Screening Report for Appropriate Assessment of residential development at Cooldown Commons, Citywest, 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. 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 national biodiversity action plan (Dept. of Arts, Heritage and the Gaeltacht, 2011). A third plan was published in 2017.

The main legislation for conserving biodiversity in Ireland have been the Directive 2009/147//EC of the European Parliament and of the Council of November 2009 on the conservation of wild birds (Birds Directive) and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive). 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. The Birds and Habitats Directives have been transposed into Irish legislation by the European Communities (Birds and Natural Habitats) Regulations 2011-2015. 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” (EU, 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 the An Bord Pleanála.

The Purpose of this document

This report has been prepared by Openfield Ecological Services for an on behalf of Cairn Homes Properties Limited to assist An Bord Pleanála carrying out the appropriate assessment screening. This document provides for the analysis of a proposed residential development at a site at Cooldown Commons, Co. Dublin, and its potential effects in relation to Natura 2000 sites (SACs and SPAs). Under the Planning and Development Act 2000 (as amended) all developments must be screened for AA by An Bord Pleanála. This report provides the necessary information to allow An Bord Pleanála 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 (EcIA) in Ireland. Since its inception in 2007 OPENFIELD has carried out numerous EcIAs 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).

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 the aforementioned 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 Natura 2000 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 Natura Site
This process identifies the conservation objectives of the site and determines whether significance effects to Natura 2000 sites will arise 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 must be made in light of the conservation objectives for that SAC or SPA.

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

Reference is also made to guidelines for Local Authorities from the Department of the Environment, Heritage and Local Government (DoEHLG, 2009).
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 SAC or SPA and so Step 1 as outlined above is not relevant.

Brief description of the proposed project

The proposed project is described here as per the planning application:

The proposed development will consist of the construction of 421 no. residential units within 9 no. blocks ranging in height from 1 – 13 storeys, retail/commercial/office units, residential amenity space, and open spaces along with all associated site development works and services provisions to facilitate the development including parking, bin storage, substations, landscaping and all services.

The subject site is located in the townland of Cooldown Commons, near City West, which is located in the western portion of County Dublin and less than 1km east of the village of Saggart. The subject lands are currently unused and are surrounded on three sides by built development including residential homes, roads and the Luas line. Some open ground remains to the north-east. Historic mapping shows that this general area was in agricultural use until relatively recently however significant land use change has occurred since the 1990s (www.osi.ie). Mapping from the Environmental Protection Agency shows the Baldonnell Upper Stream flowing along the eastern site boundary. This flows to the north and falls within the catchment of the Camac River. The Camac is a tributary of the River Liffey which in turn enters the Irish Sea at Dublin Bay. Dublin Bay is subject to a number of Natura 2000 designations.

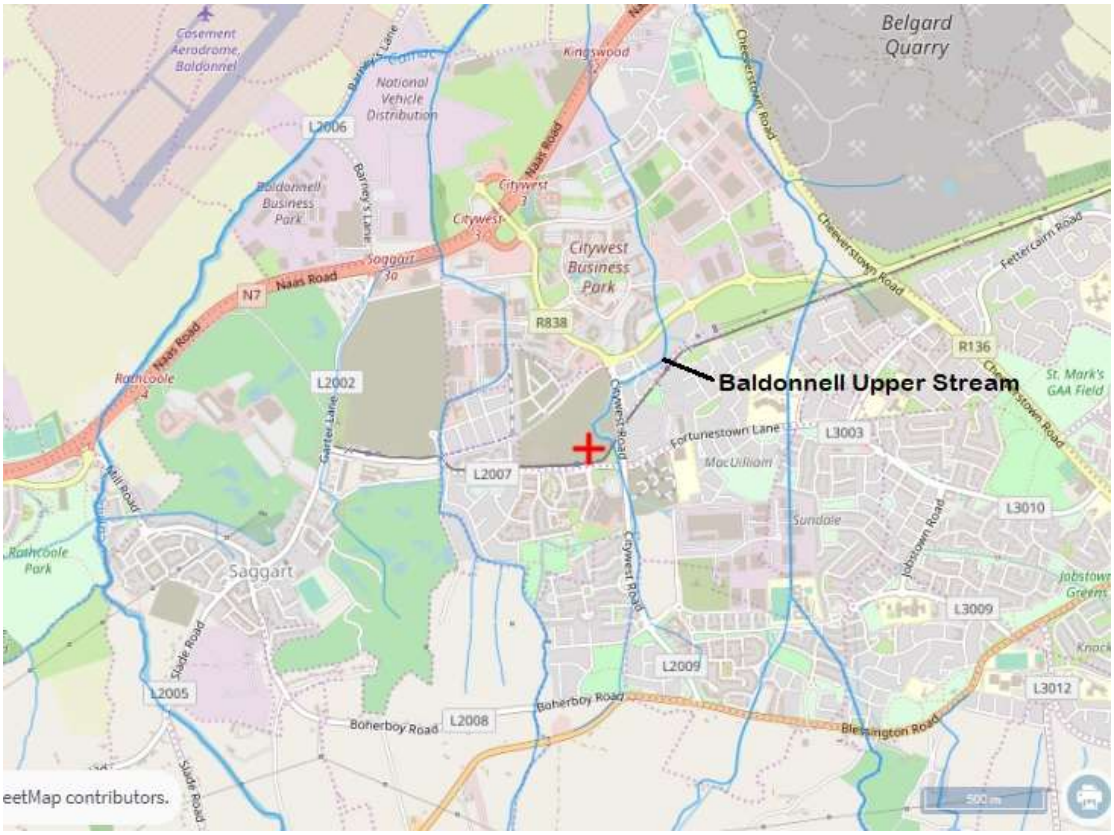

Figure 1 – Site location showing approximate 2km radius. Note there are no Natura 2000 areas in this view (from www.npws.ie)

The lands were visited as part of this study on March 4th and May 25th 2020. At this time all surfaces were highly modified and can be described as a combination of buildings and artificial surfaces. The Baldonnell Upper Stream is a highly modified water body in this location.

There are no plant species on the site that are considered rare or endangered. There are no examples of any habitat listed on Annex I of the Habitats Directive or habitats suitable for species listed on Annex II. Monitoring by Inland Fisheries Ireland do not record Atlantic Salmon *Salmo salar* from the Camac although they are present along the River Liffey[1]. The most recent fish sampling on the Camac, from 2011, indicated that there are populations of Brown Trout *Salmo trutta* and Three-spined Stickleback *Gasterosteus aculaetus*.

The subject proposal is for the construction and operation of a residential development with internal road access, parking spaces, and all associated services including connections to vital infrastructure. Figure 3 shows the proposed site layout.

[1] www.wfdfish.ie

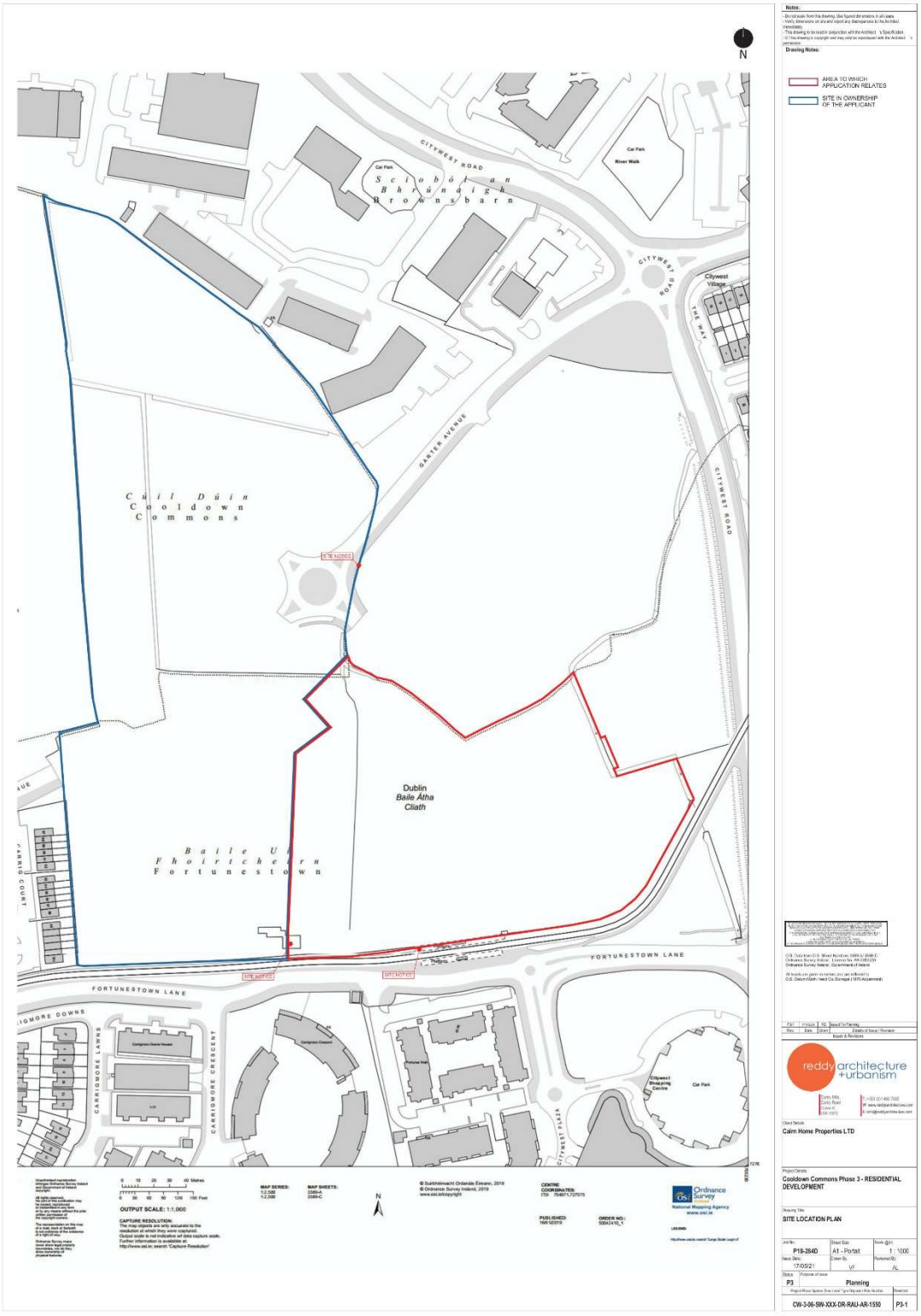

Figure 2 – Site boundary (in red line)

Figure 3 – Proposed site layout

The site will be levelled and any construction and demolition waste will be removed by a licenced contractor.

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. Irish Water, the authority in charge of the wastewater treatment network, received planning permission to upgrade this plant in April 2019. This will see an increase to the capacity of the plant from 1.64 million PE (population equivalent) to 2.15 million PE, with completion being undertaken on a phased basis.

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.

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

Currently there is no attenuation of rain run-off and this is likely to soak through open ground or enter the Baldonnell Upper Stream. In accordance with the Greater Dublin Strategic Drainage Study this project will incorporate sustainable drainage systems (SUDS) that ensure that run-off remains at a 'greenfield' rate. These are standard measures in all development projects and are not included here to avoid or reduce any effect to a Natura 2000 site. The development site is to be divided into two catchments, one of which will drain to the existing surface water drainage network for Phase 2 of this development, while the second will drain to the Baldonnell Upper Stream via an attenuation

storage unit, a flow control devise and a petrol interceptor. Additional SUDS methods include the use of permeable paving and green roofs which will reduce volumes entering the sewer system. These are standard measures which are included in all development projects and are not included here to reduce or avoid any effect to a Natura 2000 site.

Post-construction the site is to be landscaped with a variety of native trees and new amenity open space.

This site is not located within any Natura 2000 site (SAC or SPA). Figure 1 shows that there are no such areas in this vicinity. However, there is a hydrological connection between Natura 2000 sites in Dublin Bay.

This development occurs in an area that is already heavily built-up and urbanised in character. Activities in the locality are of residential and transport nature and these developments are associated with a degree of noise and artificial lighting. There are no habitats on the site that are associated with habitats or species for which SACs or SPAs are generally designated. The Camac River is of fisheries value however, supporting a run of Brown Trout and other fish, according to Inland Fisheries Ireland.

Surface water run-off is to be maintained at a ‘greenfield’ rate. The project will not result in the loss of any high value semi-natural habitats. It will result in additional noise and artificial lighting however this cannot disturb sensitive species in Natura 2000 sites due to the significant separation distance to SACs or SPAs.

Brief description of Natura 2000 sites

In assessing the zone of impact 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 area. For projects of this nature an initial 15km radius is normally examined (IEA, 1995). This is an arbitrary distance however and impacts can occur at distances greater than this. This indicative area is shown in figure 4.

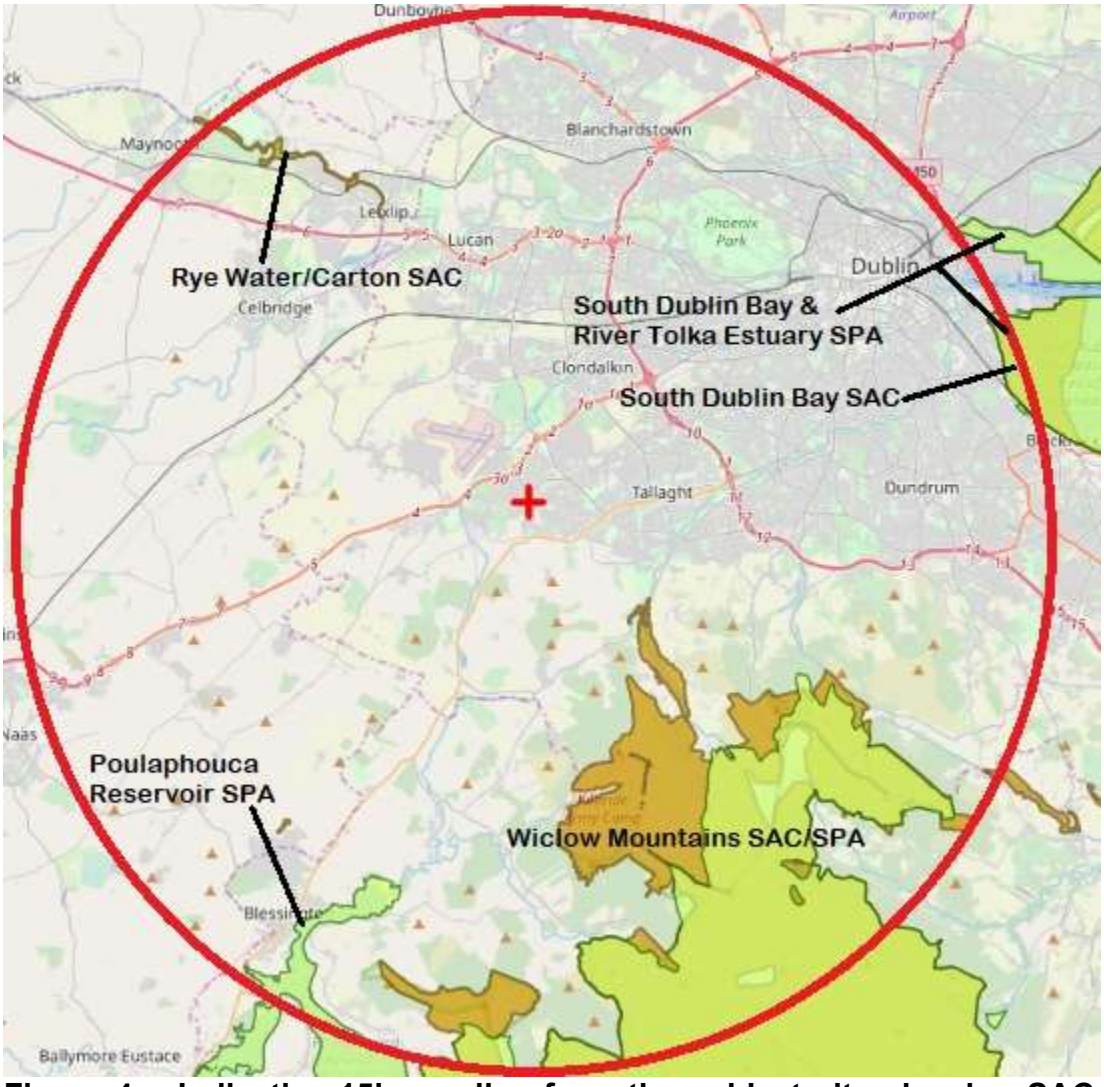

Figure 4 – Indicative 15km radius from the subject site showing SACs (tan) and SPAs (lime green) (from www.epa.ie).

As can be seen, there are a number of Natura areas within this radius. In addition, there are hydrological connections to the **South Dublin Bay and River Tolka Estuary SPA (site code: 4024)**, the **South Dublin Bay SAC (0210),** the **North Dublin Bay SAC (site code: 0206)**, the **North Bull Island SPA (site code: 4006)** and the **Poulaphouca Reservoir SPA (site code: 4063)**. These are considered to be the only Natura 2000 areas within the zone of influence of the development as pathways do not exist to other areas.

Table 1 – Features of interest for SPAs in Dublin Bay (EU code in square parenthesis)

North Bull Island SPA	**South Dublin Bay and Tolka Estuary SPA**
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
Oystercatcher (*Haematopus ostralegus*) [A130]	Oystercatcher (*Haematopus ostralegus*) [A130]
Teal (*Anas crecca*) [A052]	Ringed Plover (*Charadrius hiaticula*) [A137]
Pintail (*Anas acuta*) [A054]	Grey Plover (*Pluvialis squatarola*) [A140]
Shoveler (*Anas clypeata*) [A056]	Knot (*Calidris canutus*) [A143]
Shelduck (*Tadorna tadorna*) [A048]	Sanderling (*Calidris alba*) [A144]
Golden Plover (*Pluvialis apricaria*) [A140]	Dunlin (*Calidris alpina*) [A149]
Grey Plover (*Pluvialis squatarola*) [A141]	Bar-tailed Godwit (*Limosa lapponica*) [A157]
Knot (*Calidris canutus*) [A143]	Redshank (*Tringa totanus*) [A162]
Sanderling (*Calidris alba*) [A144]	Black-headed Gull (*Croicocephalus ridibundus*) [A179]
Dunlin (*Calidris alpina*) [A149]	Roseate Tern (*Sterna dougallii*) [A192]
Black-tailed Godwit (*Limosa limosa*) [A156]	Common Tern (*Sterna hirundo*) [A193]
Bar-tailed Godwit (*Limosa lapponica*) [A157]	Arctic Tern (*Sterna paradisaea*) [A194]
Curlew (*Numenius arquata*) [A160]	Wetlands & Waterbirds [A999]
Redshank (*Tringa totanus*) [A162]	
Turnstone (*Arenaria interpres*) [A169]	
Black-headed Gull (*Larus ridibundus*) [A179]	
Wetlands & Waterbirds [A999]	

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. The **North Bull Island SPA** (site code: 0206) meanwhile is largely coincident with the North Dublin Bay SAC with the exception of the terrestrial portion of Bull Island. These designations encompass all of the intertidal areas in Dublin Bay from south of the Howth peninsula 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 1 lists the features of interest for both of the SPAs. Species summaries are taken from Balmer et al (2013).

- **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.
- **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.
- **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.
- **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.
- **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.
- **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.

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.

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*.

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

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 2. 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 2 – Qualifying interests for the North Dublin Bay SAC

Habitat/Species	Status[2]
Mudflats and sandflats not covered by seawater at low tide	Inadequate
Salicornia and other annuals colonizing mud and sand	Favourable
Atlantic salt meadows	Inadequate
Mediterranean salt meadows	Inadequate
Annual vegetation of drift lines	Inadequate
Embryonic shifting dunes	Inadequate
Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	Inadequate

[2] NPWS. 2019. *The Status of EU Protected Habitats and Species in Ireland.* Habitat Assessments Volume 1. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Fixed coastal dunes with herbaceous vegetation (grey dunes)	Bad
Humid dune slacks	Inadequate
Petalophyllum ralfsii Petalwort	Favourable

- **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).** 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 been 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.

At its nearest point the **Poulaphouca Reservoir SPA** (site code: 4063) is located approximately 25km from the site of the proposed development. Its 'features of interest' include the Greylag Goose *Anser anser* and the Lesser Black-backed Gull *Larus fuscus*.

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 3.

Table 3 – Qualifying interests for the Glenasmole Valley SAC

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 (NPWS, 2013). Determining if significant effects are likely to occur to any of these SACs or SPAs must be measured against their 'conservation objectives'. Specific conservation objectives have been set for all of these areas with the exception of the Poulaphouca Reservoir. Generic conservation objectives have been published by the NPWS and are stated as:

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 4 while its 'features of interest' are given as Merlin *Falco columbarius* (breeding) and Peregrine *Falco peregrinus* (breeding).

Table 4 – Qualifying interests for the Wicklow Mountains SAC (site code: 4040)

Code	Habitats	Status
7130	Active Blanket bog	Bad
4010	Atlantic wet heath	Bad
4030	European dry heath	Bad
91A0	Old oak woodland	Bad
8220	Siliceous rocky slopes	Inadequate
8210	Calcareous rocky slopes	Inadequate
8110	Siliceous scree	Inadequate
4060	Alpine and Boreal heath	Bad
3160	Natural dystrophic lakes	Inadequate
3110	Oligotrophic lakes	Bad
6230	Species rich Nardus 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.
- **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.
- **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.
- **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.
- **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.
- **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.
- **Lowland Oligotrophic lakes (3110).** These are lowland lakes with very low nutrient input and frequently associated with acidic bedrock (e.g. granite or old red sandstone). Ireland is a stronghold for the habitat but is under significant pressure from eutrophication and peatland damage.
- **Species-rich Nardus grassland (6230 – priority habitat).** Mat-grass *Nardus stricta* that is found on siliceous (acid) soils in areas of high rainfall. It is associated with mineral flushes in upland districts.

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 5 below. The status provided refers to the status of the habitat or species at a national level and not necessarily within the SAC.

Table 5 – Qualifying interests for the Rye Water/Carton SAC

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

- **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 any of these SACs or SPAs is likely to be affected must be measured against their 'conservation objectives'. Specific conservation objectives have been set for all of these areas with the exception of the Poulaphouca Reservoir SPA, Glenasmole Valley SAC, Wicklow Mountains SPA and the Rye Water/Carton SAC. Generic conservation objectives have been published by the NPWS and are stated as:

To maintain or restore the favourable conservation condition of the Annexed species for which the SPA has been selected.

In a generic sense '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.

While 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.

Specific conservation objectives have been set for mudflats in the South Dublin Bay SAC (NPWS, 2013) and for all qualifying interests the North Dublin Bay SAC (NPWS, 2013). The objectives relate to habitat area, community extent, community structure and community distribution within the qualifying interest. There is no objective in relation to water quality.

For the South Dublin Bay & Tolka Estuary SPA and the North Bull Island SPA the conservations objectives for each bird species relates to maintaining a population trend that is stable or increasing and maintaining the current distribution in time and space (NPWS, 2015a & b).

For the Poulaphouca Reservoir SPA, generic conservation objectives have been published by the NPWS and are as previously stated above (NPWS, 2018).

Data collected to carry out the assessment

The site visit has shown that habitats on the site are not associated with any habitats or species for which SACs are designated or which are suitable for roosting wetland birds.

The EU's Water Framework Directive (WFD) stipulates that all water bodies must attain 'good ecological status' by 2015. This includes estuarine waters and Dublin Bay was located within the Eastern River Basin District in the first River Basin Management Plan (RBMP). This plan included a 'programme of measures' which was to be completed (ERBD, 2010).

In 2018 a second RBMP was published which highlighted 190 'priority areas for action' where resources are to be prioritised over the 2018-2021 period. Within the Liffey basin, the River Dodder and the River Tolka are among these areas. Water quality along the River Camac is routinely assessed by the EPA. The nearest monitoring stations to the subject site is at Baldonnell and here 'moderate' status was recorded. The Camac is a part of the Liffey Water

Management Unit and one third of this river length was assessed as satisfactory (good or high) according to the Programme of Measures in the ERBD Management Plan (2010). This report suggested that pressures on water quality are from abstractions, agriculture, physical modifications and wastewater discharges.

More recent information from the www.catchments.ie website suggests that 13 out of 34 water bodies (38%) are at either 'high' or 'good' status. The sub-catchment reports states:

A predominantly urban sub-catchment as it flows through Dublin City from Lexlip, it displays some of the major issues associated with inefficient drainage systems and problems with misconnections. This is a known major issue for the respective Local Authorities and work is underway to further identify sources of these pressures. Combined sewer overflows have also been identified as a significant pressure in Dublin City Council.

Downstream of Fortunestown the Camac has been classified as 'poor' or 'moderate' under the Water Framework Directive (WFD) reporting period 2010-15 (from www.epa.ie). These assessments are 'unsatisfactory' and so remedial measures will be required to restore 'good ecological status'.

The lower Liffey Estuary has most recently (2014) been assessed by the Environmental Protection Agency (EPA) as 'unpolluted' – a term which implies 'good status'. The coastal water beyond the estuary is also assessed as 'unpolluted' (from www.epa.ie). These classifications indicate that water quality downstream of the Custom House is currently meeting the requirements of the WFD.

Of the species listed in table 2 three: Dunlin, Redshank and Black-headed Gull are listed as of high conservation concern, and on BirdWatch Ireland's red list (Colhoun & Cummins, 2013).

- Dunlins do not breed on the east coast of Ireland while their winter range, which includes a number of coastal and wetland areas across the country, has declined by over 50% between 1994/5 and 2008/09. The reason for this decline is unclear.
- Wintering Redshank numbers in Ireland have changed little since the early 1980s while their breeding sites, based around wetlands west of the River Shannon and some eastern coastal areas, has fallen by 55% in 40 years. This can be attributed to habitat loss from agricultural intensification and drainage.
- Black-headed Gulls remain a frequent winter presence and their red listing relates to their breeding status only. This has seen a 55% decline in 40 years for reasons which are not clear but may relate to loss of nesting sites, predation, food depletion or drainage. They are not recorded as breeding in the Dublin area. (Balmer et al., 2013).

Of relevance to this study is it noted that although declines in these species cannot always be attributed to clear causes, there is no evidence that water quality issues have been a factor. A supporting document has been published

which provides greater details of the features of interest of the SPA. This shows that the majority of species are of favourable status with either stable or increasing population trends. Shelduck, Pintail, Shoveler, Golden Plover and Grey Plover are all assessed as 'unfavourable'. For most of these species the negative trends are in line with those at a national level. Only for Shoveler are trends positive elsewhere, suggesting that conditions within Dublin Bay may be responsible for the decline (NPWS, 2014).

In 2020 the NPWS published a report entitled 'The monitoring and assessment of six EU Habitats Directive Annex I Marine Habitats' (Scally & 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 Nepthys, 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 Nepthys 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.

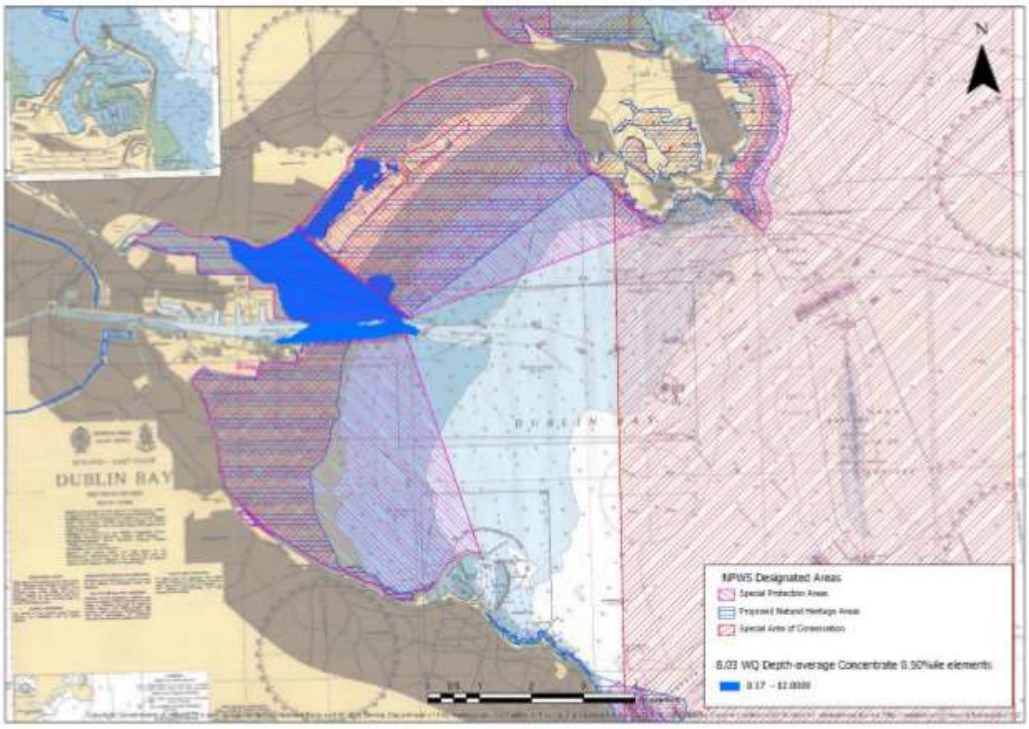

Figure 5-16: Extent of the Zone of Influence (in blue) of the effluent from the Proposed WwTP Component on the predicted modelled output for Winter depth averages 50%ile for Dissolved Inorganic Nitrogen (DIN)

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

Zone of Influence

There is no pathway between the development site and the Wicklow Mountains SAC/SPA, the Glenasmole Reservoir SAC or the Rye Valley/Carton SAC. These Natura 2000 sites lie outside the zone of influence of this development project. There are potential hydrological pathways between the development site and Natura 2000 sites in Dublin Bay as well as the Poulaphouca Reservoir SPA. These are the only Natura 2000 sites which are considered to fall within the zone of influence of this project.

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 directly adjacent to, any SAC or SPA.

Habitat loss
At its closest point the site is approximately 15km away (as the crow flies) from the boundary of the Natura 2000 sites within Dublin Bay. In reality however this distance is greater as the drainage pathway follows the course of streams leading to the Camac and Liffey rivers. Because of this distance separating the two areas there is no pathway for loss or disturbance of species listed in table 1 or other semi-natural habitats that may act as ecological corridors for important species associated with the qualifying interests of the Natura 2000 sites.

Pollution
There is a pathway from the development site via surface and wastewater water flows to Dublin Bay via the River Liffey and the Ringsend wastewater treatment plant respectively.

A. Pollution from wastewater
The plant at Ringsend is licenced to discharge treated effluent to the Irish Sea by the EPA (licence no.: D0034-01). The Annual Environmental Report (AER) for 2019 (the most recent) shows that the average loading was in excess this capacity while the standard of effluent was not compliant with emission limit values set under the Urban Wastewater Treatment Directive. Monitoring of the receiving water (the Irish Sea) takes place at points surrounding the discharge point. Water quality in Dublin Bay meanwhile is ‘good’.

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 are not considered to be significant as there is no evidence that pollution through nutrient input is affecting the conservation objectives of the South Dublin Bay and River Tolka Estuary SPA.

B. Pollution from surface water
The installation of surface water attenuation measures will ensure that there will be no negative impact to water quality or quantity arising from the change in land use from agricultural to residential. This measure is not included in order to avoid or reduce potential impacts to Natura 2000 areas and so this is not considered to be a mitigation measure in an AA context.

C. Pollution during construction
During the site clearance and construction phase the risk of sediment entering water courses, entrained in rain run-off is low as there are no water courses in this vicinity. This effect is not considered significant. This is due to the fact that sediment is not a pollutant in coastal habitats in the way it is in rivers (where it can foul fish spawning beds).

Disturbance to birds
The site is too far from bird roosting areas in Dublin Bay to result in impacts from noise or other forms of human disturbance. There is no evidence that disturbance effects of this nature are negatively affecting features of interest (i.e. bird species) from these sources. The site itself does not contain habitat which is suitable for roosting or foraging birds associated with SPAs in Dublin Bay.

Amenity use
The development is not likely to affect amenity use at Natura 2000 sites due to the location of the development. Amenity open space is provided for on the site as part of the project design. There are no pathways to other Natura 2000 sites.

Abstraction
There is no evidence that abstraction is affecting the conservation objectives of any SAC or SPA within the zone of influence of this project, including the reservoirs at Poulaphouca.

Light and noise
The project will result in additional noise and artificial lighting however given the significant distance to Natura 2000 areas, this impact can be considered to be **not significant.**

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

Individual impacts from one-off developments or plans may not in themselves be significant. However, these may become significant when combined with similar, multiple impacts elsewhere. These are sometimes known as cumulative impacts but in AA terminology are referred to as ‘in combination’ effects.

The EU’s Water Framework Directive requires that all water bodies were to attain ‘good ecological status’ by 2015 (with some exceptions). The status of the Camac is currently unsatisfactory and a target of 2021 has been set to achieve good status.

Rainwater run-off from paved and impermeable surfaces can carry hydrocarbons and particulate matter into surface waters. These features can also accelerate the discharge of rainwater off land and so accentuate the effects of flash flooding (Mason, 1996). This impact is particularly pronounced in urban locations where significant areas can be paved or built on. As such,

incremental increases in hard surfaces, such as when land use changes from agriculture to housing, can result in cumulative effects to water quality. In this case no impact from surface water is expected to occur.

Future planning in this area is provided for under the Fortunestown Local Area Plan 2012 and under which the subject lands have been zoned for residential use. This plan has been screened for AA and it was concluded that significant effects to the Natura 2000 network would not arise from its implementation.

This project can be seen in combination with development of the lands directly to the west as well as proposed development on lands to the south. All development applications have been subject to AA Screening.

Given that negative effects are not considered likely to arise, there are no projects, which acting in combination with the current proposal, can result in significant effects to Nature 2000 areas.

List of agencies consulted

Details of the development were sent to Inland Fisheries Ireland. A response to this had not been received at the time of writing.

Conclusion and Finding of No Significant Effects

Mitigation in an AA context is given as any measure which is introduced in order to avoid or reduce an impact to a Natura 2000 area. In this case no mitigation measures are suggested during either the construction or operation phases.

This project has been screened for AA under the appropriate methodology. It has found that significant effects are not likely to arise, either individually or in combination with other plans or projects to the Natura 2000 network. This conclusion is based on best scientific knowledge.

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