Screening Report for Appropriate Assessment of residential development at Parkside 4, Parkside, Dublin 13

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 Parkside 4, 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.

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 the site and so Step 1 as outlined above is not relevant.

Brief description of the project

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

The proposed development will comprise a residential scheme 282 residential units in 4 apartment blocks ranging in height from 3 to 7 storeys in height. The development will include 94 no. 1 bed apartments, 8 no. 2 bed (3 person) apartments, 167 no. 2 bed apartments (4 person) and 13 no. 3 bed apartments. Apartments will have north/south/ east/ west facing balconies/ terraces. The proposed development also includes residential amenity facilities (530sqm) incorporating concierge, media centre, and gymnasium. 277 no. car parking and 289 no. cycle parking spaces will be provided in the basement along with basement stores, plant, waste management areas, motor bike spaces and EV charging points. There will be an additional 134 no. surface cycle parking for visitors along with 9 no. surface car parking.

The proposed development provides for the continuation and completion of the Mayne River Linear Park as well as public open space and communal open spaces between the buildings.

Vehicular access is from Parkside Boulevard. Pedestrian and cycle access are from Mayne River Park, Balgriffin Road and Parkside Boulevard.

All associated site development works (including site re-profiling), landscaping, boundary treatments and services provision including ESB substations.

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

It is planned to construct a residential development on the site at Parkside, Parkside Boulevard, Dublin 17 as previously described. This will include site clearance and a construction phase to include new surface water drainage infrastructure and connection to electricity and wastewater networks.

The main phases of this project include:

- Site preparation including demolition of existing buildings and removal of inert material.
- A construction phase using standard building materials

- Construction will include a new surface water drainage infrastructure and connection to electricity and wastewater networks.
- An operation phase to which will see the homes occupied.
- Reprofiling of the river's floodplain to provide additional storage capacity.

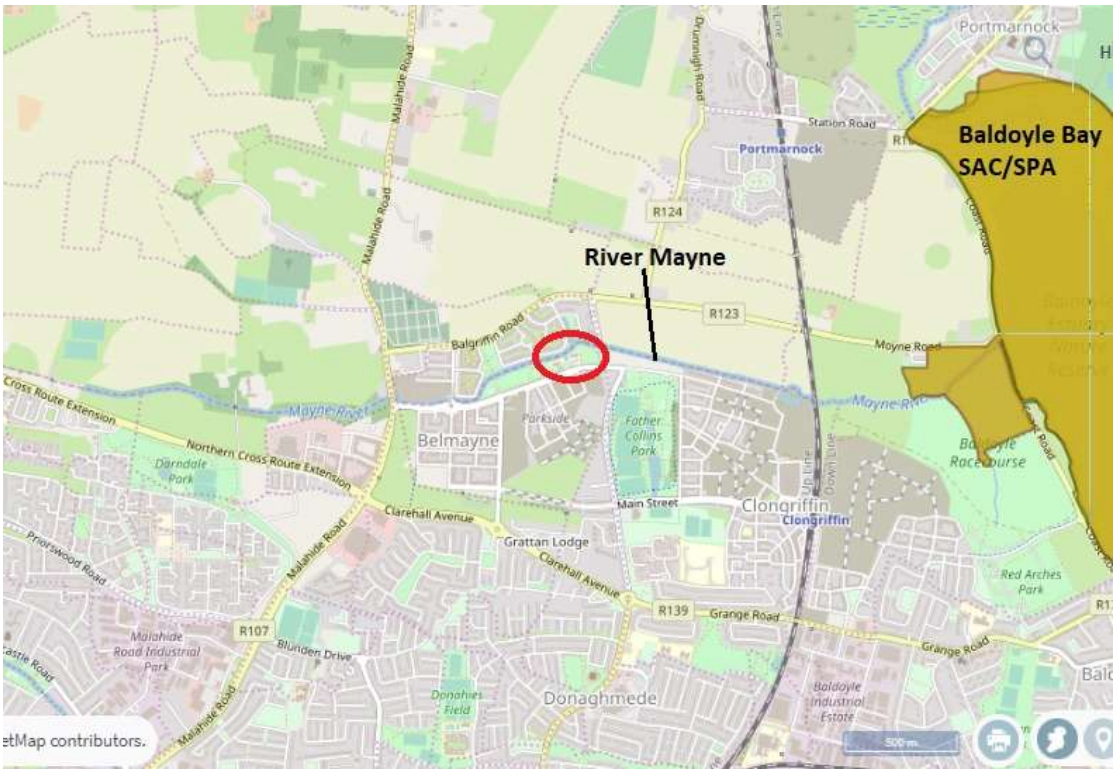

Figure 1 – Site location (red circle) showing proximity to the boundary of Natura 2000 sites in Baldoyle Bay.

The site is not located within or directly adjacent to any Natura 2000 area (SAC or SPA). This part of north Dublin is a built-up residential zone and is predominantly composed of surfaces that are sealed with tar macadam and concrete. Recent and historic aerial photography shows that the site is open land close to the River Mayne along with a temporary school building.

A site visit was carried out on the 29th of January and the 28th of May 2019 in fair weather. The site was surveyed in accordance with the Heritage Council's Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2010). Habitats were identified in accordance with Fossitt's Guide to Habitats in Ireland (Fossitt, 2000).
The subject site is composed of an open area of **buildings and artificial surfaces – BL3** and **dry meadow– GS1,** which is composed of grasses such as Cock's-foot *Dactylis glomerata* and False Oat *Arrhenatherum elatius* as well as Thistles *Cirsium sp.,* Willowherbs *Epilobium sp,* Ragwort *Senecio jacobaea* and Creeping Buttercup *Ranunculus repens.* This continues along the river to the rear of the school building. To the west of the school the land opens into an amenity area with **amenity grassland – GA2**.

The Mayne River is a **lowland river – FW2** in this location and is straight and relatively deep. Although it is not a part of any routine drainage programme, its

morphology suggests that it has been modified in the past. The riparian zone is mostly open and grassy although some stretches have occasional Alder *Alnus glutinosa* and Grey Willow *Salix cinerea* along with Reed Canary-grass *Phalaris arundinacea,* Hogweed *Heracleum sphondylium,* Nettle *Urticia dioica* etc.
There are two stretches of **hedgerow – WL1.** One along the eastern site boundary which is composed of Hawthorn *Crataegus monogyna,* Ivy *Hedera helix* and Brambles *Rubus fruticosus agg.* Another is found to the centre of the site along the riparian zone of the river and this includes Grey Willow. A small patch of **wet grassland – GS4** is found near here, with Soft Rush *Juncus effusus* and Reed Canary-grass.

There are no habitats which are examples of those listed in Annex I of the Habitats Directive. Japanese Knotweed *Fallopia japonica* is found in one location close to the Mayne River. This plant species is listed as alien invasive on Schedule 3 of SI No. 477 of 2011. An eradication plan has been prepared by a specialist contractor and this included herbicide treatment during 2019.

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

Currently there is no attenuation of rain run-off and surface water is likely to percolate to the ground or follow surface pathways to the River Mayne. In accordance with the Greater Dublin Strategic Drainage Study this project will incorporate sustainable drainage systems (SuDS). This will include underground attenuation and controlled release via and oil/grit interceptor and an existing outfall to the River Mayne.

A flood risk assessment (FRA) has been carried out by DBFL Consulting Engineers and this found that the development footprint partly infringes upon the Mayne River floodplain. To ensure all homes are located outside a flood zone A or B, it is planned to create a new flood compensation area. This will be created in an area which is currently dry meadow. While this will be linked to the river, it is not proposed to undertake any works to the river itself or its riparian zone. This is shown in greater detail in figure 4.

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 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. There are no other discharges from this operation.

Fresh water supply for the development will be via a mains supply. This originates in the Poulaphouca Reservoir or other reservoirs along the River Liffey.

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

Figure 2 – Indicative site boundary showing location of Japanese Knotweed (aerial photo from www.google.com)

Figure 3 –overview of the proposed development

Figure 4 – Extract from the Flood Risk Assessment showing the existing flood zone (above) and the proposed changes (below).

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 area. 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 areas within this radius.

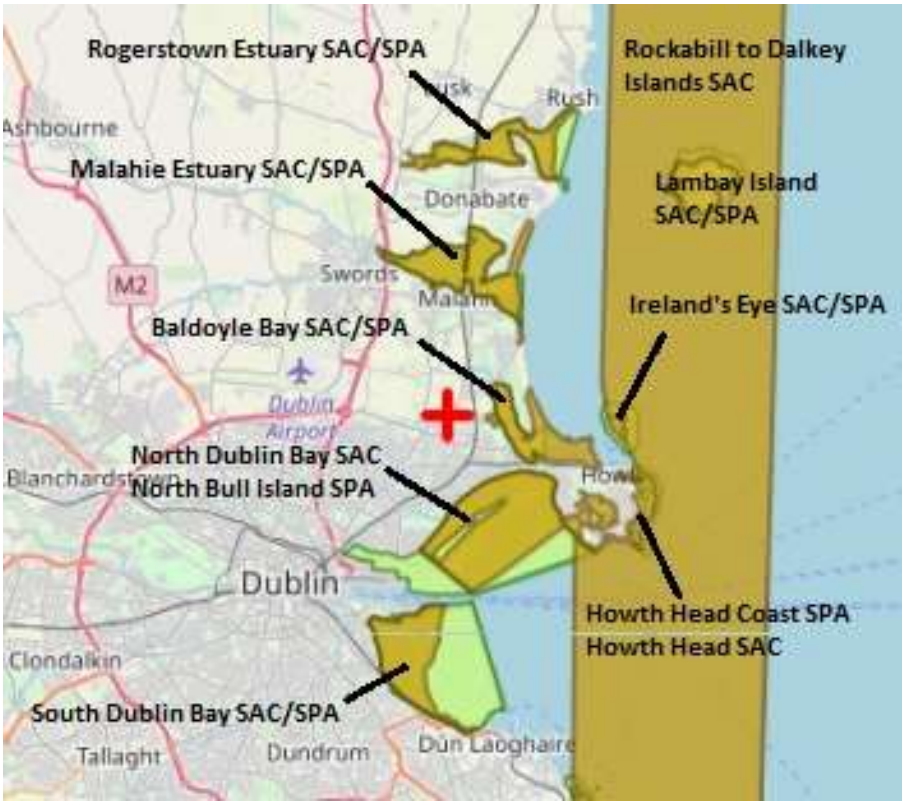

Figure 4 – Approximate 15km radius around the proposed development (red circle) site and Natura 2000 areas.

Baldoyle Bay SAC/SPA

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

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

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

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

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

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

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

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

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast. The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.
- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Golden Plover.** In winter these birds are recorded across the midlands and coastal regions. They breed only in suitable upland habitat in the north-west. Wintering abundance in Ireland has changed little in recent years although it is estimated that half of its breeding range has been lost in the last 40 years.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Shelduck.** The largest of our ducks, Shelduck both breed and winter around the coasts with some isolate stations inland. Its population and range is considered stable.

Of those species with unfavourable status in the SPA, Ringed Plover and Bar-tailed Godwit have exhibited losses at Baldoyle Bay while the national population remains stable or has increased. It is therefore reasonable to assume that local factors are leading to declines. The NPWS list a number of

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

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

factors that may be contributing to this including human disturbance (walkers with or without dogs) and nutrient enrichment (pollution). The latter effect is exhibited by algal mats, typically Sea-lettuce Ulva sp. which covers the sediment surface at low tide. This is good for those species which feed on Sea-lettuce but bad for those which cannot reach their favoured prey under the mats.

North Dublin Bay SAC/SPA

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

Table 3 – Qualifying interests for the North Dublin Bay SAC

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

- **Annual vegetation of drift lines (1210)** This habitat of the upper shore is characterised by raised banks of pebbles and stones. They are inhabited by a sparse but unique assemblage of plants, some of which are very rare. The principle pressures are listed as gravel extraction, the building of pipelines and coastal defences.
- **Embryonic shifting dunes (2110).** As their name suggests these sand structures represent the start of a sand dune's life. Perhaps only a meter high they are a transient habitat, vulnerable to inundation by the sea, or developing further into white dunes with Marram Grass. They are threatened by recreational uses, coastal defences, trampling and erosion.
- **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120).** These are the second stage in dune formation and depend upon the stabilising effects of Marram Grass. The presence of the grass traps additional sand, thus growing the dunes. They are threatened by erosion, climate change, coastal flooding and built development.

- **Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130 – priority habitat).** These are more stable dune systems, typically located on the landward side of the mobile dunes. They have a more or less permanent, and complete covering of vegetation, the quality of which depends on local hydrology and grazing regimes. They are the most endangered of the dune habitat types and are under pressure from built developments such as golf courses and caravan parks, over-grazing, under-grazing and invasive species.
- **Humid dune slacks (2190).** These are wet, nutrient enriched (relatively) depressions that are found between dune ridges. During winter months or wet weather these can flood and water levels are maintained by a soil layer or saltwater intrusion in the groundwater. There are found around the coast within the larger dune systems.
- **Petalwort (1395).** There are 30 extant populations of this small green liverwort, predominantly along the Atlantic seaboard but also with one in Dublin. It grows within sand dune systems and can attain high populations locally.

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

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

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

Redshank *Tringa totanus*	Red (Breeding & Wintering)
Turnstone *Arenaria interpres*	Green (Wintering)
Black-headed Gull *Larus ridibundus*	Red (Breeding)
Wetlands & Waterbirds	

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

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

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast. The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.
- **Sanderling.** This small bird breeds in the high Arctic and winters in Ireland along sandy beaches and sandbars. Its wintering distribution has increased by 21% in the previous 30 years.
- **Dunlin.** Although widespread and stable in number during the winter season, the Irish breeding population has collapsed by nearly 70% in 40 years. Breeding is now confined to just seven sites in the north and west as habitat in former nesting areas has been degraded.
- **Knot.** These small wading birds do not breed in Ireland but gather in coastal wetlands in winter. Their numbers have increased dramatically since the mid-1990s although the reasons for this are unclear.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.
- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.
- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Roseate Tern.** This tern breeds at only a few stations along Ireland's east coast. Most of these are in decline although at Dublin their colony is increasing.
- **Common Tern.** This summer visitor nests along the coast and on islands in the largest lakes. Its breeding range has halved in Ireland since the 1968-1972 period.
- **Arctic Tern.** These long-distance travellers predominantly breed in coastal areas of Ireland. They have suffered from predation by invasive mink and are declining in much of their range.
- **Redshank.** Once common breeders throughout the peatlands and wet grasslands of the midlands Redshanks have undergone a 55% decline in

distribution in the past 40 years. Agricultural intensification, drainage of wetlands and predation are the chief drivers of this change.

Bird counts form 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[3].

Table 5 – Annual count data for Dublin Bay from the Irish Wetland Birds Survey (IWeBS)

Year	2010/11	2011/12	2012/13	2013/14	2014/15	Mean
Count	27,931	30,725	30,021	35,878	33,486	31,608

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

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

[3] https://f1.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c

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

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

Malahide Estuary SAC and SPA (code: 0205 and 4025)
The estuary is designated for its intertidal habitats and important wintering bird population.

In addition to its Natura 2000 designations it is also a Ramsar site (Broadmeadow estuary no. 833) and a Marine Protected Area under the OSPAR Convention (site code: O-IE-0002967).
The qualifying interests for the SAC (the reasons why the site if of European value) are detailed in table 7 while the Special Conservation Interests (analogous to qualifying interests for SPAs) for the SPA are given in table 8.

Table 7 – Site qualifying interests for the Malahide estuary SAC

Aspect	Level of Protection	Status
Fixed coastal dunes with herbaceous vegetation (grey dunes) (code: 2130)	Habitats Directive Annex I priority habitat	Bad
Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') (code: 2120)	Habitats Directive Annex I	Inadequate

Salicornia and other annuals colonizing mud and sand (code: 1310)		Favourable
Mediterranean salt meadows (code: 1410)		Inadequate
Atlantic salt meadows (code: 1330)		Inadequate
Mudflats and sandflats not covered by seawater at low tide (code: 1140)		Inadequate

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

Table 8 – Special Conservation Interests for Malahide Estuary SPA

Species	National Status[4]
Anas acuta Pintail	Red (Wintering)
Branta bernicula hrota Light-bellied brent goose	Amber (Wintering)
Bucephala clangula Goldeneye	Red (Wintering)

[4] Birds of Conservation Concern in Ireland. Colhoun & Cummins, 2013

Calidris alpina Dunlin	Red (Breeding & Wintering)
Calidris canutus Knot	Amber (Wintering)
Haematopus ostralegus Oystercatcher	Amber (Breeding & Wintering)
Limosa lapponica Bar-tailed godwit	Amber (Wintering)
Limosa limosa Black-tailed godwit	Amber (Wintering)
Mergus serrator Red-breasted Merganser	Green (Breeding & Wintering)
Pluvialis apricaria Golden Plover	Red (Breeding & Wintering)
Pluvialis squatarola Grey Plover	Amber (Wintering)
Podiceps cristatus Great-crested Grebe	Amber (Breeding & Wintering)
Tadorna tadorna Shelduck	Amber (Breeding & Wintering)
Tringa totanus Redshank	Red (Breeding & Wintering)
Wetlands & Waterbirds	

- **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.
- **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.
- **Goldeneye.** This duck wintering throughout Ireland on suitable coastal areas, river valleys and wetlands. There has been an 11% contraction in its Irish wintering range since the early 1980s and a 37% decline in abundance since the 1990s.
- **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.
- **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.
- **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.
- **Red-breasted Merganser.** A widely distributed duck in winter Red-breasted Mergansers also breed in Ireland at certain coastal and inlands locations to

the north and west. They have suffered small declines in both their wintering and breeding ranges and possible reasons have been cited as predation by American Mink and shooting.

- **Golden Plover.** In winter these birds are recorded across the midlands and coastal regions. They breed only in suitable upland habitat in the north-west. Wintering abundance in Ireland has changed little in recent years although it is estimated that half of its breeding range has been lost in the last 40 years.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Great-crested Grebe.** These birds breed predominantly on freshwater sites north of the River Shannon while coastal areas along the east and south are used for wintering. Numbers in Ireland have decline by over 30% since the 1990s.
- **Shelduck.** The largest of our ducks, Shelduck both breed and winter around the coasts with some isolate stations inland. Its population and range is considered stable.
- **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.

Rogerstown estuary SAC (code: 0208) SPA (code: 4015)
This area is also a Statutory Nature Reserve, a proposed Natural Heritage Area (code: 0208) and is listed under the international Ramsar convention on the protection of wetlands (site no. 412).

The estuary is situated north of Donabate and is transected by the Rogerstown viaduct, built in the 1840s and rebuilt after a section of it collapsed in 2009. The mudflats, salt marsh and sand dune habitats are all important and during winter there are internationally important populations of the pale-bellied brent goose *Branta bernicula hrota*. The site is also of international importance as it supports in excess of 20,000 waterbirds each season.

There is site-specific information available for the SAC and SPA available from the NPWS as ‘site synopsis’ reports (from 2013c and 2014 respectively). ‘Site qualifying interests’ (i.e. the reasons the site is designated) are given by the NPWS for the SAC. For the SPA ‘features of interest’ are given. These are shown in tables 9 & 10.

Table 9 – Site qualifying interests for the Rogerstown estuary SAC

Habitat and EU code	Current national status
Fixed coastal dunes with herbaceous vegetation (grey dunes) (code: 2130)	Bad
Shifting dunes along the shoreline with *Ammophila aranaria* (‘white dunes’) (code: 2120)	Inadequate

Salicornia and other annuals colonizing mud and sand (code: 1310)	Favourable
Mediterranean salt meadows (code: 1410)	Inadequate
Atlantic salt meadows (code: 1330)	Inadequate
Estuaries (code: 1130)	Inadequate
Mudflats and sandflats not covered by seawater at low tide (code: 1140)	Inadequate

- **Estuary (1130)**: This is the portion of a river that is influenced by the tide but retaining a significant freshwater influence. Substrates can range from rocks and boulders, to expanses of fine mud and sand. They are an important resource for birds and other fauna and many estuaries have twin designations (i.e. both SAC and SPA). It considered that the majority of estuary habitat is in good condition however approximately a quarter is negatively affected by excess nutrient input and damaging fishing practices.

Table 10 – Site features of interest for the Rogerstown Estuary SPA

Species and EU Code	**National Status**
Shoveler (*Anas clypeata*) [A056]	Red (Wintering)
Greylag Goose (*Anser anser*) [A043]	Amber (Wintering)
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	Amber (Wintering)
Knot (*Calidris canutus*) [A143]	Amber (Wintering)
Dunlin (*Calidris alpina*) [A149]	Red (Breeding & Wintering)
Ringed Plover (*Charadrius hiaticula*) [A137]	Green
Oystercatcher (*Haematopus ostralegus*) [A130]	Amber (Breeding & Wintering)
Black-tailed Godwit (*Limosa limosa*) [A156]	Amber (Breeding)
Grey Plover (*Pluvialis squatarola*) [A141]	Amber (Wintering)
Shelduck (*Tadorna tadorna*) [A048]	Amber (Breeding & Wintering)
Redshank (*Tringa totanus*) [A162]	Red (Breeding & Wintering)
Wetlands and waterbirds	-

The status given for each species is taken from BirdWatch Ireland's 'Birds of Conservation Concern in Ireland' (Colhoun & Cummins, 2013) while the summaries below are all from the *Bird Atlas 2007-11* (Balmer et al., 2013).

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

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

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

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

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

Rockabill to Dalkey Island SAC (site code: 0300).
This is a recently designated off-shore (i.e. marine) SAC. It has two qualifying interests which are reefs and Harbour Porpoise *Phocoena phocoena*. Conservation objectives for this SAC have been published to maintain or restore the area of habitat and status of the population to ‘favourable conservation status’.

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

Ireland's Eye SAC/SPA

Ireland's Eye is an uninhabited island 1.5km north of Howth harbour. Its southern side is gently sloping however steep cliffs descend to the seas on its northern and eastern coasts. The thin soil and maritime influence provide habitat for an assemblage of notable plant species, including the rare Sea-Kale *Crambe maritima.* The SAC (site code: 2193) has two qualifying interests: vegetated sea cliffs and perennial vegetation of stony banks. The latter habitat is nationally of intermediate status. It is a habitat of the high tide line characterised by loose stones and shingle. It is a highly dynamic feature, being continually reshaped by tides and waves. It can be home to very rare plants and a number of coastal nesting birds. Site specific conservation objectives have been published for this SAC. These include maintaining the habitat extent, condition, vegetation composition, and community diversity for the two habitats listed as qualifying interests.

The Ireland's Eye SPA (code: 4117) is centred on the island's value as a large seabird colony. It is one of only six number of locations where Gannets *Morus bassanus* regularly breed in Ireland. The features of interest for the SPA are given in table 11.

Table 11 – Features of Interest for the Ireland's Eye SPA (from NPWS)

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

- **Cormorant.** Wintering populations of this large, fish-eating bird have increased in Ireland since the early 1980s. Breeding also occurs widely along the coast and inland waterways. It is amber-listed due to a moderate decline in numbers.
- **Herring Gull.** This large gull breeds predominantly around the Irish coast and only occasionally inland. Numbers at these colonies have fallen by

60% since 1969, a decline which is attributed to a number of sources including a reduction in available food at landfill, botulism and predation.

- **Guillemot.** This member of the auk family is found only near land during the breeding season. They nest on suitable rocky outcrops and cliffs where there is protection from predators. The population at four of Ireland's largest colonies is estimated to have increased by 22% over the past decade.
- **Razorbill.** This member of the auk family breeds exclusively at suitable coastal sites, where there are rocky cliffs to provide protection from predators. Indications are that populations at Irish colonies are stable.

Lambay Island SAC/SPA

This island is located 4km off the coast of North Dublin and is characterised by steep cliffs on three sides. The SAC (site code: 0204) is designated for marine and terrestrial habitats as well as Ireland's two resident seal species. The cliffs are important for a range of breeding seabirds and for this reason the island is also an SPA (site code: 4069). The qualifying interests of the SAC are given in table 12 while the features of interest of the SPA are given in table 13.

Table 12 – Site qualifying interests for the Lambay Island SAC

Aspect	Level of Protection	Status
Reefs (1170)	Habitats Directive Annex I	Bad
Vegetated sea cliffs (1230)		Inadequate
Grey seal *Halichoerus grypus*	Habitats Directive Annex II	Favourable
Common Seal *Phoca vitulina*		Favourable

- **Reefs (1170)** can be intertidal or subtidal features and are characterised by hard or rocky substrates. The main pressures that have been identified by the NPWS are commercial fishing, aquaculture, water pollution and commercial/recreational uses of the marine environment.
- **Vegetated sea cliffs (1230)** These coastal habitats can be composed of hard or soft material which in turn influences the rate at which erosion occurs. Vegetation can be sparse but composed of a variety of specially adapted species.
- **Grey seal (1364).** The larger of Ireland's two resident seal species can be found in breeding colonies around our coast including on off-shore islands. It is predominantly a marine species but they come ashore in autumn to mate and give birth.
- **Common seal (1365).** The smaller of Ireland's two resident seal species, common seals breed all around the coast. A predominantly marine species they also 'haul out' at favoured resting sites at low tide.

Table 13 – Features of Interest for the Lambay Island SPA (from NPWS)

Species	National Status
Phalacrocorax carbo Cormorant	Amber (Breeding & Wintering)
Larus argentatus Herring Gull	Red (Breeding)
Rissa tridactyla Kittiwake	Amber (Breeding)
Uria aalge Guillemot	Amber (Breeding)
Alca torda Razorbill	Amber (Breeding)
Fulmarus glacialis Fulmar	
Phalacrocorax aristotelis Shag	Amber (Breeding)
Anser anser Greylag Goose	Amber (Wintering)
Larus fuscus Lesser Black-backed Gull	Amber (Breeding)
Fratercula arctica Puffin	Amber (Breeding)

- **Razorbill.** This member of the auk family breeds exclusively at suitable coastal sites, where there are rocky cliffs to provide protection from predators. Indications are that populations at Irish colonies are stable.
- **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.
- **Puffin.** This unmistakable auk spends the winter far out to sea, only coming to shore in the summer to breed. Colonies are scattered around the coasts and the birds face an uncertain future due to the scale of industrial fishing combined with climate change.
- **Lesser Black-backed Gull.** The wintering range of this distinctive gull has expanded in Ireland by 55% since the early 1980s while breeding colonies have similarly increased.
- **Shag.** Nearly half of the global population of this seabird is to be found around Ireland and Britain. Its population has shown great fluctuation since counts began although the reasons for this are largely unknown. It is to be found around the Irish coast throughout the year.
- **Cormorant.** Wintering populations of this large, fish-eating bird have increased in Ireland since the early 1980s. Breeding also occurs widely along the coast and inland waterways. It is amber-listed due to a moderate decline in numbers.
- **Kittiwake.** These vocal seagulls spend most of their time at sea, returning to favoured coastal sites for breeding. Nesting is on suitable rocky cliffs around the Irish coast. These Irish colonies are considered stable.
- **Guillemot.** This member of the auk family is found only near land during the breeding season. They nest on suitable rocky outcrops and cliffs where there is protection from predators. The population at four of Ireland's largest colonies is estimated to have increased by 22% over the past decade.

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 *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.

Data collected to carry out the assessment

A site survey has shown that habitats on the site are not associated with either intertidal habitats or species.

There are no management plans for the designated areas in Baldoyle Bay however some work has been done to determine the site-specific trends or threats to their conservation status.

Tables 14 & 15 shows the most recent bird count data from Baldoyle Bay and these show that while numbers fluctuate from one year to the next, positive or negative trends are not clear. These data are likely to mask variations between species present and as table 2 shows there are a number of species here that are of high and medium conservation concern (red and amber lists). However a link between water quality and bird numbers cannot be established. In fact, the discharge of nutrient effluent from artificial fertilisers and poorly treated sewage can promote primary production that in turn provides food for wintering and resident birds in bays and estuaries (Nairn & O'Halloran eds., 2012).

Table 14 – Bird count data from the winters of 2005/06 – 2009/10 (Crowe et al., 2011; Boland & Crowe, 2006)

01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11
8,891	6,825	4,290	4,626	4,196	5,927	5,544	5,766	5,884	-

Table 15– Baldyole Bay bird count data (Irish Wetland Bird Survey)

Year	2010/11	2011/12	2012/13	2013/14	2014/15	Mean
Number	N/A	N/A	N/A	6,459	3,994	5,227

The status of features of interest in the Bladoyle Bay SPA has been assessed (NPWS, 2012c). Of those species with unfavourable status in the SPA, Ringed Plover and Bar-tailed Godwit have exhibited losses at Baldoyle Bay while the national population remains stable or has increased. It is therefore reasonable to assume that local factors are leading to declines. The NPWS list a number of factors that may be contributing to this including human disturbance (walkers

with or without dogs) and nutrient enrichment (pollution). The latter effect is exhibited by algal mats, typically Sea-lettuce *Ulva sp*. which covers the sediment surface at low tide. This is good for those species which feed on Sea-lettuce but bad for those which cannot reach their favoured prey under the mats.

Water quality in the catchment is monitored by the Environmental Protection Agency (EPA) which maintains a regular assessment programme. At the monitoring point along the Mayne, which enters Baldoyle Bay, site water quality has most recently been determined to be 'poor status'. Meanwhile the trophic status of Baldoyle Bay has been assessed as 'eutrophic'. The significant pressure on the Mayne systems derives from urban run-off (from www.epa.ie and www.catchments.ie).

Pollution may be a factor in the poor status of Bar-tailed Godwit and Ringed Plover at Baldoyle Bay due to reasons already described.

Pathway Analysis

There is a direct hydrological pathway from the site to Baldoyle Bay via the Mayne River. There is an indirect pathway through the foul sewer to Dublin Bay via the Ringsend WWTP.

The ecological status of the River Mayne and Baldoyle Bay are both failing to meet required standards. This is believed to be from nutrient sources/urban run-off. Although the exact cause of this is unknown, this may arise from misconnections whereby effluent from homes is discharging straight to the environment rather than the foul sewer. Unattenuated surface run-off may also be a contributing factor.

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

There are consequently pathways to a number of Natura 2000 sites. There are hydrological links to the Baldoyle Bay SAC (site code: 0199) and SPA (site code: 4016), South Dublin Bay and River Tolka Estuary SPA (site code: 4024), the South Dublin Bay SAC (site code: 0210), the North Bull Island SPA (site code: 4006) and the North Dublin Bay SAC (site code: 0206). The Poulaphouca Reservoir SPA (site code: 4063), from which drinking water supply for this development may originate, is also considered to fall within the zone of influence of this project.

Significance of Effects

Whether effects are significant or not must be measured against the conservation objectives of the SAC or SPA in question.

The specific conservation objectives which have been set for mudflats in the South Dublin Bay SAC (generic objectives only are available for other qualifying interests) .and qualifying interests in the North Dublin Bay SAC and Baldoyle Bay SAC relate to habitat area, community extent, community structure and community distribution within the qualifying interest. There are no objectives in relation to water quality (NPWS, 2013).

For the Baldoyle Bay SPA, South Dublin Bay & Tolka Estuary SPA and the North Bull Island SPA the conservation 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).

To maintain or restore the favourable conservation condition of the Annexed species for which the SPA has been selected. (NPWS, 2018).

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.

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.

Habitat Loss
The proposed development is not located within, or adjacent to, any SAC or SPA. No habitat loss can occur inside any Natura 2000 site.

Habitat Disturbance/Ex situ impacts
The site is approximately 1.7km from the boundary of the Baldoyle Bay SAC/SPA, and over 3km to the North Bull Island SPA. Because of this significant distance separating the two areas there is no pathway for loss or disturbance of habitats within any Natura 2000 site or other semi-natural habitats that may act as ecological corridors for important species associated with the qualifying interests or features of interest.

Wetland birds are known to feed on amenity grassland areas which are located at various points around Dublin City. No such areas are known from the Belmayne/Clongriffin area. The nearest such known areas are located in Portmarnock (~2km to the north-east) and Baldoyle (~2km to the south-east). This development is not likely to result in any ex-situ impacts.

Hydrological Impacts - wastewater
There is a pathway from the site via wastewater water flows to Dublin Bay via the Ringsend wastewater treatment plant.

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 based on two points:

1. There is no evidence that pollution through nutrient input is affecting the conservation objectives of the South Dublin Bay and River Tolka Estuary SPA.

2. Accepting that pollution is undesirable, regardless of the conservation objectives of the SPA, and would be contrary to the aims of the Water Framework Directive, then the upgrading works at Ringsend wastewater treatment plant will address future capacity demand.

No significant effects are likely to arise from this source to Natura 2000 sites in Dublin Bay.

Hydrological Impacts – surface water during operation
The integration of SUDS into the project design will ensure that no changes will occur to the quantity or quality of surface water run-off. These are standard measures which are included in all development projects and are not included here to avoid or reduce an effect to any Natura 2000 area. There are therefore not considered to be mitigation measure in an AA context. No significant effects can occur to Natura 2000 sites from this source.

Hydrological Impacts – surface water during construction
During the construction phase there will be extensive earth works and some sediment may enter the River Mayne, entrained in rain run-off. This will include re-profiling of a portion of the floodplain in this area to ensure that no homes are at risk of flooding. No works are to be undertaken to the river itself however and the riparian zone is to be maintained. While sediment can be detrimental to the ecological quality in rivers, the same is not the case for estuaries and tidally influenced habitats, which rely on vast quantities of sediment for their functioning.

Nevertheless, extensive works are planned for the floodplain area and using a precautionary approach, the potential for large quantities of silt to be washed downstream means that significant effects to the Baldoyle Bay SAC cannot be ruled out.

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

Flooding during the operation phase
No impacts are to occur to areas liable to flooding. The flood impact assessment has shown that proposed areas with housing and built development are outside the flood risk zone.

Amenity disturbance
The development is not likely to affect amenity use at Natura 2000 sites due to the nature and location of the development.

Japanese Knotweed
The stand of Japanese Knotweed is being treated with standard herbicide and its eradication is included within the Construction Management Plan for the development. However, this is not considered to pose a threat to any Natura 2000 area as there is no pathway for contamination of such sites. No significant effects can occur from this source.

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.

In terms of the conservation objectives of the SACs and SPAs, maintaining the extent and condition of important habitats and species populations is vital.

The catchment of the Mayne River has been substantially transformed in the past 15-20 years from farmland to built development. The area is currently a combination of open park spaces, with significant built development including residential and retail uses.

The cumulative effects of this type of urban growth can arise from replacing permeable ground with hard surfaces. This can result in increased risk of flooding and deterioration of water quality, primarily from the run-off of particulate matter and hydrocarbon residues (Mason, 1996). To combat this effect the Greater Dublin Strategic Drainage Study was published in 2005. This aims to ensure that new developments integrate sustainable drainage systems (SUDS) to maintain natural, or 'green field' rates of surface water run-off while also improving water quality in rivers. This development is fully complaint with these SUDS principles.

The first River Basin Management Plan (RBMP) was published under the EU's Water Framework Directive in 2010. This set out to attain 'good ecological status' of all water bodies by 2027 at the latest. It included a 'programme of measures' that was to address point or diffuse pressures on water quality. The Mayne River is currently assessed as 'poor' while Baldoyle Bay is 'eutrophic'. Under the second RBMP 2018-2021 the Mayne River is identified as one of 190 'priority areas for action'.

This project can be seen in combination with continued suburban style development in Clongriffin (and indeed across the Dublin region). This is planned for under relevant development plans, such as the Dublin City Development Plan 2016-2022. The planning authority has carried out an AA and concluded that the implementation of this plan would not result in significant effects to Natura 2000 areas.

The growth of population in the Dublin area is placing pressure on wastewater treatment infrastructure and plans are underway to increase capacity at Ringsend as well as development new treatment facilities in the north of the county, as detailed in the Fingal County Development Plan. Current compliance issues are not believed to be resulting in significant effects to Natura 2000 areas in Dublin Bay.

List of agencies consulted

Inland Fisheries Ireland was contacted for nature conservation observations as reprofiling works are to be undertaken to the floodplain of the River Mayne. A response to this was received on April 30th 2019 stating: “The Mayne River is a non-salmonid system however IFI is currently working with Fingal to try salmonid reintroduction. The study carried out by Fingal will also look at the inlet of brackish water to restore the brackish meadows and to allow for otters moving between the estuary and the river. There are flap valves at the end of the system which are now open in the hope that salmonids can move back upstream. The planned development is located on what we would consider to be the most natural and suitable habitat for Brown trout.”

Conclusions of Stage 1 Screening

Hydrological pathways exist to Baldoyle Bay; significant effects cannot be ruled out to the following area:

- Baldoyle Bay SAC

It is considered that the potential for large quantities of sediment to be washed into the Bay, due to the proximity of works to the Mayne River and extent of these works to be undertaken at the river’s floodplain, means that significant effects to habitats within the SAC cannot be ruled out at this stage.

Significant effects are not likely to occur to any other Natura 2000 area.

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