# Arranmore Wind Park

# Foreshore Licence Application for Site Investigation Works

*Non-statutory Environmental Report*

## Document Control

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This report is produced in support of an application for a site investigation licence under Section 3 of the Foreshore Act 1933, as amended, and should not be used for any other purpose apart from that expressly stated in this document.

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# List of Abbreviations

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|---|---|
| AA | Appropriate Assessment |
| ADCP | Acoustic Doppler Current Profiler |
| AIS | Automatic Identification System |
| AONB | Area of Outstanding Natural Beauty |
| API | American Petroleum Institute |
| BH | Borehole |
| BIM | Bord Iascaigh Mhara |
| BSF | Below seafloor |
| CO | Conservation Objective |
| CPOD | Cetacean Passive Acoustic Network |
| CPT | Cone Penetration Test |
| DAFM | Department of Agriculture, Food and the Marine |
| DAHG | Department of Culture, Heritage and the Gaeltacht |
| DHLGH | Department of Housing, Local Government and Heritage |
| EC | European Commission |
| EEZ | Exclusive Economic Zone |
| EIA | Environmental Impact Assessment |
| EPA | Environment Protection Agency |
| EPS | European Protected Species |
| EU | European Union |
| FLO | Fisheries Liaison Officer |
| GDG | Gavin and Doherty Geosolutions Ltd. |
| HABs | Harmful Algal Blooms |
| IBTSWG | International Bottom Trawl Survey Working Group |
| ICES | International Council for the Exploration of the Sea |
| IGS | Irish Groundfish Survey |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| ITM | Irish Transverse Mercator |
| JNCC | Joint Nature Conservation Committee |
| LiDAR | Light Detection and Ranging |
| LSE | Likely Significant Effects |
| MAP | Marine Area Planning Act 2021 |
| MARPOL | The International Convention for the Prevention of Pollution from Ships |
| MBES | Multibeam echosounder |
| MI | Marine Institute |
| MMO | Marine Mammal Observer |
| NIGS | Northern Ireland Groundfish Survey |
| NIS | Natura Impact Statement |
| NM | Nautical Mile |
| NPWS | National Parks and Wildlife Service |
| NSER | Non-Statutory Environmental Report |
| OECC | Offshore Export Cable Corridor |
| OWF | Offshore Wind Farm |
| PTS | Permanent Threshold Shift |
| SCA | Seascape Character Area |

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|---|---|
| SCI | Special Conservation Interest |
| SISAA | Supporting Information for Screening for Appropriate Assessment |
| SPL | Sound Pressure Level |
| SSS | Side Scan Sonar |
| SWCGS | Scottish West Coast Groundfish Survey |
| SWD | Shellfish Waters Directive |
| TTS | Temporary Threshold Shift |
| UK | United Kingdom |
| UTM | Universal Transverse Mercator |
| VC | Vibrocore |
| VMS | Vessel Electronic Monitoring System |
| WGS | World Geodetic System |
| WTG | Wind Turbine Generator |

# Glossary of Terms

| | |
|---|---|
| Acoustic Doppler Current Profiler (ADCP) | An Acoustic Doppler Current Profiler is a hydroacoustic current meter similar to a sonar, used to measure water current velocities over a depth range using the Doppler effect of sound waves scattered back from particles within the water column. |
| Boreholes | A borehole is a narrow shaft bored in the ground, either vertically or horizontally. |
| Cone Penetration Test (CPT) | The cone penetration or cone penetrometer test (CPT) is a method used to determine the geotechnical engineering properties of soils and delineating soil stratigraphy. |
| Exclusive Economic Zone | Marine area from the territorial seas boundary seaward to a distance of 200 miles or otherwise as agreed under international statute. |
| Foreshore | The foreshore of Ireland is classed as the land and seabed between the high water of ordinary or medium tides (shown HWM on Ordnance Survey maps) and the twelve-mile limit (12 nautical miles equals approximately 22.24 kilometres). Foreshore also covers tidal areas of rivers particularly estuaries. |
| Foreshore Licence Application Area | In this report means the area within the 12 NM limit of the Irish coastline where an Application for a Licence under Section 3 of the Foreshore Act 1933, as amended, is being submitted to the Department of Housing, Local Government and Heritage (DHLGH) for a licence to undertake site investigation activities. |
| Geophysical Surveys | Geophysical surveys are sound-based physical sensing techniques that produce a detail image or map of an area. Ground-based surveys may include: Seismic surveys - vibrations are recorded with geophones to provide information about the properties of rocks. |
| Geotechnical Surveys | Geotechnical investigation and evaluation which includes methods to acquire and evaluate subsurface information (i.e. drilling and sampling, laboratory testing, cone penetration testing, and pressure meter testing). |
| Grab Samples | A grab sample is a sample of sediment taken from the seabed. |
| Habitats Directive | Adopted in 1992, the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments. |
| Interim Campaign | Site Investigation surveys designed to build on the level of detail acquired during the preliminary campaign with the aim of developing a detailed ground model of the site that will feed into the overall design of the wind farm. For this Application it refers to the second geotechnical campaign. |
| Irish Transverse Mercator (ITM) | Irish Transverse Mercator (ITM) is the geographic coordinate system for Ireland. It was implemented jointly by the Ordnance Survey Ireland (OSi) and the Ordnance Survey of Northern Ireland (OSNI) in 2001. The name is derived from the Transverse Mercator projection it uses and the fact that it is optimised for the island of Ireland. ITM95 (EPSG:2157) is used to map the project area for the Foreshore Licence Map. |
| LiDAR | LiDAR is a method for measuring distances by illuminating the target with laser light and measuring the reflection with a sensor. Differences in laser return times and wavelengths can then be used to make digital 3-D representations of the target. It has terrestrial, airborne, and mobile applications. |
| Magnetometer | A magnetometer is a device that measures magnetism—the direction, strength, or relative change of a magnetic field at a particular location. The measurement of the magnetization of a magnetic material is an example |
| Maritime Area Planning Bill | Legislation reforming consenting within Ireland's marine area, including introducing both an offshore specific consenting regime and extending the powers of the State to enable the State to operate a consenting regime across its entire EEZ and agreed continental shelf. |

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|---|---|
| MARPOL | MARPOL is the main international convention aimed at the prevention of pollution from ships caused by operational or accidental causes. It was adopted at the International Maritime Organization (IMO) in 1973. The Protocol of 1978 was adopted in response to a number of tanker accidents in 1976–1977. |
| Metocean | Metocean conditions refer to the combined wind, wave and climate (etc.) conditions as found on a certain location. They are most often presented as statistics, including seasonal variations, scatter tables, wind roses and probability of exceedance. |
| Minister | In this report, Minister means the Minister for Housing, Local Government and Heritage |
| Multibeam Echosounder (MBES) | An echosounder uses sound waves to measure water depth. A transducer mounted under the vessel emits a pulse which travels through the water to the seafloor and bounces back to a receiver. The time it takes for the signal to return is measured, and because the speed of sound through water (~1500 m/s) is known, the water depth under the boat is measured. This is the basic principle of hydrography and seafloor mapping. A multibeam echosounder (MBES) measures multiple echoes at a time. |
| Offshore Export Cable Corridor | Area where site investigations will take place to determine the suitability of that area as a route for the export electricity cable from the wind farm to land. |
| Offshore Wind Farm Area | Area where site investigations will take place to determine the suitability of that area for the installation of Wind Turbine Generators and inter-array cabling. |
| Pollution Event | A 'pollution incident' includes a leak, spill or escape of a substance, or circumstances in which this is likely to occur. |
| Preliminary Campaign | Site Investigation surveys early in the project development programme designed to give an overview of the receiving environment with the aim of developing a first stage ground model. For this Application it refers to the first geotechnical campaign. |
| Side Scan Sonar (SSS) | Side-scan uses a sonar device that emits conical or fan-shaped pulses down toward the seafloor across a wide-angle perpendicular to the path of the sensor through the water, which may be towed from a surface vessel or submarine or mounted on the ship's hull. |
| Sub-Bottom Profiler | A Sub-bottom profiler is a type of sonar system that produces a 2-dimensional stratigraphic cross section by using acoustic energy to image sub-surface features in an aquatic environment. |
| Universal Transverse Mercator (UTM) | The UTM (Universal Transverse Mercator) coordinate system divides the world into sixty north-south zones, each 6 degrees of longitude wide. UTM zones are numbered consecutively beginning with Zone 1 and progress eastward to Zone 19. UTM 29N (EPSG:32629) is used to map the project area. |
| Vibrocore | Vibrocoring is the state-of-the-art sediment sampling methodology for retrieving continuous, undisturbed cores. Vibrocorers can work in a variety of water depths and can retrieve core samples at different lengths depending on sediment lithology and project objectives. |
| Wave Buoy | Wave buoy – used to measure the movement of the water surface as a wave train. The wave train is analysed to determine statistics like the significant wave height and period, and wave direction. |
| World Geodetic System (WGS) | The World Geodetic System (WGS) is a standard for use in cartography, geodesy, and satellite navigation including GPS. WGS84 is a geocentric reference ellipsoid and a geodetic datum, in that it defines the centre of mass of the earth as its origin, and the direction of the earth's axis as the minor axis of the reference ellipsoid. WGS84 (EPSG:4326) is used to map the project area. |

# 1 Introduction

Arranmore Wind Limited proposes to investigate the feasibility of developing an offshore wind farm, Arranmore Wind Park, off the coast of counties Donegal, Leitrim and Sligo.

Arranmore Wind Limited has prepared this report in support of an application for a Foreshore Licence under Section 3 of the Foreshore Act 1933, as amended, to carry out site investigation activities to determine the suitability of the Foreshore Licence Application Area for the development of an offshore wind farm.

Arranmore Wind Limited intends to undertake a survey campaign at the proposed Foreshore Licence Application Area to inform the location and design of the proposed offshore wind farm and cable route to shore.

## 1.1 Aim of this Report

This report is part of the Foreshore Licence Application to the Foreshore Unit of DHLGH.

The report aims to provide information documenting the current state of the environment in the vicinity of the proposed site investigation activities and on the potential effects of the proposed activities on the receiving environment.

This report also aims to determine whether any of the proposed site investigation activities fall within a class of project listed in Part 2 of Schedule 5 of the Planning Regulations Section 13A of the Foreshore Act 1933, as amended (note the proposed geotechnical, geophysical, environmental, metocean and archaeological marine surveys do not correspond to any of the project types listed in Part 1).

## 1.2 Methodology

This report describes the current state of the environment in the vicinity of the proposed site investigation activities to quantify the effects, if any, on the environment. The report documents the EIA Screening exercise undertaken and highlights how the survey design and proposed mitigation measures will be implemented to prevent or minimise impacts on the environment.

While undertaking this evaluation of effects is not a statutory requirement, the report has been produced to consider the potential effects of the proposed site investigation activities on environmental aspects such as population and human health, biodiversity (marine benthos, marine mammals, birds, fish and Natura 2000 sites), water, air & climate, socio-economic activities (commercial fisheries, aquaculture, marine traffic, tourism & recreation, material assets and other proposed developments), archaeology and cultural heritage, landscape and seascape and major accidents and disasters.

This report has been prepared in accordance with the following guidance:

1. Guidelines on the Information to be contained in Environmental Impact Assessment Reports, from the Environmental Protection Agency (EPA) (Draft, August 2017)

2. Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, from the Department of Housing, Planning, Community and Local Government (August 2018)
3. OPR Practice Note PN02 Environmental Impact Assessment Screening, from the Office of the Planning Regulator (June 2021)
4. Environmental Impact Assessment of Projects, Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU), from the European Commission (2017)

This report has been prepared by [redacted](BSc. (Hons) Marine Science, MSc. Engineering in the Coastal Environment) and reviewed by [redacted] BSc. (Hons) Biology, MSc. Applied Science (75% Environmental Science, 25% Civil Engineering), and who is a Chartered Environmentalist. [redacted] is a Marine Ecologist with coastal engineering expertise and extensive experience of offshore benthic survey and Marine Protected Area monitoring who has undertaken multiple environmental assessments under the Habitats Directive as a statutory adviser to the UK government and its devolved administrations with the Joint Nature Conservation Committee. [redacted] is an experienced professional within the offshore wind sector, who previously held scientific and regulatory roles within the Scottish Government Directorate of Marine Scotland. He has undertaken multiple environmental assessments under both the Habitats and Environmental Impact Assessment Directives as a regulator with Marine Scotland and for multiple applicants for licences in Ireland under the Foreshore Act 1933, as amended.

## 1.3 Structure of the Report

This report is structured into the following chapters, which include a description of the known receiving environment for the Foreshore Licence Application Area as well as an identification of the potential environmental impacts of the proposed site investigation activities and assessment of these impacts on the receiving environment. Specifically, the chapters describe or comprise the following elements:

- Chapter 1 (this chapter): Introduction to the report
- Chapter 2: Describes the proposed site investigation activities
- Chapter 3: Documents the Environmental Impact Assessment Screening exercise and reports on its conclusion
- Chapter 4: Non-statutory environmental assessment
- Chapter 5: Summarises the proposed mitigation measures
- Chapter 6: Presents the conclusions from this report

# 2 Description of the Proposed Site Investigation Activities

This document has been produced in support of the Foreshore Licence Application which seeks consent to conduct site investigation activities to establish the potential for offshore wind development off the Donegal, Leitrim and Sligo coasts. This is not an application for a wind farm development. If the proposed survey work, together with desktop studies and stakeholder engagement, indicates the feasibility of progressing the proposed wind farm project to the next step, that step will need to be progressed in accordance with the National Marine Planning Framework and other relevant legislation in due course, including the new consenting regime for offshore renewable energy being legislated for through the Maritime Area Planning Bill 2021 (MAP).

## 2.1 Foreshore Licence Application Area

The Foreshore License Application Area is situated off the coast of counties Donegal, Leitrim and Sligo (**Error! Reference source not found.**).

Arranmore Wind Limited acknowledges that it is only possible at this time to obtain a Site Investigation Licence for that area situated within the 12nm boundary. Arranmore Wind Limited is not proposing at this time to undertake any intrusive surveys outside the 12nm limit regulated under the Foreshore Act 1933, as amended.

This Foreshore Licence Application seeks consent to conduct site investigation activities within the 12nm boundary to establish the potential for offshore wind farm development off the coast of counties Donegal and Sligo. If the Foreshore Licence Application Area investigation activities, together with desktop studies and stakeholder engagement, indicates the feasibility of developing a wind farm, the project will be progressed at that point in accordance with the National Marine Planning Framework and other relevant legislation including the new consenting regime for offshore renewable energy being legislated for through the Maritime Area Planning Bill (MAP).

The Foreshore Licence Application Area covers a total area of 1709.69 $km^2$. The Foreshore Licence Application Area is comprised of the Offshore Wind Farm (OWF) Area within the 12nm boundary (645.37 $km^2$) and the Offshore Export Cable Corridor (OECC) Area (1064.32 $km^2$). The western boundary of the OWF area within the 12nm boundary is adjoined by the 12nm boundary.

The Foreshore Licence Application Area, OWF Area within the 12nm boundary and OECC Area are shown in Figure 2-1. The coordinates of the Foreshore Licence Application Area are provided in the Foreshore License Application Form and Schedule of Works submitted as part of this Foreshore License Application.

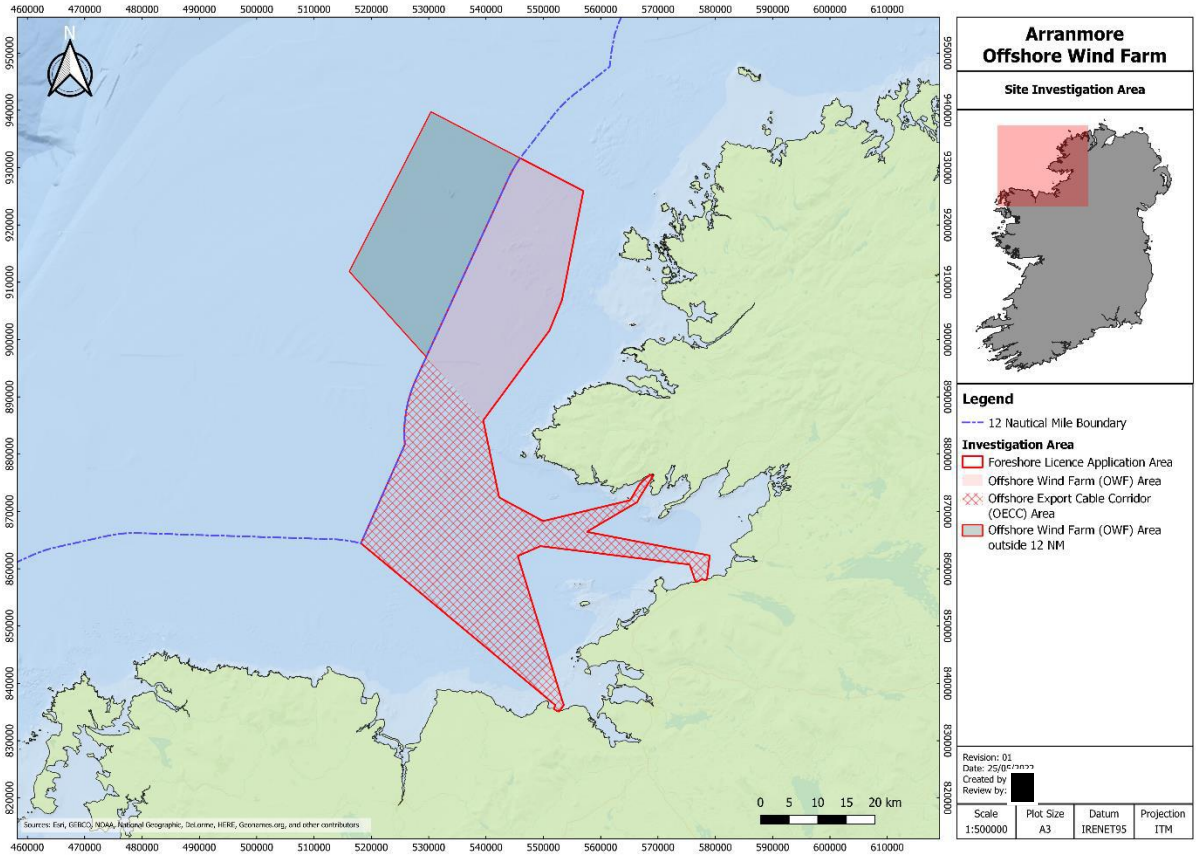


***Figure 2-1 Arranmore Wind Park OWF Area and OECC Area (red, OECC area hatched) including the OWF Area outside 12 nm (grey) for information. Note Foreshore Licence Application Area is all within 12 nm.***

## 2.2 Site Investigation Activities

The objective of the proposed Arranmore Wind Park survey campaign is to determine environmental conditions and seafloor and subsurface geological characteristics within the Foreshore Licence Application Area.

The proposed programme of site investigations to be undertaken within the Foreshore Licence Application Area is discussed in detail in the Schedule of Works document accompanying this Application. Indicative seafloor contacting Site Investigation locations are shown in **Error! Reference source not found.**. Note seafloor-contacting Site Investigation location distribution across the OWF area will be informed by geophysical data. OECC Site Investigation locations will be distributed every 1 km along the proposed OECC route.

The exact technical specifications of the equipment to be used will not be known until the survey contract has been awarded. However, a description of the typical equipment and survey parameters is described in the Schedule of Works document accompanying this Application.

All efforts will be made to follow survey recommendations outlined in the Guidance on Marine Baseline Ecological Assessments & Monitoring Activities for Offshore Renewable Energy Projects Part 1 and 2 (DCCAE, April 2018), where the specific timeframes are indicated for the survey provision.

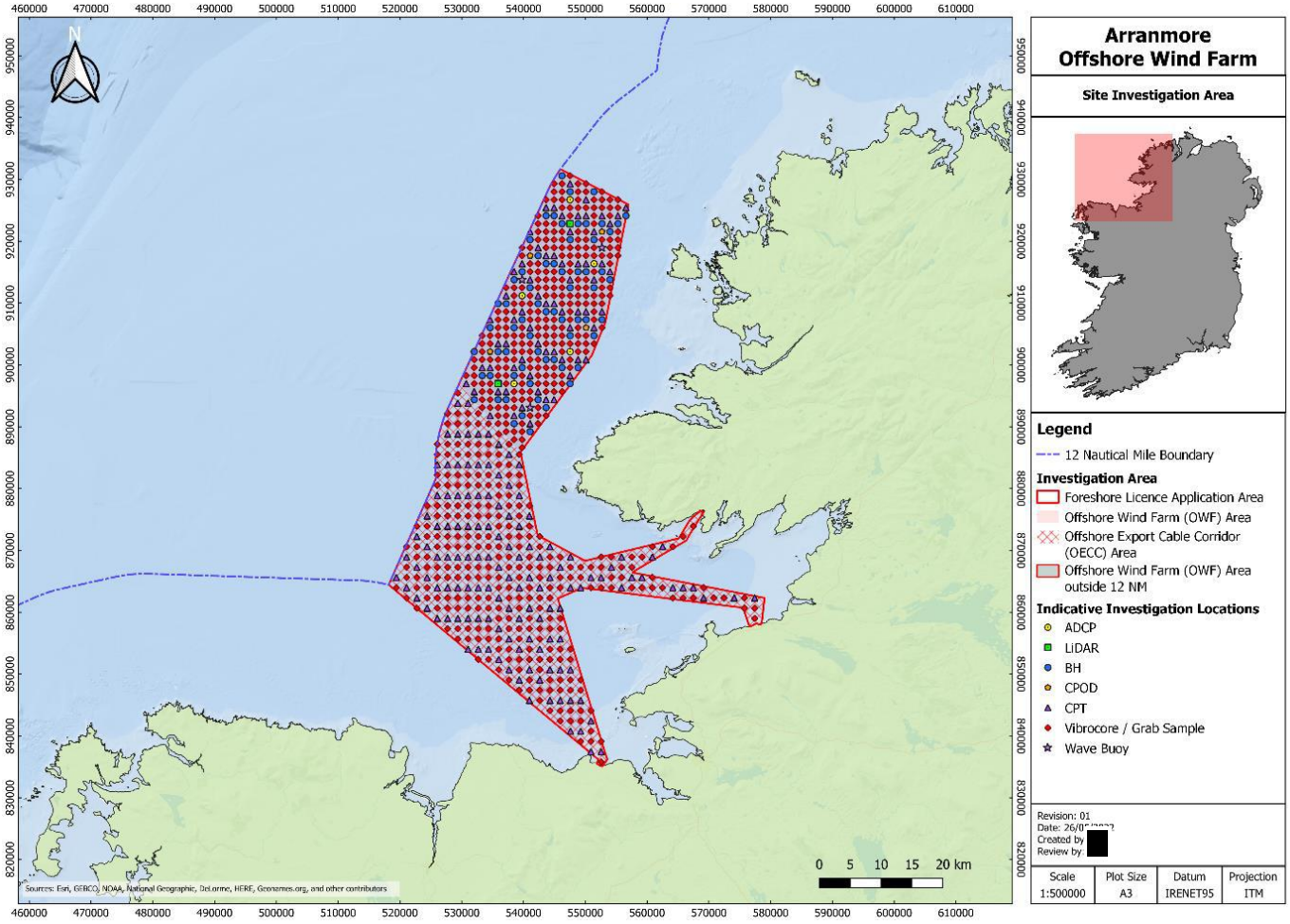


***Figure 2-2 Indicative Seafloor Contacting Site Investigation Locations***

## 2.3 Survey Schedule

Subject to the award of a Foreshore Licence, as well as favourable weather conditions, Arranmore Wind Limited propose a site investigation activities schedule that will be phased over a total of 5 years.

Due to the uncertainty associated with the timing for obtaining a Foreshore Licence, it is not possible at the time of writing to provide exact details on the proposed survey schedule. However, the intention is to begin survey activities as soon as feasible following award of the Foreshore Licence, possibly in Spring of 2023 with a staged programme of investigations over the subsequent four years (2024, 2025, 2026, 2027), capitalising on suitable weather windows over the total period of five years. This phased approach will progress the overall development towards detailed design stage. Procurement of survey contractors will be undertaken to ensure that suitable weather windows can be utilised as soon as possible following licence award. The exact survey mobilisation dates will be known at that point in the process. For further details on the proposed site investigation activities please see the Schedule of Works document that has been provided in support of the Application.

# 3 EIA Screening

## 3.1 EIA Directive Requirements

Article 2(1) of the EIA Directive[1] provides:

*"Member States shall adopt all measures necessary to ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects on the environment. Those projects are defined in Article 4."*

Article 4(1) requires that *"…projects listed in Annex I shall be made subject to an assessment…"*. EIA is therefore mandatory for the project types listed in Annex I. Article 4(2) requires that Member States must determine for Annex II project types whether EIA is required, through

a) a case-by-case assessment, or

b) thresholds or criteria set by the member State.

The Foreshore Acts 1933, as amended transposes the Article 4 requirement through Section 13A as follows:

*"13A.— (1)(a) The appropriate Minister shall, as part of his consideration of a relevant application, in accordance with paragraph (b), ensure that, before a decision on the application is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to an environmental impact assessment.*

*(b) (i) An environmental impact assessment shall be carried out by the appropriate Minister in respect of a relevant application for consent where the proposed development would be of a class specified in—*

*(I) Part 1 of Schedule 5 of the Planning and Development Regulations 2001, and either—*

*(A) such development would exceed any relevant quantity, area or other limit specified in that Part, or*
*(B) no quantity, area or other limit is specified in that Part in respect of the development concerned,*

*or*

*(II) Part 2 of Schedule 5 of the Planning and Development Regulations 2001 and either—*

*(A) such development would exceed any relevant quantity, area or other limit specified in that Part, or*

[1]Environmental Impact Assessment (EIA) Directive (Council Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU)

*(B) no quantity, area or other limit is specified in that Part in respect of the development concerned.*

*ii) An environmental impact assessment shall be carried out by the appropriate Minister in respect of a proposed development where such development—*

*(I) would be of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 but does not exceed the relevant quantity, area or other limit specified in that Part, and*
*(II) the appropriate Minister determines that the proposed development would be likely to have significant effects on the environment."*

If a project is not of a class listed in Annex I or II of the EIA Directive, or Schedule 5 of the Planning Regulations, the EIA Directive is not applicable[2].

Part 1 of Schedule 5 of the Planning and Development Regulations 2001, as amended (Planning Regulations) lists the project types for which EIA is mandatory, transposing Annex I of the EIA Directive. Part 2 lists project types for which EIA is mandatory if a specified threshold is exceeded. For all other project types listed in Part 2, corresponding to Annex II, which do not exceed a threshold or for which no threshold is set, a screening analysis and determination are required on a case-by-case basis. An EIA is also required for projects which do not exceed the threshold, but where the Minister determines that the proposed project will be likely to have significant effects on the environment.

## 3.2 Approach to EIA Screening

The Office of the Planning Regulator issued a practice note, OPR Practice Note PN02, on Environmental Impact Assessment Screening for development proposals (Office of the Planning Regulator, 2021). While the aim of the Practice Note is to provide guidance for compliance with the planning legislation, it provides useful guidance for EIA Screening for other consent regimes.

The Practice Note recommends a step-by-step approach to EIA Screening, as follows:

**Step 1: Understanding the proposal**

The first step comprises the following tests:

a) Is the proposed development a project as per the EIA Directive?

   If not, then the proposed development is not subject of EIA Directive, no screening is required, and no EIA is required.

b) Is the project listed in Schedule 5 Part 1 or does it meet or exceed the thresholds in Part 2 of the Planning and Development Regulations, SI 600 of 2001, as amended?

   If it does, no screening is required and EIA is mandatory.

c) Is the project sub threshold?

[2] See *Uí Mhuirnín* [2019] IEHC 824 specifically in connection with Foreshore Act 1933, as amended. See also Case C-156/07, *Aiello & Others*; Case C-275/09, *Brussels Hoofdstedelijk Gewest*; *Kavanagh* [2020] IEHC 259; and *Sweetman* [2020] IEHC 39.

If it is, then the project must proceed to Step 2, as preliminary examination is required.

**Step 2: Preliminary Examination & Conclusion**

This step consists of a preliminary examination of, at least, the nature, size, **or** location of the development, considering:

- **Nature** of the development including production of wastes and pollutants
- **Size** of the development
- **Location** of the development including proximity to ecologically sensitive sites and the potential to affect other environmental sensitivities in the area

Step 2 will have one of three outcomes:

a) There is no real likelihood of a significant effect on the environment and no further action is required. The reasons for this conclusion will be recorded.

b) There is significant doubt as to the effects on the environment; the project must proceed to Step 3, as a formal screening determination is required.

c) There is a real likelihood of a significant effect on the environment and an EIA is required.

**Step 3: Formal Screening Determination**

In this step, a Screening exercise must be carried out in order to determine if the proposal is likely to have significant effects on the environment. In making the determination, the planning authority must have regard to Schedule 7 criteria, Schedule 7A information, results of other relevant EU assessments, the location of sensitive ecological sites, or heritage or conservation designations. Mitigation measures may be considered.

The Screening Determination must record the outcome of the Screening exercise and state the main reasons and considerations, with reference to the relevant criteria listed in Schedule 7 of the Regulations and mitigation if relevant.

## 3.3 Screening for Mandatory EIA

### 3.3.1 Part 1 of Schedule 5

All of the project types in Part 1 have been considered in the preparation of this report. The proposed site investigation activities do not constitute a project type or class listed in Part 1 of Schedule 5 of the Regulations.

### 3.3.2 Part 2 of Schedule 5

All of the project types in Part 2 have been considered in the preparation of this report. The following class listed in Part 2 of Schedule 5 is the only class that is considered to be relevant to the proposed surveys, and is therefore given more detailed consideration below:

*"Class 2 Extractive Industry*

*2 (e) With the exception of drilling for investigating the stability of the soil, deep drilling, consisting of—*

*(iv) any other deep drilling, except where, in considering whether or not an environmental impact assessment will be carried out—*

*(IV) it is decided, in accordance with section 13A of the Foreshore Act 1933 (No. 12 of 1933) (in this subparagraph referred to as the "Act of 1933"), by the appropriate Minister (within the meaning of the Act of 1933) that the drilling concerned will not have a significant effect on the environment,"*

The proposed site investigation activities include geotechnical surveys comprising the drilling of up to 65 no. boreholes. The boreholes that will be undertaken at the landfall locations will be shallow in nature (generally c. 15-20 m and in some cases up to 40 m deep) to investigate the stability of the soils to determine the most suitable installation method for the cable at the landfall point. CPT and Vibrocores (generally with a target depth of down to 6 m) will be undertaken along the OECC to inform a refined cable route location and design.

Within the OWF, boreholes and seabed CPTs will likely be the preferred methods to investigate the stability of the soil, to determine the most suitable location and installation method for the WTGs. Boreholes will generally have a target depth of up to 80m (both sampling and CPT boreholes) and seabed CPTs will likely have a target depth of 30m, although might reach 45m in some seabed conditions.

The purpose of the drilling of the boreholes and core holes is to investigate the stability of the soil at the potential turbine foundation locations and on the export cable route.

As deep drilling for investigating the stability of the soil is excluded from Class 2(e), the proposed site investigation activities are not of a class listed in Part 2 of Schedule 5 of the Regulations and, therefore, the proposed site investigation activities are exempt as per the EIA Directive.

## 3.4 Conclusion of the EIA Screening

In answering ***Step 1, question (a): Is the proposed development a project as per the EIA Directive?*** as per OPR Practice Note 02, the answer is ***'No'***, and the conclusion is that the proposed site investigation activities are not subject of the EIA Directive, no Screening is required, and no EIA is required.

# 4 Non-statutory Environmental Assessment

The following documents, also submitted in support of this Foreshore Licence Application, provide a description of the known receiving environment for the Application Area, identify the potential environmental impacts of the proposed site investigation activities and assess the possible effects of these impacts on the receiving environment:

- Supporting Information for Screening of Appropriate Assessment (SISAA)
- Natura Impact Statement (NIS)
- Risk Assessment for Annex IV Species

**Error! Reference source not found.** sets out, for each of the documents listed above, the specific sections and sub-sections where relevant information for this Non-statutory Environment Assessment can be found.

***Table 4-1 Relevant sections and sub-section in other reports submitted in support of the Application***

| Report | Section/Subsection | Content Description |
|---|---|---|
| Supporting Information for Screening of Appropriate Assessment (SISAA) | Section 4. Potential Environmental Impacts<br>4.1 Physical Disturbance to Marine Benthic Communities<br>4.2 Vibration and underwater noise<br>4.3 Collision<br>4.4 Physical and noise disturbance<br>4.5 Pollution | Describes potential environmental impacts from the proposed site investigation activities on the receiving environment |
| | Section 5. Identification of relevant SPAs and SACs<br>5.2 Identification of relevant Natura 2000 sites using Source-Pathway-Receptor model and compilation of information Qualifying Interests and conservation objectives | Describes the Natura 2000 considered relevant to the site investigation activities, i.e. the Special Protected Areas and their Special Conservation Interests and the Special Areas of Conservation, designated Annex I Habitats and designated Annex II Species considered relevant to be included for Appropriate Assessment Stage 1 Screening (and subsequent Stage 2 Appropriate Assessment where necessary) |
| | Section 6. Assessment of Likely Significant Effects (LSE) to Natura 2000 Sites in the Zone of Influence of Proposed Activities | Assesses the likelihood of significant effects from the proposed site investigation activities on the integrity of relevant Natura 2000 sites and their Conservation Objectives (COs) |
| | Section 6.5 Screening for In-combination effects | Describes other known or proposed plans and projects in the vicinity of the site investigation activities, including other proposed wind farm and export cable route activities known at the time of submission of the Application documentation, and their interactions with the proposed site investigation activities<br>Assesses the likelihood of in-combination significant effects, from the proposed site investigation activities with the described plans, and projects on the integrity relevant Natura 2000 sites and their Conservation Objectives |

| Report | Section/Subsection | Content Description |
|---|---|---|
| | Section 8. Screening Statement Outcome | Details the conclusions of the AA Stage 1 Screening and identifies the Natura 2000 sites screened in for a Stage 2 AA |
| Natura Impact Statement (NIS) | Section 5. Impact Assessment | Assesses the likelihood of significant effects from the proposed site investigation activities on the integrity of relevant Natura 2000 sites and their Conservation Objectives (COs)<br>Proposes measures necessary to avoid, reduce or offset any identified negative effects |
| | Section 5.6 In-combination Effects | Describes other plans and projects in the Zone of Influence of the proposed site investigation activities, and assesses the likelihood of in-combination significant effects, from the proposed site investigation activities with the described plans and projects, on the integrity relevant Natura 2000 sites and their Conservation Objectives<br>Proposes measures necessary to avoid, reduce or offset any identified negative effects |
| | Section 5.7 AA Conclusion | Presents the conclusion of the Stage 2 AA described in the sections above |
| Risk Assessment for Annex IV Species | Section 3. Annex IV Species In the Vicinity of the FLA Area | Describes the European Protected Species (Annex IV species) which may be found on site |
| | Section 4. Potential Environmental Impacts<br>4.1 Vibration and underwater noise<br>4.2 Collision<br>4.3 Pollution | Describes potential environmental impacts from the proposed site investigation activities on Annex IV species |
| | Section 5.2 Impact Assessment | Assesses the impacts identified above on Annex IV species in the absence of any mitigation measures |
| | Section 6. Protection measures to prevent harm to Annex IV species | Proposes measures necessary to avoid, reduce or offset any identified negative effects |

Sections 4.1 to 4.15 of this report consider potential impacts from the proposed site investigation activities on the following:

1. Population and Human Health
2. Marine Benthos
3. Natura 2000 Sites
4. Marine Mammals
5. Birds
6. Fish and Shellfish Ecology
7. Water, Air and Climate
8. Commercial Fisheries
9. Aquaculture
10. Marine Traffic
11. Tourism and Recreation
12. Material Assets
13. Archaeology and Cultural Heritage
14. Landscape and Visual
15. Major Accidents and Disasters

## 4.1 Population and Human Health

Arranmore Wind Limited wish to ensure individuals and communities do not experience significant diminution in their quality of life from the direct or indirect effects arising from the proposed site investigation activities. All the impacts of a project or development have the potential to impinge on human health, directly and indirectly, positively and negatively. The key issues examined in this section include human health and health and safety.

All proposed site investigation activities will be conducted in accordance with all relevant Health and Safety Legislation and Regulations, and in adherence to all major international shipping conventions, adopted by the International Maritime Organization (and the International Labour Organization) concerning maritime safety and pollution prevention. This will ensure there will be no impact nor any significant negative effects on human health and/or on health and safety during the proposed survey activities.

## 4.2 Marine Benthos

Benthic and epibenthic macrofaunal invertebrates are a useful group to study in marine species assemblage mapping and environmental monitoring studies. Many macrofaunal species are sedentary, and their natural distributions typically show good relationships with habitat type and depth. Their responses to environmental change can therefore be more easily measured than more mobile species (e.g. pelagic fish). They are an integral part of marine food webs and can be an important source of food for certain commercially exploited fish and invertebrates. More practically, benthic macrofaunal invertebrates are well described taxonomically (e.g. by WoRMS - World Register of Marine Species) and can be readily sampled by grabs, corers and underwater imagery systems.

Macrofaunal invertebrate communities which occur within a particular habitat type and environmental conditions (e.g. depth, wave/tide energy) can be assigned to hierarchical habitat classification systems (e.g. European Nature Information System (EUNIS) Classification[3]) and as biotopes, which can encompass both biotic and abiotic elements.

Survey-derived habitat classification and biotope data can be used with other geospatial information such as sediment and bathymetry data to create habitat and biotope maps, such as EUSeaMap (2021), which is a broad-scale map of physical habitats covering European marine basins, including Ireland's seabed.

### 4.2.1 Marine Benthic Habitats in FLA Area

Within the Foreshore Licence Application Area, EUSeaMap (2021) predicts that the benthic habitats present in the OWF area are predominantly comprised of coarse sediments with patches of rock and sand and that benthic habitats in the OECC area are predominantly comprised of coarse, sand and mixed sediments with rock close to the shore. Water depths across the Foreshore Licence Application Area range from 46 m to 88 m in the OWF area and from 0 m to 91 m in the OECC area.

[3] https://eunis.eea.europa.eu/habitats-code-browser.jsp

**Error! Reference source not found.** below illustrates the habitat types predicted to be present in the proposed survey area, classified down to EUNIS Level 4 habitat types where possible. Detailed descriptions of these habitat types are also provided in the paragraphs below.

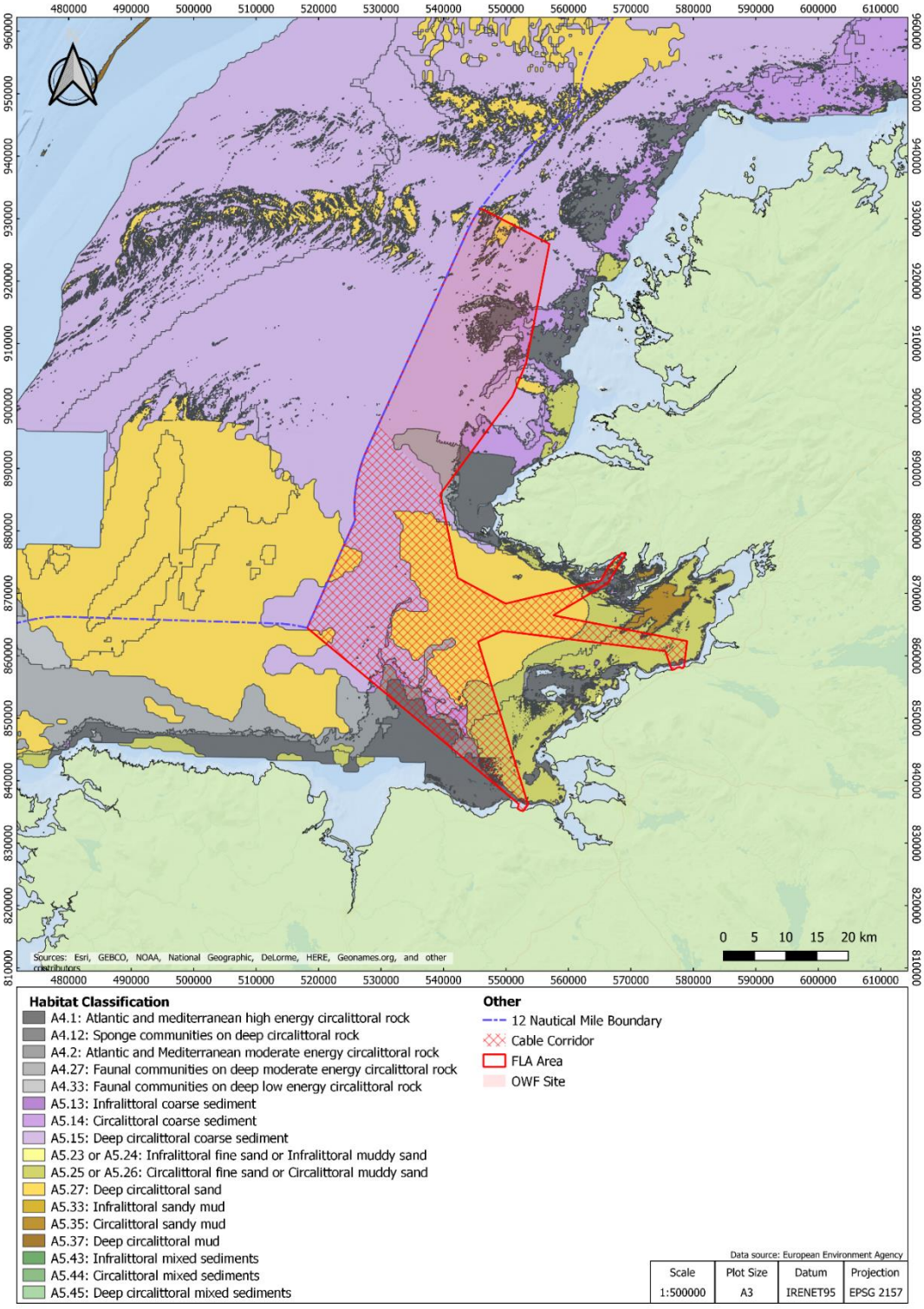


***Figure 4-1 Predicted Benthic Habitats in FLA area as per EUNIS Classification (EUSeaMap, 2021)***

### A4.1 - Atlantic and Mediterranean high energy circalittoral rock

Occurs on extremely wave-exposed to exposed circalittoral bedrock and boulders subject to tidal streams ranging from strong to very strong. Typically found in tidal straits and narrows. The high energy levels found within this habitat complex are reflected in the fauna recorded. Sponges such as *Pachymatisma johnstonia*, *Halichondria panicea*, *Esperiopsis fucorum* and *Myxilla incrustans* may all be recorded. Characteristic of this habitat complex is the dense 'carpet' of the hydroid *Tubularia indivisa*. The barnacle *Balanus crenatus* is recorded in high abundance on the rocky substrata. On rocky outcrops, *Alcyonium digitatum* is often present.

### A4.12 Sponge communities on deep circalittoral rock

This habitat type typically occurs on deep (commonly below 30m depth), wave-exposed circalittoral rock subject to negligible tidal streams. The sponge component of this biotope is the most striking feature, with similar species to the bryozoan and erect sponge habitat type (A4.131) although in this case, the sponges *Phakellia ventilabrum*, *Axinella infundibuliformis*, *Axinella dissimilis* and *Stelligera stuposa* dominate. Other sponge species frequently found on exposed rocky coasts are also present in low to moderate abundance.

### A4.2 - Atlantic and Mediterranean moderate energy circalittoral rock

Mainly occurs on exposed to moderately wave-exposed circalittoral bedrock and boulders, subject to moderately strong and weak tidal streams. This habitat type contains a broad range of biological subtypes, from echinoderms and crustose communities (A4.21) to *Sabellaria* reefs (A4.22) and circalittoral mussel beds (A4.24).

### A4.27 - Faunal communities on deep moderate energy circalittoral rock

These communities populate hard substrata with low hydrodynamics and strong sedimentation.

### A4.3 - Atlantic and Mediterranean low energy circalittoral rock

Occurs on wave-sheltered circalittoral bedrock and boulders subject to mainly weak/very weak tidal streams. The biotopes identified within this habitat type are often dominated by encrusting red algae, brachiopods (*Neocrania anomala*) and ascidians (*Ciona intestinalis* and *Ascidia mentula*).

### A5.13 - Infralittoral coarse sediment

Moderately exposed habitats with coarse sand, gravelly sand, shingle and gravel in the infralittoral, are subject to disturbance by tidal steams and wave action. Such habitats found on the open coast or in tide-swept marine inlets are characterised by a robust fauna of infaunal polychaetes such as *Chaetozone setosa* and *Lanice conchilega*, cumacean crustacea such as *Iphinoe trispinosa* and *Diastylis bradyi*, and venerid bivalves. Habitats with the lancelet *Branchiostoma lanceolatum* may also occur.

### A5.14 - Circalittoral coarse sediment

These are tide-swept circalittoral coarse sands, gravel and shingle generally in depths of over 15-20m. This habitat may be found in tidal channels of marine inlets, along exposed coasts and offshore. This habitat, as with shallower coarse sediments, may be characterised by robust infaunal polychaetes, mobile crustacea and bivalves. Certain species of sea cucumber (e.g. *Neopentadactyla*) may also be prevalent in these areas along with the lancelet *Branchiostoma lanceolatum*.

### A5.15 - Deep circalittoral coarse sediment

These are offshore (deep) circalittoral habitats with coarse sands and gravel or shell. This habitat may cover large areas of the offshore continental shelf although there is relatively little quantitative data available. Such habitats are quite diverse compared to shallower versions of this habitat and generally characterised by robust infaunal polychaete and bivalve species. Animal communities in this habitat are closely related to offshore mixed sediments and in some areas settlement of *Modiolus* larvae may occur and consequently these habitats may occasionally have large numbers of juvenile *M. modiolus*. In areas where the mussels reach maturity their byssus threads bind the sediment together, increasing stability and allowing an increased deposition of silt leading to the development of the biotope A5.622.

### A5.23 - Infralittoral fine sand

These are clean sands which occur in shallow water, either on the open coast or in tide-swept channels of marine inlets. The habitat typically lacks a significant seaweed component and is characterised by robust fauna, particularly amphipods (*Bathyporeia*) and robust polychaetes including *Nephtys cirrosa* and *Lanice conchilega*.

### A5.24 - Infralittoral muddy sand

This is a non-cohesive muddy sand (with 5% to 20% silt/clay) in the infralittoral zone, extending from the extreme lower shore down to more stable circalittoral zone at about 15-20 m. The habitat supports a variety of animal-dominated communities, particularly polychaetes (*Magelona mirabilis*, *Spiophanes bombyx* and *Chaetozone setosa*), bivalves (*Fabulina fibula* and *Chamelea gallina*) and the urchin *Echinocardium cordatum*.

### A5.25 - Circalittoral fine sand

Clean fine sands with less than 5% silt/clay in deeper water, either on the open coast or in tide-swept channels of marine inlets in depths of over 15-20 m. The habitat may also extend offshore and is characterised by a wide range of echinoderms (in some areas including the sea urchin *Echinocyamus pusillus*), polychaetes and bivalves. This habitat is generally more stable than shallower, infralittoral sands and consequently supports a more diverse community.

### A5.26 - Circalittoral muddy sand

Circalittoral non-cohesive muddy sands with the silt content of the substratum typically ranging from 5% to 20%. This habitat is generally found in water depths of over 15-20 m and supports animal-dominated communities characterised by a wide variety of polychaetes, bivalves such as *Abra alba* and *Nucula nitidosa*, and echinoderms such as *Amphiura* spp. and *Ophiura* spp., and *Astropecten irregularis*. These circalittoral habitats tend to be more stable than their infralittoral counterparts and as such support a richer infaunal community.

### A5.27 - Deep circalittoral sand

Offshore (deep) circalittoral habitats with fine sands or non-cohesive muddy sands. Very little data is available on these habitats however they are likely to be more stable than their shallower counterparts and characterised by a diverse range of polychaetes, amphipods, bivalves and echinoderms.

### A5.33 - Infralittoral sandy mud

Infralittoral, cohesive sandy mud, typically with over 20% silt/clay, in depths of less than 15-20 m. This habitat is generally found in sheltered bays or marine inlets and along sheltered areas of open coast. Typical species include a rich variety of polychaetes including *Melinna palmate*, tube building amphipods (*Ampelisca* spp.) and deposit feeding bivalves such as *Macoma balthica* and *Mysella bidentata*. Sea pens such as *Virgularia mirabilis* and brittlestars such as *Amphiura* spp. may be present but not in the same abundances as found in deeper circalittoral waters.

### A5.35 - Circalittoral sandy mud

Circalittoral, cohesive sandy mud, typically with over 20% silt/clay, generally in water depths of over 10 m, with weak or very weak tidal streams. This habitat is generally found in deeper areas of bays and marine inlets or offshore from less wave exposed coasts. Sea pens such as *Virgularia mirabilis* and brittlestars such as *Amphiura* spp. are particularly characteristic of this habitat whilst infaunal species include the tube building polychaetes *Lagis koreni* and *Owenia fusiformis*, and deposit feeding bivalves such as *Mysella bidentata* and *Abra* spp.

### A5.37 – Deep Circalittoral mud

Atlantic sublittoral muds, occurring below moderate depths of 15-20 m, either on the open coast or in marine inlets such as sealochs.

### A5.43 – Infralittoral mixed sediments

Shallow mixed (heterogeneous) sediments in fully marine or near fully marine conditions, supporting various animal-dominated communities, with relatively low proportions of seaweeds. This habitat may include well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in mud, sand or gravel.

#### A5.44 - Circalittoral mixed sediments

Mixed (heterogeneous) sediment habitats in the circalittoral zone (generally below 15-20m) including well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in or lying upon mud, sand or gravel. Due to the variable nature of the seabed a variety of communities can develop which are often very diverse. A wide range of infaunal polychaetes, bivalves, echinoderms and burrowing anemones such as *Cerianthus lloydii* are often present in such habitat and the presence of hard substrata (shells and stones) on the surface enables epifaunal species to become established, particularly hydroids such as *Nemertesia* spp and *Hydrallmania falcata*. The combination of epifauna and infauna can lead to species rich communities. Coarser mixed sediment communities may show a strong resemblance, in terms of infauna, to biotopes within the sublittoral coarse sediment complex.

#### A5.45 – Deep circalittoral mixed sediments

Offshore (deep) circalittoral habitats with slightly muddy mixed gravelly sand and stones or shell. This habitat may cover large areas of the offshore continental shelf although there is relatively little data available. Such habitats are often highly diverse with a high number of infaunal polychaete and bivalve species.

### 4.2.2 Possible Impacts on Marine Benthic Habitats in FLA Area

Benthic habitats and associated macrofaunal invertebrate communities may be subject to the following impacts due to the proposed site investigation activities:

- Habitat disturbance and smothering during all intrusive site investigation activities
- Increased suspension of solids in the water column
- Vibration from geo-technical equipment
- Sediment penetration and some substratum loss

The effect of the site investigation activities on the seabed will be localised and temporary in nature. The area is subject to strong wave and tidal currents and is a highly geomorphologically dynamic, with mobile bedforms changing with the tide. Any sediment disturbed by geotechnical survey activity is expected to be dispersed by the prevailing tides with far lower disturbance caused to benthic communities than by typical storm events.

### 4.2.3 SACs designated for Annex I Habitats in FLA Area

Please see the SISAA submitted with this Application for a detailed assessment of how the proposed survey area overlaps with Natura 2000 Special Areas of Conservation designated for Annex I Habitat Qualifying Interests.

## 4.3 Marine Mammals

A review of existing data sources regarding marine mammals was carried out in the SISAA and the Risk Assessment for Annex IV Species reports, both submitted in support of this Foreshore Licence Application.

## 4.4 Birds

Ireland is host to several nationally and internationally important bird species which inhabit areas with coastal sea cliffs, estuaries and offshore islands. Coastal habitats provide important breeding sites for many species of seabirds, several of which are protected under national and European legislation.

At least 45 species of seabird (including divers and grebes) have been recorded during at-sea surveys in Irish waters, of which 23 species regularly breed around Ireland (Pollock *et al*., 2008, Mackey *et al*., 2004). In addition, a further 59 species of waterfowl and wader regularly occur at coastal sites such as estuaries around Ireland: including 5 grebe species, 2 heron species, 26 species of wildfowl and 26 wader species (Crowe, 2005). Some of these species are migratory and are present only during migration periods in spring and autumn; others come to Ireland to breed or to spend the winter, while some are resident all year round (Lewis *et al*., 2019; Jessop *et al*., 2018).

A review of existing data sources regarding seabirds was carried out in the SISAA submitted in support of this Foreshore Licence Application.

## 4.5 Fish Ecology

The Foreshore Licence Application Area overlaps with the spawning and/or nursery grounds of several commercially important species of fish (Ireland Marine Atlas, 2021). Cod utilize the area as a nursery, as do blue whiting, mackerel, horse mackerel, hake, megrim, Atlantic herring and herring. Spawning of haddock, whiting, megrim, Atlantic herring, herring and mackerel has also been recorded. Hake spawning, both Black and White Belly Angler Monk nursery and Blue whiting spawning and nursery grounds are present in the deeper waters to the west of the Foreshore Licence Application Area. The extent of overlap with the mapped spawning and nursery grounds is shown in **Error! Reference source not found.** to 4-13 and summarised in **Error! Reference source not found.**.

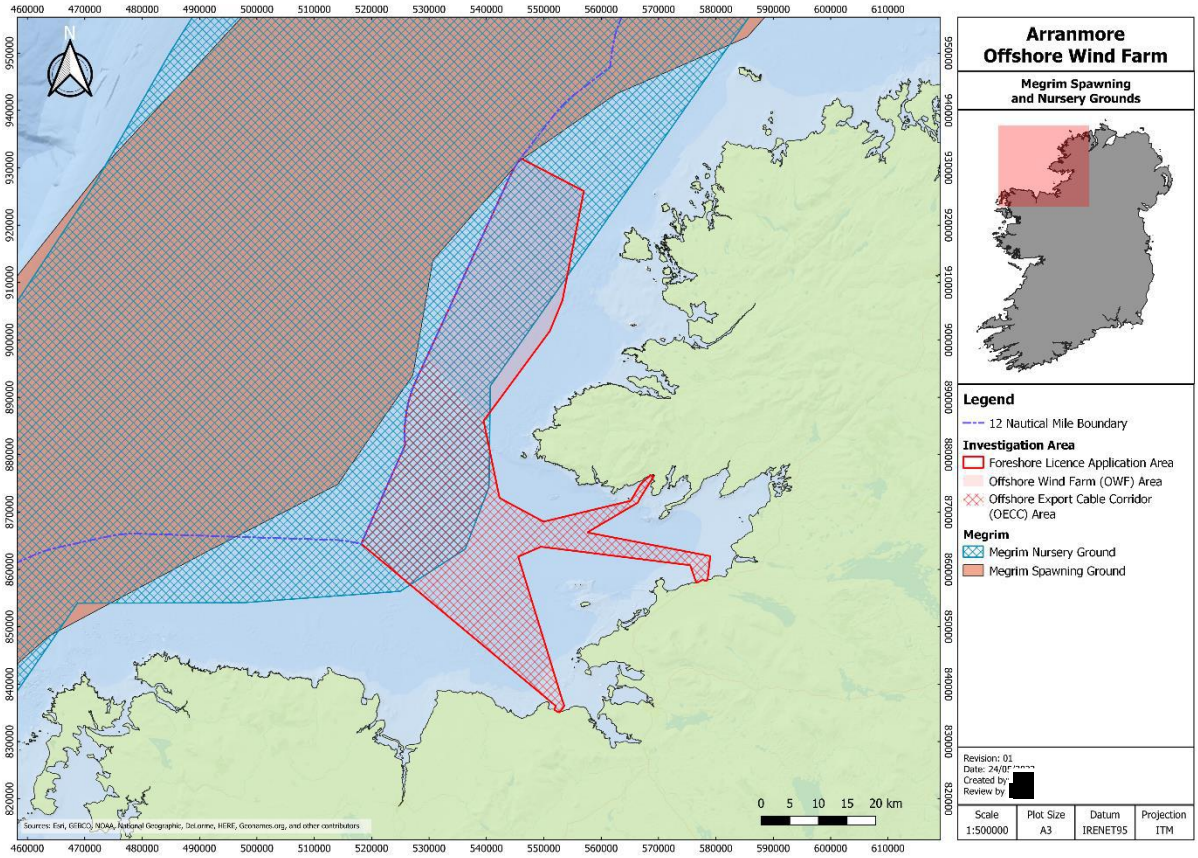


***Figure 4-2 Megrim Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)***

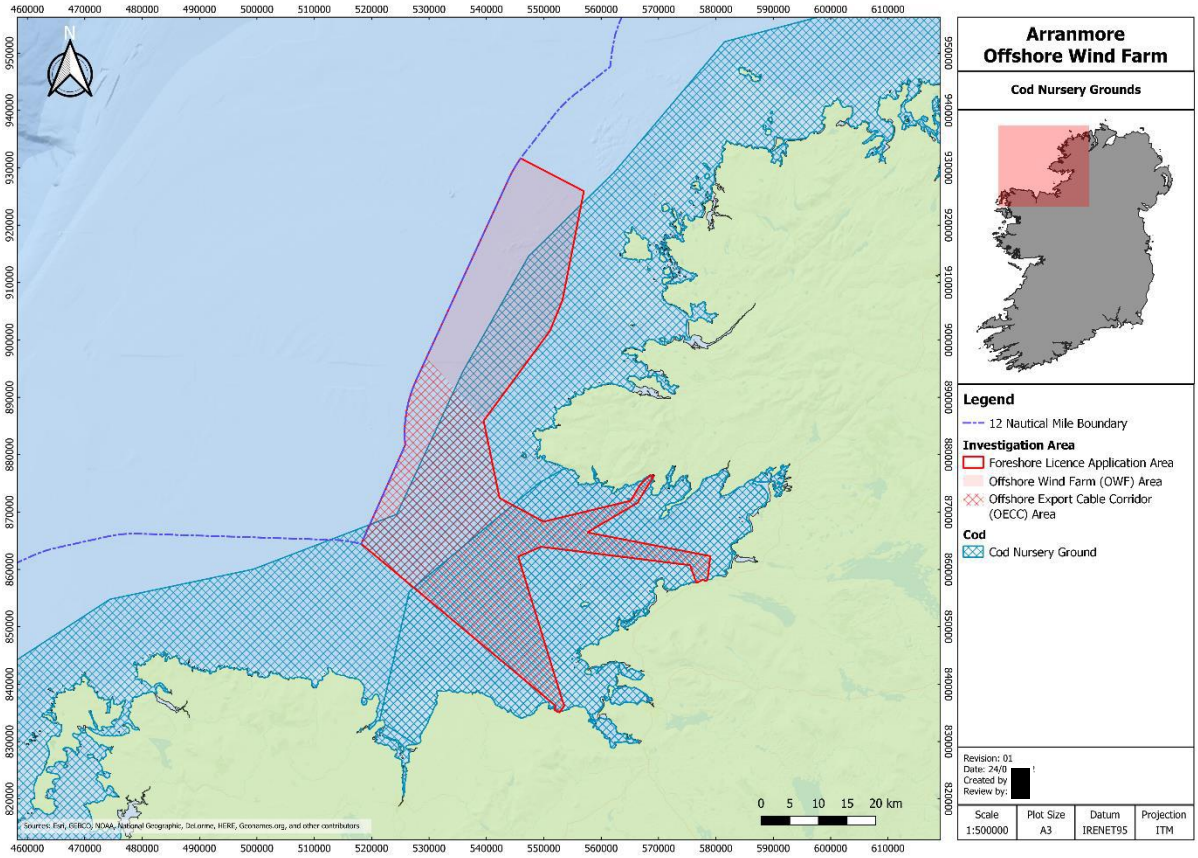


***Figure 4-3 Cod Nursery Grounds (Ireland's Marine Atlas, 2021a)***

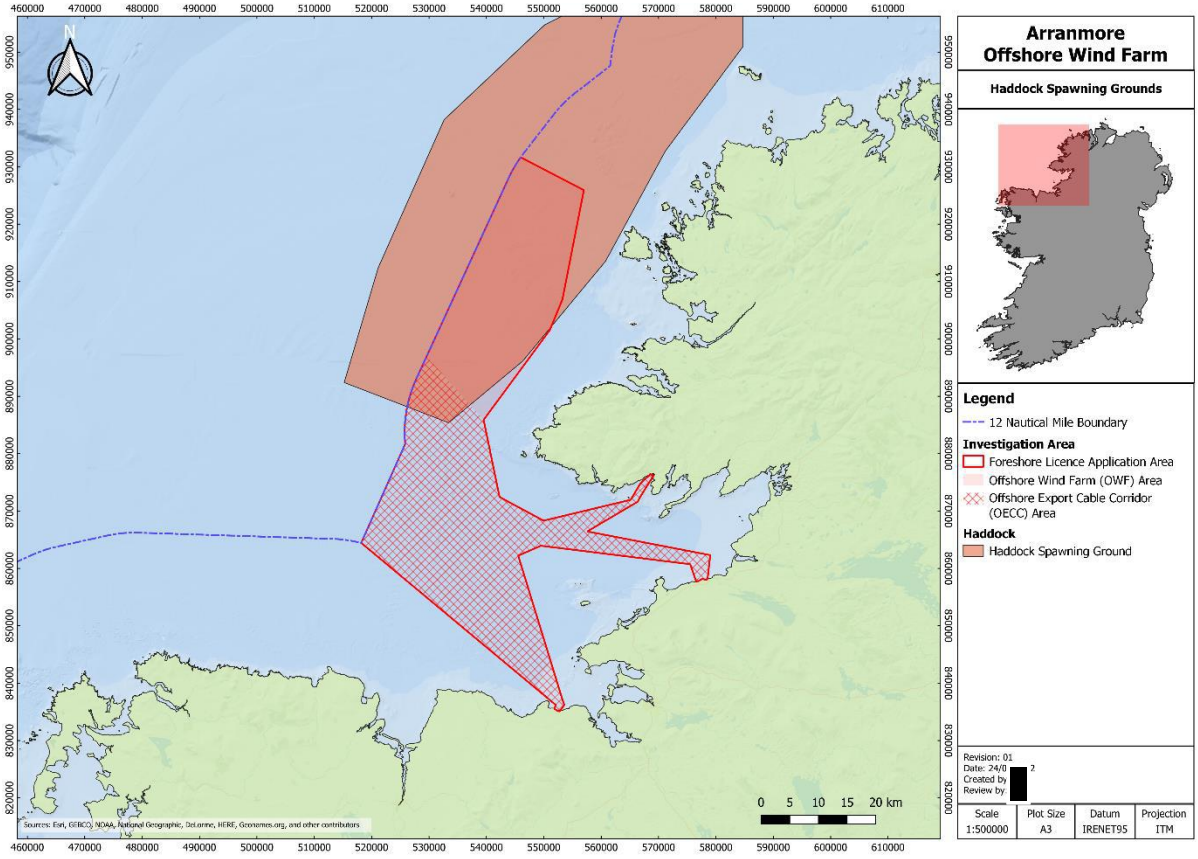


***Figure 4-4 Haddock Spawning Grounds (Ireland's Marine Atlas, 2021a)***

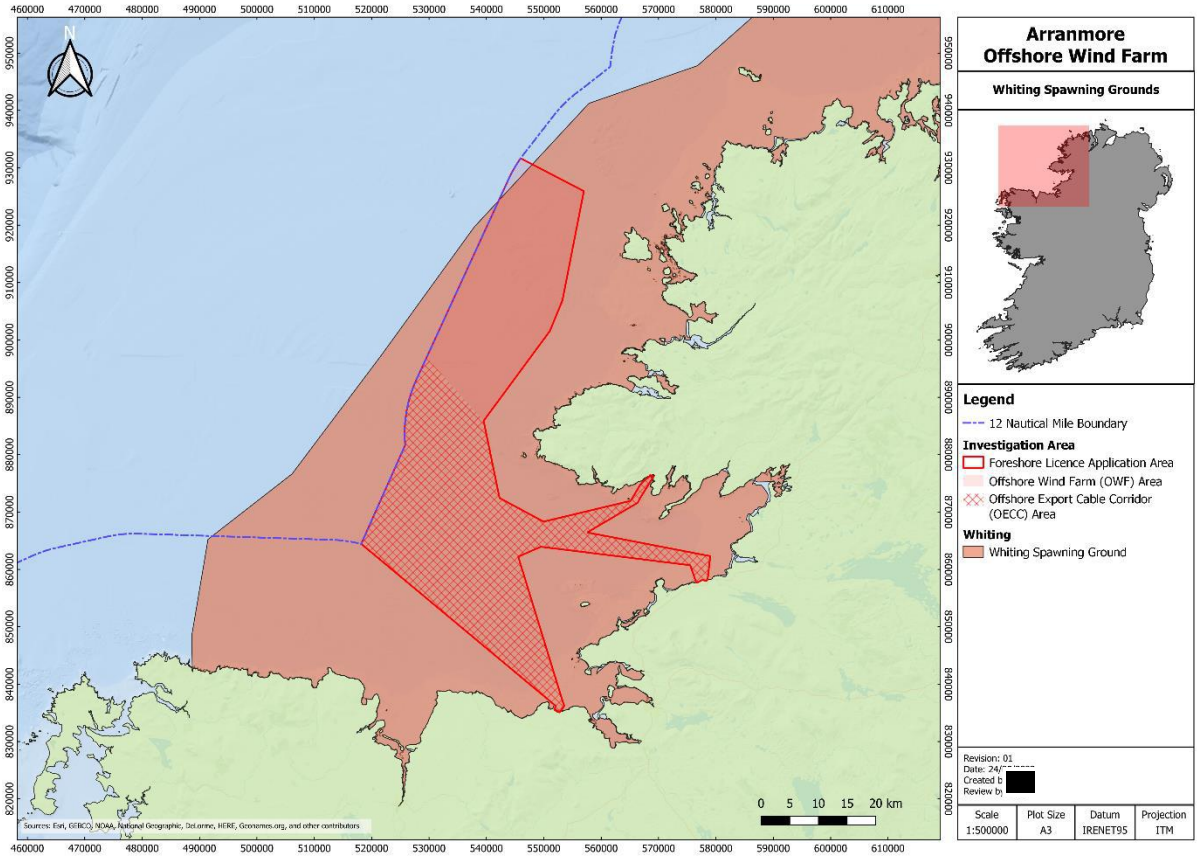


*Figure 4-5 Whiting Spawning Grounds (Ireland's Marine Atlas, 2021a)*

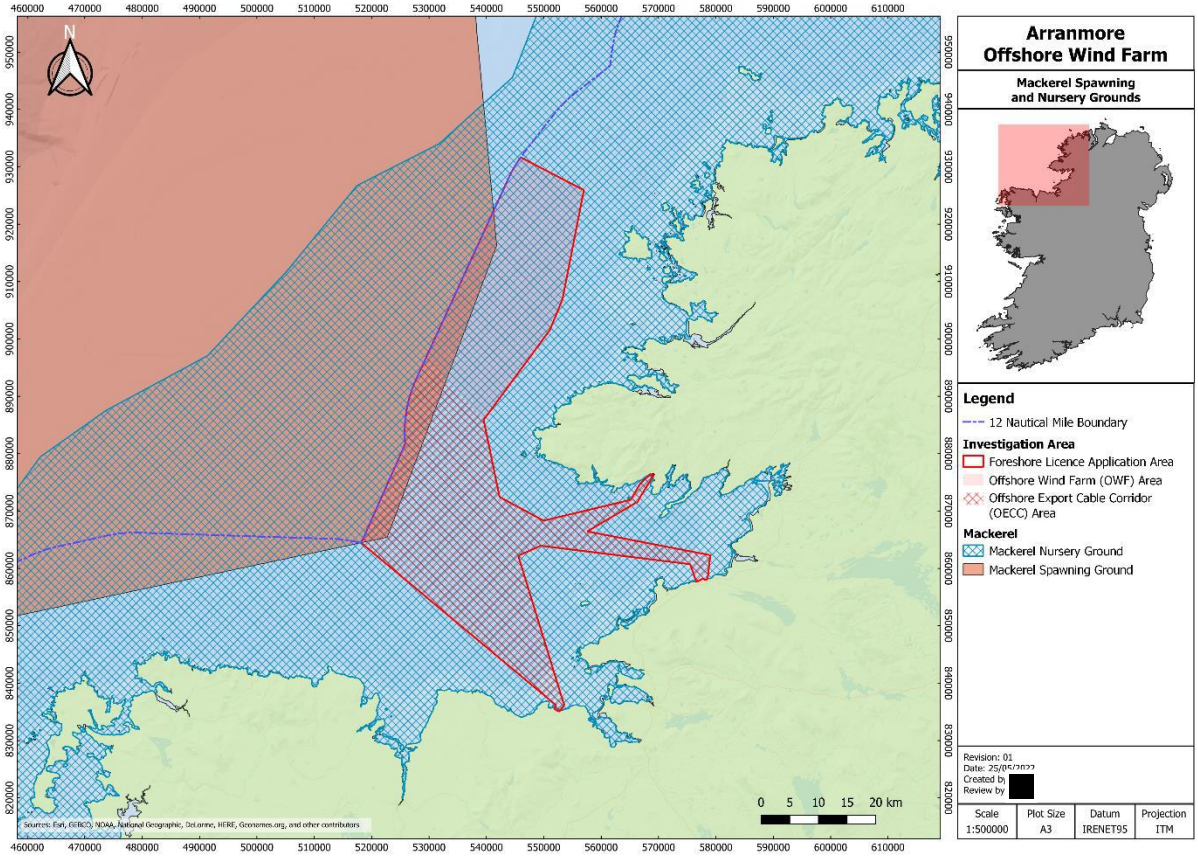


*Figure 4-6 Mackerel Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)*

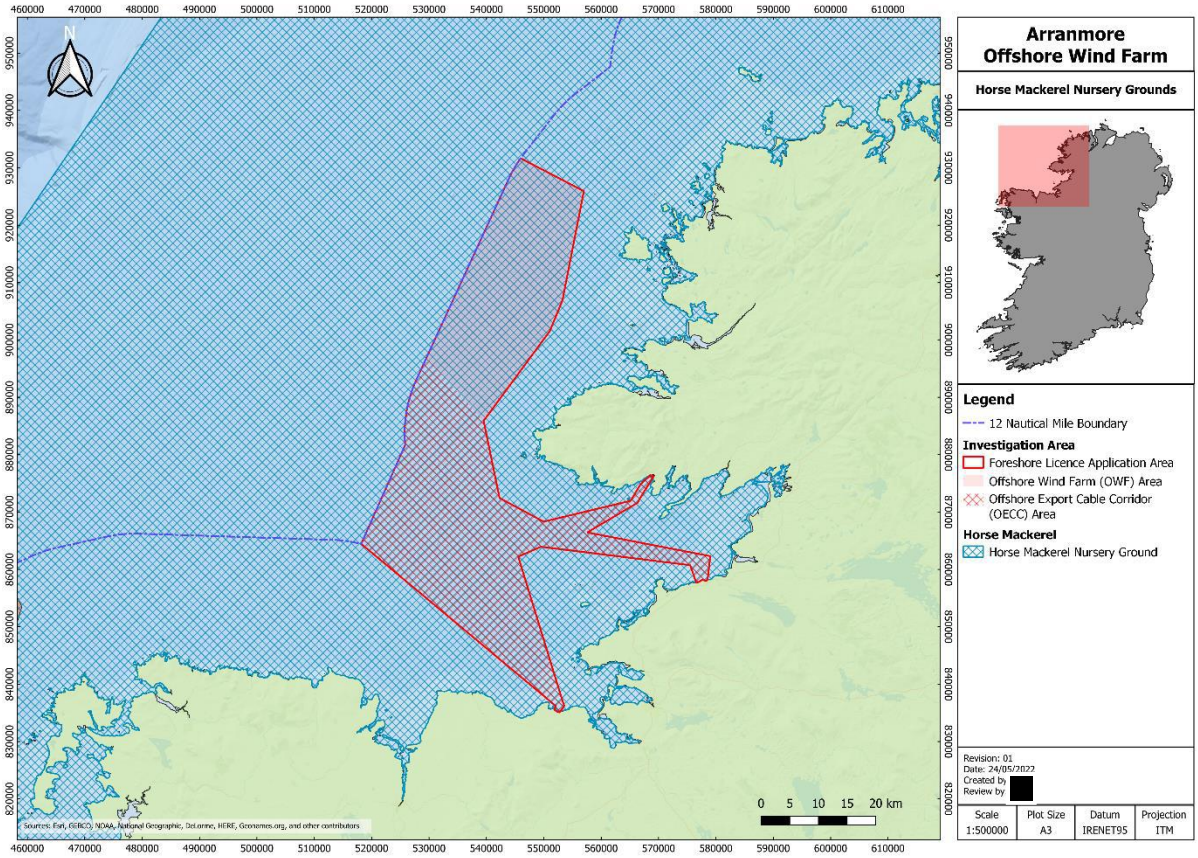


*Figure 4-7 Horse Mackerel Nursery Grounds (Ireland's Marine Atlas, 2021a)*

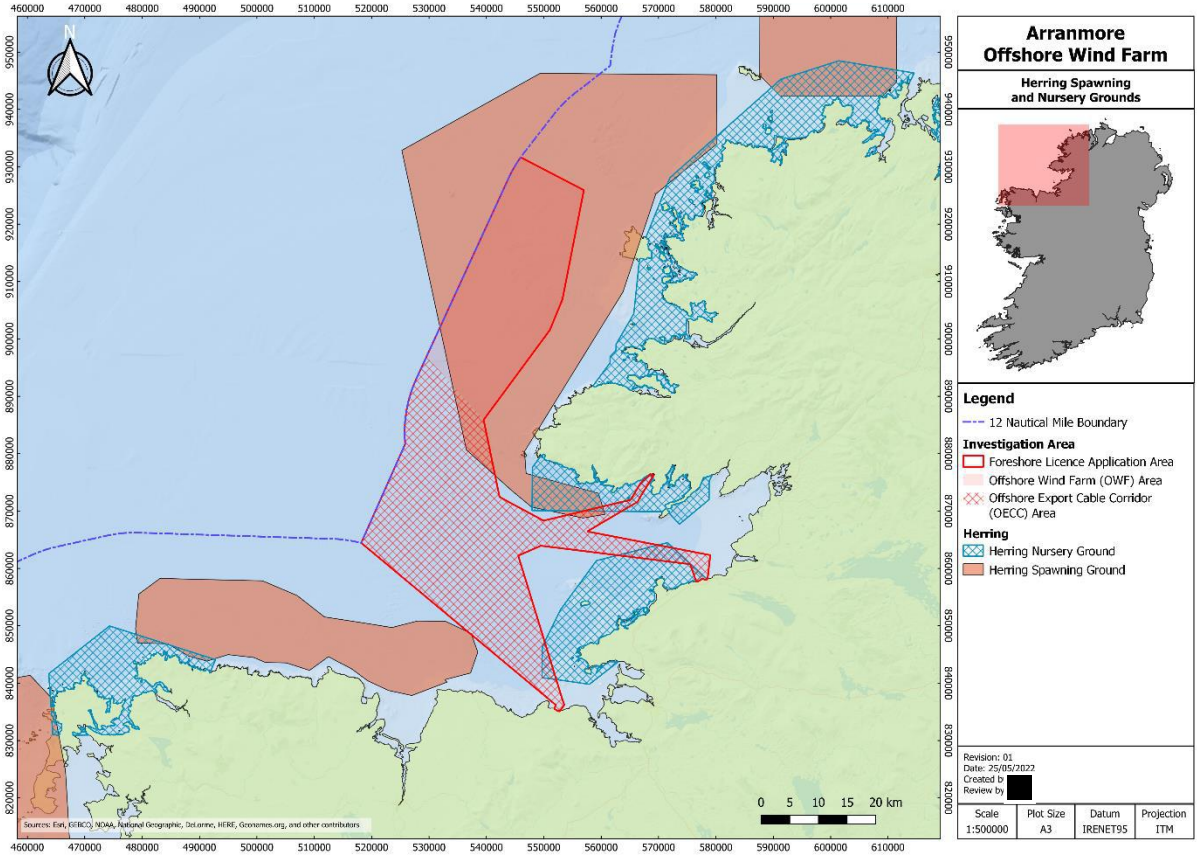


*Figure 4-8 Herring Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)*

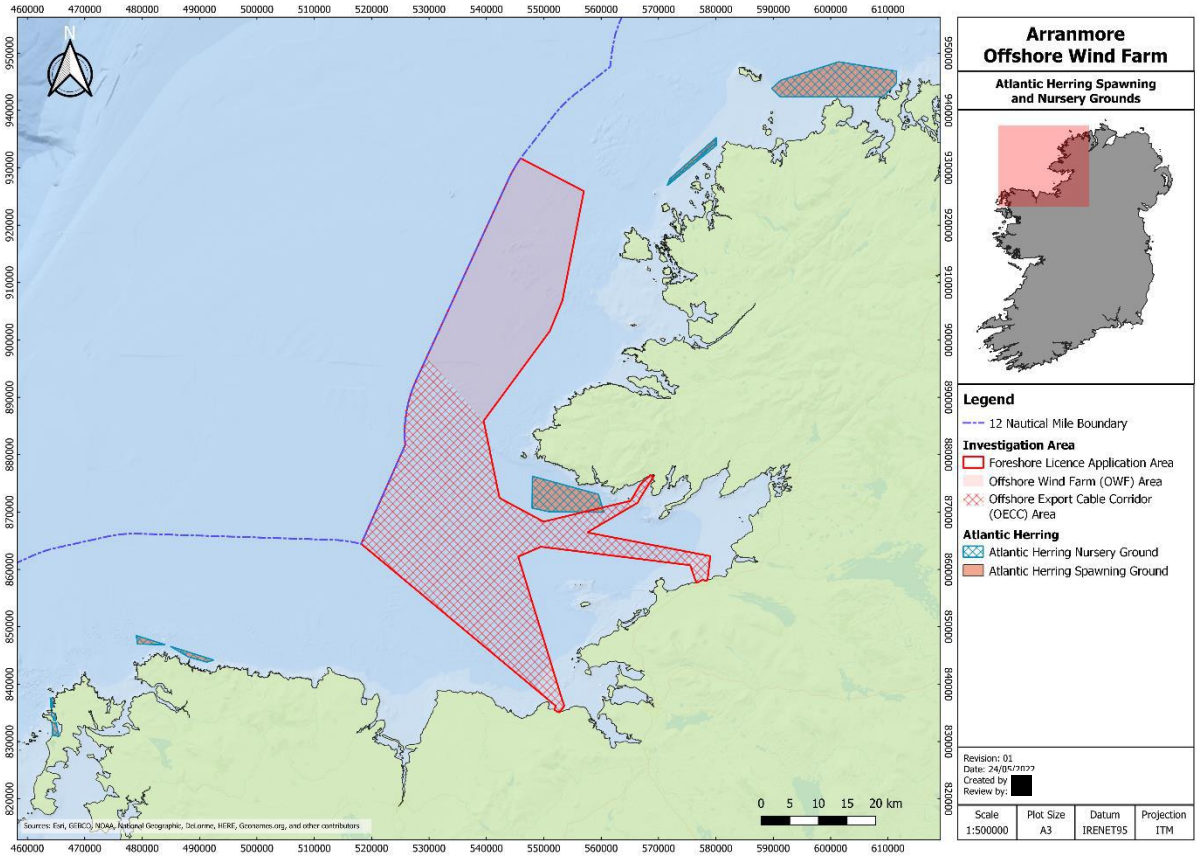


*Figure 4-9 Atlantic Herring Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)*

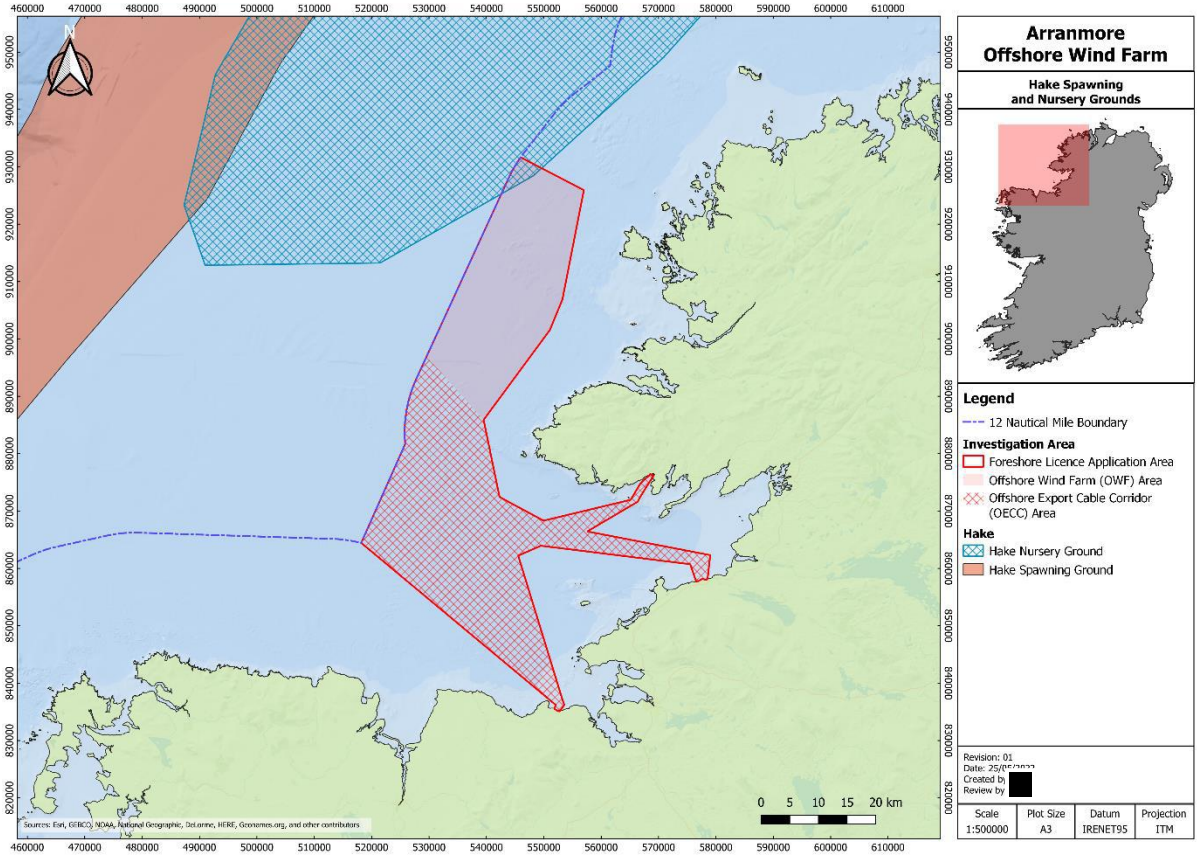


*Figure 4-10 Hake Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)*

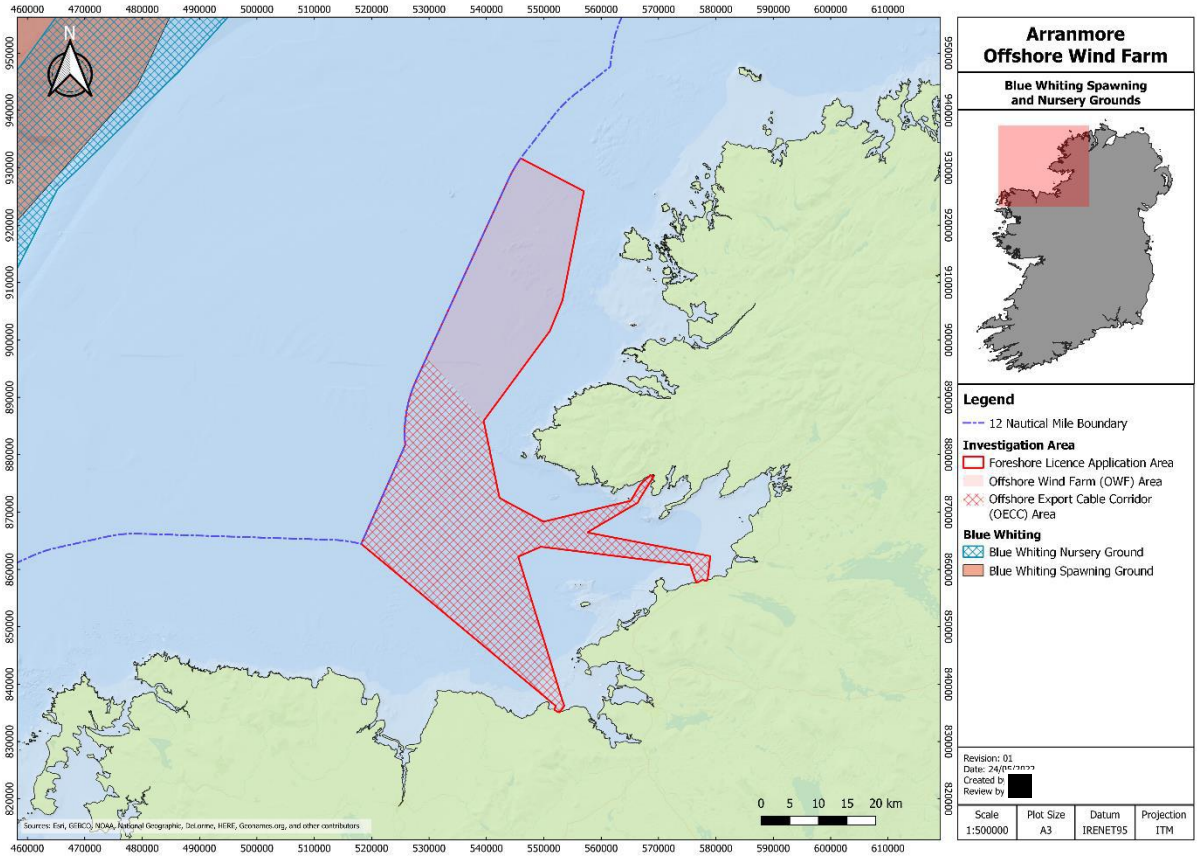


*Figure 4-11 Blue Whiting Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)*

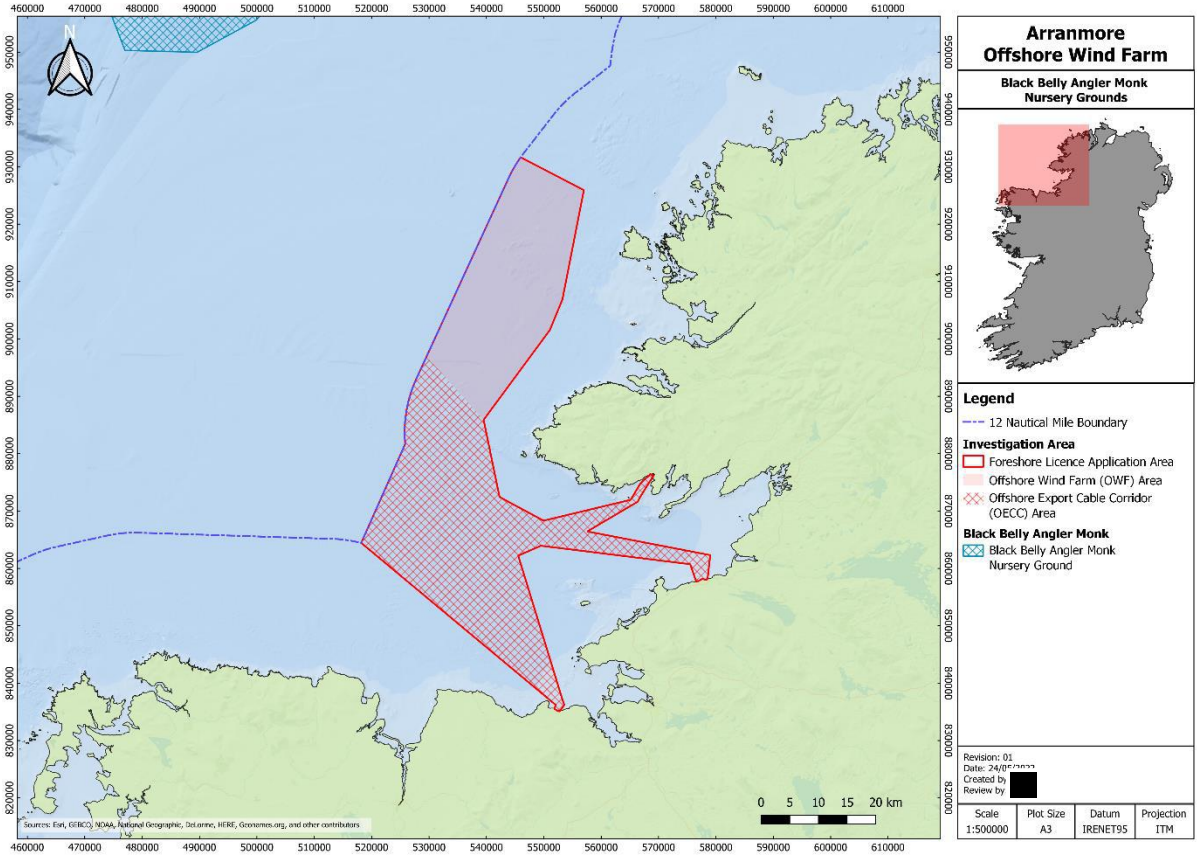


*Figure 4-12 Black Belly Angler Monk Nursery Grounds (Ireland's Marine Atlas, 2021a)*

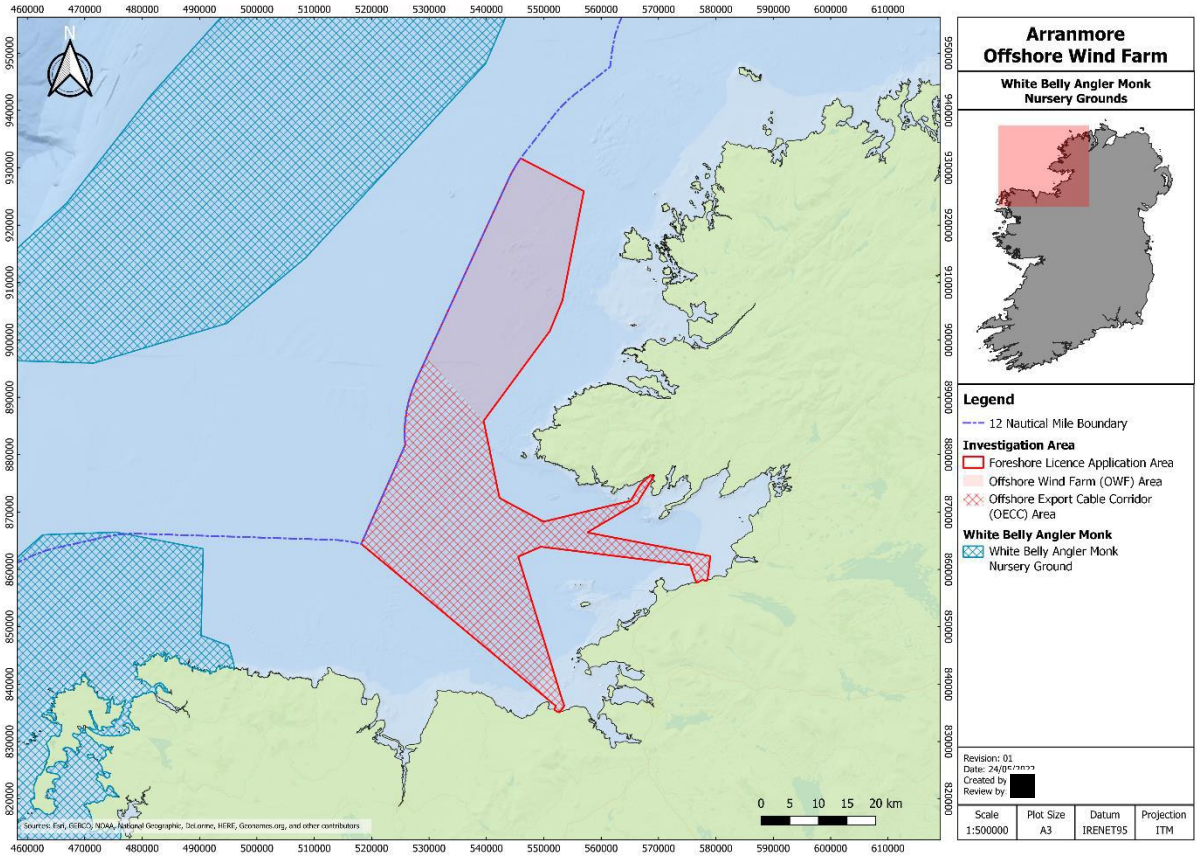


***Figure 4-13 White Belly Angler Monk Nursery Grounds (Ireland's Marine Atlas, 2021a)***

***Table 4-2 Application area overlap with commercial fish species distribution areas***

| Species | Nursery Area | Spawning Area |
|---|---|---|
| Cod | ✓ | X |
| Haddock | X | ✓ |
| Whiting | X | ✓ |
| Mackerel | ✓ | ✓ |
| Horse Mackerel | ✓ | X |
| Herring | ✓ | ✓ |
| Atlantic Herring | ✓ | ✓ |
| Hake | ✓ | X |
| Megrim | ✓ | ✓ |
| White Belly Angler Monk | X | X |
| Black Belly Angler Monk | X | X |
| Blue Whiting | X | X |

The SISAA submitted as part of this Application has considered potential impacts from the proposed site investigation activities on migratory fish species, specifically Annex II species (Atlantic salmon, Sea lamprey, River lamprey and Twaite shad), with particular focus on the impacts of noise from the proposed geophysical and geotechnical surveys.

## 4.6 Natura 2000 Sites

As stated above, the SISAA and NIS submitted as part of this Application have considered potential impacts from the proposed site investigation activities on Natura 2000 sites and identified appropriate mitigation measures. The NIS concluded that, with the implementation of the mitigation measures specified therein and summarised in Section 5 below, the proposed site investigation activities, alone or in combination with other activities and developments, would not cause an adverse effect on the integrity of any Natura 2000 site.

## 4.7 Water, Air and Climate

### 4.7.1 Water

The proposed site investigation activities will mainly be undertaken at sea. These will result in a temporary increase in vessels using the area, which could theoretically increase the risk of accidents and resultant fuel spills. All vessels carry fuel during the survey activities. Lubricants are also present onboard. Any other potentially harmful substances are at very limited amounts stored in purpose made storage containers or facilities and adequately secured. There is no production of any substances involved and no bulk transportation of oil or chemical substances.

Drilling of boreholes will use water or inert drill muds, with the drilling flush and drill cuttings being largely returned to the vessel and re-used and returned to shore for disposal. Collection and disposal of waste (refuse) produced as a result of the onboard activities will form part of any Health and Safety and/or Environmental Management Plan. However, a very small volume of the flush and cutting is expected to be released into the environment. The released material will result in a temporary localised increase in turbidity and a small mound of the seabed comprising of the cuttings. All drilling fluids will be managed in compliance with the appropriate environmental requirements and best practices.

Biodegradable polymer mix will be used throughout drilling operations where possible. Chemical material used will be from the List of Notified Chemicals (approved chemicals) and discharged into the marine environment under the Offshore Chemical Notification Scheme. The flush and cuttings will not result in any deterioration of sediment or water quality, therefore no LSE is expected as a result.

There will be no planned release of potentially harmful substances from the survey vessels. Strict maritime regulations, normal vessel operating standards and precautions, compliant with all International Maritime Law and National Maritime Legislation, will ensure the risk of a release is low and no significant effects are predicted.

In addition, all vessels used shall, as required by law, be MARPOL compliant and fully certified by the Maritime Safety Office. Therefore, it is considered not likely that there would be any occurrence of a pollution event, accidental or otherwise, that could directly or indirectly affect the environment.

In compliance with the WFD objectives, the proposed site investigation activities are not anticipated to result in a deterioration in a designated water body (or protected area) and will not jeopardise the attainment of good status (or the potential to achieve good ecological and chemical status).

### 4.7.2 Air

There will be no releases to air, other than routine vessels exhausts. Air quality standards will not be exceeded. There is not likely to be a significant effect on the environment

### 4.7.3 Climate

The survey will be conducted over a relatively short timeframe and effects contributing to climate change will not arise. There is not likely to be a significant effect on the environment.

## 4.8 Commercial Fisheries

### 4.8.1 Data Availability

The availability of information on fishery activity specifically related to fishing grounds and areas in Irish waters is dependent on the target species, fishing gear and the size of the vessels engaged in the fisheries. Broadly speaking good quality data are available for fish species which are managed via a quota system and are fished by larger vessels; conversely less data is available from smaller vessels targeting non-quota species.

Vessels >12 m are legally obliged to transmit VMS (Vessel Electronic Monitoring System) data and (with some exceptions) to submit logbooks of their catches; this information is collated by the Marine Institute (MI) to produce the Atlas of Commercial Fisheries which maps fishery activity. The data are filtered and processed by the MI to screen out non-fishing activity which is done on the basis of vessel speed upper and lower parameters in combination with industry knowledge. The data is of low certainty for some fisheries due to the difficulties in relating vessel position at a given time with logbook records for individual species, also data from all fisheries other than otter trawling are considered indicative and not quantitative due to uncertainties around effort.

Vessels <10 m are not required to transmit VMS data or to record their catches in logbooks. Information from this sector is derived from sales notes, the Bord Iascaigh Mhara (BIM) Inshore Sentinel Vessel Programme, the MI Observer Programme and industry knowledge. This classification of vessel accounts for the majority of pot-fishing inshore fleet targeting crab, lobster, shrimp and whelks. Vessels <10 m may also target finfish with gillnets, jiggers and longlines. Vessels 10-12 m are not required to transmit VMS data but must maintain logbooks, in which positional data are recorded only at the ICES (International Council for the Exploration of the Sea) Statistical Rectangle scale.

The Irish Groundfish Survey (IGFS) is an annual fisheries-independent trawl survey carried out by the MI in Irish waters to contribute to the assessment of commercial fish stocks and to feed data into the ICES stock assessments which in turn determine the size and allocation of European quotas. These data along with commercial catch data are published in the Irish Stock Book and are also available in mapping formats in Ireland's Marine Atlas. The IGFS does not survey the Irish Sea or the far north of the island, these data gaps are filled by the UK – Northern Ireland Groundfish Survey (NIGFS) and the UK – Scottish West Coast Groundfish Survey (SCOWCGFS) under the coordination of the ICES International Bottom Trawl Survey Working Group (IBTSWG).

### 4.8.2 Fishing Activity

According to the Central Statistics Office[4], Killybegs was the most important port for fish landings in 2020 accounting for 56.5% (123,233 tonnes) of all landings by Irish vessels and 106,641 tonnes landed by foreign vessels. Blue Whiting (119,875 tonnes), Mackerel (73,871 tonnes) and Horse Mackerel (22,048) were the most landed fish species in Killybegs in 2020. Nearly 35.5% of fish landed by Irish vessels in Ireland were caught in the West of Scotland and Rockall Catch Zones.

Ireland's Marine Atlas (Ireland's Marine Atlas, 2021) indicates that pot and line fishing activity areas overlap with the OWF area of the Foreshore Licence Application Area, with some net fishing and bottom trawl fishing present as well in the OECC. Distribution of different fishing methods adjacent to and overlapping the Foreshore Licence Application Area are presented in Figure 4-14. There may be other areas of fishing not recorded in Ireland's Marine Atlas.

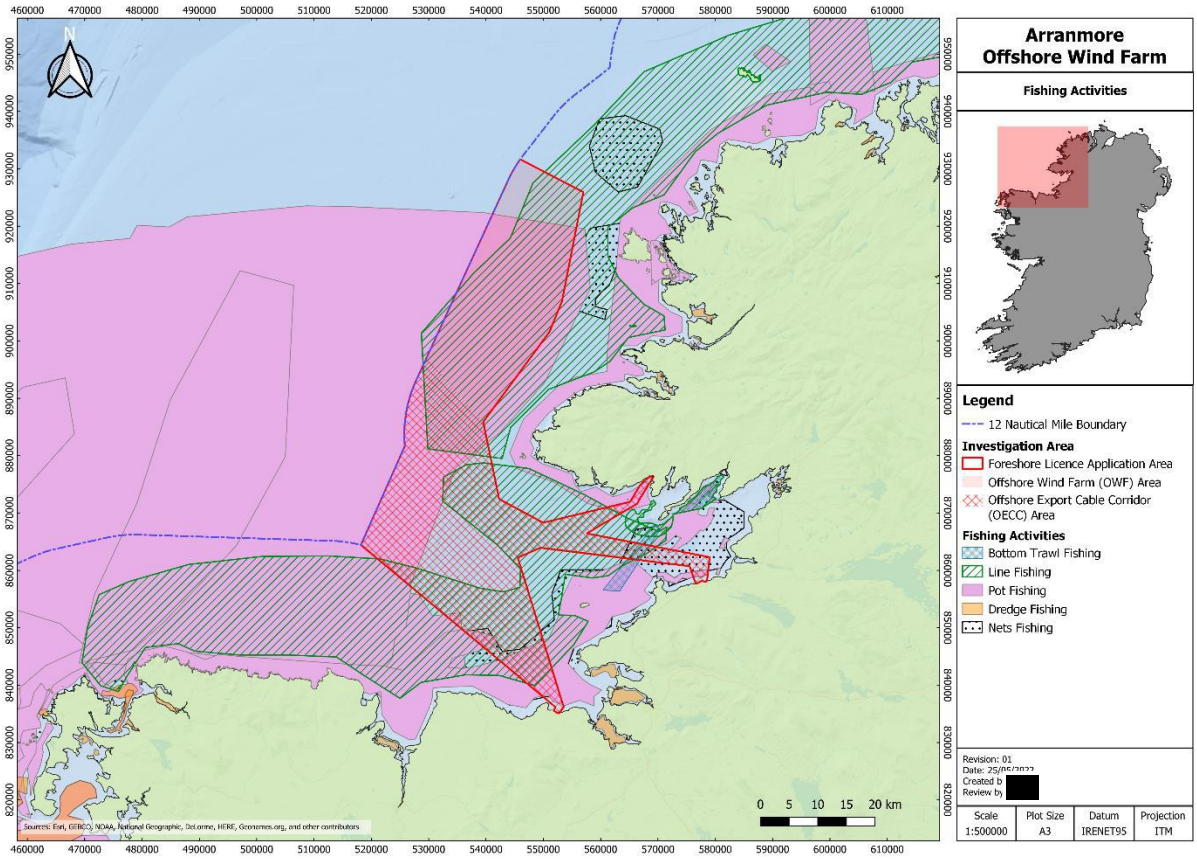


***Figure 4-14 Fishing Activities (Ireland's Marine Atlas, 2021b)***

During the proposed site investigation activities, namely the geophysical and geotechnical survey operations, the deployment of metocean equipment and during mobile ecological surveys, other vessels will be requested to maintain a safe distance from the survey vessels due to their restricted manoeuvrability. Fishermen will also be requested to avoid the static survey equipment once it is deployed, which will have a very small footprint.

Additionally, for the duration of the geophysical survey only, fishermen with static gear such as whelk/lobster/crab pots within the survey area will be requested to temporarily remove them. The impact upon the commercial fishing sector will be minimised by planning of the survey to minimise

[4] Fish Landings 2020 - CSO - Central Statistics Office

the spatial extent and duration of gear removal necessary. The resulting effect on static gear fisheries will be very small and of short duration. Furthermore, given the short duration and temporary nature of the proposed site investigation activities, any potential effect on commercial static gear fisheries and recreational fishing is expected not to be significant.

Furthermore, Arranmore Wind Limited acknowledges that information relating to fishing activity in the area is likely incomplete and intends to appoint a Fisheries Liaison Officer (FLO) to engage with local fishing community to determine the full extent of fishing effort in the Project Foreshore Licence Application Area, and to minimise disruption to the activity.

## 4.9 Aquaculture and Shellfish Ecology

The Department of Agriculture, Food and the Marine (DAFM) has responsibility for the regulation of aquaculture. Under Section 6 of the Fisheries (Amendment) Act, 1997 (as amended), it is illegal to engage in aquaculture without an appropriate Aquaculture Licence. Aquaculture includes the culture or farming of fish, aquatic invertebrates, aquatic plants, or any aquatic form of food suitable for the nutrition of fish. Figure 4-15 below shows the location of licenced aquaculture in the proximity of the Foreshore Licence Application Area.

As there are no licenced aquaculture sites within or adjacent to, or in the vicinity of the Foreshore Licence Application Area, no significant effects on aquaculture operations are expected.

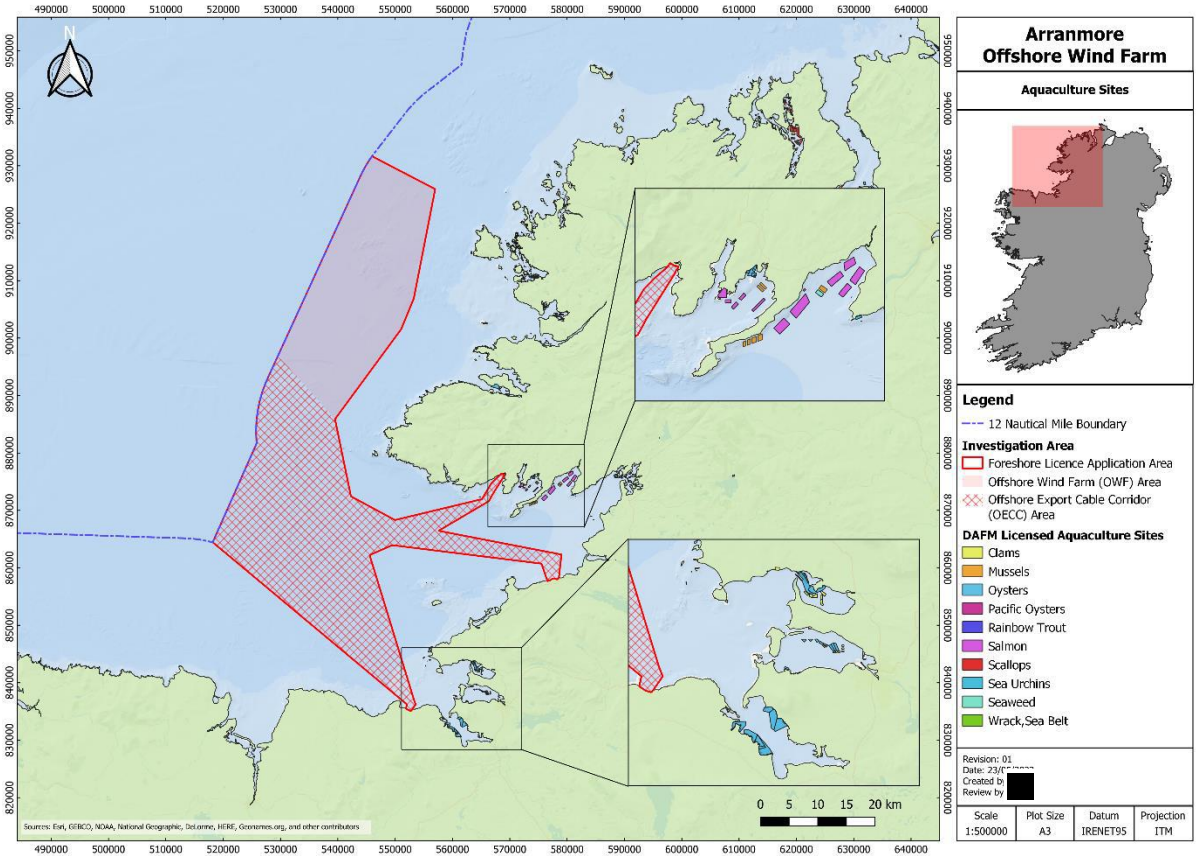


***Figure 4-15 DAFM Licenced Aquaculture Sites (Ireland's Marine Atlas, 2021c)***

Designated Harmful Algal Blooms (HABs) Inshore Shellfish Production Areas (ISPA) are administrative units used for reporting purposes in the management, collection and analysis of shellfish and phytoplankton sample data, for aquaculture production activities. Shellfish Waters Directive Areas (SWDA) aim to protect or improve shellfish waters in order to support shellfish life and growth. They are designed to protect the aquatic habitat of bivalve and gastropod molluscs, which include oysters, mussels, cockles, scallops and clams.

Both are shown in Figure 4-16; as there are no HAB ISPAs or SWDAs within or adjacent to, or in the vicinity of, the Foreshore Licence Application Area, no significant effects on aquaculture operations are expected.

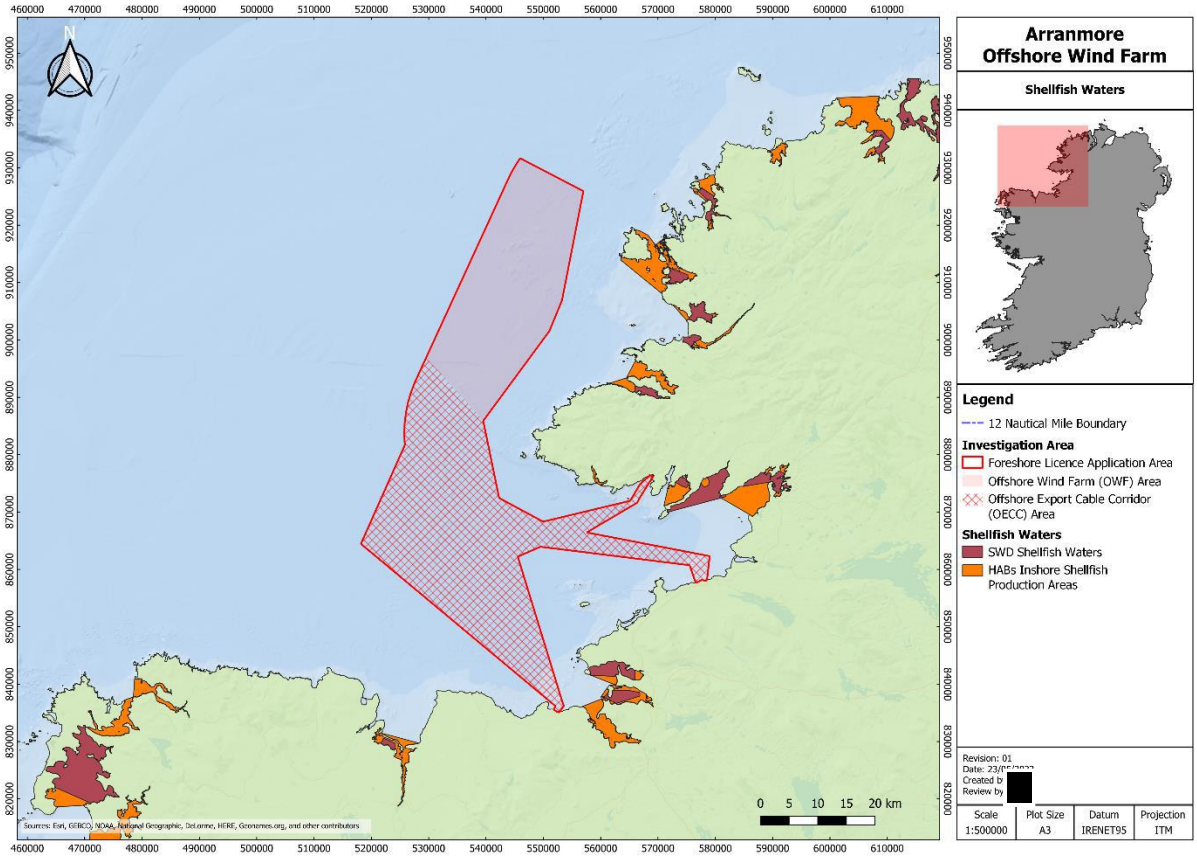


***Figure 4-16 Shellfish Waters Directive (SWD) Areas and Harmful Algal Blooms Inshore Shellfish Production Areas (Ireland's Marine Atlas, 2021)***

## 4.10 Marine Traffic

The Irish Coastguard monitors the movement of vessels in Irish waters via an Automatic Identification System (AIS) for maritime transport safety and security. The European Communities (Vessel Traffic Monitoring and Information System) Regulations 2010 governs the use of AIS systems and states that "Any fishing vessel with an overall length of more than 24 metres but less than 45 metres which is (a) registered in the State, (b) operating in the territorial waters, or (c) landing its catch in a port of the State, shall be fitted with an automatic identification system (Class A) which meets the performance standards drawn up by the IMO".

Figure 4-17 shows AIS data from the period beginning July 2018 ending June 2019. The data is mapped on a 40 m grid and represented visually by the density of marine vessels over that period.

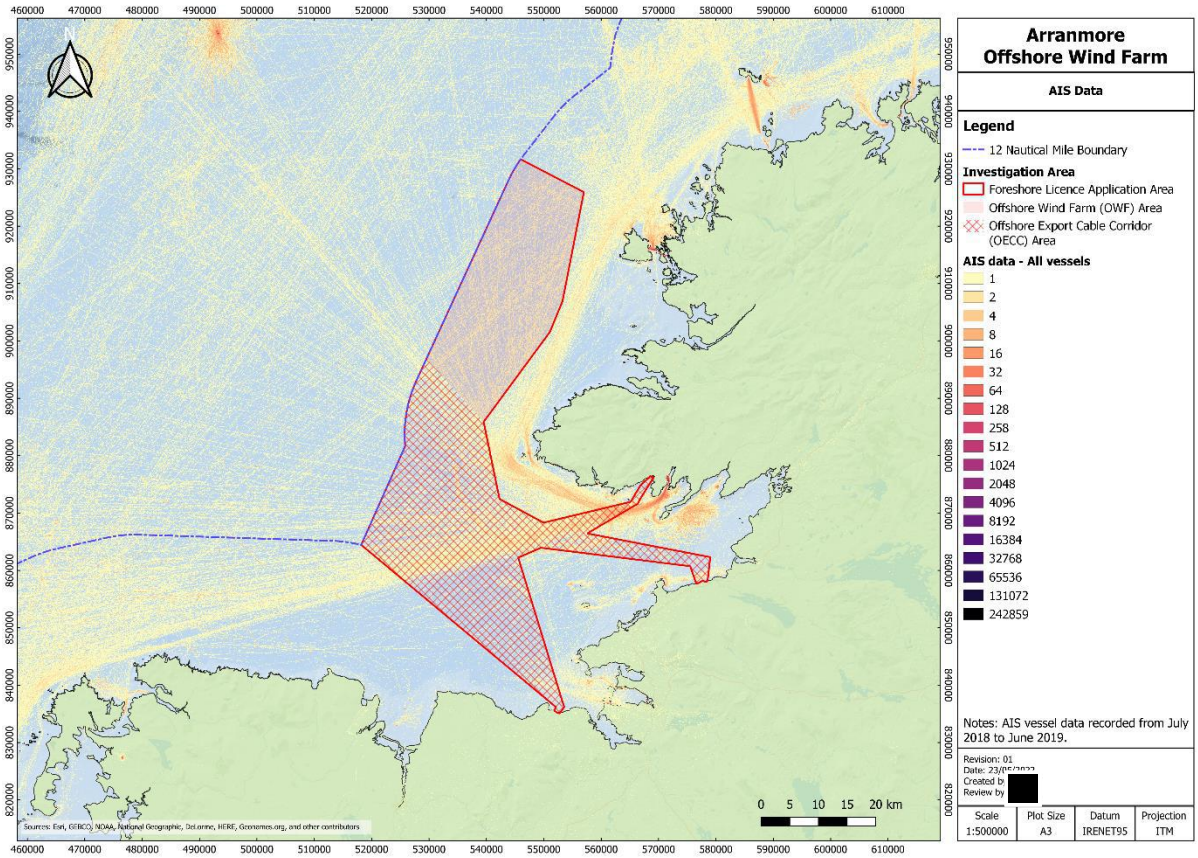


***Figure 4-17 Coastguard AIS Traffic Frequency (2018)***

Most navigation routes within the proposed area are associated with harbour traffic in and out of Killybegs port. Fishing vessels make up most of the marine traffic in the area.

The potential effects on marine traffic include an increased risk of collision with the static survey equipment and with the survey vessels. Up to two geotechnical vessels will be engaged in undertaking the geotechnical survey. They will typically be travelling at slow speeds and will also be stationary for a large portion of the time (approximately 6 hours at a CPT location, 24-36 hours at a nearshore borehole location and up to 48 hours at an offshore borehole location).

Therefore, potential effects on navigational channels within the area will be addressed through engagement with the relevant stakeholders, including the Irish Coast Guard, the Department of Transport, Tourism and Sport, local ports and harbours and users of the navigational channels, at appropriate times. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance, in keeping with accepted maritime safety practices. During the survey and deployment operations the vessels will display lights, shapes and other internationally recognised identification or warning signals.

Mitigation measures will be in place to ensure compliance with the International Regulations for Preventing Collisions at Sea and Standards, including a formal notice to mariners in advance of any activity, appropriate navigation lights and liaison with Port authorities to agree the timing of works in

the vicinity of the Traffic Separation Scheme (a maritime traffic-management route-system regulated by the International Maritime Organization) and to agree a communication protocol.

The proposed site investigation activities will be kept to the minimum time period possible. As the surveys and disruption will be temporary and short term, the effect on commercial shipping is considered not to be significant.

## 4.11 Tourism and Recreation

Overall, the site investigation area has a high value for tourism and sea-based activities (The Marine Institute, 2020).

East of the OWF area, Árainn Mhór is an important island for scuba diving, and a number of boat trips are available for ecotourism and sea kayaking. Holiday homes occupy over 52% of housing around Falcarragh, Horn Head and Portnoo.

Adjacent to the OECC area a variety of sheltered bays with rich estuaries offer evidence of millennia of human activity and habitation. Principal urban centres all located at harbours or estuaries are Sligo town, Donegal town and Killybegs town. Tourism is well established with particularly popular discovery points of the Wild Atlantic Way and popular walking routes in the area. Popular recreational resorts at Strandhill and Mullaghmore offer surfing and seaweed baths as well as other coastal recreational activities. In recent years, cruise ships have also berthed at Killybegs; whilst angling and boat charters are popular. Boat trips are also available from Sligo Harbour to Coney Island, and sightseeing trips of the Sliabh League cliffs. The estuaries of Drumcliff, Garavogue and Ballysadare are popular spots for fishing. Shore angling is common in Rosses Point and Coney Island (accessible at low tide), while The Ledge (6km west to Coney Island) and Turbot Bank (northwest of Ballysadare Bay) are preferred for boat angling.

Short term and localised impact of the proposed site investigation activities on tourism and recreation may occur. An FLO will be appointed to the project, who will maintain communications with the local fishing communities and other marine users, including leisure users, in order to minimise disruption to leisure and recreation activities.

A notice to mariners will be issued in advance of the proposed site investigation activities. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance in keeping with accepted maritime safety practices.

Activities on site will be kept to the minimum time period possible and will be temporary in nature, with the maximum time expected on site in any one place c. 24-36 hours for boreholes at the landfall locations. These are not likely to interact with other vessel traffic. Therefore, significant effects on marine traffic or other marine users are considered not likely.

## 4.12 Material Assets

The Irish Marine Atlas and the Foreshore Licence database were reviewed to determine potential infrastructure underlying the Foreshore Licence Application Area. This review process confirmed that the Foreshore Licence Application Area does not overlap with subsea cables (see **Error! Reference source not found.**.

The proposed site investigation activities have the potential to result in damage to existing infrastructure, due to direct impact of vessel spud cans, seabed sampling equipment or moorings. Geotechnical sampling locations will be positioned a minimum of 100 m from the as-found position of existing cables and buried pipelines or 250 m from the as-laid position if the position is not confirmed during the non-intrusive surveys. Third party asset owners will be consulted prior to site investigation activities commencing.

Furthermore, the mitigation measures outlined in Section 5 will ensure that the risk of impact upon seabed infrastructure is negligible, with no significant effects predicted.

## 4.13 Archaeology and Cultural Heritage

Shipwreck data available through both the INFOMAR project and National Monuments Database is shown in Figure 4-18.

INFOMAR is a joint venture between the Geological Survey of Ireland and the Marine Institute surveying Irelands seabed. Part of this involves the identification, mapping, and archiving of shipwrecks in Irish waters. The INFOMAR shipwreck data shows 1 confirmed shipwreck within the Foreshore Licence Application Area.

The National Monuments Database shipwreck data shows 6 unconfirmed shipwrecks within the Foreshore Licence Application Area. However, many of the wrecks from the National Monuments Database are unconfirmed and, unlike the INFOMAR data, do not have recent survey data associated with their records.

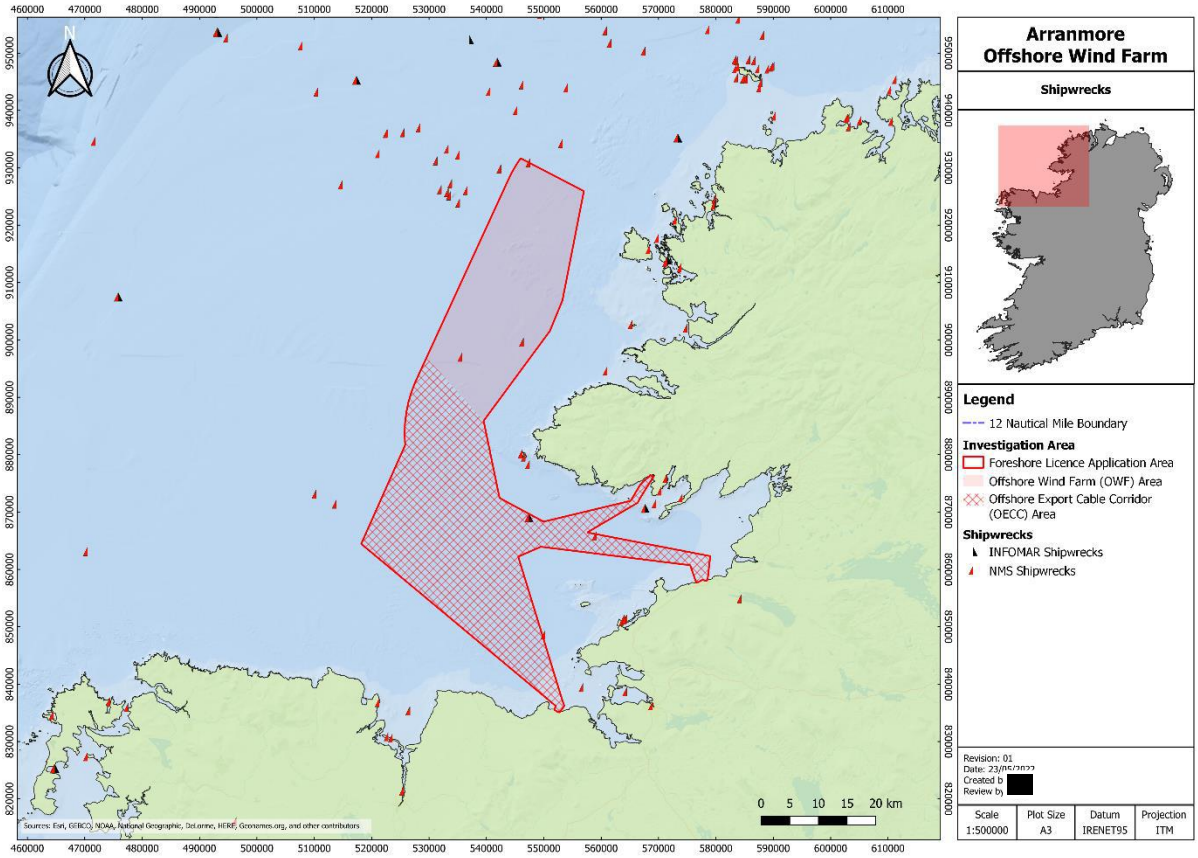


***Figure 4-18 National Monument Service (NMS) (DAHG, 2020) and INFOMAR (2020) shipwreck data***

Known or suspected wrecks will be avoided during physical sampling activities. All proposed physical sampling locations will be assessed in advance by a suitably qualified archaeologist to ensure that the proposed site investigation activities do not negatively impact on locations where there is known or potential archaeology.

## 4.14 Landscape and Seascape

The Foreshore Licence Application Area is not subject to any designation intended to protect landscape quality. The Foreshore Licence Application Area OWF area lies off Regional Seascape Character Area 3 (North Atlantic Islands, Headlands and Beaches) while the OECC area lies off and overlaps with Regional Seascape Character Area 4 - Sligo Bay (Marine Institute, 2020).

The visual disturbance caused by the proposed site investigation activities will be limited to the presence of 1-2 survey vessels on site. The area is characterised by a number of relatively high-density vessel routes, which are mainly associated with transiting into and out of local ports and harbours including Killybegs. This includes fishing (actively fishing and in transit), regular passenger ferry routes and recreational traffic. No significant effects to landscape and seascape receptors are predicted.

## 4.15 Major Accidents and Disasters

The proposed site investigation activities are not anticipated to exacerbate natural disasters such as earthquakes, subsidence, landslides, erosion or flooding.

It is noted that the proposed Foreshore Licence Application Area is susceptible to severe weather conditions. The potential for a major accident to arise as a result of the proposed activities will be minimised through mitigation measures outlined in Section 5 below. Safety of shipping and navigation mitigation will include publication of a formal Marine Notice, lights, shapes and other internationally recognised identification or warning signals displayed on survey vessels, a communication protocol with the Dublin and Howth Harbour Masters and compliance with all requirements of the International Regulations for Preventing Collisions at Sea.

## 4.16 Other Proposed Developments

A review of available information for the area surrounding the Foreshore Licence Application Area was undertaken to identify other activities and potential plans, projects and activities in the area. This included the DHLGH Foreshore License Applications and Determinations search tool (DHLGH, 2021) and the Environment Protection Agency (EPA) Dumping at Sea Register (EPA, 2021).

The following developments were considered as having potential to contribute to in-combination effects on the Nature 2000 sites identified:

- FS007084 Donegal County Council Dredging and Beach Nourishment at Magheraroarty Pier, Co Donegal
- FS007130 ESB Networks - Achill Island Submarine Cables Installation
- S0023-01 Sligo County Council Sligo Harbour
- S0028-01 Department of Agriculture Food and the Marine Killybegs Fisheries Harbour

Locations of these projects are shown in Figure 4-19 and details of these projects, their interaction with the activities proposed under this Foreshore Licence Application and the potential for likely in-combination effects is set out in the SISAA document submitted as part of this Foreshore Licence Application.

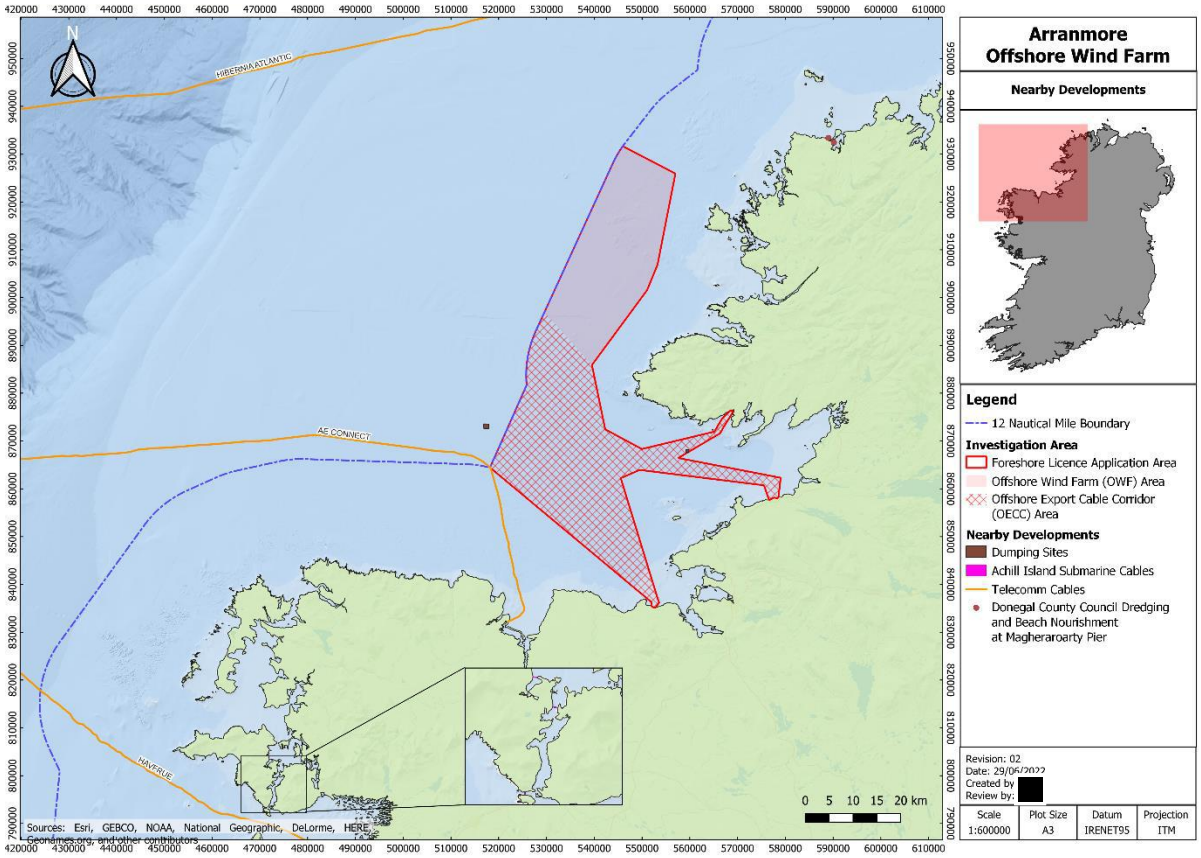


***Figure 4-19 Locations of nearby projects in relation to Foreshore Licence Application area***

The possible in-combination effects of the projects detailed above and the FLA proposed site investigation activities were identified and assessed in Section 6 of the SISAA, where it was found that there was no possibility of in-combination effects.

The NIS also concluded that adverse in-combination effects of the proposed site investigation activities with the projects identified and detailed in the paragraphs above, are considered not likely.

# 5 Summary of mitigation measures proposed

## 5.1 Population and Human Health

All proposed site investigation activities will be conducted in accordance with all relevant Health and Safety Legislation and Regulations, and in adherence to all major international shipping conventions, adopted by the International Maritime Organization (and the International Labour Organization) concerning maritime safety and pollution prevention.

## 5.2 Marine Benthos

As no likely significant effects are expected for any protected benthic habitat due to the proposed site investigation activities, no mitigation measures are proposed.

## 5.3 Marine Mammals

The proposed site investigation activities are temporary in nature and of short duration. The protocol 'Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters' (DAHG, 2014) will be followed to minimise disturbance to marine mammals, including the QIs of the nearby SACs. Measures identified within the DAHG guidance are applicable for all geophysical acoustic surveys and include:

- **Marine Mammal Observers (MMOs)** – A qualified and experienced Marine Mammal Observer (MMO) will be appointed to monitor for marine mammals and to log all relevant events using standardised data forms provided by the DAHG

- **Pre-start monitoring** – Visual search will be conducted, during daylight hours, by an MMO for a pre-soft-start search of 30 minutes i.e. prior to the commencement of marine operations

- **Monitored zone** – Should any marine mammal species be detected within a radial distance of the relevant zone of the survey vessel (as per the DAHG 2014 Guidance), commencement of site investigation activities will be delayed until their passage, or the transit of the vessel, results in the cetaceans being of sufficient distance from the vessel to satisfy the DAHG 2014 Guidance. In both cases, there will be a 30-minute delay from the time of the last sighting within the relevant zone of the survey vessel (as per the DAHG 2014 Guidance) to the commencement / recommencement of the operations. The MMO will use a distance measuring stick or reticule binoculars to ascertain distances to marine mammals. Note: once started, site investigations will not cease should cetaceans approach the survey vessel.

- **Soft start** – A soft start is the gradual ramping of power over a set period of time, to give any marine mammals adequate time to leave the area. In commencing a seismic survey operation, including any testing of seismic sound sources, where the output peak sound pressure level exceeds 170 dB re: 1µPa @1m, a ramp up procedure will be undertaken in line with the DAHG (2014) guidance. Once the soft start commences, there is no requirement to halt or discontinue the procedure at night-time, if weather or visibility conditions deteriorate, or if marine mammals enter the monitored zone (as per the DAHG 2014 Guidance for monitored zones – activity dependent).

- **Line changes** – Where the duration of a survey line or station change is greater than 40 minutes, the activity will, on completion of the line/station being surveyed, either cease (i.e., shut down) or preferably undergo a reduction in energy output to a lower state where the peak sound pressure level from any operating source is =<170 dB re 1 µPa @ 1 m. Prior to the start of the next line/station, if the power was shut down, all pre-survey monitoring measures and soft start procedures will be followed as for start-up. If there has been a reduction in power, a soft start will be undertaken gradually from the lower output level. The latter sound reduction measure will be applied to line changes at night-time or in daytime conditions of poor visibility. Where the duration of a survey line/station change is less than 40 minutes the activity will continue as normal (i.e. under full output).

- **Breaks in survey periods** – If there is a break in sound output from survey equipment for a period greater than 10 minutes (e.g., due to equipment failure, shut-down, survey line/station change) then all pre-start monitoring measures and ramp-up procedures will recommence prior to re-starting.

- **Reporting** – All recordings of marine mammals species will be made using standardised data forms provided by the NPWS. Full reporting on operations and mitigation will be provided to the NPWS to facilitate reporting under Article 17 of the EC Habitats Directive and future improvements to guidance (DAHG, 2014). The report will also include feedback on how successful the measures were. This requirement will be communicated to the MMOs at project start up meetings and at crew change.

- **Survey vessels speed and course** – The project survey vessels will be moving at a maximum speed of approximately 5 knots during surveys to allow for marine mammal species to move away from the vessel should they be disturbed by the vessel presence or noise emissions. During transit times, the survey vessels will be travelling at speeds greater than 5 knots. However, these movements are not considered to deviate from normal vessel traffic in the Foreshore Licence Application Area. Should marine mammal be found to be in the direct path of a survey vessel, during or outside of survey times, the survey vessel will slow down or, if possible, alter course to avoid collision.

In addition, should Arranmore Wind Limited identify that a temporal overlap is likely between these proposed site investigation activities and those projects identified in the SISAA as having the potential to cause in-combination effects to marine mammals, Arranmore Wind Limited will engage with those projects to ensure that activities are sufficiently distanced to ensure that adverse effects on marine mammals are mitigated for.

## 5.4 Birds

As no likely significant effects are expected for any bird species due to the proposed site investigation activities, no mitigation measures are proposed.

## 5.5 Fish Ecology

The soft-start/ramp-up procedure described in the 'Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters' protocol (DAHG, 2014) will be followed to ensure that

any adverse effect to fish species due to disturbance caused by underwater noise will be mitigated for.

If a temporal overlap is likely between the proposed site investigation activities and projects identified as having the potential to cause in-combination effects to noise pressure sensitive fish species, Arranmore Wind Limited will engage with those projects to ensure that activities are sufficiently distanced to ensure that adverse effects on such species are mitigated for.

## 5.6 Natura 2000 Sites

### 5.6.1 Annex I Habitats

As no likely significant effects are expected for any protected benthic habitat due to the proposed site investigation activities, no mitigation measures are proposed.

### 5.6.2 Annex II Species

See Section 5.3 Marine Mammals for proposed mitigation measures for Annex II marine mammal species; and see Section 5.5 Fish Ecology for proposed mitigation measures for Annex II migratory fish species.

## 5.7 Water, Air and Climate

Biodegradable polymer mix will be used throughout drilling operations where possible. Chemical material used will be from the List of Notified Chemicals (approved chemicals) and discharged into the marine environment under the Offshore Chemical Notification Scheme.

Strict maritime regulations, normal vessel operating standards and precautions, compliant with all International Maritime Law and National Maritime Legislation, will ensure the risk of a chemical release is low and no significant effects are predicted.

In addition, all vessels used shall, as required by law, be MARPOL compliant and fully certified by the Maritime Safety Office.

No likely significant effects are predicted from the site investigation activities on Air or Climate, therefore no mitigation measures were proposed.

## 5.8 Commercial Fisheries

During the proposed site investigation activities, other vessels will be requested to maintain a safe distance from the survey vessels due to their restricted manoeuvrability. Fishermen will also be requested to avoid the static survey equipment once it is deployed, which will have a very small footprint.

For the duration of the geophysical survey fishermen with static gear such as whelk/lobster/crab pots within the survey area will be requested to temporarily remove them. The impact upon the commercial fishing sector will be minimised by planning of the survey to minimise the spatial extent

and duration of the necessary gear removal. The proposed site investigation activities will be temporary and have a short duration.

Arranmore Wind Limited have appointed an FLO to engage with local fishing community in order to determine the full extent of fishing effort in the Project Foreshore Licence Application Area, and to minimise disruption to the activity.

## 5.9 Aquaculture and Shellfish Ecology

As no likely significant effects are expected for aquaculture operations or shellfish ecology in result of the proposed site investigation activities, no mitigation measures are proposed.

## 5.10 Marine Traffic

Navigational channels within the site will be addressed through engagement with the relevant stakeholders, including the Irish Coast Guard, the Department of Transport, Tourism and Sport, local ports and harbours and users of the navigational channels, at appropriate times. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance, in keeping with accepted maritime safety practices.

During the survey and deployment operations the vessels will display lights, shapes and other internationally recognised identification or warning signals.

Mitigation measures will be in place to ensure compliance with the International Regulations for Preventing Collisions at Sea and standards, including a formal notice to mariners in advance of any activity, appropriate navigation lights and liaison with Port authorities to agree the timing of works and to agree a communication protocol.

The proposed site investigation activities will be temporary and have a short duration.

## 5.11 Tourism and Recreation

An FLO has been appointed to the project, who will maintain communications with the local fishing communities and other marine users, including leisure users, in order to minimise disruption to leisure and recreation activities.

A notice to mariners will be issued in advance of the proposed site investigation activities. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance in keeping with accepted maritime safety practices.

Activities on site will be kept to the minimum time period possible and will be temporary in nature, with the maximum time expected on site in any one place c. 24-36 hours for boreholes at the landfall locations and up to 48 hours at offshore locations.

## 5.12 Material Assets

Geotechnical sampling locations will be positioned a minimum of 100 m from the as-found position of any cables and buried pipelines identified during the non-intrusive surveys. Third party asset owners will be consulted prior to site investigation activities commencing.

## 5.13 Archaeology and Cultural Heritage

Known or suspected wrecks will be avoided during physical sampling activities. All proposed physical sampling locations will be assessed in advance by a suitably qualified archaeologist to ensure that the proposed site investigation activities do not negatively impact on locations where there is known or potential archaeology.

## 5.14 Landscape and Seascape

As no likely significant effects are expected to any landscape or seascape in result of the proposed site investigation activities, no mitigation measures are proposed.

## 5.15 Major Accidents and Disasters

Safety of shipping and navigation mitigation will include publication of a formal Marine Notice, lights, shapes and other internationally recognised identification or warning signals displayed on survey vessels, communication protocol with the relevant Harbour Master and compliance with all requirements of the International Regulations for Preventing Collisions at Sea.

## 5.16 Other Proposed Developments

Relevant mitigation measures were included in the Sections above where possible in-combination effects were identified on particular receptors. Adverse in-combination effects of the proposed site investigation activities with the projects identified in Section 4.16 are not considered likely due to the:

1. Implementation of effective communication between Arranmore Wind Park and those projects listed in Section 4.16;
2. Likely timing and phased nature of proposed site investigation activities;
3. Temporary nature of proposed site investigation activities;
4. Very localised and imperceptible effects of proposed site investigation activities; and
5. Implementation of the DAHG (2014) best practice guidelines;

# 6 Conclusion

The EIA Screening exercise described in Section 3 concluded that the proposed site investigation activities are not subject to the EIA Directive. No screening or other EIA stages are therefore required, and no EIA is required.

The Non-statutory Environmental Assessment in this report has been undertaken based upon the information provided in this report, as well as in the information provided in other reports submitted in support of the Application, and the implementation of the mitigation measures proposed therein. These reports are:

- Supporting Information for Screening of Appropriate Assessment (SISAA)
- Natura Impact Statement (NIS)
- Risk Assessment for Annex IV Species

The Non-statutory Environmental Report concludes that due to the nature, scale and location of the proposed site investigation activities and proposed mitigation measures, there are no foreseeable significant effects on the environment arising from the proposed site investigation activities.

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