

Screening Report for Appropriate Assessment of amendments to a permitted development at Finlay Park, Naas, Co. Kildare

Compiled by OPENFIELD Ecological Services

Pádraic Fogarty, MSc MIEMA

For Westar



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Introduction

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

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

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

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

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

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

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

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

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

The test at stage 1 AA Screening is that:

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

The test at stage 2 (Appropriate Assessment) is:

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

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

Screening for Appropriate Assessment

Article 6(3) of the Habitats Directive states:

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

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

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

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

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

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

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

The Purpose of this document

This document provides for the screening of proposed amendments to a permitted Large-scale Residential Development (Planning Ref. No. 22/221502) at a site at Finlay Park, Naas, Co. Kildare, and its potential effects in relation to Natura 2000 sites (SACs and SPAs). Under the Planning and Development Act 2000 (as amended) all developments must be screened for AA by the Local Authority. This report provides the necessary information to allow Kildare County Council to carry out this screening.

About OPENFIELD Ecological Services

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

Guidance

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

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

Methodology

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

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

Step 1: Management of the Site

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

Step 2: Description of the Project

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

Step 3: Characteristics of the Site

This process identifies the conservation aspects of the site and determines whether negative impacts can be expected as a result of the plan. This is done through a literature survey and consultation with relevant stakeholders – particularly the National Parks and Wildlife Service (NPWS). All potential effects

are identified including those that may act alone or in combination with other projects or plans.

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

Step 4: Assessment of Significance

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

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

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

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

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

Screening Template as per Annex 2 of EU methodology:

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

Step 1: Brief description of the project

The permitted development consists of the construction of 134 no. apartments (comprising a mixture of 70 no. 2 storey apartments and 64 no. apartments - 22 no. 1 bedroom apartments, 77 no. 2 bedroom apartments, and 35 no. 3 bedroom apartments) with private open space provided in the form of balconies/terraces as follows:

A) Block A (4 storey apartment block) comprising 26 no. apartments (6 no. 1 bed units, 16 no. 2 bed units & 4 no. 3 bed units); Block B (part 4 part 5 storey apartment block) comprising 66 no. apartments (10 no. 1 bed units, 33 no. 2 bed units and 23 no. 3 bed units), with a commercial/ health/medical unit (c. 247.6 sq. m) at ground floor; Block C (part 4 part 5 storey apartment block) comprising 42 no. apartments (6 no. 1 bed, 28 no. 2 bed units and 8 no. 3 bed units);

B) Vehicular/pedestrian and cyclist access from the Old Caragh Road (in new arrangement) along with the provision of 201 no. undercroft and surface car parking spaces as well as 388 no. undercroft and surface cycle parking

spaces; internal road and shared surface networks including pedestrian and cycle paths;

C) Public Open space including central communal (courtyard) open space including outdoor playground area;

Provision of foul and surface water drainage, including relocation of existing foul main in northern part of site as well as green roofs; linear greenway path, bin stores; plant rooms; public lighting and all associated landscaping and boundary treatment works, site development and infrastructural works, ESB substations, and all ancillary works necessary to facilitate the development.

The modifications to the previously approved development are proposed to achieve a second means of escape from upper floor units in compliance with Part B of the Building Regulations and will consist of:

A) The replacement of the permitted duplex units at 2nd and 3rd floor levels with apartments in Blocks A, B and C resulting in an overall increase of 5 no. units from 134 to 139 no. units across the same original building footprints as approved under KCC Reg. Ref. 22/221502;

B) Minor amendments to previously approved apartment units and provision of new apartment types to facilitate changes to corridor lengths and widths;

C) Amendments to staircases in ground floor stair cores to include straight flights;

D) Minor amendments to the fenestration arrangements on all elevations to accommodate new apartment layouts;

E) Amendment to ground to first-floor building height decreasing from 3,650 to 3,600mm;

F) Provision of Automatic Opening Vents (AOV) in apartment Blocks A, B and C;

G) Provision of additional escape routes at ground floor and first floor podium level;

H) Provision of 14 no. natural vents at podium level.

The overall permitted building footprints and wider layout remains as per the parent permission including road layout and services. The elevations, scale and massing will be similar to the permitted scheme.

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The site location is shown in figures 1 and 2.

The site was surveyed on February 3rd and May 20th 2020, the 24th of February and the 21st of June 2021, the 2nd of February and the 24th of May 2022, the 23rd of January and 1st of August 2023. It is essential for a study of this nature that pathways between the development site and Natura 2000 sites be identified. In this regard a full assessment was possible. The site was surveyed in accordance with best practice guidance (Smith et al., 2011). Breeding and wintering bird surveys were carried out in accordance with guidance from the

National Roads Authority (NRA, 2009). Habitats are described here in accordance with the standard Fossitt classification scheme (Fossitt, 2000).

The lands were formerly entirely in agricultural production and the northern field, are part of which is within the application boundary, remains **improved agricultural grassland – GA1** and are grazed by horses. Grasses are predominantly Perennial Rye *Lolium perenne* and Cock's-foot *Dactylis glomerata* while Creeping Buttercup *Ranunculus repens* and Nettle *Urtica dioica* are also present.



Figure 1 – Site location (red circle) and local water courses (from www.epa.ie). There are no Natura 2000 sites in this view.

The main field is not grazed by animals and are either **spoil and bare ground – ED2** or **dry meadow – GS2**. Vegetation is sparse and ruderal on bare areas while meadows include Cock's-foot, Dandelions *Taraxacum sp.*, Ribwort Plantain *Plantago lanceolata*, Creeping Buttercup and Cleavers *Galium aparine*.

Traditional field boundaries remain and include **hedgerow – WL1** and **treelines – WL2**. Species composition in these linear habitats can be similar while treelines are distinguished by the dominance of trees over 5m in height. These include Ash *Fraxinus excelsior*, Beech *Fagus sylvatica*, Crack Willow *Salix*

fragilis, and Hawthorn *Crataegus monogyna*. Ground vegetation includes Cow Parsley *Anthriscus sylvestris*, Yarrow *Achillea millefolium*, Creeping Cinquefoil *Potentilla repens*, Hart's-tongue *Asplenium scolopendrium*, Vetches *Vicia sp.*, Hogweed *Heracleum sphondylium* and Cowslip *Primula veris*.

Following guidance from the Heritage Council, all of the treelines are classified as 'higher significance' due to their structure, age and species diversity. This includes a short stretch of the north-western boundary which is a townland boundary (Foulkes et al., 2013). The hedgerow running east-west is 'lower significance' due to low species diversity and poor structure. It has been cut to a short, box shape and includes large gaps. To the east this boundary line is a **stone wall – BL1** with Brambles *Rubus fruticosus agg.*

Drainage ditches – FW4 run across the site and are highly modified water bodies. They drain to the River Liffey and are not directly hydrologically connected with the Grand Canal. The River Liffey is not subject to any nature conservation designations in this vicinity.

Breeding and wintering birds surveys found no record of any bird species which is listed as a qualifying interest of Natura 2000 sites.

There are no plant species which are listed as alien invasive under Schedule 3 of SI No. 477 of 2011. None of the habitats is an example of those listed on Annex I of the Habitats Directive.

The development site is not located within or directly adjacent to any Natura 2000 site (SAC or SPA). This part of Naas is north of the town centre, and land use is predominantly of a built-up nature, having seen significant change in recent years, from agricultural to suburban. Mapping from the Environmental Protection Agency (EPA) shows no water courses running through the site.

The construction phase will involve the clearance of top soil and sub-soil. Any inert construction and demolition waste will be removed by a licenced contractor and disposed of in accordance with the Waste Management Act. Drainage ditches and their associated treelines are to be largely retained. The proposed amendments will not result in any substantial changes to the construction phase.

The design and management of surface water for the permitted development comply with the policies and guidelines outlined in the Greater Dublin Strategic Drainage Study (GDSDS) and with the requirements of Kildare Co. Co. The surface water drainage layout includes attenuation storage and discharge at a controlled rate. Additional SUDS measures include the use of permeable paving, infiltration trenches and blue roofs which will ensure that run-off quality and quantity will be retained at a 'greenfield' rate. SUDS are standard measures in all development projects and are not included here to reduce or avoid an effect to a Natura 2000 site. The proposed amendments will result in no changes to the configuration of the surface water infrastructure.



Figure 2 – Site boundary and habitats on recent aerial photograph (from www.google.com)

Wastewater from the development will pass to the Osberstown wastewater treatment plant (also known as the Upper Liffey Valley Regional Sewerage Scheme) which facilitates the towns of Naas, Newbridge, Kilcullen, Sallins and Kill. This plant discharges treated wastewater to the River Liffey under licence from the Environmental Protection Agency (EPA).

Water will be supplied from a mains supply which originates from reservoirs at Ballymore Eustace, along the River Liffey. The reservoirs at Poulaphouca are designated as an SPA.

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

The operation phase will see the development occupied and this will bring with it human disturbance as well as noise and artificial light.



Figure 3 – permitted site layout as approved under KCC Reg. Ref. 22/1502



Figure 4 – proposed site layout

Step 3: Brief description of Natura 2000 sites

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

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

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

Due to the surface hydrological pathway to the River Liffey, Natura 2000 sites in Dublin Bay are also included in this analysis.

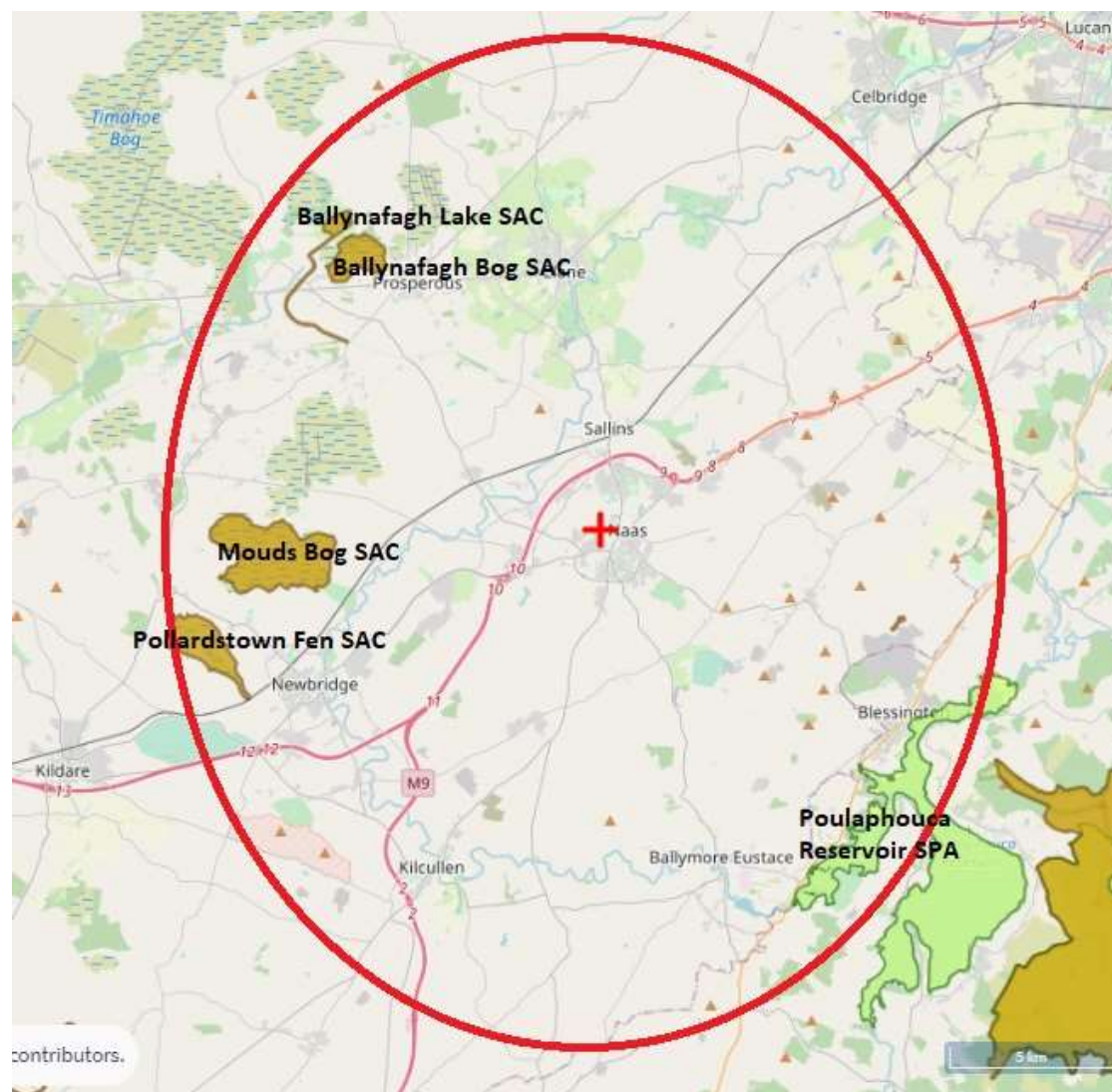


Figure 4 – Approximate 15km radius around the proposed development (red circle) site and Natura 2000 sites (www.epa.ie).

Ballynafagh Lake SAC (site code: 1387)

This shallow alkaline lake was originally constructed as a reservoir, created by the Grand Canal Company, but has since developed a very naturalised vegetation including dense stands of reeds and sedges. The Blackwood Feeder leads to the Royal Canal and this is included in the SAC boundary.

The lake is of value for its important habitats as well as its invertebrate diversity – particularly freshwater molluscs. In winter it is home to a number of bird species including the Whooper Swan *Cygnus cygnus*.

The reasons why the Ballynafagh Lake is an SAC are set out in the site's 'qualifying interests' and these are given in table 1. Also given is the status of the feature as assessed by the National Parks and Wildlife Service in its routine reporting to the European Commission (2019). It should be noted however that this is the status on a national level and not necessarily within the SAC relevant to this study.

Table 1 – Qualifying interests of the Ballynafagh Lake SAC

Aspect	Level of Protection	Status
Alkaline Fens (code: 7230)	Habitats Directive Annex I	Bad
Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> (code: 1016)	Habitats Directive Annex II	Inadequate
Marsh Fritillary Butterfly <i>Euphydryas aurinia</i> (code: 1065)		Inadequate

- Alkaline Fens: Threats of 'high importance' are groundwater abstractions, land reclamation, diffuse groundwater pollution, land abandonment/under-grazing. These fen systems are often a complex mosaic of habitats, with tall sedge beds, reedbeds, wet grasslands, springs and open-water often co-occurring at a given fen site. Their integrity is reliant upon a stable, high water table; calcareous/low-nutrient water supply; and controlled mowing and/or grazing.
- Desmoulin's Whorl Snail: a tiny mollusc that is particularly sensitive to changes in water level. Occurs in swamps, fens and marshes. The greatest threats have been drainage of wetlands and riparian management of canals.
- Marsh Fritillary: Good habitat is considered to be moderate to high coverage of *Succisa pratensis* (Devil's-bit Scabious, food plant for the caterpillars), low-growing unintensified sward with low levels of scrub. The species survives best in an open landscape where movement is largely unimpeded and habitat patches are easily reached by the relatively sedentary adults.

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

Desmoulin's Whorl Snail (code: 7230)

No decline in distribution, occurrence in suitable habitat, density with habitat, subject to natural processes; area of suitable habitat stable or increasing, subject to natural processes; no less than 10ha of at least suboptimal habitat; no decline in habitat quality, subject to natural processes;

Alkaline Fen (7230)

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

Marsh Fritillary (1065)

Maintain distribution within the SAC; Proof of breeding confirmed by detection of webs; area of potential habitat stable or increasing, subject to natural processes; area of good quality habitat stable or increasing, subject to natural processes.

Ballynafagh Bog SAC (site code: 0391)

This SAC is situated close to Prosperous and is an example of a typical midlands raised bog. In 2007 the NPWS estimated that nearly half of its area was intact but that afforestation, mechanised peat cutting and drainage were threatening its status. Intact raised bogs are very rare habitats and Ireland has approximately half of all the intact raised bogs remaining in Europe. The qualifying interests for this SAC are shown in table 2 below.

Table 2 – Qualifying interests of the Ballynafagh Bog SAC

Aspect	Level of Protection	Status
Active raised bog (code: 7110)	Habitats Directive Annex I priority	Bad
Degraded raised bog (code: 7120)	Habitats Directive Annex I	Bad
Rhynchosporian depressions (code: 7150)		Bad

These features are interrelated and are subject to an on-going recovery programme which, if successful, will result in a reduction in area of degraded raised bog and Rhynchosporian depressions in favour of active raised bog. The structure and function of raised bog and its associated habitats is dependent upon maintaining a high water table and a growing layer of *Sphagnum sp.* mosses.

Site specific conservation objectives have been set for the active raised bog qualifying interest for this SAC (NPWS, 2015a). No conservation objectives have been set for degraded raised bogs or rhynchosporian depressions.

Active raised bogs (7110)

Restore the area of active raised bog to 26.6ha, subject to natural processes; Restore the distribution and variability of active raised bog across the SAC; No decline in extent of high bog subject to the conservation requirements of the SAC; Restore appropriate water levels throughout each site; Restore, where possible, appropriate high bog topography, flow directions and slopes; Restore adequate transitional areas to support/protect the raised bog ecosystem and the services it provides; Restore 13.3ha of central ecotope/active flush/soaks/bog woodland as appropriate; Restore adequate cover of high quality microtopographical features; Restore adequate cover of bog moss (*Sphagnum*) species to ensure peatforming capacity; Restore, where appropriate, typical active raised bog flora and fauna; Maintain features of local distinctiveness, subject to natural processes; Negative physical features absent or insignificant; Native negative indicator species at insignificant levels; Non-native invasive species at insignificant levels and not more than 1% cover; Air quality surrounding the bogs close to natural reference conditions. The total nitrogen deposition should not exceed 5kg N/ha/yr. Water quality on the high bog and in transitional areas close to natural reference conditions;

Mouds Bog SAC (code: 2331)

A synopsis report has been published for the SAC (NPWS, 2014). It gives a broad description of the designated area as well as discussing the SAC's qualifying interests and other features of ecological importance.

This SAC is a typical example of a midlands raised bog. It is approximately 590ha in extent and much of this is 'high bog'. Marginal areas have been cut away either by hand or on an industrial scale and this has altered the hydrology of the bog. Affected areas have ceased to lay down new layers of peat while in central depressions 'active' bog is still to be found and is characterised by a series of wet flats, hummocks, pools and lawns of the bog building moss *Sphagnum sp.* Raised bogs once extended across as much as 309,000 ha in Ireland but only 8% of this original area was of any conservation interest over a decade ago (Foss et al., 2001). This percentage is likely to be less today. The principle threats to this habitat are peat cutting, drainage, forestry and burning (NPWS, 2008). Turf-cutting has been prohibited on Mouds bog since 2011.

The reasons why this area falls under the SAC designation are set out in the qualifying interests. They are either habitat types listed in Annex I or species listed in Annex II of the Habitats Directive. This information is provided by the National Parks and Wildlife Service (NPWS) and is shown in table 3 below. In this case the SAC is designated only for protected habitat types.

Table 3 – Qualifying interests for the Mouds bog SAC (from NPWS)

Code	Habitats	National Status
7110	Active raised bog	Bad
7120	Degraded raised bog	Bad
7150	Rhynchosporian depressions	Bad

- **Raised Bog habitats (7110 & 7120).** These features are interrelated and are subject to an on-going recovery programme which, if successful, will result in a reduction in area of degraded raised bog and Rhynchosporian depressions in favour of active raised bog. The structure and function of raised bog and its associated habitats is dependant upon maintaining a high water table and a growing layer of *Sphagnum sp.* mosses.
- **Rhynchosporion Depressions (7150).** *Rhynchosporion alba* is the White-beaked Sedge and is a pioneer species on exposed peat and areas of disturbed bog.

Site specific conservation objectives have been set for the active raised bog qualifying interest for this SAC (NPWS, 2015b). No conservation objectives have been set for degraded raised bogs or rhynchosporian depressions.

Active raised bogs (7110)

Restore the area of active raised bog to 105.8ha, subject to natural processes; Restore the distribution and variability of active raised bog across the SAC; No decline in extent of high bog subject to the conservation requirements of the SAC; Restore appropriate water levels throughout each site; Restore, where possible, appropriate high bog topography, flow directions and slopes; Restore adequate transitional areas to support/protect the raised bog ecosystem and the services it provides; Restore 52.9ha of central ecotope/active flush/soaks/bog woodland as appropriate; Restore adequate cover of high quality microtopographical features; Restore adequate cover of bog moss (*Sphagnum*) species to ensure peatforming capacity; Restore, where appropriate, typical active raised bog flora and fauna; Maintain features of local distinctiveness, subject to natural processes; Negative physical features absent or insignificant; Native negative indicator species at insignificant levels; Non-native invasive species at insignificant levels and not more than 1% cover; Air quality surrounding the bogs close to natural reference conditions. The total nitrogen deposition should not exceed 5kg N/ha/yr. Water quality on the high bog and in transitional areas close to natural reference conditions;

Pollardstown Fen SAC (code: 0396)

This is an internationally important conservation area as it is the largest area of spring-fed fen in Ireland. Fen is a peat-forming habitat which has developed in waterlogged areas. It is a very rare habitat type in Ireland and Pollardstown is particularly significant as it is home to three snail species listed on Annex I of the EU Habitats Directive (see table 4). The species and habitats here are highly dependent upon the maintenance of the hydrological regime.

Table 4 – Qualifying interests for the Pollardstown Fen SAC

Code	Habitat/Species	National Status
7210	Calcareous fens with <i>Cladium mariscus</i>	Inadequate
7220	Petrifying springs with tufa formation (<i>Cratoneurion</i>)	Inadequate
7230	Alkaline fens	Bad
1016	<i>Vertigo moulinsiana</i> Desmoulin's whorl snail	Inadequate
1013	<i>Vertigo geyeri</i> Geyer's whorl snail	Bad
1014	<i>Vertigo angustior</i> Narrow-mouthed whorl snail	Inadequate

- **Cladium (calcareous) Fens (7210 – priority habitat).** This priority habitat is found in base-rich, groundwater fed fens or around the fringes of lakes or turloughs with similar water chemistry. The characteristic features is the Great Fen-sedge *Cladium mariscus*. The habitat is threatened from drainage and wetland infilling and lack of site management.
- **Petrifying Springs (7220 – priority habitat):** These are very localised habitats that arise from the precipitation of excess calcium carbonate in supersaturated running water. They are associated with characteristic bryophytes. They are vulnerable to changes in water quality, flow regime and intensification of land use practices.
- **Alkaline Fens (7230):** Threats of 'high importance' are groundwater abstractions, land reclamation, diffuse groundwater pollution, land abandonment/under-grazing. These fen systems are often a complex mosaic of habitats, with tall sedge beds, reedbeds, wet grasslands, springs and open-water often co-occurring at a given fen site. Their integrity is reliant upon a stable, high water table; calcareous/low-nutrient water supply; and controlled mowing and/or grazing.
- **Geyer's Whorl Snail (1013).** Like other whorl snails *V. geyeri* favours damp, wet habitats where they live on the decaying roots of sedges. It requires constant saturation in calcareous water.
- **Narrow-mouthed Whorl Snail (1014).** This whorl snail is present in a wide variety of habitats from dunes and coastal grasslands, to fens, salt-marshes and floodplains. The principle threats to its habitat derives from undergrazing and overgrazing.
- **Desmoulin's Whorl Snail (1016)** is a tiny mollusc that is particularly sensitive to changes in water level. It occurs in swamps, fens and marshes. The greatest threats have been drainage of wetlands and riparian management of canals.

Site specific conservation objectives have been published and can be summarised as (NPWS, 2022a):

Calcareous Fen (7210)

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

Petrifying springs – priority habitat (7220)

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

Alkaline Fen (7230)

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

Geyer's Whorl Snail (1013)

No decline in distribution or occurrence in stable habitat, subject to natural processes; Area of suitable habitat stable or increasing, subject to natural processes; no less than 2ha of at least suboptimal habitat, with at least 50% in optimal condition; No decline in habitat quality, subject to natural processes; No decline in soil wetness, subject to natural processes

Narrow -mouthed Whorl Snail (1014)

No decline in distribution or occurrence in stable habitat, subject to natural processes; Area of suitable habitat stable or increasing, subject to natural processes; no less than 2ha of optimal habitat; No decline in soil wetness, subject to natural processes

Desmoulin's Whorl Snail (1016)

No decline in distribution, occurrence in stable habitat, habitat quality or density, subject to natural processes; Area of suitable habitat stable or increasing, subject to natural processes; no less than 10ha of at least suboptimal habitat; No decline in soil wetness, subject to natural processes.

The **South Dublin Bay and Tolka Estuary SPA (side code: 4024)** is largely coincident with the South Dublin Bay SAC boundary with the exception of the Tolka Estuary. The **North Bull Island SPA (site code: 0206)** meanwhile is largely coincident with the North Dublin Bay SAC with the exception of the terrestrial portion of Bull Island. These designations encompass all of the intertidal areas in Dublin Bay from south of the Howth peninsula to the pier in Dun Laoghaire. Wintering birds in particular are attracted to these areas in great

number as they shelter from harsh conditions further north and avail of the available food supply within sands and soft sediments. Table 1 lists the features of interest for both of the SPAs.

Table 5 – Features of interest for SPAs in Dublin Bay (EU code in square parenthesis)

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

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

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

- **Shelduck.** The largest of our ducks, Shelduck both breed and winter around the coasts with some isolate stations inland. Its population and range are considered stable.
- **Golden Plover.** In winter these birds are recorded across the midlands and coastal regions. They breed only in suitable upland habitat in the north-west. Wintering abundance in Ireland has changed little in recent years although it is estimated that half of its breeding range has been lost in the last 40 years.
- **Black-tailed Godwit.** Breeding in Iceland these waders winter in selected sites around the Irish coast, but predominantly to the east and southern halves. Their range here has increase substantially of late.
- **Curlew.** Still a common sight during winter at coastal and inland areas around the country it breeding population here has effectively collapsed. Their habitat has been affected by the destruction of peat bogs, afforestation, farmland intensification and land abandonment. Their wintering distribution also appears to be in decline.
- **Turnstone.** This winter visitor to Irish coasts favours sandy beaches, estuaries and rocky shores. It is found throughout the island but changes may be occurring due to climate change.

Bird counts from BirdWatch Ireland are taken from Dublin Bay as a whole and are not specific to any particular portion of the Bay. Dublin Bay is recognised as an internationally important site for water birds as it supports over 20,000 individuals. Table 6 shows the most recent count data available¹.

Table 6 – 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

¹ <https://fl.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c>

Pintail	184
Shoveler	101
Black-tailed Godwit	2,038
Curlew	882
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 7 – 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 (<i>Branta bernicla hrota</i>) [A046]
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]
Grey Plover (<i>Pluvialis squatarola</i>) [A140]
Knot (<i>Calidris canutus</i>) [A143]
Sanderling (<i>Calidris alba</i>) [A144]
Dunlin (<i>Calidris alpina</i>) [A149]
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]
Redshank (<i>Tringa totanus</i>) [A162]
Black-headed Gull (<i>Croicocephalus ridibundus</i>) [A179]
Roseate Tern (<i>Sterna dougallii</i>) [A192]
Common Tern (<i>Sterna hirundo</i>) [A193]
Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Wetlands & Waterbirds [A999]

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

Birds (similar for all species)

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

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

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

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

Mudflats (code 1140)

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

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

The **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 8. The status of the habitat is also given and this is an assessment of its range, area, structure and function, and future prospects on a national level and not within the SAC itself.

Table 8 – Qualifying interests for the North Dublin Bay SAC

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

- **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120)**. These are the second stage in dune formation and depend upon the stabilising effects of Marram Grass. The presence of the grass traps additional sand, thus growing the dunes. They are threatened by erosion, climate change, coastal flooding and built development.
- **Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130)**. These are more stable dune systems, typically located on the landward side of the mobile dunes. They have a more or less permanent, and complete covering of vegetation, the quality of which depends on local hydrology and grazing regimes. They are the most endangered of the dune habitat types and are under pressure from built developments such as golf courses and caravan parks, over-grazing, under-grazing and invasive species.
- **Humid dune slacks (2190)**. These are wet, nutrient enriched (relatively) depressions that are found 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. They are found around the coast within the larger dune systems.
- **Petalwort (1395)**. There are 30 extant populations of this small green liverwort, predominantly along the Atlantic seaboard but also with one in Dublin. It grows within sand dune systems and can attain high populations locally.

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

Annual vegetation of drift lines (code: 1210)

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

Atlantic/Mediterranean Salt Meadows (1330/1410)

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

Embryonic shifting dunes (code: 2110)

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

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

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

Fixed Coastal Dunes/Shifting Dunes (2130/2120)

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

Humid dune slacks (code: 2190)

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

Petalwort *Petalophyllum ralfsii* (code: 1395)

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

The North Bull Island SPA (site code: 0206) is largely coincident with the North Dublin Bay SAC with the exception of the terrestrial portion of Bull Island. Table 9 lists its features of interest

Table 9 – Features of interest for the North Bull Island SPA

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

- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Teal.** In winter this duck is widespread throughout the country. Land use change and drainage however have contributed to a massive decline in its breeding range over the past 40 years.
- **Pintail.** Dabbling duck wintering on grazing marshes, river floodplains, sheltered coasts and estuaries. It is a localised species and has suffered a small decline in distribution in Ireland for unknown reasons.
- **Shoveler.** Favoured wintering sites for this duck are inland wetlands and coastal estuaries. While there have been local shifts in population and distribution, overall their status is stable in Ireland.

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

Site specific conservation objectives have been published for this SPA (NPWS, 2015d) 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 North-West Irish Sea SPA (site code: 4236)

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

Table 10 – Qualifying interests for the North-West Irish Sea SPA (EU code in square parenthesis)

South Dublin Bay and Tolka Estuary SPA
Roseate Tern (<i>Sterna dougallii</i>) [A192]
Common Tern (<i>Sterna hirundo</i>) [A193]
Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Little Tern (<i>Sterna albifrons</i>) [A195]
Common Scoter (<i>Melanitta nigra</i>) [A065]
Red-throated Diver (<i>Gavia stellata</i>) [A001]
Great Northern Diver (<i>Gavia immer</i>) [A003]
Fulmar (<i>Fulmarus glacialis</i>) [A009]
Manx Shearwater (<i>Puffinus puffinus</i>) [A013]
Shag (<i>Phalacrocorax aristotelis</i>) [A018]
Cormorant (<i>Phalacrocorax carbo</i>) [A017]
Little Gull (<i>Larus minutus</i>) [A177]
Kittiwake (<i>Rissa tridactyla</i>) [A188]
Black-headed Gull (<i>Croicocephalus ridibundus</i>) [A179]
Common Gull (<i>Larus canus</i>) [A182]
Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]
Herring Gull (<i>Larus argentatus</i>) [A184]
Great Black-backed Gull (<i>Larus marinus</i>) [A187]
Puffin (<i>Fratercula arctica</i>) [A204]
Razorbill (<i>Alca torda</i>) [A200]
Guillemot (<i>Uria aalge</i>) [A199]

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

Poulaphouca Reservoir SPA (site code: 4063)

This is a large artificial lake which was created with the damming of the River Liffey. Its 'features of interest' include the Greylag Goose *Anser anser* and the Lesser Black-backed Gull *Larus fuscus*.

Whether any of these SACs or SPAs is likely to be significantly affected must be measured against their 'conservation objectives'. Specific conservation objectives have been set for all of these areas with the exception of the Poulaphouca Reservoir. Generic conservation objectives have been published by the NPWS and are stated as:

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

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

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

The favourable conservation status of a species is achieved when:

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

Pathway Analysis

There is an indirect, surface, natural hydrological connection from the development site to Natura 2000 sites in Dublin Bay via surface water run-off. However, due to the great distance separating source and the receptor, this pathway is extremely weak.

There is an indirect pathway to the River Liffey through the foul sewer *en route* to the Osberstown WWTP. Again, the pathway to Natura 2000 sites is weak.

The Annual Environmental Report (AER) for the Osberstown WWTP indicates that the discharge is 'not having an observable' effect on Water Framework Directive status of the receiving water. The status of the River Liffey downstream of, Naas is 'good'. These data indicate that the zone of influence of the Osberstown WWTP does not extend to Dublin Bay.

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

Following this analysis it can be seen that there are pathways to a number of Natura 2000 sites from the proposed development. There are hydrological links to the South Dublin Bay and River Tolka Estuary SPA (site code: 4024), the South Dublin Bay SAC (site code: 0210), the North Bull Island SPA (site code: 4006), the North Dublin Bay SAC (site code: 0206) and the North-West Irish Sea SPA (site code: 4236).

There is also pathway from abstraction of freshwater to the Poulaphouca Reservoir SPA (site code: 4063).

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

Data collected to carry out the assessment

A series of site surveys from 2020 to 2023 has shown that habitats on the development site are not associated with any of habitats or species which are listed as qualifying interests of Natura 2000 sites within the zone of influence of the project.

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to have attained 'good ecological status' by 2015.

The development site lies within the Liffey Water Management Unit and the majority of the Liffey river system is assessed as satisfactory (good or high) as part of the Water Framework Directive reporting period 2016-2021. Surface drainage pathways were studied as part of the Flood Risk Assessment which was undertaken for the permitted development. An extract is reproduced in figure 5.

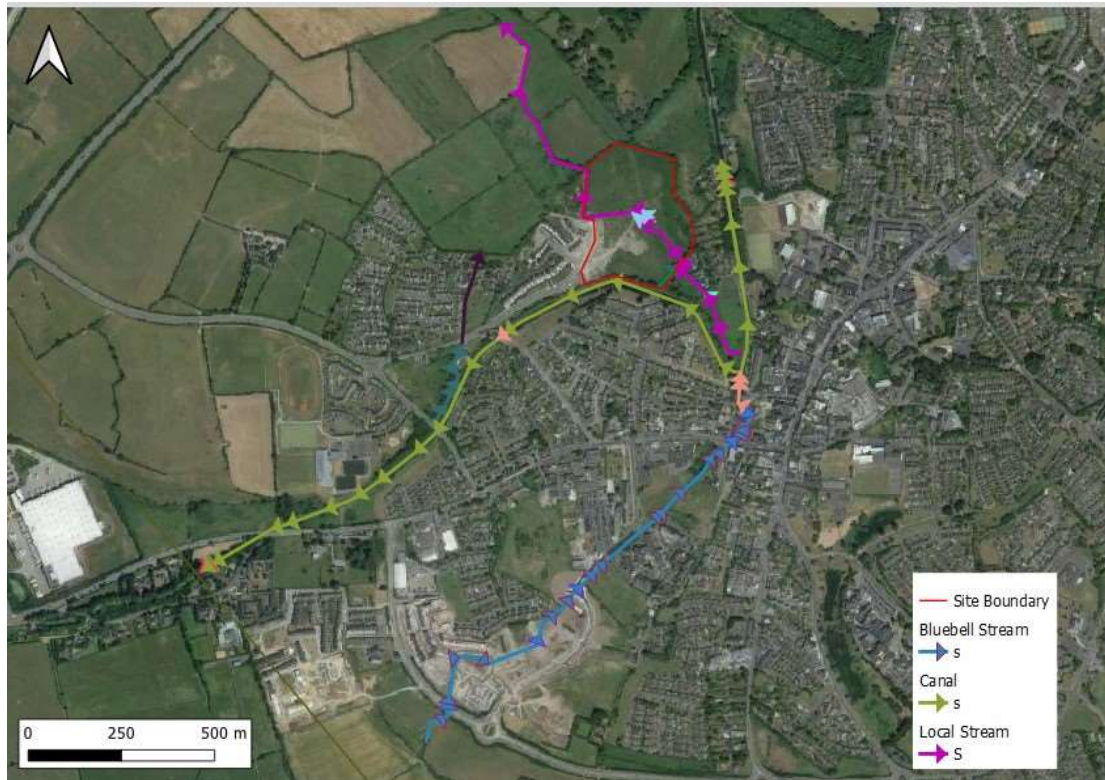


Figure 5 – surface drainage pathways and directions of flow showing the drainage ditches on the site leading to the north-west and the River Liffey (from the Flood Risk Assessment).

According to the www.catchments.ie website the main pressures on water quality are from abstractions, physical modifications and wastewater discharges. Water bodies in the vicinity of Naas, including the Grand Canal, are assessed as 'good status'. The Liffey downstream of this point has been classified as 'good status'.

Good status is maintained as far as Leixlip and thereafter the river deteriorates to 'poor' status. The Upper Liffey Estuary through Dublin city (water body code: IE_EA_090_0400) is 'good' while Dublin Bay (water body code: IE_EA_090_0000) is also 'good'.

These classifications indicate that water quality in the River Liffey downstream of the Osberstown wastewater treatment plant is not negatively affecting water status in Dublin Bay.

Details from the NPWS site synopsis report and the most recent data from BirdWatch Ireland's Wetlands Bird Survey (IWeBS) (Crowe et al., 2011) indicate that Dublin Bay is of international importance for wintering birds meaning that it regularly holds a population of over 20,000 birds. Total counts from IWeBS are shown in table 2.

Of the species listed in table 1 eleven: Curlew, Dunlin, Redshank, Shoveler, Oystercatcher, Grey Plover, Knot, Golden Plover, Bar-tailed Godwit, Black-tailed Godwit and Black-headed Gull are listed as of high conservation concern, and on BirdWatch Ireland's red list (Gilbert et al., 2021).

A 'supporting document' has been published by the NPWS which gives a detailed assessment of the features of interest for which SPAs in Dublin Bay have been designated (NPWS, 2014). In particular it presents information on the trends of these features and the pressures which are likely to affect these trends. It has determined that five species: Grey Plover, Shelduck, Pintail, Shoveler, Golden Plover and Black-headed Gull, are of unfavourable status while the remainder are 'favourable'. In the case of the Grey Plover it was found that its population trend is decreasing both within Dublin Bay and at an all-Ireland level. For this reason it is reasonable to assume that the factors for its decline are not unique to Dublin Bay. The Black-headed Gull population was not assessed in this way. Only for Shoveler is it considered that significant declines are being experienced due to site conditions.

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

Step 4: The Assessment of Significance of Effects

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

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

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

Habitat loss

The development site is approximately 33km from the boundary of the South Dublin Bay and River Tolka estuary SPA/SAC as the crow flies but following the flow of the River Liffey this distance is significantly greater. Because of this distance separating the development site and Natura 2000 sites there is no effective pathway for loss or disturbance of species in any Natura 2000 site or other semi-natural habitats that may act as ecological corridors for important species associated with the qualifying interests of the Natura 2000 sites.

The proposed amendments to the permitted development are not likely to result in significant effects to Natura 2000 sites from this source.

Habitat disturbance

The development site is too far from bird roosting areas in Natura 2000 sites to result in impacts from noise or other forms of human disturbance.

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

The lands are not suitable for regularly occurring populations of wetland/wintering/wading birds which may be associated with Natura 2000 sites in Dublin Bay. Site surveys which were carried out during the optimal season in 2020, 2021 and 2022 found no evidence that such species were using the site. No ex-situ impacts can arise.

The proposed amendments to the permitted development are not likely to result in significant effects to Natura 2000 sites from this source.

Hydrological pathways - wastewater

There is a pathway from the development site via surface and wastewater water flows to Dublin Bay via the River Liffey and the Osberstown wastewater treatment plant respectively. However this pathway is extremely weak. The discharge point is c.22km upstream of the boundary of Natura 2000 sites in Dublin Bay. There is consequently no effective pathway from the wastewater treatment plant to these Natura 2000 sites.

The plant at Osberstown is licenced to discharge treated effluent to the River Liffey by the EPA (licence no.: D0002-01). It has a capacity to treat wastewater for a population equivalent (P.E.) of 130,000. The Annual Environmental Report (AER) for 2021 (the most recent) shows that the average loading was within this capacity while the standard of effluent was fully compliant with emission limit values set under the Urban Wastewater Treatment Directive. Monitoring of the receiving water (i.e. the River Liffey) takes place at points upstream and downstream of the discharge point. The AER states that “the discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status”. This permitted development will lead to a tiny increase in demand on the treatment plant however the existing evidence suggests that this will not result in pollution problems.

The proposed amendments to the permitted development are not likely to result in significant effects to Natura 2000 sites from this source.

Hydrological pathways – surface water/operation phase

The installation of surface water attenuation measures will ensure that there will be no negative impact to water quality or quantity arising from the change in land use from agricultural to residential. These are standard measures which are included in all development projects and are not included here to reduce or avoid any effect to Natura 2000 site. This is confirmed in the judgment recently issued from the ECJU (Case C-721/21, Eco Advocacy CLG v An Bord Pleanála) which confirms that where standard measures are included in the application they cannot be considered as mitigation in an AA context.

The proposed amendments to the permitted development are not likely to result in significant effects to Natura 2000 sites from this source.

Hydrological pathways – construction phase

During the site clearance and construction phase the risk of sediment entering water courses, entrained in rain run-off, is moderate due to the presence of drainage ditches and proximity to the River Liffey. However, this effect is not significant due to the enormous separation distance to Natura 2000 sites in Dublin Bay (c.33km). Any sediment which may be lost will settle out of the water column long before entering the River Liffey. Furthermore, sediment cannot negatively affect intertidal habitats in Dublin Bay. Even in the absence of any pollution control measures there can be no effect to Natura 2000 sites.

The proposed amendments to the permitted development are not likely to result in significant effects to Natura 2000 sites from this source.

Abstraction

There is no evidence that abstraction is resulting in negative effects to any Natura 2000 site. No effects to Natura 2000 sites will arise from this source.

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

Eventual implementation of the WFD will result in overall improvements to water quality throughout the Liffey catchment.

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 (Mason, 1996).

Significant land use change has occurred in this vicinity in the past decade as part of the growth of the town, and which has seen agricultural land converted to built development. This can impact upon biodiversity through disturbance effects and the cumulative impact of water pollution. Impacts to water quality arising from this project have been assessed and are not predicted to result in pollution. This development can be seen in combination with development on lands to the west (Finlay Park) as well as the permitted development on the subject lands.

Water quality in Dublin Bay can be influenced by multiple sources of effluent including diffuse run-off from agriculture or one-off houses. Substantial point sources also exist, particularly from the wastewater treatment plants at Leixlip (the Lower Liffey Regional Sewerage Scheme which also discharges to the Liffey) and the main treatment plant for Dublin city at Ringsend, which discharges to Dublin Bay. The former plant is currently compliant with its discharge licence however long-standing problems at Ringsend persist. The discharge here is not compliant with licence values and although upgrading works were granted permission in 2019 and the first phase is expected to be

complete in 2023. Nevertheless, there is no evidence that discharges from Ringsend are impacting on Natura 2000 sites in Dublin Bay.

The additional loading from this project to the Osberstown plant will contribute to capacity at that plant however it is not considered to be significant as the plant was fully compliant with all emission limit values in 2021 and sufficient capacity exists to treat the expected additional loading from this project.

There are no further effects which can act in combination with other similar effects, to result in significant effects to the SAC or SPAs in question.

Conclusion and Finding of No Significant Effects

This project has been assessed for the purposes of AA screening under the appropriate methodology. This report has found that significant effects are not likely to arise, either alone or in combination with other plans or projects to the Natura 2000 network. No mitigation measures are relied upon to arrive at this assessment. This assessment is based upon the best available scientific evidence.

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