



**Appropriate Assessment Report and Determination for  
Maritime Usage Licence Application**  
From  
**Shannon Foynes Port Company**

FOR Marine site investigation to support the preliminary and detailed engineering design of the deep-water terminal development on Foynes Island.

Application Number No. LIC230014

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## **Statement of Authority**

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

## **1 Introduction**

### **1.1 Background**

Shannon Foynes Port Company are proposing to carry out site investigation works at a two locations adjacent to Foynes Island, Foynes, Co. Limerick (Figure 1). The site investigation works are required to facilitate the preliminary, detailed design and environmental assessment of a wider project, which will comprise of a new deep-water port at Foynes Island.

Shannon Foynes Port is situated on the southern shoreline of the Shannon Estuary, 38km west of Limerick City. The port specialises in bulk cargo with typical cargoes including energy products (liquid fuels, coal, etc.), agri-business inputs (feedstuff and fertilisers), recyclable materials, and green-energy components such as wind turbines. The proposed future development project, which comprises of the construction of a new terminal on the northwest side of Foynes Island, would provide significant additional capacity to existing port operations.

### **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. In addition, a 30-day public consultation is required on the Natura Impact Statement under Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations, 2011.

### **1.3 Screening for Appropriate Assessment**

MARA completed a screening for appropriate assessment and published an appropriate assessment screening determination on 19 March 2024. The determination stated that the proposal by Shannon Foynes Port Company to carry out site investigation works requires an Appropriate Assessment, as it cannot be excluded on the basis of objective scientific information, following screening, that the proposed activities, individually or in combination with other plans or projects, will have a significant effect on a European Site.

## **2 Description of proposed works**

### **2.1 Project and Site Description**

The site investigation works include both geophysical and geotechnical marine based surveys. The proposed geophysical surveys include Side Scan Sonar, Sub-bottom profiler, Multibeam Echosounder and Magnetometer. The proposed geotechnical surveys will include up to 163 No. cable percussion and/or rotary core Boreholes.

The works will take place in 2 phases. Phase 1 works shall constitute a preliminary site investigation with the objective of providing initial ground conditions for the purposes of informing the preliminary geotechnical design of marine structures and bridge piers. Phase 1 is proposed to have a duration of 18 weeks in total. Phase 2 will constitute a detailed site investigation with the objective of adding to the data gained from phase 1. Phase 2 is proposed to take place in Q1 2026 and have a duration of 16 weeks in total.

The proposed maritime licence activity involves Marine Site Investigation works to support the planning and engineering design of the Foynes Island Deep Water Berth Development on Foynes Island. Geophysical and geotechnical marine-based site investigation are proposed to inform the design of the proposed bridge crossing over to the South-East corner of Foynes Island from Foynes Port, construction of quay/marine infrastructure with associated quay furniture/services and development of a hardstanding hinterland area at the North-West edge of the Island. The surveys will entail the following activities:

- Standard methods of acoustic based sensing which will include the gathering of bathymetric, side scan sonar, sub-bottom profiler and magnetometer data.
- Standard methods of geotechnical investigation including deep boreholes (30-45m deep), shallow boreholes (5-10m deep). The boreholes are to be drilled firstly using cable percussive techniques. If rock is to be penetrated, then rotary drilling will follow on. For each borehole, the footprint of the works on the foreshore will be four approximately 1 m<sup>2</sup> legs of the jack-up barge and the 200mm temporary steel casing. The 200mm steel casing is the diameter of the borehole.
- Operation and manoeuvring of typical jack-up barge, survey vessels and floating pontoon equipment.

### **2.2 Location**

The location of the proposed site is within an area designated as Natural Heritage Area as well as being part of the River Shannon and Fergus Estuary SPA, and the Lower Shannon SAC and is outlined in red in Figure 1.

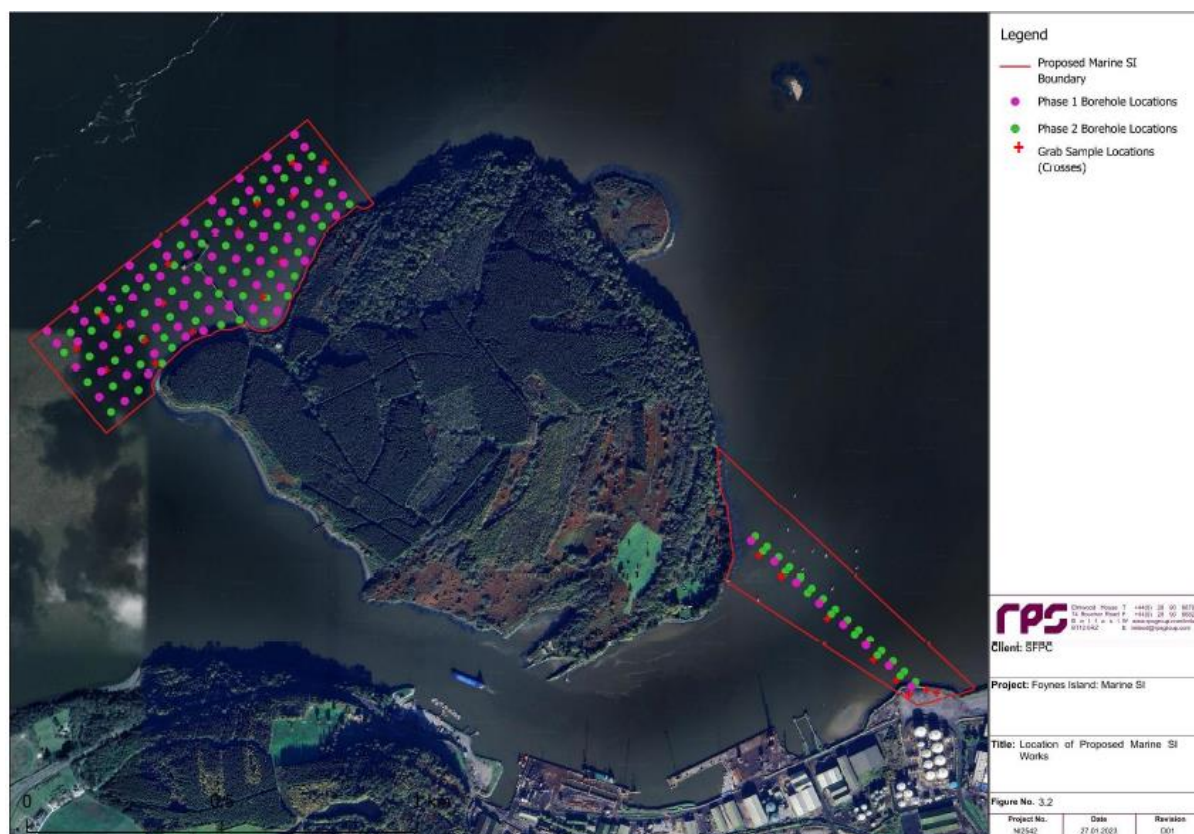


Figure 1: Map showing proposed licence area outlined in red, with proposed borehole sites in pink and green (taken from application documents).

### 2.3 Description of the Proposed Survey Works

A full description of the proposed project and its associated scope of works is presented in Section 3.3 of the Natura Impact Statement (NIS), (RPS, 29 March 2024). A suite of mapping instruments is proposed to be used in this survey (Table 1) along with the drilling of boreholes (a total of 163) and the taking of surface grab samples (16 locations). An intertidal walkover survey, benthic faunal sampling (eight locations) and underwater video surveys (10 locations) are also planned.

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

Survey equipment	Purpose	Frequency	Noise pressure level (dB re 1µPa @ 1m)
<b>Multibeam Echosounder</b>	Collect topographical data of the seabed	200-500 kHz	210-245
<b>Sub-bottom profiling</b> Chirper	Identify geological layers and sediment thickness beneath the seabed	2-13 kHz	185-215

<b>Sidescan sonar</b>	Determine sediment characteristics and seabed features	200-700 kHz	200-240
<b>Magnetometer</b>	Identifies magnetic anomalies, hazard mapping on the seabed	Passive device, no sound emitted	

### 3 European Sites and Qualifying Interests

#### 3.1 Identification of European sites likely to be affected

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 (AA) for these site investigations at Shannon-Foynes Port in Co. Limerick. This Screening for AA report is dated 19 March 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 and possible impact as a result of the proposed maritime usage are given in Table 4 below.

#### 3.2 Description of the Qualifying Interests and Special Conservation Interests affected

The appropriate assessment screening identified Estuaries, Reefs, Freshwater Pearl mussel (*Margaritifera margaritifera*), Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River lamprey (*Lampetra fluviatilis*), Atlantic salmon (*Salmo salar*), Otter (*Lutra lutra*), 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 2019<sup>1</sup>.

In addition, 22 bird species were identified as needing further assessment due to the possibility for those species to be significantly negatively affected by disturbance from above water noise or underwater noise in the case of diving species (Screening for AA Report, 19

<sup>1</sup> [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)

March 2024, Table 4). Seabird species profiles, population trends and species specific threats used in this assessment were taken from the most recent Article 12 assessment produced by the NPWS in 2019<sup>2</sup>.

It should be noted that species marked with an asterisk in Table 4 are additional to those assessed in the MARA AA Screening of 21 March 2024. This is due to the inclusion of a number of additional Bottlenose Dolphin and Harbour Porpoise QI's to SACs in late March 2024, which postdate the MARA AA Screening Report.

### **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. Details of these sites are available on the NPWS website (<https://www.npws.ie/protected-sites>). Conservation objectives are not yet available for the new QI's for existing SAC sites screened in as a result to the updated list of QI species for a number of SAC's published by the NPWS in March 2024. The Conservation objectives used in the assessment of these species comes from the nearest available SAC. For Bottlenose Dolphin, this is the Lower River Shannon SAC. For Harbour Porpoise, this is Blasket Islands SAC for sites on the South and West Coast, and Rockabill and Dalkey Islands SAC on the East Coast. These SAC sites represent two of the three sites with Harbour Porpoise as a QI before March 2024. A similar approach was taken for assessing French sites without Conservation objectives.

Conservation status of a habitat or 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.

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

The overall conservation status for Estuaries and Reefs is Inadequate. In the Irish assessments, Freshwater Pearl mussel and Sea Lamprey have an Inadequate/Bad conservation status, Brook Lamprey has a Favourable conservation status, River lamprey have a Favourable/Unknown conservation status and Atlantic salmon has an Inadequate conservation status. Grey Seal, Bottlenose dolphin, otter and Harbour Porpoise have Favourable conservation status in the Irish assessments. All Irish conservation status values are taken from the latest Article 17 report from the NPWS in 2019<sup>3</sup>.

Grey Seal, Harbour Porpoise and Bottlenose dolphin have a favourable status for the British sites. The Harbour Porpoise and Bottlenose dolphin have a Bad/Unfavourable conservation status for the French assessment.

Under the Birds of Conservation Concern in Ireland Assessment<sup>4</sup>, of the birds that screened in for further assessment six are classified as Amber (medium concern) and eight species classified as Red (high concern).

The most recent Birds Directive [Article 12 report](#)<sup>5</sup> identified trends in seabird species relating to Breeding Population numbers and Breeding Distribution. For the relevant species under consideration in this assessment, declining long-term Breeding distribution trends were seen for the Cormorant.

### 3.4 Pressures and threats to Habitats, 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 for relevant Habitats and Annex II species as assessed for the NPWS 2019 Article 17 report.

	Pressure	Threat
Estuaries [1130]	F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution (H) A28 Agricultural activities generation marine pollution (H) G16 Marine aquaculture generating marine pollution (H) I02 Other invasive alien species (other than species of Union concern) (H) XU Unknown pressure (M)	F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution (H) A28 Agricultural activities generation marine pollution (H) G16 Marine aquaculture generating marine pollution (H) I02 Other invasive alien species (other than species of Union concern) (H)

<sup>3</sup> [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)

<sup>4</sup> [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.)

<sup>5</sup> <https://www.npws.ie/sites/default/files/publications/pdf/IWM114.pdf>



	Pressure	Threat
Reef [1170]	G01 Marine fishing and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (H) G03 Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (H)	G01 Marine fishing and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (H) G03 Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (H)
Freshwater Pearl Mussel[1029]	A31 Drainage for use as agricultural land (H) B27 Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (H) F31 Other modification of hydrological conditions for residential or recreational development (H) A26 Agricultural activities generating diffuse pollution to surface or ground waters (H) B23 Forestry activities generating pollution to surface or ground waters (H) F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) C05 Peat extraction (M) F28 Modification of flooding regimes, flood protection for residential or recreational development (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) F33 Abstraction of ground and surface waters (including marine) for public water supply and recreational use (M)	A31 Drainage for use as agricultural land (H) B27 Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (H) F31 Other modification of hydrological conditions for residential or recreational development (H) A26 Agricultural activities generating diffuse pollution to surface or ground waters (H) B23 Forestry activities generating pollution to surface or ground waters (H) F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) C05 Peat extraction (M) F28 Modification of flooding regimes, flood protection for residential or recreational development (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) F33 Abstraction of ground and surface waters (including marine) for public water supply and recreational use (M)
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) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations (M) Xo Threats and pressures from outside the Member State (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) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations (M) Xo Threats and pressures from outside the Member State (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M)

	Pressure	Threat
Brook Lamprey [1096]	A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) B09 Clear-cutting, removal of all trees (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) F11 Pollution to surface or ground water due to urban runoffs (M) F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water	A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) B09 Clear-cutting, removal of all trees (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) F11 Pollution to surface or ground water due to urban runoffs (M) F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water. N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M)
River Lamprey [1099]	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) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) E03 Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (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) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) E03 Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M)
Salmon [1106]	<b>A26</b> Agricultural activities generating diffuse pollution to surface or ground waters (H) <b>G19</b> Other impacts from marine aquaculture, including infrastructure (H) <b>K05</b> Physical alteration of water bodies (H) <b>J01</b> Mixed source pollution to surface and ground waters (limnic and terrestrial) (H) <b>A25</b> Agricultural activities generating point source pollution to surface or ground waters (M) <b>B23</b> Forestry activities generating pollution to surface or ground waters (M) <b>D02</b> Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) <b>G11</b> Illegal harvesting, collecting and taking (M) <b>G20</b> Abstraction of water, flow diversion, dams and other modifications of hydrological conditions for freshwater aquaculture (M)	<b>A26</b> Agricultural activities generating diffuse pollution to surface or ground waters (H) <b>G19</b> Other impacts from marine aquaculture, including infrastructure (H) <b>K05</b> Physical alteration of water bodies (H) <b>N01</b> Temperature changes (e.g. rise of temperature & extremes) due to climate change (H) <b>A25</b> Agricultural activities generating point source pollution to surface or ground waters (M) <b>B23</b> Forestry activities generating pollution to surface or ground waters (M) <b>F12</b> Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M)

	Pressure	Threat
	<b>L06</b> Interspecific relations (competition, predation, parasitism, pathogens) (M)	<b>F28</b> Modification of flooding regimes, flood protection for residential or recreational development (M) <b>G11</b> Illegal harvesting, collecting and taking (M) <b>I02</b> Other invasive species (other than species of Union concern) (M)
Grey seal[1364], Harbour porpoise [1351] and Bottlenose dolphin [1349]	<b>C09</b> Geotechnical surveying (M) <b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)	<b>C09</b> Geotechnical surveying (M) <b>G01</b> Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)

The most recent Birds Directive [Article 12 report](#) identified the main pressures and threats to Annex I breeding seabirds. Table 3 shows these main threats and their percentage relevance to seabirds.

**Table 3** Pressures and Threats on Annex I bird species as assessed for the NPWS 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>J02</b>	Mixed source marine water pollution (marine and coastal)	29

**Table 4:** Special Areas of Conservation, Special Protected Areas, qualifying interests and conservation objectives identified as requiring further assessment.

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
Lower River Shannon SAC [Site Code IE002165]	Within SAC boundary	Estuaries [1130] Reefs [1170]  <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <i>Lampetra planeri</i> (Brook Lamprey) [1096] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106]  <i>Tursiops truncatus</i> (Common Bottle-nose Dolphin) [1349] <i>Lutra lutra</i> (Otter) [1355]	Physical disturbance Habitat loss Increase suspended sediment concentrations Disturbance from underwater noise and vibration	To maintain favourable conservation condition of habitats and species in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf</a>
Basket Islands SAC [Site code IE002172]	117/ Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351] <i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Grey Seal and Harbour Porpoise in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf</a>
Slyne Head Islands SAC [Site code IE000328]	167/Within Management Unit for Bottlenose Dolphin	<i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] <i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Bottlenose Dolphin and Grey Seal in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000328.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000328.pdf</a>

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
Slyne Head Peninsula SAC [Site code IE002074]	Within Management Unit for Bottlenose Dolphin	<i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Bottlenose Dolphin in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002074.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002074.pdf</a>
West Connacht Coast SAC [Site code IE002998]	Within Management Unit for Bottlenose Dolphin	<i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Bottlenose Dolphin in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002998.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002998.pdf</a> 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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf</a> )
Inishbofin and Inishshark SAC [Site code IE000278]	200	<i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Grey Seal in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000278.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000278.pdf</a>
Duvillaun Islands SAC [Site code IE000495]	245/ Within Management Unit for Bottlenose Dolphin	<i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]* <i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Grey Seal in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000495.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000495.pdf</a> 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 West Connaught Coast SAC are used in their absence

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
				<a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002998.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002998.pdf</a>
Inishkea Islands SAC [Site code IE000507]	250	<i>Halichoerus grypus</i> (Grey Seal) [1364]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Grey Seal in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000507.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000507.pdf</a>
Roaringwater Bay and Islands SAC [Site code IE000101]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Harbour Porpoise in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000101.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000101.pdf</a>
Rockabill to Dalkey SAC [IE003000]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	To maintain favourable conservation condition of Harbour Porpoise in the SAC as per the attributes, measures and targets set out in <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf</a>
Hook Head SAC (Site code: IE000764)	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf</a> )

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
Carnsore Point SAC (Site code: IE002269)	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf</a> )
Blackwater Bank SAC (Site code: 002953)	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf</a> )
Kenmare River SAC [Site code: IE002158]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf</a> )
Lambay Island SAC (Site Code IE000204)	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf</a> )

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
Inishmore Island SAC [Site code IE000213]	Within MU for species	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf</a> )
Kilkieran Bay and Islands SAC [Site code IE002111]	Within MU for species	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf</a> )
Bunduff Lough and Machair/Trawalua/Mullaghmore SAC [000625]	Within MU for species	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf</a> )
Belgica Mound Province SAC [Site code IE002327]	Within MU for species	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]*	Disturbance from underwater noise and vibration	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 ( <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf</a> )



European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
North Anglesey Marine / Gogledd Môn Forol [UK 0030398]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	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	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	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	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	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	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	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	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
Anse de Vauville [FR2502019]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Banc et récifs de Surtainville [FR2502018]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Chausey [FR2500079]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Baie du Mont Saint-Michel [FR2500077]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Estuaire de la Rance [FR5300061]	Within Management Unit for	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
	Harbour porpoise			[Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard [FR5300012]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Cap d'Erquy-Cap Fréhel [FR5300011]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Baie de Saint-Brieuc – Est [FR5300066]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Tregor Goëlo Est [FR5300010]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
Côte de Granit rose-Sept-Iles [FR5300009]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Nord Bretagne DH [FR2502022]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Baie de Morlaix [FR5300015]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Abers - Côte des legends [FR5300017]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
Ouessant-Molène [FR5300018]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
Côtes de Crozon [FR5302006]	Within Management Unit for Harbour porpoise	<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	Disturbance from underwater noise and vibration	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) and Blasket Islands SAC [Site code IE002172] were used - To maintain favourable conservation condition of Bottlenose dolphin and Harbour Porpoise in the SAC.
River Shannon and River Fergus 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]	Visual & above water noise disturbance and disturbance from underwater noise and vibration	To maintain the favourable conservation condition of all listed SCI species at River Shannon and River Fergus Estuaries SPA as defined by the list of attributes and targets available at: <a href="https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004077.pdf">https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004077.pdf</a>

European Site Code	Distance from the Proposed Development (km) or other basis for consideration	List of Qualifying Interests	Potential source of impact	Conservation Objective
		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]		

## 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 to estuarine and reef habitats, potential disturbance to sea, brook and river lamprey, freshwater pearl mussel and Atlantic salmon in Lower River Shannon SAC from increased sedimentation and underwater noise and vibration and visual disturbance, underwater noise and vibration and above water noise for a number of SAC and SPA sites (Table 4) and impacts of accidental events. These disturbances may cause deterioration of habitats, 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 Physical Disturbance to Habitats and Habitat loss

The total affected areas of habitat will be small and represent a small proportion of the total areas of the relevant Annex I habitats within the SAC (Table 5). For mudflats and sandflats and for estuarine habitats, this disturbance does not reflect a permanent loss, as the habitat type will allow for the refilling of the 200mm wide boreholes after the activity has ceased.

However, this is not true of the reef habitat. While the supporting documentation for this SAC outlines the various reef types found throughout the SAC<sup>6</sup>, it is not possible to conclusively identify what particular type of reef is found in the proposed site, nor is this information available from the NIS. Therefore, it is not possible to rule out a permanent loss of some Reef habitat resulting from this activity. Borehole drilling in Reef habitat within the Permitted Marine Usage area cannot be allowed under these circumstances.

**Table 5:** taken from Section 4.3 of the RPS NIS (29 March 2024), showing proposed habitat loss

Annex I Habitat	No. Boreholes Proposed	Total Area of Proposed Boreholes (m <sup>2</sup> )	Total Cumulative Area of Jack-up Rig Footings (m <sup>2</sup> )	Total Area Affected (m <sup>2</sup> )	Total area of Annex I Habitat within SAC (ha)	Percentage of Total Area Affected (%) [Boreholes only]
Estuaries [1130]	108	3.39	432	435.39	24,273	0.00018 [0.00000001]
Mudflats and Sandflats [1140]	36	1.13	144	145.13	8,808	0.00016 [0.000000128]
Reefs [1170]	19	0.60	76	76.6	21,421	0.000036 [0.000000028]

<sup>6</sup>

[https://www.npws.ie/sites/default/files/publications/pdf/002165\\_Lower%20River%20Shannon%20SAC%20Marine%20Supporting%20Doc\\_V1.pdf](https://www.npws.ie/sites/default/files/publications/pdf/002165_Lower%20River%20Shannon%20SAC%20Marine%20Supporting%20Doc_V1.pdf)

#### 4.1.2 Disturbance to Fish species and Freshwater Pearl Mussel

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<sup>7</sup>. Most fish are capable of hearing sound within the frequency range of 50Hz to 200-1,500Hz. It is understood that QI fish species of the Lower River Shannon SAC, including sea lamprey, brook lamprey and river lamprey are, at several stages in their life cycle, vulnerable to the effects of high levels of underwater noise and vibration. 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. Increased sedimentation levels during sampling periods could have a localised, temporary negative impact on migratory fish species such as the Atlantic salmon and lamprey species. 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. However, short-term peaks over a relatively short time scale in an area of high water flow would be of lesser concern. Freshwater pearl mussel (FWPM) could be potentially affected if Atlantic salmon were impacted negatively as this is one of two species who can act as a host for the FWPM larvae in freshwater.

While the proposed activities are in the expected migration route for salmon, as well as two of the three lamprey species listed, the proposed methodology minimises the suspended sediments created, and it is in an environment which is subject to significant sediment transport associated with the tidal action on soft overburdens including sand and mud and significant suspended sediments which are washed down into the estuary from the River Shannon and River Fergus catch. Also, as mobile species, these species generally have the ability to avoid such localised disturbances. The low source levels from the geotechnical works (boring/drilling) means that, even at close ranges, there is little to no auditory risk to fish or their larvae from this activity. 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.

#### 4.1.3 Disturbance due to underwater noise and vibration (marine mammals)

Underwater noise resulting from the proposed survey has the potential to impact grey seal, harbour Seal, bottlenose dolphin and harbour porpoise should they be within the Zone of Influence (Zoi) of the survey during operations. Marine mammals depend on sound for a wide range of 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

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<sup>7</sup> <https://onlinelibrary.wiley.com/doi/full/10.1111/jfb.13948>



be defined as a permanent threshold shift leading to non-reversible auditory injury or as a temporary threshold shift 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. These threshold levels as they relate to varying impact levels on marine mammals have been the focus of a number of research papers and resulted in guidelines being issued<sup>8</sup>.

The NIS found that adverse effects upon QI common bottlenose dolphin, harbour porpoise or grey seal populations associated with the SACs listed in Table 4, as a result of underwater noise and vibrational effects cannot be excluded in the absence of mitigation measures in respect of the proposed geophysical surveys. This concurs with the assessment of MARA, which finds that the possibility of impact on these marine mammals as a result of equipment proposed as per Table 1 of this report cannot be excluded beyond reasonable scientific doubt. In-combination impacts resulting in a higher risk of negative impact are also considered 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 4.2. Therefore, it is recommended that suitable mitigation measures be included in any Maritime Usage Licence relating to this proposed maritime usage activity to rule out possible negative impacts on marine mammals due to underwater noise.

#### 4.1.4 Disturbance due to underwater noise and vibration (birds)

Diving birds such as Cormorant 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 noise. There is a low likelihood of interaction between the sound source and diving birds due to the relatively short exposure time when they dive, 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.

#### 4.1.5 Disturbance due to above water noise

Temporary displacement from boat activity and above water noise can be expected for bird species also. In the intertidal, disturbance is also possible to breeding and feeding birds due to noise and activity disturbance. This is unlikely to be significant, due to the temporary nature of the disturbance.

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<sup>8</sup> [https://sea-inc.net/wp-content/uploads/2019/10/Southall-et-al\\_2019\\_MM-Noise-criteria-update-with-errata\\_Aq-Mammals.pdf](https://sea-inc.net/wp-content/uploads/2019/10/Southall-et-al_2019_MM-Noise-criteria-update-with-errata_Aq-Mammals.pdf)  
[https://www.npws.ie/sites/default/files/general/Underwater%20sound%20guidance\\_Jan%202014.pdf](https://www.npws.ie/sites/default/files/general/Underwater%20sound%20guidance_Jan%202014.pdf)  
<https://data.jncc.gov.uk/data/e2a46de5-43d4-43f0-b296-c62134397ce4/jncc-guidelines-seismicsurvey-aug2017-web.pdf>

While it is acknowledged that the species that 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 an additional vessels in a busy port 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 4.2. However, given the short duration of the proposed site investigations, the significance of effects on birds in the environment from the proposed site investigations, including due to visual or above water noise disturbance, will be temporary and therefore, will not be significant and no further mitigation is required.

Above water noise also has the possibility to be disturbing to otter. However, given the crepuscular nature of this species' activities and the fact that the proposed maritime usage activities will occur during daytime, is not considered significant and therefore no mitigation is required.

#### 4.1.6 Disturbance due to accidental incidents

It is proposed to carry out seabed surveys in estuarine areas. The use of small craft or 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 a 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 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.

#### 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 definition of the CESS is based on acoustic survey equipment effective deterrence ranges as per JNCC Guidance on Assessing the Significance of Noise Disturbance

against Harbour Porpoise<sup>9</sup>. The CESS was defined at Appropriate Assessment screening stage as 5km, based on acoustic survey equipment effective deterrence ranges<sup>10</sup>.

### Defining the Cumulative Effects Temporal Scope (CETS)

The temporal scope for examination of cumulative effects has been defined considering the period over which the proposed maritime usage would take place. For this project, this is seven years, the requested Marine Usage period. Therefore, the Cumulative Effects Temporal Scope (CETS) is 7 years.

### Impact identification

The impacts identified are:

- Physical disturbance and habitat loss
- Increased sedimentation
- Disturbance from underwater noise and vibration
- Visual and above water noise disturbance

### 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.
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.
Increased sedimentation	Pathway possible via sediment moving downstream with impacts possible within CESS where there is temporal overlap with other sediment producing projects (either above or downstream of this project).

### Prediction:

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

#### *Disturbance from underwater noise*

<sup>9</sup> JNCC Guidance on Assessing the Significance of Noise Disturbance against Harbour Porpoise SACs Conservation Objectives (<https://data.jncc.gov.uk/data/2e60a9a0-4366-4971-9327-2bc409e09784/JNCC-Report-654-FINAL-WEB.pdf>)

<sup>10</sup> Effective Deterrence Range – the radius of a circular area assumed to be disturbed.

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.

*Physical disturbance and habitat loss*

There is the potential for increased physical disturbance and habitat loss within the SAC if similar activities within other projects were to take place during the CETS period.

*Increased sedimentation*

There is the potential for increased sedimentation within CESS where there is temporal overlap with other sediment producing projects (either above or downstream of this project).

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 9 September 2024, the projects in Table 6 were identified as potential in-combination projects.

**Table 6:** Projects identified with the potential to cause in-combination effects with the project being assessed.

Relevant Authority	Application reference no.	Project	Approximate Distance from MUL Area	Project Status	Cumulative Effects
Foreshore Unit, DHLGH	FS005110	Foreshore licence for (now derelict) oil discharging jetty	0km	99 year lease, due to lapse in 2064. Site is derelict.	Spatial overlap with Shannon Foynes Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
Local Authority	18301561	Capacity Extension at Foynes Port	0km	Approved but not completed - permission granted 12/12/18	Spatial overlap with Shannon Foynes Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.

Local Authority	2360011	Shannon Foynes Port Development	0km	Proposed – permission submitted January 2023	Spatial overlap with Shannon Foynes Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
Local Authority	22742	Shannon Foynes Port Development	0km	Proposed – permission submitted July 2022	Spatial overlap with Shannon Foynes Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
Foreshore Unit, DHLGH	FS006975	Shannon Foynes Port Company maintenance dredging	0km	Approved but not completed - permission granted 03/03/2023	Spatial overlap with Shannon Foynes Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
EPA	S0009-03	Shannon Foynes Port Company Dumping at Sea Permit	0km	Approved but not completed - permission granted 21/12/2020	Spatial overlap with Shannon Foynes Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
MARA	MAC20230032	Net Zero Energy	4km	Proposed – submitted 12/07/2024	Within the CESS. Possible temporal overlap.
MARA	MAC20230010	Uisce Éireann	1km	Proposed – submitted 05/07/2024	Within the CESS. Possible temporal overlap.
MARA	LIC230004	Aughinish Alumina Maintenance Dredging	3.5km	Proposed – MUL licence submitted 30/11/23	Within the CESS. Possible temporal overlap.
EPA		Aughinish Alumina Dumping at sea permit	3.5km	Proposed – covers same area as submission to MARA on 30/11/23	Within the CESS. Possible temporal overlap.
Local Authority	PA91.312146 and 318302	Aughinish Alumina Bauxite Extension	3.5km	Approved - permission granted 31/08/22	Within the CESS. Possible temporal overlap.

#### Cumulative Effects Assessment conclusion

Based on insufficient clarity when projects will be carried out and using the precautionary principle the above projects are considered to have potential in-combination effects should there be temporal 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)

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 6 and the relevant plans listed. Therefore, it is recommended that suitable mitigation measure be included in a Maritime Usage Licence relating this proposed maritime activity for the possibility of likely significant 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 on the qualifying interests from the British and French protected sites.

#### **4.4 Public consultation**

A 30-day public consultation was undertaken commencing on 11 May 2024, with the public invited to make observations. In addition to the public consultation, observations were invited from relevant public bodies. No submissions were received.

#### **4.5 Mitigation Measures**

Mitigation measures for those impacts identified in Section 4.1 *Assessment of Likely/Possible Significant Impacts on European Sites and their conservation interests* are detailed below.

##### **4.5.1 Physical Disturbance to Habitats and Habitat loss**

Due to the potential impacts of borehole drilling on reef habitats, which include permanent habitat loss, no borehole drilling should take place on reef habitats within the Permitted Maritime Usage Area. This is to ensure the protection of the Reef habitat which is a Qualifying Interest of the Lower River Shannon Special Area of Conservation. It is recommended a condition be included in any maritime usage licence that may be granted as follows:

No borehole activity shall take place in Reef habitat (EU Annex 1 habitat code 1170). All borehole activity shall be undertaken under the direct supervision of a suitably qualified

person or persons with appropriate geophysical and/or benthic ecology experience in identifying Reef habitat, who shall be present on the survey vessel/drill rig during borehole activity and who shall be empowered to halt such borehole activity where necessary to protect Reef habitat.

#### 4.5.2 Disturbance to Fish species and Freshwater Pearl Mussel

No mitigation is required for fish species or freshwater pearl mussels relating to survey disturbance in the proposed Maritime Usage Area.

#### 4.5.3 Disturbance due to underwater noise and vibration (marine mammals)

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

- i. 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.
- ii. The Holder shall implement risk control and mitigation measures for marine mammals in strict accordance with National Parks and Wildlife guidance.
- iii. The Holder, upon completion of the Permitted Maritime Activity, shall forward all reporting to [offshore@npws.gov.ie](mailto:offshore@npws.gov.ie) and [compliance@mara.gov.ie](mailto:compliance@mara.gov.ie).

#### 4.5.4 Disturbance due to underwater noise and vibration (birds)

No mitigation is required for birds relating to survey disturbance due to underwater noise and vibration in the proposed Maritime Usage Area.

#### 4.5.5 Disturbance due to above water noise

No mitigation is required for birds or otter relating to survey disturbance due to above water noise in the proposed Maritime Usage Area.

#### 4.5.6 Disturbance due to accidental incidents

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

##### Accidental events

The Holder shall ensure that there is an oil pollution emergency plan on-board any survey vessels. This plan should specify:

- i. Information on the location and detail of spill response resources on-board;
- ii. Information on crew training in relation to oil pollution response;
- iii. How 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:

##### In-combination effects

- i. Prior to the commencement of the Permitted Maritime Usage, the Holder shall coordinate with other authorisation holders carrying out geophysical, seismic and geotechnical activities within a 10 km radius of the site boundary.
- ii. Where a vessel-to-vessel distance of greater than 10 km cannot be maintained with respect to geophysical, seismic and geotechnical activities, the Holder shall co-ordinate with other authorisation holders to prevent temporal overlap of the activities. Where the Holder can submit evidence that there is a vessel-to-vessel distance of greater than 10 km, no temporal co-ordination of activities is required.
- iii. Where the Holder becomes aware of temporal overlap that cannot be resolved within the prescribed distance, the Holder shall notify the Grantor who shall determine the timing of activities.
- iv. Records of all engagements held and agreements reached, if any, shall be maintained by the Holder and made available to the Grantor if requested.

To ensure appropriate records of the above mitigation measures are maintained, it is also recommended a condition be included in any maritime usage licence that may be granted as follows:

The Holder shall keep the following documents together and available for inspection by the Grantor:

- i. a copy of the licence related to this Permitted Maritime Usage;
- ii. all correspondence with the Grantor;
- iii. up to date drawings, plans and maps relating to the Permitted Maritime Usage;
- iv. documents and photographs and other relevant records relating to the Permitted Maritime Usage to provide evidence of compliance with licence conditions;
- v. marine positional log; and,
- vi. any elements of the licence application and associated documentation referenced in this licence.




## 5 Appropriate Assessment Conclusion

The applicant provided a Natura Impact Statement 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.

The Appropriate Assessment Screening process identified likely/possible significant impacts due to disturbance from habitat loss, underwater noise and vibration from borehole drilling and geophysical surveys on habitats and Annex II marine mammal species, as well as accidental incidents. These likely significant impacts could not be ruled out, beyond reasonable scientific doubt, without mitigation.

The potential direct and indirect effects of habitat loss and underwater noise and vibration disturbance from borehole drilling and geophysical surveys were identified as having the potential to cause in-combination impacts, as well as accidental incidents 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 the mitigation measures specified in section 4.5 Mitigation Measures, and in view of best scientific knowledge, and of the sites' conservation objectives, I find that the project, individually, or in-combination with other plans or projects, will not have adverse effects on European sites.

Signature and Date of Recommending Marine Advisor	 Senior Marine Advisor Assessment, Research and Data Unit 18 September 2024
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## 6 Appropriate Assessment Determination

Having considered this report, the documents submitted by Shannon Foynes Port Company, 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 site investigation works at Shannon Foynes* (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 specified in section 4.5 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 data-bbox="683 481 1252 560">Director of Assessment, Research and Data 18 September 2024</p>
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