



**Appropriate Assessment Report and  
Determination for Maritime Usage Licence  
Application**

**NORTH IRISH SEA ARRAY WIND FARM LTD., SITE  
INVESTIGATION OFF COUNTIES DUBLIN, MEATH  
AND LOUTH.**

Application Number No. LIC230001

Date: 29 May 2024

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## Statement of Authority

This Appropriate Assessment Report has been undertaken by the Assessment Research and Development Unit within MARA, a specialist unit with appropriate expertise in environmental and ecological assessment.

## Section 1 Introduction

Article 6.3 of the Habitats Directive 92/43/EEC requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect on it, either individually or in-combination with other plans or projects, must be assessed in view of the said site's conservation objectives. The competent authorities can agree to the plan or project only after having ascertained that it will not adversely affect the integrity of a European site and, if appropriate, after having obtained the opinion of the general public.

This process takes place in a four stage process in which Stage 1, screening process, determines if the proposed plan or project, either alone or in-combination with other plans or projects is likely to have significant effects on a European site in view of its conservation objectives. If significant effects are likely then a Stage 2 appropriate assessment must be undertaken by the competent authority using the Natura Impact Statement provided by the proponent of the plan or project.

A screening for Appropriate Assessment was carried out by MARA in February 2024. It was concluded that likely significant effects as a result of the proposed project could not be discounted for a number of European sites and therefore an Appropriate Assessment was required. This report represents the Appropriate Assessment of the activities that the North Irish Sea Wind Farm Ltd. wish to carry out under Marine Usage Licence (MUL) LIC230001.

### 1.1 Background

North Irish Sea Wind Farm Ltd. (NISA Ltd.) are seeking a Maritime Usage Licence for a period of up to 7 years to conduct site investigation activities for the proposed North Irish Sea Array (NISA) wind farm to be located approximately 12km off the coast of counties Dublin, Meath and Louth. The objective of the NISA site investigations is to determine the environmental conditions, seafloor and subsurface geological characteristics within the Licence Area. The overall area that is the subject of this application is approximately 125km<sup>2</sup>.

### 1.2 Application documents submitted

The application documents in Table 1.1 were received and reviewed as part of this assessment. They are available to review at [LIC230001 - MARA - The Maritime Regulator](#)

**Table 1.1:** Application documents received in relation to LIC230001.

<b>Application documentation</b>	
Maritime Usage Licence Application	Received 9 October 2023
Maritime Usage Licence Map	Dated: 6 October 2023
Supporting Information for Screening for Appropriate Assessment (SISAA) Report	Dated: 9 October 2023
Natura Impact Statement Report	Dated: 9 October 2023
Risk Assessment for Annex IV Species Report	Dated: 9 October 2023
Assessment of Impact of Maritime Usage (AIMU) Report	Dated: 9 October 2023
Revised documents submitted: <ul style="list-style-type: none"> <li>• Supporting Information for Screening for Appropriate Assessment (SISAA) Report</li> <li>• Natura Impact Statement Report</li> <li>• Assessment of Impact of Maritime Usage (AIMU) Report</li> </ul>	Received 7 February 2024

### 1.3 Relevant consultation responses

A 30- day public consultation period was undertaken under Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011, commencing on 27 February 2024, with the public invited to make observations. This public consultation period was subsequently extended to 15 April 2024. A total of four submissions were received on foot of the public consultation, two from public bodies and two from members of the public and are outlined in Table 4.5 of Section 4 of this report. However, the public consultation did not raise any significant queries or provide any significant comments related to Appropriate Assessment (AA) or the protection of European sites.

### 1.4 Legislative Context

This appropriate assessment report relates to a licence application for an activity in the maritime area in accordance with Part 5 of the Maritime Area Planning Act (2021, as amended). Section 117 sets out the requirements for MARA to undertake appropriate assessment in respect of proposed maritime usage. The EU Habitats Directive (Council Directive 92/43/EC) and Birds Directive (2009/147/EC) are transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and by Part XAB of the Planning and Development Act 2000 (as amended). Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, outline the requirements for screening for appropriate assessment and for undertaking appropriate assessment.

## Section 2 Description of proposed works

### 2.1 Project Description

NISA Ltd. are seeking consent to conduct site investigation activities to inform design of the proposed NISA offshore wind farm array and cables, located off the east coast of Ireland. The site investigations will identify the hydrographical, geophysical, geotechnical, metocean, ecological, archeological and water quality characteristics of the area.

The Applicant has applied for a seven-year licence to carry out site investigations works. These surveys will take place over specified time periods (see section 2.2), and will include geophysical, geotechnical, metocean, ecological, archeological, and water quality surveys. The total time period proposed to undertake the hydrographical and geophysical surveys is from four to eight weeks. See section 2.3 for schedules associated with the geotechnical, metocean, ecological, archeological and water quality surveys.

### 2.2 Location

At its furthest extent the Maritime Usage Licence Application area lies approximately 25km off the coast of counties Dublin, Meath and Louth and makes landfall near Balbriggan, County Dublin (Figure 1). The overall area of this Maritime Usage Licence Application is approximately 125km<sup>2</sup>.

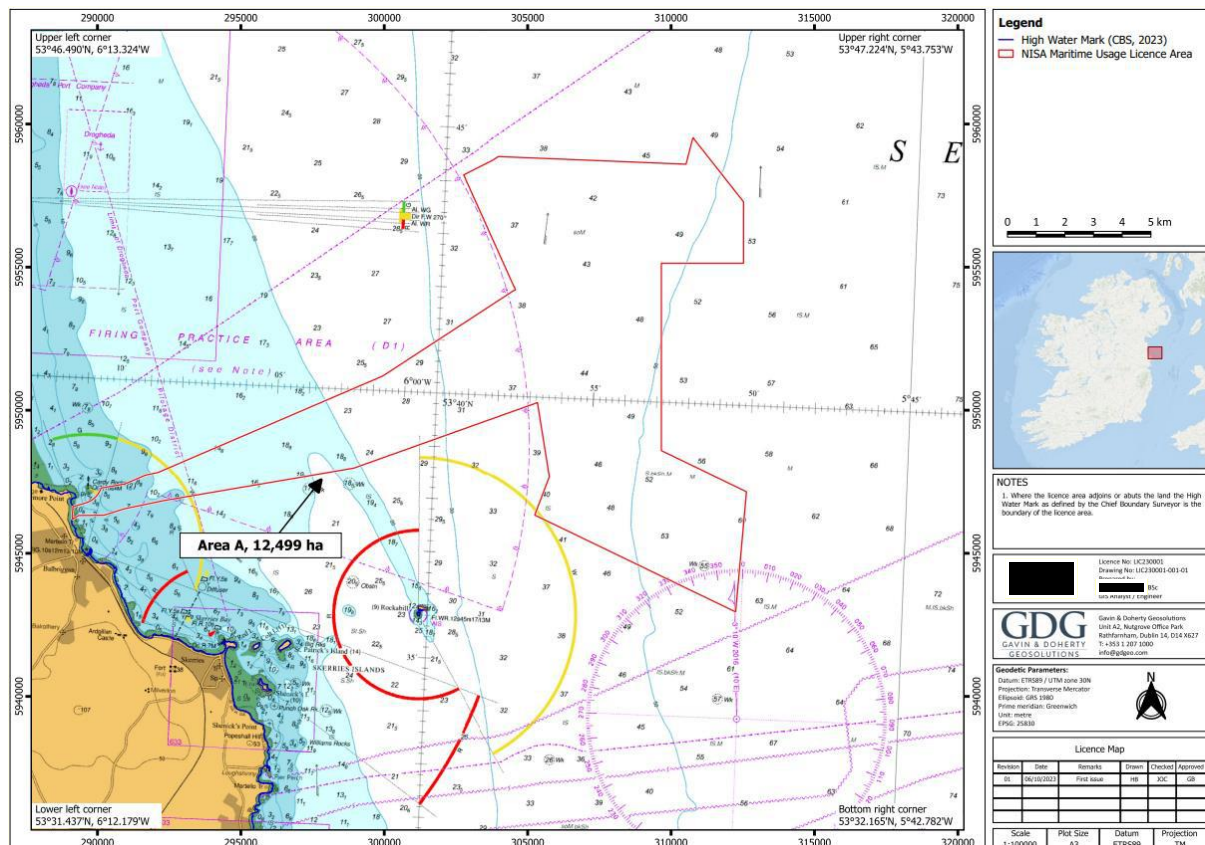


Figure 1: map showing proposed Maritime Usage Licence Area.

### 2.3 Description of the Proposed Survey Works

The applicant proposes to carry out hydrographical, geophysical, geotechnical, Metocean, ecological, archaeological and water quality monitoring surveys.

#### 2.3.1 Hydrographical and geophysical surveys

**Single Beam Echosounder (SBES):** The Single Beam Echosounder is a system designed to provide precise depth measurements along with seafloor profiling data. Typical equipment includes the Kongsberg 200 9G Single Beam Echosounder, with a maximum ping rate of up to 30 pings per second. Operating frequencies are approximately 200 kHz with sound pressure levels of 221.6dB re1 $\mu$ Pa @1m.

**Multibeam Echosounder (MBES):** MBES is a system for collecting detailed topographical data of the seabed. Typical equipment includes the Kongsberg EM3002D multi-beam system with mounting system including AML SV Smart Probe, Kongsberg EM 2040 MKII or similar. For these surveys, the equipment will operate at a typical central frequency of 400 kHz with sound pressure levels in the range of 198dB re1 $\mu$ Pa @1m.

**Side Scan Sonar (SSS):** SSS surveys are used to determine sediment characteristics and seabed features. The EdgeTech 4205 may be taken as an indicative example of an SSS device and for these surveys will have a potential operating frequency range of approximately 300/600kHz in the offshore area and 600/900kHz in the shallower nearshore area with sound pressure levels of 220-230dB re1 $\mu$ Pa @1m.

**Magnetometer:** A magnetometer is used to identify magnetic anomalies and hazard mapping for metal obstructions, shipwrecks and unexploded ordnance on the surface and in the shallow sub-surface. The Geometrics G-882 can be taken as an indicative equipment example. It is a passive device with the sensor responding to local variability in magnetic field and therefore emits no sound.

**Sub-bottom Profiling (SBP) - Parametric Sub Bottom Profiler:** SBP is used to develop an image of the subsurface, identifying different strata encountered in the shallow sediments. The Innomar "standard" Sub-Bottom Profiler is an indicative example of a parametric system with a primary and secondary frequency range of 85-115kHz and 2-22kHz, respectively, and sound pressure levels of up to 232 dB (typically operated at <200dB) re1 $\mu$ Pa @1m, which would be used in both nearshore and offshore areas.

**Sub-bottom Profiling (SBP) – Boomer:** The Applied Acoustics AA301 is an indicative example of a boomer, the instrument consists of a piezo electric plate transducer mounted on a surface tow catamaran frame. Reflected sound signals are recorded using a separate hydrophone such as the Applied acoustics HYD-360/08 (50m). The Boomer SBP operates in a frequency

range of 0.5 kHz to 5 kHz, with sound pressure levels in the range of 205-211dB re1 $\mu$ Pa @ 1m which would be used in the nearshore shallower area.

Sub-bottom profiling (SPB) – Sparker: The applied Acoustics Dual 400 Tip is an indicative example of a sparker system used in sub-bottom profiling. Reflected sound signals are recorded using a separate hydrophone such as the Applied acoustics HYD-360/08 (50m) or a multi-channel hydrophone such as the Geometrics GeoEel LH-16™ Digital Streamer. The sparker source has a frequency range of between 0.4-5kHz and a recorded sound pressure of 203dB re1 $\mu$ Pa @1m.

Acoustic Corer: The Acoustic Corer™ (Pangeo subsea/Kraken Robotics) creates a high-resolution 12m wide acoustic core penetrating the sub-seabed to depths greater than 40m. The Acoustic Corer provides a 3D image of stratigraphy layers and anomalies across the entire foundation footprint. The acoustic corer has a low frequency 1.5 to 6 kHz and high frequency 4.5 to 12 kHz chirp and Peak SL 195dB & 190dB re 1uPa @1m respectively.

Sub-bottom Imager (SBI): The Sub-Bottom Imager uses advanced acoustic technology to image beneath the seabed. The SBI has an operating frequency of 4.5 to 12.5 kHz and emits a sound level of 190dB re 1uPa @1m.

Acoustic positioning system; Ultrashort Baseline (USBL): The Applied Acoustics EasyTrak Nexus Model EZT-2691 is an example of an ultrashort baseline acoustic positioning system. The system consists of a transceiver unit and a set of transponders. The transceiver unit emits acoustic signals, which are picked up by the transponders. The signals are used to determine the position and orientation of the transponders relative to the transceiver, with high accuracy and precision. The frequency emitted ranges between 18-32kHz and a recorded sound pressure of 192dB re1 $\mu$ Pa @1m.

Refraction Seismic (Beach and Intertidal): Land based refraction seismic refraction survey relies on the refraction of compressional seismic waves which occurs when a subsurface interface exists with higher seismic velocity than the overlying deposits. For shallow investigations the interface between the superficial deposits and rock provides such a contrast. Refraction seismic profiles would be undertaken using onshore survey equipment at low tide within the intertidal area. A sledgehammer and metal plate sound source would be used to create compressional wave energy. Refracted sound signals will be received on a geophone array and recorded on a digital seismograph. Positions and levels of the geophones would be recorded using RTK GPS techniques.

Hydrographical and geophysical surveys schedule: The hydrographical and geophysical survey area will be refined prior to undertaking the surveys to minimise time on site; with the total time period proposed to undertake the hydrographical and geophysical surveys being from 4

to 8 weeks. The typical frequencies and the maximum peak sound pressure levels (SPL<sub>peak</sub>) of the proposed geophysical equipment are given in Table 2.1.

**Table 2.1** Summary of the noise sources from geophysical and geotechnical surveys.

Noise Source	Frequency	Sound Pressure Level (dB re 1 $\mu$ Pa @ 1m)
Shipping Noise	50 - 300 kHz	160-175 dB
SBEC	200 kHz	221 dB
MBES	400 kHz	198 dB
SSS	300 – 900 kHz	220 - 230 dB
SBP - parametric	2 - 115 kHz	232 dB
SBP - boomer	0.5 - 5 kHz	205 – 211 dB
Acoustic Corer	1.5 – 12 kHz	195 dB
Sub-bottom Imager	4.5 – 12.5 kHz	190 dB
USBL	18 – 32 kHz	192 dB
Geotechnical drilling (Rotary)	1 - 120 Hz	145 dB
Seismic CPT	1 - 280 Hz	145 dB
P-S wireline logging	1 - 240 Hz	70 dB

### 2.3.2 Geotechnical survey

#### Boreholes – Rotary Drilling:

Boreholes may be up to 80 m below the sea floor within the Licence Area. All drilling equipment used will follow the ISO and API technical specifications for drilling equipment. Marine rotary drilling is a technique used to bore holes into the seabed. The drilling process involves rotating a drill bit attached to a drill string and applying downward pressure to cut through the rock formations. Geotechnical sampling tools, including push and piston samples, can then be deployed into the ground to recover intact material. The typical frequencies emitted from rotary drilling are between 0.001-0.120kHz and a recorded sound pressure of approximately 145dB re1 $\mu$ Pa @1m.

This activity will be split between two surveys with a preliminary survey typically taking up to 10 weeks and an interim survey typically taking up to 20 weeks. The total number of boreholes proposed in the maritime usage licence area is 94 and the time required for each borehole is from between 24 and 36 hours.



Cone Penetration Tests (CPT): CPTs are in-situ tests that are used to identify soil type. In this test a cone penetrometer is pushed into the seafloor at a standard rate and data is recorded at regular intervals during penetration. CPTs can be performed as either Seabed or downhole in boreholes. Two types of CPT surveys are proposed, namely Seismic CPT and P-S wireline.

Seismic CPT: A seismic CPT provides the same data as a standard CPT test with the addition of geophones (receivers) located behind the shoulder of the cone. A seismic source, typically consisting of two to three pneumatic or hydraulic trigger hammers, is positioned on the seabed, triggered to create a sound wave, which then propagates through the ground, and is recorded by the cone. The arrival times of the soundwave to the cone is measured, and provides an indication of the material. The typical frequencies emitted from CPT and seismic CPT are between 0.001-0.28kHz and a recorded sound pressure of approximately 145dB re1 $\mu$ Pa @1m.

P-S wireline logging: A P-S wireline logging probe is a method similar to Seismic CPTs, however the source is located within the probe, with geophones spaced either side of the source. The data is used to determine rock and soil properties, and the test is conducted after a borehole has been completed within the annulus created by the drilling. The typical frequencies emitted from P-S wireline logging are between 0.001-0.24kHz and a recorded sound pressure of approximately 70dB re1 $\mu$ Pa @1m.

The total number of CPTs proposed in the maritime usage licence area is 224 and the time required for each test is from between 30 minutes and 1 hour.

Vibrocore / Gravity Corer: Vibrocore and Gravity Corer are methods of collecting un-consolidated seabed samples. A maximum of 110 sample locations will be required for either vibrocore or gravity sampling with a target depth of 6m below seafloor within the Licence Area. The total time required for gravity corer activity is maximum of 24 days but gravity corer is part of same survey as boreholes so approximately 10 weeks for preliminary survey and 20 weeks for the interim survey.

Intertidal Trial Pits: Trial pits are used to recover large bulk samples of soil and/or where thorough visual examination of strata is required. Trial pits can be dug by hand if required (due to the presence of underground services for example) but will most likely be dug using a machine excavator. An example excavator is a hydraulic wheeled backhoe loader (e.g. JCB 3CX - Figure 0-20). Pits are generally excavated to a depth of up to 5m, and are typically 3m x 1m in size. Trial Pits will be excavated, photographed and backfilled with the original suitable excavated material.

### 2.3.3 Metocean

Floating LiDAR: Floating LiDAR buoys will be deployed to measure the wind resource within the OWF Area. Deployment of this buoy will include anchor points on the seafloor. LiDAR may

be deployed for a period of between 12 to 24 months. A maximum of 5 floating LiDAR buoys may be deployed

Acoustic Doppler Current Profiler (ADCP): ADCPs may be used to examine wave and current conditions in the Licence Area. This equipment is installed on the seabed and anchored with a suitable mooring structure. A maximum of 5 ADCPs may be used to examine wave and current conditions in the Licence Area.

Wave Buoy: Waverider buoys may be deployed to measure wave heights and direction to feed into the detailed design of the project within the OWF area. They will be moored to the seabed by a suitably sized mooring structure

#### 2.3.4 Ecology

Fisheries Survey: Fisheries surveys identify fish species distribution within the Licence Area. Exact details of monitoring required will be determined through engagement with the relevant authorities including the SFPA, the Marine Institute and through local knowledge where appropriate.

Benthic Ecology: Benthic surveys identify subtidal and intertidal benthic communities and habitats at the site. Subtidal sample locations may be subject to drop down video in advance of sampling, intertidal sample locations may be subject to walkover/drone survey in advance of sampling. There will be up to 300 sampling locations within the Licence Area and multiple samples may be taken at each location.

Marine Mammal Acoustic Monitoring: Acoustic monitoring of marine mammals will be undertaken using passive acoustic monitoring equipment such as C-PODs deployed on the seabed. SoundTrap hydrophones may be deployed alongside the C-PODs for periods throughout the monitoring campaign. There will be a maximum of five C-POD sampling locations within the Licence Area. These will either be five permanent sites or the five sites will be relocated every three months during battery change. This will be decided on in consultation with an experienced marine mammal ecologist.

#### 2.3.5 Archaeological

The proposed archaeological survey will comprise of the identification and assessment of metallic and other targets recorded during the geophysical survey. Submarine archaeological surveys are also proposed including remote sensing, acoustic imaging, underwater photography and videography, and in-situ archaeological excavation.

All required archaeological work will be carried out by a suitably qualified archaeologist to determine the location of all known archaeological features in advance of the geotechnical and environmental survey.

### 2.3.6 Water Quality Monitoring

Water sampling will be conducted to collect data to inform assessment of water quality. Sample collection will be undertaken using water bottle rosettes and in situ sampling. There will be a maximum of 75 water quality sampling locations within the Licence Area.

## **Section 3 Habitats and Species Assessed**

### **3.1 Appropriate Assessment Screening**

As the Consenting Authority for Maritime Usage Licensing and in line with Regulation 42.1 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) MARA carried out a screening for Appropriate Assessment for these site investigations off the coast of Counties Dublin, Meath and Louth.

The source-pathway-receptor method was used to assess the potential for likely significant effects (OPR, 2021). The source was identified as elements of the proposed project that may affect ecological receptors. The ecological receptors were the Qualifying Interests or Special Conservation Interests in European sites within the Zone of Influence. The Zone of Influence of the project is dependent on the species or habitat under consideration. Only marine and coastal Annex I habitats were considered in this screening process.

### **3.2 Identification of European sites likely to be affected**

The Screening for Appropriate Assessment Report (dated 21 February 2024) identified eight Irish sites, eight British and 16 French sites that were considered to be within the Zone of Influence of the proposed project. These European sites, the Qualifying Interests and Species of Conservation Interest which were screened in for further assessment, and the possible impacts as a result of the proposed development are given in Tables 3.1 and 3.2 below.

Since the completion of the Screening for Appropriate Assessment Report in February 2024, the National Parks and Wildlife Service (NPWS) have published a list of proposed additional Qualifying Interest species for a number of SAC's, which are relevant to this assessment. These additional Qualifying Interests are currently open for public consultation and the relevant species and associated SAC's were included in this appropriate assessment, as indicated in Table 3.1

Eleven Irish SPA sites and nine British sites were considered for inclusion in this full appropriate assessment, following further review of the use of the Source-Path-Receptor method for bird species, along with a number of additional species from SPA sites already screened in for assessment from the 21 February AA Screening report. Bird species were re-assessed using their mean maximum foraging distance as a potential pathway using Thaxter et al (2012) and

Woodward et al (2019). However, as no additional species (which had not already been screened in for the North Irish Sea SPA) were SCIs of these SPA sites, these were not included. Also their inclusion at this stage would have no impact on any mitigation measures recommended.

### **3.2.1 Description of the Qualifying Interests affected**

#### Marine Mammals

Harbour seals occurs in estuarine, coastal and offshore waters but also use a range of intertidal and terrestrial habitats for important life history functions such as breeding, moulting, resting and social activity. Their aquatic range for foraging and inter-site movement extends into continental shelf waters and extends over approx. 450km (Carter et al, 2022). When hauling out ashore Harbour seals tend to prefer comparatively sheltered locations. In Ireland therefore the species is more commonly found ashore in sheltered bays, inlets and enclosed estuaries. Harbour seals are vulnerable to disturbance during periods spent ashore or in shallow waters whether as individuals or groups. Times spent ashore occur immediately prior to and during the annual breeding season which takes place predominantly during the months of May to July. Specific established sites tend to be used annually for breeding-associated behaviour by adult males, adult females and their new-born pups. Harbour Seal is a qualifying interest of Lambay Island SAC and Slaney River Valley SAC (Table 3.1).

Grey seals occur in estuarine, coastal and offshore waters but also use a range of intertidal and terrestrial habitats for breeding, moulting, resting and social activity. Its aquatic range for foraging and inter-site movement extends predominantly into continental shelf and slope waters and can extend over 250 km (Carter et al, 2022). Breeding occurs from August to December approximately, with moulting occurring from December to April. Grey seals are vulnerable to disturbance during periods in which time is spent ashore as individuals or in groups. Pups are born on land, usually on remote beaches and uninhabited islands or in sheltered caves. They are nursed there for a period of several weeks by the mother prior to weaning and abandonment. Specific established sites are used annually for breeding-associated behaviour by adult females, adult males, new-born pups and weaned pups. During this period, adult females mate with adult males at or adjacent to these breeding sites. Grey seal is a qualifying interest of Lambay Island SAC, Saltee Islands SAC, Roaringwater Bay SAC, The Maidens SAC and Pembrokeshire Marine SAC (Table 3.1).

Harbour porpoises occur in estuarine, coastal and offshore waters. Their distribution extends throughout continental shelf waters where it can range over many hundreds or thousands of kilometres. Group sizes tend to be small, commonly 2-3 individuals although larger aggregations may occasionally be recorded, particularly in the summer months. Harbour porpoise breeds annually in Ireland; the principal calving period in Irish waters is thought to occur in the months of May and June, although it may extend throughout the summer months and early autumn. New-born calves are weaned before they are one year old. Mating commonly

occurs several weeks after the calving season. Harbour porpoise feeds on a wide variety of fish, cephalopod and crustacean species occurring in the water column or close to the seabed. Dive depths in excess of 200m have been recorded for the species. Foraging areas for harbour porpoise are often associated with areas of strong tidal current and associated eddies, and are commonly seen close to shore or adjacent to islands and prominent. Harbour porpoise is a qualifying interest in 27 SACs within the Celtic and Irish Seas management unit for this species (JNCC, 2023) (Table 3.1).

Bottlenose dolphins occur in estuarine, coastal and offshore waters where they carry out breeding, foraging, resting, social activity and other life history functions. Distribution extends throughout continental shelf and slope waters and groups have also been recorded in waters more than 2,500m deep. Several resident coastal populations are described in western European waters; however, individuals and/or groups of the species may also range over many hundreds or thousands of kilometres. The species breeds annually in Irish waters and indications are that the birth and early rearing of new-born calves takes place predominantly during the summer and early autumn months (i.e. May to September). Bottlenose dolphin is a successful aquatic predator that feeds on a wide variety of fish (e.g. mackerel, horse mackerel, salmonids, gadoids, eels, flatfish and dogfish), cephalopods (e.g. squid) and occasionally crustacean species that occur in the water column or close to or within the seabed. Foraging areas for bottlenose dolphin are often associated with areas of strong tidal current and associated eddies; therefore foraging dolphins are often sighted close to shore or adjacent to cliffs, islands, prominent headlands and tidal narrows. Bottlenose Dolphin is a qualifying interest in Hook Head SAC, Llyn Peninsula and Cardigan Bay which are in the Irish Sea management unit (JNCC, 2023) (Table 3.1).

In Ireland, otter populations are found along rivers, lakes and coasts, where fish and other prey are abundant, and where the bank-side habitat offers plenty of cover. The otter is an opportunistic predator with a broad and varied diet. In coastal areas fish, crabs and molluscs are known to be eaten. In freshwater areas a variety of fish from sticklebacks to salmon and eels will be taken, while crayfish and frogs can be important locally or seasonally.

#### Migratory fish

In Ireland, juvenile salmon usually stay in rivers for two to three years before migrating to sea. Once there they migrate to their feeding grounds primarily off the coast of Greenland. After one or more winters at sea they migrate back to freshwater, arriving at the rivers in which they were born in spring or early summer. Salmon is a qualifying interest for the River Boyne and Blackwater SAC (Table 3.1).

The river lamprey breeds in freshwater rivers and streams. Adults spawn in spring, excavating shallow nests in gravels and stones. After hatching, the larvae called ammocoetes drift or swim downstream to areas of river bed with a fine silt composition. They burrow into this bed material and live as filter feeders over a period of years before transforming into young adult

fish. As adults they are parasitic, attaching to and feeding on larger fish in coastal waters. They can grow to 30cm at maturity at which stage they re-enter freshwater to spawn. The adult fish die after spawning. River Lamprey is a qualifying interest of River Boyne and Blackwater SAC (Table 3.1).

**Table 3.1** Special Area of Conservation (SAC) and their qualifying interests that were considered further after the screening process. This includes proposed QI's for a number of SAC sites, as publicly advertised by the Minister on 27 March 2024, marked with an asterix\*.

Site and Code	Distance from Survey Area	Qualifying Interests	Potential source of impact
Rockabill to Dalkey SAC [Site code IE003000]	2.6 km	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Lambay Island SAC [Site code IE000204]	14.8 km	<i>Halichoerus grypus</i> (Grey Seal) [1364] <i>Phoca vitulina</i> (Harbour Seal) [1365] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Codling Fault Zone SAC [Site code IE003015]	37 km	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
River Boyne and River Blackwater SAC [Site code 002299]	16 km	<i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Lutra lutra</i> (Otter) [1355]	Increased suspended sediment concentrations Disturbance from underwater noise and vibration
Slaney River Valley SAC [Site code IE000781]	146 km	<i>Phoca vitulina</i> (Harbour Seal)[1365]	Disturbance from underwater noise and vibration
Saltee Islands SAC [Site code IE0007071]	174 km	<i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration
Hook Head SAC [Site code: IE000764]	Within MU for Harbour Porpoise and Bottlenose Dolphin	<i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]* <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration

Carnsore Point SAC [Site code: IE002269]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Blackwater Bank SAC [Site code: IE003000]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Roaringwater Bay and Islands SAC [Site code IE000101]	388 Km/Within MU for Harbour Porpoise	<i>Halichoerus grypus</i> (Grey Seal) [1364] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Kenmare River SAC [Site code: IE002158]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Blasket Islands SAC [Site code IE002172]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Kilkieran Bay and Islands SAC [Site code IE002111]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
West Connacht Coast SAC [Site code IE002998]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Inishmore Island SAC [Site code IE000213]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Belgica Mound Province SAC [Site code IE002327]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
Bunduff Lough and Mach-air/Trawalua/Mullaghmore SAC [Site code IE000625]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration
The Maidens [Site code UK0030384]	136 km	<i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration

Pembrokeshire Marine/ Sir Benfro Forol SAC [UK0013116]	186 km	<i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration
Llyn Peninsula and the Sarnau / Pen Llyn a'r Sar [Site code UK0013117]	Within MU for Bottlenose Dolphin	<i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] <i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration
Cardigan Bay [UK0012712]	Within MU for Bottlenose dolphin	<i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]	Disturbance from underwater noise and vibration
North Anglesey Marine / Gogledd Môn Forol [UK 0030398]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
West Wales Marine / Gorllewin Cymru Forol [UK 0030397]]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
North Channel [UK 0030399]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Bristol Channel Approaches / Dynesfeydd Môr Hafren [UK0030396]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Récifs et landes de la Hague [FR2500084]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Anse de Vauville [FR2502019]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Banc et récifs de Surtaïville [FR2502018]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Chausey [FR2500079]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration



Baie du Mont Saint-Michel [FR2500077]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Estuaire de la Rance [FR5300061]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Baie de Lancier, Baie de l'Arguenon, Archipel de Saint Malo et Dinard [FR5300012]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Cap d'Erquy-Cap Fréhel [FR5300011]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Baie de Saint-Brieuc – Est [FR5300066]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Tregor Goëlo Est [FR5300010]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Côte de Granit rose-Sept-Iles [FR5300009]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Nord Bretagne DH [FR2502022]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Baie de Morlaix [FR5300015]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Abers - Côte des legends [FR5300017]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
Ouessant-Molène [FR5300018]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	D Disturbance from underwater noise and vibration

Côtes de Crozon [FR5302006]	Within MU for Harbour Porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration
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### 3.2.2 Description of Species of Conservation Interest affected

Twenty-one seabird species from four SPAs were considered for further assessment due to the possibility for those species being significantly affected by disturbance from above water noise and survey vessels or underwater noise in the case of diving species. For species profiles, population trends and species specific threats, please refer to the most recent Article 12 assessment produced by the NPWS (NPWS, 2019b).

**Table 3.2** Special Protection Area (SPA) and the SCI's that were considered further after the screening process.

Site and Code	Distance from Survey Area	Qualifying Interests	Potential source of impact
North-west Irish Sea SPA [Site code IE004236]	0km	<p><b>Wintering</b></p> <p>Red-throated Diver [A001] Great Northern Diver [A003] Fulmar [A009] Common Scoter [A065] Little Gull [A177] Black-headed Gull [A179] Common Gull [A182] Herring Gull [A184] Great Black-backed Gull [A187] Kittiwake [A188] Guillemot [A199] Razorbill [A200]</p> <p><b>Breeding</b></p> <p>Manx Shearwater [A013] Cormorant [A017] Shag [A018] Lesser Black-backed Gull [A183] Roseate Tern [A192] Common Tern [A193] Arctic Tern [A194] Little Tern [A195] Puffin [A204]</p>	Visual and above water noise disturbance from surveys. Diving birds could be disturbed by underwater noise

Site and Code	Distance from Survey Area	Qualifying Interests	Potential source of impact
		<b>Diving</b> Red-throated Diver [A001] Great Northern Diver [A003] Manx Shearwater [A013] Cormorant [A017] Shag [A018]	
Rockabill SPA [Site code IE004014]	0.2 km	<b>Wintering</b> Purple Sandpiper [A148] <b>Breeding</b> Roseate Tern [A192] Common Tern [A193] Arctic Tern [A194]	Visual and above water noise disturbance from surveys
Skerries Islands SPA [Site code IE004122]	5.2 km	Cormorant [A017] Shag [A018]	Visual and above water noise disturbance from surveys. Diving birds could be disturbed by underwater noise
Lambay Island SPA [Site code IE004069]	14.5 km	Cormorant [A017] Shag [A018]	Visual and above water noise disturbance from surveys. Diving birds could be disturbed by underwater noise

### 3.2.3 Conservation Objectives of Species likely to be affected

Conservation objectives are intended to define as precisely as possible the desired state or degree of conservation to be reached in a particular site. The measures taken under the Habitats Directive are to ensure that the species and habitats listed in the Annexes achieve Favourable Conservation Status. The objective of the Birds Directive is formulated slightly differently but the ambition is the same.

The Favourable Conservation Status of a species is achieved when:

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

- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The conservation objectives and population trends for the SACs and SPAs and qualifying interests that were screened in are presented in Table 3.3 and 3.4 respectively.

**Table 3.3:** showing Conservation Objectives and their most recent National Conservation Status (2013-2018) for Qualifying Interest (QI) species in SACs under consideration. No Conservation Objectives were available for the French sites at the time of writing.

Site Name and Qualifying Interest	Conservation Objective	National Conservation Status
Rockabill to Dalkey SAC [Site code IE003000] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	To maintain favourable conservation condition of Harbour Porpoise in the SAC	Favourable
Lambay Island SAC [Site code IE000204] <i>Halichoerus grypus</i> (Grey Seal) [1364] <i>Phoca vitulina</i> (Harbour Seal) [1365] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	To maintain favourable conservation condition of Grey Seal, Harbour Seal and Harbour Porpoise in the SAC	Favourable Favourable Favourable
Codling Fault Zone SAC [Site code IE003015] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	To maintain favourable conservation condition of Harbour Porpoise in the SAC	Favourable
River Boyne and River Blackwater SAC [Site code 002299] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Lutra lutra</i> (Otter) [1355]	To maintain favourable conservation condition of River lamprey, Atlantic Salmon and Otter in the SAC	Unknown – River Lamprey Unfavourable - Salmon Favourable - Otter
Slaney River Valley SAC [Site code IE000781] <i>Phoca vitulina</i> (Harbour Seal)[1365]	To maintain favourable conservation condition of Harbour Seal in the SAC	Favourable
Saltee Islands SAC [Site code IE0007071] <i>Halichoerus grypus</i> (Grey Seal) [1364]	To maintain favourable conservation condition of Grey Seal in the SAC	Favourable

<p>Hook Head SAC [Site code: IE000764]  <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]*  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Bottlenose Dolphin and Harbour Porpoise in the SAC</p>	Favourable
<p>Carnsore Point SAC [Site code: IE002269]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable
<p>Blackwater Bank SAC [Site code: IE003000]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable
<p>Roaringwater Bay and Islands SAC [Site code IE000101]  <i>Halichoerus grypus</i> (Grey Seal) [1364]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]</p>	<p>To maintain favourable conservation condition of Grey Seal and Harbour Porpoise in the SAC</p>	Favourable
<p>Kenmare River SAC [Site code: IE002158]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable
<p>Blasket Islands SAC [Site code IE002172]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable
<p>Kilkieran Bay and Islands SAC [Site code IE002111]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable
<p>West Connacht Coast SAC [Site code IE002998]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable
<p>Inishmore Island SAC [Site code IE000213]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable
<p>Belgica Mound Province SAC [Site code IE002327]  <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*</p>	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC</p>	Favourable

Bunduff Lough and Mach-air/Trawalua/Mullaghmore SAC [000625] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	To maintain favourable conservation condition of Harbour Porpoise in the SAC	Favourable
The Maidens [Site code UK0030384] <i>Halichoerus grypus</i> (Grey Seal) [1364]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Grey Seal in UK waters	Favourable
Pembrokeshire Marine/ Sir Benfro Forol SAC [UK0013116] <i>Halichoerus grypus</i> (Grey Seal) [1364]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Grey Seal in UK waters	Favourable
Llyn Peninsula and the Sarnau / Pen Llyn a`r Sar [Site code UK0013117] <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] <i>Halichoerus grypus</i> (Grey Seal) [1364]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Bottlenose Dolphin and Grey Seal in UK waters	Favourable
Cardigan Bay [UK0012712] <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Bottlenose Dolphin in UK waters	Favourable
North Anglesey Marine / Gogledd Môn Forol [UK 0030398] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters	Favourable
West Wales Marine / Gorllewin Cymru Forol [UK 0030397] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters	Favourable
North Channel [UK 0030399] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters	Favourable

Bristol Channel Approaches / Dynesfeydd Môr Hafren [UK0030396] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters	Favourable
Récifs et landes de la Hague [FR2500084] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	..	Unfavourable - Bad
Anse de Vauville [FR2502019] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Banc et récifs de Surtainville [FR2502018] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Chausey [FR2500079] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Baie du Mont Saint-Michel [FR2500077] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Estuaire de la Rance [FR5300061] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard [FR5300012] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Cap d'Erquy-Cap Fréhel [FR5300011] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Baie de Saint-Brieuc – Est [FR5300066] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Tregor Goëlo Est [FR5300010] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Côte de Granit rose-Sept-Iles [FR5300009] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad
Nord Bretagne DH [FR2502022] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]		Unfavourable - Bad

Baie de Morlaix [FR5300015] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Unfavourable – Bad
Abers - Côte des legends [FR5300017] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Unfavourable – Bad
Ouessant-Molène [FR5300018] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Unfavourable – Bad
Côtes de Crozon [FR5302006] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Unfavourable – Bad

The site-specific conservation objectives for the Species of Conservation Interest, which were carried forward for Appropriate Assessment, are presented in Table 3.4. The population trends for these species from the most recent Article 12 report (NPWS, 2019b) are also included here. Negative trends, or cases where no data on population trends were available are marked in bold (Table 3.4).

**Table 3.4:** showing Conservation Objectives and National Population Trends for Species of Conservation Interest (SCI) under consideration in SPAs. SPA specific population trends are given in brackets where available. Text highlighted in bold indicates a negative trend or a lack of information for that species.

Site Name ,Qualifying Interest and Population Trends	Conservation Objective
<b>North West Irish Sea cSPA</b> Fulmar [A009] - Short term trend 0%, Long term trend +68% Common Scoter [A065] – <b>no information available</b> Little Gull [A177] – <b>no information available</b> Black-headed Gull [A179] - Short term trend +102%, <b>Long term trend -11%</b> Common Gull [A182] - Short term trend +82%, <b>Long term trend -25%</b> Herring Gull [A184] - ] - Short term trend +87%, <b>Long term trend -33%</b> Great Black-backed Gull [A187] - Short term trend +38%, Long term trend +6% Kittiwake [A188] - <b>Short term trend -32%, Long term trend -35%</b> Guillemot [A199] - Short term trend +28%, Long term trend+72% ( <b>Lambay -1%</b> ) Razorbill [A200] - Short term trend +23%, Long term trend +45% (Lambay +207%)	To maintain the favourable conservation condition of the SCI's in North West Irish sea CSPA, defined by a list of attributes and targets available at: <a href="https://www.npws.ie/protected-sites/spa/004236">https://www.npws.ie/protected-sites/spa/004236</a>



<p>Manx Shearwater [A013] - <b>no information available</b></p> <p>Cormorant [A017] - Short term trend +15%, Long term trend +18%</p> <p>Shag [A018] - Short term trend +46%, Long term trend +12%</p> <p>Lesser Black-backed Gull [A183] - Short term trend +148%, <b>Long term trend -145%</b></p> <p>Roseate Tern [A192] - Short term trend +192%, Long term trend +579%</p> <p>Common Tern [A193] - Short term trend +185%, Long term trend +201%</p> <p>Arctic Tern [A194] - Short term trend +17%, Long term trend +40%</p> <p>Little Tern [A195] - Short term trend +123%, Long term trend +51%</p> <p>Puffin [A204]</p> <p>Red throated Diver [A001] <b>no information available</b></p> <p>Great Northern Diver [A003] <b>no information available</b></p>	
<p><b>Rockabill SPA</b></p> <p>Purple Sandpiper [A148] - <b>no information available</b></p> <p>Roseate Tern [A192] - Short term trend +192%, Long term trend +579%</p> <p>Common Tern [A193] - Short term trend +185%, Long term trend +201%</p> <p>Arctic Tern [A194] - Short term trend +17%, Long term trend +40%</p>	<p>To maintain the favourable conservation condition of the SCI's in Rockabill SPA, defined by a list of attributes and targets available at:  <a href="https://www.npws.ie/protected-sites/spa/004014">https://www.npws.ie/protected-sites/spa/004014</a></p>
<p><b>Skerries SPA</b></p> <p>Cormorant [A017] - Short term trend +15%, Long term trend +18%</p> <p>Shag [A018] - Short term trend +46%, Long term trend +12%</p>	<p>To maintain the favourable conservation condition of each species identified as a qualifying interest in the Skerries SPA</p>
<p><b>Lambay Island SPA</b></p> <p>Cormorant [A017] - Short term trend +15%, Long term trend +18% (<b>Lambay -56%</b>)</p> <p>Shag [A018] - Short term trend +46%, Long term trend +12% (<b>Lambay -58%</b>)</p>	<p>To maintain or restore the favourable conservation condition of each species identified as a qualifying interest in the Lambay Island SPA</p>

### 3.2.3 Pressures and threats to Annex II species and Annex I species

The 2019 Article 17 report and Article 12 report identified the main pressures and threats in reaching Favourable Conservation Status for Annex II and Annex I species in Ireland (NPWS, 2019a and 2019b). (Tables 3.5 and 3.6).

**Table 3.5** Pressures and Threats for Annex II species as assessed for the 2019 Article 17 report (NPWS, 2019a).

Annex II Species	Pressure	Threat
Salmon [1106]	<p><b>A26</b> Agricultural activities generating diffuse pollution to surface or ground waters (H)</p> <p><b>G19</b> Other impacts from marine aquaculture, including infrastructure (H)</p> <p><b>K05</b> Physical alteration of water bodies (H)</p> <p><b>J01</b> Mixed source pollution to surface and ground waters (limnic and terrestrial) (H)</p> <p><b>A25</b> Agricultural activities generating point source pollution to surface or ground waters (M)</p> <p><b>B23</b> Forestry activities generating pollution to surface or ground waters (M)</p> <p><b>D02</b> Hydropower (dams, weirs, run-off-the-river), including infrastructure (M)</p> <p><b>G11</b> Illegal harvesting, collecting and taking (M)</p> <p><b>G20</b> Abstraction of water, flow diversion, dams and other modifications of hydrological conditions for freshwater aquaculture (M)</p> <p><b>L06</b> Interspecific relations (competition, predation, parasitism, pathogens) (M)</p>	<p><b>A26</b> Agricultural activities generating diffuse pollution to surface or ground waters (H)</p> <p><b>G19</b> Other impacts from marine aquaculture, including infrastructure (H)</p> <p><b>K05</b> Physical alteration of water bodies (H)</p> <p><b>N01</b> Temperature changes (e.g. rise of temperature &amp; extremes) due to climate change (H)</p> <p><b>A25</b> Agricultural activities generating point source pollution to surface or ground waters (M)</p> <p><b>B23</b> Forestry activities generating pollution to surface or ground waters (M)</p> <p><b>F12</b> Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M)</p> <p><b>F28</b> Modification of flooding regimes, flood protection for residential or recreational development (M)</p> <p><b>G11</b> Illegal harvesting, collecting and taking (M)</p> <p><b>I02</b> Other invasive species (other than species of Union concern) (M)</p>

Annex II Species		Pressure	Threat
River Lamprey [1099]		<p><b>D02</b> Hydropower (dams, weirs, run-off-the-river), including infrastructure (H)</p> <p><b>N03</b> Increases or changes in precipitation due to climate change (H)</p> <p><b>A19</b> Application of natural fertilisers on agricultural land (M)</p> <p><b>A20</b> Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p><b>A31</b> Drainage for use as agricultural land (M)</p> <p><b>E03</b> Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (M)</p>	<p><b>D02</b> Hydropower (dams, weirs, run-off-the-river), including infrastructure (H)</p> <p><b>N03</b> Increases or changes in precipitation due to climate change (H)</p> <p><b>A19</b> Application of natural fertilisers on agricultural land (M)</p> <p><b>A20</b> Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p><b>A31</b> Drainage for use as agricultural land (M)</p> <p><b>E03</b> Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (M)</p> <p><b>N01</b> Temperature changes (e.g. rise of temperature &amp; extremes) due to climate change (M)</p>
Otter [1355]		No pressures listed at a national level	No threats listed at a national level
Grey Seal [1364]		<p><b>C09</b> Geotechnical surveying (M)</p> <p><b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>	<p><b>C09</b> Geotechnical surveying (M)</p> <p><b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>
Harbour seal [1365]		<p><b>C09</b> Geotechnical surveying (M)</p> <p><b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>	<p><b>C09</b> Geotechnical surveying (M)</p> <p><b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>
Harbour Porpoise [1351]		<p><b>C09</b> Geotechnical surveying (M)</p> <p><b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>	<p><b>C09</b> Geotechnical surveying (M)</p> <p><b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>
Bottlenose dolphin [1349]		<p><b>C09</b> Geotechnical surveying (M)</p> <p><b>G01</b> Marine fish and shellfish harvesting (professional, recreational)</p>	<p><b>C09</b> Geotechnical surveying (M)</p>

Annex II Species	Pressure	Threat
	causing reduction of species/prey populations and disturbance of species (M)	<b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)

It should be noted that under the European Environment Agency guidance on Article 17 guidance, noise pollution from marine seismic surveys was to be reported under C09 Geotechnical Surveying.

The most recent Birds Directive Article 12 report (NPWS 2019b) identified the main pressures and threats to Annex I breeding seabirds (Table 3.6).

**Table 3.6** Pressures and Threats on Annex I bird species as assessed for the 2019 Article 12 report.

Code	Description	Percentage relevance
<b>D01</b>	Wind, wave and tidal power, including infrastructure	92
<b>G12</b>	Bycatch and incidental killing (due to fishing and hunting activities)	79
<b>N06</b>	Desynchronisation of biological/ecological processes due to climate change	75
<b>N07</b>	Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change	75
<b>I02</b>	Other invasive alien species (other than species of Union concern)	71
<b>F22</b>	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam)	54
<b>F23</b>	Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam)	54
<b>F07</b>	Sports, tourism and leisure activities	46
<b>G01</b>	Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species	46
<b>I04</b>	Problematic native species	33
<b>A09</b>	Intensive grazing or overgrazing by livestock	29
<b>J02</b>	Mixed source marine water pollution (marine and coastal)	29

Code	Description	Percentage relevance
M08	Flooding (natural processes)	25
L06	Interspecific relations (competition, predation, parasitism, pathogens)	21
G10	Illegal shooting/killing	4
N04	Sea-level and wave exposure changes due to climate change	4

## Section 4 Assessment of Impacts

### 4.1 In-combination effects

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

In-combination screening for cumulative effects has been undertaken following the approach outlined in the European Commission Notice Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (EC, 2021). This screening has also had regard to European and National guidance documents and is based on professional and scientific judgment. Under Article 6(3), the ‘in combination’ provision applies both to Stage 1 Screening and to Stage 2 Appropriate Assessment.

### Relevant Plans/Projects

The in-combination effects provision applies to the following plan/project types:

- Projects that are completed,
- Projects approved but uncompleted,
- Proposed projects, (projects applied for and under consideration but not approved by the relevant consenting authority or projects known to MARA),
- Plans that are completed,
- Plans approved but uncompleted,
- Proposed plans,
- Proposals in adopted plans,
- Proposals in finalised draft plans formally published or submitted for consultation or adoption

As per European guidance, it is recommended that plans and projects that are not yet proposed do not generally have to be taken into account in the assessment of in-combination effects, even if they are part of an overarching masterplan. The exception is where the project is considered to be functionally interdependent with the development before the competent authority. An example of this is a site investigation for a proposed offshore windfarm that has received a MAC. The consideration of in-combination effects is not restricted to similar project/plan types covering the same sector of activity (e.g. a series of offshore wind farms). All types of plans or projects that could, in-combination with the project under consideration, have a significant effect, should be taken into account.

Although already completed plans and projects are themselves excluded from the assessment requirements of Article 6(3), it is still important to take them into consideration when assessing the effects of the current plan or project in order to determine whether there are any potential cumulative effects arising from the current project in combination with other completed plans and projects.

Using professional and scientific judgement, the key steps for assessing cumulative effects are as follows:

1. Defining the Cumulative Effects Spatial Scope (CESS)
2. Defining the Cumulative Effects Temporal Scope (CETS)
3. Impact identification
4. Pathway identification
5. Prediction
6. Identification of Plans or Projects that could act in combination
7. Screening Stage Cumulative Effects Assessment conclusion
8. Managing cumulative impacts - to be carried out as part of Stage 2 AA process

1. Defining the Cumulative Effects Spatial Scope (CESS):

Impacts of noise associated with the planned survey activities are considered to have the widest spatial reach, with Harbour porpoise the designated Natura 2000 site feature that is most sensitive to noise disturbance. The JNCC Guidance on Assessing the Significance of Noise Disturbance against Harbour Porpoise SACs Conservation Objectives (JNCC, 2020) has therefore been used to determine the boundary for examination of cumulative effects. The guidance uses published ranges for effects of noise from different noise producing activities to determine Effective Deterrence Ranges (EDRs).

**Table 4.1** Survey equipment noise sources and associated Effective Deterrence Ranges (EDR).

Noise source	Operating frequency (kHz)	Sound Level (dB re 1 Pa @ 1m)	Pressure EDR (JNCC 2020)
SBEC	50 - 300 kHz	160-175 dB	5km using EDR range for geophysical activity.
MBES	200 kHz	221 dB	5km using EDR range for geophysical activity.
SSS	400 kHz	198 dB	5km using EDR range for geophysical activity.
SBP - parametric	300 – 900 kHz	220 - 230 dB	5km using EDR range for geophysical activity.
SBP - boomer	2 - 115 kHz	232 dB	5km using EDR range for geophysical activity.
Acoustic Corer	0.5 - 5 kHz	205 – 211 dB	5km using EDR range for geophysical activity.
Sub-bottom Imager	1.5 – 12 kHz	195 dB	5km using EDR range for geophysical activity.
USBL	4.5 – 12.5 kHz	190 dB	5km using EDR range for geophysical activity.
Seismic CPT	0.001 – 0.12 kHz	145 dB	12km using EDR range for geophysical activity.

In line with Table 4.1 above, the EDR has been conservatively chosen as 12km (the EDR for Seismic CPTs – the largest EDR for the activities considered as part of this application), with projects within this range judged to be within the CESS.

## 2. Defining the Cumulative Effects Temporal Scope (CETS):

The temporal scope for examination of cumulative effects has been defined considering the period over which the licence activities would take place. A licence period of up to 7 years is being sought for this project. The Cumulative Effects Temporal Scope (CETS) is therefore 7 years.

## 3. Impact identification:

The impacts identified are:

- Disturbance from underwater noise
- Increased suspended sediment concentrations

- Visual and above water noise disturbance
- Physical disturbance and habitat loss (indirect impact on supporting birds habitats)

#### 4. Pathway Identification:

**Table 4.2** Pathway Identification

Impact	Potential Cumulative Pathway
Disturbance from underwater noise	Pathway possible via sound travelling through water with impacts possible within CESS where there is temporal overlap with other underwater noise producing projects.
Increased suspended sediment concentrations	Pathway possible via suspended sediment travelling through water with impacts possible within CESS where there is temporal overlap with other suspended sediment producing projects.
Visual and above water noise disturbance	Pathway possible via light and sound travelling through air with impacts possible within CESS where there is temporal overlap with other visual and above water noise producing projects.
Physical disturbance and habitat loss	Pathway requires direct spatial overlap. Potential pathway for physical disturbance and habitat loss impact where there is spatial and temporal overlap.

#### 5. Prediction:

The magnitude and extent of identified likely cumulative effects have been predicted below following EC 2021 guidance:

Disturbance from underwater noise: There is the potential for increased underwater noise disturbance effects if geophysical activities with other projects were to take place at the same time. Therefore, significant likely cumulative effects will be considered further.

Increased suspended sediment concentrations: There is the potential for increased suspended solids effects if geotechnical activities with other projects were to take place at the same time. Therefore, significant likely cumulative effects will be considered further.

Visual and above water noise disturbance: There is the potential for increased visual and above water noise disturbance if geotechnical activities with other projects were to take place at the same time. Therefore, significant likely cumulative effects will be considered further.



Physical disturbance and habitat loss: There is no overlap between the proposed Maritime Usage Licence area and any SACs designated for the protection of the Qualifying Interest Annex I Habitats. However the North-west Irish Sea SPA (SPA) overlaps with the Licence Area. There is a possible indirect impact from the proposed works on the supporting habitats of the proposed bird features of the SPA through disturbance to marine benthic communities and habitat loss impacting the ability of foraging grounds to provide food for foraging birds. Intrusive works undertaken by other projects may contribute to a possible indirect impact on the supporting habitats of the proposed bird features of the SPA through disturbance to marine benthic communities and habitat loss impacting the ability of foraging grounds to provide food for foraging birds and will be considered further below. There is the potential for increased physical disturbance and habitat loss if geotechnical activities with other projects were to take place at the same time. Therefore, significant likely cumulative effects will be considered further.

#### 6. Identification of Plans or Projects that could act in combination:

Following the approach outlined by European Commission Guidance (EC, 2021), all plans and projects within the CESS and CETS have been identified. All consented activities/developments and applications for activities or development within the CESS and CETS have been considered for their potential to cause cumulative effects in combination with the site investigation activities proposed under this Maritime Usage Licence Application, on the qualifying interests of Special Areas of Conservation and Special Protection Areas, shown in Table 4.3.

Searches were conducted of the following:

- Applications and lease/licence database of the Department of Housing, Local Government and Heritage
- Local Authority (Louth, Meath and Dublin County Councils) Planning lists
- An Bord Pleanála Planning Lists
- General internet search (for master plans etc)
- Department of Agriculture Food and the Marine Aquaculture Licence lists
- The Maritime Area Regulatory Authority's databases
- EPA Website

**Table 4.3** In-combination Projects

Applica- tion	Project	Project Status	Cumulative Effects
FS007635	Mares Connect Ltd. Site Investigations for proposed Electricity Inter-Connector	Proposed – Fore-shore licence submitted 03/03/23	Overlaps spatially with NISA Maritime Usage Licence Area and within CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above.

			Possible temporal overlap of disturbance to cetacean and bird species.
FS007392	LIR Offshore Array Ltd. Site Investigations for proposed offshore wind farm	Proposed – Fore-shore licence submitted 22/07/22	Overlaps spatially with NISA Maritime Usage Licence Area and within CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
FS007031	Statkraft North Irish Sea Array (NISA) Site Investigations Array Area	Proposed – Fore-shore licence submitted 17/12/19	Overlaps spatially with NISA Maritime Usage Licence Area and within CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
FS007358	Statkraft North Irish Sea Array (NISA) Cable Route	Proposed – Fore-shore licence submitted 31/03/21	Overlaps spatially with NISA Maritime Usage Licence Area and within CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
FS006973	SSE Renewables Ltd. Site Investigations for proposed Braymore Point offshore wind farm	Proposed – Fore-shore licence submitted 19/03/19	Overlaps spatially with NISA Maritime Usage Licence Area and within CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
na	Proposed future NISA windfarm array and cable construction phase	Proposed	Overlaps spatially with NISA Maritime Usage Licence Area and within CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above.

			Possible temporal overlap of disturbance to cetacean and bird species.
FS006852	Hibernian Wind Power Ltd Site Investigations for proposed Cooley Point offshore wind farm.	Approved but not completed - Fore-shore licence granted 09/07/19	No Spatial overlap with NISA Maritime Usage Licence Area. Within the CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
FS006787	Hibernian Wind Power Ltd Site Investigations for proposed Clogher Head offshore wind farm.	Approved but not completed - Fore-shore licence granted 14/12/18	No Spatial overlap with NISA Maritime Usage Licence Area. Within the CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
FS006602	Meath County Council – Laytown Beach Coastal Protection Works	Approved but not completed – fore-shore licence granted 16/05/2018	No Spatial overlap with NISA Maritime Usage Licence Area. Within the CESS - therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
LIC230018	Microsoft Ireland Operations Ltd – subsea cable Portmarnock	Proposed – Maritime Usage Licence submitted 28/11/23	No Spatial overlap with NISA Maritime Usage Licence Area. Within the CESS- therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.
FS007359	Drogheda Port Company – Maintenance Dredging	Approved but not completed - Fore-shore licence granted 09/04/21	No Spatial overlap with NISA Maritime Usage Licence Area. Within the CESS- therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above.

			Possible temporal overlap of disturbance to cetacean and bird species.
Dump at Sea Permit 50015-03	Drogheda Port Company Dumping at Sea	Approved but not completed – Dumping at Sea Permit granted 11/02/21	No Spatial overlap with NISA Maritime Usage Licence Area. Within the CESS- therefore possible cumulative effects for the Annex II and Annex I species as outlined in Tables 3.1 and 3.2 above. Possible temporal overlap of disturbance to cetacean and bird species.

#### 7. Screening Stage Cumulative Effects Assessment conclusion:

The projects outlined in Table 4.3 have been identified in the CESS following a search undertaken on 14 February 2024 and a follow-up search on 9 May 2024.

Based on insufficient detail relating to when projects will be carried out, and using the precautionary principle, the following projects are considered to have the potential to cause in-combination effects relating to disturbance to the species listed in Tables 3.2 and 3.3 should there be temporal overlap with the proposed project:

- Mares Connect Electricity Interconnector Site Investigations
- Lir Offshore Array Ltd, ORE Site Investigations
- Statkraft North Irish Sea Array, ORE Site Investigations (Array Area)
- Statkraft North Irish Sea Array, ORE Site Investigations (Cable Route)
- SSE Renewables Braymore Point, ORE Site Investigations
- Cooley Point, ORE Site Investigations
- Clogher Head, ORE Site Investigations
- Meath County Council, Laytown Beach coastal protection works
- Microsoft Ireland Operations, subsea cable Site Investigations
- Drogheda Port Company, Maintenance Dredging

#### Relevant Plans and Projects:

The following plans, related to the development of the maritime environment were also identified:

- The Climate Action Plan 2023
- River Basin Management Plans (RBMP)
- Designated Maritime Area Plans (DMAPs)

These plans promote sustainable development in the maritime environment and particularly Ireland's Climate Action Plan's renewable electricity target of 80% of energy generated from

renewable electricity sources by 2030. Potentially significant in-combination effects between the proposed project (LIC230001) and the above listed 10 projects and 3 plans on the conservation objectives of Natura 2000 sites considered in this report **cannot be excluded** at this stage.

In-combination effects of other activities in the area are considered in the assessment of potential impacts in sections 4.3 and 4.4 which follow.

#### 4.2.1 Mitigation

Liaise with other operators within 24km of the boundary of the Marine Usage Licence Application Area engaging in surveys likely to produce in-combination effects, including geophysical, geotechnical and seismic survey

### **4.2 Assessment of Likely/Possible Significant Impacts on European Sites**

No Annex I Habitat is considered to be within the Zone of Influence of the proposed project. The impact of the proposed project at screening was identified as disturbance to Annex II species Salmon, River Lamprey, Otter, Grey and Harbour seal, Bottlenose dolphin and Harbour porpoise. A total of twenty two Annex I bird species were identified as having the potential to be negatively impacted by this project.

The direct and indirect effects as a result of visual and above water noise disturbance from surveys, increased sedimentation and underwater noise from geophysical and geotechnical surveys were identified as having the potential to cause impacts. This disturbance may cause the displacement of individuals, changes in species behaviour, or the risk of morbidity or mortality.

### **4.3 Impacts to Annex II Species**

#### **Disturbance due to sound - underwater**

Marine mammals depend on sound for a wide range functions including navigation, perception of their environment, communication, prey identification and capture, and the detection of predators. The hearing system of marine mammals, being highly sensitive and adapted to respond to changes in pressure in an aquatic environment, is particularly susceptible to damage. Auditory injury in marine mammals can be defined as a permanent threshold shift (PTS) leading to non-reversible auditory injury, or as a temporary threshold shift (TTS) in hearing sensitivity, which can have negative effects on the ability to communicate, navigate, or locate prey for a period of minutes, hours or days. Generally, impulsive sounds have physical characteristics (e.g. high peak sound pressures and rapid rise times) that make them more injurious than non-impulsive sound sources. Impulsive noise types include e.g. seismic air guns, impact piling or underwater explosions.

Otters are generally crepuscular in their activities and those in coastal areas likely range over 10-15 km. The intertidal surveys and sampling could potentially temporarily displace otter, but this is unlikely due to the fact that they are unlikely to overlap temporally.

Hearing plays an important role for fish in providing information often over great distances. Sound is used for communication, for mating behaviour, detection of prey and predators, for orientation, migration and habitat selection (Popper and Hawkins, 2019). Most fish are capable of hearing sound within the frequency range of 50Hz to 200-1,500Hz. While exposure to very intense sound may lead to mortality, less intensive sounds may lead to altered behaviour, including deviation from migration routes or feeding or breeding habitats, or prevent detection of other important biological sounds (Popper and Hawkins, 2019).

Increased sedimentation levels during sampling periods could have a localised, temporary negative impact on migratory fish species such as the Atlantic salmon or River lamprey, as considered here. High, long-term sedimentation rates in a concentrated area are known to have significant impacts on fish species from immediate impacts such as clogging of gills, to longer term effects such as increased pathogen and heavy metal loads (Buitrago et al, 2023). However, short term peaks over a wide study area and a relatively short time scale (approximately 30 weeks total, non-continuous sampling) would be of lesser concern. While the proposed activities are in the expected migration route for salmon and in the coastal area that river lamprey could be expected to inhabit, as mobile species both salmon and river lamprey have the ability to avoid such localised disturbances. Therefore, on further consideration, potentially significant negative impacts on these species, either alone or in combination with other plans or projects are not expected due to the proposed development.

#### 4.3.1 Mitigation

Appropriate mitigation for the effects of underwater noise on marine mammals is the implementation of the National Parks and Wildlife's guidance on risk to marine mammals from man-made sound in the marine environment (NPWS, 2014). When carrying out geotechnical and geophysical surveys particular attention should be paid to sections 4.3.2 (i) and 4.3.4 (ii) of the guidance.

No mitigation due to risks to otters or from sedimentation are required.

#### **4.4 Impacts to Annex I species**

##### **Disturbance below water**

Diving species such as Red-throated Diver [A001], Great Northern Diver [A003], Manx Shearwater [A013], Cormorant [A017] and Shag [A018] can be sensitive to disturbance from underwater noise and previous studies have indicated fatalities can occur at close distance (Danil & St Leger 2011). Flushing disturbance can be expected to displace these diving seabirds from close proximity to the survey vessel and any towed equipment, thereby limiting

their exposure to the highest sound pressures generated. The likelihood of these birds being in the vicinity of a noise generating operation is low due to the surface activity associated with such operations disturbing the birds prior to commencement of the underwater noise (BEIS, 2019; Fliessbach et al. 2019). There is a low likelihood of interaction between the sound source and diving birds due to the relatively short exposure time, the temporary nature of the survey work, their mobile nature and the displacement of most diving species due to flushing disturbance. It can be determined that underwater noise would be very unlikely to have a significant effect on diving seabirds in the vicinity of the survey area. However, in-combination impacts resulting in a higher risk of negative impact are possible in relation to underwater noise due to the potential for similar surveys and activities occurring at the same time in the same area, as outlined in Section 4.1.

There is a possible indirect impact from the proposed works on the supporting habitats of the proposed bird features of the SPAs through disturbance to marine benthic communities and habitat loss as this could impact the ability of foraging grounds to provide food for foraging birds. However, this is considered very unlikely as a result of this project due to the relative size of the survey area disturbed in this manner in comparison to the overall foraging habitat available in the north-east Irish Sea and the SPAs themselves. Intrusive works undertaken by other projects may contribute to a further possible indirect impact on the supporting habitats of the proposed bird features of the SPA through disturbance to marine benthic communities and habitat. There is potential for increased physical disturbance and habitat loss if geotechnical activities from other projects were to take place at the same time in close proximity to this project.

#### **Disturbance above water due to survey vessels and sound**

Temporary displacement from boat activity and above water noise can be expected for all other bird species listed in Table 3.3. In the intertidal, disturbance is also possible to breeding and feeding birds due to noise and activity disturbance during the digging of trial pits. This is unlikely to be significant however, due to the temporary nature of the disturbance and the public nature of the landfall site.

While it is acknowledged that the species which use the survey area for feeding and breeding may be disturbed by the activities of the survey vessel, visual or above water noise disturbance from up to two additional vessels in a busy maritime area is unlikely to be significant when considered against background levels. In-combination impacts in relation to disturbance are possible in relation to above water noise and bird activity due to the potential for other surveys and activities to occur at the same time in the same area, as outlined in Section 4.1. However, given the short duration of the proposed site investigations, the significance of effects on birds in the offshore environment from the proposed site investigations, including due to visual or above water noise disturbance, will be temporary and has been assessed as not significant.

#### 4.4.1 Mitigation

To minimise the potential for underwater noise related disturbance or displacement on the diving seabirds, the mitigation detailed below is proposed:

- Where the operator observes a significant cluster of birds actively fishing and/or diving in the survey pathway, within 500 m of the survey route will be modified to aim to maintain a 500m buffer distance from the diving birds.

To minimise the potential for habitat disturbance the mitigation detailed below is proposed:

- Liaising with other operators within 24km of the boundary of the Marine Usage Licence Application Area engaging in surveys likely to produce in-combination effects, including geophysical, geotechnical and seismic surveys

To minimise the potential for above water noise and survey related disturbance or displacement on seabirds in the intertidal, the mitigation detailed below is proposed.

- Any trial pits excavated will be refilled as soon as practical to do so
- Movement of tracked vehicles in the intertidal area will be restricted to the minimum number of access tracks necessary to achieve the sampling.

No mitigation is required for SCI species relating to above water noise or survey disturbance in the offshore environment.

#### **4.5 Submissions from Public Consultation Phase**

**Table 4.4** gives a summary of the submissions made at public consultation stage and MARA's response.

**Table 4.4:** Public Consultation Responses received

<b>Public Body</b>	<b>MARA Response</b>
<b>Commissioner of Irish Lights</b>	
Irish Lights has no objection to the granting of this licence based on the information supplied.	MARA notes the comments from the Commissioner of Irish Lights. The onus is on the applicant to engage with the Commissioner of Irish Lights in relation to statutory requirements under the Merchant Shipping Act.
Irish Lights requests that the following terms be included in the licence:-	
<ul style="list-style-type: none"> <li>• Before any aid to navigation (AtoN) can be established, altered or disestablished approval in the form of Statutory Consent under the Merchant Shipping Act must be obtained from the Commissioners of Irish</li> </ul>	The proposed works will not include deployment of surface marking buoys or associated moorings (AtoN).



Public Body	MARA Response
<p>Lights. The AtoN must be coloured and marked as per IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) Standards. Any Appropriate Assessment activity conduct as part of this licensing process should include the impact of the deployment of surface marking buoys and associated mooring which are required as part of the project.</p> <ul style="list-style-type: none"> <li>The licence sought is located in a relatively busy traffic area. Irish Lights therefore advise consultation with local authorities and the Marine Survey Office (MSO), A Marine Notice should be published for the information of all local maritime users detailing the works, and any vessels which may be engaged in Site Investigation works.</li> </ul>	<p>Furthermore, the onus is on the applicant to engage with the Department of Transport, relevant local authorities and the Marine Survey office in relation to the requirements to marine traffic. This is outside the scope of the appropriate assessment.</p> <p>The ARD team recommends that a condition stating that the licence is for the purposes of undertaking an activity in the maritime area and does not negate the licensee's statutory obligations under any other legislation.</p>
<b>Marine Institute</b>	
<p>The Marine Institute (MI) noted that the proposed site investigations do not include bird monitoring or investigations and questioned if there is sufficient data already available to inform this subject area at the EIA stage for any future planning applications.</p> <p>The MI also noted the importance of considering the cumulative effects of the activities in light of the location and timing of similar activities along the east coast and the likely longer-term effects on marine mammals, birds and other biota, if any, and how these effects might be measured.</p> <p>Furthermore, the MI advised that similar data gathering exercises should be carried out in a coordinated fashion in order to avoid</p>	<p>The point raised relating to bird monitoring is noted by MARA, however, the completeness of the information contained within an environmental impact assessment report is outside the scope of this assessment.</p> <p>The cumulative effects of the proposed activities have been considered alongside the cumulative effects of other proposed projects.</p> <p>MARA notes the submission of the MI and will ensure it is taken into consideration in respect of similar data gathering exercises.</p>

Public Body	MARA Response
<p>redundancy of effort and minimize disturbance while also broadening spatial and temporal extent of the baseline of information on habitats and species. The extension of ecological surveying beyond the footprint of the MUL area might also be considered.</p>	
<b>Public Submissions</b>	
<p>Private Individual 1</p> <p>The individual was concerned that NISA had not planned public meetings in Gormanstown and Stamullen, Co. Meath, close to the coastal area where the licence is being sought.</p>	<p>The arrangement of public meetings is outside the scope of the appropriate assessment and also outside the scope of the MUL.</p>
<p>Private Individual 2</p> <p>The individual objected to the granting of a licence for this area on the basis of the archaeological importance of the site.</p> <p>The submission also referred to the environmental importance of the MUL area. In particular, the individual noted the importance of the area to a number of species (Roseate Terns, grey seals, oyster catchers, short eared owls and herons).</p> <p>The submission also referred to the unsatisfactory manner in which the extension to the period for public consultation was communicated.</p>	<p>While the comments relating to archaeology are outside the scope of the appropriate assessment, it should be noted that the applicant stated in their application that an archaeological survey is included in the proposed activity. This work will be undertaken by a suitably qualified archaeologist to determine the location of all known archaeological features in advance of the geotechnical and environmental survey.</p> <p>The impacts of the proposed site investigation works have been considered in the context of the appropriate assessment.</p> <p>The public was advised of an extension to the public consultation period through newspaper notices in one national paper and three relevant local papers. Copies of these notices are available on the MARA website.</p>

#### 4.6 Transboundary effects

No transboundary effects will result from this proposed project.

#### 4.7 Mitigation Measures

The mitigation measures proposed are:

1. Marine Mammals
  - i. The Holder shall appoint a Marine Mammal Observer for the purposes of overseeing the activity. The Marine Mammal Observer shall satisfy the requirements of the National Parks and Wildlife Service.
  - ii. The Holder shall implement risk control and mitigation measures for marine mammals in accordance with National Parks and Wildlife Service “Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters” (NPWS, 2014).
2. Birds
  - i. The movement of tracked vehicles in the intertidal area will be restricted to minimum access tracks necessary to achieve completion of the site investigation works
  - ii. Any trial pits excavated for the purposes of the site investigation works will be refilled as soon as practicable.
  - iii. Where the Holder observes significant clusters of birds, actively fishing and/or diving, within 500m of the vessel, the survey route shall be altered to maintain a 500m buffer from the birds.
3. In-combination
 

The Holder shall coordinate with other licence holders within a 24km radius of the site boundary to ensure that no temporal overlap occurs between projects in respect of geophysical, seismic and geotechnical activities. Where necessary, the Grantor will determine the timing of activities to ensure that there is no temporal overlap.

#### 4.8 Appropriate Assessment Conclusion

The applicant provided a Natura Impact Statement (NIS) that detailed the potential impact of the proposed project on relevant European sites and whether these impacts would adversely affect the integrity of the sites in light of their conservation objectives.



Underwater noise was screened in for marine mammals and diving birds in the Appropriate Assessment Screening process. Likely significant impacts as a result of underwater noise from geophysical surveys on Annex II species of marine mammals could not be ruled out without mitigation. Potential significant impacts as a result of underwater noise from geophysical surveys on Annex I species of birds from four SPAs could not be ruled out beyond reasonable scientific doubt without mitigation.

Disturbance from above water noise and survey activity for foraging bird species offshore and in the intertidal from a number of SPAs could not be ruled out beyond reasonable scientific doubt without mitigation.

The potential direct and indirect effects as a result of visual and above water noise disturbance from surveys, increased sedimentation and underwater noise from geophysical and geotechnical surveys were identified as having the potential to cause in-combination impacts which could not be ruled out beyond reasonable scientific doubt without mitigation.



Mitigation measures were identified to ensure that impacts on European sites and their qualifying interests would not occur. Therefore, with adherence to these measures and in view of best scientific knowledge and of the sites' conservation objectives, the project, individually or in combination with other plans or projects, will not have adverse effects on European sites.

Therefore, having considered the documents submitted by NISA and the observations received from the public consultation on the application, along with my own assessment in this report, it can be concluded, and I conclude, beyond reasonable scientific doubt, for the purposes of Article 6(3) of the Habitats Directive and Regulation 42(11) of the Birds and Natural Habitats Regulations, that the proposed site investigation activities for Marine Usage Licence application LIC230001 (either individually or in combination with any other plans or projects) will not adversely affect the integrity of any European sites, in view of the sites' conservation objectives, subject to the implementation of the mitigation measures adopted and outlined in Section 4.7 of this report which must be included as conditions to any consent that may be granted in respect of Marine Usage Licence application LIC230001.

Signature and Date of Author	  Senior Marine Advisor  10 June 2024
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#### 4.8 Appropriate Assessment Determination

Having considered the documents submitted by NISA Ltd, the observations received on foot of the public consultation on the application and this report along with my own assessment, I determine, for the purposes of Article 6(3) of the Habitats Directive and Regulation 42(11) of the Birds and Natural Habitats Regulations, that the proposed site investigation activities for Marine Usage Licence application LIC230001 (either individually or in combination with any other plans or projects) will not adversely affect the integrity of any European sites, in view of the sites' conservation objectives, subject to the implementation of the mitigation measures adopted and outlined above, which must be included as conditions to any consent that may be granted in respect of the respective maritime usage licence application.

Signature and Date of Decision Maker	  Director of Assessment, Research and Data 10 June 2024
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## Section 5 References and Conservation Objectives

### Conservation Objectives:

Site specific conservation objectives for SAC and SPA sites listed in this report are available from: [Protected Sites in Ireland | National Parks & Wildlife Service \(npws.ie\)](https://www.npws.ie)

Site specific conservation objectives for UK sites are available from: <https://jncc.gov.uk/our-work/uk-protected-areas/>

Site specific conservation objectives for the French sites were not available at the time of writing.

### References:

BEIS, 2019. The Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999 (as amended) – A Guide. Revision 5, 81pp.

Carter et al, 2022. Sympatric Seals, Satellite Tracking and Protected Areas: Habitat-Based Distribution Estimates for Conservation and Management, *Frontiers in Marine Science*, v9 2022.

Danil K & St. Leger JA (2011). Seabird and dolphin mortality associated with underwater detonation exercises. *Marine Technology Society Journal* **45**: 89-95.

Fliessbach KL, Borkenhagen K, Guse N, Markones N, Schwemmer P & Garthe S (2019). A ship traffic Disturbance Vulnerability Index for Northwest European seabirds as a tool for marine spatial planning. *Frontiers in Marine Science* **6**: 192.

JNCC 2023 - IAMMWG. 2023. Review of Management Unit boundaries for cetaceans in UK waters (2023). JNCC Report 734, JNCC, Peterborough, ISSN 0963-8091.

<https://data.jncc.gov.uk/data/b48b8332-349f-4358-b080-b4506384f4f7/jncc-report-734.pdf>

JNCC, 2020 - JNCC (2020). Guidance for assessing the significance of noise disturbance against Conservation Objectives of Harbour porpoise SACs (England, Wales & Northern Ireland). JNCC Report No. 65.

MMO (2018). Displacement and habituation of seabirds in response to marine activities. A report produced for the Marine Management Organisation, MMO Project No: 1139, May 2018, 69pp

OPR 2021, Office of the Planning Regulator, March 2021 OPR Practice Note PN01, <https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf>

NPWS 2019a Article 17 Species Conservation Assessments 2019 Volume 3, unpublished report, National Parks and Wildlife Service, Dublin. [https://www.npws.ie/sites/default/files/publications/pdf/NPWS\\_2019\\_Vol3\\_Species\\_Article17.pdf](https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol3_Species_Article17.pdf)

NPWS 2019b Cummins, S., Lauder, C., Lauder, A. & Tierney, T. D. (2019) The Status of Ireland's Breeding Seabirds: Birds Directive Article 12 Reporting 2013 – 2018. *Irish Wildlife Manuals*, No. 114. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland. <https://www.npws.ie/sites/default/files/publications/pdf/IWM114.pdf>