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SSE Renewables at Celtic Sea site investigations (FS006983)

Appropriate Assessment Screening Report

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Client:
Foreshore Unit
Department of Housing, Local Government and Heritage
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Foreshore Licence Application for FS006983 SSE Renewables Celtic Sea Site Investigations

Appropriate Assessment Screening Report

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1.0 INTRODUCTION

1.1 Project Overview

SSE Renewables ("the Applicant") has submitted a Foreshore Licence Application relating to the proposed geophysical, geotechnical and environmental site investigation works within the potential export cable corridors off Bunmahon Bay, Co. Waterford and Bannow Bay, Co. Wexford ("the proposed development"). The proposed development will inform the suitability of the area for the planned 800MW offshore wind development, located beyond the 12 nautical mile limit and therefore beyond the boundary of the foreshore.

A Foreshore Licence is required in order to complete the site investigation works which will enable a detailed mapping of nearshore shallow geological and seabed character, reconnaissance level mapping of seabed relief and features (i.e. archaeology), greater understanding of wind resource and metocean conditions and baseline environmental mapping. An application for such a licence was submitted to the Foreshore Unit of the Department of Housing, Local Government and Heritage (DHLGH) by SSE Renewables on the 19th March 2019 (hereafter referred to as "the Application") with a revised Application being submitted on 22nd November 2019, following the requirement for a more detailed description of the location of the site investigation works within the cable export corridors.

The proposed development comprises the following:

- Geophysical survey
  - Bathymetric, side scan sonar, magnetometry, sub-bottom profiling
- Geotechnical survey
  - Borehole and Cone Penetrometer Test (CPT) of the seabed
- Wind resource and metocean survey
  - Deployment of wave rider buoys and a LiDAR buoy; ADCP proposed to assess tidal currents
- Topographic survey
  - Via traditional methods or via drone
- Environmental survey
  - Benthic invertebrate assessment using imagery and a series of grab samples

ROD has been commissioned by the Foreshore Unit of the Department of Housing, Local Government and Heritage to prepare this Appropriate Assessment (AA) Screening Report in accordance with relevant EU and national legislation, associated guidelines and standards. The aim of this AA Screening Report is to inform and assist the Competent Authority in carrying out its AA Screening Assessment by determining whether or not the proposed development, either individually or in combination with other plans and projects, has the potential to significantly affect one or more European sites in view of their Conservation Objectives.

It is the considered opinion of ROD, as the author of this AA Screening Report, that the proposed development, either individually or in combination with other plans or projects, is likely to give rise to impacts which would constitute significant effects on eight European sites, namely the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Ballyteige Burrow SAC,

the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC in view of their Conservation Objectives, and, therefore, that AA is required in respect of the proposed development.

1.2 Competent Experts

This report has been prepared by [redacted] and [redacted]. [redacted] has a degree in Botany from Trinity College Dublin and an MSc in Ecological Management and Conservation Biology from Queen's University Belfast. He is a Full Member of the Chartered Institute of Ecology and Environmental Management and has over nine years' experience in the ecological assessment including impact assessment and Appropriate Assessment. [redacted] holds a BSc (Hons) in Zoology from University College Cork and an MRes degree (with distinction) from the University of Roehampton and has one years' experience in ecological assessment.

1.3 Application Documents

The following documents for the proposed development were used to inform this AA Screening Report:

- Foreshore Licence Application Form (dated 19/03/2019)
- Foreshore Licence Application Form – Revised (dated 22/11/2019)
- Supporting Document (dated 18/03/2019)
- Supporting Document – Revised (dated 15/11/2019)
- Foreshore Licence Map 1 (dated 20/03/2019)
- Foreshore Licence Map 1 – Revised (dated 16/09/2019)
- Foreshore Licence Map 2 (dated 20/03/2019)
- Foreshore Licence Map 2 – Revised (dated 16/09/2019)
- Foreshore Licence Map 3 (dated 20/03/2019)
- Foreshore Licence Map 3 – Revised (dated 16/09/2019)
- Copies of Newspaper Notices (dated 25/06/2019 – 28/06/2019)
- Consolidated versions of the submissions received from prescribed bodies and members of the public as part of the public consultation which was undertaken in accordance with Regulation 42 of SI 477/2011 between the 25th June 2019 and the 23rd July 2019.
- The responses from the Applicant to the submissions received as part of the public consultation which was undertaken in accordance with Regulation 42 of SI 477/2011 between the 25th June 2019 and the 23rd July 2019.

The contents of the Revised Supporting Document and any relevant information in the other documents were considered in this technical review.

1.4 Legislative Context

Council Directive 92/43/EEC of the 21st May 1992 on the conservation of natural habitats of wild fauna and flora ("the Habitats Directive") and Directive 2009/147/EC of the European Parliament and of the Council of the 30th November 2009 on the conservation of wild birds ("the Birds Directive") list habitats and species which are, in a European context, important for conservation and in need of protection. This protection is afforded in part through the designation of sites which support significant examples of habitats or populations of species ("European sites"). Sites designated for wild birds are termed "Special Protection Areas" (SPAs) and sites designated for

natural habitat types or other species are termed "Special Areas of Conservation" (SACs). The complete network of European sites is referred to as "Natura 2000".

In order to ensure the protection of European sites in the context of land use planning and development, Article 6(3) of the Habitats Directive provides for the assessment of the implications of plans and projects for European sites, as follows:

> *"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[1] 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."*

In *Case C-323/17* [§34*], People Over Wind*, the Court of Justice of the European Union ('the CJEU') referred to the nature of the test to be applied in making a screening determination as follows:

"[...] it is settled case-law that Article 6(3) of the Habitats Directive makes the requirement for an appropriate assessment of the implications of a plan or project conditional on there being a probability or a risk that the plan or project in question will have a significant effect on the site concerned. In the light, in particular, of the precautionary principle, such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have a significant effect on the site concerned (judgment of 26 May 2011, Commission v Belgium, C-538/09, EU:C:2011:349, paragraph 39 and the case-law cited). The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project (see, to that effect, judgment of 21 July 2016, Orleans and Others, C-387/15 and C-388/15, EU:C:2016:583, paragraph 45 and the case-law cited)."

Article 7 of the Habitats Directive provides that the provisions of, *inter alia*, Article 6(3) are to apply to SPAs under Directive 2009/147/EC (the "Birds Directive").

As stated, the requirements arising out of Article 6(3) of the Habitats Directive are transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 as amended[2] (S.I. No.477 of 2011) (the Habitats Regulations), including Part 5 thereof.

The determination of whether or not a plan or project requires AA is referred to as "Stage 1" or "AA Screening". A "Stage 1" or "AA Screening" is completed to determine whether or not the proposed development, either individually or in combination with other plans or projects, in view of best scientific knowledge, is likely to have a significant effect on areas designated as being of European importance for nature conservation ("European sites"), thereby enabling the Applicant, to fulfil its obligations under Article 6(3) of the Habitats Directive.

Article 6(3) of the Habitats Directive specifies that AA must be undertaken by the "competent national authorities". In Ireland, the "competent authority" is the relevant

[1] Including, where applicable, 'sites'.
[2] Including inter alia S.I. 290 of 2013; SI 499 of 2013; SI 355 of 2015; the Planning, Heritage and Broadcasting (Amendment) Act 2021, Chapter 4; SI 293 of 2021.

planning authority for each plan or project, e.g. the local authority, public authority or An Bord Pleanála. Consequently, the responsibility for carrying out AA Screening lies solely with the competent authority. In that respect, the AA Screening Report is not in itself an AA Screening Assessment but provides the competent authority with the information it needs in order to carry out its AA Screening.

1.5 Screening Methodology

The AA Screening Report assesses the potential effects from the plan or project on the European sites within the likely zone of impact and evaluates them in view of the sites' Conservation Objectives.

This AA Screening Report has had regard inter alia to the following matters[3]:

- The threshold test is that an appropriate assessment will be required if the proposed development is likely to have a significant effect on (a) European site(s) either individually or in combination with other plans or protects.
- It is not necessary, in order to trigger the requirement to proceed to stage 2 AA that the proposed development will *'definitely'* have significant effects on the protected site, but such a requirement will arise if it is a *'mere probability'* that such an effect exists. The requirement to carry out an AA will be satisfied if there is a *'probability or a risk'* that the proposed development will have *'significant effects'* on (a) European site(s).
- Consequent upon the application of the precautionary principle, such a *'risk'* will be found to exist if *'it cannot be excluded on the basis of objective information that the particular proposed development 'will have significant effects'* on (a) European site(s).
- An AA will be required if, on the basis of objective information, a 'significant effect*'* on a European site *'cannot be excluded'.* An AA will not be required if, on the basis of objective information, *a 'significant effect'* on (a) European site(s) *'can be excluded'.*
- In the case of *'doubt as to the absence of significant effects'* an AA must be carried out.
- The requirement to conduct an AA will arise where, at the screening stage, it is ascertained that the particular development is *'capable of having any effect'* (albeit this must be any *'significant effect')* on (a) European site(s).
- The *'possibility'* of there being a *'significant effect'* on (a) European site(s) will give rise to a requirement to carry out an AA for the purposes of Article 6(3). There is no need to *'establish'* such an effect and it is merely necessary to determine that there 'may be*'* such an effect.
- In order to meet the threshold of likelihood of significant effect, the word 'likely' in Article 6(3) means less than the balance of probabilities. The test does not require any 'hard and fast evidence' that such a significant effect was likely. It merely has to be shown that there is a 'possibility' that this significant effect is likely.
- The assessment of whether there is a risk of *'*significant effect' on the European site must be made in light, inter alia*,* of the 'characteristics and specific environmental conditions of the site concerned*'* by the relevant plan or project.

3 See Eoin Kelly v. An Bord Pleanála [2019] IEHC 84; Kelly v. An Bord Pleanála [2014] IEHC 400; Connelly v. An Bord Pleanála [2018] IESC 31; [2018] ILRM 453.

- Plans or projects or applications for developments which have no appreciable effect on European sites are excluded from the requirement to proceed to AA. If all applications for permission for proposed developments capable of having *any effect whatsoever* on such sites were to be caught by Article 6(3) activities on or near the site would risk being impossible by reason of legislative overkill.

While the threshold at the screening stage of Article 6(3) is very low, nonetheless it is a threshold which must be met before it is necessary to proceed to the stage 2 AA.

Accordingly, best practice in undertaking AA Screening involves five steps as follows:

(i) The first step involves gathering the information and data necessary to carry out a screening assessment. These include, but are not limited to, the details of all phases of the plan or project, environmental data pertaining to the area in which the plan or project is located, e.g. rare or protected habitats and species present or likely to be present, and the details of the European sites within the likely zone of impact.

(ii) The second step involves examining the information gathered in the first step and a scientific analysis of the potential impacts of the project on the receiving environment, particularly the European sites in the likely zone of impact.

(iii) The third step evaluates the impacts analysed in the second step against the Conservation Objectives of the relevant European sites, thereby determining whether or not those impacts constitute "likely significant effects", within the meaning of Article 6(3) of the Habitats Directive.

(iv) The fourth step involves considering the potential for likely significant effects to arise from the combination of the impacts of the plan or project with those of other plans or projects. If it is determined in the third step that Stage 2 (AA) is required, consideration of potential cumulative impacts may be deferred to that stage.

(v) The last step involves the issuing of a statement of the determination of the AA Screening. Notwithstanding the recommendation made in the AA Screening Report, the responsibility for completing this step lies solely with the competent authority.

The following guidance documents informed the assessment methodology:

- EC (2021) *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* Environment Directorate-General of the European Commission.
- EC (2018) *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. European Commission, Brussels.
- DEHLG (2010) Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2010) *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular Letter NPWS 1/10 & PSSP 2/10.* National Parks & Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.
- OPR (2021) *Practice Note PN01: Appropriate Assessment Screening for Development Management.* Office of the Planning Regulator.

1.6 Ecological Assessment

In order to fully inform this AA Screening Report in respect of the proposed development, it was necessary to establish the baseline ecological conditions in the receiving environment, particularly with regard to European sites.

1.6.1 Desk Study

During the desk study, the statutory consultee, the National Parks & Wildlife Service (NPWS), provided data on designations of sites, habitats and species of conservation interest. This included reports pursuant to Article 17 of the Habitats Directive (NPWS, 2019a,b,c) and the Site Synopses, Natura 2000 Standard Data Forms and Conservation Objectives (including supporting documents) for the relevant European sites.

The desk study involved a thorough review of existing information relating to ecology in the vicinity of the proposed development and in the surrounding area. A number of web-based geographic information systems (GISs) were used to obtain information relating to the natural environment surrounding the proposed development. These included the NPWS *Map Viewer* (NPWS, 2022) and the EPA *Map Viewer* (2022), which provided information on the locations of protected sites, the National Biodiversity Data Centre's *Biodiversity Maps* (NBDC, 2022), which provided recent and historic records of rare and protected species in the area, and Ordnance Survey Ireland's *GeoHive*, which provided additional geospatial information on the wider environment.

1.6.2 Assessment

The ecological baseline which was established by the desk study described above was used to inform the assessment of the ecological effects likely to arise from the proposed development, particularly with regard to European sites. Any assumptions that were made in view of gaps in the ecological data were made in accordance with the Precautionary Principle.

2.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Overview

The Applicant wishes to assess the suitability of two areas of interest for cable installation associated with a potential c. 800 MW of offshore wind development in the Irish Exclusive Economic Zone (EEZ). The proposed development relates specifically to the geophysical, geotechnical and environmental surveys that will inform the suitability of the area for the potential offshore wind development.

2.2 Location

The surveys will be undertaken within two export cable corridors, located off the coastline of Bunmahon, County Waterford and Graigue Hill, County Wexford, to the 12 nautical mile limit offshore. Each export cable corridor is 4 km wide. The location of the proposed development is shown in Figure 2.1 below.

2.3 General Description

The geophysical, geotechnical and environmental surveys will inform the suitability of the area for an offshore wind development through the following:

- Detailed mapping of nearshore shallow geological and seabed character;
- Reconnaissance level mapping of seabed relief and features (i.e. archaeology);
- Greater understanding of metocean conditions; and
- Baseline environmental mapping.
- Geophysical survey
    - Bathymetric, side scan sonar, magnetometry, sub-bottom profiling
- Geotechnical survey
    - Borehole and Cone Penetrometer Test (CPT) of the seabed
- Wind resource and metocean survey
    - Deployment of wave rider buoys and a LiDAR buoy; ADCP proposed to assess tidal currents
- Topographic survey
    - Via traditional methods or via drone
- Environmental survey
    - Benthic invertebrate assessment using imagery and a series of grab samples

2.4 Receiving Natural Environment

The proposed development site is located off the southern coast of Waterford and Wexford. The export cable corridors are surrounded by open marine water to the south, east and west. To the north, the export cable corridors join the coastline where they are bound by rocky and sandy shores. The principal habitat types that exist in the footprint of the site include Open Marine Water (MW1), Rocky Sea Cliffs (CS1), Exposed Rocky Shores (LR1) and Sand Shores (LS2). The western cable corridor off Bunmahon Bay falls within the Colligan-Mahon Water Framework Directive (WFD) catchment and traverses the Mid-Waterford Coast SPA. The eastern cable corridor off Bannow Bay falls within the Ballyteigue-Bannow WFD catchment and traverses the Keeragh Islands SPA.

2.5 Likely Effects on the Natural Environment

A number of elements of the proposed development are considered likely to give rise to environmental and ecological impacts. Potential risks to the natural environment arising from the proposed development are as follows:

- Disturbance from vibration and underwater noise associated with surveys on fisheries and other taxa.
- Disturbance of benthic communities from vibration .
- Impacts on water quality arising from vessels i.e., fuels and oils.

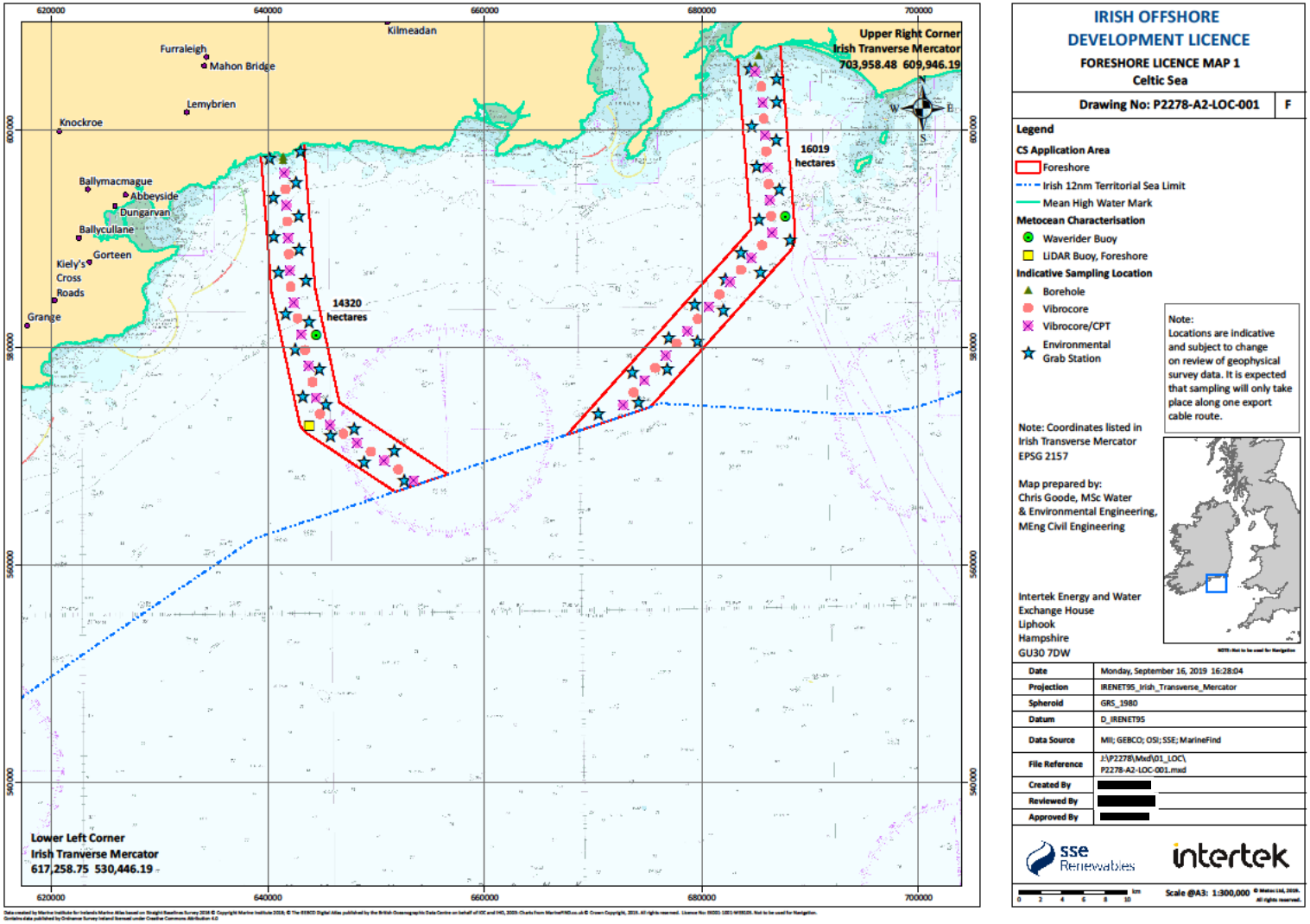

Figure 2.1 **Location of the proposed export cable corridors for proposed surveys off Bunmahon, Co. Waterford and Graigue Hill, Co. Wexford.**

3.0 IDENTIFICATION OF LIKELY SIGNIFICANT EFFECTS

3.1 Establishing the Likely Zone of Impact

Section 3.2.3 of DEHLG (2010) outlines the procedure for selecting the European sites to be considered in AA. It states that European sites potentially affected should be identified and listed, bearing in mind the potential for direct, indirect and cumulative effects. It also states that the specific approach in each case is likely to differ depending on the scale and likely effects of the plan or project. However, it advises that the following sites should generally be included:

- All European sites within or immediately adjacent to the plan or project area;
- All European sites within the likely zone of impact of the plan or project; and,
- In accordance with the Precautionary Principle, all European sites for which there is doubt as to whether or not they might be significantly affected.

The "likely zone of impact" of a plan or project is the geographic extent over which significant ecological effects are likely to occur. In the case of plans, this zone should extend to a distance of 15 km in all directions from the boundary of the plan area. In the case of projects, however, the guidance recognises that the likely zone of impact must be established on a case-by-case basis, with reference to the following key variables:

- The nature, size and location of the project;
- The sensitivities of the ecological receptors; and,
- The potential for in-combination effects.

For example, in the case of a project that could affect a watercourse, it may be necessary to include the entire upstream and/or downstream catchment in order to capture all European sites with water-dependent Qualifying Interests.

Having regard to the above key variables, the likely zone of impact was defined as:

- The proposed development (export cable sites) boundaries plus a 5 km buffer

This area extends to the maximum distance at which likely significant effects, such as underwater noise and vibration could travel through the marine environment and impact marine mammals, fish and other taxa. Beyond this limit, underwater noise, vibration and visual disturbance to birds and marine mammals is unlikely to occur.

A geographical representation of the likely zone of impact was produced in QGIS 3.16.9 using the proposed development boundary and publicly available OpenStreet Maps. This was used in combination with NPWS shapefiles to identify the boundaries of European sites in relation to the likely zone of impact (Figure 3.1).

It was determined that nine European site, namely the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Saltee Islands SPA, the Ballyteige Burrow SAC, the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC occur within the likely zone of impact. These sites are listed in Table 3.1 which also assesses whether or not there are pathways for impacts to the sites. Where pathways exist, a detailed description is provided in Section 3.2.

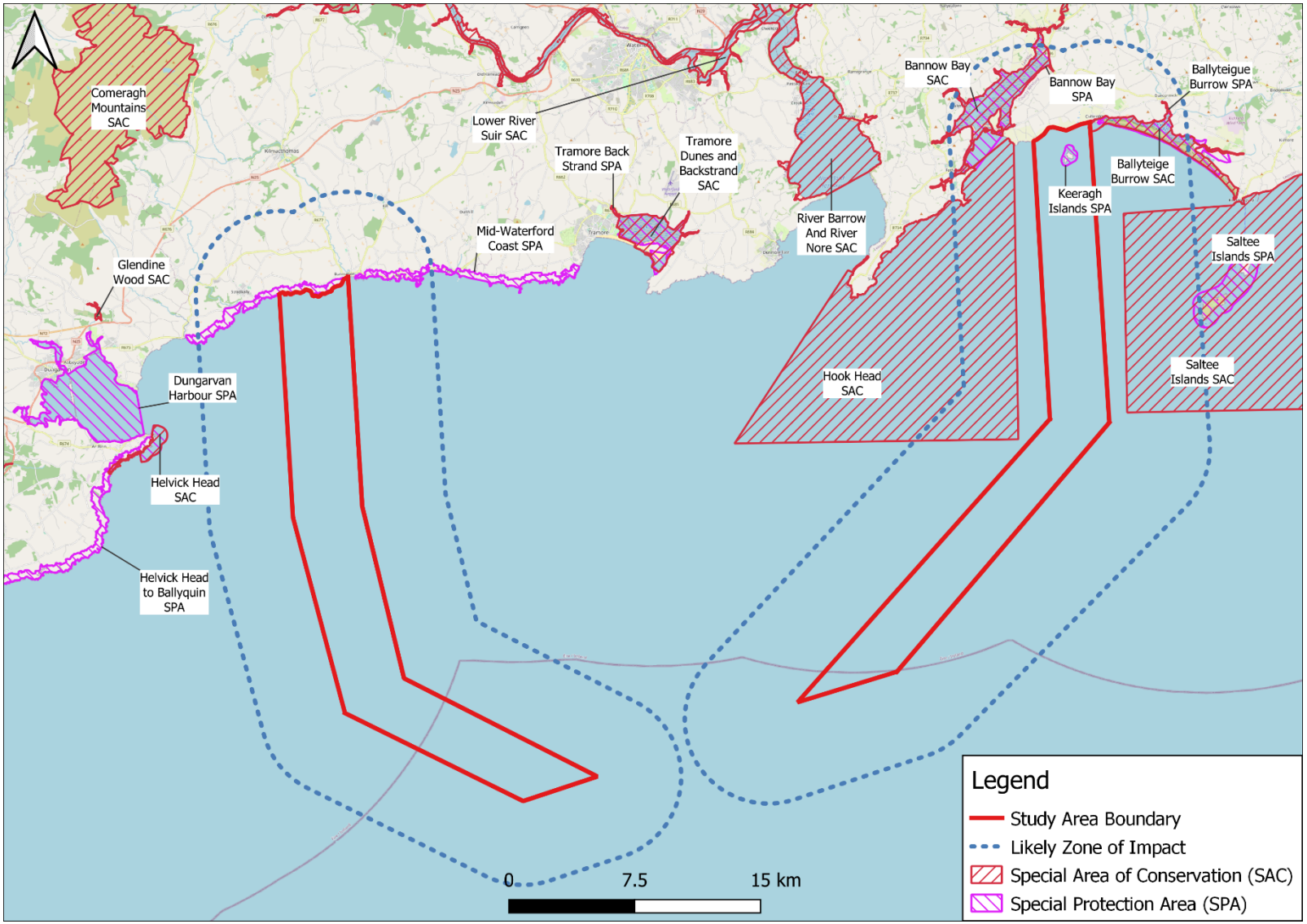

Figure 3.1 Location of European sites in relation to the likely zone of impact of the proposed developments.

Table 3.1 European sites with closest proximity to the proposed development.

European site [site code]	Are there potential pathways for impacts from the proposed development to this site? Explain.
Mid-Waterford Coast SPA [004193]	**Yes.** This European site is located within the boundary of the proposed development site.
Keeragh Islands SPA [004118]	**Yes.** This European site is located within the boundary of the proposed development site.
Ballyteige Burrow SPA [004020]	**Yes.** This European site is c. <1 km from the boundary of the proposed development site via the marine environment at Ballyteige Burrow SPA.
Bannow Bay SPA [004033]	**Yes.** The shortest absolute distance from the proposed development to this site is c. 1.3 km northwest at Bannow Nature Reserve. This distance is over land. The shortest distance from the proposed development to the site via a hydrological connection is c. 1.6 km through the Bannow Bay and Kiln Bay.
Saltee Islands SPA [004002]	**Yes.** The shortest absolute distance from the proposed development to this site is c. 5 km east at the Saltee Islands SPA boundary via the marine environment.
Hook Head SAC [000764]	**Yes.** This European site is c. <1 km from the boundary of the proposed development site via the marine environment.
Ballyteige Burrow SAC [000696]	**Yes.** This European site is c. <1 km from the boundary of the proposed development site via the marine environment.
Bannow Bay SAC [000697]	**Yes.** The shortest absolute distance from the proposed development to this site is c. 1.3 km northwest at Bannow Nature Reserve. This distance is over land. The shortest distance from the proposed development to the site via a hydrological connection is c. 1.6 km through the Bannow Bay and Kiln Bay.
Saltee Islands SAC [000707]	**Yes.** This European site is c. 1.3 km from the boundary of the proposed development site via the marine environment.

3.2 Site Description

The following section describes the European sites where potential pathways for effects between the proposed development and these sites have been identified.

3.2.1 Mid-Waterford Coast SPA

Site Overview

The description of the Mid-Waterford Coast SPA provided here is based on the Site Synopsis (NPWS, 2015) and Conservation Objectives (NPWS, 2022a), for the site.

The Mid-Waterford Coast SPA encompasses the areas of high coast and sea cliffs in Co. Waterford between Newtown Cove to the east and Ballyvoyle to the west. The site includes the sea cliffs and the land adjacent to the cliff edge. The high water mark forms the seaward boundary. The site is underlain by Devonian sandstones, siltstones, mudstones and conglomerates as well as a variety of volcanic rocks of Ordovician age. Sea cliffs are the predominant habitat of the site; these occur along its length and are generally well-vegetated by a suite of typical sea cliff species. Above the cliffs areas of heath, improved grassland, unimproved wet and dry grassland, and woodland occur.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Chough, Peregrine, Cormorant and Herring Gull.

The site supports an internationally important population of breeding Chough, a Red Data Book species that is listed on Annex I of the E.U. Birds Directive; 24 breeding pairs were recorded from the site in the 1992 survey and 20 pairs in the 2002/03 survey. In addition, five flocks totalling 59 birds were noted in the 1992 survey and a flock of 24 birds in the 2002/03 survey. Along this coast flocks occur between Annestown and Stradbally.

The site supports a nationally important Peregrine population (10 pairs in 2002). The site also holds nationally important populations of Cormorant (79 pairs) and Herring Gull (147 pairs), as well as smaller populations of other breeding seabirds: Fulmar (246 pairs), Shag (14 pairs), Guillemot (27 pairs), Razorbill (4 pairs) and Black Guillemot (15 individuals) – all seabird data from 1999-2000.

The Mid-Waterford Coast SPA is an important site for Chough and Peregrine, both species that are listed on Annex I of the E.U. Birds Directive. It also supports a range of breeding seabirds, including nationally important populations of Cormorant and Herring Gull.

Qualifying Interests of the Site

[A017] Cormorant (*Phalacrocorax carbo*)

[A103] Peregrine (*Falco peregrinus*)

[A184] Herring Gull (*Larus argentatus*)

[A346] Chough (*Pyrrhocorax pyrrhocoax*)

3.2.2 Keeragh Islands SPA

Site Overview

The description of the Keeragh Islands SPA provided here is based on the Site Synopsis (NPWS, 2014g) and Conservation Objectives (NPWS, 2022b) for the site.

The Keeragh Islands are two low-lying islets located just over 1 km offshore from the south Wexford coastline. The site includes the islets and associated rocky shorelines and reefs, as well as the surrounding marine area to a distance of 200 m. The islets, which rise to a maximum height of about 10 m above sea level, have a small area of land permanently above the tide line. The vegetation is predominantly maritime in character, with species such as Red Fescue (*Festuca rubra*), Thrift (*Armeria maritima*), Common Scurvygrass (*Cochlearia officinalis*) and Sea Campion (*Silene vulgaris* subsp. *maritima*) occurring.

The surrounding reefs support a range of seaweeds. This site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Cormorant.

The islands have a nationally important breeding colony of Cormorant (200 pairs recorded in 2000), which is considered to be one of the largest in the country. The colony has been well-monitored since it was first recorded in 1968 and there has been a long-term ringing programme. Terns, mainly Arctic Tern, have bred in the past but not since the 1970s. Herring Gull, Great Black-backed Gull and Lesser Black-backed Gull have also bred but no population estimates for recent years are available. A small number of Shag (c.10 pairs) were present in 1970.

In winter the islands are a refuge and night roost for flocks of Light-bellied Brent Goose and for ducks, notably Mallard and Wigeon, as well as smaller numbers of Teal and Shoveler.

The Keeragh Islands SPA is of particular ornithological importance for its nationally important population of breeding Cormorant. It retains potential for attracting breeding terns, species that are listed on Annex I of the E.U. Birds Directive.

Qualifying Interests of the Site

[A017] Cormorant (*Phalacrocorax carbo*)

3.2.3 Ballyteige Burrow SPA

Site Overview

The description of the Ballyteige Burrow SPA provided here is based on the Site Synopsis (NPWS, 2014c) and Conservation Objectives (NPWS, 2014d) for the site.

Ballyteige Burrow SPA is located on the south coast of Co. Wexford between the towns of Kilmore Quay and Cullenstown. It comprises a sand and shingle barrier beach, approximately 8 km in length, and the estuary of the Duncormick River. The extensive overlying sand spit is known as the Burrow, while the estuary that it encloses is known as the Cull. Some areas of adjacent polderland, particularly to the east, also form part of the site.

The site has a range of coastal habitats, including various types of sand dunes, salt meadows, and intertidal sand and mud flats. Saltmarsh vegetation fringes The Cull, with such species as Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*), Sea Lavender (*Limonium humile*) and Glasswort (*Salicornia* spp.). The estuary empties almost entirely on most tides, apart from the main central channel. Sediments vary from muds in the innermost areas, especially towards Duncormick, to sands elsewhere. In addition to the Duncormick River, the estuary receives the flow from a network of canals which drain the extensive polders to the east and north-east of the site.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Golden Plover, Grey Plover, Lapwing, Black-tailed Godwit and Bar-tailed Godwit. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The principal ornithological importance of the site is wintering waterfowl, with internationally important populations of Light-bellied Brent Goose (290) and Black-tailed Godwit (474) occurring – all figures are five year mean peaks for the period 1995/96 to1999/2000. It also supports nationally important numbers of Shelduck (167), Golden Plover (4,630), Grey Plover (69), Lapwing (7,808), and Bar-tailed Godwit (582). Several other species occur in numbers of regional importance, including Wigeon (306), Ringed Plover (133), Dunlin (1,020) and Redshank (206). The estuarine habitats provide feeding and roosting areas for the waterfowl species, though a lot of the birds also feed on the intensively managed lands of the adjacent polders. Cullenstown Strand has a small colony of breeding Little Tern, though nesting may not occur in every year.

Ballyteige Burrow SPA is of ornithological importance because it supports internationally important populations of Light-bellied Brent Goose and Black-tailed

Godwit, and nationally important populations of a further five species. Of particular note is that three of the species that occur at the site, i.e. Golden Plover, Bar-tailed Godwit and Little Tern, are listed on Annex I of the E.U. Birds Directive. Ballyteige Burrow is a Biogenetic Reserve site and part of the Ballyteige Burrow SPA is a Statutory Nature Reserve.

Qualifying Interests of the Site

[A046] Light-bellied Brent Goose (*Branta bernicla hrota*)

[A048] Shelduck (*Tadorna tadorna*)

[A140] Golden Plover (*Pluvialis apricaria*)

[A141] Grey Plover (*Pluvialis squatarola*)

[A142] Lapwing (*Vanellus vanellus*)

[A156] Black-tailed Godwit (*Limosa limosa*)

[A157] Bar-tailed Godwit (*Limosa lapponica*)

[A999] Wetlands and Waterbirds

3.2.4 Bannow Bay SPA

Site Overview

The description of the Bannow Bay SPA provided here is based on the Site Synopsis (NPWS, 2014e) and Conservation Objectives (NPWS, 2012b) for the site.

Bannow Bay is a large, very sheltered, estuarine system with a narrow outlet to the sea, situated on the south coast of Co. Wexford. It is up to 14 km long along its north-east/south-west axis and has an average width of about 2 km. A number of small- to medium-sized rivers flow into the site, the principal being the Owenduff and the Corock which enter at the top end of the estuary. Very extensive intertidal mud and sand flats are exposed at low tide. The sediments have a rich macroinvertebrate fauna, with such species as Peppery Furrow-shell (*Scrobicularia plana*), Ragworm (*Hediste diversicolor*) and Lugworm (*Arenicola arenaria*) occurring frequently. Mats of green algae (Ulva spp.) are present on the intertidal flats and shorelines. Salt marshes are well-developed in the sheltered areas of the site and are characterised by species such as Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Plantain (*Plantago maritima*), Red Fescue (*Festuca rubra*), Saltmarsh Rush (*Juncus gerardi*) and Sea Rush (*Juncus maritimus*). Swards of Glasswort (*Salicornia* spp.) occur on the lower zones of the salt marshes and extend onto the intertidal flats.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Pintail, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Knot, Dunlin, Blacktailed Godwit, Bar-tailed Godwit, Curlew and Redshank. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Bannow Bay supports an excellent diversity of wintering waterfowl and is one of the most important sites in the south-east. Of particular note is an internationally important population of Light-bellied Brent Goose (561) and Black-tailed Godwit (546) - all figures are mean peaks for the 5 winters 1995/96-1999/2000. The site also supports nationally important numbers of a further eleven species: Shelduck (500), Pintail (52), Oystercatcher (711), Golden Plover (1,955), Grey Plover (142), Lapwing (2,950), Knot (508), Dunlin (3,038), Bar-tailed Godwit (471), Curlew (891) and

Redshank (377). The populations of Shelduck and Bar-tailed Godwit are of particular note as they comprise 3.4% and 3.0% of the respective all-Ireland totals. Other species which occur include Wigeon (412), Teal (256), Ringed Plover (38) and Turnstone (50). The intertidal sand and mud flats provide excellent feeding for the waterfowl species, while suitable high tide roosts are provided by the salt marshes and other shoreline habitats. Little Egret, a species which has recently colonised Ireland, also occurs at this site.

Bannow Bay SPA is an excellent example of an enclosed estuarine system. It supports internationally important populations of Light-bellied Brent Goose and Black-tailed Godwit as well as nationally important populations of a further eleven species. Two of the species that occur, i.e. Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. Bannow Bay is a Ramsar Convention site and part of Bannow Bay SPA is a Wildfowl Sanctuary.

Qualifying Interests of the Site

[A046] Light-bellied Brent Goose (*Branta bernicla hrota*)
[A048] Shelduck (*Tadorna tadorna*)
[A054] Pintail (*Anas acuta*)
[A130] Oystercatcher (*Haematopus ostralegus*)
[A140] Golden Plover (*Pluvialis apricaria*)
[A141] Grey Plover (*Pluvialis squatarola*)
[A142] Lapwing (*Vanellus vanellus*)
[A143] Knot (*Calidris canutus*)
[A149] Dunlin (*Calidris alpina*)
[A156] Black-tailed Godwit (*Limosa limosa*)
[A157] Bar-tailed Godwit (*Limosa lapponica*)
[A160] Curlew (*Numenius arquata*)
[A162] Redshank (*Tringa totanus*)
[A999] Wetlands and Waterbirds

3.2.5 Saltee Islands SPA

Site Overview

The description of the Saltee Islands SPA provided here is based on the Site Synopsis (NPWS, 2012a) and Conservation Objectives (NPWS, 2011b) for the site.

The Saltee Islands SPA is situated some 4-5 km off the coast of south Co. Wexford and comprises the two islands, Great Saltee and Little Saltee, and the surrounding seas both between them and to a distance of 500 m from them. The bedrock of the islands is of Precambrian gneiss and granite. Both islands have exposed rocky cliffs on their south and east – those on Great Saltee being mostly c. 30 m high, those on Little Saltee about half this height. The northern and western sides of both islands are fringed with shingle and boulder shores, backed by boulder clay cliffs, as well as small areas of intertidal sandflats. Sea caves occur at the base of the cliffs on Great Saltee.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Fulmar, Gannet, Cormorant, Shag, Lesser Black-backed Gull, Herring Gull, Kittiwake, Guillemot, Razorbill and Puffin.

The site is also of special conservation interest for holding an assemblage of over 20,000 breeding seabirds.

The Saltee Islands are internationally important for holding an assemblage of over 20,000 breeding seabirds. The nationally important Gannet colony on Great Saltee has been well documented since its establishment in the1920s and 2,446 pairs were present in 2004. The following species have populations of national importance (all counts in the 1998-2000 breeding seasons): Fulmar (520 pairs), Cormorant (273 pairs), Shag (268 pairs), Lesser Black-backed Gull (164 pairs), Herring Gull (73 pairs), Kittiwake (2,125 pairs), Guillemot (14,362 pairs), Razorbill (2,505 pairs) and Puffin (1,822 pairs). An estimated 250 pairs of Manx Shearwater occur on these islands. Seabird populations are monitored annually and large numbers of chicks, especially of Gannets, auks and Shags, are ringed.

Peregrine Falcon breeds (1-2 pairs) and Chough (1 pair) occurs at the eastern edge of its Irish range. Hen Harrier uses the site for autumn passage and overwintering.

Great Saltee is a major site for spring and autumn landbird migration and was the site for Ireland's first bird observatory. While the observatory is no longer operational, substantial numbers of migrants are still ringed annually. Large numbers of pipits, swallows and martins, thrushes, warblers and finches occur, while smaller numbers of a great variety of other species (some very rare in Ireland) are also recorded.

The Saltee Islands SPA is of international importance for breeding seabirds; it also supports populations of three species that are listed on Annex I of the E.U. Birds Directive, i.e. Peregrine, Chough and Hen Harrier. It is one of the best-documented sites in the country and is monitored annually.

Qualifying Interests of the Site

[A009] Fulmar (*Fulmarus glacialis*)

[A016] Gannet (*Morus bassanus*)

[A017] Cormorant (*Phalacrocorax carbo*)

[A018] Shag (*Phalacrocorax aristotelis*)

[A183] Lesser Black-backed Gull (*Larus fuscus*)

[A184] Herring Gull (*Larus argentatus*)

[A188] Kittiwake (*Rissa tridactyla*)

[A199] Guillemot (*Uria aalge*)

[A200] Razorbill (*Alca torda*)

[A204] Puffin (*Fratercula arctica*)

3.2.6 Hook Head SAC

Site Overview

The description of the Hook Head SAC provided here is based on the Site Synopsis (NPWS, 2014b) and Conservation Objectives (NPWS, 2011a) for the site.

The areas of conservation interest at Hook Head comprise marine subtidal reefs to the south and east of the Hook Head Peninsula, and also sea cliffs from Hook Head to Baginbun and Ingard Point. The peninsula forms the eastern side of Waterford Harbour, while to the east it adjoins the estuary mouth of Bannow Bay. Hook Head itself is composed of Carboniferous limestone overlain by Devonian Old Red Sandstone and is palaeontologically of international importance.

An exposed to moderately exposed intertidal reef community complex occurs around Hook Head. Subtidally the reefs are aligned in a north-east/south-west orientation and are typically strewn with boulders, cobbles and patches of sand and gravel. They are exposed to prevailing winds and swells from the west and tidal streams tend to be moderate but are strong in some areas. There are also a number of isolated reefs that project from a sand plain. The reefs around Hook Head have excellent examples of tide-swept communities and species richness is high in both the shallow and deep-water communities. A *Laminaria*-dominated community is recorded from the shallow waters around Hook Head. Deeper waters consist of Echinoderm and sponge-dominated community complex types, characterised by cushion sponges, with branching sponges and the rose 'coral' *Pentapora foliacea*. In addition, the sponge *Stryphnus ponderosa*, the sea squirts *Sidnyum elegans*, *Distomus variolosus* and *Stolonica socialis*, and the brittlestar *Amphiura securigera* are present. These species have a limited distribution in Ireland. The rare red algae *Schizymenia dubyi* also occurs.

The sea cliffs, which extend for a distance of approximately 15 km, are mostly low, usually not more than 10 m, though they extend up to 30 m high near Baginbun Head. Both clay and rock cliffs are represented. The vegetation of the cliffs, as well as the underlying rocky shoreline, is characterised by species such as Thrift (*Armeria maritima*), Rock Samphire (*Crithmum maritimum*), Rock Sea-lavender (*Limonium binervosum*), Sea Plantain (*Plantago maritima*), Buck's-horn Plantain (*Plantago coronopus*), Rock Sea-spurrey (*Spergularia rupicola*) and Sea Mayweed (*Matricaria maritima*).

The cliffs at this site are of ornithological interest for breeding Chough, Raven) and Peregrine, and there is a small seabird colony, mainly of Guillemots, near Baginbun. The headland is a noted landfall point for migrants.

The waters off Hook Head are rich in marine life and are a popular diver site for SCUBA enthusiasts. Rock pools on the shore support a diverse flora and fauna.

In summary, this site is of conservation importance for its subtidal reef and shallow bay communities, and their diversity of species, as well as for the vegetated sea cliffs. These habitats are listed under the E.U. Habitats Directive. The rocky coastline is also important for a number of breeding birds, two of which are listed on Annex I of the E.U. Birds Directive.

Qualifying Interests of the Site

[1160] Large shallow inlets and bays

[1170] Reefs

[1230] Vegetated sea cliffs of the Atlantic and Baltic coasts

3.2.7 Ballyteige Burrow SAC

Site Overview

The description of the Ballyteige Burrow SAC provided here is based on the Site Synopsis (NPWS, 2020) and Conservation Objectives (NPWS, 2014f) for the site.

This coastal site extends eastwards and northwards from the village of Kilmore Quay in Co. Wexford. A long, narrow spit of coarse sand and gravel with an impressive sand dune system (Ballyteige Burrow) forms most of the seaward boundary of this site. Behind the spit lies a shallow, tidal sea inlet and estuary of the Duncormick River (The Cull). The eastern portion of this intertidal system was reclaimed in the

19th century by construction of the Cull Bank and is now polderland, most of which is intensively farmed grassland and arable land. The western portion of The Cull retains semi-natural habitat, including mudflats which are exposed at low tide and saltmarsh. Most of the site is designated a Nature Reserve.

The invertebrate fauna of the site includes a number of scarce species, examples being the bumble bees (*Bombus distinguendus)* and *B. sylvarum*, the jewel wasp (*Hedychridium ardens)* and the ant (*Tetramorium caespitum)*, as well as those listed above.

The dune system is used for cattle grazing. An appropriate grazing level is a critical factor in maintaining the diversity of dune systems. Coastal systems in general are threatened by disturbance of the substrate, such as removal of sand/shingle.

This coastal site is of major ecological value for its range of good quality coastal habitats, including three habitats given priority status on Annex I of the E.U. Habitats Directive - fixed dune, dune heath and lagoon. The dune system is of excellent quality, physically well developed and with a rich flora which includes five protected species. The importance of the site for wintering waterfowl further enhances its value.

Qualifying Interests of the Site

[1130] Estuaries

[1140] Mudflats and sandflats not covered by seawater at low tide

[1150] Coastal lagoons

[1210] Annual vegetation of drift lines

[1220] Perennial vegetation of stony banks

[1310] *Salicornia* and other annuals colonising mud and sand

[1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

[1410] Mediterranean salt meadows (*Juncetalia maritimi*)

[1420] Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

[2110] Embryonic shifting dunes

[2120] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

[2130] Fixed coastal dunes with herbaceous vegetation (grey dunes)

[2150] Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)

[2190] Humid dune slacks

3.2.8 Bannow Bay SAC

Site Overview

The description of the Bannow Bay SAC provided here is based on the Site Synopsis (NPWS, 2014a) and Conservation Objectives (NPWS, 2012c) for the site.

Bannow Bay SAC is a relatively large estuarine site, approximately 14 km long, on the south coast of Co. Wexford. Small rivers and streams to the north and south-west flow into the bay and their sub-estuaries from part of the site. The bay contains large areas of mud and sand, and the underlying geology is mainly of Ordovician slates with the exception of the areas to the east of Bannow Island which are underlain by Cambrian slates.

The main areas of saltmarsh are on the islands at Clonmines, at the mouth of the tributary at Clonmines, at the mouth of the tributary at Taulaght, close to Saint Kieran's House, at the north-west of Big Burrow, at the south-east of Bannow Island and at the west of Rabbit Burrow in Fethard Bay. Very small fragmented linear strips of saltmarsh occur in the upper estuary as far north as the confluence of the Corock and Owenduff Rivers and along the other tributaries. The main type of saltmarsh present is Atlantic salt meadow, although the Mediterranean type is also found. Typical species of the former include Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Plantain (*Plantago maritima*), Red Fescue (*Festuca rubra*), Creeping Bent (*Agrostis stolonifera*), Saltmarsh Rush (*Juncus gerardi*), Sea Arrowgrass (*Triglochin maritima*) and Sea Beet (*Beta vulgaris* subsp. *Maritima*). An abundance of Sea Purslane (*Halimione portulacoides*) is found in Fethard and in part of the Taulaght saltmarshes. In the larger areas of saltmarsh Sea Rush (*Juncus maritimus*), a species more typical of Mediterranean salt meadows, is found. Other plants recorded are Lax-flowered Sea-lavender (*Limonium humile*) and Common Scurvygrass (*Cochlearia officinalis*).

Good conditions for the community 'annual vegetation of drift lines' exist on the seaward side of dune systems at this site. Typical species which have been recorded include Sea Rocket (*Cakile maritima*), mayweed (*Matricaria* sp.), Sea Spurge (*Euphorbia paralias*), Sea-holly (*Eryngium maritimum*), orache species (*Atriplex* spp.), *Polygonum* spp. and Sea Beet (*Beta vulgaris* subsp. *Maritima*). Areas of habitat which are likely to be suitable for the development of the community 'perennial vegetation of stony banks' exist at this site, but are small in area.

Also linked with saltmarshes in places are stony beaches and reedbeds. Narrow shingle beaches up to 30 m wide occur in places along the edge of the estuary. The fringing reed communities are mainly confined to the tributaries and are relatively small in extent. They support Sea Club-rush (*Scirpus maritimus*), Grey Club-rush (*S. tabernaemontani*), Hemlock Water-dropwort (*Oenanthe crocata*) and abundant Common Reed (*Phragmites australis*). Halophilous scrub occurs in four of the larger saltmarsh areas. It is characterised by the presence of the legally protected (Flora (Protection) Order, 1999) and Red Data Book-listed plant Perennial Glasswort (*Arthrocnemum perenne*), which occurs in only a few sites in the country.

A mosaic of sand dune habitats occurs in three areas at the edge of the estuary. Embryonic shifting dunes and white dunes are characterised by the presence of Lyme-grass (*Leymus arenarius*), Marram (*Ammophila arenaria*), Sea Spurge and Seaholly in both Big Burrow and to the south east of Bannow Island.

The priority habitat fixed grey dune is also present. Typical species here include Common Bird's-foot-trefoil (*Lotus corniculatus*), Kidney Vetch (*Anthyllis vulneraria*), Wild Thyme (Thymus praecox), stork's-bill species (*Erodium* spp.), Ribwort Plantain (*Plantago lanceolata*), Common Restharrow (*Ononis repens*), Mouse-ear Hawkweed (*Hieracium pilosella*), Field Wood-rush (*Luzula campestris*) and Wild Carrot (*Daucus carota*). Some areas of this dune type contain a carpet of the moss *Tortula ruraliformis* and lichens (*Cladonia* sp.). There is some gorse (*Ulex* sp.) present beside the mossy area at the south-east of the site. Bee Orchid (*Ophrys apifera*) and Pyramidal Orchid (*Anacamptis pyramidalis*) have also been recorded. Sharp Rush (*Juncus acutus*) occurs in a dune slack associated with the grey dunes at Big Burrow. At the west of the system, east of Bannow Island, the dunes are quite high, reaching almost 15m. Nonnative plant species, including Tree Mallow (*Lavatera arborea*), occur in several parts of the site.

The site is of considerable conservation significance for the large number of E.U. Habitats Directive Annex I habitats that it contains, including the priority habitat fixed grey dune. The legally protected and Red Data Book plant species Perennial Glasswort also occurs. The site is also an SPA because of the important numbers of wintering wildfowl it supports, including an internationally important population of Light-bellied Brent Goose.

Qualifying Interests of the Site

[1130] Estuaries

[1140] Mudflats and sandflats not covered by seawater at low tide

[1210] Annual vegetation of drift lines

[1220] Perennial vegetation of stony banks

[1310] *Salicornia* and other annuals colonising mud and sand

[1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

[1410] Mediterranean salt meadows (*Juncetalia maritimi*)

[1420] Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

[2110] Embryonic shifting dunes

[2120] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

[2130] Fixed coastal dunes with herbaceous vegetation (grey dunes)

3.2.9 Saltee Islands SAC

Site Overview

The description of the Saltee Islands SAC provided here is based on the Site Synopsis (NPWS, 2013a) and Conservation Objectives (NPWS, 2011b) for the site.

This site comprises the Saltees Islands and a large area of the surrounding seas. There are two islands, Great Saltee and Little Saltee, and a constellation of islets and rocks. The islands are situated between 4 and 5 km off the south Wexford coast. As a group, they constitute a broken reef that protrudes from a seabed of sand and shell. The reef has a north-east/south-west orientation and is typically strewn with boulders, cobbles and patches of sand and gravel. Bedrock is metamorphic schist and gneiss.

The subtidal reefs at this site range from rugged bedrock with steep sided gullies to large boulders mixed with sand or cobbles and pebbles. They range from exposed, to moderately exposed, to wave action. The communities present are excellent examples of those typical of tide-swept areas and many have fauna and flora that are tolerant of sand scour. The area is notable for the range of colonial sea squirts present. With the exception of only a few samples, the communities are very species rich, with samples taken during the BioMar Survey having from 78 to 117 species. No other area surveyed during the BioMar Survey had so many species rich communities.

In shallow water the reefs support a forest of mixed kelp species, with scour tolerant fauna on tide-swept bedrock or a kelp forest of Laminaria hyperborea with a faunal cushion and foliose red algae. With increasing depth the kelp thins to a kelp park. The kelp understorey ranges from a turf of hydroids, bryozoans, sponges and numerous colonial sea squirts, to a community characterised by the bryozoan Flustra

foliacea or an understorey foliose red algae. On the sides of boulders a community with Deadman's Fingers (*Alcyonium digitatum*), the keel worm (*Pomatoceros triqueter)* and algal and bryozoan crusts is found.

In deeper water (15-30 m) animal dominated reef communities occur. The most notable of these is a community dominated by the sea squirt *Stolonica socialis* and the bryozoan *Flustra foliacea*. This community is rich in colonial sea squirts, in which *Archidistoma aggregatum*, *Sidnyum elegans* and *Distomus variolosus* and the solitary *Pyura squammata* occur. *Stolonica socialis* is only known from the south-east and north-west of Ireland, while *S. elegans* has not previously been recorded in Ireland. *Distomus variolosus* is only known from between Galway and Tralee Bay on the west coast, and the east and south-east coasts of Ireland. *Pyura squammata* appears to have a widespread but local distribution in Ireland. The sea anemone *Cataphellia brodricii* occurs in this community and in shallow water, both around the Saltee Islands and in other areas in the south-east. The only other records for this species are from Roaringwater Bay, Co. Cork. Where the bedrock is steep or large boulders are present the community may be formed of cushion sponges, branching sponges, massive sponges, *Nemertesia hydroids*, the rose coral *Pentapora foliacea*, or *Alcyonium digitatum*. Beds of the brittlestars *Ophiothrix fragilis* and *Ophiocomina nigra* are also found in the area, and on very steep to vertical reefs the plumose anemone *Metridium senile* may be found.

This site is of high conservation importance for the occurrence of several habitats which are listed on Annex I of the E.U. Habitats Directive, of which the reefs are of exceptional quality and diversity. The site is of international importance for breeding seabirds and has two species which are listed on Annex I of the E.U. Birds Directive. In addition, the site has a breeding population of Grey Seal, an Annex II species on the E.U. Habitats Directive.

Qualifying Interests of the Site

[1140] Mudflats and sandflats not covered by seawater at low tide

[1160] Large shallow inlets and bays

[1170] Reefs

[1230] Vegetated sea cliffs of the Atlantic and Baltic coasts

[8330] Submerged or partially submerged sea caves

[1364] Grey Seal (*Halichoerus grypus*)

3.3 Evaluation Against Conservation Objectives

Tables 3.2 – 3.10 below details the evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the sites identified in Section 3.1 and described in Section 3.2. As explained in Sections 1.5 and 1.6, AA Screening is carried out in view of the Conservation Objectives of the relevant European sites, which are in turn defined by detailed Attributes and corresponding Targets. Therefore, the evaluation of whether or not a likely effect is significant (in view of the Conservation Objective in question) is made with regard to these Attributes and Targets.

Table 3.2 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Mid-Waterford Coast SPA.

Qualifying Interest	Conservation Objective (NPWS, 2022b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Cormorant (*Phalacrocorax carbo*) [A017]	"*To maintain the favourable conservation condition of Cormorant in the Mid-Waterford Coast SPA*" as per the Mid-Clare Coast SPA (NPWS, 2014h)	The Attributes of this Conservation Objective focuses on "*Breeding population abundance*", *"Productivity rate", "Distribution", "Prey biomass availability", "Barriers to connectivity"* and "*Disturbance at breeding site*". This qualifying interest is found in Ireland during both the breeding and overwintering seasons Any activity which causes disturbance can lead to the displacement of bird species. In terms of feeding habitat, displacement from feeding opportunities not only reduces a bird's energy intake but also leads to an increase in energy expenditure as a result of the energetic costs of flying to an alternative feeding area. The proposed development has the potential to disturb this qualifying interest due to the survey activities and vessels in the marine environment. There is also potential for marine survey vessels to cause accidental inputs of hydrocarbons and other pollutants into the marine environment during the proposed survey activities. A reduction in water quality has the potential for indirect impacts on the Conservation Objectives of this Qualifying Interest. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Mid-Waterford Coast SPA in view of its Conservation Objectives for this Qualifying Interest.**	Yes

Qualifying Interest	Conservation Objective (NPWS, 2022b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Peregrine (*Falco peregrinus*) [A103]	"*To maintain the favourable conservation condition of Peregrine in the Mid-Waterford Coast SPA*" as per the Migneint-Arenig-Dduallt SPA [UK9013131] (CCW, 2008).	The Attributes of this Conservation Objectives focuses on "*Breeding population size*", *"peregrine breeding distribution", "Breeding Success", "Extent of Available nest sites"* and *"Extent of available hunting habitat and items"*. This qualifying interest is found in Ireland during the breeding season. As mentioned above, any activity which causes disturbance can lead to the displacement of bird species. In terms of feeding habitat, displacement from feeding opportunities not only reduces a bird's energy intake but also leads to an increase in energy expenditure as a result of the energetic costs of flying to an alternative foraging area. The proposed development has the potential to disturb this qualifying interest due to the survey activities and vessels in the coastal and marine environment. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Mid-Waterford Coast SPA in view of its Conservation Objectives for this Qualifying Interest.**	Yes
Herring Gull (*Larus argentatus*) [A184]	"*To maintain the favourable conservation condition of Herring Gull in the Mid-Waterford Coast SPA*" as per the Dundalk Bay SPA (NPWS, 2011c)	The Attributes of these Conservation Objectives focus on "*Population trend*" and "*Distribution*". These qualifying interests are found in Ireland during both the breeding and overwintering seasons. As mentioned above, any activity which causes disturbance can lead to the displacement of bird species. In terms of feeding habitat, displacement from feeding	Yes

Qualifying Interest	Conservation Objective (NPWS, 2022b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Chough (*Pyrrhocorax pyrrocorax*) [A141]	"*To maintain the favourable conservation condition of Chough in the Mid-Waterford Coast SPA*" as per the Castlemaine Harbour SPA (NPWS, 2011d)	opportunities not only reduces a bird's energy intake but also leads to an increase in energy expenditure as a result of the energetic costs of flying to an alternative foraging area. The proposed development has the potential to disturb these qualifying interests due to the survey activities and vessels in the marine environment. There is also potential for marine survey vessels to cause accidental inputs of hydrocarbons and other pollutants into the marine environment during the proposed survey activities. A reduction in water quality has the potential for indirect impacts on the Conservation Objectives of these Qualifying Interests. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Mid-Waterford Coast SPA in view of its Conservation Objectives for these Qualifying Interests**	

Table 3.3 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Keeragh Islands SPA.

Qualifying Interest	Conservation Objective (NPWS, 2022c)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Cormorant (*Phalacrocorax carbo*) [A017]	"*To maintain the favourable conservation condition of Cormorant in the Mid-Waterford Coast SPA*" as per the Mid-Clare Coast SPA (NPWS, 2014h)	The Attributes of this Conservation Objective focuses on "*Breeding population abundance*", *"Productivity rate", "Distribution", "Prey biomass availability", "Barriers to connectivity"* and "*Disturbance at breeding site*". This qualifying interest is found in Ireland during both the breeding and overwintering seasons. Any activity which causes disturbance can lead to the displacement of bird species. In terms of feeding habitat, displacement from feeding opportunities not only reduces a bird's energy intake but also leads to an increase in energy expenditure as a result of the energetic costs of flying to an alternative feeding area. The proposed development has the potential to disturb these qualifying interests due to the survey activities and vessels in the marine environment. There is also potential for marine survey vessels to cause accidental inputs of hydrocarbons and other pollutants into the marine environment during the proposed survey activities. A reduction in water quality has the potential for indirect impacts on the Conservation Objectives of this Qualifying Interest. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Keeragh Islands SPA in view of its Conservation Objectives for this Qualifying Interest.**	Yes

Table 3.4 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Ballyteige Burrow SPA.

Qualifying Interest	Conservation Objective (NPWS, 2014d)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	"*To maintain the favourable conservation condition of Light-bellied Brent Goose in the Ballyteige Burrow SPA*" (NPWS, 2014d)	The Attributes of these Conservation Objectives focus on "*Population trend*" and "*Distribution*". These qualifying interests are found in Ireland during both the breeding and overwintering seasons. As mentioned above, any activity which causes disturbance can lead to the displacement of bird species. In terms of feeding habitat, displacement from feeding opportunities not only reduces a bird's energy intake but also leads to an increase in energy expenditure as a result of the energetic costs of flying to an alternative foraging area. The proposed development has the potential to disturb these qualifying interests due to the survey activities and vessels in the marine environment. There is also potential for marine survey vessels to cause accidental inputs of hydrocarbons and other pollutants into the marine environment during the proposed survey activities. A reduction in water quality has the potential for indirect impacts on the Conservation Objectives of these Qualifying Interests. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Ballyteige Burrow SPA in view of its Conservation Objectives for these Qualifying Interests.**	Yes
Shelduck (*Tadorna tadorna*) [A048]	"*To maintain the favourable conservation condition of Shelduck in the Ballyteige Burrow SPA*" (NPWS, 2014d)		Yes
Golden Plover (*Pluvialis apricaria*) [A140]	"*To maintain the favourable conservation condition of Golden Plover in the Ballyteige Burrow SPA*" (NPWS, 2014d)		Yes
Grey Plover (*Pluvialis squatarola*) [A141]	"*To maintain the favourable conservation condition of Grey Plover in the Ballyteige Burrow SPA*" (NPWS, 2014d)		Yes
Lapwing (*Vanellus vanellus*) [A142]	"*To maintain the favourable conservation condition of Lapwing in the Ballyteige Burrow SPA*" (NPWS, 2014d)		Yes
Black-tailed Godwit (*Limosa limosa*) [A156]	"*To maintain the favourable conservation condition of Black-tailed Godwit in the Ballyteige Burrow SPA*" (NPWS, 2014d)		Yes
Bar-tailed Godwit (*Limosa lapponica*) [A157]	"*To maintain the favourable conservation condition of Bar-tailed Godwit in the Ballyteige Burrow SPA*" (NPWS, 2014d)		Yes

Qualifying Interest	Conservation Objective (NPWS, 2014d)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Wetlands and Waterbirds [A999]	"*To maintain the favourable conservation condition of wetland habitat in the Ballyteige Burrow SPA as a resource for the regularly-occurring migratory waterbirds that utilise it*" (NPWS, 2014d)	The Conservation Objective for Wetlands is defined by a single Attribute, namely "Habitat area", the Target for which is "*The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 559 hectares, other than that occurring from natural patterns of variation*". **As the proposed development does not provide for any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective.**	No

Table 3.5 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Bannow Bay SPA.

Qualifying Interest	Conservation Objective (NPWS, 2012b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	"*To maintain the favourable conservation condition of Light-bellied Brent Goose in the Bannow Bay SPA*" (NPWS, 2012b)	The Attributes of these Conservation Objectives focus on "*Population trend*" and "*Distribution*". As explained above, any activity which causes disturbance can lead to the displacement of bird species. These qualifying interests are only found in Ireland during the overwintering season. As the surveys operations are planned for between April – October, there is no overlap between the presence of these qualifying interests and the survey activities. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not cause likely significant effects on the Ballyteige Burrow SPA in view of its Conservation Objectives for these Qualifying Interests.**	No
Pintail (*Anas acuta*) [A054]	"*To maintain the favourable conservation condition of Pintail in the Bannow Bay SPA*" (NPWS, 2012b)		No
Grey Plover (*Pluvialis squatarola*) [A141]	"*To maintain the favourable conservation condition of Grey Plover in the Bannow Bay SPA*" (NPWS, 2012b)		No
Knot (*Calidris canutus*) [A143]	"*To maintain the favourable conservation condition of Knot in the Bannow Bay SPA*" (NPWS, 2012b)		No
Black-tailed Godwit (*Limosa limosa*) [A156]	"*To maintain the favourable conservation condition of Black-tailed Godwit in the Bannow Bay SPA*" (NPWS, 2012b)		No
Bar-tailed Godwit (*Limosa lapponica*) [A157]	"*To maintain the favourable conservation condition of Bar-tailed Godwit in the Bannow Bay SPA*" (NPWS, 2012b)		No
Shelduck (*Tadorna tadorna*) [A048]	"*To maintain the favourable conservation condition of Shelduck in the Bannow Bay SPA*" (NPWS, 2012b)	The Attributes of these Conservation Objectives focus on "*Population trend*" and "*Distribution*". These qualifying interests are found in Ireland during both the breeding and overwintering seasons. As mentioned above, any activity which causes	Yes
Oystercatcher	"*To maintain the favourable*		Yes

Qualifying Interest	Conservation Objective (NPWS, 2012b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
(*Haematopus ostralegus*) [A130]	*conservation condition of Oystercatcher in the Bannow Bay SPA*" (NPWS, 2012b)	disturbance can lead to the displacement of bird species. In terms of feeding habitat, displacement from feeding opportunities not only reduces a bird's energy intake but also leads to an increase in energy expenditure as a result of the energetic costs of flying to an alternative foraging area. The proposed development has the potential to disturb these qualifying interests due to the survey activities and vessels in the marine environment. There is also potential for marine survey vessels to cause accidental inputs of hydrocarbons and other pollutants into the marine environment during the proposed survey activities. A reduction in water quality has the potential for indirect impacts on the Conservation Objectives of these Qualifying Interests. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Ballyteige Burrow SPA in view of its Conservation Objectives for these Qualifying Interests.**	
Golden Plover (*Pluvialis apricaria*) [A140]	"*To maintain the favourable conservation condition of Golden Plover in the Bannow Bay SPA*" (NPWS, 2012b)		Yes
Lapwing (*Vanellus vanellus*) [A142]	"*To maintain the favourable conservation condition of Lapwing in the Bannow Bay SPA*" (NPWS, 2012b)		Yes
Dunlin (*Calidris alpina*) [A149]	"*To maintain the favourable conservation condition of Dunlin in the Bannow Bay SPA*" (NPWS, 2012b)		Yes
Curlew (*Numenius arquata*) [A160]	"*To maintain the favourable conservation condition of Curlew in the Bannow Bay SPA*" (NPWS, 2012b)		Yes
Redshank (*Tringa totanus*) [A162]	"*To maintain the favourable conservation condition of Redshank in the Bannow Bay SPA*" (NPWS, 2012b)		Yes
Wetland and Waterbirds [A999]	"*To maintain the favourable conservation condition of wetland habitat in the Bannow Bay SPA as a resource for the regularly-occurring migratory waterbirds that utilise it*" (NPWS, 2012b)	The Conservation Objective for Wetlands is defined by a single Attribute, namely "Habitat area", the Target for which is "*The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,364 hectares, other than that occurring from natural patterns of variation*". **As the proposed development does not provide for any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective.**	No

Table 3.6 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Saltee Islands SPA.

Qualifying Interest	Conservation Objective (NPWS, 2011b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Fulmar (*Fulmarus glacialis*) [A009]	"*To maintain the favourable conservation condition of Fulmar in the Saltee Islands SPA*" (NPWS, 2011b)	The Attributes of these Conservation Objectives focus on "*Breeding population abundance*", *"Productivity rate", "Distribution", "Prey biomass availability", "Barriers to connectivity",* "*Disturbance at breeding site*" and *"Disturbance at marine areas immediately adjacent to the colony"*. The Statutory Nature Conservation Bodies (SNCB), which comprises Natural Resources Wales (NRW), the Department of Agriculture, Environment and Rural Affairs/Northern Ireland Environment Agency (DAERA/NIEA), Scottish Natural Heritage (SNH) and the Joint Nature Conservation Committee (JNCC) recommend a standard 2 km disturbance buffer from the edge of an offshore windfarm development footprint for most species, with a 4 km displacement buffer for divers and sea ducks (Natural England and JNCC, 2022). Considering the purpose of the proposed survey activities are to inform the planning and design of an offshore wind farm, this displacement buffer is appropriate in this evaluation. The proposed survey activities will take place at least 5 km from this European site. Additionally, given the assimilative capacity of the marine environment off the southern coast of Co. Wexford and the scale of the proposed development, any water quality impacts would be negligible by the time they reached this site. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not cause likely significant effects on the Saltee Islands SPA in view of its Conservation Objectives for these Qualifying Interests.**	No
Gannet (*Morus bassanus*) [A016]	"*To maintain the favourable conservation condition of Gannet in the Saltee Islands SPA*" (NPWS, 2011b)		No
Cormorant (*Phalacrocorax carbo*) [A017]	"*To maintain the favourable conservation condition of Cormorant in the Saltee Islands SPA*" (NPWS, 2011b)		No
Shag (*Phalacrocorax aristotelis*) [A018]	"*To maintain the favourable conservation condition of Shag in the Saltee Islands SPA*" (NPWS, 2011b)		No
Lesser Black-backed Gull (*Larus fuscus*) [A183]	"*To maintain the favourable conservation condition of Lesser Black-backed Gull in the Saltee Islands SPA*" (NPWS, 2011b)		No
Herring Gull (*Larus argentatus*) [A184]	"*To maintain the favourable conservation condition of Herring Gull in the Saltee Islands SPA*" (NPWS, 2011b)		No
Kittiwake (*Rissa tridactyla*) [A188]	"*To maintain the favourable conservation condition of Kittiwake in the Saltee Islands SPA*" (NPWS, 2011b)		No

Qualifying Interest	Conservation Objective (NPWS, 2011b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Guillemot (*Uria aalge*) [A199]	"*To maintain the favourable conservation condition of Guillemot in the Saltee Islands SPA*" (NPWS, 2011b)	[As above]	No
Razorbill (*Alca torda*) [A200]	"*To maintain the favourable conservation condition of Razorbill in the Saltee Islands SPA*" (NPWS, 2011b)		No
Puffin (*Fratercula arctica*) [A204]	"*To maintain the favourable conservation condition of Puffin in the Saltee Islands SPA*" (NPWS, 2011b)		No

Table 3.7 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Hook Head SAC.

Qualifying Interest	Conservation Objective (NPWS, 2011a)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Large shallow inlets and bays [1160]	"*To maintain the favourable conservation condition of Large shallow inlets and bays in the Hook Head SAC*" (NPWS, 2011a)	The Attributes of this Conservation Objective focuses on "*Habitat area"* and *"Community extent"*. The proposed development boundary is <1 km from this European site. Although there is no planned land-take from this area and so the proposed development will not impact on the *"Habitat Area"* conservation objective, the nature of the proposed development (i.e. geotechnical surveys) may lead to sedimentation, thereby impacting the "*Community extent"* conservation objective. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Hook Head SAC in view of its Conservation Objectives for this Qualifying Interest.**	Yes
Reefs [1170]	"*To maintain the favourable conservation condition of Large shallow inlets and bays in the Hook Head SAC*" (NPWS, 2011a)	The Attributes of this Conservation Objective focuses on *"Distribution",* "*Habitat area" "Community Structure"* and *"Community extent".* The proposed development boundary is <1 km from this European site. Although there is no planned land-take from this area, the nature of the proposed development (i.e. geotechnical surveys and borehole drilling) may lead to sedimentation, thereby impacting the conservation condition of this qualifying interest. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Hook Head SAC in view of its Conservation Objectives for this Qualifying Interest.**	Yes
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	"*To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in the Hook Head SAC*" (NPWS, 2011a)	The Attributes of this Conservation Objective focuses on *"Habitat Length", "Habitat Distribution", Physical Structure", Vegetation Structure"* and *"Vegetation Composition".* Vegetated sea cliffs of the Atlantic and Baltic coasts are a terrestrial habitat and thus have no hydrological connection to the proposed development. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not cause likely significant effects on the Hook Head SAC in view of its Conservation Objectives for this Qualifying Interest.**	No

Table 3.8 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Ballyteige Burrow SAC.

Qualifying Interest	Conservation Objective (NPWS, 2014f)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Estuaries [1130]	*"To maintain the favourable conservation condition of Estuaries in the Ballyteige Burrow SAC"* (NPWS, 2014f)	The Attributes of this Conservation Objective focuses on "*Habitat Area"* and "*Community Distribution*" The proposed development boundary is <1 km from this European site via a hydrological connection. Although there is no planned land-take from this area and so the proposed development will not impact on the *"Habitat Area"* conservation objective, the nature of the proposed development (i.e. geotechnical surveys) may lead to sedimentation, thereby impacting the "*Community extent"* conservation objective. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Ballyteige Burrow SAC in view of its Conservation Objectives for these Qualifying Interests.**	Yes
Mudflats and sandflats not covered by seawater at low tide [1140]	*"To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Ballyteige Burrow SAC"* (NPWS, 2014f)		Yes
Coastal lagoons [1150]	*"To restore the favourable conservation condition of Coastal lagoons in the Ballyteige Burrow SAC"* (NPWS, 2014f)	The Attributes of this Conservation Objective focuses on "*Habitat Area", "Habitat Distribution", "Salty Regime", "Hydrological Regime", "Barrier Connectivity", "Water Quality", "Depth of Macrophyte Colonisation", "Typical Plant Species", "Typical Animal Species"* and *"Negative Indicator Species".* The proposed development boundary is <1 km from this European site via a hydrological connection. Although there is no planned land-take from this area, the nature of the proposed development (i.e. geotechnical surveys and borehole drilling) has the potential to lead to sedimentation and disruption of baseline conditions. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Ballyteige Burrow SAC in view of its Conservation Objectives for this Qualifying Interest.**	Yes
Annual vegetation of drift lines [1210]	*"To maintain the favourable conservation condition of Annual vegetation of drift lines in the Ballyteige*	The Attributes of these Conservation Objectives focus on *"Habitat Area", "Habitat Distribution", "Physical Structure", Vegetation Structure"* and *"Vegetation Composition".*	No

Qualifying Interest	Conservation Objective (NPWS, 2014f)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
	Burrow SAC" (NPWS, 2014f)	These qualifying interests are terrestrial habitats and thus have no hydrological connection to the proposed development. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not cause likely significant effects on the Ballyteige Burrow SAC in view of its Conservation Objectives for these Qualifying Interests.**	
Perennial vegetation of stony banks [1220]	*"To maintain the favourable conservation condition of Perennial vegetation of stony banks in the Ballyteige Burrow SAC"* (NPWS, 2014f)		No
Salicornia and other annuals colonising mud and sand [1310]	*"To maintain the favourable conservation condition of Salicornia and other annuals colonising mud and sand in the Ballyteige Burrow SAC"* (NPWS, 2014f)	The Attributes of these Conservation Objectives focus on *"Habitat Area", "Habitat Distribution", "Physical Structure", Vegetation Structure"* and *"Vegetation Composition".* These qualifying interests are terrestrial habitats and thus have no hydrological connection to the proposed development. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Ballyteige Burrow SAC in view of its Conservation Objectives for these Qualifying Interests.**	Yes
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	*"To restore the favourable conservation condition of Atlantic salt meadows (Glauco-Puccinellietalia maritimae) in the Ballyteige Burrow SAC"* (NPWS, 2014f)		Yes
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	*"To maintain the favourable conservation condition of Mediterranean salt meadows (Juncetalia maritimi) in the Ballyteige Burrow SAC*" (NPWS, 2014f)		Yes
Mediterranean and thermo-Atlantic	*"To restore the favourable conservation condition of Mediterranean and thermo-*		Yes

Qualifying Interest	Conservation Objective (NPWS, 2014f)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
halophilous scrubs (*Sarcocornetea fruticosi*) [1420]	*Atlantic halophilous scrubs (Sarcocornetea fruticosi) in the Ballyteige Burrow SAC"* (NPWS, 2014f)		
Embryonic shifting dunes [2110]	*"To maintain the favourable conservation condition of Embryonic shifting dunes in the Ballyteige Burrow SAC"* (NPWS, 2014f)	The Attributes of these Conservation Objectives focus on *"Habitat Area", "Habitat Distribution", "Physical Structure", Vegetation Structure"* and *"Vegetation Composition".* These qualifying interests are terrestrial habitats and thus have no hydrological connection to the proposed development. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not cause likely significant effects on the Ballyteige Burrow SAC in view of its Conservation Objectives for these Qualifying Interests.**	No
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	*"To maintain the favourable conservation condition of Shifting dunes along the shoreline with Ammophila arenaria (white dunes) in the Ballyteige Burrow SAC"* (NPWS, 2014f)		No
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	*"To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation (grey dunes) in the Ballyteige Burrow SAC"* (NPWS, 2014f)		No
Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) [2150]	*"To maintain the favourable conservation condition of Atlantic decalcified fixed dunes (Calluno-Ulicetea) in the Ballyteige Burrow SAC"* (NPWS, 2014f)		No
Humid dune slacks [2190]	*"To restore the favourable conservation condition of Humid dune slacks in the*		No

Qualifying Interest	Conservation Objective (NPWS, 2014f)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
	Ballyteige Burrow SAC" as per the Ballysadare Bay SAC (NPWS, 2013b).	[As above]	

Table 3.9 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Bannow Bay SAC.

Qualifying Interest	Conservation Objective (NPWS, 2012c)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Estuaries [1130]	"*To maintain the favourable conservation condition of Estuaries in the Bannow Bay SAC*" (NPWS, 2012c)	The Attributes of this Conservation Objective focuses on "*Habitat Area"* and "*Community Distribution*". The proposed development boundary is c. 1.6 km from this European site via a hydrological connection. Although there is no planned land-take from this area, the nature of the proposed development (i.e. geotechnical surveys and borehole drilling) has the potential to lead to sedimentation and disruption of baseline conditions and benthic communities. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Bannow Bay SAC in view of its Conservation Objectives for this Qualifying Interest.**	Yes
Mudflats and sandflats not covered by seawater at low tide [1140]	"*To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Bannow Bay SAC*" (NPWS, 2012c)	The Attributes of this Conservation Objective focuses on "*Habitat Area",* "*Community Distribution*", *"*Zostera *Shoot Community",* and *"*Barnea candida *Density"* The proposed development boundary is c. 1.6 km from this European site via a hydrological connection. Although there is no planned land-take from this area, the nature of the proposed development (i.e. geotechnical surveys and borehole drilling) has the potential to lead to sedimentation and disruption of baseline conditions and benthic communities. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Bannow Bay SAC in view of its Conservation Objectives for this Qualifying Interest.**	Yes
Annual vegetation of drift lines [1210]	"*To maintain the favourable conservation condition of Annual vegetation of drift lines in the Bannow Bay SAC*" (NPWS, 2012c)	The Attributes of these Conservation Objectives focus on *"Habitat Area", "Habitat Distribution", "Physical Structure", Vegetation Structure"* and *"Vegetation Composition".* These qualifying interests are terrestrial habitats and thus have no hydrological connection to the proposed development.	No
Perennial	"*To maintain the favourable*	**Therefore, it can be concluded beyond reasonable scientific doubt that the proposed**	No

Qualifying Interest	Conservation Objective (NPWS, 2012c)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
vegetation of stony banks [1220]	*conservation condition of Perennial vegetation of stony banks in the Bannow Bay SAC*" (NPWS, 2012c)	**development will not cause likely significant effects on the Bannow Bay SAC in view of its Conservation Objectives for these Qualifying Interests.**	
Embryonic shifting dunes [2110]	*"To restore the favourable conservation condition of Embryonic shifting dunes in the Bannow Bay SAC"* (NPWS, 2012c)		No
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	"*To restore the favourable conservation condition of Shifting dunes along the shoreline with* Ammophila arenaria *(white dunes) in the Bannow Bay SAC*" (NPWS, 2012c)		No
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	"*To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation (grey dunes) in the Bannow Bay SAC*" (NPWS, 2012c)		No
Salicornia and other annuals colonising mud and sand [1310]	"*To restore the favourable conservation condition of Salicornia and other annuals colonising mud and sand in the Bannow Bay SAC*" (NPWS, 2012c)	The Attributes of these Conservation Objectives focus on *"Habitat Area", "Habitat Distribution", "Physical Structure", Vegetation Structure"* and *"Vegetation Composition".* The proposed development boundary is c. 1.6 km from this European site via a hydrological connection. Although there is no planned land-take from this area, the nature of the proposed development (i.e. geotechnical surveys and borehole drilling) has the potential to lead to sedimentation and disruption of baseline conditions and benthic communities. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed**	Yes
Atlantic salt meadows (*Glauco-Puccinellietalia*	"*To restore the favourable conservation condition of Atlantic salt meadows* (Glauco-Puccinellietalia		Yes

Qualifying Interest	Conservation Objective (NPWS, 2012c)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
***maritimae*) [1330]**	maritimae) *in the Bannow Bay SAC*" (NPWS, 2012c)	**development has the potential to cause likely significant effects on the Bannow Bay SAC in view of its Conservation Objectives for these Qualifying Interests.**	
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	"*To restore the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in the Bannow Bay SAC*" (NPWS, 2012c)		Yes
Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) [1420]	"*To restore the favourable conservation condition of Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) in the Bannow Bay SAC*" (NPWS, 2012c)		Yes

Table 3.10 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Saltee Islands SAC.

Qualifying Interest	Conservation Objective (NPWS, 2011b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Mudflats and sandflats not covered by seawater at low tide [1140]	*"To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Saltee Islands SAC"* (NPWS, 2011b)	The Attributes of this Conservation Objective focuses on "*Habitat Area"* and "*Community Extent*" The proposed development boundary is c. 1.3 km from this European site via a hydrological connection. Although there is no planned land-take from this area, the nature of the proposed development (i.e. geotechnical surveys and borehole drilling) has the potential to lead to sedimentation and disruption of baseline conditions and benthic communities. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Saltee Islands SAC in view of its Conservation Objectives for these Qualifying Interests.**	Yes
Large shallow inlets and bays [1160]	*"To maintain the favourable conservation condition of Large shallow inlets and bays in the Saltee Islands SAC"* (NPWS, 2011b)		Yes
Reefs [1170]	*"To maintain the favourable conservation condition of Reefs in the Saltee Islands SAC"* (NPWS, 2011b)	The Attributes of this Conservation Objective focuses on "*Habitat Area", "Distribution", "Community Structure"* and "*Community Extent*" The proposed development boundary is c. 1.3 km from this European site via a hydrological connection. Although there is no planned land-take from this area, the nature of the proposed development (i.e. geotechnical surveys and borehole drilling) has the potential to lead to sedimentation and disruption of baseline conditions and benthic communities. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Saltee Islands SAC in view of its Conservation Objectives for these Qualifying Interests.**	Yes
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	*"To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in the Saltee Islands SAC"* (NPWS, 2011b)	The Attributes of this Conservation Objective focuses on *"Habitat Length", "Habitat Distribution", "Physical Structure", Vegetation Structure"* and *"Vegetation Composition".* Vegetated sea cliffs of the Atlantic and Baltic coasts are a terrestrial habitat and thus have no hydrological connection to the proposed development.	No

Qualifying Interest	Conservation Objective (NPWS, 2011b)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not cause likely significant effects on the Saltee Islands SAC in view of its Conservation Objectives for this Qualifying Interest.	
Submerged or partially submerged sea caves [8330]	*"To maintain the favourable conservation condition of Submerged or partially submerged sea caves in the Saltee Islands SAC"* (NPWS, 2011b)	The Attributes of this Conservation Objective focuses on *"Distribution"* and *"Community Structure".* The proposed development boundary is c. 1.3 km from this European site via a hydrological connection. There is no planned land-take from this area and the closest known location of this qualifying interest occurs >5 km the proposed development location. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development will not cause likely significant effects on the Saltee Islands SAC in view of its Conservation Objectives for this Qualifying Interest.**	No
***Halichoerus grypus* (Grey Seal) [1364]**	*"To maintain the favourable conservation condition of Grey Seal in the Saltee Islands SAC"* (NPWS, 2011b)	The Attributes of this Conservation Objective focuses on "*Access to suitable habitat", "Breeding behaviour", "Moulting behaviour", "Resting behaviour", "Population composition"* and *"Disturbance"* This proposed development boundary is c. 1.3 km from this European site via a hydrological connection. Any activity which causes disturbance can lead to the displacement of marine mammals. Grey seal have the potential to be impacted by underwater noise due to the survey activities and vessels in the marine environment as well as creating artificial barriers in the form of equipment in the marine environment. **Therefore, it can be concluded beyond reasonable scientific doubt that the proposed development has the potential to cause likely significant effects on the Saltee Islands SAC in view of its Conservation Objectives for this Qualifying Interest.**	Yes

3.4 Summary of Likely Significant Effects

In Section 3.1, it was established that nine European sites, namely the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Saltee Islands SPA, the Ballyteige Burrow SAC, the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC occur within the likely zone of impact.

It was determined that potential pathways for effects exist between the proposed development and nine sites, namely the namely the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Saltee Islands SPA, the Ballyteige Burrow SAC, the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC. There are no pathways for effects between the proposed development and any other European sites. These sites were described in detail in Section 3.2. Tables 3.2 – 3.10 above established that, in the absence of appropriate mitigation, the proposed development is likely to have significant effects on the Qualifying Interests of eight of these sites, namely the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Ballyteige Burrow SAC, the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC, in view of their Conservation Objectives.

4.0 IN-COMBINATION EFFECTS

Article 6(3) of the Habitats Directive requires that AA be carried out in respect of any plan or project which is likely to have a significant effect on one or more European sites, "either individually or in combination with other plans or projects". Therefore, regardless of whether or not the likely effects of a plan or project are significant when considered in isolation, the potential for the plan or project to significantly affect European sites in combination with other past, present or foreseeable future plans or projects must also be assessed.

In the case of the proposed development, this AA Screening Report has found that the proposed development, individually, is likely to have significant effects on one European site. Therefore, the assessment of the proposed development must proceed to Stage 2 (AA). The assessment of likely significant effects on this European site arising from the proposed development, in combination with other plans or projects, should be undertaken at that stage.

5.0 APPROPRIATE ASSESSEMENT SCREENING CONCLUSION

In accordance with Article 6(3) of the Habitats Directive and Part 5 of the Birds and Natural Habitats Regulations, the relevant case law, established best practice and the Precautionary Principle, this AA Screening Report has considered the proposed development and its potential to significantly affect European sites. This report has concluded, on the basis of objective information, that the proposed development, either individually or in combination with other plans or projects, is likely to give rise to impacts which would constitute significant effects on eight European sites, namely the namely the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Ballyteige Burrow SAC, the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC, in view of their Conservation Objectives.

In light of this conclusion, it is the considered opinion of ROD, as the author of this AA Screening Report, that the Department of Housing, Local Government and Heritage, as the Competent Authority in this case, in completing its AA Screening in respect of the proposed development, should find that the proposed development, either individually or in combination with other plans or projects, is likely to have a significant effect on eight European sites, namely the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Ballyteige Burrow SAC, the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC, in view of their Conservation Objectives. Therefore, the Department should determine that AA is required in respect of the proposed development.

The AA must contain complete, precise and definitive findings and conclusions in relation to the implications of the proposed development for the integrity of the Mid-Waterford Coast SPA, the Keeragh Islands SPA, the Ballyteige Burrow SPA, the Bannow Bay SPA, the Ballyteige Burrow SAC, the Saltee Islands SAC, the Hook Head SAC, and the Bannow Bay SAC. A Natura Impact Statement (NIS) should be prepared to provide the Department with the scientific information upon which it will base its findings and conclusions. The NIS should take the form of a comprehensive examination, analysis and evaluation, including recommendations, in respect of the implications of the proposed development, individually and in combination with other plans and projects, for the integrity of the European sites concerned.

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