



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

**SITE INVESTIGATION SURVEYS AT ESB
MONEYPOINT COUNTY CLARE**

Application Number LIC230008

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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 assessment.

Section 1 Introduction

1.1 Background

ESB submitted an application to MARA for a Maritime Usage Licence (MUL) for geophysical, environmental/ecological, metocean and geotechnical surveys at Moneypoint Co. Clare. The total Maritime Usage Licence Area is 927.5 hectares.

The applicant submitted a Natura Impact Statement with their licence application in support of this appropriate assessment.

1.2 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 of the Act 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 requirements for screening for appropriate assessment and for undertaking appropriate assessment. A 30-day public consultation was undertaken under Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011, running from 26 April to 27 May 2024, with the public invited to make observations. In addition to the public consultation, observations were invited from four relevant public bodies. No submissions were received on foot of the public consultation and one submission was received from Clare County council.

1.3 Screening for Appropriate Assessment

MARA completed a screening for appropriate assessment and published an appropriate assessment screening determination on 9 April 2024. The screening determination found that the proposal by ESB to carry out site investigation surveys at Moneypoint County Clare (LIC240008) required Stage 2 Appropriate Assessment. It could not be excluded beyond reasonable scientific doubt on the basis of objective scientific information that the proposed activities, either individually or in combination with other plans or projects, would not have a significant effect on a European Site.

Section 2 Description of proposed works

2.1 Project Description

The site investigations are proposed to take place over two phases. The phase one Marine Site Investigation Works will include Marine Geophysical Surveys, Marine Environmental/Ecological Surveys and Metocean Surveys. The proposed geophysical surveys

include Multi Beam Echosounder, Sub-bottom Profiler, Side Scan Sonar and Magnetometer surveys. The geophysical surveys may also incorporate visual surveys e.g., drop down video or remotely operated vehicle. Phase two Marine Site Investigation Works will include Marine Geotechnical Surveys i.e. sampling/coring boreholes at 20 locations to a maximum of 30m investigation depth below seabed level and Vibrocores at approximately 25 locations. The Applicant has applied for a 3 year licence to carry out site investigations works. The geophysical surveys, which are expected to last for four to six weeks, are proposed to be carried out in phase one (Q2 2024) and the geotechnical surveys are proposed to be carried out in phase two (Q4 2024/Q1 2025).

2.2 Location

The proposed site investigation works will take place in the vicinity of the existing Moneypoint generating station located on the northern shore of the Shannon Estuary in Co. Clare, approximately 3 km west of Killimer and 6 km south-east of Kiltrush as shown in Figure 1.

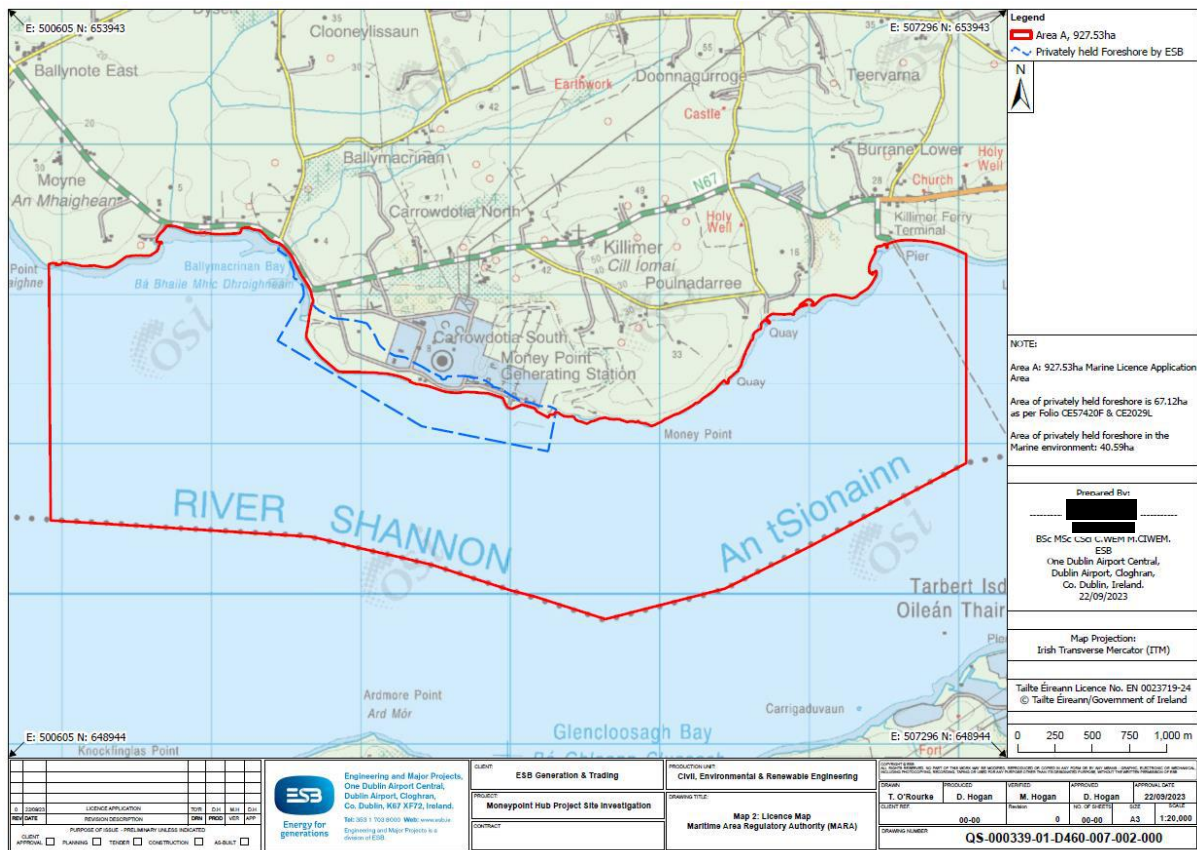


Figure 1: Map showing proposed licence area outlined in red.

The sediment in the area is largely that of coarse sediment (<https://www.emodnet-seabedhabitats.eu/>).

Water depths in the survey area range from the intertidal to approximately 10m.

The Shannon estuary is the largest estuary in Ireland and contains a variety of habitats and species; the estuary also contains vast expanses of intertidal mudflats often fringed with salt march vegetation.

2.3 Description of the Proposed Survey Works

The proposed geophysical surveys include Multi Beam Echosounder, Sub-bottom Profiler, Side Scan Sonar and Magnetometer surveys.

2.3.1 Description of Site Investigation Works

The objectives of these marine site investigations is to acquire data to a high quality and specification for the site as summarised below:

- Phase 1 geophysical, metocean and environmental/ecological surveys.
- Phase 2 geotechnical site investigation surveys.

Geophysical Surveys

The marine geophysical surveys include Multi Beam Echosounder (MBES), sub-bottom profiler (SBP), Side Scan Sonar (SSS), Magnetometer, drop down video and Remotely Operated Vehicle (ROV). The works are scheduled to take 4-6 weeks and take place as soon as the MUL is awarded.

Metocean Surveys

Acoustic Doppler Current Profilers (ADCPs) are proposed for the metocean survey. The works are scheduled to take 4-6 weeks and take place as soon as the MUL is awarded.

Environmental/ Ecological Surveys

The marine environmental/ecological surveys include benthic sampling/grab samples, static underwater acoustic recorders, ornithology surveys, marine mammal surveys, shipping and navigation surveys, marine archaeology surveys and marine habitat surveys. The deployment of the static underwater acoustic recorders are scheduled to take 4-6 weeks and take place as soon as the MUL is awarded.

Geotechnical Investigations

The marine geotechnical investigations include 20 sampling/coring boreholes (to a maximum of 30m investigation depth below seabed level) and 25 Vibrocores (up to 3m depth below seabed level). The geotechnical site investigations are scheduled to take 2-3 months and take place in Q4 2024/Q1 2025.

Table 1: Survey equipment proposed for the site investigations, with frequencies and noise pressure levels.

Survey equipment	Purpose	Frequency	Noise pressure level (dB re 1µPa @ 1m)
Multibeam Echosounder	Collect topographical data of the seabed	200-500 kHz	198
Sub-bottom profiling	Boomer	0.5-5 kHz	205-211
	Parametric	85-222 kHz	232
	Sparker	0.4-5 kHz	203
Sidescan sonar	Determine sediment characteristics and seabed features	300-700 kHz	200-240

Acoustic Corer	3D image of stratigraphy layers	1.5-12 kHz	190-195
Magnetometer	Identifies magnetic anomalies, hazard mapping on the seabed	Passive device, no sound emitted	
Sampling/coring Boreholes	To collect samples for inspection	120 kHz	148 - 151
Vibrocore/Gravity Corer	To collect un-consolidated seabed samples	No sound emitted	

Section 3 European Sites and Qualifying Interests

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 works. This Screening for AA report is dated 9 April 2024 and is available on the MARA website.

The Screening for AA Report identified ten Irish Special Area of Conservation (SAC) sites, four British and sixteen French sites, which were considered to be within the Zone of Influence of the proposed maritime usage activity. The screening also identified one Special Protected Area (SPA) site that was considered to be within the Zone of Influence of the proposed maritime usage activity. These European sites, their Qualifying Interests, Special Conservation Interests, conservation objectives and possible impact as a result of the proposed project are given in Table 4 below.

3.2 Qualifying Interests and Special Conservation Interests affected

The appropriate assessment screening identified the habitats Estuaries and Reefs and the species Salmon (*Salmo salar*), Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*Lampetra fluviatilis*), Harbour seal (*Phoca vitulina*), Grey seal (*Halichoerus grypus*), Bottlenose dolphin (*Tursiops truncatus*) and Harbour porpoise (*Phocoena phocoena*) as qualifying interests that may be impacted as a result of the proposed maritime usage. This appropriate assessment has been undertaken in light of the descriptions of the qualifying interests and special conservation interests in the latest Article 17 report from the NPWS in 2019¹.

In addition, 22 bird species were identified as needing further assessment due to the possibility for those species to be significantly negatively affected by visual disturbance, disturbance from above water noise or underwater noise in the case of diving species (Screening for AA Report, 9 April 2024, Table 3). Seabird species profiles, population trends and species specific threats used in this assessment were taken from the most recent Article

¹ https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol3_Species_Article17.pdf

12 assessment produced by the NPWS in 2019². Information on waterbirds and waders in this assessment came from the most recent Irish Wetland Bird Survey³ and Checklist of Protected and Threatened Species 2019.⁴

It should be noted that NPWS added a number of additional Bottlenose Dolphin and Harbour Porpoise QI's to a number of existing SACs in March 2024; these sites and QIs are included in Table 4 below (as marked with an asterisk).

3.3 Conservation Objectives, Overall Status and Trends of Species and Habitats with potential 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.

Site-specific conservation objectives for sites, habitats and species listed in Table 4 were used when considering potential impacts of the proposed activity. For most sites screened in for this assessment, details are also available in Section 5 of the NIS for this licence application (RPS, January 2024⁵) which was submitted by the applicant prior to the AA Screening Stage taking place. Details of these are also available on the NPWS website (<https://www.npws.ie/protected-sites>).

The Conservation objectives for the additional sites added by NPWS in March are taken to be those from the nearest available SAC. For Bottlenose Dolphin, this is the Lower River Shannon SAC. For Harbour Porpoise, this is Blasket Islands SAC. A similar approach was taken for assessing French sites without Conservation objectives.

Additionally, one SPA site was screened in as part of this assessment but not included in the NIS. This is the River Shannon and River Foynes Estuaries SPA. Site-specific conservation objectives for these SPA sites is available on the NPWS website (<https://www.npws.ie/protected-sites>) and were used as part of this assessment.

Conservation status of a species relates to the nationwide status, while conservation objectives relate to a specific SAC or SPA. 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.

² <https://www.npws.ie/sites/default/files/publications/pdf/IWM114.pdf>

³ https://www.npws.ie/sites/default/files/publications/pdf/IWM_106_Irelands_Wintering_Waterbirds.pdf

⁴ [IWM 116 Checklists Protected and Threatened Species 2019.pdf \(npws.ie\)](https://www.npws.ie/sites/default/files/publications/pdf/IWM_116_Checklists_Protected_and_Threatened_Species_2019.pdf)

⁵ https://cdn.maritimeregulator.ie/wp-content/uploads/2024/04/11-230008-NIS_redacted.pdf

The national conservation status of Irish species is defined as per the NPWS Status of EU Protected Habitats and Species in Ireland Report. Sea Lamprey (*Petromyzon marinus*) is the only species screened in for this stage 2 Appropriate Assessment that has a national conservation status of bad.

The habitats Estuaries and Reefs and the species Salmon (*Salmo salar*) have national conservation statuses of inadequate. In addition, the species River Lamprey (*Lampetra fluviatilis*) is unknown.

Harbour seal, Grey Seal, Bottlenose dolphin and Harbour Porpoise have Favourable conservation status in the Irish assessments. Grey Seal, Harbour Porpoise and Bottlenose dolphin have a favourable status for the British sites, but Harbour Seal has an Inadequate status in British sites. The Harbour Porpoise and Bottlenose dolphin have a Bad/Unfavourable conservation status for the French assessment.

The most recent Birds Directive Article 12 report identified trends in seabird species relating to Breeding Population numbers and Breeding Distribution. For the species under consideration in this assessment only Cormorant and Black-headed gull are included. Both Cormorant and Black-headed gull are experiencing increases in their Breeding population numbers in the short term. Cormorant is experiencing increases in the long term while Black-headed gull are experiencing a long term declining trend.

Ten of the twenty two bird species considered under the Birds of Conservation Concern in Ireland assessment⁶ are mainly classified as Red-list species (high conservation concern); these are Scaup, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew and Redshank. Two species are classified as Amber (medium conservation concern); Cormorant and Brent Goose.

3.4 Pressures and threats to Annex II species and Annex I species

Table 2 outlines the various pressures and threats experienced in Ireland by the Annex II species screened in for this assessment. 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.

Table 2 Pressures and Threats on relevant Annex II species as assessed for the NPWS 2019 Article 17 report.

	Pressure	Threat
Sea Lamprey [1095]	D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H) N03 Increases or changes in precipitation due to climate change (H) A19 Application of natural fertilisers on agricultural land (M)	D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H) N03 Increases or changes in precipitation due to climate change (H) A19 Application of natural fertilisers on agricultural land (M)

⁶ [https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/#:~:text=The%20conservation%20status%20of%20species,%25\)%20on%20the%20Green%20list.](https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/#:~:text=The%20conservation%20status%20of%20species,%25)%20on%20the%20Green%20list.)

	Pressure	Threat
	<p>A20 Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p>A31 Drainage for use as agricultural land (M)</p> <p>G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations (M)</p> <p>Xo Threats and pressures from outside the Member State (M)</p>	<p>A20 Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p>A31 Drainage for use as agricultural land (M)</p> <p>G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations (M)</p> <p>Xo Threats and pressures from outside the Member State (M)</p> <p>N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M)</p> <p>N02 Droughts and decreases in precipitation due to climate change (M)</p>
<p>Brook Lamprey [1096]</p>	<p>A19 Application of natural fertilisers on agricultural land (M)</p> <p>A20 Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p>A31 Drainage for use as agricultural land (M)</p> <p>B09 Clear-cutting, removal of all trees (M)</p> <p>D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M)</p> <p>F11 Pollution to surface or ground water due to urban runoffs (M)</p> <p>F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M)</p>	<p>A19 Application of natural fertilisers on agricultural land (M)</p> <p>A20 Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p>A31 Drainage for use as agricultural land (M)</p> <p>B09 Clear-cutting, removal of all trees (M)</p> <p>D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M)</p> <p>F11 Pollution to surface or ground water due to urban runoffs (M)</p> <p>F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M)</p> <p>N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M)</p> <p>N02 Droughts and decreases in precipitation due to climate change (M)</p>
<p>River Lamprey [1099]</p>	<p>D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H)</p> <p>N03 Increases or changes in precipitation due to climate change (H)</p> <p>A19 Application of natural fertilisers on agricultural land (M)</p> <p>A20 Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p>A31 Drainage for use as agricultural land (M)</p> <p>E03 Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (M)</p>	<p>D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H)</p> <p>N03 Increases or changes in precipitation due to climate change (H)</p> <p>A19 Application of natural fertilisers on agricultural land (M)</p> <p>A20 Application of synthetic (mineral) fertilisers on agricultural land (M)</p> <p>A31 Drainage for use as agricultural land (M)</p> <p>E03 Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (M)</p> <p>N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M)</p>

	Pressure	Threat
		N02 Droughts and decreases in precipitation due to climate change (M)
Salmon [1106]	<p>A26 Agricultural activities generating diffuse pollution to surface or ground waters (H)</p> <p>G19 Other impacts from marine aquaculture, including infrastructure (H)</p> <p>K05 Physical alteration of water bodies (H)</p> <p>J01 Mixed source pollution to surface and ground waters (limnic and terrestrial) (H)</p> <p>A25 Agricultural activities generating point source pollution to surface or ground waters (M)</p> <p>B23 Forestry activities generating pollution to surface or ground waters (M)</p> <p>D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M)</p> <p>G11 Illegal harvesting, collecting and taking (M)</p> <p>G20 Abstraction of water, flow diversion, dams and other modifications of hydrological conditions for freshwater aquaculture (M)</p> <p>L06 Interspecific relations (competition, predation, parasitism, pathogens) (M)</p>	<p>A26 Agricultural activities generating diffuse pollution to surface or ground waters (H)</p> <p>G19 Other impacts from marine aquaculture, including infrastructure (H)</p> <p>K05 Physical alteration of water bodies (H)</p> <p>N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (H)</p> <p>A25 Agricultural activities generating point source pollution to surface or ground waters (M)</p> <p>B23 Forestry activities generating pollution to surface or ground waters (M)</p> <p>F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M)</p> <p>F28 Modification of flooding regimes, flood protection for residential or recreational development (M)</p> <p>G11 Illegal harvesting, collecting and taking (M)</p> <p>I02 Other invasive species (other than species of Union concern) (M)</p>
Grey seal [1364], Harbour seal [1365], Harbour porpoise [1351] and Bottlenose dolphin [1349]	<p>C09 Geotechnical surveying (M)</p> <p>G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>	<p>C09 Geotechnical surveying (M)</p> <p>G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)</p>

Table 3: Special Area of Conservation (SAC) and their qualifying interests to be considered further in the screening process.

European Site Code	Distance from the Proposed Development (km)	List of Qualifying Interests]	Potential source of impact	Conservation Objective
Lower River Shannon SAC [Site Code IE002165]	Within SAC boundary	Estuaries [1130] Reefs [1170] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Salmo salar (Salmon) [1106] Tursiops truncatus (Common Bottle-nose Dolphin) [1349] Lutra lutra (Otter) [1355]	Physical disturbance & habitat loss, increased suspended sediment concentrations and disturbance from underwater noise	To maintain the favourable conservation condition of the listed habitats and species in the SAC, as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000696.pdf
Blasket Islands SAC [Site code IE002172]	95/within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351] Halichoerus grypus (Grey Seal) [1364]	Disturbance from underwater noise	To maintain the favourable conservation condition of Harbour Porpoise and Grey Seal in the SAC, as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf
Slyne Head Islands SAC [Site code IE000328]	145/Within Management Unit for Bottlenose Dolphin	Tursiops truncatus (Common Bottlenose Dolphin) [1349] Halichoerus grypus (Grey Seal) [1364]	Disturbance from underwater noise	To maintain the favourable conservation condition of Bottlenose Dolphin and Grey Seal in the SAC, as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000328.pdf
Slyne Head Peninsula SAC [Site code IE002074]	Within Management Unit for Bottlenose Dolphin	Tursiops truncatus (Common Bottlenose Dolphin) [1349]	Disturbance from underwater noise	To maintain the favourable conservation condition of Bottlenose Dolphin in the SAC, as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002074.pdf
Inishmore Island SAC [Site code IE000213]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Blasket Islands SAC - To maintain favourable conservation condition of Harbour Porpoise in the SAC. [Site code IE002172] were used in their absence

				https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf
Kilkieran Bay and Islands SAC [Site code IE002111]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]* Phoca vitulina (Harbour Seal) [1365]	Disturbance from underwater noise	There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC - To maintain favourable conservation condition of Harbour Porpoise in the SAC. [Site code IE002172] were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf) To maintain favourable conservation condition of Harbour Seal in the SAC as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002111.pdf
West Connacht Coast SAC [Site code IE002998]	Within Management Unit for Bottlenose Dolphin	Tursiops truncatus (Common Bottlenose Dolphin) [1349] Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf) To maintain favourable conservation condition of Bottlenose Dolphin in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf)
Inishbofin and Inishshark SAC [Site code IE000278]	178	Halichoerus grypus (Grey Seal) [1364]	Disturbance from underwater noise	To maintain the favourable conservation condition of Grey Seal in the SAC, as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000278.pdf
Duvillaun Islands SAC [Site code IE000495]	245/Within Management Unit for Bottlenose Dolphin	Tursiops truncatus (Common Bottlenose Dolphin) [1349] Halichoerus grypus (Grey Seal) [1364]	Disturbance from underwater noise	To maintain favourable conservation condition of Bottlenose Dolphin in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used in their absence

				<p>(https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf)</p> <p>To maintain the favourable conservation condition of Grey Seal in the SAC, as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000495.pdf</p>
Inishkea Islands SAC [Site code IE000507]	228	Halichoerus grypus (Grey Seal) [1364]	Disturbance from underwater noise	<p>To maintain the favourable conservation condition of Grey Seal in the SAC, as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000507.pdf</p>
Roaringwater Bay and Islands SAC [Site code IE000101]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	<p>To maintain favourable conservation condition of Grey Seal and Harbour Porpoise in the SAC as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000101.pdf</p>
Rockabill to Dalkey SAC [IE003000]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	<p>To maintain favourable conservation condition of Harbour Porpoise in the SAC as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf</p>
Kenmare River SAC [IE002158]	210	Phoca vitulina (Harbour Seal) [1365] Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	<p>To maintain favourable conservation condition of Harbour Seal in the SAC as per the attributes, measures and targets set out in https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002158.pdf</p> <p>To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Blasket Islands SAC [Site code IE002172] were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf)</p>

Belgica Mound Province SAC [IE002327]	Within Management Unit for Harbour porpoise and Bottlenose Dolphin	Phocoena phocoena (Harbour Porpoise) [1351]* Tursiops truncatus (Common Bottlenose Dolphin) [1349]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf) To maintain favourable conservation condition of Bottlenose Dolphin in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf)
Bunduff Lough and Machair/Trawalua/Mullaghmore SAC [000625]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf)
St Johns Point SAC [IE000191]	Within Management Unit for Bottlenose Dolphin	Tursiops truncatus (Common Bottlenose Dolphin) [1349]*	Disturbance from underwater noise	To maintain favourable conservation condition of Bottlenose Dolphin in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf)
Hook Head SAC [IE000764]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands SAC (Site code: IE003000) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf)

Carnsore Point SAC [IE002629]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands SAC (Site code: IE003000) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf)
Blackwater Bank SAC [IE002953]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands SAC (Site code: IE003000) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf)
Porcupine Bank Canyon SAC [IE003001]	Within Management Unit for Bottlenose Dolphin	Tursiops truncatus (Common Bottlenose Dolphin) [1349]*	Disturbance from underwater noise	To maintain favourable conservation condition of Bottlenose Dolphin in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf)
South-west Porcupine Bank SAC [IE002329]	Within Management Unit for Bottlenose Dolphin	Tursiops truncatus (Common Bottlenose Dolphin) [1349]*	Disturbance from underwater noise	To maintain favourable conservation condition of Bottlenose Dolphin in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf)
Codling Fault Zone SAC [IE003015]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands SAC (Site code: IE003000) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf)

Lambay Island SAC [IE000204]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]*	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands SAC (Site code: IE003000) were used in their absence (https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf)
North Anglesey Marine / Gogledd Môn Forol [UK 0030398]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	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
Bristol Channel Approaches / Dynesfeydd Môr Hafren [UK0030396]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	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
North Channel [UK 0030399]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	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
West Wales Marine / Gorllewin Cymru Forol [UK 0030397]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	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
Récifs et landes de la Hague [FR2500084]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Blasket Islands SAC [Site code IE002172] were used
Anse de Vauville [FR2502019]	Within Management Unit for	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to

	Harbour porpoise			this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Banc et récifs de Surtainville [FR2502018]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Chausey [FR2500079]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Baie du Mont Saint-Michel [FR2500077]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Estuaire de la Rance [FR5300061]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard [FR5300012]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Cap d'Erquy-Cap Fréhel [FR5300011]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used

Baie de Saint-Brieuc – Est [FR5300066]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Tregor Goëlo Est [FR5300010]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Côte de Granit rose-Sept-Iles [FR5300009]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Nord Bretagne DH [FR2502022]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Baie de Morlaix [FR5300015]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Abers - Côte des legends [FR5300017]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
Ouessant-Molène [FR5300018]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used

Côtes de Crozon [FR5302006]	Within Management Unit for Harbour porpoise	Phocoena phocoena (Harbour Porpoise) [1351]	Disturbance from underwater noise	To maintain favourable conservation condition of Harbour Porpoise in the SAC. There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Basket Islands SAC [Site code IE002172] were used
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Table 4 Special Protection Areas (SPA) and their SCI's that were considered further after the screening process.

European Site Code	Distance from the Proposed Development (km)	List of Special Conservation Interests (SCI)	Potential source of impact	Conservation Objective
River Shannon and River Foynes Estuaries SPA [Site code IE004077]	Within SPA boundary	Cormorant (<i>Phalacrocorax carbo</i>) [A017] Whooper Swan (<i>Cygnus cygnus</i>) [A038] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Shoveler (<i>Anas clypeata</i>) [A056] Scaup (<i>Aythya marila</i>) [A062] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Knot (<i>Calidris canutus</i>) [A143] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Greenshank (<i>Tringa nebularia</i>) [A164] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Wetland and Waterbirds [A999]	Visual & above water noise disturbance and disturbance from underwater noise	To maintain the favourable conservation condition of all listed SCI species at River Shannon and River Foynes Estuaries SPA as defined by the list of attributes and targets available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004077.pdf

4 Assessment and Mitigation

4.1 Assessment of Likely/Possible Significant Impacts on European Sites and their conservation interests

The impacts that have been identified, that have the potential to cause significant impacts on European sites and their designated species or habitats, are physical disturbance and habitat loss, increased suspended sediment concentrations, disturbance from underwater noise and visual & above water noise disturbance.

These impacts may cause the displacement of individuals, changes in species behaviour, or the risk of morbidity or mortality. Any mitigation measures recommended on foot of the assessment in this section are included in Section 4.4 Mitigation Measures.

4.1.1 Habitats physical disturbance and loss

On soft sediments communities such as sea grass meadows and maerl beds are vulnerable to the placing of structures on them. For sediment communities, impact is confined to the immediate footprint of the equipment and their recovery is quick following the removal of the equipment. Reef habitat is susceptible to abrasion and damage during deployment and retrieval of equipment on the sea floor. Reef habitat is present within and adjacent to the proposed site investigations works and therefore, it is recommended that suitable mitigation measures be included in any Maritime Usage Licence relating to the proposed maritime usage activity.

4.1.2 Disturbance to salmon, river lamprey, sea lamprey and brook lamprey

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 Lower River Shannon SAC (Table 4).

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 the Lower River Shannon SAC (Table 4).

Adult sea lamprey at sea exist as external parasites on host fish or marine mammals before migrating in late spring into freshwater to spawn. Adults die after spawning. After hatching,

the resulting larvae, called ammocoetes, swim or drift downstream to areas of fine sediment into which they can burrow. The ammocoete is a filter feeder and retains its burrowing habit in fine-grained sediment over a period of six to eight years. Transformation to the young adult stage occurs in late summer and the juvenile sea lamprey migrates downriver to estuarine waters and the open sea in late autumn – winter. They spend up to three years at sea before returning up river to spawn in late May. Sea Lamprey is a qualifying interest of the Lower River Shannon SAC (Table 4).

The brook lamprey is the smallest of the three lampreys recorded in Ireland, typically reaching no more than 15-18cm in length. Unlike the sea lamprey and the river lamprey, the brook lamprey is non-parasitic and non-migratory as an adult, living its entire life in freshwater. Adults spawn in spring and after hatching, the larvae drift or swim downstream to areas of river bed or margins with fine silt deposits. They burrow into this substrate and live as filter feeders over a period of years before transforming into young adult fish. These young adults overwinter before migrating short distances upstream to gravelled areas where they spawn. The adult fish die after spawning. River and brook lamprey are indistinguishable as larvae, but mature adult forms are clearly distinguishable based on body size. Brook lamprey is a qualifying interest of the Lower River Shannon SAC (Table 4).

While salmon, river lamprey, sea lamprey and brook lamprey are present near the proposed site investigation activities, as mobile species they 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 site investigation works.

4.1.3 Disturbance due to underwater noise (marine mammal)

Harbour 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. Their aquatic range for foraging and inter-site movement extends to approximately 450 km. When hauling out ashore Harbour seals tend to prefer comparatively sheltered locations. In Ireland they are 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. Times spent ashore occur immediately prior to and during the annual breeding season predominantly during the months of May to July. Harbour Seal is a qualifying interest of Kenmare River SAC and Kilkieran Bay and Islands SAC (Table 4).

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 to over 250 km. 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. Grey seal is a

qualifying interest of the Blasket Islands SAC, Inishbofin and Inishshark SAC, Duvillaun Islands SAC and Inishkea Islands SAC (Table 4).

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 kilometers. Harbour porpoise breeds annually in Ireland during the months of May and June, although it may extend throughout the summer months and early autumn. 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. Harbour porpoise is a qualifying interest in 34 SACs within the Celtic and Irish Seas management unit for this species (JNCC, 2023) (Table 4).

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 the Lower River Shannon SAC, Slyne Head Islands SAC, Slyne Head Peninsula SAC, West Connacht Coast SAC, Duvillaun Islands SAC, Belgica Mound Province SAC, St Johns Point SAC, Porcupine Bank Canyon SAC and the South-west Porcupine Bank SAC which are in the Offshore Waters management unit (JNCC, 2023) (Table 4).

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. Otter is the qualifying interest in the Lower River Shannon SAC (Table 4).

4.1.4 Disturbance due to underwater noise (birds)

Diving birds such as Red-throated Diver, Great Northern Diver, Manx Shearwater, Cormorant and Shag can be sensitive to disturbance from underwater noise and fatalities can occur at close distance. 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 noise⁷. 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, the mobile nature of the birds and the displacement of most diving species due to flushing disturbance. Therefore, 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. 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 considered in Section 4.2.

4.1.5 Disturbance due to above water noise

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 therefore, will not be significant.

Temporary displacement from boat activity and above water noise can be expected for bird species. This is unlikely to be significant, due to the temporary nature of the disturbance and the public nature of the landfall site.

4.1.6 Disturbance due to accidental incidents

The use survey vessels present the risk of diesel or oil spills which can impacts foraging ability, health and mortality of the birds identified as susceptible to potential impacts from the proposed project. While the risks associated with this form of disturbance is low, the impact could be significant and mitigation is required. Therefore, it is recommended that suitable mitigation measures be included in any Maritime Usage Licence relating to the proposed maritime usage activity.

4.2 Assessment of 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 which is likely to have a significant effect on one or more European sites, either individually or in combination with other plans or projects. Therefore, regardless of whether or not the likely 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

⁷https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/778899/OPRED_EIA_Guidance_2019_Revision_5_-_14Feb19.pdf
<https://www.frontiersin.org/articles/10.3389/fmars.2019.00192/full>

must also be assessed. All types of plans or projects that could, in-combination with the project under consideration, have a significant effect, should be taken into account. This in-combination assessment has been undertaken using profession and scientific judgement.

1. Defining the Cumulative Effects Spatial Scope (CESS)

Impacts of underwater noise associated with the proposed maritime usage are considered to have the widest spatial reach, with Harbour porpoise being most sensitive to noise disturbance . The CESS was defined at Appropriate Assessment screening stage as 5km, based on acoustic survey equipment effective deterrence ranges.

2. Defining the Cumulative Effects Temporal Scope (CETS)

The temporal scope for examination of cumulative effects has been defined considering the maritime usage licence period. The CETS is therefore 3 years.

3. Impact identification

The impacts identified are:

- Physical disturbance and habitat loss
- Increased suspended sediment concentrations
- Disturbance from underwater noise
- Visual and above water noise disturbance
- Disturbance due to accidental incidents

4. Pathway Identification

Impact	Potential Cumulative Pathway
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.
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.
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.
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.
Disturbance due to accidental incidents	Pathway possible via substances travelling through water with impacts possible within CESS where there is temporal overlap with another accidental incident.

5. Prediction:

The magnitude and extent of identified likely cumulative effects have been predicted below.

Physical disturbance and habitat loss

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.

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.

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.

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.

Disturbance due to accidental incidents

There is the potential for increased disturbance due to accidental incidents if vessel activities with other projects were to take place at the same time.

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

A search was carried out of relevant databases (e.g. EPA, Foreshore, MARA, planning authorities, etc) for other plans/projects with characteristics that may cause in-combination or cumulative effects with the project being assessed, on Natura 2000 sites. All plans and projects within the CESS and CETS have been identified. All projects 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.

Following a search of relevant databases undertaken on the 19th of March 2024 as part of the Appropriate Assessment screening, the projects in Table 3 were identified as potential in-combination projects.

Table 5: Projects identified with the potential to cause in-combination effects with the project being assessed.

Application reference no.	Project	Approximate Distance from MUL Area	Project Status	Cumulative Effects
FS007083	ESB - installation of submarine electricity cables across the Lower Shannon Estuary	0km	Approved - permission granted 13/06/23	Spatial overlap with ESB Moneypoint Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.

FS007141	ESB – ecological survey	0km	Completed – project completed in 2020	Spatial overlap with ESB Moneypoint Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
FS007137	FS007137 ESB Wind Development Ltd. Moneypoint Offshore Wind Farm - Site Investigations off Clare and Kerry Coasts	0km	Proposed - Foreshore licence application received 22/12/22	Spatial overlap with ESB Moneypoint Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
2332	ESB – Moneypoint generating station development	0km	Approved but not completed - permission granted 18/04/23	Spatial overlap with ESB Moneypoint Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
ABP-311233-21 (2)	Shannon LNG Ltd – proposed power plant, battery energy storage system, floating storage and regasification unit, jetty and onshore facility.	1km	Permission refused 13/09/20	No spatial overlap with ESB Moneypoint Maritime Usage Licence Area. Within the CESS. However project refused so no potential in-combination effects.
23350	Eirgrid – Tarbert generating station redevelopment	3.5km	Proposed – permission submitted 31/03/23	No spatial overlap with ESB Moneypoint Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.

7. Cumulative Effects Assessment conclusion

Based on insufficient clarity on when projects will be carried out and using the precautionary principle all the above projects are considered to have potential in-combination effects should there be temporary overlap with the proposed maritime usage activity.

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

- Climate Action Plan 2023
- National Marine Planning Framework
- Draft River Basin Management Plan for Ireland (2022-2027)
- Draft South Coast Designated Maritime Area Plan

These plans promote sustainable development and integrated management planning in the maritime environment. It is unlikely that any of these plans will result in a negative in-combination effect on the conservation objectives of the Natura 2000 sites.

It is not possible to exclude the possibility of likely significant in-combination effects on the conservation objectives of the Natura 2000 sites considered in this assessment as a result of

this proposed maritime usage activity, the projects identified in Table 3 and the relevant plans listed above. The measure below will mitigate against any potential in-combination effects.

4.3 Assessment of Transboundary effects

The mitigation measures proposed as part of this appropriate assessment will mitigate against any transboundary effects in the British and French protected sites.

4.4 Public Consultation

A 30-day public consultation was undertaken from 26 April to 27 May 2024 with the public invited to make observations. In addition to the public consultation, observations were invited from the following public bodies: National Parks and Wildlife Service, Department of Agriculture, Food and the Marine, the Marine Institute and Clare County Council.

No submissions were received on foot of the public consultation and one submission was received from Clare County council.

4.5 Mitigation Measures

4.5.1 Habitats physical disturbance and loss

To minimise the potential of impacts to Annex I habitats Reef, the mitigation detailed below is recommended to be included as a condition in the Maritime usage licence that may be granted as follows:

- a. *The Holder shall review the outputs of the geophysical surveys to identify any areas of reef habitat; and no environmental, ecological or metocean survey equipment will be deployed onto identified reef habitat.*
- b. *The Holder will undertake a visual survey (i.e., undertaken by divers, autonomous underwater vehicle (UAV) or remotely operated vehicle (ROV)) at each survey location, prior to undertaking the geotechnical and benthic survey. If reef habitats are present, geotechnical sampling locations will be micro sited away from the reef habitat and benthic sampling locations will be sampled by video survey only.*
- c. *All jack-up operations associated with geotechnical surveys, or placement of moorings for metocean devices (ADCPs) will be positioned to avoid any identified reef features.*

4.5.2 Disturbance to salmon, river lamprey, sea lamprey and brook lamprey

No mitigation is required as potential significant effects ruled out in section 4.1.2.

4.5.3 Disturbance due to underwater noise (marine mammal)

Appropriate mitigation for the effects of underwater noise on marine mammals is the implementation of the NPWS [Guidance to manage the Risk to marine mammals from man-made sound sources in Irish Waters](#). When carrying out geotechnical and geophysical surveys particular attention should be paid to the sections of the guidance relating to drilling (in relation to seabed cores) and geophysical acoustic surveys. It is recommended a condition be included in any maritime usage licence that may be granted as follows:

Marine Mammals

- a. *The Holder shall appoint a marine mammal observer for the purposes of overseeing the activity. The Holder shall ensure the marine mammal observer shall satisfy the requirements of National Parks and Wildlife Service guidance.*

- b. *The Holder shall implement risk control and mitigation measures for marine mammals in accordance with National Parks and Wildlife guidance.*
- c. *All reporting shall be forwarded to offshore@npws.gov.ie .*

4.5.4 Disturbance due to underwater noise (birds)

No mitigation is required as potential significant effects ruled out in section 4.1.4.

4.5.5 Disturbance due to above water noise

No mitigation is required as potential significant effects ruled out in section 4.1.5.

4.5.6 Disturbance due to accidental incidents

Mitigation is required to minimise the risk of impacts as a result of accidental spills from survey vessels. It is recommended a condition be included in any maritime usage licence that may be granted as follows:

Accidental events

The Holder shall ensure that there is a Shipboard Oil Pollution Emergency Plan on-board any survey vessels. This plan should specify:

- a. *Information on the location and detail of spill response resources on-board ship;*
- b. *Information on crew training in relation to oil pollution response;*
- c. *How ship crew will interface with other site investigation operators, where applicable.*

4.5.7 In-combination effects

To minimise any in-combination effects as a results of other projects or plans, it is recommended a condition be included in any maritime usage licence that may be granted as follows:

- a. *The Holder shall coordinate with other licence holders within a 10km radius of the site boundary to ensure that no temporal overlap occurs between projects in respect of geophysical and geotechnical activities.*
- b. *Where the Holder becomes aware of temporal overlap that cannot be resolved, the Holder shall notify the Grantor who shall determine the timing of activities.*

5 Appropriate Assessment Conclusion

The applicant provided a Natura Impact Statement (NIS) which 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. Sites not considered in the NIS but screened in for further assessment were assessed separately and included in this report.

The screening process identified likely/possible significant impacts due to physical disturbance and habitat loss, increased suspended sediment concentrations, disturbance from underwater noise, visual & above water noise disturbance and accidents.

The likely significant impacts due to physical disturbance & habitat loss and disturbance from underwater noise could not be ruled out beyond reasonable scientific doubt without mitigation.

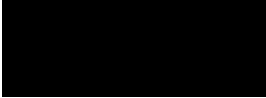

The potential direct and indirect effects as a result of physical disturbance and habitat loss, increased suspended sediment concentrations, disturbance from underwater noise, visual & above water noise disturbance and accidents from geophysical and geotechnical surveys were identified as having the 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 and special conservation interests do not occur. Therefore, with adherence to these measures specified in section 4.5 Mitigation 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.

<p>Signature and Date of Recommending Marine Advisor</p>	<div style="background-color: black; width: 200px; height: 40px; margin-bottom: 10px;"></div> <hr style="width: 150px; margin-left: 0;"/> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <p>Marine Advisor Environment Assessment, Research and Data 16th July 2024</p>
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6 Appropriate Assessment Determination

Therefore, having considered the documents submitted by ESB, the observations received on foot of the public consultation on the application, along with my own assessment, it can be concluded, and 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 *proposal for geophysical, environmental/ecological, metocean and geotechnical surveys at Moneypoint Co. Clare* (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.

<p>Signature and Date of Decision Maker</p>	  Director of Assessment, Research and Data 16 th July 2024
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