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MERC Consultants
environmental and conservation services

Assessment of Impact on the Maritime Usage

Uisce Éireann South East Coast Strategic Model

MERC Consultants Ltd, [redacted].
www.mercenvironmental.ie

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Contents

1. Introduction

Uisce Éireann wish to conduct a strategic modelling study of water currents and bathymetry along the South East coast of Ireland. The study requires the deployment of up to nine static Acoustic Doppler Current Profilers (ADCPs) at separate locations within the study area. Ancillary instruments, to collect salinity and temperature data, may also be contained within the trawl resistant frames in which the ADCPs will be deployed. Boat based ADCP surveys and a bathymetric survey (multibeam and single beam) are also required.

The proposed project is located off the South East coast between Dungarvan, Co. Waterford and Greystones, Co. Wicklow (Figure 1).

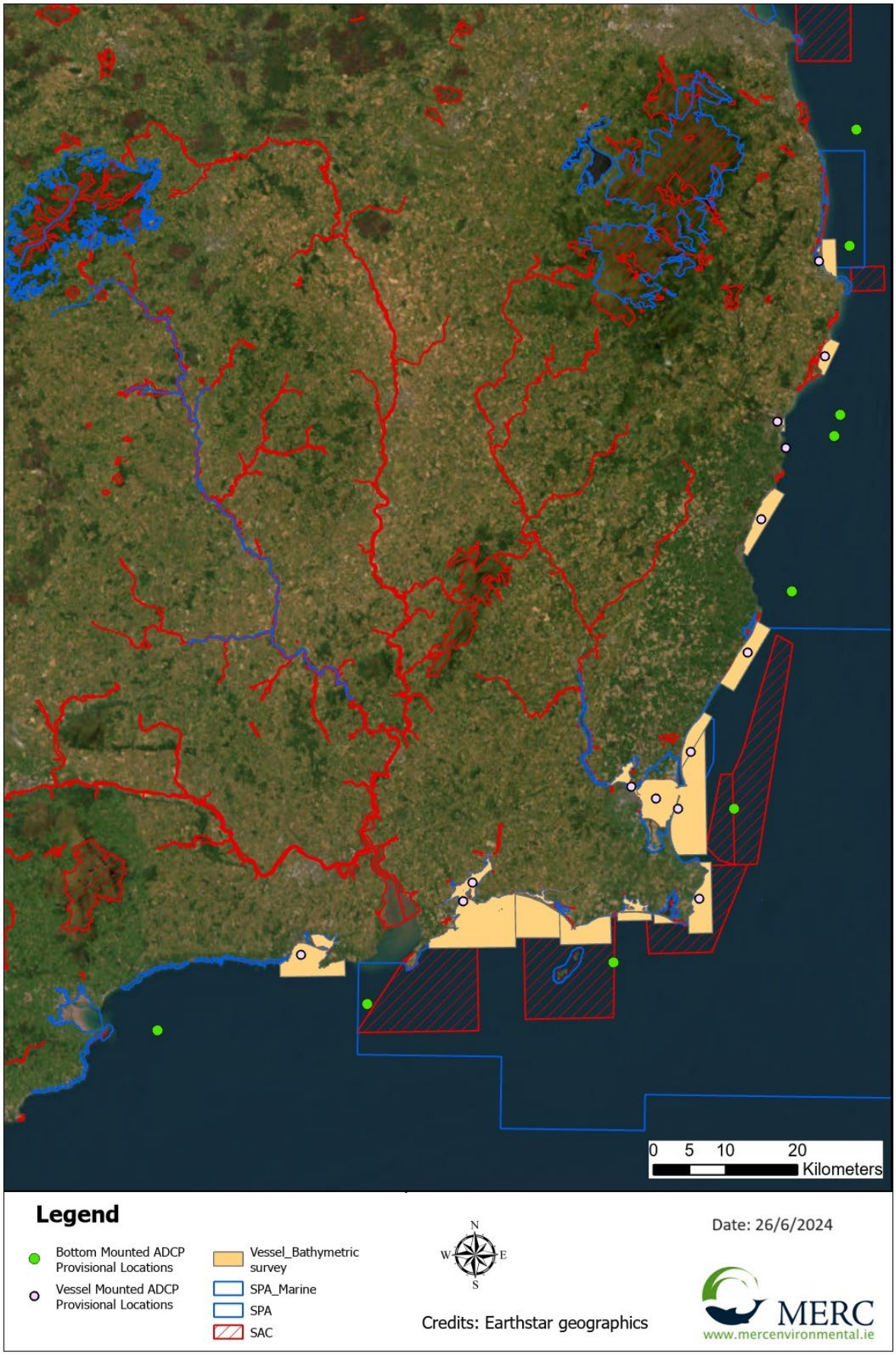

Figure 1. Overview of proposed project site.

1.2 Objectives of this report

To allow the Competent Authority to fully assess all potential impacts of the proposed maritime usage, this Assessment of Impact on the Maritime Usage (AIMU) report has examined the potential for project related impacts on the environment including the following elements:

- Assessment of impact on the environment with respect to the EIA Directive
- Assessment of conformity relative to the key objectives of the Water Framework Directive (WFD)
- Assessment of conformity relative to the key objectives of the Marine Strategy Framework Directive (MSFD)
- Assessment of consistency with the National Marine Planning Framework (NMPF)

2. Statement of Authority

This report was prepared by MERC Consultants. MERC are a specialist marine ecological survey and consultancy firm. Core staff have more than 60 years of combined experience and specialist knowledge in relation to Irish aquatic habitats and species in addition to the assessment and management of conservation interests. MERC were responsible for preparing the NPWS national monitoring of marine Annex I habitats for compliance under Article 17 of the EU Habitats Directive. In this context MERC were responsible for the assessment and reporting of marine Annex I habitats in Ireland and were the authors of all Article 17 reports and overarching site monitoring reports.

In addition to their scientific expertise MERC have an in-depth knowledge of Irish and European Environmental legislation and policy. In 2011 MERC prepared the text describing Activities Requiring Consent (ARCs) for inclusion in a handbook detailing the regulatory framework for all developments within designated sites in Ireland on behalf of the National Parks and Wildlife Service. They have also produced numerous Conservation Management Plans for the same department. To-date MERC have conducted in excess of 200 ecological reports in support of Appropriate Assessment under Article 6(3) of the EU Habitats Directive.

3. Details of the Proposed Project

The project consists of the deployment of up to nine (9) bottom deployed ADCPs. Ancillary instruments, to collect salinity and temperature data, may also be contained within the trawl resistant frames in which the ADCPs will be deployed. The project also includes vessel based assessment of water currents and bathymetry using a combination of vessel based ADCP's, single-beam and multibeam surveys, and potentially, the deployment of tidal gauges. See Table 1 for all survey and deployment locations.

A description of the proposed survey equipment is summarised in Table 1 and described below.

4.2.1 Multibeam echosounder

A multibeam echosounder (MBES) is a type of sonar frequently used to map bathymetry. It operates by emitting an acoustic wave in a fan shape beneath the point of its transceiver attached the hull of the vessel or more typically mounted on a tow-fish. The time it takes for the sound waves to bounce off the seabed and return to the transceiver is used to calculate the water depth within the arc of the fan. A typical multibeam echo sounder operates at a sound pressure level of between 200-220 dB re 1µPa at 1m with a peak frequency between 300-500 kHz (300,000-500,000 Hz).

4.2.2 Single-beam sonar

Single-beam sonar (SBS) operates in a similar way to multibeam but with a narrower band width in the regions of a 2–15-degree beam. They are typically used in shallow waters for smaller areas where the time required to achieve 100% insonification with a multibeam sonar is considered unnecessary depending on the purpose the bathymetry is being gathered for.

4.2.3 Vessel mounted and static Acoustic Doppler Current Profiler ADCP) surveys

An Acoustic Doppler Current Profiler (ADCP) is a hydroacoustic current meter that measures water current velocities over a depth range using the Doppler effect of sound waves scattered back from particles within the water column. It is proposed that nine ADCDs are deployed on the seabed as shown in Figure 1. Due to the shallow depth in some areas additional vessel mounted ADCP surveys are proposed as part of the current programme of works. Vessel mounted (VM) ADCPs work on the same principle as the fixed ADCPs but obtain less data. VMADCP measurements would be taken every half-hour and averaged over 13 hours of a mean spring and mean neap tidal cycle.

4.2.4 Tidal gauges

Tidal gauges are used to gather precise tidal height data for discrete fixed points. The resulting data can then be extrapolated to a wider area. For the proposed projects it is proposed that the tidal gauge would be mounted on either a galvanized steel pole to the side of a suitable pier or other permanent fixed structure. Installation would take place on a very low tide so that the mountings can be attached as low as possible down the pier wall to ensure the sensor is below chart datum.

4.2.5 Ancillary data collection

Additional ancillary data may be collected. This may include the collection of water samples, and data on temperature & Conductivity/Salinity collected through the deployment of a small overboard conductivity, temperature, and depth (CTD) meter.

4.2.6 Vessel

To facilitate the multibeam and single beam surveys (should they be required) and the collection of ancillary data (e.g. CTD data, deployment of tidal gauges) a shallow draft vessel approximately 16m in length will be contracted. An appropriate vessel of this size would typically operate with an inboard diesel engine within a capacity of up to 400hp/300 kW.

Table 1. Proposed survey equipment

Element	Method	Frequency	Location
Fixed ADCP	Fixed ADCP surveys will be conducted using a Nortek AWAC 600 Khz or 1 Mhz unit (or equivalent) deployed on seabed mounted frames. ADCP frames will be equipped with a recovery line attached to a small rigid buoy that is held in place by an acoustic release, which releases the buoy once triggered by a deck unit. Housed within the frame is the battery canister(s) for the ADCP along with lead ballast to prevent movement on the seabed in high energy tidal and wave environments. An acoustic pinger is mounted on the frame to aid in the recovery of the frame in the event of the acoustic release not firing.	32 days. A sampling rate of 1-minute average every 10 minutes for each ADCP sensor is required.	Indicative locations provided in figure 1
Vessel Based ADCP	The Vessel mounted ADCP (VMADCP) surveys will be conducted using a TRDI WH Monitor 600kHz ADCP (or similar) to an aluminium pole that will be mounted to the side of the vessel ensuring the ADCP is deployed below the surface of the water. Measurements will be taken periodically at set stations as part of a transect with is repeatedly transversed over a tidal cycle, or taken continuously as the vessel remains on station over a tidal cycle.	13 hours of surveying on 1no spring and 1no neap tide. A sampling rate of a minimum of 1-minute average every 10 minutes for each ADCP	Within MUL Area (figure 1); limited to marine navigable areas
Water Sampling	Water sampling will be undertaken concurrently with the VMADCP surveys. Periodically samples will be taken from the surface layer of the water column via bucket and telescopic arm, and collected and stored for subsequent analyses	Periodically over 13 hours of surveying on 1no spring and 1no neap tide	Within MUL Area (Figure 1); limited to marine navigable areas
Conductivity, Temperature and depth (CTD) and Dissolved Oxygen (DO) Monitoring	Concurrently with the VMADCP surveys CTD and DO surveys will take place from the vessel. This will involve deploying a Sonde at set intervals for the duration of the tidal survey at each VMADCP location. The sonde will be lowered to just below the surface of the water from the vessel, the sonde will be allowed to settle at the surface of the water before being lowered to the seabed, where the instrument will be lifted from the seabed and allow the values returned to the hand-held device to settle. Once the values from the sonde have settled it will be slowly lifted back to the sea surface and back onboard the vessel.	Periodically over 13 hours of surveying on 1no spring and 1no neap tide	Within MUL Area (figure 1); limited to marine navigable areas
Bathymetry	Surveying of bathymetry may require a combination of methods including Multibeam Echosounders and single beam.	n/a	Within Wicklow and Courtown Harbours

Tide Gauge	The inshore tide gauge will be mounted on either a galvanized steel pole to the side of a suitable pier or other permanent fixed structure. Installation will take place on a very low tide so mountings can be attached as low as possible down the pier wall to ensure the sensor is below chart datum.	Installed for a minimum of 3 months, coinciding with all other sampling	Within MUL Area
Vessel details	A small survey vessel, likely to be no larger than 16m length, 6m beam and 2m draught will be used.		

4. Methods

A report containing Supporting Information for Screening for Appropriate Assessment (MERC, 2024a), Natura Impact Statement (MERC, 2024b) and Annex IV Risk Assessment (IWDG, 2024) have also been prepared to support this licence application. These reports were consulted during the preparation of this AIMU report.

This AIMU report has been prepared with reference to the following European Directives, national legislation and guidance on the provisions of, *inter alia*, the Environmental Impact Assessment Directive.

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna. Official Journal of the European Communities.
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version).
- European Communities (Birds and Natural Habitats) Regulations 2011. SI No. 477 of 2011.
- Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Commission Notice C(2018) 7621 final, Brussels, 21.11.2018.
- Assessment of plans and projects in relation to Natura 2000 sites-Methodological Guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC 2021/C 437/01-Publication office of the EU (europa.eu).
- Appropriate Assessment Screening for Development Management. OPR Practice Note PN01. Office of the Planning Regulator. March 2021.
- Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Department of Arts, Heritage and the Gaeltacht, 2014.
- JNCC. 2023. JNCC guidance for the use of Passive Acoustic Monitoring in UK waters for minimising the risk of injury to marine mammals from offshore activities. JNCC, Peterborough.

A review of the baseline data was carried out by referring to the following reports and datasets:

- Department of Housing, Local Government and Heritage. National monuments service, wreck viewer.
- Integrated Mapping for the Sustainable Development of Ireland's Marine Resource (INFOMAR) 2024. Bathymetry, backscatter, sediment samples and sediment classification layers.
- Marine Institute (2022). Ireland's Marine Atlas: Fishing activity and Fish Species Distribution Layers
- Irish Ramsar Wetlands Committee. Ramsar sites Ireland.
- NPWS Designations viewer (SACs, SPAs, NHAs and pNHAs)
- Biodiversity Data Centre Maps: Habitats and Species.
- MERC (2024a). Supporting Information for Screening for Appropriate Assessment: Uisce Éireann South East Coast Strategic Model.
- MERC (2024b). Natura Impact Statement: Uisce Éireann South East Coast Strategic Model.
- IWDG (2024). EU Habitats Directive: Annex IV Risk Assessment: Uisce Éireann South East Coast Strategic Model.

5. Environmental Report (EIA Directive: not of a class)

5.1 Background

The objective of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the Environmental Impact Assessment, or EIA, Directive) is to ensure that projects that are likely to have a significant effect on the environment are adequately assessed before they are approved. An EIA is required for all projects detailed in Annex I of the EIA Directive and for all projects detailed in Annex II where the proposed project is likely to have significant effects on the environment. The proposed project does not fall within the classes defined under Annex I or Annex II of the EIA Directive. Therefore, it is not subject to the provisions of the EIA Directive.

Notwithstanding the fact that the proposed project is not subject to mandatory EIA, this AIMU has assessed the project relative to its potential to impact the receiving environment by virtue, *inter alia*, of its nature, size and location.

As such the following elements have been assessed and an analysis of the assessment is given in table 3 of this report:

- Land & Soils
- Water
- Biodiversity
- Fisheries and Aquaculture
- Air Quality
- Noise & Vibration
- Landscape/Seascape
- Traffic & Transport (including navigation)
- Cultural Heritage (including underwater archaeology
- Population & Human Health
- Major Accidents & Disasters
- Climate
- Waste
- Material Assets
- Interactions

5.2 Assessment of Impact

The Zone of Influence (ZoI) of the proposed project was established in the preparation of the SISAA (MERC, 2024a).

No direct or indirect pathway to freshwater, coastal or terrestrial habitats was established. For this reason the baseline of the receiving environment is focused solely on marine habitats, and species including marine mammals and avifauna that utilise the marine environment.

6. Environmental Report

Table 2 below provides a summary of the environmental baseline and an assessment of the potential for impact on the environment.

Table 2. Environmental baseline and assessment of impact

Environmental baseline
European sites (SAC's and SPA's)
The proposed licence areas overlap with the following European sites: • Tramore Dunes and Backstrand SAC (000671) • Hook Head SAC (000764) • Bannow Bay SAC (000697) • Saltee Islands SAC (000707) • Carnsore Point SAC (002269) • Slaney River Valley SAC (000781) • Raven Point Nature Reserve SAC (000710) • Blackwater Bank SAC (002953) • Seas off Wexford SPA (004237) • Tramore Back Strand SPA (004027) • Bannow Bay SPA (004033) Keeragh Islands SPA (004118) • Ballyteigue Burrow SPA (004020) • Lady's Island Lake SPA (004009) • Wexford Harbour and Slobs SPA (004076) • The Raven SPA (004019) • The Murrough SPA (004186) The Zone of Influence (ZoI) of the proposed project was established in the preparation of SISAA (MERC, 2024a). This analysis, using a source-path receptor model, demonstrated that the ZoI was limited to the area of the vessel operations, to include the area of ensonification resulting from the deployment of acoustic instruments. The ZoI was expanded to include marine and coastal sites within a 20km buffer zone surrounding the proposed project site and additional sites designated for mobile species as follows: • All SACs designated for Annex II cetaceans that overlapped with the survey area. • All SACs designated for Grey seal and Harbour seal within foraging range of the survey area. • SACs designated for Annex II fish species within 20km of the outer boundary of the proposed project areas • SPAs designated for Annex I deeper diving breeding seabirds and wintering water birds with the potential to forage within the survey area. The bathymetry and predominant habitat types in the area, including within the licence area, is known from Infomar data. Additional data sources include NPWS marine community mapping for areas within European sites designated for marine Annex I habitats and from Water Framework Directive data for transitional and coastal water bodies (i.e. Lower Slaney Estuary, Tramore Back Strand, Tramore Bay, Eastern Celtic Sea, Southwestern Irish Sea, Southwestern Irish Sea - Brittas Bay, Southwestern Irish Sea - Killiney Bay). The marine qualifying interests for the Special Areas of Conservation (SACs) where an overlap with the licence area occurs are as follows:

Tramore Dunes and Back strand SAC

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

Hook Head SAC

- Large shallow inlets and bays [1160]
- Reefs [1170]
- Tursiops truncatus (Common Bottlenose Dolphin) [1349]
- Phocoena phocoena (Harbour Porpoise) [1351]

Bannow Bay SAC

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

Ballyteigure Burrow SAC

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140]

Saltee Islands SAC

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Large Shallow inlets and Bays [1160]
- *Halichoerus grypus* (Grey Seal) [1364]

Carnsore point SAC

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Reefs [1170]
- *Phocoena phocoena* (Harbour Porpoise) [1351]

Slaney River Valley SAC

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140]
- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Alosa fallax fallax* (Twaite Shad) [1103]
- *Salmo salar* (Salmon) [1106]
- *Lutra lutra* (Otter) [1355]
- *Phoca vitulina* (Harbour Seal) [1365]

Raven Point Nature Reserve SAC

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

Long Bank SAC

- Sandbanks which are slightly covered by sea water all the time [1110]

Blackwater Bank SAC

- Sandbanks which are slightly covered by sea water all the time [1110]
- *Phocoena Phocoena* Harbour Porpoise [1351]

The Special Conservation Interests (SCIs) for Special Protection Areas (SPAs) where an overlap with the licence area occurs are as follows:

Seas off Wexford SPA

- Mediterranean Gull (*Larus melanocephalus*) [A176]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Lesser Black-backed Gull (*Larus fuscus*) [A183]
- Herring Gull (*Larus argentatus*) [A184]
- Kittiwake (*Rissa tridactyla*) [A188]
- Guillemot (*Uria aalge*) [A199]
- Sandwich Tern (*Sterna sandvicensis*) [A191]
- Roseate Tern (*Sterna dougallii*) [A192]
- Common Tern (*Sterna hirundo*) [A193]
- Arctic Tern (*Sterna paradisaea*) [A194]
- Little Tern (*Sterna albifrons*) [A195]

- Red-throated Diver (*Gavia stellata*) [A001]
- Fulmar (*Fulmarus glacialis*) [A009]
- Manx Shearwater (*Puffinus puffinus*) [A013]
- Gannet (*Morus bassanus*) [A016]
- Cormorant (*Phalacrocorax carbo*) [A017]
- Shag (*Phalacrocorax aristotelis*) [A018]
- Common Scoter (*Melanitta nigra*) [A065]
- Razorbill (*Alca torda*) [A200]
- Puffin (*Fratercula arctica*) [A204]

Tramore Back Strand SPA

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Wetland and Waterbirds [A999]

Bannow Bay SPA

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

Keeragh Islands SPA

- Cormorant (*Phalacrocorax carbo*) [A017]

Ballyteigure Burrow SPA

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Shelduck (*Tadorna tadorna*) [A048]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Wetland and Waterbirds [A999]

Tacumshin Lake SPA

- Little Grebe (*Tachybaptus ruficollis*) [A004]
- Bewick's Swan (*Cygnus columbianus bewickii*) [A037]
- Whooper Swan (*Cygnus cygnus*) [A038]
- Wigeon (*Anas penelope*) [A050]
- Gadwall (*Anas strepera*) [A051]
- Teal (*Anas crecca)* [A052]
- Pintail (*Anas acuta*) [A054]
- Shoveler (*Anas clypeata*) [A056]

- Tufted Duck (*Aythya fuligula*) [A061]
- Coot (*Fulica atra*) [A125]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Wetland and Waterbirds [A999

Wexford Harbour and Slobs SPA

- Little Grebe (*Tachybaptus ruficollis*) [A004]
- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Cormorant (*Phalacrocorax carbo*) [A017]
- Grey Heron (*Ardea cinerea*) [A028]
- Bewick's Swan (*Cygnus columbianus bewickii*) [A037]
- Whooper Swan (*Cygnus cygnus*) [A038]
- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Mallard (*Anas platyrhynchos*) [A053]
- Pintail (*Anas acuta*) [A054]
- Scaup (*Aythya marila*) [A062]
- Goldeneye (*Bucephala clangula*) [A067]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Hen Harrier (*Circus cyaneus*) [A082]
- Coot (*Fulica atra*) [A125]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Knot (*Calidris canutus*) [A143]
- Sanderling (*Calidris alba*) [A144]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179[
- Lesser Black-backed Gull (*Larus fuscus*) [A183]
- Little Tern (*Sterna albifrons*) [A195]
- Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]
- Wetland and Waterbirds [A999]

The Raven SPA

- Red-throated Diver (*Gavia stellata*) [A001]
- Cormorant (*Phalacrocorax carbo*) [A017]
- Common Scoter (*Melanitta nigra*) [A065]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Sanderling (*Calidris alba*) [A144]
- Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]
- Wetland and Waterbirds [A999]

The Murrough SPA

- Red-throated Diver (*Gavia stellata*) [A001]
- Greylag Goose (*Anser anser*) [A043]
- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Wigeon (*Anas penelope*) [A050]

- Teal (*Anas crecca*) [A052]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Herring Gull (*Larus argentatus*) [A184]
- Little Tern (*Sterna albifrons*) [A195]
- Wetland and Waterbirds [A999]

The SISAA did not record the potential for impact on any Annex I habitats associated with any European Site/s.

The SISAA has indicated that there was potential for impacts on a number of European sites designated for Bottlenose dolphin, Harbour porpoise, Harbour seal and Grey seal.

The SISAA concluded there was potential for impact on wintering waterbirds associated with SPAs where a spatial overlap with the proposed project occurred.

Records are also present for a number of Annex IV species within the survey area and its environs. A separate Annex IV risk assessment has been prepared (IWDG, 2024). This report indicated that there was potential for impacts on the Annex IV cetacean species (Bottlenose Dolphin, Common Dolphin and Harbour porpoise).

The Annex IV risk Assessment and Natura Impact Statement (MERC 2024b) recommended mitigation to address the potential impacts identified and this mitigation is also detailed in section 7 of this report.

Additional designations (NHAs, pNHAs, Ramsar sites)

There is a spatial overlap between the proposed project site and Kerragh Islands NHA.

Several pNHAs are present within the proposed project location. These include:

- Wexford slobs and Harbour pNHA
- St Helen's Burrow pNHA
- Tacumshin Lake pNHA
- Ballyteigue Burrow pNHA
- Bannow Bay pNHA
- Hook Head pNHA
- Tramore Dunes and Back Strand pNHA

The SISAA considered the SPAs and SACs that overlap with these pNHAs. As such, habitats and species which form QI's or SCIs for the relevant Natura sites have been considered and mitigation proposed, as required, in the NIS and detailed in section 7 of this report. As no additional features are recorded within any of these pNHAs, that would be considered sensitive receptors to the proposed project, no potential for impact is considered possible.

The following Ramsar sites have a spatial overlap with the proposed project site:

- The Raven Ramsar site
- Bannow Bay Ramsar site
- Tramore Back Strand Ramsar site

The intertidal flats of these Ramsar site provides important feeding sites for birds.

The SISAA considered the SPAs that overlap with these Ramsar sites and concluded that without mitigation there was potential for impact on these sites. As such, a separate NIS for the project was prepared. The mitigation proposed and is detailed in section 7 of this report.

Assessment of potential for impact
Population and Human Health
All acoustic surveys will be fully marine. Minor inconvenience may be encountered by fishing vessel operators during survey activities, but this will be temporary and for a short time period. There is no potential for pollution. No on-site vessel fuelling will take place and there is no further use of hydrocarbons associated with the proposed project. As such the project does not have the potential to lead to accidental hydrocarbon spills. The survey is required for modelling purposes to inform the future design and installation of wastewater treatment which will in time provide positive benefits to the human health of the general public residing in this area.
Biodiversity
Benthic habitats Infomar survey mapping indicates that a mosaic of different sediment types are recorded for this area. These include shallow sublittoral sand, shallow sublittoral mixed sediment, shallow sublittoral coarse sediment, shallow sublittoral mud and shallow sublittoral rock and biogenic reef (note infomar does not distinguish between geogenic and biogenic reef habitats). Within the SAC areas, finer scale mapping, to support the setting of Conservation Objectives, is available. This mapping shows a range of soft sediment benthic communities, geogenic and biogenic reef habitats. Many of the sediment communities described for the area are typical of exposed sublittoral communities. The geogenic reef habitats (particularly on the area of Hook Head SAC) support a diverse community dominated by epibenthic species and kelp. While these reef communities are also characteristic of exposed sites, they are vulnerable to physical impact and abrasion. However, as documented in the SISAA, the proposed project will have limited interaction with the seabed and no interaction with reef habitats therefore no potential for impact is considered possible. **Coastal and terrestrial habitats** Not relevant. The proposed project is entirely marine based with no potential for interaction with coastal or terrestrial habitats. **Avifauna** The sheltered intertidal areas of Tramore Back Strand SPA, Bannow Bay SPA, Ballyteigure Burrow SPA, Tacumshin Lake SPA, Wexford Harbour and Slobs SPA, Raven SPA and The Murrough SPA are designated foraging areas for a range of wintering water birds. The SISAA considered there was potential for impact on wintering waterbirds due to disturbance during bathymetric surveys. The NIS recommended mitigation to avoid the documented impacts and these are listed in section 7 of this report. **Marine Mammals** An Annex IV Risk assessment (IWDG, 2024) was carried out for the proposed project. This report was based on original data collected by the IWDG and a review of the available literature. The risk assessment concluded that potential project related impacts were possible for harbour porpoise and, to a lesser extent, bottlenose and common dolphins as a result of bathymetric surveys. The SISAA (MERC, 2024a) considered potential impacts on Annex II pinnipeds (grey and Harbour seal) recorded as being present with the ZoI of the proposed project. Mitigation measures to address the potential for impact on these species were proposed in the NIS and Annex IV risk assessment and are detailed in section 7 of this report. **Bats**

The Annex IV Risk Assessment considered the potential for impacts on bats recorded within or adjacent to the proposed survey area. This assessment concluded that it was highly unlikely that any bat species would make use of the proposed project area for foraging and as all equipment deployment is subtidal there is no potential for impact.

Otters

The Annex IV Risk Assessment considered the potential for impacts on otter likely to be present within the proposed survey area. This assessment concluded that it was extremely unlikely that otters will be exposed to potential impacts as the likelihood of them being within the impacted area is extremely low and they are not sensitive to high frequencies sound sources.

Marine turtles

The Annex IV Risk Assessment considered the potential for impacts on marine turtle with the unlikely, but potential possibility of them being within the proposed survey area. This assessment concluded that it was extremely unlikely that marine turtles will be exposed to potential impacts as the likelihood of them being within the impacted area is extremely low and they are not sensitive to high frequencies sound sources.

Fish

Commercial fisheries

The waters within the proposed survey areas and their environs are used by Ireland's inshore fishing fleet for net fishing, midwater trawling and potting (Ireland's Marine Atlas, 2022). Periwinkle harvesting is also carried out within the area (Figure 2).

The proposed project area has a spatial overlap with the following nursery and spawning areas for commercially fished stocks (Figure 3):

- Cod spawning and nursery grounds
- Herring spawning ground and beds

Due to the limited interaction with the seabed and scale and scope of the project no impact on commercial fisheries is considered possible.

Annex II fish species

The potential for impact on Annex II fish species was assessed in the SISAA (MERC, 2024) and no potential for impact on any Annex II fish species was considered likely.

Aquaculture

Aquaculture (Pacific Oyster and/or Manila Clam) takes place within the intertidal areas of Bannow Bay (figure 4). These areas will be avoided, by navigational necessity, and therefore no potential for impact is possible.

Water, Air and Climate

While emissions to air resulting from vessel exhausts is unavoidable the level of such emissions would not be significantly above background levels in this area and would not have the potential to lead to Air Quality standards being exceeded. Therefore, no Likely significant effects to air quality are anticipated. Other than indirect impacts on climate change resulting from the use of vessel fuel the project does not have the potential to impact climate change trends.

Cultural heritage
A review of the National Monuments Service Historic Environment viewer and Wreck viewer has been carried out. The review indicates many historic wrecks within and adjacent to the licence areas (See figure 5). The nearest wreck site, (the wreck of the Explorer 1) lies 463 meters west of a fixed ADCP off the Wicklow Coast (Figure 6). Another wreck the Alfred D Snow lies 447 meters northwest of a fixed ADCP south of Tramore Bay. These are the nearest wreck sites to areas where there will be any interaction with the seabed. Both wreck sites will be avoided during deployment of ADCPS and as they are more than 400m from the proposed deployment sites no impact is considered possible during deployment and retrieval.
Material Assets
As the proposed surveys will have no significant interaction with the seabed, no potential for impact on material assets is possible.
Cumulative impacts
Cumulative impacts were assessed as part of the preparation of the SISAA (MERC, 2024a). This report indicated that following a review of current sources of information for marine based projects or plans, nine projects had the potential for impact without mitigation due to a possible temporal and/or spatial overlap. Mitigation measures to address the potential for vessel-based disturbance and underwater noise were proposed and these mitigation measures are detailed in the summary of mitigations in section 7. It is considered that provided the mitigation proposed in the report is implemented, the potential for in-combination impacts will also be mitigated.
Conclusion
The SISAA (MERC, 2024a) and Annex IV Risk Assessment (IWDG, 2024) carried out in support of this project concluded that without mitigation the proposed project had the potential to impact a number of cetacean species, pinnipeds and wintering waterbirds should they be present in the area during surveys.

7. Proposed mitigation

7.1 Bottlenose dolphin, Common dolphin and Harbour porpoise

The National Parks and Wildlife Service *Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters* recommends a distance of 1000m radial distance for geophysical surveys including multibeam in water depths of <200m (NPWS 2014).

The measures outlined below are applicable to

(i) all seismic surveys (including the testing and full operational use of airguns, water guns, sparkers, boomers and vertical seismic profiling [VSP] or checkshot systems) in inshore and offshore Irish waters;

(iii) all multibeam, single beam, side-scan sonar and sub-bottom profiler (e.g., pinger or chirp system) surveys within bays, inlets or estuaries‡‡ and within 1,500m of the entrance of enclosed bays/inlets/estuaries;

(iii) or as advised by the relevant Regulatory Authority

Multibeam, single beam, side-scan sonar surveys

1. A qualified and experienced marine mammal observer (MMO) shall be appointed to monitor for marine mammals and to log all relevant events using standardised data forms.

2. Unless information specific to the location and/or plan/project is otherwise available to inform the mitigation process (e.g., specific sound propagation and/or attenuation data) and a distance modification has been agreed with the Regulatory Authority, acoustic surveying using the above equipment shall not commence if marine mammals are detected within a 500m radial distance of the sound source intended for use, i.e., within the Monitored Zone.

Pre-Start Monitoring

3. Sound-producing activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible the sound-producing activities shall be postponed until effective visual monitoring is possible.

4. An agreed and clear on-site communication signal must be used between the MMO and the Works Superintendent as to whether the relevant activity may or may not proceed, or resume following a break (see below). It shall only proceed on positive confirmation with the MMO.

5. In waters up to 200m deep, the MMO shall conduct pre-start-up constant effort monitoring at least 30 minutes before the sound-producing activity is due to commence. Sound-producing activity shall not commence until at least 30 minutes have elapsed with no marine mammals detected within the Monitored Zone by the MMO.

6. This prescribed Pre-Start Monitoring shall subsequently be followed by a Ramp-Up Procedure which should include continued monitoring by the MMO.

Ramp-Up Procedure

7. In commencing an acoustic survey operation using the above equipment, the following Ramp-up Procedure (i.e., "soft-start") must be used, including during any testing of acoustic sources, where the output peak sound pressure level from any source exceeds 170 dB re: 1µPa @1m:

(a) Where it is possible according to the operational parameters of the equipment concerned, the device's acoustic energy output shall commence from a lower energy start-up (i.e., a peak sound pressure level not exceeding 170 dB re: 1µPa @1m) and thereafter be allowed to gradually build up to the necessary maximum output over a period of 20 minutes.

(b) This controlled build-up of acoustic energy output shall occur in consistent stages to provide a steady and gradual increase over the ramp-up period.

(c) Where the acoustic output measures outlined in steps (a) and (b) are not possible according to the operational parameters of any such equipment, the device shall be switched "on" and "off" in a consistent sequential manner over a period of 20 minutes prior to commencement of the full necessary output.

8. In all cases where a Ramp-Up Procedure is employed the delay between the end of ramp-up and the necessary full output must be minimised to prevent unnecessary high-level sound introduction into the environment.

9. Once the Ramp-Up Procedure commences, there is no requirement to halt or discontinue the procedure at night-time, nor if weather or visibility conditions deteriorate nor if marine mammals occur within a 500m radial distance of the sound source, i.e., within the Monitored Zone.

Breaks in sound output

10. If there is a break in sound output for a period greater than 30 minutes (e.g., due to equipment failure, shut-down, survey line or station change) then all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) must be undertaken.

11. For higher output survey operations which have the potential to produce injurious levels of underwater sound as informed by the associated risk assessment, there is likely to be a regulatory requirement to adopt a shorter 5-10 minute break limit after which period all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) shall recommence as for start-up.

Reporting

12. Full reporting on MMO operations and mitigation undertaken must be provided to the Regulatory Authority.

Given that sections of the proposed surveys will be conducted adjacent to the shore, best practice is to ensure that no animals are entrapped between the survey and the shore, particularly in embayments where escape is difficult. Survey lines should be soft-started on the shoreward end of a line and move towards open water (i.e. inshore-offshore transects and not parallel to the shore) to allow any animals present ample opportunity to leave the area.

7.2 Grey seal and Harbour seal,

In line with the guidance to manage the risk to marine mammals (NPWS, 2014), the mitigation proposed in section 7.1 for Cetacean species are also proposed for grey and harbour seal. Furthermore, it is recommended that surveys do not take place within 100m of haul out sites when these are occupied.

7.3 Wintering waterbirds

To avoid disturbance to foraging wintering waterbirds bathymetric surveys should not be carried out within the SPA areas where a spatial overlap occurs between the months of September to March.

7.4 Cumulative impacts

Eight of the total of nine projects, identified as having the potential to lead to cumulative impacts, relate to offshore wind development projects. However, due to current Government policy to establish a plan-led approach to offshore wind development, there is uncertainty if these projects will no proceed or proceed in their current format. One project (LIC240006) relates to bathymetric surveys which overlap with the proposed project site. It is therefore recommended that the timing of the proposed project is co-ordinated so that no potential for a temporal overlap with LIC240006 occurs.

8. Conclusion. EIA Directive (not of a class)

The proposed project is not of a class whereby mandatory Environmental Impact Assessment (EIA) is required. Projects which do not meet the threshold may still require an EIA if the project is likely to have significant effects on the environment. This AIMU report has assessed the implications of the project, alone and in-combination with other projects on the receiving environment. It concludes that, based on the scale and scope of the proposed project and mitigation measures proposed, no impact on the receiving environment is likely. Therefore, EIA is not required.

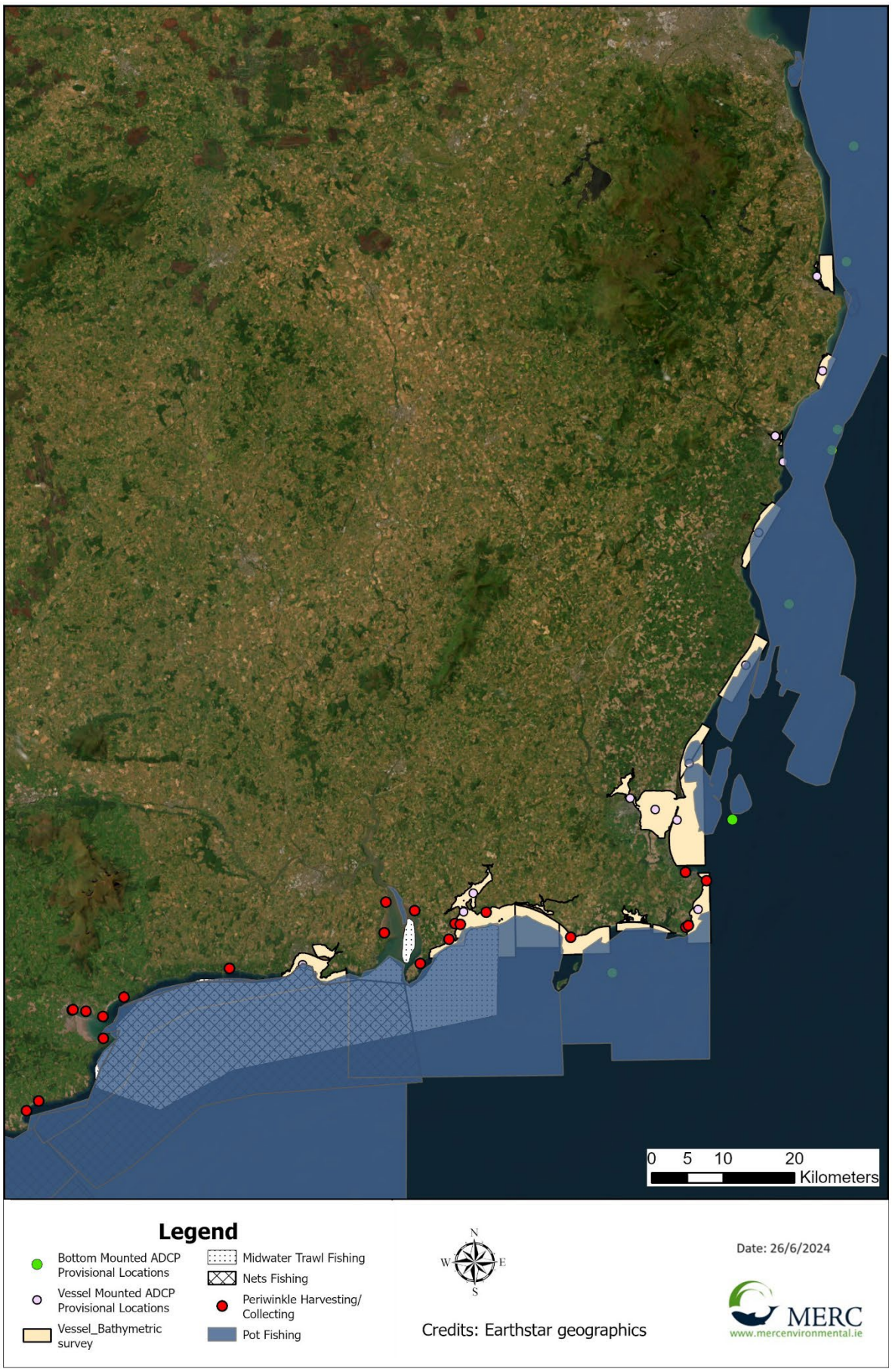

Figure 2. Fisheries type.

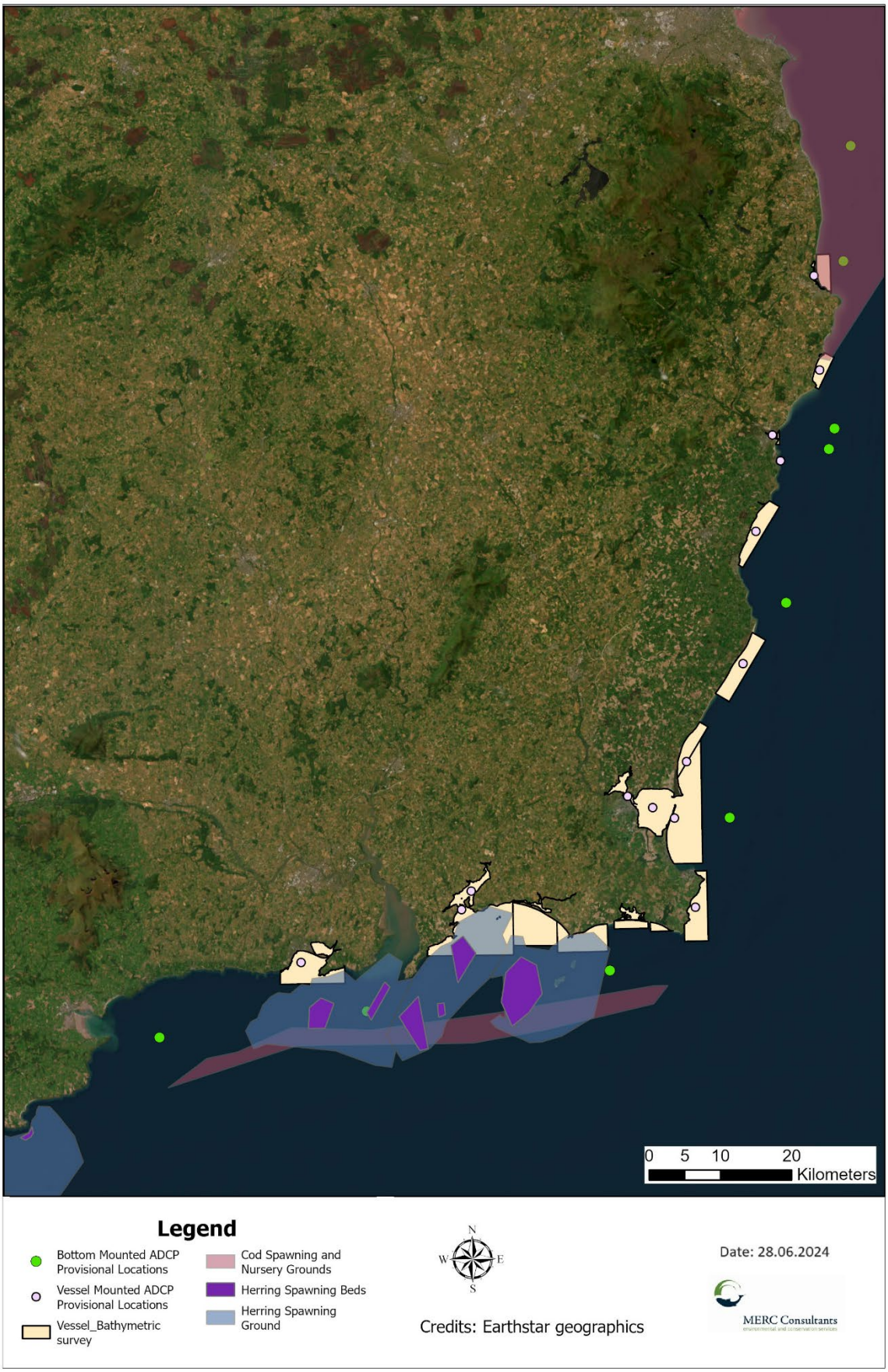

Figure 3. Commercial fisheries spawning and nursery areas.

Figure 4. Aquaculture licence areas.

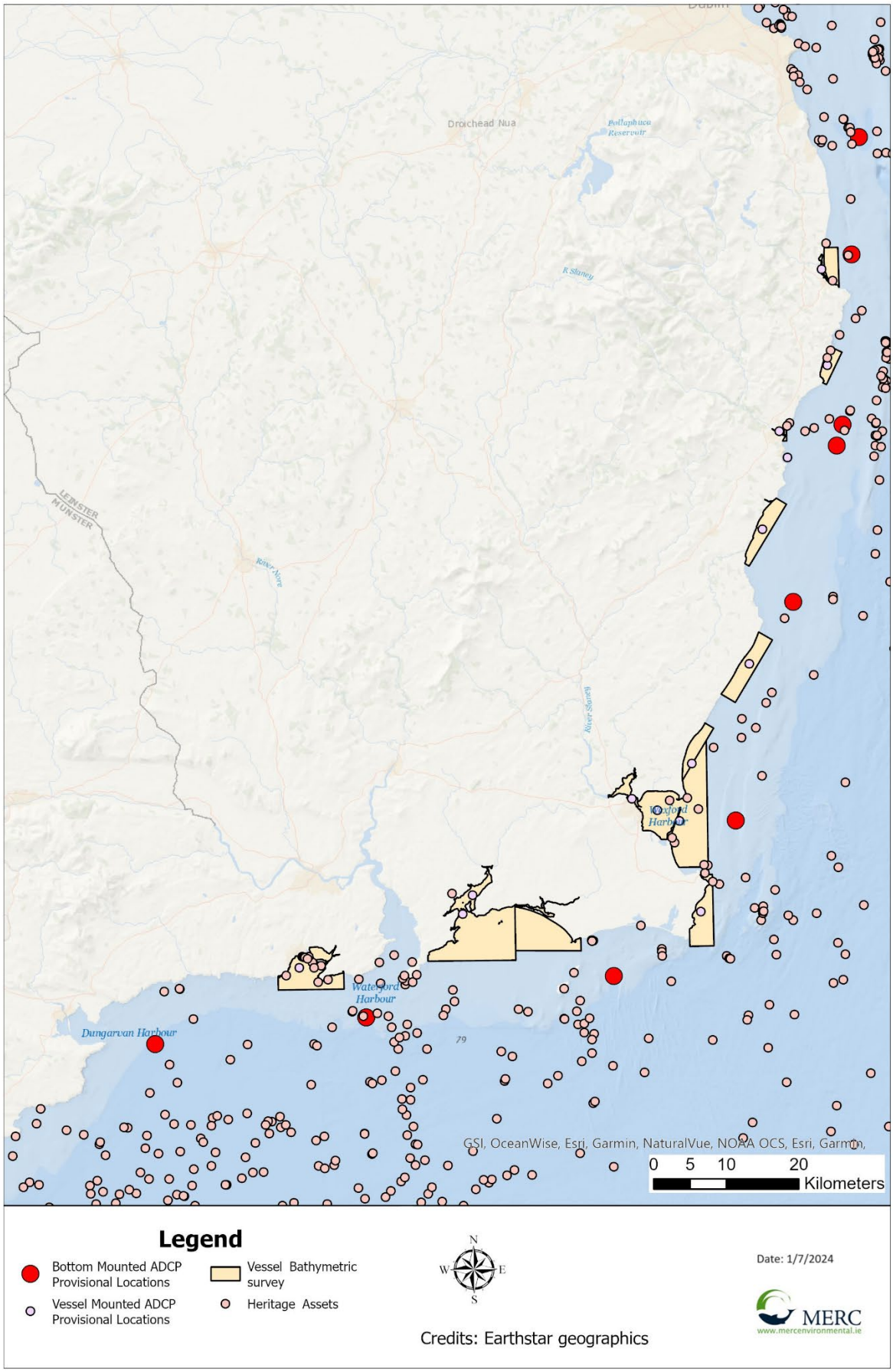

Figure 5. Wreck sites.

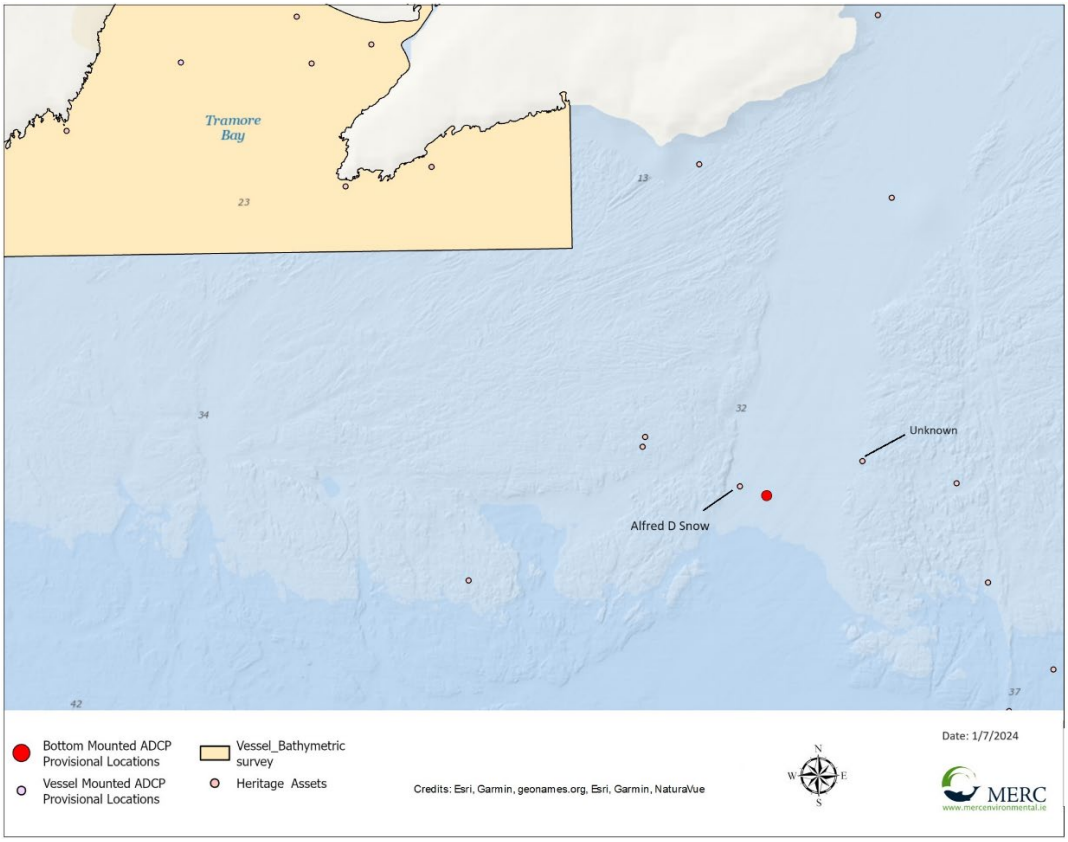

Figure 6. Wreck sites relative to fixed ADCPs

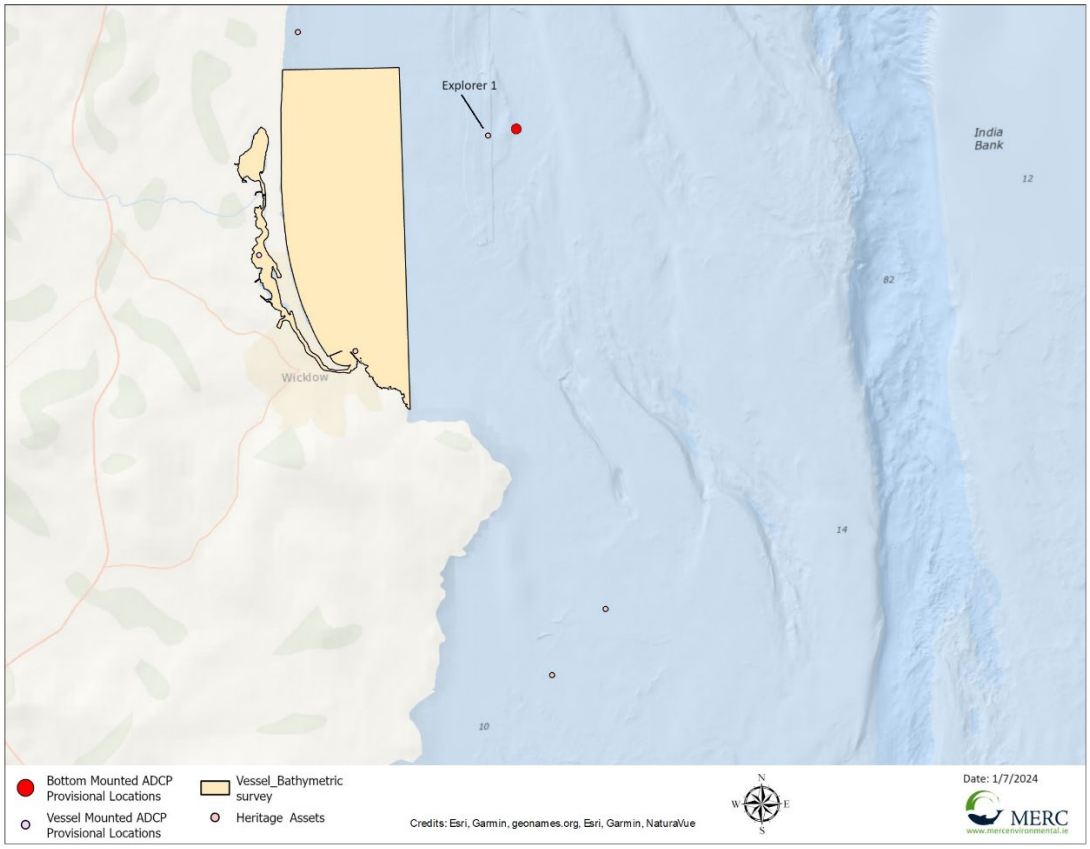

Figure 7. Wreck sites relative to ADCPs.

9. Water Framework Directive

The key objectives of the Water Framework Directive (WFD) are set out in Article 4 of the Directive. It requires Member States to use their River Basin Management Plans and Programmes of Measures to protect and, where necessary, restore water bodies in order to reach good status, and to prevent deterioration. Thereby ensuring good qualitative and quantitative health, i.e. on reducing and removing pollution and ensuring that there is enough water to support wildlife at the same time as human needs.

This AIMU report has assessed the implications of the project on the receiving environment. It concludes that, based on the scale and scope of the proposed project no impact on the any receiving waterbody will occur. The project consists of small-scale vessel based bathymetric surveys and no potential for impacts on the receiving water body due to the use of the vessel or proposed surveys are considered possible.

10. Marine Strategy Framework Directive

The key objective of the Marine Strategy Framework Directive (MSFD) is to protect the marine ecosystem and biodiversity upon which our health and marine-related economic and social activities depend. Its aim is to achieve good environmental status (GES) of the EU's marine waters and sustainably protect the resource base upon which marine-related economic and social activities depend.

To help EU countries achieve a good environmental status (GES), the directive sets out 11 illustrative qualitative descriptors. To achieve this goal of GES, the MSFD has set out a programme of measures to address identified stressors to achieving GES. A total of 28 separate measures have been set out. These measures are mostly focused on reducing pressures by improving water quality and preventing environmental damage. Negative impacts stated in the MSFD include, for example, pollution, biodiversity loss, seabed damage, overexploitation, spread of non-indigenous species, marine litter, underwater noise, and ocean warming and acidification.

This AIMU report has assessed the implications of the project on the receiving environment (table 3). It concludes that, based on the scale and scope of the proposed project, no impact on the marine environment in possible.

Table 3. MSFD Analysis

Descriptor	Analysis	Assessment
Descriptor 1: Biodiversity is maintained	Table 2 of this AIMU provides a description of the biodiversity baseline of the proposed project location and its environs. In addition, a separate SISAA, Natura Impact Statement (NIS) and Annex IV Risk Assessment were prepared for this project. All of which examined the potential for impact on various elements of the biodiversity of the proposed project area and potential for project related impacts on them. With the exception of potential impacts on selected marine mammals and wintering waterbirds no potential for impact on biodiversity was recorded. Mitigation to ensure no impact on marine mammals or wintering waterbirds occurred was proposed in this AIMU, the NIS and the Annex IV Risk Assessment.	Provided the mitigation outlined in this AIMU is adhered to no potential for impact on this descriptor is considered possible.
Descriptor 2: Non-indigenous species do not adversely alter ecosystems	No element of the proposed project has been identified that has the potential to introduce or spread non-indigenous species.	No potential for impact.
Descriptor 3: Populations of commercial fish and shellfish species are healthy	Commercial fishing occurs within the proposed project area. This AIMU (Table 2) has considered impacts on commercial fisheries and has not identified any potential for impact.	No potential for impact.
Descriptor 4: Food webs ensure long-term abundance and reproduction of species	No project related impacts with the potential to impact food webs or affect long-term abundance and/or reproduction of species is considered possible.	No potential for impact.
Descriptor 5: Eutrophication is reduced	No impacts relative to eutrophication are possible.	No potential for impact.
Descriptor 6: Sea floor integrity ensures the proper functioning of ecosystems	The proposed project will have limited interaction with the seabed in the form of ADCP deployment. Therefore, no potential for impacts are considered possible.	No potential for impact.
Descriptor 7: Permanent alteration of hydrographical conditions does not adversely affect ecosystems	The proposed project does not have the potential to cause any hydrographical changes.	No potential for impact.
Descriptor 8: Concentrations of contaminants give no pollution effects	The proposed project does not have the potential to lead to the introduction of any contaminants.	No potential for impact.

Descriptor 9: Contaminants in seafood are at safe levels	The proposed project does not have the potential to add to or alter contaminants in the seafloor.	No potential for impact.
Descriptor 10: Marine litter does not cause harm	The proposed project does not have the potential to lead to the littering.	No potential for impact.
Descriptor 11: Introduction of energy (including underwater noise) does not adversely affect the ecosystem	The project SSIA and Annex IV risk assessment identified the potential for the introduction of underwater noise and disturbance in the absence of mitigation. While it was considered impacts related to underwater noise were unlikely to have a significant on any marine mammal species, mitigation was proposed in view of the precautionary principle. Mitigation was also proposed to avoid disturbance to wintering waterbirds and seal when present at their haul-out sites	Provided the mitigation outlined in section 7 of this AIMU is adhered to no potential for impact on this descriptor is considered possible.

11. National Marine Planning Framework (NMPF)

The NMPF sets out Overarching Marine Planning Policies (OMPPs) that will apply to all marine activities or development. These include policies in relation to, *inter alia*, co-existence with biodiversity, coastal and island communities, and infrastructure.

The proposed project is considered to have limited potential impact on the overarching marine planning policies of the NMPF. Nonetheless, a review of these policies relative to the proposed project has been carried out and is documented in table 4 which indicates how the proposed project will be in compliance with the NMPF. The conclusion of which, is that the proposed project is fully compliant with the overall objectives and policies of the NMPF. No element of the proposed project is considered contrary to these policies.

Table 4. Assessment of compliance with the National Marine Planning Framework (NMPF)

Environmental-Ocean Health	
Biodiversity & Protected Marine Sites	
Biodiversity	The project is supported by the following documents: • Supporting Information for Screening for Appropriate Assessment (SISAA) • Natura Impact Statement • Annex IV Risk Assessment • Assessment of Impact on Maritime Usage Report (AIMU) The conclusion of the SISAA, Annex IV Risk Assessment and AIMU is that, with mitigation, no impact on any marine mammal or bird species will occur. Furthermore, the scale and scope of the project is considered too small to lead to any adverse effects on either the local or wider marine environment.
Protected Marine Sites	The SISAA identified the potential for impacts on a number of European sites without mitigation. The project NIS, Annex IV risk assessment and AIMU proposed mitigation to eliminate impacts on European sites. It is considered that provided the proposed mitigation is implemented no impacts on protected marine sites will occur.
Non-indigenous Species	The SISAA and AIMU did not identify any potential for the introduction of non-indigenous species.
Water Quality	The SISAA and AIMU did not identify potential for impacts on water quality.
Sea-floor and Water Column Integrity	The scale and scope of the project does not have the potential to impact Sea-floor and Water Column Integrity as documented in the AIMU.
Marine Litter	The scale and scope of the project does not have the potential to intentionally or accidentally contribute to the impacts on marine litter policy as documented in the AIMU.
Underwater Noise	The project SISIA and Annex IV risk assessment identified the potential for the introduction of underwater noise in the absence of mitigation. While it was considered impacts related to underwater noise were unlikely to have a significant on any marine mammal species, mitigation was proposed in view of the precautionary principle. Provided the mitigation proposed is adhered to no potential for impact related to underwater noise is considered possible.

Air quality	Not relevant: The project does not have the potential to impact air quality.
Climate Change	Not relevant: The project does not have the potential to impact air quality.
Economic – Thriving Maritime Economy	
Co-existence	No potential for significant impact. The proposed works are temporary in nature (weeks). While disturbance to commercial fisheries activity may occur, this disturbance will be of a temporary nature and will not have a significant impact on commercial fishery activity in the area. no other significant activities have been identified.
Infrastructure	No potential for impact on the infrastructure policy. No permanent infrastructure is proposed.
Social – Engagement with the sea	
Access	No access issues have been identified.
Employment	Not applicable. It is considered the Employment Policy 1 is not relevant to the proposed project.
Heritage assets	A review of the Historic Environment Viewer and National monument service wreck viewer (Accessed July 2024) indicated the presence of numerous historic wreck sites within the area. However, the proposed project will have limited interaction with the seabed for the deployment of ADCPs none of which will be deployed within 100 meters of any wreck site.
Rural Coast and Island Communities	This policy is not considered relevant to the proposed project.
Seascape and Landscape	No impact possible.
Social Benefits	The proposed project will provide social benefits in the medium to long term by facilitating the provision of improved waste water discharges.
Transboundary	No transboundary effects are possible.

12. References

Department of Housing, Local Government and Heritage. National monuments service; wreck viewer. Available at: https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=89e50518e5f4437abfa6284ff39fd640 Accessed 01.7.2024

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