MERC Consultants
environmental and conservation services

Supporting Information for Screening for Appropriate Assessment Report

North Atlantic Shipwrecks Survey

Document control				
Document reference: 16082025-1				
Version	Date	Issue	Prepared by	Approved by
1	16/8/2025	Final	[redacted]	[redacted]

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1. Introduction

SalvOcean Ltd (SAL) is a limited liability company established in the United Kingdom with a USA subsidiary; specifically inaugurated as a project manager company to enable execution of marine surveys, salvage recoveries from shipwrecks, submerged ordnance handling and disposal, environmental impact surveys, and marine operations within the oil, gas, and renewables sectors on behalf of their clients.

SalvOcean also operates in unison with academia, providing facilities onboard their vessels to allow for further scientific research into marine biology, ocean health and risks posed to the environment from potentially polluting shipwrecks.

SalvOcean wish to carry out non-intrusive subsea surveys on two shipwrecks (MV Accra and the SS City of Simla), hereafter referred to as the "proposed project". The SS City of Simla lies within Irelands Exclusive Economic Zone (EEZ) and currently designated Irish Continental Shelf Maritime Boundary (CSMB), the MV Accra lies within Irelands CSMB (Figure 1).

Both shipwrecks can be considered as lost during the period of the Second World War, with sinking brought about through submarine intervention. Relevant details of each individual wreck can be found in section 4.1 of this document.

This document constitutes Supporting Information for Screening for Appropriate Assessment (SISAA) to assist the Competent Authority in undertaking a screening exercise for Appropriate Assessment (AA). The screening exercise will aim to assess, in view of the best scientific knowledge, if the proposed project, individually or in combination with other plans or projects, is likely to significantly affect any European site/s, considering their conservation objectives. Under Article 6(3) of the EU Habitats Directive, an Appropriate Assessment must be undertaken for any plan or programme that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. Article 6(4) of the Habitats Directive sets out the decision-making test which must be applied to plans or projects that may impact on a Natura 2000 site.

Appropriate Assessment is a four stage process as detailed below:

Stage One: Screening — the process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;
Stage Two: Appropriate Assessment — the consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;
Stage Three: Assessment of alternative solutions — the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;
Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

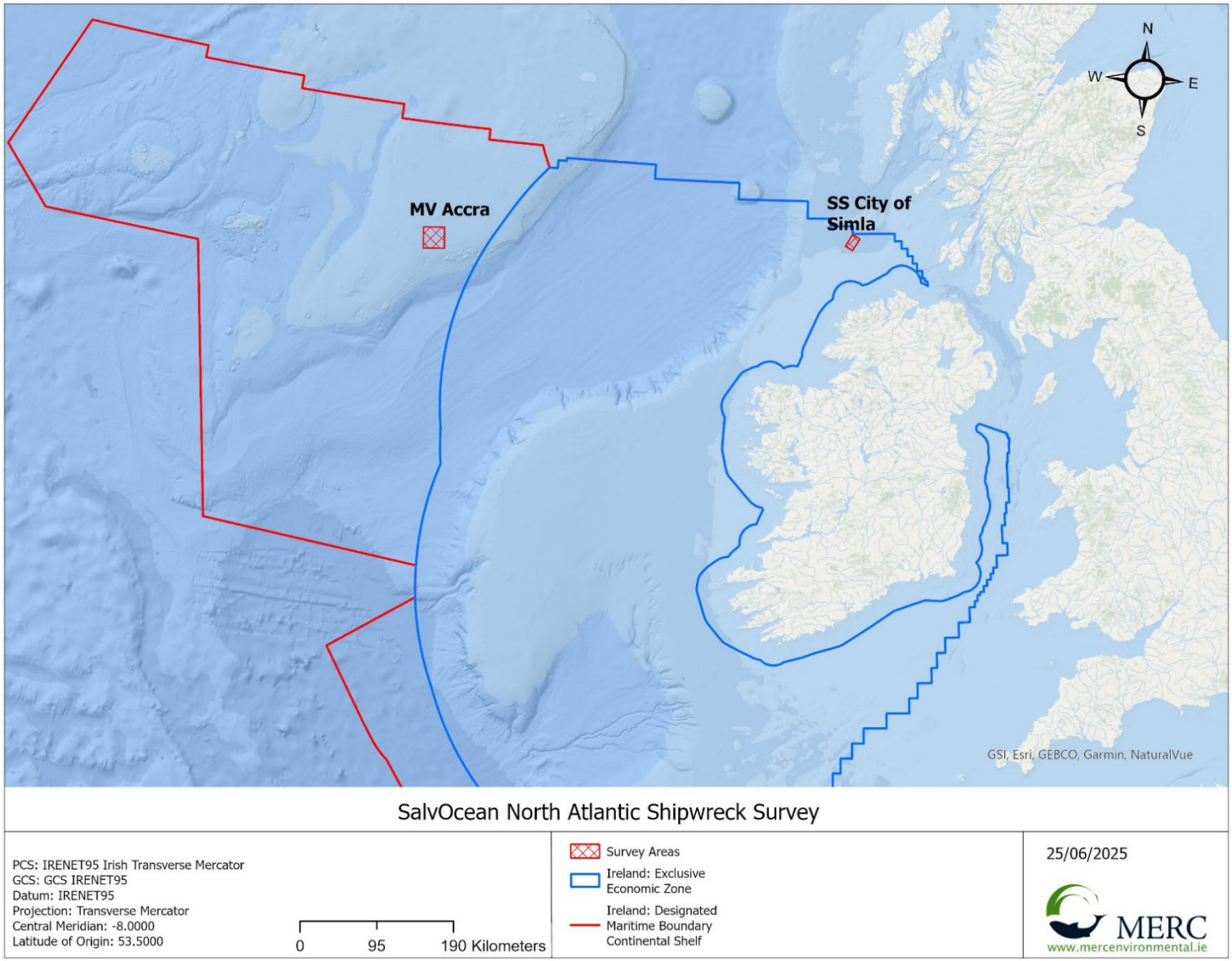

Figure 1. Proposed project site.

2. Statement of authority

This report was prepared by [redacted] and [redacted] of 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 the period 2015-2019. 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. MERC are currently engaged in conducting surveys and preparing the relevant reports for the current (2022-2025) monitoring cycle.

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.

[redacted] is a professional marine ecologist with a wide range of experience in the field of conservation biology, marine habitat mapping and ecology. She completed a M.Sc. in ecology and taxonomy at Trinity College Dublin in 1989 and a Ph.D. in taxonomy also at Trinity College Dublin in 2001. She is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). For the last 20 years she has specialised in the ecology of marine ecosystems. She has specialised in the assessment of benthic habitats with a focus on intertidal and subtidal reef habitats and sensitive seabed species and habitats. Over the last 15 years she has conducted extensive marine monitoring surveys and assessments of EU Habitats Directive marine Annex I habitats and their associated species within European sites in Ireland to assist Ireland in complying with monitoring obligations under the EU Habitats Directive .

[redacted] is a professional marine ecologist with a wide range of experience in the ecology, survey, and monitoring of marine habitats and species in Ireland. He completed a Diploma in Science at Galway Regional Technical College in 1987 and a B.Sc. in Biological Sciences at Plymouth University in 1989. He is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He has extensive experience in the monitoring of benthic habitats and species in Ireland and was lead scientist for the mapping of sensitive subtidal species across a range of European sites in Ireland from 2006 to 2010. Over the last 30 years he has also specialised in the ecology of marine fish, and in this regard, provides expertise and review services with respect to assessment of anthropogenic impacts on shellfish, pelagic and demersal species. He has acted as a lead auditor for the Aquaculture Stewardship Council (ASC) and Marine Stewardship Council (MSC).

3. Methods

3.1. Guidelines and legislation

This report has been prepared with reference to the following European Directives, national legislation and guidance on the appropriate assessment of projects and plans with regard to the implementation of the provisions of Article 6(3) and (4) of the EU Habitats Directive 92/43/EEC.

- 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. European Commission 2018. 7621 final. Office for Official Publications of the European Communities, Luxembourg.
- 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.
- Relevant case law.

3.2. Description of the proposed project and its associated scope of works

A description of the proposed project was compiled and is set out in section 4. The description details all works required to carry out the proposed project.

To fully understand the receiving environment, relative to project related effects, the literature consulted included the available National Parks and Wildlife Service (NPWS) data sources for all European sites within the Zone of Influence (ZoI) of the proposed project (see section 3.3 for methods used to determine the ZoI). This included the conservation objectives and GIS layers (habitats and species) for the relevant European sites. Further data was obtained from the following sources (non-exhaustive):

- Sensitive Ecosystem Assessment and ROV Exploration of Reef (SeaRover)
- INFOMAR Seabed and sediment data.
- Irish Whale and Dolphin Group live sightings.
- ObSERVE Aerial Surveys
- EMODnet: EUSeaMap

3.3. Impact Assessment approach

The zone of influence (ZoI) of a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. In the context of Appropriate Assessment Screening, the ZoI is the area over which a plan or project could affect the receiving environment such that it could potentially have significant effects on the conservation status of European Sites. Within the ZoI those receptors that are sensitive to change must be identified and considered.

To define the ZoI of a project, the potential for project related effects on sensitive receptors must first be established. For this purpose, a **Source-Path-Receptor (SPR)** model was applied. The SPR model is a well-established model frequently applied to the analysis of project related impacts on ecosystems and is the one which has been applied to the assessment of the proposed project.

Using this approach all elements of the proposed project were reviewed to assess potential pathways and receptors which might be affected so that a ZoI could be established. This process involved the following steps:

- The identification of sources of potential impacts and their pathways from the proposed project site to European Sites.
- Consideration of sensitive receptors and their dependent ecosystems within the aforementioned European sites.
- Identifying and characterising project related impacts and their likely effects, direct, indirect and cumulative on the identified sensitive receptors.

Once the ZoI was established, the following steps were taken to assess the potential for likely significant effects on sensitive receptors:

1. The scale and scope of the project was examined.
2. A desk review of the available literature describing the habitats and species known to occur at the proposed project sites and surrounding area was undertaken.
3. Any project related activities likely to affect migratory or highly mobile species was considered.
4. Any use of the proposed project sites by mobile species that make regular movements to, from, or across the site was assessed.
5. An assessment was carried out of the key ecological processes and species activity periods including seasonal variations in distribution, abundance and activity.

3.4. Review of European sites

Once the ZoI of the proposed project was determined, European sites within this ZoI were documented and an analysis of the sensitivity of ecological receptors therein was conducted. In determining the sensitivity of ecological receptors consideration was given to the scale, scope and location of the proposed project relative to the aforementioned receptors.

4. Proposed survey work

4.1. Overview

The proposed project consists of a non-intrusive survey of two wreck sites as listed in Table 1. One wreck site (MV Accra) lies outside of Ireland's EEZ, but within the boundaries of the CSMB. The second wreck site (SS City of Simla) lies within the boundaries of Ireland's EEZ and CSMB. Both wreck sites are outside of Ireland's 12-mile territorial and 24-mile contiguous zones (Figure 1).

The timing for carrying out the survey works at both wreck sites will ideally occur between March and November due to this being the best seasonal weather. Surveys will run simultaneously as opposed to being individual operations and operate on a 24-hour basis.

Table 1. Proposed survey elements

Survey type	Wreck	
	MV Accra (NA/C7-D)	SS City of Simla (NA/CI-E)
Side Scan Sonar (SSS) survey	√	√
Multibeam echosounder (MBES) Survey	√	√
Sub-bottom profile (SBP) survey	√	√
Photogrammetry survey	√	√
Environmental survey	√	√
Hydrocarbon leak detection survey	√	√
Cultural heritage assessment survey	√	√

MV Accra (NA/C7-D)

The MV Accra is considered to be most likely positioned approximately 410km northwest of Annagh Head, Co. Mayo. The vessel was sunk due to a single torpedo strike and has never previously been located. However, a detailed analysis of the sinking event has been carried out and a subsequent target box for subsea surveys has been developed.

Table 2. MV Accra known details

Year of loss	1940	
GPS / PA	PA	
Position (Decimal degrees)	55.6671577°N -16.4670974°W	
Water depth	450 meters (estimated)	
SSS Target box area	678 sqkm	
Estimated target box coordinates	NE corner	55.7960844N -16.2840706W
	SE corner	55.5636285N -16.2383094W
	SW corner	55.5372053N -16.6481826W
	NW corner	55.7694260N -16.6963327W
Estimated time for SSS	297 – hours / 12.4 -days (maximum)	
Estimated time for residual surveys	7 - days	

SS City of Simla (NA/C1-E)

The SS City of Simla is positioned approximately 72km northwest of Malin Head, Co. Donegal. The vessel was sunk due to torpedo strikes. The wreck is split into two sections and the location of the main body of the wreck is known. However, the location of the stern section (approx. 50 meters in length) has not been located to date. The purpose of this survey is to locate the missing stern section and to obtain detailed photogrammetry of both sections of the wreck.

Table 3. SS City of Simla known details

Year of loss	1940	
GPS / PA	GPS main body / PA missing stern section	
Position	55.9362568°N -8.1649909°W	
Water depth	175 meters	
SSS Target box area	178 sqkm	
Estimated target box coordinates	NE corner	55.9423227N -8.0739340W
	SE corner	55.8141417N -8.2192833W
	SW corner	55.8646599N -8.3613375W
	NW corner	55.9930073N -8.2162692W
Estimated time for SSS	120 – hours / 5 - days (maximum)	

4.2. Survey equipment

A suite of mapping instruments will be used for the survey as detailed in Table 4. Details of the survey vessel and proposed equipment to be used are listed in Table 4 and described in section 4.2.1-4.2.5. Survey operations at each of the two wreck sites remain consistent. However, where a wreck is deemed as a Position Approximate (PA), then a Side Scan Survey (SSS) will be carried out to first locate the wreck prior to commencing a detailed survey. Where SSS is required, it shall be conducted within the predetermined 'target boxes', see Table 2 and Table 3.

Table 4. Equipment specification and sound pressure levels*

Equipment	Model	Deployment	Company	Sound Pressure Level Source Level (dB re 1 µPa)
Survey vessel	Glomar supporter or similar	Ocean Surface	Bharati Shipyard Goa, India	165–175
Vessel DP	DP2 Kongsberg Kpos 21	Hull mounted	Kongsberg	178
Acoustic Transponders	EdgeTech CAT Coastal Acoustic Transponder	Equipment mounted	EdgeTech	192
Obstacle Avoidance Sonars	Teledyne	Equipment mounted	Teledyne	160 to 180
Underwater Navigational Signals	Sonardyne Compatt 6 8300-3111 (USBL)	Equipment mounted	Sonardyne	187-196
Work Class ROV	Millennium® Plus Work Class ROV	Launched from Vessel	Oceaneering	130-160
Work Class ROV	Schilling Robotics HD Work Class ROV	Launched from Vessel	Schilling	130-160
Side Scan Sonar	EdgeTech 4200 Series	Towed System	EdgeTech	195-205
MBES	Sonic-V Series 2020,2022,2024,2025	Hull mounted	R2 Sonic	196-224
Ultra-High Resolution MBES	Teledyne RESON SeaBat® 7125	ROV Mounted	Teledyne	196-224
Sub Bottom Profiler	EdgeTech 3300	Hull Mounted	Hull Mounted	167-175
Sub Bottom Profiler	Immomar - Standard ROV	ROV mounted	Innomar Technologie	240

* While SalvOcean cannot categorically state it will be the exact models as listed, should alternatives be utilised then the sound pressure levels will fall within the parameters detailed in this table.

4.2.1. Survey vessel

As a survey vessel will be chartered, the specific vessel cannot be confirmed at this stage. However, the below vessel specification can be used as an 'example' vessel for the survey phase.

Glomar Supporter **MMSI: 352110000** **Call sign: 3EKK8** **IMO Number: 9344227** **Flag: Panama**	
Length OA	60.00m
Beam	15.20m
Draft Max (Loaded)	5.00m
Classification (RINA)	*C X SUPPLY VESSEL; FIRE-FIGHTING SHIP – 1 – WATER-SPRAYING; UNRESTRICTED NAVIGATION* *X AUT-UMS X DYNAPOS DP2; SPS*
DP Type	DP2 – Kongsberg Kpos 21

4.2.2. Multibeam echosounder

A multibeam echosounder (MBES) is a type of sonar, frequently used to map bathymetry, and is also used to provide the data required to map shipwrecks. It operates by emitting an acoustic wave in a fan shape beneath the point of its transceiver attached to the hull of the vessel. The time it takes for the sound waves to bounce off the seabed and return to the transceiver is used to calculate depths within the arc of the fan. The proposed MBES operates at a sound pressure level of 196-224 dB re 1µPa at 1m. Typical peak frequency is between 200-400 kHz.

4.2.3. Sub-bottom profiler

A Sub-bottom profiler employs an acoustic signal, to provide the information required to identify and measure marine sediment layers that exist below the sediment/water interface. The proposed equipment comprises an EdgeTech 3300 Hull mounted system, operating at a sound pressure level of 165-175 dB re 1µPa at 1m.

4.2.4. Side scan sonar

Side scan sonar (SSS) is another device that transmits sound pulses that is frequently used to map the seabed and in the detection of submerged objects such as shipwrecks. It differs from MBES in that SSS has a finer beam width and smaller footprint to MBES and therefore higher resolution. It will be towed behind the vessel very close to the seabed. SSS emits fan-shaped acoustic pulses, directed down toward the seafloor, which are recorded as a series of cross-tracks. The sound frequencies used by side-scan sonar generally range from 100 to 1000kHz; higher frequencies yielding better resolution but less range. The proposed EdgeTech SSS to be used operates at 195-205 dB re 1µPa at 1m.

4.2.5. Additional acoustic transponders

A number of additional transponders, as given in Table 3, will be required to aid position fixing of the equipment deployed. All transponders operate by emitting and receiving acoustic signals and measuring time to calculate distance and direction by analysing the returning signal.

4.3. Survey campaign

4.3.1. Routing and planned schedule

The current proposed mobilisation port is Aberdeen, Scotland. However, options closer to the operational areas are currently being considered.

The planned routing of the survey vessel after departure from mobilisation port will be over the north coast of Scotland before engaging at site NA/C7-D (MV Accra), once operations are completed the vessel will then transit due east to the second wreck site NA/C1-E (SS City of Simla).

4.3.2. Hull mounted MBES and SSS

Wreck sites deemed Position Approximate (PA) will require the 'scanning' of a predetermined target box to locate the actual shipwreck within. The most efficient method identified for carrying out the scans is by means of a hull mounted MBES system. The hull mounted dual-head MBES system will allow the seabed to be scanned at a vessel speed of 4.5 knots.

To aid in identifying further anomalies, a towed side scan sonar (SSS) system will be utilised at the same time as the MBES.

4.3.3. General visual inspection of the wreck

A video survey will be conducted at the shipwreck and close vicinities. The adjacent areas will be surveyed to confirm the location of debris, fishing nets etc.

4.3.4. Digital video acquisition

One or several cameras, mounted on a ROV, will be used to record the visual monitoring of the wrecks and adjacent areas during the surveys.

4.3.5. Multi Beam Echo Sounder survey

The MBES will acquire data continuously during the survey. The MBES settings shall be optimised to provide the best profile quality and ensure the ping interval is set to achieve the required sounding density. It would be expected to achieve a density of 2-3 soundings for each cell at a ping rate of 10 Hz. This provides a real-time DTM so the data density can be reviewed. The ping rate can subsequently be increased or decreased as required.

4.3.6. Sub Bottom Profiler survey

Where necessary, a SBP survey will be carried out.

4.3.7. Hydrocarbon Leak Detection survey

Where considered necessary, a hydrocarbons/HNS survey will be carried out at the wreck site. As hydrocarbons can be considered as lighter in weight than seawater, such substances if emitting from a shipwreck can be detected using the ROV's OAS. A suitable grid will be overlaid on the survey navigation screen to allow the ROV to make passes across the wreck while detecting for emissions.

4.3.8. Photogrammetry survey

Photogrammetry of each wreck will be carried out by collecting imagery of the wrecks and their environ by a ROV mounted SubSLAM X2 system, an underwater camera system.

5. Receiving environment

The proposed survey covers an area of 856 sqkm (678 sqkm surrounding the PA of the MV Accra and 178 sqkm surrounding the PA of SS City of Simla). There is no spatial overlap between the proposed MUL area for either of the wreck sites and any European site/s.

The MV Accra is located on the Rockhall bank at a depth of approximately 450m. The seabed in this general area is somewhat known from INFOMAR (Integrated Mapping for the Sustainable Development of Ireland's Marine Resource) surveys and additional surveys carried out as part of the SeaRover project. The predominant habitat type within the proposed MUL area is classified as Upper Slope (<200m & >750m). The upper bank, within the proposed licence area is shown to be relatively level and limited sampling of the area suggests it consists of poorly sorted gravelly sand and areas of Gravelly Muddy Sand with ribbons of coarser material. The bank margins are known to host the cold water coral (*Lophelia pertusa*) although these areas are approximately 20km east of the proposed MUL licence area.

The SS City of Simla is located approximately 72km northwest of Malin Head, Co. Donegal at a depth of approximately 175m. The seabed within the area of the proposed MUL is well known from Infomar surveys including Shipek Grabs. The predominant habitat type is classified as a mosaic of shelf sublittoral sand and Shelf sublittoral mud. Shipek grabs describe the sediment as a mosaic of silty sand and broken shell fragments. However, poor grab recovery rates in some areas indicate the likelihood of coarser sediments. Conspicuous epifauna included brittle stars, squat lobster, shrimp and urchins in some samples recovered.

A marine Mammal Database compiled and managed by the National Biodiversity Data Centre has collated data from numerous sources (e.g. Irish Whale and Dolphin Group, ObSERVE project) indicates use of the area surrounding both wreck sites by both Bottlenose dolphin (*Tursiops truncates*) and Harbour porpoise (*Phocoena phocoena*).

These data also indicate use of the waters surrounding both wreck sites by Grey seal (*Halichoerus grypus*) and Harbour seal (*Phoca vitulina*) and the waters surrounding the MV Accra by Grey seal.

The MUL area may also provide foraging habitat for seabird species connected to more distant SPAs, within foraging range such as Manx Shearwater, Gannet and Fulmar.

Atlantic salmon may transit through the areas surrounding the MUL of both wreck sites during their migration periods, although they do not actively forage during this period.

Both MUL areas surrounding both wreck sites are too far offshore to provide habitat for any additional mobile Annex II species.

6. Identification of potential impacts

The proposed survey elements and types of equipment to be used, including the use of the vessel required, are described in section 4. This information was reviewed to establish if a source/pathway existed and if so, what sensitive receptors might be affected.

Potential project related impacts have been identified and assessed in the context of a SPR matrix as given in Table 5.

Table 5. Source-Path-Receptor matrix

Element	Potential Source (pressure)	Path	Receptor
Vessel presence	Disturbance, harm or injury as a result of vessel operations	Direct and indirect	Marine mammals, Birds
Vessel	Accidental spillage of hydrocarbons	Direct and indirect	Benthic habitats, Marine mammals, Birds, fish
Vessel	Introduction of Invasive Alien species (IAS)	Direct and indirect	Benthic habitats, fish
Acoustic transponders and Obstacle Avoidance Sonars	Disturbance, harm or injury as a result of underwater noise	Direct and indirect	Marine mammals, Birds, fish
Multibeam echosounder	Disturbance, harm or injury as a result of underwater noise	Direct and indirect	Marine mammals, Birds, fish
Sub-Bottom Profiler	Disturbance, harm or injury as a result of underwater noise	Direct and indirect	Marine mammals, Birds, fish
Side scan Sonar	Disturbance, harm or injury as a result of underwater noise	Direct and indirect	Marine mammals, Birds, fish
Imaging (photogrammetry) ROV deployed	Disturbance	Direct and indirect	Marine mammals

** The survey vessel used will be covered by MARPOL regulations. The MARPOL Convention is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. The Convention includes regulations aimed at preventing and minimizing pollution from ships – both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.*

***The dumping of ballast water and fouling of vessel hulls are considered to be the main vectors for the spread of IAS in marine environments. The MARPOL convention, includes annexes governing the management of ballast water and the anti-fouling of hulls. The vessel used will be governed by MARPOL regulations and as such the vessel will ensure all actions required to prevent the introduction of IAS.*

6.1. Zone of Influence

Based on the area of impact for the individual project components, documented in Table 5 it is concluded that the proposed project has a maximum direct area of impact extending to the immediate area of the proposed survey i.e. the MUL Licence areas only. With due regard to mobile species that may be transiting through or using the potential area of impact, including breeding seabirds and Annex II marine mammals, the ZoI of the project is taken to include all European sites where the potential for either a direct or indirect connection between such species and these sites is possible. There is no potential for impact (no SPR link) to any SAC that does not have a direct connection to the marine environment.

The proposed project consists of a non-intrusive survey and there is no requirement at any time for direct contact with the seabed or either of the two shipwrecks. Therefore the only potential for impacts are associated with disturbance and noise. The maximum area of **direct** impact, for disturbance and noise, is estimated to be the direct area of the survey i.e. the MUL licence area. However, **indirect** impacts may extend to greater distances in the case of European sites for which mobile species are included as a Qualifying Interest (QI).

No potential for impacts on any Annex I Habitat has been identified, therefore the focus of this report remains to assess potential for impact on species listed as Qualifying Interests (QIs) for Special Areas of Conservation (SACs) or Special Conservation Interests (SCIs) for SPAs that may occur within the ZoI as discussed below.

Pinnipeds

Pinnipeds have the potential to be effected by the impacts of effects of disturbance and underwater noise.

The foraging ranges for Grey seal can be large, travelling up to several hundred kilometres from their breeding areas (Kiely *et al*, 2000) while the foraging distance travelled by Harbour seals is generally less, it can also extend for 100's of kilometres (Vance *et al,* 2021). Recent research (Carter, *el al*, 2022) estimates foraging ranges of 273km for harbour seal and 448km for grey seal. We have undertaken a screening exercise in ARCGIS to calculate the distance of all European sites where grey seal and harbour seal are a QI within these ranges. While NPWS site conservation objectives only apply to these species within their site, we have included a ZoI of 448km for Grey seal and 273km for Harbour seal to align with MARA practice.

Cetaceans

Cetaceans have the potential to be effected by the impacts of effects of disturbance and underwater noise.

Harbour porpoise and Bottlenose dolphin are wide ranging and highly mobile, although some populations do appear to be relatively site faithful. However, it can be assumed they travel many 100's of kilometres depending on prey availability and distribution. It is not appropriate to give definitive foraging areas for either of the aforementioned species. However, to align with MARA practice, we have included all SACs where Harbour porpoise and/or Bottlenose dolphin form a QI within any Management Unit overlapping within the proposed project site. This brings in a number of European sites for which these species are a QI.

Seabirds

Diving seabirds have the potential to be effected by the impacts of effects of disturbance and underwater noise.

Seabirds foraging ranges are well studied and vary widely between species (see appendix 12.1). There are a range of **breeding** seabird species associated with SPAs adjacent to the proposed project site, or within foraging range of it. Site specific surveys of the proposed project area for seabirds have not been undertaken. However, for seabird species during the summer breeding months, the ZoI for indirect impacts is considered to extend to all SPAs within foraging range of the proposed project site. A screening exercise using the mean max foraging distances published in Woodward *et al*. (2019) has been conducted. This brings in a number of SPAs for species with a wide foraging range such as Manx Shearwater, Gannet and Fulmar.

Atlantic salmon

Atlantic salmon have the potential to be effected by the impacts of underwater noise.

The main migratory route for Atlantic salmon on the west coast of Ireland, moving between their natal rivers and their feeding grounds off Greenland and the Faroe Islands, is along the shelf margin (Rickardsen *et al*., 2021). Outward and inward migrating Salmon may therefore move through the MUL area during their migration. However, due to the scale and scope of the project, the fact that Atlantic salmon do not actively forage during migration, the distance offshore of both wreck sites and the open ocean nature of the sites, it is considered that the SPR link, to relevant SACs for which this species is a QI, is too weak for any potential Likely Significant Effects (LSEs). Therefore, all migratory fish which form a QI for any SAC have been screened out for further assessment.

Benthic habitats

Benthic habitats and their associated species have the potential to be effected by the impacts of the accidental spillage of hydrocarbons and the Introduction of Invasive Alien species (IAS). However, as the survey vessel will be MARPOL complainant and the nearest SAC designated for benthic habitats is over 67km away (Mulroy Bay SAC) there is no potential for LSEs on this or any other European site designated for benthic habitats. Therefore, all benthic habitats which form a QI for any SAC have been screened out for further assessment.

7. European Sites

Based on the criteria described in section 6, all SACs within the ZoI, and screened in, are given in Table 6 and shown in Figure 2. This includes UK sites (outside of the Natura 2000 Network) in relation to Harbour porpoise and/or Bottlenose dolphin, where the MUL areas lie within a MU for these species as per MARA practice.

All SPAs, with breeding seabirds within foraging range of the MUL area, and therefore within the ZoI and screened in, are given in Table 7 and shown in Figure 3.

Table 6. SAC's within the ZoI which have been screened in.

			NA/C1-E (SS City of Simla)		NA/C7-D (MV Accra)	
Site code	**Site name**	**Qualifier for screening in**	**Distance (km)* to SAC**	**Wreck site Inside/outside MU for HP or BND**	**Distance (km) to SAC**	**Wreck site Inside/outside MU for HP or BND****
133	Donegal Bay (Murvagh) SAC	Harbour seal (*Phoca vitulina*)	210	N/A	517	N/A
147	Horn Head and Rinclevan SAC	Grey seal (*Halichoerus grypus*)	71	N/A	514	N/A
190	Slieve Tooey/Tormore Island/Loughros Beg Bay SAC	Grey seal (*Halichoerus grypus*)	122	N/A	477	N/A
191	St. John's Point SAC	Bottlenose dolphin (*Tursiops truncatus*)	165	Inside "Oceanic Waters" MU for BND	495	Outside all MU's
197	West of Ardara/Maas Road SAC	Harbour seal (*Phoca vitulina*)	119	N/A	486	N/A
241	Lough Swilly SAC	Harbour porpoise (*Phocoena phocoena*)	89	Inside West Scotland MU for HP	555	Outside all MU's
278	Inishbofin and Inishshark SAC	Grey seal (*Halichoerus grypus*)	286	N/A	430	N/A
328	Slyne Head Islands SAC	Bottlenose dolphin (*Tursiops truncatus*)	311	Inside "Oceanic Waters" MU		Outside all MU's
		Grey seal (*Halichoerus grypus*)		N/A	446	N/A
458	Killala Bay/Moy Estuary SAC	Harbour seal (*Phoca vitulina*)	194	N/A	478	N/A
495	Duvillaun Islands SAC	Bottlenose dolphin (*Tursiops truncatus*)	235	Inside "Oceanic Waters" MU		Outside all MU's
		Grey seal (*Halichoerus grypus*)		N/A	411	N/A
507	Inishkea Islands SAC	Grey seal (*Halichoerus grypus*)	229	N/A	408	N/A
622	Ballysadare Bay SAC	Harbour seal (*Phoca vitulina*)	180	N/A	498	N/A
627	Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Harbour seal (*Phoca vitulina*)	175	N/A	492	N/A
1141	Gweedore Bay and Islands SAC	Harbour porpoise (*Phocoena phocoena*)	79	Inside West Scotland MU for HP	491	Outside all MU's
2074	Slyne Head Peninsula SAC	Bottlenose dolphin (*Tursiops truncatus*)	310	Inside "Oceanic Waters" MU	449	Outside all MU's

			NA/C1-E (SS City of Simla)		NA/C7-D (MV Accra)	
Site code	**Site name**	**Qualifier for screening in**	**Distance (km)* to SAC**	**Wreck site Inside/outside MU for HP or BND**	**Distance (km) to SAC**	**Wreck site Inside/outside MU for HP or BND****
2165	Lower River Shannon SAC	Bottlenose dolphin (*Tursiops truncatus*)	408	Inside "Oceanic Waters" MU	519	Outside all MU's
2283	Rutland Island and Sound SAC	Harbour seal (*Phoca vitulina*)	97	N/A	487	N/A
2327	Belgica Mound Province SAC	Bottlenose dolphin (*Tursiops truncatus*)	536	Inside "Oceanic Waters" MU		Outside all MU's
		Harbour porpoise (*Phocoena phocoena*)		Not within a MU for HP	529	Outside all MU's
2329	South-West Porcupine Bank SAC	Bottlenose dolphin (*Tursiops truncatus*)	626	Inside "Oceanic Waters" MU	408	Outside all MU's
2998	West Connaught coast SAC	Bottlenose dolphin (*Tursiops truncatus*)	210	Inside "Oceanic Waters" MU		Outside all MU's
		Harbour porpoise (*Phocoena phocoena*)		Not within a MU for HP	404	Outside all MU's
3001	Porcupine Bank Canyon SAC	Bottlenose dolphin (*Tursiops truncatus*)	594	Inside "Oceanic Waters" MU	373	Outside all MU's
UK0030393	Inner Hebrides and the Minches	Harbour porpoise (*Phocoena phocoena*)	92	Inside " West Scotland" MU	592	Outside all MU's
UK0030383	Skerries and Causeway	Harbour porpoise (*Phocoena phocoena*)	113	Inside " West Scotland" MU	613	Outside all MU's

** All distances are hydrological distances. ** Wreck site NA/C7-D (MV Accra) does not lie within any MUs for Bottlenose Dolphin or Harbour porpoise.*

Table 7. SPAs within the ZoI which have been screened in.

Species	Foraging range (km)	NA/C1-ESS City of Simla	NA/C7-DMV Accra	SPA
Kittiwake	156.1	71	N/A	Horn Head to Fanad Head SPA
		84	N/A	West Donegal Coast SPA
Fulmar	542.3	66	N/A	Tory Island SPA
		71	N/A	Horn Head to Fanad Head SPA
		84	N/A	West Donegal Coast SPA
		255	N/A	Clare Island SPA
		391	N/A	Kerry Head SPA
		426	N/A	Saltee Islands SPA
		442	N/A	Iveragh Peninsula SPA
		470	N/A	Puffin Island SPA
		479	N/A	Skelligs SPA
Guillemot	73.2	71	N/A	Horn Head to Fanad Head SPA
Razorbill	88.7	66	N/A	Tory Island SPA
		71	N/A	Horn Head to Fanad Head SPA
		84	N/A	West Donegal Coast SPA
Puffin	137.1	66	N/A	Tory Island SPA
Manx shearwater	1346.8	254	665	North-West Irish Sea SPA
		291	440	Cruagh Island SPA
		443	522	Blasket Islands SPA
		470	555	Puffin Island SPA
		477	571	Deenish Island and Scariff Island SPA
		479	555	Skelligs SPA
		390	702	Seas off Wexford SPA
Storm petrel	336	195	N/A	Illanmaster SPA
		196	N/A	Stags of Broad Haven SPA
		222	N/A	Inishglora and Inishkeeragh SPA
		234	N/A	Duvillaun Islands SPA

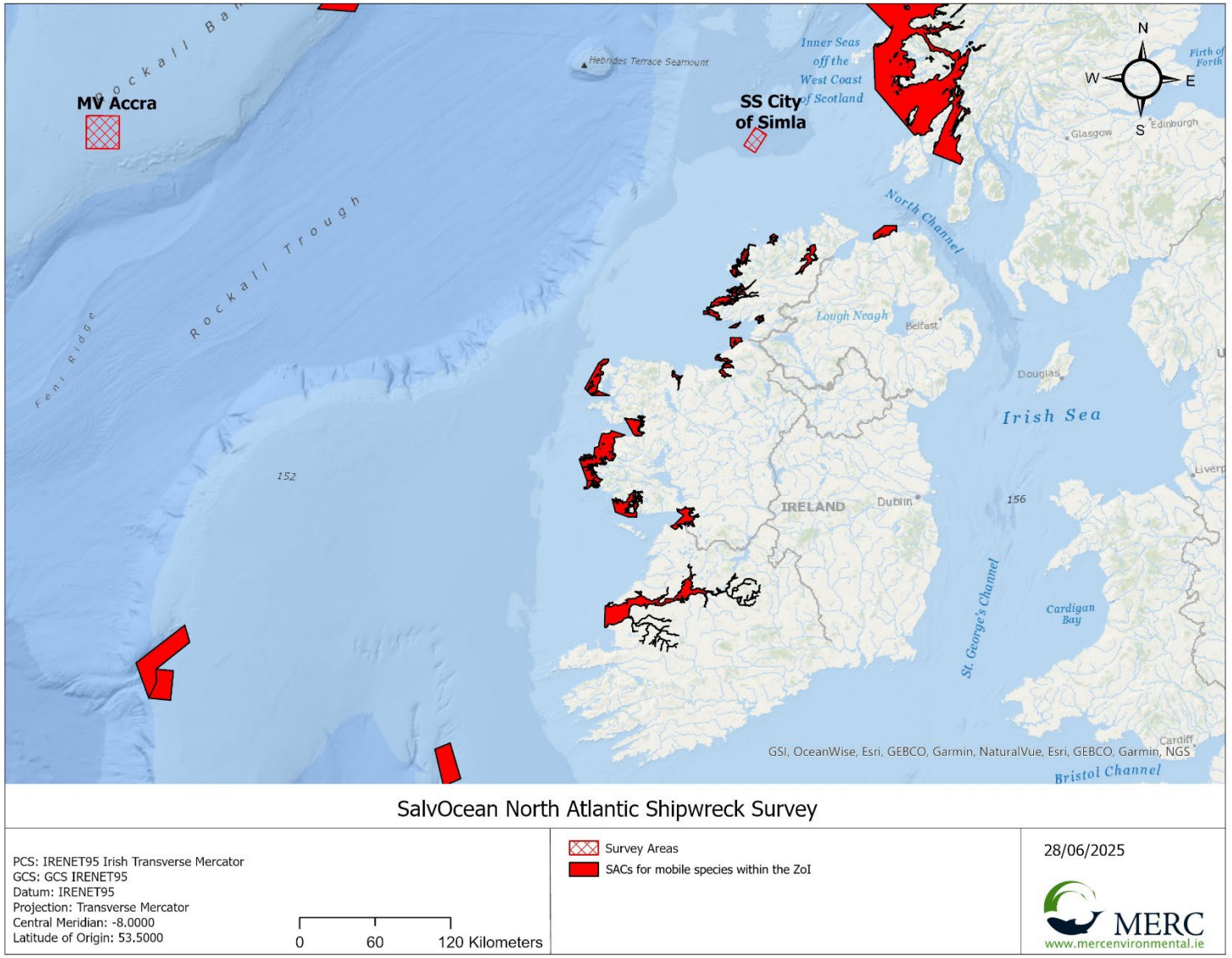

Figure 2. SACs within the ZoI

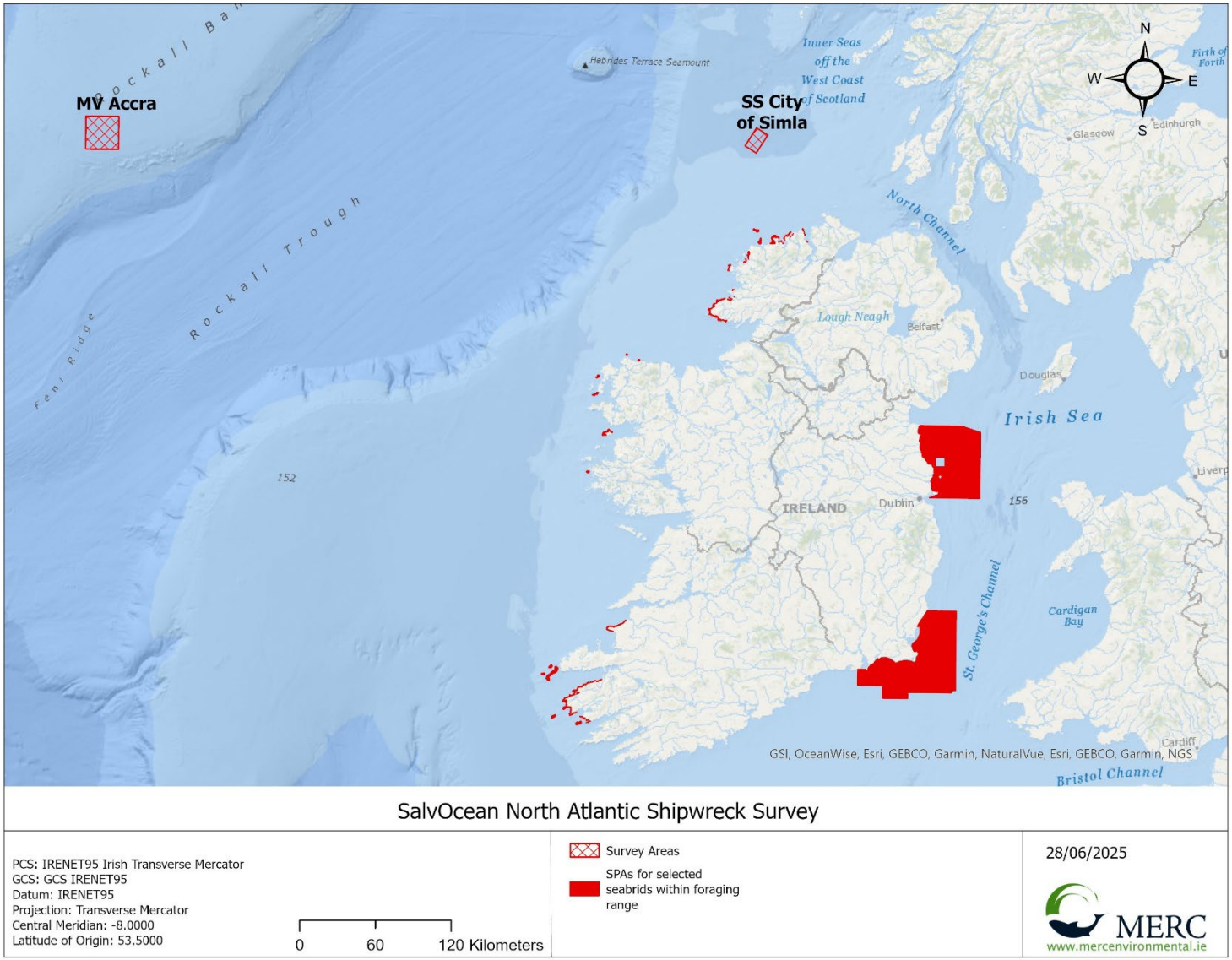

Figure 3. SPAs within the ZoI

8. In-combination impacts

8.1. Approach to identification of in-combination effects

While a single project or plan may not, in itself, lead to a significant effect on the conservation objectives of a site, a combination of projects within a localised area may cause a significant effect on a site. Therefore, the cumulative impacts must be taken into consideration when assessing the possible impacts of a project.

Potential project related impacts were identified in section 6 of this SISAA, and included potential pressures resulting from: vessel presence and acoustic surveys. Additional projects identified as having potential to act in-combination with the proposed project are considered to be those projects most likely to contribute to these pressures and generate additional underwater noise, vessel disturbance and impacts on benthic habitats.

MARA has developed a stepwise approach for identifying in-combination plans and projects, as such, using professional and scientific judgement, the key steps for assessing cumulative effects employed were as follows:

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

For the proposed project the CESS has been defined as 5 km from the boundary of the proposed MUL area for each wreck site and the CETS as 3 years. 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 SACs Conservation Objectives (JNCC, 2020) and the CETS is the Maritime Usage Licence period.

Using the above 8 step approach, and following a search of relevant databases undertaken on June 30th, 2025, no projects have been identified as being within the CESS of the MUL area. In addition, no plans, that could contribute to negative effects, in-combination with the proposed project, were identified.

8.2. Assessment of In-combination effects

A review of the MARA website for current licence applications proposed or determined does not indicate any additional projects for the MUL area that could act in combination with the proposed project with regard to cumulative effects. Similarly no plans for the proposed MUL area or its environs were identified.

Therefore it is concluded that the proposed project does not have the potential to act in-combination with other projects and plans that could result in a significant effect on the conservation objectives of any European site.

9. Transboundary effect

Transboundary effects refer to significant effects that a proposed development in one country may have on the environment of another. The United Nations Economic Commission for Europe (UNECE) Convention on Environmental Impact Assessment in a Transboundary Context, (referred to as the 'Espoo Convention') adopted in 1991 documents the requirement to consider transboundary impacts. The Espoo Convention requires that assessments are extended across borders between Parties of the Convention when a planned activity may cause significant adverse transboundary impacts.

Since 1 January 2021 nature conservation areas in the UK (including Northern Ireland) are no longer part of the Natura 2000 network. On this basis, the nearest European sites outside of Ireland's national boundaries are on mainland Europe. No potential for effects on European sites associated with other EU countries were identified.

10. Conclusion

Following a review of the proposed project, information to support a screening assessment, following the guidelines of *Assessment of plans and projects significantly affecting Natura 2000 sites* - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC has been prepared.

The assessment concludes that, the proposed project may give rise to significant effects on the conservation objectives of a number of European sites without mitigation. Accordingly, it is concluded that Appropriate Assessment of the proposed project is required.

11. References and data sources

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12. Appendices

12.1. Foraging ranges for breeding seabirds

**After Woodward et al. (2019).*

Species	Foraging Range - Mean Max (km)*
Kittiwake	156.1
Gannet	315.2
Fulmar	542.3
Cormorant	25.6
Shag	13.2
Guillemot	73.2
Razorbill	88.7
Puffin	137.1
Black-headed gull	18.5
Roseate tern	12.6
Common tern	18
Arctic tern	25.7
Sandwich tern	34.3
Red-throated diver	9
Herring gull	58.8
Little tern	5
Lesser black-backed gull	127
Manx shearwater	1346.8
Storm petrel	336
Great black-backed gull	73
Common gull	50
Med gull	20
Great skua	443.3
Arctic skua	NA

12.2. All European Sites assessed (QIs and SCIs)

Appendix 13.2. All European sites within the ZoI of the proposed project considered for further assessment in this report on the basis of having sensitive receptors with the potential for impact.

European site	**QI Screening Assessment**
Donegal Bay (Murvagh) SAC	**Screened in**
Mudflats and sandflats not covered by seawater at low tide [1140]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Dunes with *Salix repens* ssp. argentea (Salicion arenariae) [2170]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Phoca vitulina (Harbour Seal) [1365]	QI within ZoI
Horn Head and Rinclevan SAC	**Screened in**
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Dunes with *Salix repens* ssp. argentea (Salicion arenariae) [2170]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Machairs (* in Ireland) [21A0]	QI outside ZoI
Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130]	QI outside ZoI
Vertigo geyeri (Geyer's Whorl Snail) [1013]	QI outside ZoI
Halichoerus grypus (Grey Seal) [1364]	QI within ZoI
Petalophyllum ralfsii (Petalwort) [1395]	QI outside ZoI
Najas flexilis (Slender Naiad) [1833]	QI outside ZoI
Slieve Tooey/Tormore Island/Loughros Beg Bay SAC	**Screened in**
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	QI outside ZoI
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	QI outside ZoI
Mediterranean salt meadows (Juncetalia maritimi) [1410]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Decalcified fixed dunes with *Empetrum nigrum* [2140]	QI outside ZoI
Atlantic decalcified fixed dunes (Calluno-Ulicetea) [2150]	QI outside ZoI
Dunes with *Salix repens* ssp. argentea (Salicion arenariae) [2170]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Alpine and Boreal heaths [4060]	QI outside ZoI
Blanket bogs (* if active bog) [7130]	QI outside ZoI
Vertigo angustior (Narrow-mouthed Whorl Snail) [1014]	QI outside ZoI
Lutra lutra (Otter) [1355]	QI outside ZoI
Halichoerus grypus (Grey Seal) [1364]	QI within ZoI
St. John's Point SAC	**Screened in**
Large shallow inlets and bays [1160]	QI outside ZoI
Reefs [1170]	QI outside ZoI
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	QI outside ZoI
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]	QI outside ZoI

Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	QI outside ZoI
Alkaline fens [7230]	QI outside ZoI
Limestone pavements [8240]	QI outside ZoI
Submerged or partially submerged sea caves [8330]	QI outside ZoI
Euphydryas aurinia (Marsh Fritillary) [1065]	QI outside ZoI
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
West of Ardara/Maas Road SAC	**Screened in**
Estuaries [1130]	QI outside ZoI
Mudflats and sandflats not covered by seawater at low tide [1140]	QI outside ZoI
Large shallow inlets and bays [1160]	QI outside ZoI
Annual vegetation of drift lines [1210]	QI outside ZoI
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	QI outside ZoI
Mediterranean salt meadows (Juncetalia maritimi) [1410]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Decalcified fixed dunes with *Empetrum nigrum* [2140]	QI outside ZoI
Atlantic decalcified fixed dunes (Calluno-Ulicetea) [2150]	QI outside ZoI
Dunes with *Salix repens* ssp. argentea (Salicion arenariae) [2170]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Machairs (* in Ireland) [21A0]	QI outside ZoI
Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]	QI outside ZoI
Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130]	QI outside ZoI
Northern Atlantic wet heaths with *Erica tetralix* [4010]	QI outside ZoI
European dry heaths [4030]	QI outside ZoI
Alpine and Boreal heaths [4060]	QI outside ZoI
Juniperus communis formations on heaths or calcareous grasslands [5130]	QI outside ZoI
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]	QI outside ZoI
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	QI outside ZoI
Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) [6510]	QI outside ZoI
Blanket bogs (* if active bog) [7130]	QI outside ZoI
Depressions on peat substrates of the Rhynchosporion [7150]	QI outside ZoI
Alkaline fens [7230]	QI outside ZoI
Vertigo geyeri (Geyer's Whorl Snail) [1013]	QI outside ZoI
Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]	QI outside ZoI
Euphydryas aurinia (Marsh Fritillary) [1065]	QI outside ZoI
Salmo salar (Salmon) [1106]	QI outside ZoI
Lutra lutra (Otter) [1355]	QI outside ZoI
Phoca vitulina (Harbour Seal) [1365]	QI within ZoI
Petalophyllum ralfsii (Petalwort) [1395]	QI outside ZoI
Najas flexilis (Slender Naiad) [1833]	QI outside ZoI
Lough Swilly SAC	**Screened in**
Estuaries [1130]	QI outside ZoI

Coastal lagoons [1150]	QI outside ZoI
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	QI outside ZoI
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	QI outside ZoI
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]	QI outside ZoI
Phocoena phocoena (Harbour Porpoise) [1351]	QI within ZoI
Lutra lutra (Otter) [1355]	QI outside ZoI
Inishbofin and Inishshark SAC	**Screened in**
Coastal lagoons [1150]	QI outside ZoI
Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]	QI outside ZoI
Northern Atlantic wet heaths with *Erica tetralix* [4010]	QI outside ZoI
European dry heaths [4030]	QI outside ZoI
Halichoerus grypus (Grey Seal) [1364]	QI within ZoI
Slyne Head Islands SAC	**Screened in**
Reefs [1170]	QI outside ZoI
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
Halichoerus grypus (Grey Seal) [1364]	QI within ZoI
Killala Bay/Moy Estuary SAC	**Screened in**
Estuaries [1130]	QI outside ZoI
Mudflats and sandflats not covered by seawater at low tide [1140]	QI outside ZoI
Annual vegetation of drift lines [1210]	QI outside ZoI
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	QI outside ZoI
Salicornia and other annuals colonising mud and sand [1310]	QI outside ZoI
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Vertigo angustior (Narrow-mouthed Whorl Snail) [1014]	QI outside ZoI
Petromyzon marinus (Sea Lamprey) [1095]	QI outside ZoI
Phoca vitulina (Harbour Seal) [1365]	QI within ZoI
Duvillaun Islands SAC	**Screened in**
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
Halichoerus grypus (Grey Seal) [1364]	QI within ZoI
Inishkea Islands SAC	**Screened in**
Machairs (* in Ireland) [21A0]	QI outside ZoI
Halichoerus grypus (Grey Seal) [1364]	QI within ZoI
Petalophyllum ralfsii (Petalwort) [1395]	QI outside ZoI
Ballysadare Bay SAC	**Screened in**
Estuaries [1130]	QI outside ZoI
Mudflats and sandflats not covered by seawater at low tide [1140]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Vertigo angustior (Narrow-mouthed Whorl Snail) [1014]	QI outside ZoI

Phoca vitulina (Harbour Seal) [1365]	QI within ZoI
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	**Screened in**
Estuaries [1130]	QI outside ZoI
Mudflats and sandflats not covered by seawater at low tide [1140]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Juniperus communis formations on heaths or calcareous grasslands [5130]	QI outside ZoI
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]	QI outside ZoI
Petrifying springs with tufa formation (Cratoneurion) [7220]	QI outside ZoI
Vertigo angustior (Narrow-mouthed Whorl Snail) [1014]	QI outside ZoI
Petromyzon marinus (Sea Lamprey) [1095]	QI outside ZoI
Lampetra fluviatilis (River Lamprey) [1099]	QI outside ZoI
Phoca vitulina (Harbour Seal) [1365]	QI within ZoI
Gweedore Bay and Islands SAC	**Screened in**
Coastal lagoons [1150]	QI outside ZoI
Reefs [1170]	QI outside ZoI
Perennial vegetation of stony banks [1220]	QI outside ZoI
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	QI outside ZoI
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	QI outside ZoI
Mediterranean salt meadows (Juncetalia maritimi) [1410]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Decalcified fixed dunes with *Empetrum nigrum* [2140]	QI outside ZoI
Atlantic decalcified fixed dunes (Calluno-Ulicetea) [2150]	QI outside ZoI
Dunes with *Salix repens* ssp. argentea (Salicion arenariae) [2170]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Machairs (* in Ireland) [21A0]	QI outside ZoI
Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130]	QI outside ZoI
European dry heaths [4030]	QI outside ZoI
Alpine and Boreal heaths [4060]	QI outside ZoI
Juniperus communis formations on heaths or calcareous grasslands [5130]	QI outside ZoI
Euphydryas aurinia (Marsh Fritillary) [1065]	QI outside ZoI
Phocoena phocoena (Harbour Porpoise) [1351]	QI within ZoI
Lutra lutra (Otter) [1355]	QI outside ZoI
Petalophyllum ralfsii (Petalwort) [1395]	QI outside ZoI
Najas flexilis (Slender Naiad) [1833]	QI outside ZoI
Slyne Head Peninsula SAC	**Screened in**
Coastal lagoons [1150]	QI outside ZoI
Large shallow inlets and bays [1160]	QI outside ZoI
Reefs [1170]	QI outside ZoI
Annual vegetation of drift lines [1210]	QI outside ZoI
Perennial vegetation of stony banks [1220]	QI outside ZoI
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	QI outside ZoI

Mediterranean salt meadows (Juncetalia maritimi) [1410]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Machairs (* in Ireland) [21A0]	QI outside ZoI
Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]	QI outside ZoI
Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130]	QI outside ZoI
Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]	QI outside ZoI
European dry heaths [4030]	QI outside ZoI
Juniperus communis formations on heaths or calcareous grasslands [5130]	QI outside ZoI
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]	QI outside ZoI
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	QI outside ZoI
Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) [6510]	QI outside ZoI
Alkaline fens [7230]	QI outside ZoI
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
Petalophyllum ralfsii (Petalwort) [1395]	QI outside ZoI
Najas flexilis (Slender Naiad) [1833]	QI outside ZoI
Lower River Shannon SAC	**Screened in**
Sandbanks which are slightly covered by sea water all the time [1110]	QI outside ZoI
Estuaries [1130]	QI outside ZoI
Mudflats and sandflats not covered by seawater at low tide [1140]	QI outside ZoI
Coastal lagoons [1150]	QI outside ZoI
Large shallow inlets and bays [1160]	QI outside ZoI
Reefs [1170]	QI outside ZoI
Perennial vegetation of stony banks [1220]	QI outside ZoI
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	QI outside ZoI
Salicornia and other annuals colonising mud and sand [1310]	QI outside ZoI
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	QI outside ZoI
Mediterranean salt meadows (Juncetalia maritimi) [1410]	QI outside ZoI
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	QI outside ZoI
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	QI outside ZoI
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	QI outside ZoI
Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]	QI outside ZoI
Petromyzon marinus (Sea Lamprey) [1095]	QI outside ZoI
Lampetra planeri (Brook Lamprey) [1096]	QI outside ZoI
Lampetra fluviatilis (River Lamprey) [1099]	QI outside ZoI
Salmo salar (Salmon) [1106]	QI outside ZoI
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
Lutra lutra (Otter) [1355]	QI outside ZoI
Rutland Island and Sound SAC	**Screened in**
Coastal lagoons [1150]	QI outside ZoI
Large shallow inlets and bays [1160]	QI outside ZoI

Reefs [1170]	QI outside ZoI
Annual vegetation of drift lines [1210]	QI outside ZoI
Embryonic shifting dunes [2110]	QI outside ZoI
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	QI outside ZoI
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	QI outside ZoI
Humid dune slacks [2190]	QI outside ZoI
Phoca vitulina (Harbour Seal) [1365]	QI within ZoI
Belgica Mound Province SAC	**Screened in**
Reefs [1170]	QI outside ZoI
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
Phocoena phocoena (Harbour Porpoise) [1351]	QI outside ZoI
South-West Porcupine Bank SAC	**Screened in**
Reefs [1170]	QI outside ZoI
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
West Connaught coast SAC	**Screened in**
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
Phocoena phocoena (Harbour Porpoise) [1351]	QI outside ZoI
Porcupine Bank Canyon SAC	**Screened in**
Reefs [1170]	QI outside ZoI
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	QI within ZoI
UK sites within relevant Management Units	
Inner Hebrides and the Minches	**Screened in**
Skerries and Causeway	**Screened in**
Horn Head to Fanad Head SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Cormorant (*Phalacrocorax carbo*) [A017]	QI outside ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI
Barnacle Goose (Branta leucopsis) [A045]	QI outside ZoI
Peregrine (*Falco peregrinus*) [A103]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI within ZoI
Guillemot (*Uria aalge)* [A199]	QI within ZoI
Razorbill (*Alca torda*) [A200]	QI within ZoI
Chough (*Pyrrhocorax pyrrhocorax*) [A346]	QI outside ZoI
Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]	QI outside ZoI
Tory Island SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Corncrake (*Crex crex*) [A122]	QI outside ZoI
Razorbill (*Alca torda*) [A200]	QI within ZoI
Puffin (*Fratercula arctica*) [A204]	QI within ZoI
Clare Island SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI
Common Gull (*Larus canus*) [A182]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI outside ZoI
Guillemot (*Uria aalge*) [A199]	QI outside ZoI
Razorbill (*Alca torda*) [A200]	QI outside ZoI
Chough (*Pyrrhocorax pyrrhocorax*) [A346]	QI outside ZoI
West Donegal Coast SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Cormorant (*Phalacrocorax carbo*) [A017]	QI outside ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI

Peregrine (*Falco peregrinus*) [A103]	QI outside ZoI
Herring Gull (*Larus argentatus*) [A184]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI within ZoI
Razorbill (*Alca torda*) [A200]	QI within ZoI
Chough (*Pyrrhocorax pyrrhocorax*) [A346]	QI outside ZoI
Kerry Head SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Chough (*Pyrrhocorax pyrrhocorax*) [A346]	QI outside ZoI
Saltee Islands SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Gannet (*Morus bassanus*) [A016]	QI outside ZoI
Cormorant (*Phalacrocorax carbo*) [A017]	QI outside ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Herring Gull (*Larus argentatus*) [A184]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI outside ZoI
Guillemot (*Uria aalge*) [A199]	QI outside ZoI
Razorbill (*Alca torda*) [A200]	QI outside ZoI
Puffin (*Fratercula arctica*) [A204]	QI outside ZoI
Iveragh Peninsula SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Peregrine (*Falco peregrinus*) [A103]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI outside ZoI
Guillemot (*Uria aalge*) [A199]	QI outside ZoI
Chough (*Pyrrhocorax pyrrhocorax*) [A346]	QI outside ZoI
Puffin Island SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Manx Shearwater (*Puffinus puffinus*) [A013]	QI within ZoI
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Razorbill (*Alca torda)* [A200]	QI outside ZoI
Puffin (*Fratercula arctica*) [A204]	QI outside ZoI
Skelligs SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI within ZoI
Manx Shearwater (*Puffinus puffinus*) [A013]	QI within ZoI
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI outside ZoI
Gannet (*Morus bassanus*) [A016]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI outside ZoI
Guillemot (*Uria aalge*) [A199]	QI outside ZoI
Puffin (*Fratercula arctica*) [A204]	QI outside ZoI
Inishbofin, Inishdooey and Inishbeg SPA	**Screened in**
Barnacle Goose (*Branta leucopsis*) [A045]	QI outside ZoI
Corncrake (*Crex crex*) [A122]	QI outside ZoI
Common Gull (*Larus canus*) [A182]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI within ZoI
Arctic Tern (*Sterna paradisaea*) [A194]	QI outside ZoI
North-West Irish Sea SPA	**Screened in**
Red-throated Diver (*Gavia stellata*) [A001]	QI outside ZoI
Great Northern Diver (*Gavia immer*) [A003]	QI outside ZoI
Fulmar (*Fulmarus glacialis*) [A009]	QI outside ZoI
Manx Shearwater (*Puffinus puffinus*) [A013]	QI within ZoI
Cormorant (*Phalacrocorax carbo*) [A017]	QI outside ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI
Common Scoter (*Melanitta nigra*) [A065]	QI outside ZoI

Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	QI outside ZoI
Common Gull (*Larus canus*) [A182]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Herring Gull (*Larus argentatus*) [A184]	QI outside ZoI
Great Black-backed Gull (*Larus marinus*) [A187]	QI outside ZoI
Kittiwake (Rissa tridactyla) [A188]	QI outside ZoI
Roseate Tern (*Sterna dougallii*) [A192]	QI outside ZoI
Common Tern (*Sterna hirundo*) [A193]	QI outside ZoI
Arctic Tern (*Sterna paradisaea*) [A194]	QI outside ZoI
Guillemot (*Uria aalge*) [A199]	QI outside ZoI
Razorbill (*Alca torda*) [A200]	QI outside ZoI
Puffin (*Fratercula arctica*) [A204]	QI outside ZoI
Little Gull (*Hydrocoloeus minutus*) [A862]	QI outside ZoI
Little Tern (*Sternula albifrons*) [A885]	QI outside ZoI
Cruagh Island SPA	**Screened in**
Manx Shearwater (*Puffinus puffinus*) [A013]	QI within ZoI
Barnacle Goose (*Branta leucopsis*) [A045]	QI outside ZoI
Blasket Islands SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI outside ZoI
Manx Shearwater (*Puffinus puffinus*) [A013]	QI within ZoI
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI outside ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Herring Gull (*Larus argentatus*) [A184]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI outside ZoI
Arctic Tern (*Sterna paradisaea*) [A194]	QI outside ZoI
Razorbill (*Alca torda*) [A200]	QI outside ZoI
Puffin (*Fratercula arctica*) [A204]	QI outside ZoI
Chough (*Pyrrhocorax pyrrhocorax*) [A346]	QI outside ZoI
Deenish Island and Scariff Island SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI outside ZoI
Manx Shearwater (*Puffinus puffinus*) [A013]	QI within ZoI
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Arctic Tern (*Sterna paradisaea*) [A194]	QI outside ZoI
Fulmar (*Fulmarus glacialis*) [A009]	QI outside ZoI
Manx Shearwater (*Puffinus puffinus*) [A013]	QI outside ZoI
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Arctic Tern (*Sterna paradisaea*) [A194]	QI outside ZoI
Seas off Wexford SPA	**Screened in**
Red-throated Diver (*Gavia stellata*) [A001]	QI outside ZoI
Fulmar (*Fulmarus glacialis*) [A009]	QI outside ZoI
Manx Shearwater (*Puffinus puffinus*) [A013]	QI within ZoI
Gannet (*Morus bassanus*) [A016]	QI outside ZoI
Cormorant (*Phalacrocorax carbo*) [A017]	QI outside ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI
Common Scoter (*Melanitta nigra*) [A065]	QI outside ZoI
Mediterranean Gull (*Larus melanocephalus*) [A176]	QI outside ZoI
Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Herring Gull (*Larus argentatus*) [A184]	QI outside ZoI
Kittiwake (*Rissa tridactyla*) [A188]	QI outside ZoI
Roseate Tern (*Sterna dougallii*) [A192]	QI outside ZoI

Common Tern (*Sterna hirundo*) [A193]	QI outside ZoI
Arctic Tern (*Sterna paradisaea*) [A194]	QI outside ZoI
Guillemot (*Uria aalge)* [A199]	QI outside ZoI
Razorbill (*Alca torda*) [A200]	QI outside ZoI
Puffin (*Fratercula arctica*) [A204]	QI outside ZoI
Sandwich Tern (*Thalasseus sandvicensis*) [A863]	QI outside ZoI
Little Tern (*Sternula albifrons*) [A885]	QI outside ZoI
Illanmaster SPA	**Screened in**
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI within ZoI
Stags of Broad Haven SPA	**Screened in**
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI within ZoI
Leach's Storm-petrel (*Hydrobates leucorhous*) [A854]	QI outside ZoI
Inishglora and Inishkeeragh SPA	**Screened in**
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI within ZoI
Cormorant (*Phalacrocorax carbo*) [A017]	QI outside ZoI
Shag (*Phalacrocorax aristotelis*) [A018]	QI outside ZoI
Barnacle Goose (B*ranta leucopsis*) [A045]	QI outside ZoI
Lesser Black-backed Gull (*Larus fuscus*) [A183]	QI outside ZoI
Herring Gull (*Larus argentatus*) [A184]	QI outside ZoI
Arctic Tern (*Sterna paradisaea*) [A194]	QI outside ZoI
Duvillaun Islands SPA	**Screened in**
Fulmar (*Fulmarus glacialis*) [A009]	QI outside ZoI
Storm Petrel (*Hydrobates pelagicus*) [A014]	QI within ZoI
Barnacle Goose (*Branta leucopsis*) [A045]	QI outside ZoI