by the NPWS which gives a detailed assessment of the features of interest for which SPAs in Dublin Bay have been designated (NPWS, 2014b). In particular it presents information on the trends of these features and the pressures which are likely to affect these trends. It has determined that five species: Grey Plover, Shelduck, Pintail, Shoveler, Golden Plover and Black-headed Gull, are of unfavourable status while the remainder are 'favourable'. In the case of the Grey Plover it was found that its population trend is decreasing both within Dublin Bay and at an all-

Ireland level. For this reason it is reasonable to assume that the factors for its decline are not unique to Dublin Bay. The Black-headed Gull population was not assessed in this way. Only for Shoveler is it considered that significant declines are being experienced due to site conditions.

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 Nephthys, 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)."*

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.

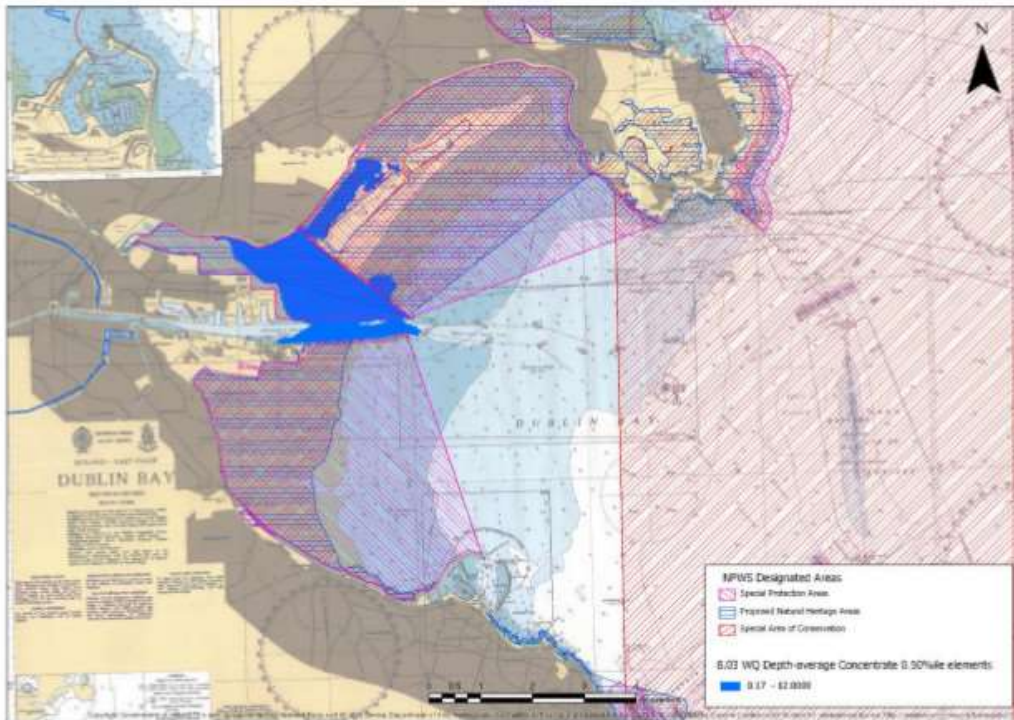


Figure 5-16: Extent of the Zone of Influence (in blue) of the effluent from the Proposed WwTP Component on the predicted modelled output for Winter depth averages 50%ile for Dissolved Inorganic Nitrogen (DIN)

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

## 7.0 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**

At its closest point the site is c.10.2km away (as the crow flies) from the boundary of the Natura 2000 sites within Dublin Bay. In reality however, this distance is greater as hydrological pathways follow the course of the drainage network to Dublin Bay. Because of the distance separating the site and the SPAs/SACs there is no pathway for loss or disturbance of important habitats or important species associated with the features of interest of the SPA.

No significant effects to Natura 2000 sites will arise from this source.

**Habitat disturbance/Ex-situ impacts**

The subject site is located in a heavily urbanised environment close to significant noise and artificial light sources such as roads. This development cannot contribute to potential disturbance impacts to species or habitats of for which Natura 2000 sites have been designated due to the separation distance.

The development site does not provide suitable habitat for wetland/wading/wintering birds which may be associated with Natura 2000 sites in Dublin Bay. No ex-situ impacts can arise.

**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 2020, 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%, with a target completion date of 2022.

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).

No significant effects to Natura 2000 sites will arise from this source.

**Pollution during operation - surface water**

The incorporation of SUDS into this project will ensure that no negative effects to surface water will occur. These are standard measures which are included in all development projects and are not included here to avoid or reduce an effect to a Natura 2000 site. They are therefore not considered to be mitigation measures in an AA context.

Discharges of wastewater and surface water from this project cannot result in significant effects to the SACs or SPAs in Dublin Bay.

**Pollution during construction**

There is unlikely to be escape of sediment during the construction phase as there are no water courses in the vicinity of the development site. This cannot result in significant pollution due to the distance from sensitive receptors, and the temporary nature of the works. Tidal and coastal habitats are not sensitive to sediment pollution in the way that freshwater bodies are.

No significant effects to Natura 2000 sites will arise from this source.

**Abstraction**

Evidence 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 effects are likely to arise to the Poulaphouca Reservoir SPA, or any other Natura 2000 site, from this project.

**Alien invasive species**

Three-cornered Leek has been recorded growing on the development site and this is an alien invasive species as listed in SI No. 477 of 2011. The developer therefore has an onus to prevent its spread and control measures will be undertaken. However, this is not a mitigation measure in an AA context. As there are no pathways for Three-cornered Leek to reach Natura 2000 sites, no effect to such areas can arise. Even in the absence of any control measures, no significant effects to Natura 2000 sites are likely to arise from this source.

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

Implementation of the WFD will ensure that improvements to water quality in Dublin Bay and the River Liffey are maintained. 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 negative impacts to surface water quality/quantity due to the SUDS measures which are incorporated in the project design. These are not mitigation measures in an AA context.

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. This project is fully compliant with SUDS principles.

There are no effects which could act in combination with the subject proposal to result in significant effects to Natura areas.

## **8.0 Conclusion and Finding of No Significant Effects**

No significant effects will arise from this project to Natura 2000 sites in Dublin Bay: the North Dublin Bay SAC, South Dublin Bay SAC, the North Bull Island SPA or the South Dublin Bay and River Tolka Estuary SPA.

In carrying out this AA screening, mitigation measures have not been taken into account. Standard best practice construction measures which could have the effect of mitigating any effects on any European Sites have similarly not been taken into account.

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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