Screening Report for Appropriate Assessment of proposed Strategic Housing Development of Phase 5 Lands at Oldtown, Co. Dublin

prepared by OPENFIELD Ecological Services
for Gannon Properties

Pádraic Fogarty MSc, MIEMA

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1.0 INTRODUCTION

1.1 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. Pádraic has a primary degree in Analytical Science from DCU, and diplomas in Field Ecology (UCC), Environment and Geography (Open University) and Environmental Protection (IT Sligo). Since its inception in 2007 OPENFIELD has carried out numerous EcIAs for Environmental Impact Assessment (EIA), Appropriate Assessment under the EU Habitats Directive, as well as individual planning applications. Pádraic is a full member of the Institute of Environmental Management and Assessment (IEMA).

1.2 Protection of biodiversity

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

All life depends on biodiversity and its current global decline is a major challenge facing humanity. In 1992, at the Rio Earth Summit, this challenge was recognised by the United Nations through the Convention on Biological Diversity which has since been ratified by 193 countries, including Ireland. Its goal to significantly slow down the rate of biodiversity loss on Earth has been echoed by the European Union, which set a target date of 2010 for halting the decline. This target was not met but in 2010 in Nagoya, Japan, governments from around the world set about redoubling their efforts and issued a strategy for 2020 called 'Living in Harmony with Nature'. In 2011 the Irish Government incorporated the goals set out in this strategy, along with its commitments to the conservation of biodiversity under national and EU law, in the second and third national biodiversity action plans (Dept. of Arts, Heritage and the Gaeltacht, 2011; Department of Culture, Heritage and the Gaeltacht, 2017). A fourth plan is due for publication in 2022.

The main policy instruments for conserving biodiversity in Ireland have been the Birds Directive of 1979 and the Habitats Directive of 1992. Among other things, these require member states to designate areas of their territory that contain important bird populations in the case of the former; or a representative sample of important or endangered habitats and species in the case of the latter. These areas are known as Special Protection Areas (SPA) and Special Areas of Conservation (SAC) respectively. Collectively they form a network of sites across the European Union known as Natura 2000. A report into the

economic benefits of the Natura 2000 network concluded that “there is a new evidence base that conserving and investing in our biodiversity makes sense for climate challenges, for saving money, for jobs, for food, water and physical security, for cultural identity, health, science and learning, and of course for biodiversity itself” (EC, 2013).

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

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

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

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

The test at stage 1 AA Screening is that:

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

The test at stage 2 (Appropriate Assessment) is:

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

However, where this is not the case, a preliminary screening must first be carried out to determine whether or not a full AA is required. This screening is carried out by An Bord Pleanála.

Screening for Appropriate Assessment

Article 6(3) of the Habitats Directive states:

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

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

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

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

An Bord Pleanála's determination as to whether an Appropriate Assessment is required must be made on the basis of objective information and must be recorded.

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

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

1.3 Purpose of this Report

This document provides for a screening of Phase 5 of a proposed residential development in Oldtown Co. Dublin, and its potential effects in relation to Natura 2000 sites (SACs and SPAs).

This document will assess whether effects to the Natura 2000 network are likely to occur as a result of the construction or operation phases of this project. It will determine whether these effects are likely to be significant, and if so, will recommend that a full appropriate assessment be carried out.

1.4 Methodology

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

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

Methodology
The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled 'Assessment of plans and projects significantly affecting Natura 2000 sites 'Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (Oxford Brookes University, 2001). Chapter 3, part 1, of this document deals specifically with screening while Annex 2 provides the template for the screening/finding of no significant effects report matrices to be used.

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

Step 1: Management of the Site
This determines whether the project is necessary for the conservation management of the site in question.

Step 2: Description of the Project
This step describes the aspects of the project that may have an impact on the Natura 2000 site.

Step 3: Characteristics of the Site
This process identifies the conservation aspects of the site and determines whether negative impacts can be expected as a result of the plan. This is done through a literature survey and consultation with relevant stakeholders – particularly the National Parks and Wildlife Service (NPWS). All potential effects are identified including those that may act alone or in combination with other projects or plans.

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

Step 4: Assessment of Significance
Assessing whether an effect is significant or not must be measured against the conservation objectives for the Natura area in question. If this analysis shows that significant effects are likely then a full AA will be required.

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

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

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

2.0 Step 1 – Analysis of the Natura 2000 network

2.1 Site location and extent

The development site is located in the townland of Oldtown, Co. Dublin, approximately 2km north-west of the town of Swords. This location is shown in figure 1 which also shows its position in relation to the boundary of nearby Natura 2000 sites.

There is no prescribed radius around a development site for determining what Natura 2000 sites should be studied. This is determined by the zone of influence of the project. Figure 1 shows the development site location and as can be seen, there are two Natura 2000 sites in this vicinity: Malahide Estuary SPA and SAC. In additional to these European designations Malahide Estuary is also recognised as a wetland of international importance under the RAMSAR Convention (site 833). It is also a proposed Natural Heritage Area, a designation under national legislation.

OSI mapping shows that the Saucerstown Stream flows close to the development site boundary and this is a tributary of the Broadmeadow, entering the Irish sea at Malahide estuary. The development site is in an area shown as agricultural land in aerial photography from 2000. Significant development since then has seen urban style encroachment from the east. A feeder road on the Mooretown lands has been granted permission (reference no.: F12A/0270) as well as Phase 1 and 4C of the development at Oldtown is now complete, while Phases 2, 3, 4A and 4B are underway. The Phase 5 site boundary is shown in figure 2.

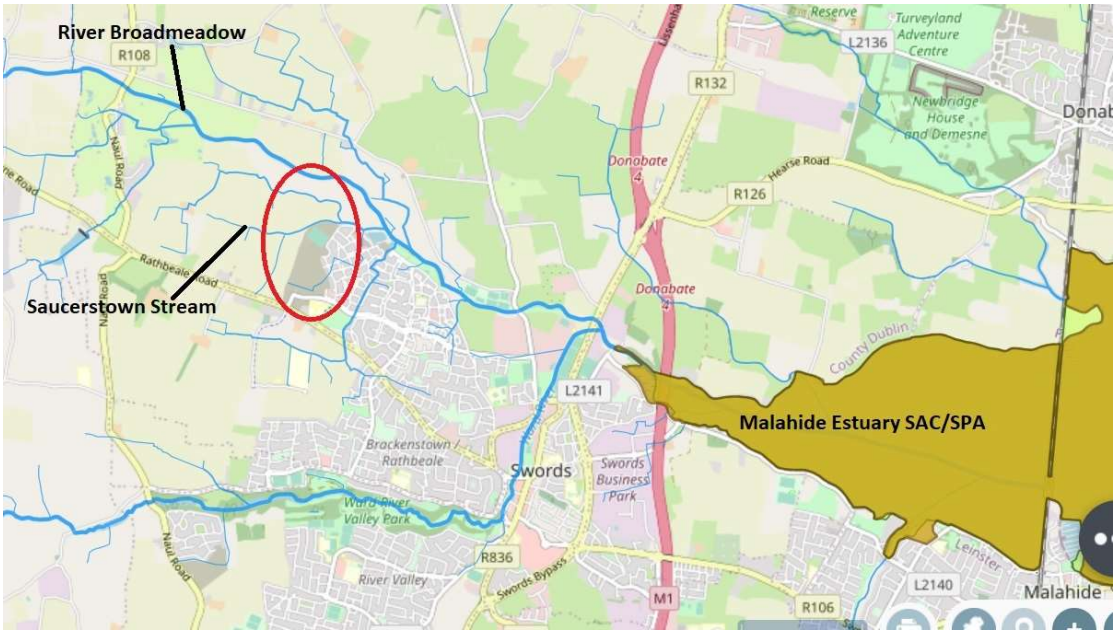

Figure 1 – Location of development site at Oldtown, Co. Dublin. The SAC boundary is shown in tan while that of the SPA is shown in lime green, there is significant overlap between the SAC and SPA in this location (from www.epa.ie).

Site surveys were carried out on the 17th of May 2018, and August 27th 2020 and October 21st 2021 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 Phase 5 lands are predominantly composed of a field of former arable crops but which is now mostly **bare ground – ED2**. Since the cessation of farming ruderal and opportunistic plants have begun to colonise however disturbance means that overall vegetation cover is low. Annual plants are present in low levels of abundance, e.g. Annual Meadow-grass *Poa annua,* Groundsel *Senecio vulgaris,* Wild Oat *Avena fatua,* and Fumatory *Fumaria sp.*

Elsewhere, land has been disturbed as part of adjacent site works and land is **buildings and artificial surfaces – BL3** or **recolonising bare ground – ED3**.

The remaining patch of open land can be described as a **dry meadow – GS2** with rough grasses, Docks *Rumex sp.,* Clovers *Trifolium sp.* and Vetches *Vicia sp.*

Distinct areas to the north and east are labelled A, B and C. Areas A & B are within fields of **improved agricultural grassland – GA1.** Area A is bisected by a **hedgerow – WL1** which is composed of Elder *Sambucus nigra,* Hawthorn *Crataegus nigra,* Blackthorn *Prunus spinosa* with Nettles *Urtica dioica* and rough grasses. It is not associated with any water course, e.g. drainage ditch. To the north, this hedgerow structure is characterised by mature Hawthorn. Area C is entirely composed of **bare soil – ED2**. Areas A, B and C are to be developed as open space.

There are no alien invasive species growing on the site. No plants which are considered rare or protected were recorded during the site survey or during previous surveys. There are no historic records of such plants. All habitats described are shown as a habitat map in figure 2.

The lands are not suitable for regularly occurring populations of wetland, wintering or wading birds which may be qualifying interests of coastal Natura 2000 sites, e.g. the Malahide Estuary SPA. These birds are typically associated with intertidal habitats close to the shore, however some species are known to avail of inland amenity grasslands for supplementary feeding, notably the Light-bellied Brent Goose *Anser albifrons.* No such habitats are available on the development lands.

Figure 2 – Indicative site boundary of Phase 5 of the Oldtown site (in red line). Note there are no Natura 2000 sites in this view (aerial photo from www.google.ie **).**

A series of wintering bird surveys was carried out between November 2021 and March 2022 by Hugh Delaney, a freelance Ecologist. On ten dates surveys were undertaken from sunrise to sunset, recording all bird behaviour. No wetland, wading, wintering birds which are qualifying interests of the Malahide Estuary were recorded at any stage.

The proposed site for the Stormwater storage tank is located on the junction of the Glen Ellan Road and the Balheary Road, Swords, Co. Dublin. The purpose of this tank is to alleviate known constraints in the foul water network that services the Oldtown / Mooretown / Holybanks lands catchments. Currently this foul sewer overflows in an uncontrolled manner to the River Ward during storm events. This element of the project will eliminate this uncontrolled overflow and

introduce a controlled overflow to the River Broadmeadow. While it is not desirable from an environmental perspective to have an overflow to water courses, it is preferable to surcharging of the tank and network to adjacent roads, footpaths and nearby residential units. While this proposed storage tank will have an overflow outfall to the Broadmeadow River, the construction of the storage tank itself will ultimately *reduce* the quantum of current overflows experienced on the existing network which will **have a positive net impact on the environment**. The River Ward ultimately joins the River Broadmeadow before reaching the Malahide Estuary and so the net effect of this aspect of the project on water quality in the Malahide Estuary will be positive.

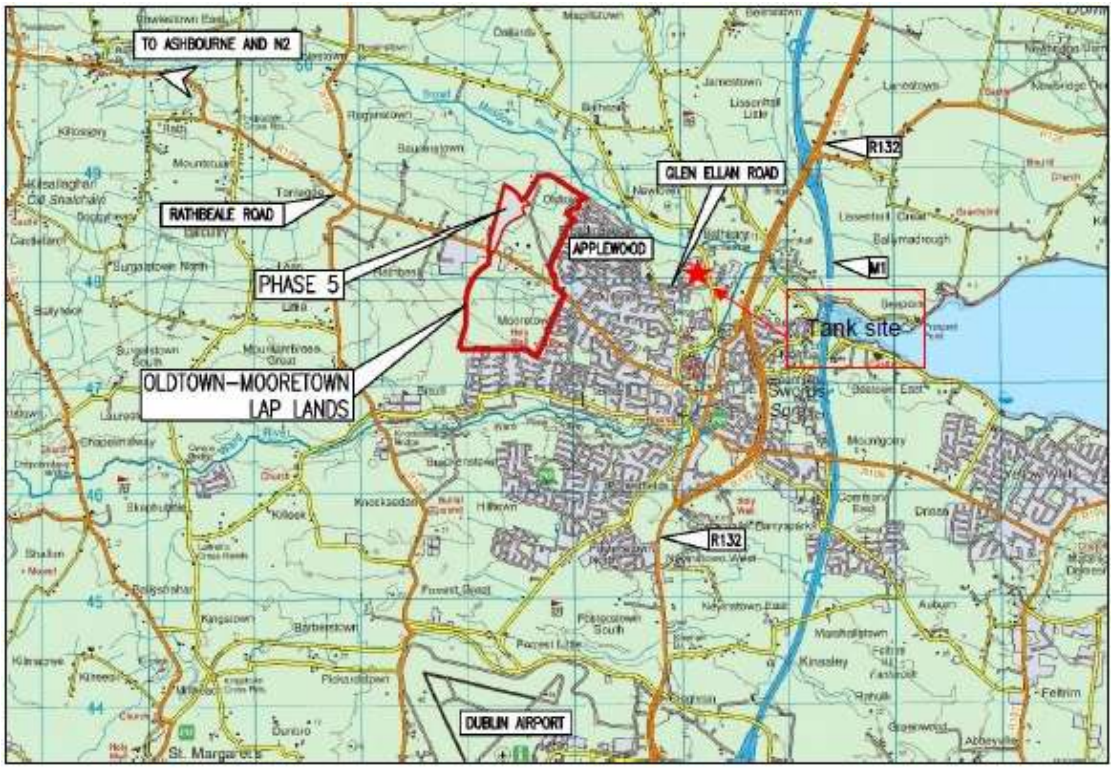

Figure 3 – Site location showing the location of the proposed surface water tank on the Balheary Road.

The location of the proposed storage tank lies within an area of **dry meadow – GS2** with Dandelions *Taraxacum sp.,* Thistles *Cirsium sp.,* Docks *Rumex sp.,* Cock's-foot *Dactylis glomerata,* Ribwort Plantain *Plantago lanceolata* and patches of Brambles *Rubus fruticosus agg.*

The route of the proposed outfall pipe passes an area of **amenity grassland – GA2** with a line of mid-aged Ash *Fraxinus excelsior* and Maple *Acer sp.* trees. However the pipe itself will be installed under the existing road.

The route then passes through an area of amenity grassland at the riparian zone of the River Broadmeadow. The river in this location is a **lowland river – FW2** with grassy banks and is close to a bridge/road crossing. There are no trees or natural riparian vegetation in this location. The riverbank at the location of the proposed outfall pipe is composed of granite boulders installed to prevent erosion. The water at the time of survey was shallow and the river substrate

was characterised by cobbles and stones with growths of the green algae *Cladophora sp.*

2.2 Natura 2000 Sites

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

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

It has already been stated that the site is not located within or directly adjacent to any Natura 2000 site. For projects of this nature an initial 15km radius is normally examined. This is an arbitrary distance however and impacts can occur at distances greater than this. There are a number of Natura 2000 sites within this radius.

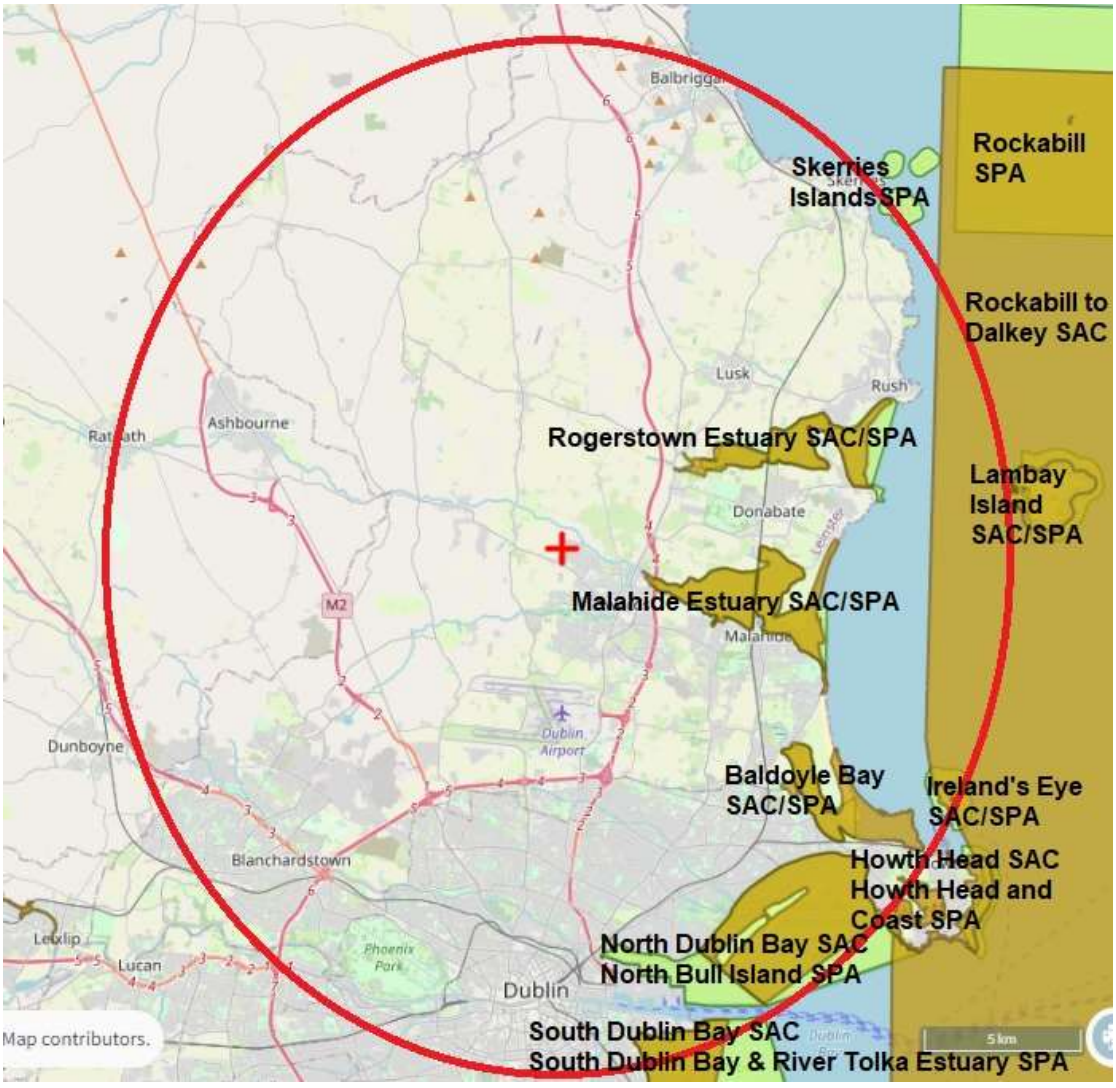

Figure 4 – Approximate 15km radius around the proposed development (red circle) site and Natura 2000 sites.

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* (NPWS, 2013a & 2014a).

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	Intermediate
1310	Salicornia and other annuals colonizing mud and sand	Intermediate
1330	Atlantic salt meadows	Intermediate
1410	Mediterranean salt meadows	Intermediate

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

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

Mudflats (code 1140)
Permanent habitat area stable or increasing (estimated at 409 hectares); estuarine muds dominated by polychaetes and crustaceans community complex maintained in a natural condition.

Salicornia mudflats (1310)
Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica.*

Atlantic/Mediterranean Salt Meadows (1330/1410)
Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica.*

The Baldoyle Bay SPA (site codes: 4016) is composed of estuarine habitats. They are some of the most productive in the world and the nutrients that are deposited here fuel primary and secondary production (levels in the food chain) that in turn provide food for internationally significant numbers of wintering birds (Little, 2000). 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	Amber (Breeding & Wintering)	Intermediate unfavourable
Limosa lapponica Bar-tailed godwit	Red (Wintering)	Highly unfavourable
Pluvialis apricaria Golden plover	Red (Breeding & Wintering)	Unfavourable
Pluvialis squatarola Grey plover	Red (Wintering)	Unfavourable
Tadorna Tadorna Shelduck	Amber (Breeding & Wintering)	Favourable
Wetlands & Waterbirds		

[1] Birds of Conservation Concern in Ireland. Gilbert et al., 2021
[2] Conservation Objectives Supporting Document. Version 1. National Parks & Wildlife Service. 2012.

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast since the early 1980s. 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 factors that may be contributing to this including human disturbance (walkers with or without dogs) and nutrient enrichment (pollution). The latter effect is exhibited by algal mats, typically Sea-lettuce Ulva sp. which covers the sediment surface at low tide. This is good for those species which feed on Sea-lettuce but bad for those which cannot reach their favoured prey under the mats.

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

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

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 (NPWS 2013c & 2014b).

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
1310	Salicornia and other annuals colonizing mud and sand	Favourable
1330	Atlantic salt meadows	Inadequate
1410	Mediterranean salt meadows	Inadequate
1210	Annual vegetation of drift lines	Inadequate
2110	Embryonic shifting dunes	Inadequate
2120	Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	Inadequate
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)	Bad
2190	Humid dune slacks	Inadequate
1395	*Petalophyllum ralfsii* Petalwort	Good

- **Annual vegetation of drift lines (1210)** This habitat of the upper shore is characterised by raised banks of pebbles and stones. They are inhabited by a sparse but unique assemblage of plants, some of which are very rare. The principle pressures are listed as gravel extraction, the building of pipelines and coastal defences.
- **Embryonic shifting dunes (2110).** As their name suggests these sand structures represent the start of a sand dune's life. Perhaps only a meter high they are a transient habitat, vulnerable to inundation by the sea, or developing further into white dunes with Marram Grass. They are threatened by recreational uses, coastal defences, trampling and erosion.
- **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120).** These are the second stage in dune formation and depend upon the stabilising effects of Marram Grass. The presence of the grass traps additional sand, thus growing the dunes. They are threatened by erosion, climate change, coastal flooding and built development.
- **Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130 – priority habitat).** These are more stable dune systems, typically located on the landward side of the mobile dunes. They have a more or less permanent, and complete covering of vegetation, the quality of which depends on local

hydrology and grazing regimes. They are the most endangered of the dune habitat types and are under pressure from built developments such as golf courses and caravan parks, over-grazing, under-grazing and invasive species.

- **Humid dune slacks (2190).** These are wet, nutrient enriched (relatively) depressions that are found between dune ridges. During winter months or wet weather these can flood and water levels are maintained by a soil layer or saltwater intrusion in the groundwater. There are found around the coast within the larger dune systems.
- **Petalwort (1395).** There are 30 extant populations of this small green liverwort, predominantly along the Atlantic seaboard but also with one in Dublin. It grows within sand dune systems and can attain high populations locally.

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

Annual vegetation of drift lines (code: 1210)
Habitat areas stable or increasing subject to natural variation; no decline in habitat distribution; maintain physical and vegetation structure without any physical obstructions, maintain vegetation structure and composition subject to natural variations.

Atlantic/Mediterranean Salt Meadows (1330/1410)
Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica.*

Embryonic shifting dunes (code: 2110)
Habitat areas stable or increasing subject to natural variation; no decline in habitat distribution; maintain physical and vegetation structure without any physical obstructions, maintain vegetation structure and composition subject to natural variations.

Salicornia and other annuals colonising mud and sand (code: 3110)
Habitat area stable or increasing; no decline in habitat distribution; maintain physical and vegetation structure.

Fixed Coastal Dunes/Shifting Dunes (2130/2120)
Maintain habitat area and distribution including physical structure (functionality and sediment supply, percentage of bare ground, sward height). Maintain vegetation structure as measured by zonation, vegetation cover, typical species and sub-communities. Absences of the invasive *Hippophae rhamnoides.*

Humid dune slacks (code: 2190)
Area increasing, subject to natural processes including erosion and succession; No decline or change in habitat distribution, subject to natural processes; Maintain the natural circulation of sediment and organic matter, without any physical obstructions; Maintain natural hydrological regime; Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession; Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground; Maintain structural variation within sward; Maintain range of subcommunities with typical species; Maintain less than 40% cover of creeping willow (Salix repens); Negative indicator species (including non-natives) to represent less than 5% cover.

Petalwort *Petalophyllum ralfsii* (code: 1395)
No decline in known populations. No decline in population, estimated at 5,824 thalli. No decline in area of suitable habitat. Maintain hydrological conditions; maintain open, low vegetation, with a high percentage cover of bryophytes (small acrocarps and liverwort turf) and bare ground.

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

Table 4 – Features of interest for the North Bull Island SPA

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

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

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

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

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

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

This SPA is largely coincident with the South Dublin Bay SAC boundary with the exception of the Tolka Estuary. These designations encompass all of the intertidal areas in Dublin Bay from south of Bull Island to the pier in Dun Laoghaire. Wintering birds in particular are attracted to these areas in great number as they shelter from harsh conditions further north and avail of the available food supply within sands and soft sediments (NPWS, 2015b). Table 6 lists the features of interest.

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

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

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

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

[3] https://c0amf055.caspio.com/dp/f4db30005dbe20614b404564be88

Turnstone	272

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 – Qualifying interests 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]

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

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

The **South Dublin Bay SAC** (side code: 0210). 15km from the development site)

This SAC is concentrated on the intertidal area of Sandymount Strand (NPWS, 2015d). It has four qualifying interests: mudflats and sandflats not covered by seawater at low tide (1140), annual vegetation of drift lines (1210), Salicornia and other annuals colonising mud and sand (1310) and Embryonic shifting dunes (2110).

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

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

Mudflats (code 1140)
Permanent habitat area stable or increasing (estimated at 720 hectares); Maintain the extent of the Zostera-dominated community, subject to natural processes; Conserve the high quality of the Zostera-dominated community, subject to natural processes; Conserve the following community type in a natural condition: Fine sands with Angulus tenuis community complex.

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

Malahide Estuary SAC and SPA (code: 0205 and 4025). 1.5km from the development site.
The estuary is designated for its intertidal habitats and important wintering bird population as detailed in table 8 (NPWS, 2017a & 2013f).

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 is 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)		Inadequate
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. The overall status of the habitat is inadequate and declining due to pollution from agriculture, forestry, wastewater sources and marine aquaculture.
- **Salicornia mudflats (1310)**: This is a pioneer saltmarsh community and so is associated with intertidal areas. It is 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.

Site specific conservation objectives have been published for this SAC (NPWS, 2013g) and are summarised here:

Mudflats (code 1140)
Permanent habitat area stable or increasing (estimated at 311 hectares); Maintain the extent of the Zostera-dominated community and the Mytilus edulis-dominated community complex, subject to natural processes; Conserve the high quality of the Zostera-dominated community, subject to natural processes; Conserve the high quality of the Mytilus edulis dominated community, subject to natural processes; Conserve the following community types in a natural condition: Fine sand with oligochaetes, amphipods, bivalves and polychaetes community complex; Estuarine sandy mud with Chironomidae and Hediste diversicolor community complex; and Sand to muddy sand with Peringia ulvae, Tubificoides benedii and Cerastoderma edule community complex.

Salicornia mudflats (1310)
Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica.*

Atlantic/Mediterranean Salt Meadows (1330/1410)
Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica.*

Fixed Coastal Dunes/Shifting Dunes (2130/2120)
Maintain habitat area and distribution including physical structure (functionality and sediment supply, percentage of bare ground, sward height). Maintain vegetation structure as measured by zonation, vegetation cover, typical species and sub-communities. Absences of the invasive *Hippophae rhamnoides.*

Table 8 – Qualifying Interests for Malahide Estuary SPA

Species	National Status[4]
Anas acuta Pintail	Amber (Wintering)
Branta bernicula hrota Light-bellied brent goose	Amber (Wintering)
Bucephala clangula Goldeneye	Red (Wintering)
Calidris alpina Dunlin	Red (Breeding & Wintering)
Calidris canutus Knot	Red (Wintering)
Haematopus ostralegus Oystercatcher	Red (Breeding & Wintering)
Limosa lapponica Bar-tailed godwit	Red (Wintering)
Limosa limosa Black-tailed godwit	Red (Wintering)
Mergus serrator Red-breasted Merganser	Amber (Breeding & Wintering)
Pluvialis apricaria Golden Plover	Red (Breeding & Wintering)
Pluvialis squatarola Grey Plover	Red (Wintering)
Podiceps cristatus Great-crested Grebe	Red (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.

[4] Birds of Conservation Concern in Ireland. Gilbert et al., 2021

- **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.

Table 9 – Mean count of bird species (qualifying interests) for Malahide Estuary SPA from the Irish Wetland Birds Survey (IWeBS) from 2010 - 2020[5]

Species	Mean
Light-bellied Brent Goose	3,453
Sanderling	500
Dunlin	5,951
Knot	5,093
Black-headed Gull	3,340
Ringed Plover	176
Pintail	19

[5] https://c0amf055.caspio.com/dp/f4db30005dbe20614b404564be88

Light-bellied Brent Goose	932
Goldeneye	34
Dunlin	515
Knot	414
Oystercatcher	1,050
Bar-tailed Godwit	89
Black-tailed Godwit	387
Red-breasted Merganser	71
Golden Plover	77
Grey Plover	54
Shelduck	322
Redshank	

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

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

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) (NPWS, 2013i & 2014c).

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 10 & 11.

Table 10 – 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 arenaria* ('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.

Site specific conservation objectives have been published for this SAC (NPWS, 2013j) and are summarised here:

Estuaries (code: 1130)
Permanent habitat area stable or increasing (estimated at 268 hectares); Maintain the extent of the Zostera-dominated community and the Mytilus edulis-dominated community, subject to natural processes; Conserve the high quality of the Zostera-dominated community, subject to natural processes; Conserve the high quality of the Mytilus edulis dominated community, subject to natural processes; Conserve the following community types in a natural condition: Sand to coarse sediment with Nephtys cirrosa and Scolelepis squamata community complex; Estuarine sandy mud to mixed sediment with Tubificoides benedii, Hediste diversicolor and Peringia ulvae community complex.

Mudflats (code 1140)
Permanent habitat area stable or increasing (estimated at 370 hectares); Maintain the extent of the Zostera-dominated community and the Mytilus edulis-dominated community, subject to natural processes; Conserve the high quality of the Zostera-dominated community, subject to natural processes; Conserve the high quality of the Mytilus edulis dominated community, subject to natural processes; Conserve the following community

types in a natural condition: Sand to coarse sediment with Nephtys cirrosa and Scolelepis squamata community complex; Estuarine sandy mud to mixed sediment with Tubificoides benedii, Hediste diversicolor and Peringia ulvae community complex.

Salicornia mudflats (1310)
Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica.*

Atlantic/Mediterranean Salt Meadows (1330/1410)
Maintain habitat area and distribution including physical structure (sediment supply, creeks and pans, flooding regime). Maintain vegetation structure as measured by vegetation height, vegetation cover, typical species and sub-communities. Absences of the invasive *Spartina anglica.*

Fixed Coastal Dunes/Shifting Dunes (2130/2120)
Maintain habitat area and distribution including physical structure (functionality and sediment supply, percentage of bare ground, sward height). Maintain vegetation structure as measured by zonation, vegetation cover, typical species and sub-communities. Absences of the invasive *Hippophae rhamnoides.*

Table 11 – Site features of interest for the Rogerstown Estuary SPA

Species and EU Code	**National Status**
Shoveler (*Anas clypeata*) [A056]	Amber (Wintering)
Greylag Goose (*Anser anser*) [A043]	Amber (Wintering)
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	Amber (Wintering)
Knot (*Calidris canutus*) [A143]	Red (Wintering)
Dunlin (*Calidris alpina*) [A149]	Red (Breeding & Wintering)
Ringed Plover (*Charadrius hiaticula*) [A137]	Green
Oystercatcher (*Haematopus ostralegus*) [A130]	Red (Breeding & Wintering)
Black-tailed Godwit (*Limosa limosa*) [A156]	Red (Breeding)
Grey Plover (*Pluvialis squatarola*) [A141]	Red (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' (Gilber et al., 2021) 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.

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

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

Howth Head SAC and Howth Head Coast SPA. 14.3km from the development site.

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 (NPWS, 2013l).

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

Vegetated sea cliffs (code: 1230)
Habitat areas stable or increasing subject to natural processes; no decline in habitat distribution; No alteration to natural functioning of geomorphological and hydrological processes, including groundwater quality, due to artificial structures; maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession; maintain vegetation structure, composition.

European Dry Heaths (4030)
Habitat area stable or increasing subject to natural processes; no decline in habitat distribution; maintain soil nutrient status within natural range; maintain vegetation composition and structure (including negative indicator species and absence of burning); less than 10% disturbed/bare ground.

The Howth Head Coast SPA (code: 4133) is home to large colonies of breeding seabirds, particularly Kittiwake, the SPAs only feature of interest. These vocal seagulls spend most of their time at sea, returning to favoured coastal sites for breeding. Nesting is on suitable rocky cliffs around the Irish coast (NPWS, 2011a). These Irish colonies are considered stable (Balmer et al., 2013).

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

Rockabill to Dalkey Island SAC (site code: 0300).
This is an off-shore (i.e. marine) SAC (NPWS, 2014d). It has two qualifying interests which are reefs and Harbour Porpoise *Phocoena phocoena*. Conservation objectives for this SAC have been published to maintain or restore the area of habitat and status of the population to 'favourable conservation status'.

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

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

Reefs (code: 1170)
The permanent habitat area and distribution of the habitat are stable or increasing; the biological composition is conserved.

Harbour Porpoise (code: 1351)
Species range within the site should not be restricted by artificial barriers to site use; Human activities should occur at levels that do not adversely affect the harbour porpoise community at the site.

Ireland's Eye SAC/SPA.
Ireland's Eye is an uninhabited island 1.5km north of Howth harbour (NPWS, 2014e & 2011b). 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.

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

Perennial vegetation of stony bank (code: 1220)
Habitat areas stable or increasing subject to natural variation; no decline in habitat distribution; maintain physical and vegetation structure without any physical obstructions, maintain vegetation structure and composition subject to natural variations.

Vegetated sea cliffs (code: 1230)
Habitat areas stable or increasing subject to natural processes; no decline in habitat distribution; No alteration to natural functioning of geomorphological and hydrological processes, including groundwater quality, due to artificial structures; maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession; maintain vegetation structure, composition.

The Ireland's Eye SPA (code: 4117) is centred on the island's value as a large seabird colony. It is one of only six number of locations where Gannets *Morus bassanus* regularly breed in Ireland. The features of interest for the SPA are given in table 12.

Table 12 – Features of Interest for the Ireland's Eye SPA (from NPWS)

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

- **Cormorant.** Wintering populations of this large, fish-eating bird have increased in Ireland since the early 1980s. Breeding also occurs widely along the coast and inland waterways. It is amber-listed due to a moderate decline in numbers.
- **Herring Gull.** This large gull breeds predominantly around the Irish coast and only occasionally inland. Numbers at these colonies have fallen by 60% since 1969, a decline which is attributed to a number of sources including a reduction in available food at landfill, botulism and predation.
- **Guillemot.** This member of the auk family is found only near land during the breeding season. They nest on suitable rocky outcrops and cliffs where there is protection from predators. The population at four of Ireland's largest colonies is estimated to have increased by 22% over the past decade.
- **Razorbill.** This member of the auk family breeds exclusively at suitable coastal sites, where there are rocky cliffs to provide protection from predators. Indications are that populations at Irish colonies are stable.

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

Lambay Island SAC/SPA.

This island is located 4km off the coast of North Dublin and is characterised by steep cliffs on three sides (NPWS, 2014f). 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 13 while the features of interest of the SPA are given in table 14.

Table 13 – 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	Good
Common Seal *Phoca vitulina*		Good

- **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.

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

Vegetated sea cliffs (code: 1230)
Habitat areas stable or increasing subject to natural processes; no decline in habitat distribution; No alteration to natural functioning of geomorphological and hydrological processes, including groundwater quality, due to artificial structures; maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession; maintain vegetation structure, composition.

Reefs (code: 1170)
The permanent habitat area and distribution of the habitat are stable or increasing; the biological composition is conserved.

Grey Seal (code: 0204)
Species range within the site should not be restricted by artificial barriers to site use; The breeding sites should be maintained in a natural condition; The moult haul-out sites should be maintained in a natural condition; the resting haul-out sites should be maintained in a natural condition; human activities should occur at levels that do not adversely affect the seal population at the site.

Table 14 – Features of Interest for the Lambay Island SPA (from NPWS)

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

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

Skerries Island SPA (code: 4122).
This is a collection of three uninhabited islands between 1-1.5km off the coast of Dublin. The SPA boundary includes not only the islands themselves but a 200m wide band of marine habitat around each one of them. The islands are of international importance for both breeding seabirds and wintering species (NPWS, 2009).

The special conservation interests for the SAC (the reasons why the site is of European value) are detailed in table 14.

Table 15 – Special Conservation Interests for Skerries Islands SPA

Species	National Status[6]
Arenaria interpres Turnstone	Amber (Wintering)
Branta bernicula hrota Light-bellied brent goose	Amber (Wintering)
Calidris maritima Purple Sandpiper	Green (Wintering)
Larus argentatus Herring Gull	Amber (Breeding)
Shag *Phalacrocorax aristotelis*	Amber (Breeding)
Phalacrocorax carbo Cormorant	Amber (Breeding & Wintering)

- **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.
- **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.
- **Purple Sandpiper.** Wintering Purple Sandpipers are found on rocky shores around the Irish coast. Although some range contraction has been recorded this may be due to poor recording coverage rather than an underline decline in population.
- **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.
- **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.

[6] Birds of Conservation Concern in Ireland. Gilbert et al., 2021

- **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.

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

Pathway Analysis

There is a direct hydrological pathway from the development site to the Malahide Estuary via the Saucerstown Stream and the Broadmeadow River. There also an indirect pathway to the Malahide Estuary from the sewer system/ wastewater treatment plant.

There are consequently pathways to two Natura 2000 sites: Malahide Estuary SAC (site code: 0205) and SPA (site code: 4025).

There are no direct or indirect, surface, terrestrial or hydrological pathways to any other Natura 2000 site.

Table 16 – Summary table of Natura 2000 sites

Natura 2000 sites found to lie within the zone of influence of the project
Malahide Estuary SAC
Malahide Estuary SPA
Natura 2000 sites examined but found not to lie within the zone of influence of the project
North Dublin Bay SAC
North Bull Island SPA
South Dublin Bay SAC
South Dublin Bay and River Tolka Estuary SPA
Baldoyle Bay SAC
Baldoyle Bay SPA
Howth Head SAC
Howth Head Coast SPA

Rockabill to Dalkey SAC
Rogerstown Estuary SAC
Rogerstown Estuary SPA
Rockabill SPA
Lambay Island SAC
Lambay Island SPA
Ireland's Eye SAC
Ireland's Eye SPA
Skerries Islands SPA

3.0 Step 2 – Analysis of the Project

This application is for the construction and operation of residential housing units and all associated services and infrastructural works. It is described thus, as per the planning application:

A proposed Strategic Housing Development consisting of the removal of the temporary site office/site compound structures on site and the construction of 377 no. residential units comprising of duplexes, apartments and houses, all with associated car parking; a childcare facility with associated car parking; landscaping including play equipment; boundary treatments; public lighting; and all associated engineering and site works necessary to facilitate the development including proposed vehicular accesses onto Miller's Avenue, and a proposed stormwater storage tank (with proposed vehicular/service access onto Balheary Road) and overflow outfall gravity sewer to the Broadmeadow River with associated manholes on lands locally known as the Celestica/Motorola site, junction of Glen Ellan Road and Balheary Road, and at/on Balheary Road.

The construction phase will involve the use of standard construction materials. Treelines and drainage ditches are to be preserved.

Surface water will pass to the Broadmeadow River via an existing drainage network for this site. This comprises an open pond attenuation area and conforms with the Greater Dublin Strategic Drainage Study (GDSDS). Outfall from the site will be controlled by a hydrobrake flow control mechanism. The headwall and outfall to the Broadmeadow have already been constructed.

SUDS are standard measures in all development projects and are not included here to reduce or avoid any effect to a Natura 2000 site.

Foul wastewater from the proposed development will be sent to the wastewater treatment plant at Swords. This plant is operated by Irish Water and discharges treated effluent to the Broadmeadow Estuary under licence from the EPA (D0024-01). The Annual Environmental Report (AER) for the plant for 2020 showed that the discharge was fully compliant with emission limit standards Monitoring of the receiving environment suggested that "The discharges from the wastewater treatment plants do not have an observable negative impact on the Water Framework Directive status". The Swords plant discharges into the Broadmeadow River which in turn enters the sea at Malahide estuary. The treatment capacity is 90,000 P.E. (population equivalent). According to the AER the remaining capacity is 11,391 P.E. The AER states that capacity will not be exceeded within the next three years.

Water for domestic purposes will be sourced from a mains supply which originates in the River Liffey at an abstraction point at Leixlip. This reservoir is not within, or upstream of any freshwater Natura areas. The proposed site layout is shown in figure 3.

Modelling carried out by Irish Water, the full results of which are presented in the Stormwater Storage Tank Report prepared for this application by Waterman Moylan, show that the stormwater tank will be capable of containing a 1-in-5 year storm event, i.e. no overflow will arise during this scenario.

In exceptional circumstances, i.e. during a 1-in-10 to 1-in-30 year rainfall event, the storm water tank will overflow to the River Broadmeadow. The modelling shows that the maximum overflow during a 1-in-10 year event, and accounting for climate change, will be 7m3. This increases to 606m3 during a 1-in-20 year event and 938m3 during the 1-in-30 year event.

Currently storm water overflows occur on this sewer line, leading to discharges to the River Ward. The proposed development will reduce the frequency and intensity of overflow events. A comparison figure under the 1-in-10 year event, and in the absence of the proposed stormwater tank, shows that the overflow will be 1,242m3. According to the Waterman Moylan report:

"Upon comparison of all figures given above for the different scenarios, rainfall event frequencies, and whether inclusive or non-inclusive of climate change factors, it is demonstrated that the construction of the proposed storage tank will prevent or significantly reduce the frequency and/or volume of overflow, compared to if a "do nothing approach" were to be taken to the situation.
[…]

The provision of the proposed stormwater storage tank will ensure that there will be significantly less surcharge events, or at worst significantly reduced surcharge overflow volumes occurring to the Broadmeadow River/Ward River."

The proposed development will eliminate a source of ongoing and uncontrolled pollution from the River Ward. Instead, stormwater will be diverted into the tank

and any overflows from the tank will discharge to the Broadmeadow. At the Malahide Estuary, downstream of the confluence of these rivers, the net impact on water quality will be positive, primarily by reducing the frequency and magnitude of uncontrolled overflow events.

During the construction phase there will be disturbance of soil as well as works at the banks of the River Broadmeadow.

Figure 3 – Final Site layout.

4.0 Step 3 – Analysis of Other Plans and Projects

Implementation of the WFD will result in continued improvements to water quality in the Malahide Estuary. Environmental water quality can be impacted by the effects of surface water run-off from areas of hard standing. These impacts are particularly pronounced in urban areas and can include pollution from particulate matter and hydrocarbon residues, and downstream erosion from accelerated flows during flood events. There can be no negative impact to surface water quality leaving the development site due to the attenuation measures which are planned.

In 2005 the Greater Dublin Drainage Study (GDDS) was published as a policy document designed to provide for drainage infrastructure to 2030. The implementation of this policy will see broad compliance with environmental and planning requirements in an integrated manner. This is likely to result in a long-term improvement to the quality and quantity of storm water run-off in the capital. This project is complaint with the requirements of this policy.

The Oldtown lands are zoned RA (new residential communities subject to the provision of the necessary social and physical infrastructure) under the Fingal County Development Plan 2017-2023 and were subject to the Oldtown-Mooretown Local Area Plan 2010 before it expired in July 2020. The primary objectives of the LAP are recognised and considered in the preparation and detailed design of this planning application.

There are a number of extant primary or ‘parent’ planning permissions for the Oldtown lands, summarised in Table 17.

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A combined total of 967 dwellings, 5 crèches and 1537sqm of retail uses have been granted planning permission. Of these, 647 dwellings are complete and 207 dwellings are under construction.

New housing developments in this vicinity, including at Oldtown, Holybanks and Mooretown will increase the loading to the Swords wastewater treatment plant. According to the AER for this plant from 2020 (the most recent available), it has a design capacity of 90,000 P.E. In 2020 the actual loading (peak week) was 59,109 P.E. leaving an available capacity of 11,391. The AER stated that the treatment capacity at the plant was not likely be exceeded ‘within the next three years’, i.e. by 2023. There is sufficient capacity at the Swords WWTP to treat the effluent from the proposed development to a high standard.

This land is highlighted as a Masterplan area under the Fingal County Development Plan 2017-2023. This Plan was subject to AA by the Local Authority which concluded that adverse impacts to the integrity of the Natura 2000 network would not occur.

The proposed development is Phase 5 of a wider scheme that has been underway since 2013. Each of the previous permitted phases, which have been completed or which are underway, have been accompanied by Screening for Appropriate Assessment.

Table 17 – Summary table of Natura 2000 sites

Reg. Ref.	Description	Status
F11A/0436 'Miller's Glen'	'Phase 1' Parent Permission: 245 units, amended by subsequent permissions to 243 units	243 units complete
F11A/0473 'Westmill'	'Phase 2' Parent Permission: 224 units and the village centre, amended by subsequent permissions to 249 units	Civic Square, 1372sqm commercial uses, 48 dwellings and creche complete. 108 dwellings under construction
F13A/0185 'Longview'	'Phase 3' Parent Permission 246 units, amended by both planning conditions and subsequent permissions to 181 units.	161 units complete
F17A/0666 'Meadowbank'	'Phase 4A' Parent Permission: 96 units amended by condition to 95 units	41 units complete 54 units under construction
F17A/0735 'Meadowbank'	'Phase 4B' Parent Permission: 98 units granted	53 units complete 45 units under construction
F17A/0687 'Meadowbank'	'Phase 4C' Parent Permission: 92 unit, amended by subsequent permission to 101 units.	101 units complete

In the event that multiple construction projects are underway concurrently with the subject development, there is a potential for construction pollutants entering water courses in this catchment to act in combination with one another. For this reason, this report has concluded that the potential for effects to arise to Malahide Estuary SAC/SPA could not be ruled out.

Other than during the construction phase, there are no plans or projects which can act in combination with the proposed development which can give rise to significant effect to Natura 2000 sites within the zone of influence.

5.0 Step 4: Determination of Significance

5.1 Impact prediction

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

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

Following on from steps 1 – 3 of this process a number of specific impacts are considered:

5.1.1 Habitat loss

The site is approximately 3km from the boundary of the Malahide Estuary SPA/SAC as the crow flies and the intervening land is occupied by residential development and transport links, including the M1 motorway. Because of the distance separating the two areas there is no pathway for loss or disturbance of habitats listed as qualifying interests of Natura 2000 sites, or other semi-natural habitats that may act as ecological corridors for important species associated with the qualifying interests of the Natura 2000 sites.

No significant effects to Natura 2000 sites are likely to arise from this aspect of the development.

5.1.2 Habitat disturbance

No habitats will be disturbed within or directly connected to Natura 2000 sites. This development is will not significantly increase recreational pressure on Malahide Estuary or any other Natura 2000 site as it lies a significant distance to accessible areas likely to be used by birds.

The development site lands themselves are not suitable for regularly occurring populations of wetland or wading birds which may be associated with Natura 2000 sites at Malahide Estuary or Baldoyle Estuary. There are no habitats for such species on the development site.

No significant effects to Natura 2000 sites are likely to arise from this aspect of the development.

5.1.3 Pollution during construction

During the site clearance and construction phases some sediment may become entrained in rain run-off. 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 close to the Saucerstown Stream and the Broadmeadow River, including for the proposed surface water overflow from the tank on the Balheary Road, and using a precautionary approach, the potential for large quantities of silt to be washed downstream means that significant effects to the Malahide Estuary SAC and SPA cannot be ruled out.

5.1.4 Pollution during normal operation

- wastewater

Sufficient capacity exists at the Swords wastewater treatment plant to accommodate the proposed development. The additional loading to the plant has been calculated at 179,734.5l/day. The 2020 AER states that there is capacity of 11,391 P.E and that capacity will not be exceeded within the next three years. The most recent AER for this plant has indicated that it is having no observable impact on the WFD status of the receiving waters.

- exceptional overflow events

The data presented in this report has shown that the installation of the proposed stormwater storage tank will reduce the frequency and intensity of the overflow incidents and significantly reduce the volume of untreated effluent entering the Malahide Estuary, currently via the River Ward. The project will have a net positive effect on water quality and WFD status from this source.

- surface water/operation phase

New surface water attenuation measures are designed so that there will be no net change to the quantity or quality of surface water leaving the site. 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.

This development can have no significant effect upon Natura 2000 sites in the Malahide Estuary.

No significant effects can occur to any Natura 2000 site arising from this source.

5.1.5 Abstraction

There is no pathway between the development site, and the sources of abstraction along the River Liffey, to any Natura 2000 site.

No negative effects to Natura 2000 sites are likely to arise from this aspect of the development.

6.0 Conclusion of Stage 1 Screening

Hydrological pathways exist to the Malahide Estuary; at this stage significant effects cannot be ruled out to the following areas:

- Malahide Estuary SAC
- Malahide Estuary SPA

It is considered that the potential for large quantities of sediment to be washed into the Estuary, due to the proximity of works to the River Broadmeadow, means that significant effects to habitats within the SAC, and species within the SPA, cannot be ruled out at this stage. A full AA may therefore be required following on from a full design review of the development.

No significant effects are likely to arise to any Natura 2000 site from the proposed stormwater overflow which will substantially reduce current volumes of undertreated effluent entering the River Ward and the Malahide Estuary.

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