



MERC Consultants
environmental and conservation services

Supporting Information for Screening for Environmental Impact Assessment (SISEIA)

Survey and salvage work on RMS Laconia

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1. Introduction

1.1 Overview

Salvocean proposes to undertake a subsea survey and controlled salvage operation at the wreck of Royal Mail Ship (RMS) *Laconia*, hereafter referred to as the “proposed project”. The RMS *Laconia* wreck is located within Ireland’s Exclusive Economic Zone (EEZ) and over the State’s continental shelf area known as the Porcupine Bank, approximately 150 miles (242 km) from the nearest point of land (Figure 1). Average water depths in the area are approximately 370–375m.

The present document *Supporting Information for Screening for Environmental Impact Assessment* has been prepared in support of an application for a Marine Usage Licence (MUL) to the Maritime Area Regulatory Authority (MARA) for the proposed survey and controlled salvage operations.

Salvocean Ltd is a limited liability company established in the United Kingdom, with a subsidiary in the United States, specialising in marine survey and salvage operations, recovery from shipwrecks, the handling and disposal of submerged ordnance, environmental impact surveys, and marine operations supporting the oil and gas and renewable energy sectors. Salvocean also works in collaboration with academic and research institutions, providing vessel-based facilities and operational support for scientific investigations into marine biology, ocean health, and the environmental risks associated with potentially polluting shipwrecks.

RMS *Laconia* was lost during the First World War (WWI), following an attack by a submarine. The vessel, originally designated SS *Laconia*, was a steel ocean liner operated by the Cunard Steamship Co. Ltd. It was built and launched by Swan, Hunter & Wigham Richardson Ltd. at Wallsend in January 1912. The vessel was constructed as Yard No. 877 and was assigned Official/IMO No. 131412.

Salvocean’s operational procedures for this project are to be undertaken in four phases: **Phase I** - as-found survey, hydrocarbon leak detection, MBES and detailed bow/holds 1-3 inspection; **Phase II** - survey point-fixing and installation of frond matting over the exposed UXO/lard area; **Phase III** - controlled bow access, systematic deck/overburden removal and recovery of selected cargoes/artefacts; and **Phase IV** - as-left video, MBES and hydrocarbon leak detection followed by recovery of seabed equipment.

1.2 Objectives of this report

The objective of this report is to provide information to assist the Competent Authority in screening the proposed maritime usage to determine if an Environmental Impact Assessment (EIA) is required.

2. Statement of professional authority

This report was prepared by Nick Pfeiffer and Ronan Browne of MERC Consultants. MERC is a specialist marine ecological consultancy with extensive expertise in marine environmental assessment, ecological fieldwork and the management and conservation of marine ecosystems. Our team has substantial combined practical experience spanning more than 60 years undertaking complex aquatic surveys and providing independent scientific advice in support of Marine Protected Areas, designated conservation sites and sustainable marine development.

MERC also is also active in supporting public authorities, developers and marine operators throughout various consenting and regulatory processes, including for projects involving aquaculture, marine seabed surveys, shipwreck recovery and removal, port infrastructure and offshore renewable energy. Our work combines robust scientific methodology, extensive field experience and a detailed understanding of current national and EU environmental law and relevant marine regulatory requirements.

Through our breadth of technical expertise and proven experience in challenging marine environments, MERC provides credible, evidence-based ecological advice to inform sound environmental decision-making and the sustainable management of marine resources.

3. Details of the proposed project

3.1 Project location

The RMS Laconia lies in the Irish Exclusive Economic Zone (EEZ), 150 miles (c. 240 km) NW by W of Fastnet, on the Porcupine Bank (Figure 1). The wreck is oriented from North-East to South-West. Seabed topography in the area is characterised by an even slope of soft and/or silty sediments encompassing foraminifera-rich (benthic and pelagic) glauconitic quartz sand. The details of the RMS Laconia are provided in Table 1.

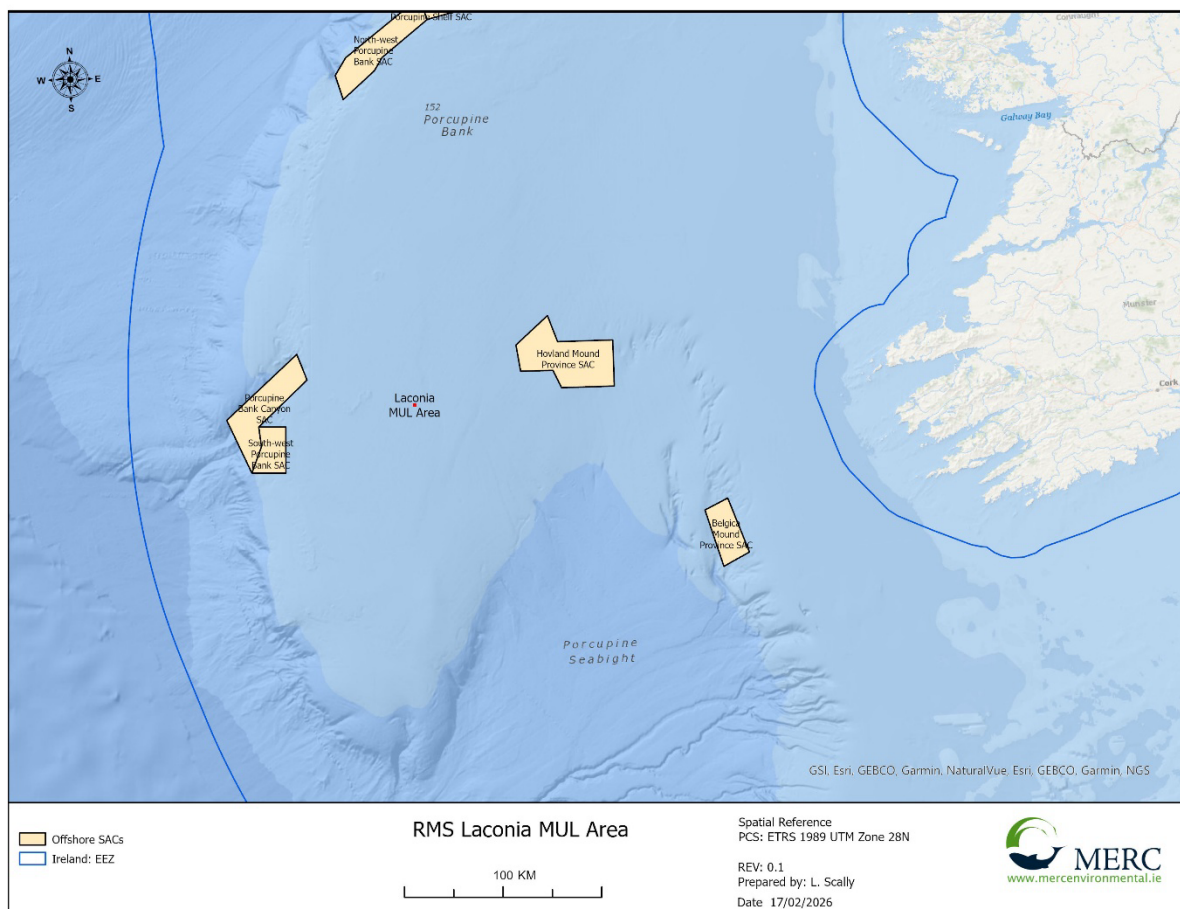


Figure 1. Location of the proposed project and some offshore SACs

Table 1. RMS Laconia: known details

Date of loss	25 February 1917
Position (GPS/PA)	5203711N 1331179W 52° 00.3079'N. 013° 58.2161'W
Wreck I.D.	W05759
Water depth	~375 meters
Wreck footprint (approximate)	There have been several previous salvage attempts on the wreck, which have greatly reduced the wreck structure to approximately 155m x 25m (the wreck is in three sections)
Project description	The location of the wreck has been known since early salvage attempts in the mid to late 20th century. The wreck's 1st- and 2nd-class accommodation levels have been removed, down to the 3rd-class accommodation level. The contents of the grab tools have been dumped from the port and starboard sides of the wreck, while significant areas of the stern and aft have been excavated by a mass flow excavator to a depth of a few meters. The wreck comprises three sections: Forward section (bow to forward funnel hatch): decks have collapsed, and both port and starboard hull plates are separating. Midship section (forward funnel hatch to aft end of engine room hatch): the central hull remains intact and upright on the seabed; the aft section continues at an angle of ~10–20° towards the stern. Stern section (aft end of engine room hatch to stern): largely indistinguishable, heavily damaged by two torpedo strikes and subsequent salvage attempts (including grabs, explosives, mass-flow excavator, and other tools).
SS Laconia particulars at the time of build in 1912	Tonnage of 18,099 grt, her dimensions were: 183.3m x 22.5m x 12.4m. Fitted with 2 x quadruple expansion engines, 6 boilers fuelled by coal, dual shaft, and 2 screws.
Cargo	Cargo on the final voyage included silver (bars/coins), mail and substantial shell and munitions cargo, alongside other bulk goods (Chronicle 2017). Salvocean's August 2026 UXO review records 11,628 cases of rifles and large-calibre shells with a gross weight of 4,831,028 lb; apart from identified proof-shell consignments, the shipping declaration does not establish whether the shells were primed or awaiting filling. 368 tons of lard – (140 tons of lard in crates, and 128 tons of lard in tierces (barrels or casks), 100 tons of block lard in crates). 1,201 barrels of mineral lubricating oil, 161 tons. 2,024.5 tons of brass shells (made up of 6-, 8-, 9.2- and 12-inch shells). Fuses, explosives, propellants and small arms ammunition. The munitions shipped on the <i>Laconia</i> consisted of: • Guns: \$5,200,000 • Rifles: \$3,000,000 • Shells 6" and over: \$71,000,000 • Shells under 6": \$47,000,000 • Fuses: \$12,500,000 • Forgings: \$25,000,000

	- Explosives and Propellants: \$27,500,000 - Small Arms and Ammunition: \$14,800,000
Estimated time for the proposed survey and salvage works and requested MUL duration.	Salvocean estimates an overall campaign duration of 1,258 hours (53 days), including mobilisation, transit, demobilisation, a mid-project crew change and 20% weather downtime. The four offshore operational phases at the wreck site total approximately 32.4 days (Phase I 1 day; Phase II 1 day; Phase III 30 days; Phase IV 0.4 day). A two-year MUL is being sought to provide for weather, vessel availability, seasonality and operational contingencies.

3.2 Scope of works

Phase I - as-found survey, hydrocarbon leak detection, MBES and detailed bow/holds 1-3 inspection; **Phase II** - survey point-fixing and installation of frond matting over the exposed UXO/lard area; **Phase III** - controlled bow access, systematic deck/overburden removal and recovery of selected cargoes/artefacts; and **Phase IV** - as-left video, MBES and hydrocarbon leak detection followed by recovery of seabed equipment.

On arrival on site, the vessel will establish DP and complete survey calibrations, followed by a baseline survey across the wreck and surrounding seabed (GVI, hydrocarbon leak detection and MBES). ROVs will inspect internal compartments, after which controlled works will begin. Cargoes and artefacts will be recovered using dedicated secure baskets. Recovery baskets and subsea containers will be used for approved non-UXO cargoes and artefacts. Salvage will concentrate on the bow and forward holds. The identified shell-cargo stack at the stern lies more than 85 m from the intended work area and will not be disturbed. The works will finish with “as left” surveys (MBES, video and hydrocarbon leak detection), after which the vessel will depart the site. No intentional detonation or explosive ordnance disposal activities form part of the proposed works under this application.

Salvocean will undertake the works in accordance with MARA (2024) guidance on identifying unexploded ordnance (UXO). Ordnance is not to be disturbed, and no shell should be assumed inert merely because a fuse is not visible. The RMS Laconia has been subjected to a torpedo attack that sank the vessel and previous salvage attempts using explosives without sympathetic explosion. UXO mitigation will be provided by Salvocean for further archival research and, under the direction of a third-party qualified and regulated UXO technician. An ROV measuring-rod check of a readily accessible unfused shell casing where required to determine whether explosive material is present within it. Salvage efforts will be concentrated on the bow and forward holds, more than 85 m from the identified shell-cargo stack in the stern/No. 4-5 hold area. Following UXO verification/fuse identification. Frond matting will be placed over the exposed holds and materials to promote sediment accumulation and provide in-situ protection without disturbing the ordnance.

The proposed survey and salvage elements and equipment types, including the vessel required, are outlined in Table 2.

Table 2. Proposed survey elements

Survey type
Multibeam echosounder (MBES) survey (wreck site and surrounding seabed)
The use of historic sub-bottom profiler (SBP) survey data (previous survey)
Photogrammetry survey
Environmental survey
Hydrocarbon leak detection survey
Cultural heritage assessment survey
As Found/As Left survey reporting (incl. MBES, video/GVI, leak detection outputs as applicable)

The following salvage operations will be undertaken at the site and will be conducted using dynamic positioning.

Table 3. Proposed salvage elements

Salvage Operations
DP-capable salvage vessel (DP set-up and station keeping)
WROV / work-class ROV operations (GVI support, tooling, handling, dredge support)
Vector Fly-out ROV (Snaeco, France) capability (internal bow compartment inspection)
HiPAP/USBL positioning and seabed reference beacon(s) (deployment and recovery)
SVP (sound velocity profiling)
Heavy-lift crane (200 t SWL)
Secondary/auxiliary crane (deck handling/support)
Crane tooling for cutting/removal: Hydraulic Shears (Tiny) and Deck Removal Tool (Deep Tek)
Sediment removal: ROV-mounted Excav8 Subsea 6" Dredge Pump and/or vessel-crane-deployed Controlled Flow Excavator, as required
Open-top half-height recovery baskets/containers positioned adjacent to the worksite
Subsea containers (modified half-height containers) positioned adjacent to the worksite
Subsea grab operations for approved non-UXO cargo and artefact recovery. The identified ordnance/munition stack will not be disturbed.
Subsea grab/WROV recovery of cargoes and other approved non-UXO materials into half-height recovery baskets/containers
Container cycling workflow (cycle to surface, empty using deck crane, redeploy)
Deck handling to recover seabed equipment and reference beacons

The stern of the Laconia has been heavily disturbed by previous salvage efforts. This has exposed crated and loose munitions in the No. 4-5 hold area. The identified munitions will not be recovered or disturbed under the proposed scope. Following UXO verification/fuse identification, Salvocean proposes placing frond matting over the exposed UXO/lard-crate area to secure it, reduce further scour/exposure, and promote in-situ preservation by sediment accumulation.

Survey and Salvage equipment

A suite of survey technologies will be used to characterise the wreck site and support salvage operations, including ROV-mounted MBES, ROV-based digital imagery/video, hydrocarbon leak detection, and USBL/HiPAP positioning with seabed reference beacon(s), supported by SVP. Historic SBP data will be utilised for salvage activities. Salvage works will use work-class ROVs and the Vector fly-out ROV, a 200 t SWL crane with secondary crane support, the specified cutting/removal tooling, and localised sediment removal with the Excav8 Subsea 6" Dredge Pump and/or Controlled Flow

Excavator. Only approved non-UXO cargoes/artefacts will be recovered using grabs and open-top half-height recovery baskets/containers.

Survey/ salvage vessel and equipment descriptions

As a survey/salvage vessel will be chartered, the specific vessel cannot be confirmed at this stage e.g. type 639 Multipurpose Offshore Vessel (or similar). Aker Yards, Norway, is an indicative vessel with sound pressure levels of 165-175 dB re 1 μ Pa at 1 m, and a DP2 Kongsberg Kpos 21 system at the ship's hull with an indicative level of 178 dB re 1 μ Pa at 1 m. The Olympic Challenger shown below can also be used as an 'example' vessel for the survey/salvage operation (4).

Table 4. An example of typical survey/ salvage vessel

Example: Olympic Challenger Type: Multipurpose Offshore Vessel MMSI: 257089810 Call sign: LAZQ7 IMO Number: 9398292 Flag: Norway	
Length OA	105.9m
Beam	21.0m
Draft Max (Loaded)	5.7m
Classification (RINA)	DNV, 1A1 ICE-C SF COMF-V(3), HELD K(E) DYMPOS AUTR, CLEAN DESIGN DK (+)
DP Type	DP2 – Kongsberg Kpos 2

Multibeam echosounder

A Teledyne RESON SeaBat 7125 ultra-high-resolution MBES, ROV-mounted, with an indicative sound pressure level of 196-224 dB re 1 μ Pa at 1 m. The MBES is used for the as-found survey and the as-left survey of the wreck and surrounding seabed.

Sub-bottom profiler (SBP)

A sub-bottom profiler survey was previously undertaken over the wreck as part of the existing survey record.

Additional acoustic transponders

A number of additional transponders will be required to aid in the positioning of the deployed equipment. All transponders operate by emitting and receiving acoustic signals and measuring time to calculate distance and direction by analysing the returning signal.

Routing and planned schedule

The survey and salvage campaign will mobilise and demobilise from Nigg Bay, Scotland, with passage plans prepared by the responsible officers on the salvage vessel for each transit leg. Ringaskiddy Harbour may serve as an operational support port for crew changes, provisioning, equipment logistics, and weather sheltering, as required. When recovered material is retained onboard, the salvage vessel will not enter the Irish contiguous zone and will transit directly from the wreck site to a UK port.

General visual inspection of the wreck

A video survey will be conducted at the shipwreck and its immediate vicinity. The adjacent areas will be surveyed to confirm the locations of debris, fishing nets, and similar items.

Digital video acquisition

One or more cameras mounted on a ROV will be used to record visual monitoring of the wreck and adjacent areas during the surveys, salvage and at the completion of works.

Multi-Beam Echo Sounder survey

The MBES will acquire data periodically throughout the work. 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 is expected to achieve 2-3 soundings per cell at a ping rate of 10 Hz.

Hydrocarbon Leak Detection Survey

Hydrocarbons can be considered lighter in weight than seawater, such substances, if emitted 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. However, Britannia's Gold Ltd (BGL), on behalf of the Irish Coast Guard (ICG), reported negligible to no pollution risk from the coal-powered RMS *Laconia*, with no visible pollutants observed during previous salvage operations or the 2018 BGL survey.

Photogrammetry survey

Photogrammetry of the wreck and its environment by a ROV-mounted SubSLAM X2 system, an underwater camera system. A fly-out ROV system will be used to inspect internal bow compartments where access allows. A work-class ROV will support both survey verification and salvage activities, including close visual inspection, handling tasks, and the deployment/management of subsea equipment. ROV operations will also support monitoring during recovery works and confirm conditions during "as found" and "as left" inspections.

Vessel presence and dynamic positioning (DP)

The survey/salvage vessel will mobilise to the site and maintain station using DP while surveys and subsea works are undertaken. Vessel presence, thruster use and general operations contribute to the overall underwater noise environment.

Controlled access works

Controlled access works at the bow will use WROV cutting tools together with the crane-deployed Hydraulic Shears (Tiny) and Deck Removal Tool (Deep Tek). The deck removal tool will lift and shift cut deck sections clear of the bow to a dedicated laydown/dump zone, under the project lifting, rigging and HSE controls.

Sediment removal and clearance

Sediment removal will be undertaken where required using the ROV-mounted Excav8 Subsea 6" Dredge Pump (Centurion Subsea Services, UK) and/or the vessel-crane-deployed Controlled Flow Excavator (Coretti, France), depending on local conditions and access requirements.

The Controlled Flow Excavator and ROV-mounted 6" dredge pump will be used where required to move or remove localised overburden. The principal environmental effects are direct benthic disturbance within the work footprint, short-term suspended sediment/turbidity, localised redeposition and temporary disturbance to mobile fauna.

Cut deck sections/equipment and non-recovered overburden may be moved to dedicated local seabed laydown zones adjacent to the bow work area. Material of interest will be placed in open-top, half-height containers for recovery and surface inspection.

Recovery of cargoes and artefacts

Cargoes and artefacts will be recovered using dedicated secure baskets. Baskets will be positioned adjacent to the work area and recovered to the surface as required, with handling managed via ROV/vessel cranes and deck operations.

Containers and subsea collection workflow

Open-top half-height recovery baskets/containers will be positioned adjacent to the bow worksite for recovered cargoes/artefacts and material of interest. Containers will be cycled to the surface for emptying and redeployed as necessary.

UXO avoidance and in-situ protection

Salvage will concentrate on the bow and forward holds, more than 85 m from the identified shell-cargo stack in the stern/No. 4-5 hold. Following UXO verification/fuse identification, frond matting is to be placed over the exposed UXO area to secure it, promote sediment accumulation and provide in-situ protection without disturbing the ordnance.

Frond mats will be deployed individually by vessel crane using a purpose-built lifting frame and positioned by the WROV. The installation area and the centre of each mat will be survey point-fixed, with a mat-position overlay/as-built record produced. The mats are a soft and reversible in-situ

preservation measure intended to reduce scour and promote sediment accumulation over the exposed UXO/lard area.

No recovery of the identified shell-cargo stack is proposed. If an unexpected suspect munition is encountered outside that area, work will stop. The item will remain in situ pending assessment by the qualified UXO technician. No item is to be treated as inert solely because a fuse is not visible.

Deck operations and recovery of seabed equipment

Deck operations will support crane rigging, deployment and recovery of tooling, container emptying, and general handling. At completion, seabed equipment (including positioning beacons and any temporary subsea infrastructure) will be recovered.

Underwater noise source levels

Where available, indicative source levels for key acoustic systems are provided in the associated equipment tables (Table 5 and 6 -dB re 1 μ Pa). For mechanical equipment, definitive source levels are generally not available. However, for mechanical equipment operated from the surface, such as underwater grabs, sound is typically intermittent, has a low duty cycle, and is dominated by mechanical contact rather than sustained transmission.

Table 5. Equipment specification and sound pressure levels*

Equipment	Model	Deployment	Company	Sound Pressure Level / Source Level (dB re 1 μ Pa)
Survey / Salvage vessel	Type 639 Multipurpose Offshore Vessel (or similar)	Ocean surface	Aker Yards, Norway	165–175
Vessel DP	DP2 Kongsberg KPos 21	Ships Hull	Kongsberg	178
Acoustic transponders	EdgeTech CAT Coastal Acoustic Transponder	Equipment mounted	EdgeTech	192
Obstacle avoidance sonars	Teledyne (model TBC)	Equipment mounted	Teledyne	160–180
Underwater navigational signals (USBL)	Sonardyne Compatt 6 8300-3111	Equipment mounted	Sonardyne	187–196
Work class ROV (WROV)	Millennium® Plus Work Class ROV	Launched from vessel	Oceaneering	130–160
Work class ROV (WROV)	Schilling Robotics HD Work Class ROV	Launched from vessel	Schilling	130–160
Ultra-high resolution MBES	Teledyne RESON SeaBat® 7125	ROV mounted	Teledyne	196–224
Fly-out ROV	Vector	ROV mounted	Snaeco, France	Est. 130 - 160

* Should alternative equipment need to be utilised, then Salvocean will ensure that sound pressure levels will fall within the parameters detailed in this table.

Table 6. Grouped salvage equipment.

Group	Items included	Mechanical sound type	Typical duration/duty cycle
ROV manipulators	T4 + Atlas Manipulators; Flange Splitter; PHINS; DVL	Mostly low-level hydraulic/electric actuation, short “servo” sounds; minor structure-borne vibration	Intermittent
Cutting/grinding / sawing tools	Grinders / Chop Saw; Track Saw (17" rotary saw); Diamond Wire Cutter (MMDWS); Hydraulic Shears (Tiny); Deck Removal Tool (Deep Tek)	Intermittent high-frequency tonal/rasping cutting noise; vibration transferred into the wreck structure; occasional impact sounds	Short bursts
Line cutters & small cutters	Soft line cutter; Hard line cutter	Very brief mechanical snap/cut, possibly a short motor whine; minimal energy	Infrequent
Pump / jet / hydraulic flow tools	Dynajet pump; HP water jet; Excav8 Subsea 6" Dredge Pump; Controlled Flow Excavator	Broadband “hiss/jet” with pump whine; some low-frequency components; largely confined to a few metres	Intermittent
Grabs and baskets: contact/impact handling	Large Tine Grab (DWT OPG 2.2); Small Tine Grab (MEGA CLAW 3); Clam Shell Grab (DWT BAG10 Grab); Half Height Baskets	Intermittent low-frequency clunks/impacts, scraping/dragging depending on substrate	Intermittent

The work-class ROV equipment includes T4 + Atlas Manipulators, RTIS, Grinders / Chop Saw, Dynajet Pump, Flange Splitter, Soft and Hard-Line Cutters, Track Saw (Aleron), HP Water Jet, MBES, PHINS, DVL, SVP, USBL Beacons and a Diamond Wire Cutter. Remote-intervention equipment includes the DWT OPG 2.2 Large Tine Grab, MEGA CLAW 3 Small Tine Grab, DWT BAG10 Clam Shell Grab, Tiny Hydraulic Shears, Deep Tek Deck Removal Tool, Half Height Baskets and a Controlled Flow Excavator. Except for MBES/USBL, these items are not continuous acoustic transmitters; any underwater noise is expected to be intermittent and task-driven, driven by tool operation and contact with steel/sediment, and strongly dependent on settings and duty cycle. In the absence of equipment-specific referenced data, source levels are not assigned for these tools.

USBL beacons are active acoustic sources for which indicative source levels are provided where available, while other navigation aids are not expected to generate material underwater noise unless they include active acoustic transmissions (to be confirmed).

4. Methods

A report containing Supporting Information for Screening for Appropriate Assessment (MERC, 2026a), a Natura Impact Statement (MERC, 2026b) and an Annex IV Risk Assessment (MERC, 2026c) have been prepared in support of this licence application. These reports were consulted during the preparation of this SISEIA.

The SISEIA 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.

- Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU (EIA Directive) (Codified Directive).
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022).
- Technical Guidance note: Obtaining a licence to carry out specified maritime usages in the Maritime Area under the Maritime Area Planning Act 2021. MARA, 2024 Ver 7.
- 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.
- Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Department of Arts, Heritage and the Gaeltacht, 2014.

A review of relevant 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) 2026. Bathymetry, backscatter, sediment samples and sediment classification layers.
- Marine Institute (2026). Ireland's Marine Atlas: Fishing Activity and Fish Species Distribution Layers
- Irish Ramsar Wetlands Committee (2026). Ramsar sites in Ireland.
- NPWS Designations viewer (SACs, SPAs, NHAs and pNHAs)
- Biodiversity Data Centre Maps: Habitats and Species.
- MERC (2026a). Supporting Information for Screening for Appropriate Assessment: Survey and salvage work on RMS Laconia.
- MERC (2026b). Natura Impact Statement: Survey and salvage work on RMS Laconia.
- MERC (2026c). EU Habitats Directive: Annex IV Risk Assessment: Survey and salvage work on RMS Laconia.

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 that the proposed project is not subject to mandatory EIA, the SISEIA process has assessed the project's 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 4 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, 2026a).

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

The bathymetry and predominant habitat types in the area are known from INFOMAR data. A description of the ecology of the receiving environment is provided in the SISAA (MERC, 2026a). Table 4 below provides a summary of the environmental baseline and an assessment of the potential for impact on the environment.

Table 4. Environmental baseline and assessment of impact

Protected sites
European sites (SAC's and SPA's)
There is no spatial overlap between the proposed project area and any European site. However, a number of European sites are present within the Zol of the proposed project. A SISAA report (MERC, 2026a) has been provided as part of this application. The SISAA report identified all European sites within the Zol of the proposed project and concluded that the proposed project may give rise to significant effects on the conservation objectives of a number of European sites in the absence of mitigation. Subsequently, a Natura Impact Assessment (NIS) of the proposed project was carried out, and mitigation measures were proposed to avoid significant adverse effects on European sites (MERC, 2026b). The NIS concluded that, provided the recommended mitigation measures were implemented, the proposed project would not have any significant adverse effects on any European sites.
Additional designations (NHAs, pNHAs, Ramsar sites)
The proposed project is entirely marine, and the SISAA did not identify any source path receptor link to any terrestrial, coastal or freshwater habitats or species.
The proposed project consists of a survey and salvage works at the RMS Laconia wreck site. The wreck site lies offshore on the Porcupine Bank, approximately 150 miles (~242 km) NW by W of the Fastnet Rock, within Ireland's Exclusive Economic Zone (EEZ) and on the continental shelf. As such, the proposed survey/ salvage areas do not overlap with any additional designations (NHAs, pNHAs, or Ramsar sites).
Non-statutory Environmental Assessment
Population and Human Health
Britannia's Gold Ltd (BGL), for and on behalf of the Irish Coast Guard (ICG) conducted a <i>Hydrocarbons & HNS Survey Data Risk to Environment Report</i> . The threat of pollution from the <i>Laconia</i> is negligible to none. She was coal-powered. Previous salvors reported no visible pollution from the wreck, and the survey completed by BGL in 2018 found no pollutants emanating from the wreck site.
An assessment of the mineral oil cargo reported that the barrels carried would have been buoyant and capable of floating free from the wreck as it sank. Any barrels remaining were likely destroyed or damaged by the torpedo strikes, fire, seabed impacts and previous salvage operations.

Following UXO verification/fuse identification, frond matting is proposed over the exposed UXO/lard-crate area to provide in-situ protection and reduce further scour/exposure. Any required ROV verification will be directed by a third-party qualified and regulated UXO technician. No shell will be assumed inert solely because a fuse is not visible. With no disturbance to the shell stack and >85 m separation from the proposed salvage area.

All survey and salvage works proposed will be fully marine. The salvage vessel activities will be focused on one restricted location, and the vessel's presence will ensure that there is no interaction by fishing operators during survey/ salvage activities, but these will be temporary and short-lived. No significant pollution risk is anticipated, with controls in place (MARPOL compliance, SOPEP, etc.) in respect of the risks associated with presence and operation of a modern survey and salvage capable vessel offshore vessel.

Biodiversity

Benthic habitats

The proposed survey and salvage area covers ~1 km². There is no spatial overlap between the proposed MUL area for the wreck site and any European site/s. The wreck lies in Ireland's EEZ on the Porcupine Bank, approximately 150 miles NW by W of Fastnet, at a water depth of approximately 375m. The site is characterised as low energy, with the wreck sitting relatively upright on a gentle slope.

Seabed conditions are soft, silty sediment with a surface layer dominated by foraminifera-rich glauconitic quartz sand (in the regional geological context of the Porcupine Bank). The wider Porcupine Bank setting is noted as being free of terrigenous sedimentation, with carbonate accumulation and mixing with relict quartz sands/glacial material, and with benthic foraminifera and possible coral patch association in 200–500 m water depths.

The seabed around the wreck has been disturbed by previous salvage attempts, including mass-flow excavator activity, and there are excavation features and the dumping of grab contents along the sides of the wreck. The receiving environment is not "pristine" and already contains disturbed sediments and redistributed material.

There are no records of any sensitive benthic habitats or species within the survey area.

Coastal and terrestrial habitats

Not relevant. The proposed project is entirely within the subtidal marine environment, and no direct or indirect links to coastal, freshwater or terrestrial habitats are possible.

Avifauna

The proposed project area provides foraging habitat for seabirds. Following a full review of the available data and the potential for impact on bird species, the SISAA (MERC, 2026a) concluded that a number of deeper diving seabirds may utilise the proposed survey area during the breeding season.

However, the NIS concluded that while vessel presence may cause disturbance to seabirds, should they be foraging in the area at the same time as the proposed survey. But, given the large expanses of alternative available foraging habitat and the limited scale and duration of the proposed project no adverse effects on the conservation objectives of seabirds which form a SCI for any SPA are considered likely.

Marine Mammals

A total of 26 cetacean species have been recorded in Ireland. 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) on the distribution of cetaceans off the coast of Ireland. ICES's Working Group on Marine Mammal Ecology (WGMME) has also collated several relevant survey datasets for British and Scottish waters, including the SCANS-IV multidenominational survey. These data sources show that the areas surrounding the proposed project locations are used by a wide range of cetacean species. The density and distribution of which vary over time and season.

The proposed project consists of a survey and salvage works; potential impacts include disturbance and noise. The maximum area of direct impact for disturbance is confined to the direct area of the survey/salvage, i.e. the MUL licence area as determined in the SISAA. Underwater-noise effects have a wider precautionary Zol as assessed in the SISAA/NIS. (MERC, 2026a).

An Annex IV Risk Assessment was prepared for the proposed project (MERC 2026c). This assessment indicated the potential for impacts on a number of cetacean species should they be present in the proposed project area during selected elements of the acoustic survey. As such, mitigation was proposed, and this has been included in the "Summary of Mitigation" provided below.

In a similar manner to that identified in the Annex IV Risk assessment, it is considered that without mitigation, impacts on pinnipeds, including grey seal, may occur, without mitigation. However, provided the mitigation detailed in this report is implemented no potential for impact on pinnipeds is considered likely.

Fish

Commercial fisheries

The proposed survey/salvage area is outside of the Irish inshore fishing area for all commercial species.

The following gear types are used by Irish and international offshore fleets in the proposed survey/salvage area of the RMS Laconia. Fishing effort is collated from vessel monitoring systems, logbooks and the EU fleet register. Figure 2 to Figure 7 show the distribution of the fishing effort for the following gear type:

- Irish bottom trawls
- Irish pelagic trawls
- International bottom otter trawl
- International long lines

- International pelagic trawl
- International Pots

The waters surrounding the proposed MUL area lie within or adjacent to mapped spawning, nursery or fisheries grounds for a range of commercially fished species, including Blue Whiting, Megrim, Horse Mackerel and Nephrops. The areas where these spawning and nursery grounds overlap with the proposed MUL area are shown in Figure 8 to Figure 11

Vessel and survey noise will be above background levels locally; however, effects are expected to be temporary and spatially limited. A noise modelling and environmental risk assessment (Thomsen *et al*, 2023) was carried out for the use of a suite of instrumentation, with many similar instruments, to that proposed for this project. This modelling report assessed the potential for impact as a result of the use of the proposed acoustic equipment on Atlantic Herring. Atlantic Herring was used as a proxy for fish containing a swim bladder, such as the other commercial fish species detailed above.

While a behavioural response is possible, it is considered that this would only have the potential to lead to temporary disturbance, over a short duration (days) and would therefore, not have the potential to lead to impacts on the fishery especially given the magnitude of the minor impact relative to the large nursery and spawning area available to these species. Only minimal impact related to disturbance of fishing activities is possible. However, it will be localised and short term.

Annex II fish species

The SISAA (MERC, 2026a) demonstrated that the proposed project did not have the potential for impact on any Annex II fish species.

Aquaculture

There are no aquaculture sites within the proposed project area or its environs.

Water, Air and Climate

While emissions to air as a result of 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 on air quality are anticipated. The proposed survey/salvage vessel is MARPOL compliant and regulated by the stringent control of waste, wastewater and non-indigenous species.

Waste generated during the project will be managed in accordance with MARPOL and applicable waste-management procedures.

There will be a project-specific HIRA before mobilisation; Permit-to-Work, Job Safety Analysis, lift-plan and recorded toolbox-talk controls; twice-daily/12-hour weather forecasts with suspension of operations when operating limits are exceeded; spill kits at suitable locations; use of synthetic biodegradable hydraulic oils where oil-powered subsea tooling is required; segregation and compliant disposal of used spill materials; return of non-incinerator waste to port for compliant disposal; and defined notification/response arrangements for environmental incidents.

The project does not have the potential to impact climate change trends.
Cultural heritage
A review of the National Monuments Service wreck viewer and INFOMAR wreck data has been carried out. These data indicate a number of wreck sites around the Porcupine Bank and Seabight (Figure 12), other than the target wreck. Salvocean engaged with the Irish National Monument Service on 16 April 2026 to hold preliminary discussions regarding the requirements of a salvage operation within the Irish EEZ but outside the 24 nm limit. Salvocean will have a qualified and highly experienced marine archaeologist present during all their survey and salvage operations. Salvocean's marine archaeologist is part of the offshore management team and has knowledge and experience of ROVs, subsea salvage tooling and survey. The marine archaeologist will oversee research, survey, investigation, recovery, documentation and basic conservation, storage onboard of recovered coins, ingots, artefacts, and produces policies and procedures for all archaeological operations. All archaeological work will be conducted in accordance with UK professional archaeology standards and guidelines.
Material Assets
No potential for any interaction with material assets has been identified. No infrastructure (e.g. subsea electrical or telecoms cables) or other marine-based infrastructure is located within the proposed project area. The proposed project will have no physical interaction with the seabed that could affect material assets.
Cumulative impacts
Cumulative impacts have been assessed, and relevant projects (e.g. MUL230036) included as part of the preparation of the SISAA (MERC, 2026a). That report concluded that following a review of current sources of information for marine-based projects or plans, no relevant projects were identified that would give rise to cumulative effects. Cumulative impacts on other aspects of the environment outside the Natura 2000 network are not considered possible given the scale and scope of the proposed project and the findings of this report.
Summary of mitigations
The Annex IV Risk Assessment carried out in support of this project (MERC, 2026c) concluded that without mitigation the proposed project had the potential to cause disturbance to a number of Annex IV species should they be present in the area during surveys. The project NIS similarly identified the potential for impacts on Annex II marine mammals. To mitigate potential for impact on Annex IV species, the NIS was completed with implementation of NPWS (2014) guidance on managing risks to marine mammals from man-made sound sources in Irish waters. This document provides guidance and mitigation measures to address key potential sources of anthropogenic sound that may impact

negatively on marine mammals in Irish waters. The mitigation methods proposed follow the guidance prescribed by the National Parks and Wildlife Service. Specifically, in relation to acoustic surveys, such as proposed in this project, the guidance sets out the following mitigations:

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 (Appendix 6, NPWS, 2014).
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 proposed acoustic 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.

Line Changes

10. Where the duration of a survey line or station change will be greater than 40 minutes the activity shall, on completion of the line/station being surveyed, either
 - (a) shut down and undertake full Pre-Start Monitoring, followed by a Ramp-Up Procedure for recommencement, or
 - (b) undergo a major reduction in seismic energy output to a lower energy state¹ where the output peak sound pressure level from any operating source is 165-170 dB re: 1µPa @1m, and then undertake a full Ramp-Up Procedure for recommencement.
11. Where the duration of a survey line or station change will be less than 40 minutes the activity may continue as normal (i.e., under full seismic output)

Breaks in sound output

12. 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.
13. For higher output survey operations which have the potential to produce injurious levels of underwater sound (see sections 2.4, 3.2) 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

14. Full reporting on MMO operations and mitigation undertaken must be provided to the Regulatory Authority as outlined in Appendix 6 of NPWS (2014).

Additional recommendations

UXO controls: Do not disturb the identified ordnance. Retain a third-party qualified and regulated UXO technician for any required verification. Undertake further archival research. Protect the exposed UXO/lard-crate area with frond matting; and confine salvage to the bow and forward holds more than 85 m from the shell-cargo stack.

¹ It is important that this significant reduction in sound output is to a minimum point (i.e., minimum peak sound pressure level) that in theory remains audible above most ambient sound and shipping noise and yet is also consistent with the Ramp-up Procedure.

As the project is extremely limited in scale both temporally and spatially, risks to the following components of the receiving environment have been reviewed and are not considered insignificant. Accordingly they are not assessed further.

- Landscape/Seascape impacts
- Traffic & Transport (including navigation) impacts
- Major accidents / disasters

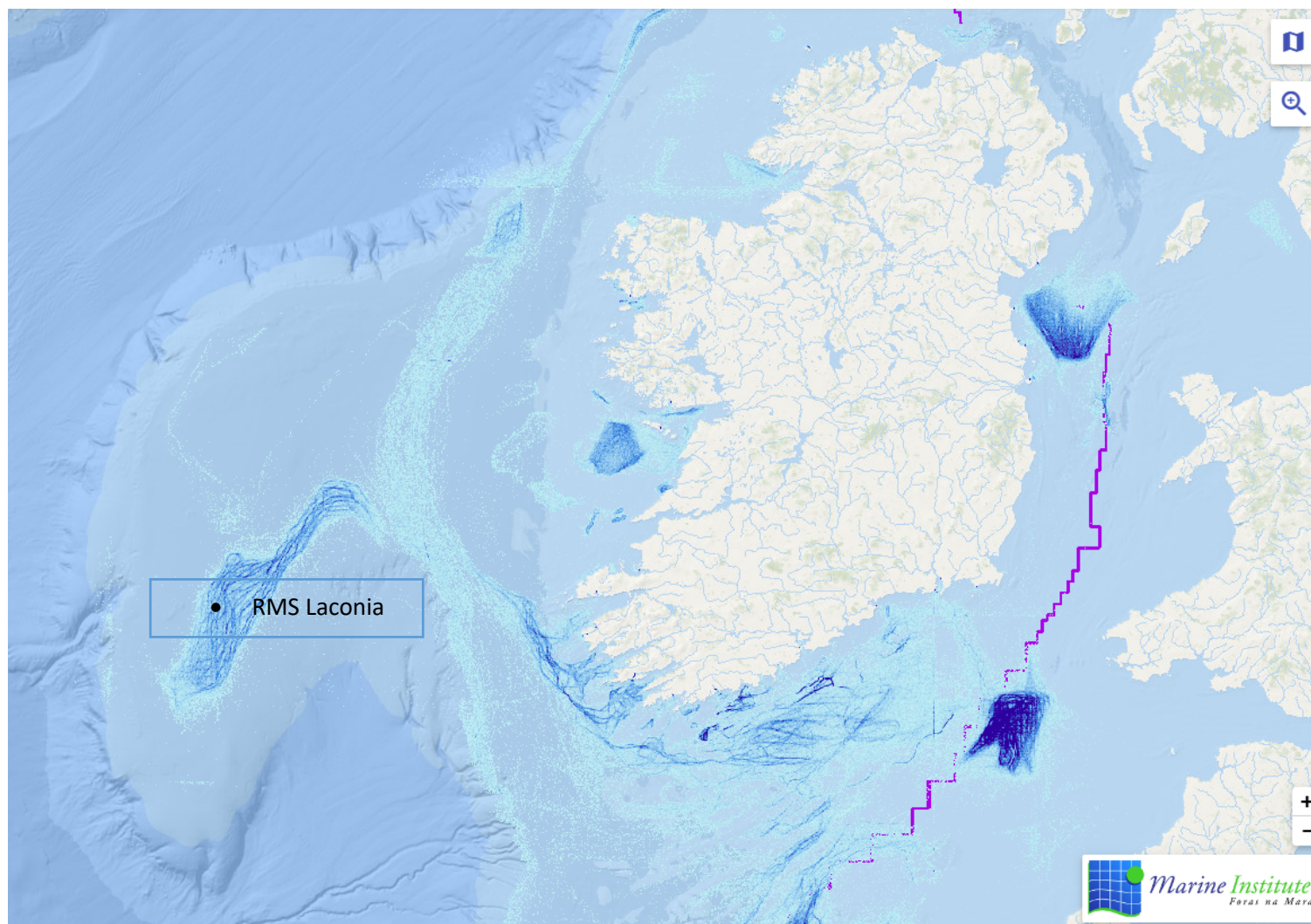


Figure 2. Fishing effort: Irish bottom trawls

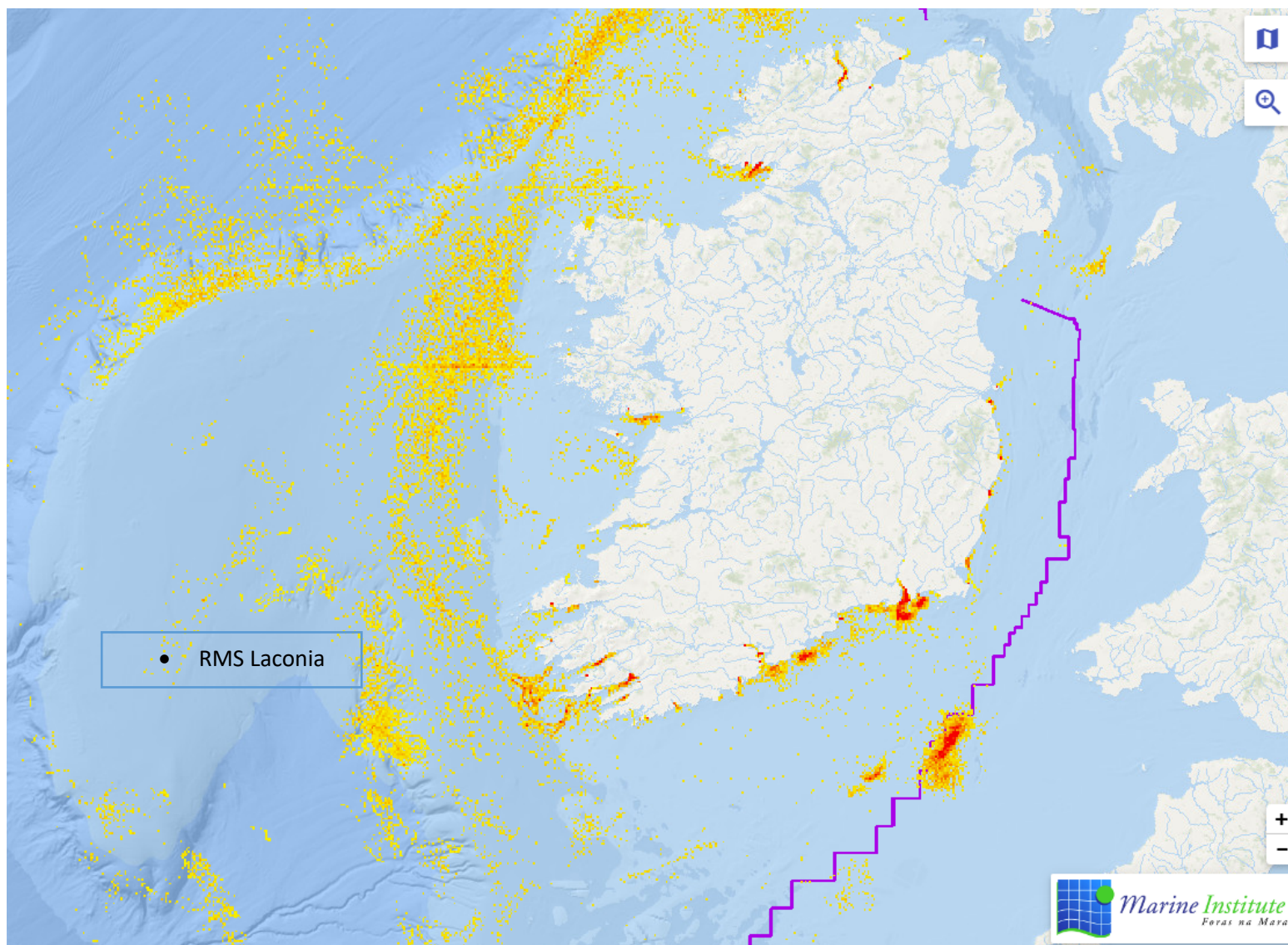


Figure 3. Fishing effort: Irish pelagic trawls

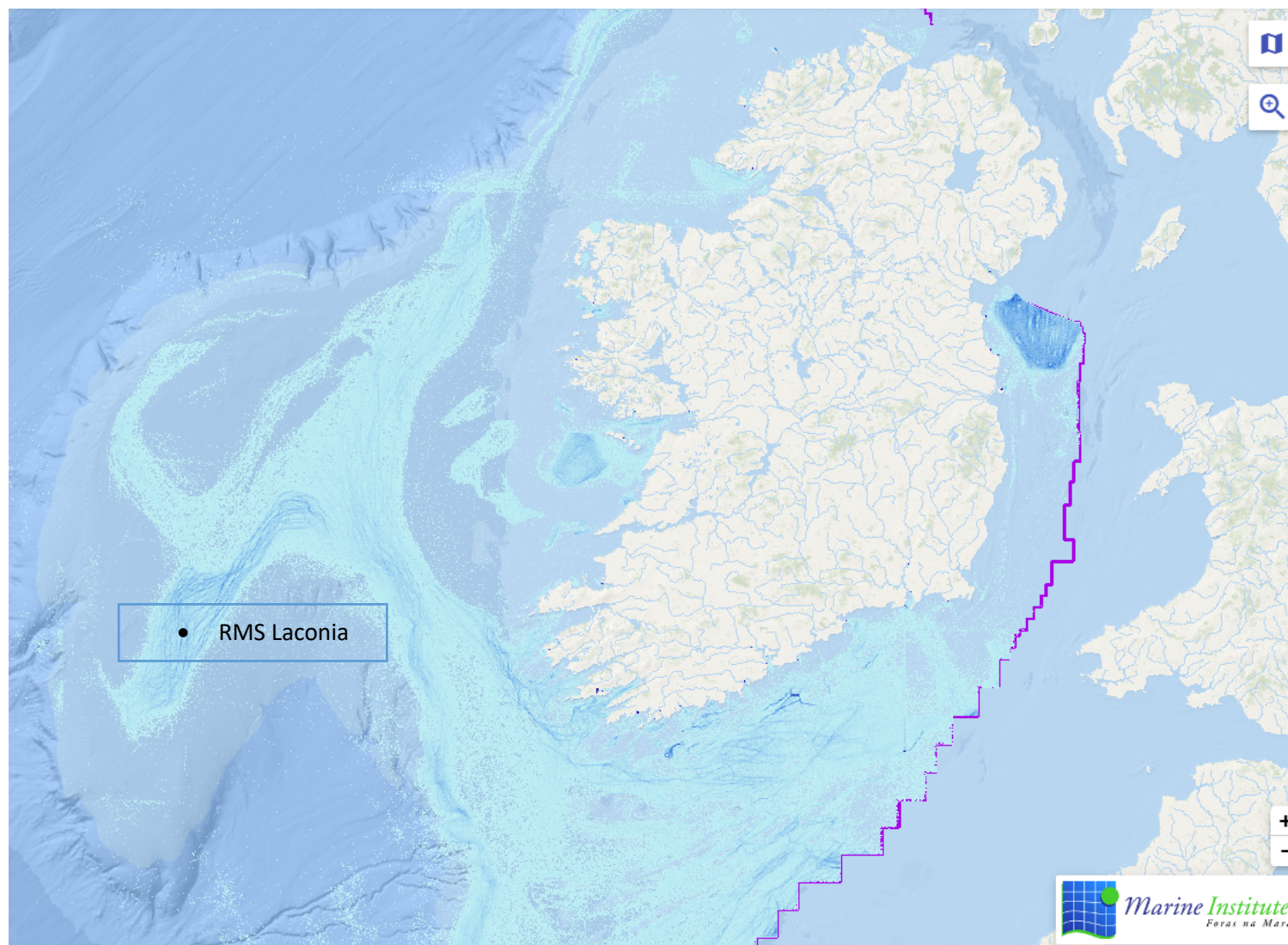


Figure 4. Fishing effort: International bottom otter trawl

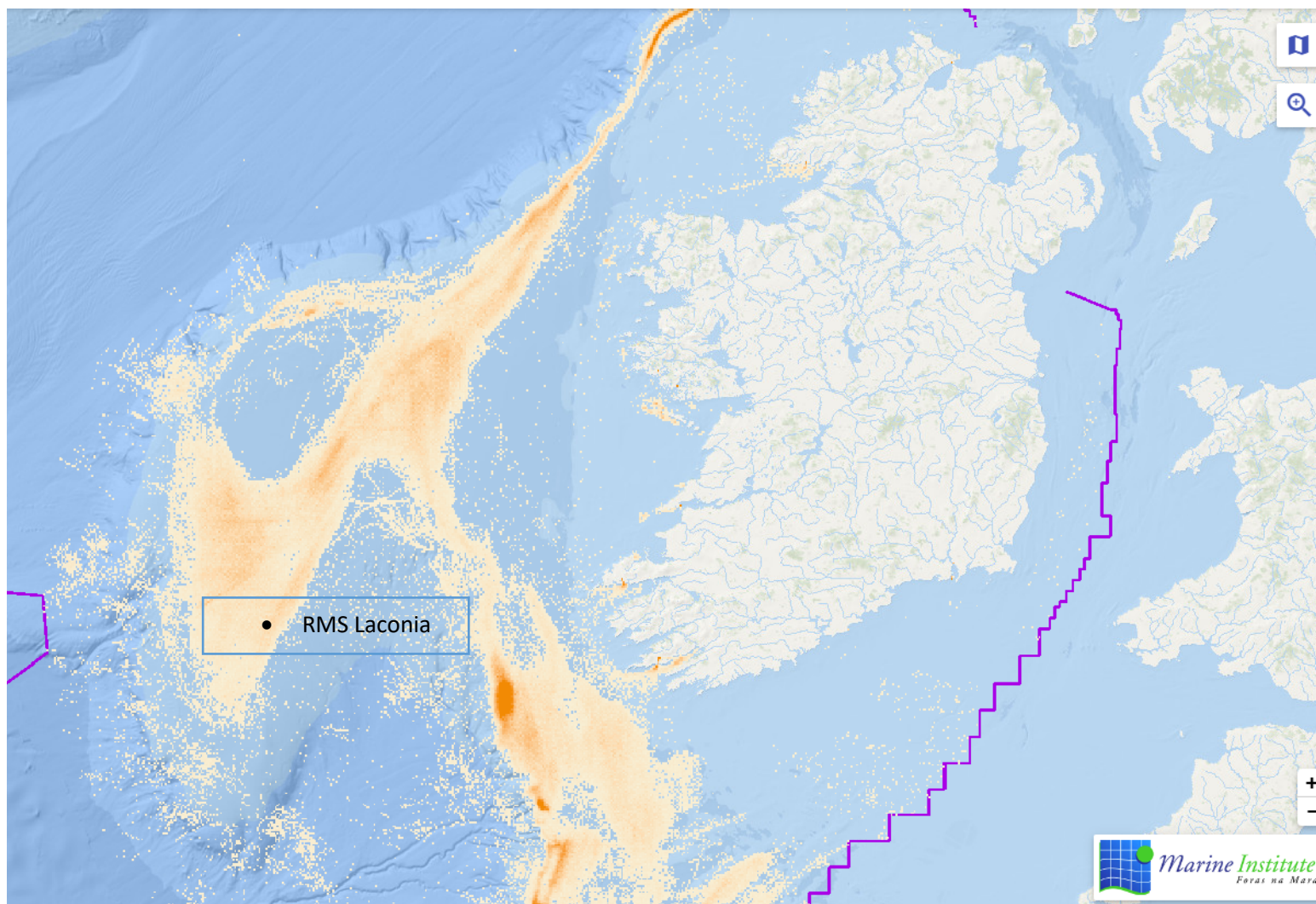


Figure 5. Fishing Effort: International long lines

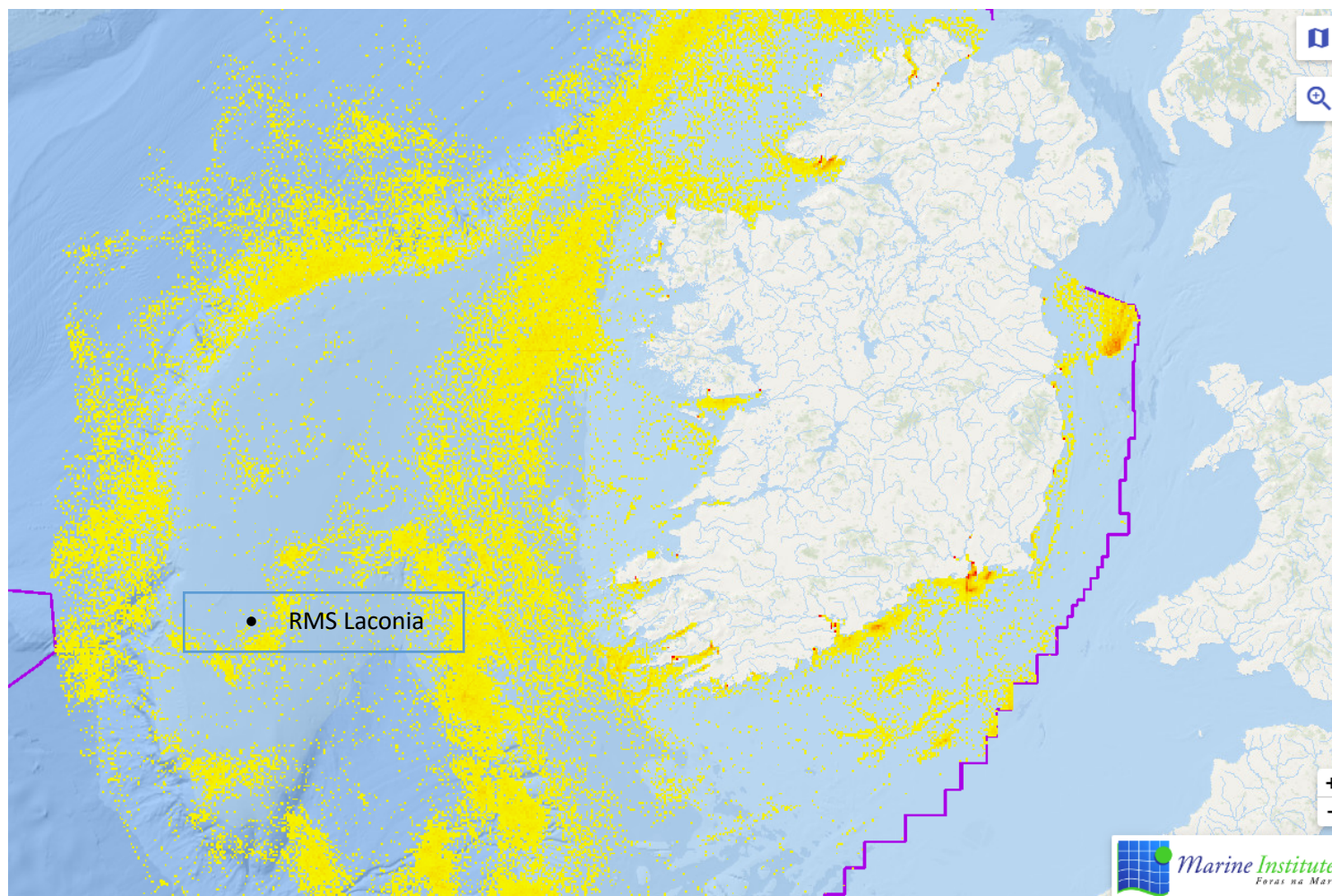


Figure 6. Fishing Effort: International pelagic trawl

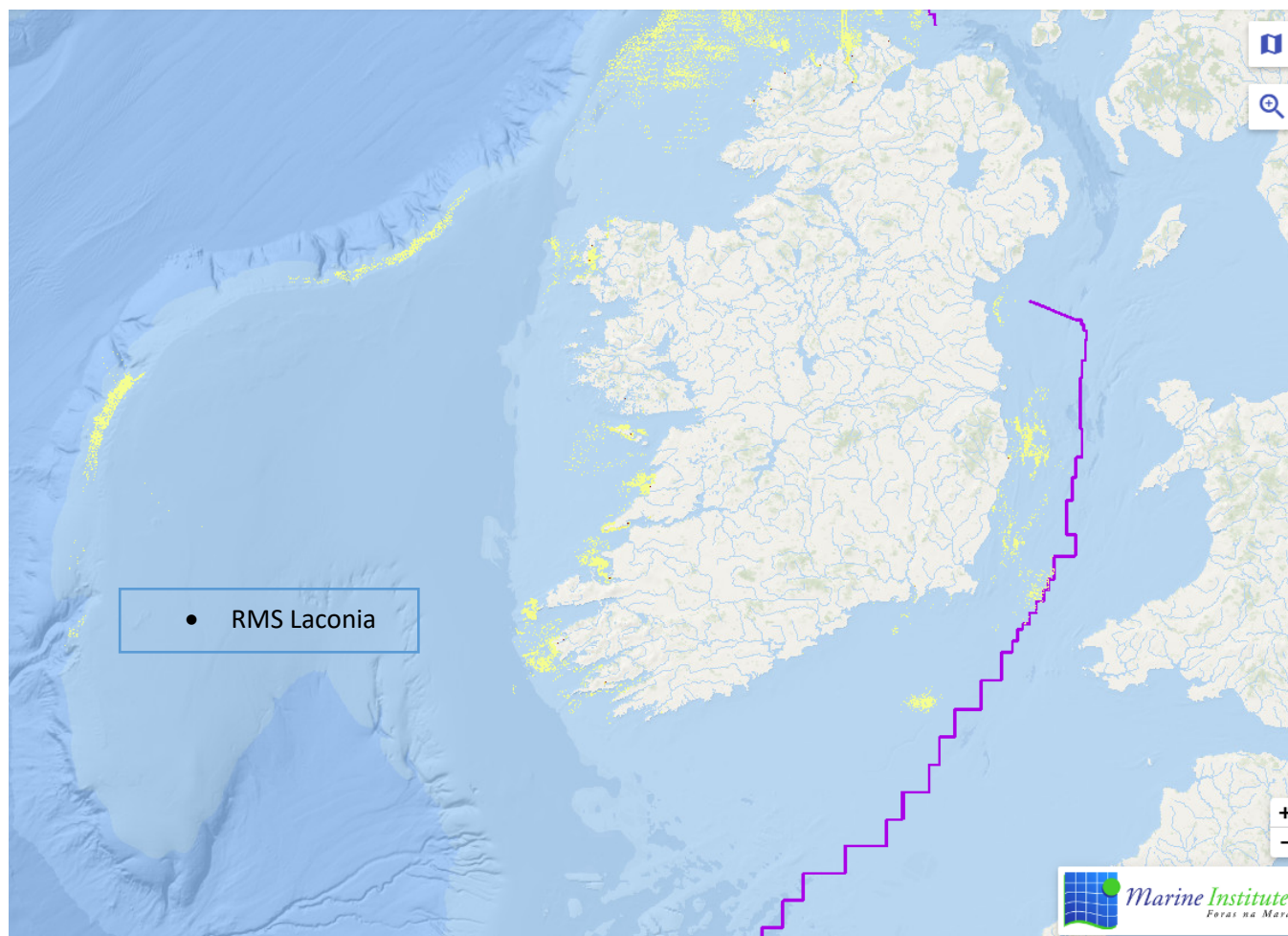


Figure 7. Fishing Effort: International Pots

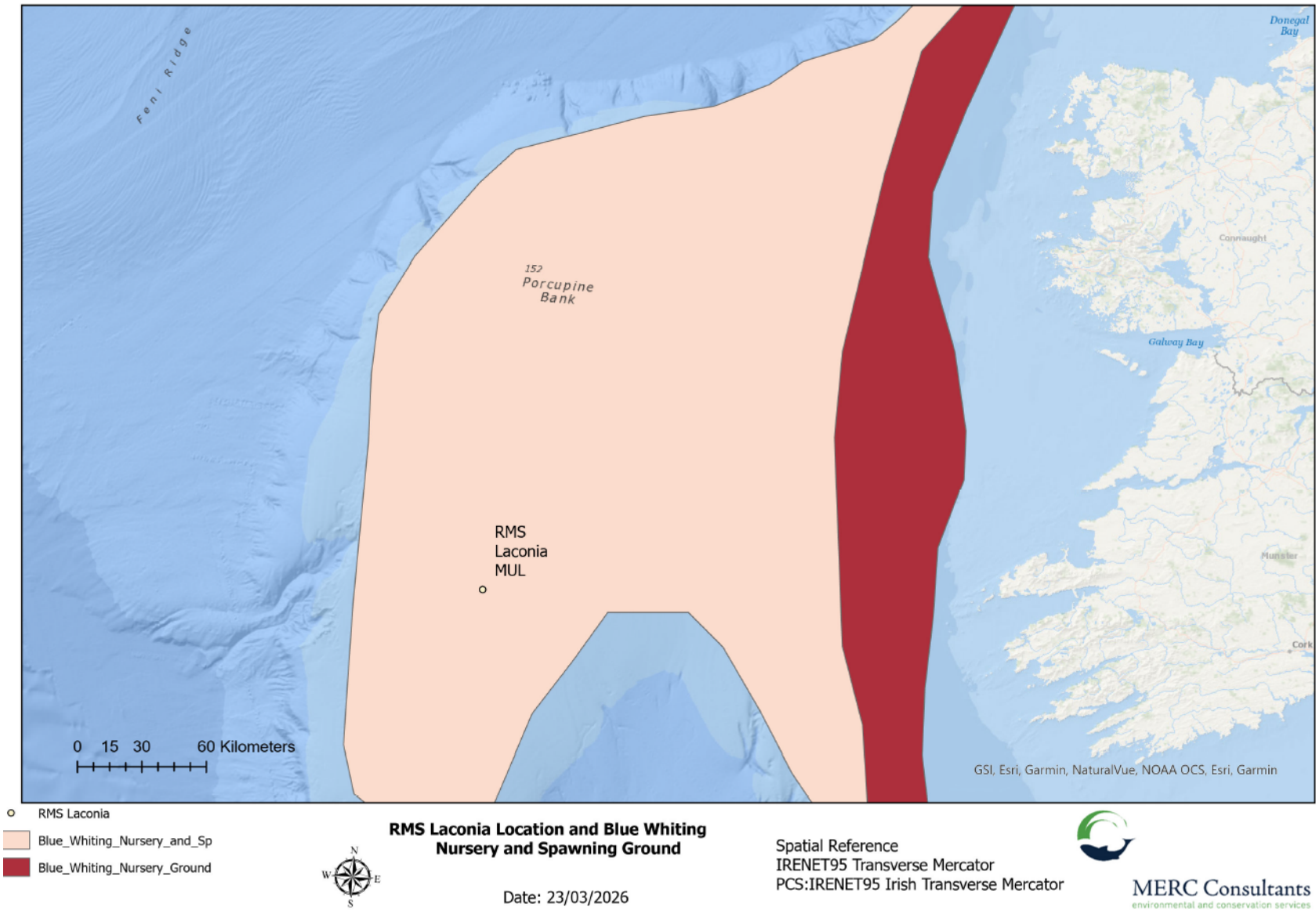


Figure 8. Blue Whiting Nursery and Spawning Ground

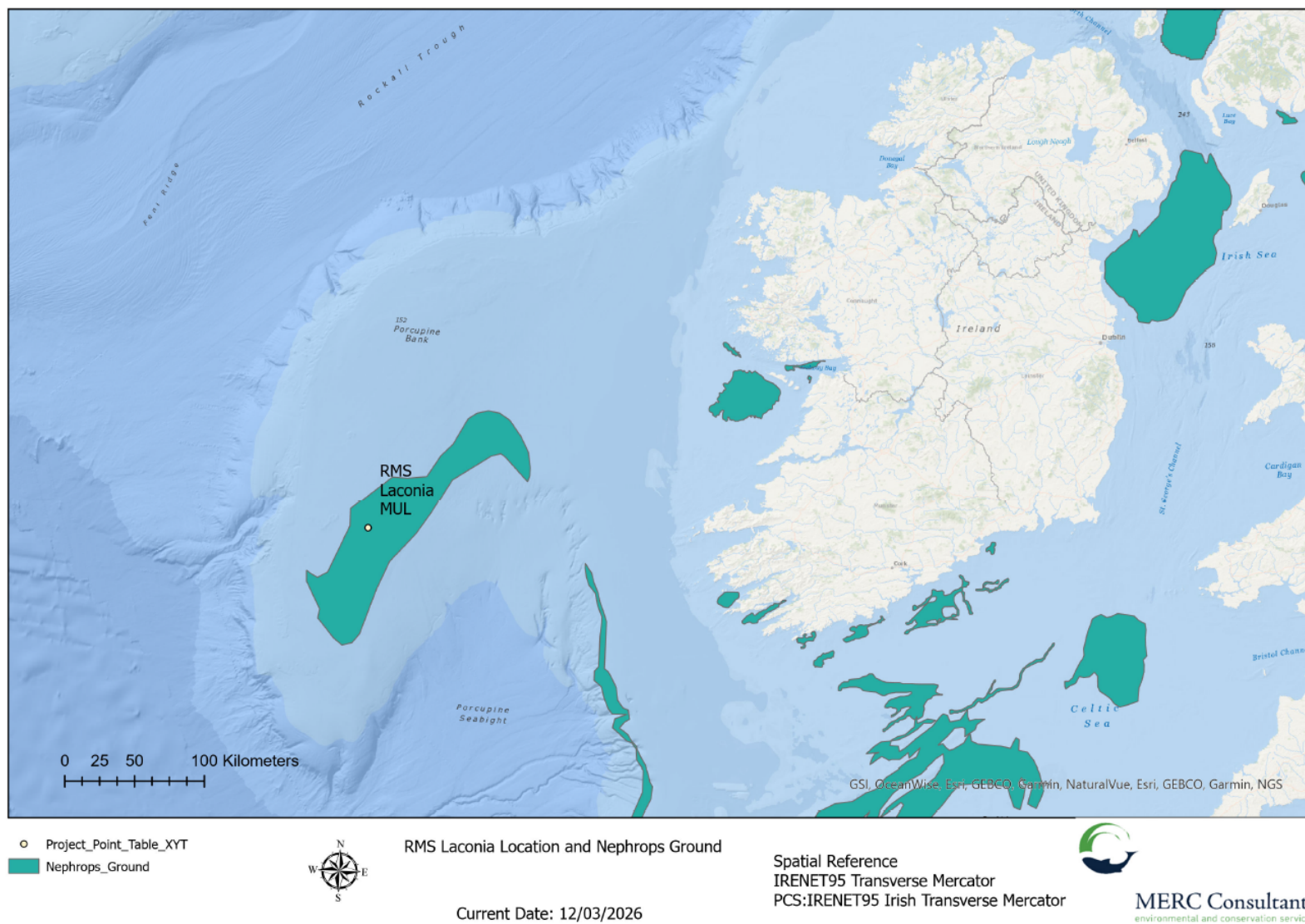


Figure 9. Nephrops Ground

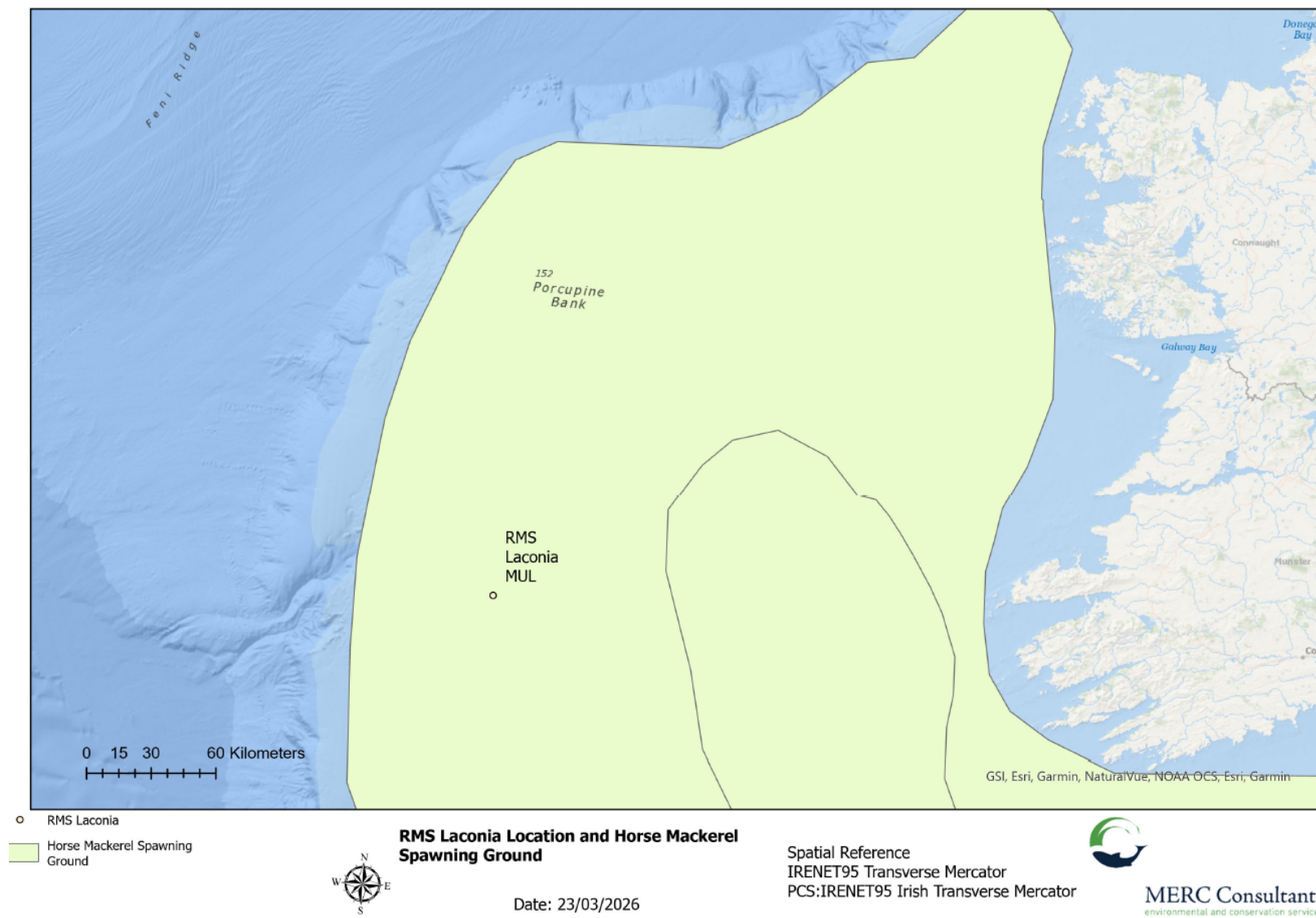


Figure 10. Horse Mackerel Spawning Ground

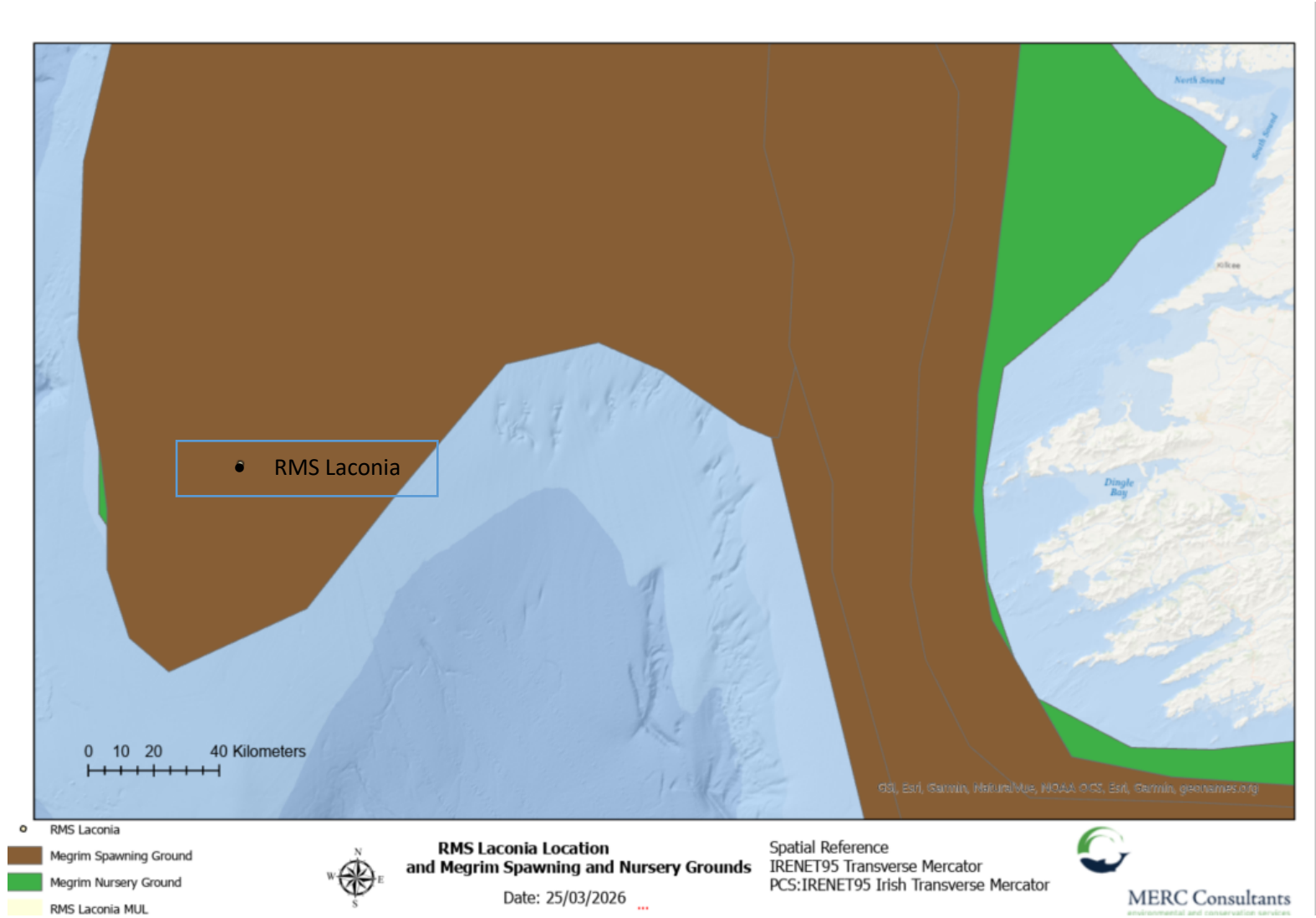


Figure 11. Megrin Spawning and Nursery Grounds

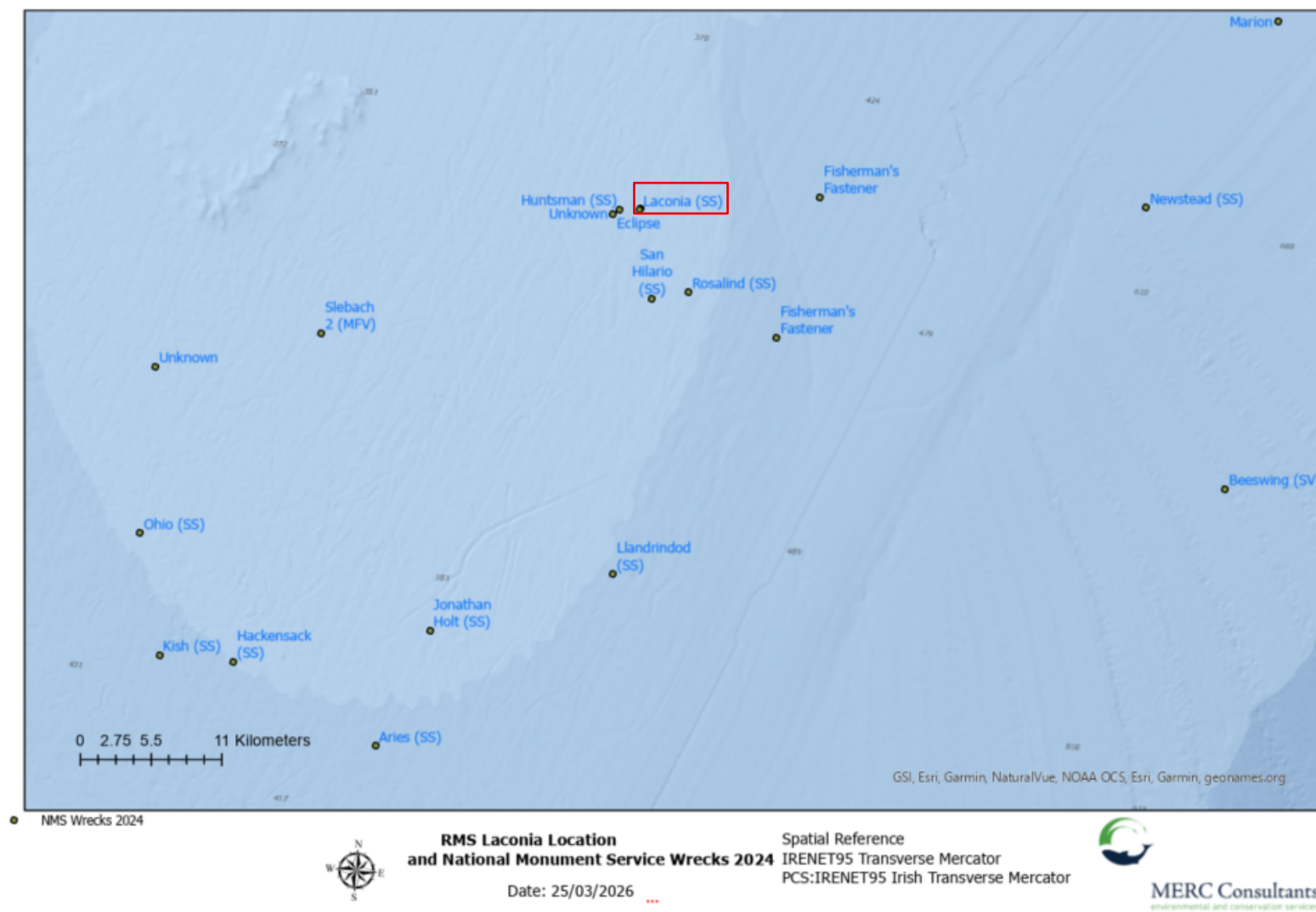


Figure 12. Locations of National Monuments Service Wrecks in relation to the Laco

5.3. Conclusion

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 SISEIA report has assessed the project's implications, alone and in combination with other projects, for the receiving environment. It concludes that, based on the scale and scope of the proposed project and the proposed mitigation measures, no significant adverse effects on the receiving environment are likely. Therefore, an EIA is not required to be conducted in advance of the project being implemented.

The screening conclusion incorporates: Non-disturbance of the identified shell-cargo stack. Salvage concentrated on the bow/forward holds. A qualified UXO technician oversight of any verification and front-mat in-situ protection.

Given the offshore location within Ireland's EEZ and continental shelf, together with the limited spatial and temporal extent of the proposed works, any significant local or transboundary environmental effects are considered highly unlikely to occur.

6. References

Biodiversity Data Centre (2026) Maps. Available at: <https://maps.biodiversityireland.ie/Map>. Accessed 2026

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 2026

Integrated Mapping for the Sustainable Development of Ireland's Marine Resource (INFOMAR) 2024. Bathymetry, backscatter, sediment samples and sediment classification layers. Available at: <https://www.infomar.ie/maps/interactive-maps/seabed-and-sediment> Accessed 2026

MARA 2024. Guidance Note Identification of Unexploded Ordnance (UXO) in the Maritime Area Guidance for Consent Holders on the identification of Unexploded Ordnance (UXO) in the Maritime Area. Guidance Note 001 October 2024. <https://www.maritimeregulator.ie/wp-content/uploads/2025/10/CER-Guidance-001-UXO-Unexploded-Ordnance.pdf>

Marine Institute (2026). Ireland's Marine Atlas. Available at: <https://atlas.marine.ie/#?c=52.2862:-6.4689:11>. Accessed 2026

MERC (2026a). Supporting Information for Screening for Appropriate Assessment: Survey and salvage work on RMS Laconia.

MERC (2026b). Natura Impact Statement: Survey and salvage work on RMS Laconia.

MERC (2026c). EU Habitats Directive: Annex IV Risk Assessment: Survey and salvage work on RMS Laconia.

Irish Ramsar Wetlands Committee. Ramsar sites Ireland. Available at: <http://irishwetlands.ie/irish-sites/> Accessed 2026.

NPWS Designations viewer (SACs, SPAs, NHAs and pNHAs): 2026

NPWS (2014). Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Department of arts, Heritage and the Gaeltacht.

Thomsen, F., Ram, M., Chreptowicz, M., Nocoń, M., & Balicka, I. (2023) Noise modelling and environmental risk assessment of a geophysical survey and its impact on herring and minke whales in Irish coastal waters. Marine Institute, Galway. <http://hdl.handle.net/10793/1872>