

BRITISH TELECOMMUNICATIONS PLC

Scotland - Northern Ireland (Scot-NI) 3 and 4 Replacement Cables

Technical Appendix C - Fisheries Liaison and Mitigation Action Plan





Fisheries Liaison and Mitigation Action Plan
for Global Marine Group on BT Project
Scotland—Northern Ireland Subsea Cable Systems 3 & 4

Revision Number: 2
Date: 23 November 2020



Revision	Issue Date	Comments	Reviewer	Pages
0	06 Sep 2020			
1	25 Sep 2020		EM	All
2	26 Oct 2020	Incorporate stakeholder comments	EM	All
3	23 Nov 2020	Final comments	EM	


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**Scotland—Northern Ireland Subsea Cable Systems 3 & 4
Fisheries Liaison and Mitigation Action Plan**

Introduction

Seagard has been contracted by Global Marine Group (GMG) to develop a Fisheries Liaison and Mitigation Action Plan (FLMAP) for the Scotland—Northern Ireland Subsea Cable Replacement project. The proposed SCOT-NI 3 cable runs between Portpatrick and Donaghadee (approx. 40 km), and the SCOT-NI 4 cable runs between Girvan and Larne (approx. 85 km). Please see cable survey plan below, as provided by GMG (Figure 1).

All cable route survey, installation, and potential maintenance work for these projects will be taking place in the North Channel and therefore within the EEZ and/or territorial waters of the UK.

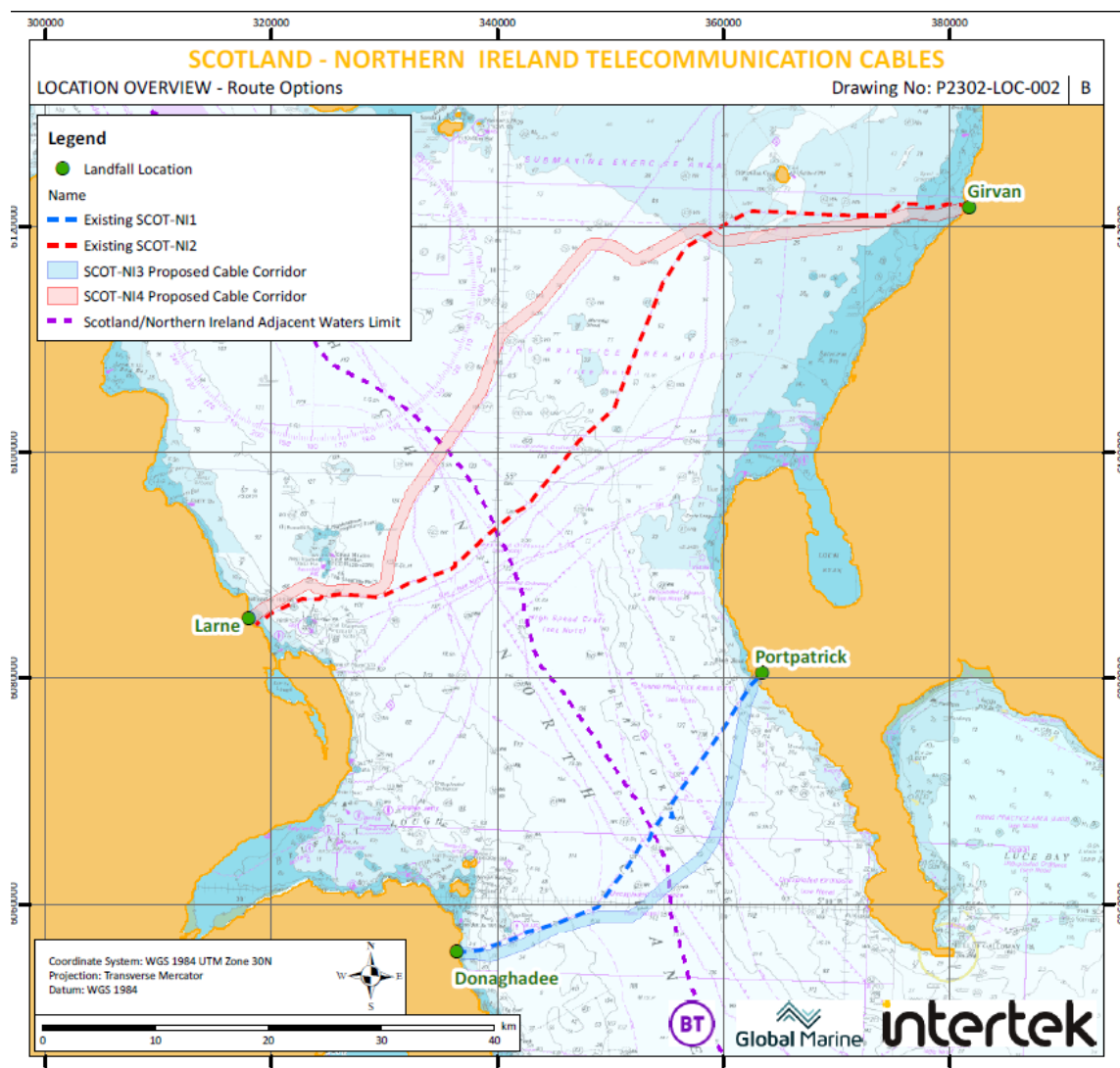



Figure 1. Map of proposed cable sites as provided by GMG (July 2020). The Northern route (Girvan—Larne) is SCOT-NI 4 and the Southern route (Portpatrick-Donaghadee) is SCOT-NI 3.

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Abbreviations

AFBI—Agri-Food and Biosciences Institute

AIS—Automatic Identification System

DEFRA—Department for Environment, Food & Rural Affairs

DfT - Department for Transport

EEZ—Exclusive Economic Zone

ESCA—European Subsea Cables Association

FAO—Food and Agriculture Organization of the United Nations

FLMAP—Fisheries Liaison and Mitigation Action Plan

FLO—Fisheries Liaison Officer

GMG—Global Marine Group

ICES—International Council for Exploration of the Seas

ICPC—International Cable Protection Committee

MEA—Marine Environmental Appraisal

MMO—Marine Management Organisation

MPA - Marine Protected Areas


NRA - Navigation Risk Assessment

NMPi—National Marine Plan interactive

PLSE—Pre-Laid Shore End

ROV—Remotely Operated Vehicle

SAR—Swept Area Ratio

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Project Description

The Scot-NI 3 & 4 cables are fibre optic telecommunication cables connecting Scotland and Northern Ireland; these are replacements for the existing Scot-NI 1 & 2 cables in the same area. This cable project is owned and operated by BT Group; the licensing application is being prepared in conjunction with GMG and Intertek (responsible for the MEA), with Seagard contributing the FLMAP. Project installation is planned to commence at the beginning of September 2021 and is expected to take 2 months in total, with operations being generally short term and specific to the cable route. Cable lay for both Scot-NI 3 & 4 is planned to occur from East to West (subject to change). Potential decommissioning plans for Scot-NI 1 & 2 will be considered at a later date.

Most of the cable lay will be completed using a cable plough, with a target burial depth of 1 m and an expected plough rate of 600 m/hr. Some sections will be post-lay buried with a trenching ROV (Atlas series) and inshore sections will be laid with a jet sled. Three of the four shore ends are likely to be conducted as direct shore end landings, while the fourth is likely to be conducted as a pre-lay shore end (PLSE); in both scenarios, divers will be utilised to float the cable into shore, where the beach team will ensure proper connection and burial (GMG Installation Overview, 2020). Cable pull in is projected to take 2 days at each site and cable burial/beach restoration will take up to 5 days per landfall (MEA Chapter 2 Project Description, 2020). At cable crossings and other vulnerable points, Uraduct cable protection will be applied and efforts will be made to attain sufficient burial.

Appropriate cable protection measures, such as rock bags or mattresses, may be installed (if applicable) along the cable route including over crossed assets pending agreements with third party cable owners (GMG Installation Overview, 2020). Due to the relatively small size of the fibre optic cables (approximately 50 mm diameter) and the narrow trench cut by the plough, sediment along most of the trench should reconsolidate almost immediately after the cable is laid. Where Uraduct will be utilised, the diameter will be approximately 90-100 mm. Benthic areas consisting of fine sands may take up to 24 hours to consolidate, while areas with thick clays may take longer. A similar project in the region exhibited complete sediment recovery, with all traces of ploughing gone within 14 days of burial (Kraus & Carter, 2018).

Table 1. Proposed project timeline (exact dates subject to change).

Phase	Date
Preparation of Licensing Application	May 2020 – October 2020
Application Submission	November 2020
Pre-Installation FLO outreach/preparations	June 2021 – August 2021
Installation: Scot-NI 3	September 2021
Installation: Scot-NI 4	Late September 2021 – Early November 2021




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The operation will be working within the following weather parameters, per the GMG contract.

Weather Limitation Parameters

Safe working conditions for the Installation Vessels and equipment will always be subject to the Commander's discretion. The table below lists some of the main activities and their typical weather limitations:

Operation	Beaufort Wind Force	General Description	Probable Maximum Wave & Swell Ht m	Wind Speeds kts	Av Wind Speed kts
PLGR and Route Clearance Operations	5	Fresh Breeze	2.0	17 to 21	19
Workboat support inc personnel transfers to and from vessel	4	Moderate Breeze	1.0	11 to 16	13
Surface Lay cable operations	6	Strong Breeze	3.0	22 to 27	24
ROV Operations	5	Fresh Breeze	2.0	17 to 21	19
Plough Ops	5	Moderate Breeze	2.0	11 to 16	19


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Purpose of Fisheries Liaison and Mitigation Action Plan

The following Fisheries Liaison and Mitigation Action Plan (FLMAP) details the measures to be implemented regarding the Scot-NI 3 & 4 Project. As this project falls entirely within the bounds of the UK EEZ, all mitigation and action measures will follow stringent national and international guidelines regarding maritime usage. Seagard works to ensure that safe and effective communication measures are maintained at every step of the process.

This document provides a concise summary of the potential impacts of the proposed SCOT-NI 3 & 4 subsea cables on commercial fisheries and other maritime users, while also detailing plans for swift and effective mitigation measures, should they be required. Specifically, this plan outlines the responsibilities of the Fisheries Liaison Officer, potential guard vessels, and associated operations team.

Amendments to this document may be added as additional stakeholder information becomes available. As we work to continually increase efficiency and streamline our services, any additional changes will be outlined in future revisions.

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Intersection of Marine Users

Marine users in the Scot-NI cable regions and North Channel are varied and numerous. The western coast of Scotland and the coast of Northern Ireland have become quite popular as tourist destinations and offer a plethora of recreational maritime activities. Additionally, there are passenger transit routes between the islands multiple times per day. According to the Department for Transport (DfT), more than 67% of Northern Ireland vessel traffic passes through Belfast, with an additional 10% transiting through the Port of Larne. There are also several Marine Protected Areas (MPAs) of varying sizes and protection levels throughout the North Channel. Most marine users associated with these categories should pose little to no threat to submarine cables in the region, although incorrect or emergency anchoring may damage cables and should be avoided via mitigation through early communication and stakeholder outreach strategies.

Fisheries are an integral part of the food supply chain throughout the UK, and for many communities, fishing is a way of life. However, vessels engaged in fishing activities can pose a distinct threat to vulnerable subsea cables. Approximately 70% of cable faults are caused by fishing or shipping vessels, with the prior group accounting for approximately 65% of all cable faults (ICPC; Carter *et al.* 2009). According to the UK Seas Fisheries Statistics (MMO, 2018), there are a total of 2,083 fishing vessels working out of Scottish ports and 332 vessels working out of Northern Irish ports, with an additional 440 out of Wales and 2,923 out of England. The majority of vessels from Northern Ireland and many from the other regions are expected to pass through and potentially fish in the North Channel and associated cable regions.

Potential Impacts on and by Fisheries

Within the North Channel, there are several varieties of commercial and artisanal fisheries. Dredging, trawling, and static gear (pot and creel) fisheries were identified as the most likely to be operating within the cable regions (according to ICES data sourced from MMO 2018). Overall relative fishing intensities for the months of September, October, and November 2019 can be seen in Figure 2. Therefore, these are the key fishing types on which the following analyses and mitigation plan will be focused. Please note that the following fisheries datasets exclude vessels less than 12 m in length and focus on active fishing, during which vessels tend to travel at speeds less than 4 knots (Eigaard *et al.* 2016).

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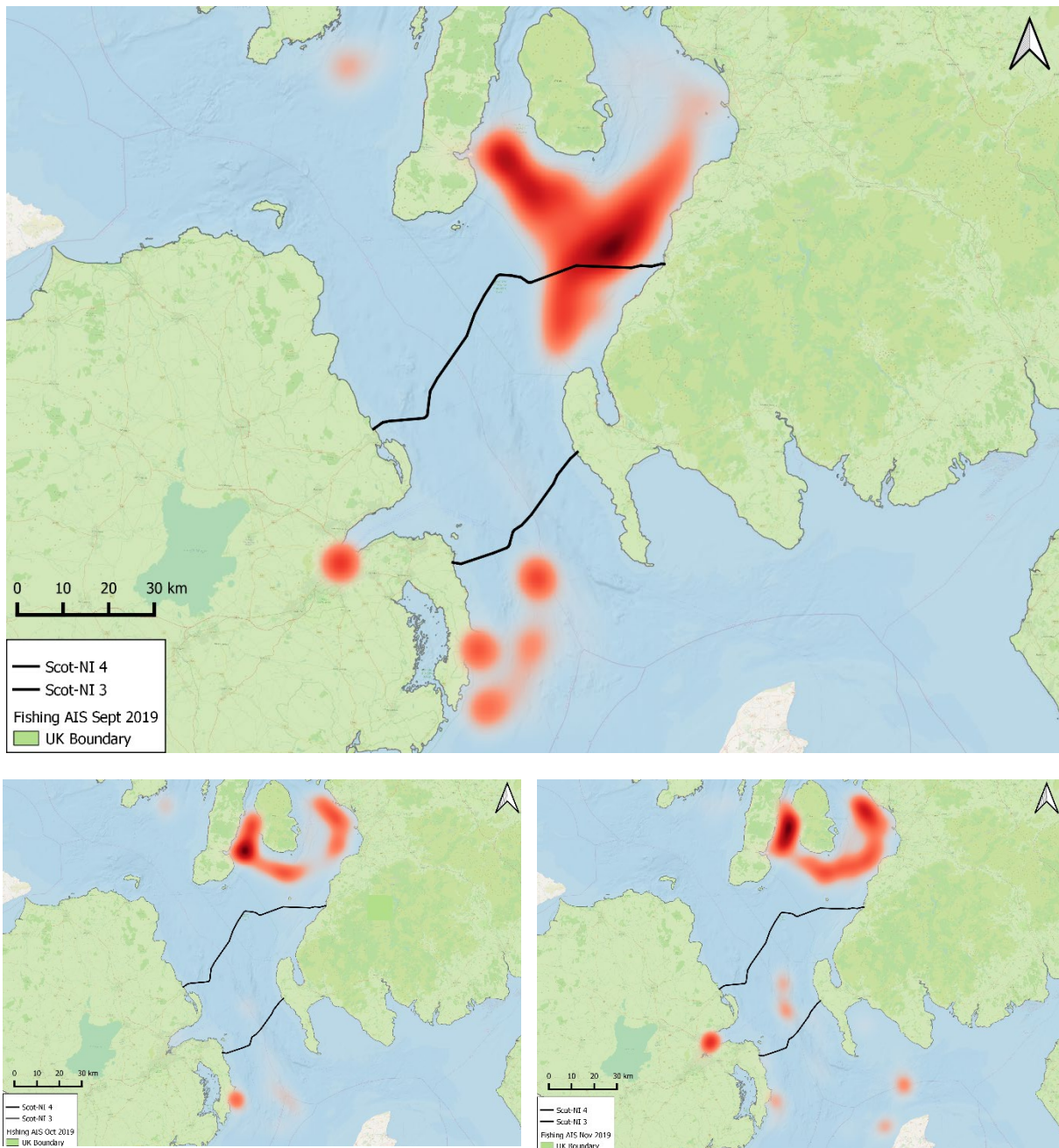


Figure 2. Relative concentration of total recorded active fishing (AIS) for September 2019 (top), October 2019 (bottom left) and November 2019 (bottom right). Vessels were listed as “active fishing” if speed was between 0 and 4 knots. Note: AIS data was utilised for this figure and as such fishing vessels smaller than 15 m are not included.

Vessels engaged in dredging operations are among the most likely to cause cable faults (Drew & Hopper, ICPC 2009). In this type of fishing operation, a steel dredge fitted with downward pointing teeth (Figure 3) is dragged across the seabed. These teeth dig into the top layer of the seabed to capture the buried target species (commonly King Scallops, *Pecten maximus*,

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or Queen Scallops, *Aequipecten opercularis*). In doing so, the gear may snag and damage cables in areas where burial is shallow or not possible. Scallop dredging in the proposed cable area is common; in 2015, more than 1,300 tonnes of scallops were landed in Northern Ireland by 76 fishing vessels (AFBI, 2017). In 2018, more than 15,300 tonnes of scallops were landed in Scottish ports, and the total value of this catch was almost £38 million (Scottish sea fishery statistics, 2018). However, the scallop dredging season does not typically begin in earnest until November. As the project installation is planned for the first week of September through the first week of November, major disruptions should be avoided as long as installation proceeds as scheduled with few delays. Figure 4 shows total annual fishing intensity (2016) for dredging vessels in the region.

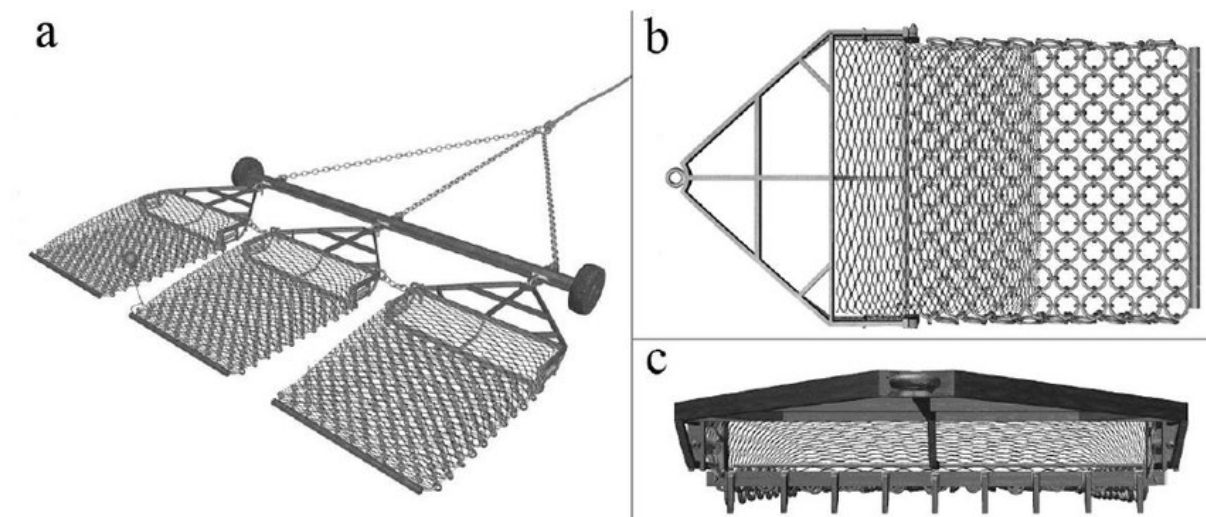


Figure 3. Dredging gear typical of UK commercial scallop fishing fleet (Boulcott, 2012).

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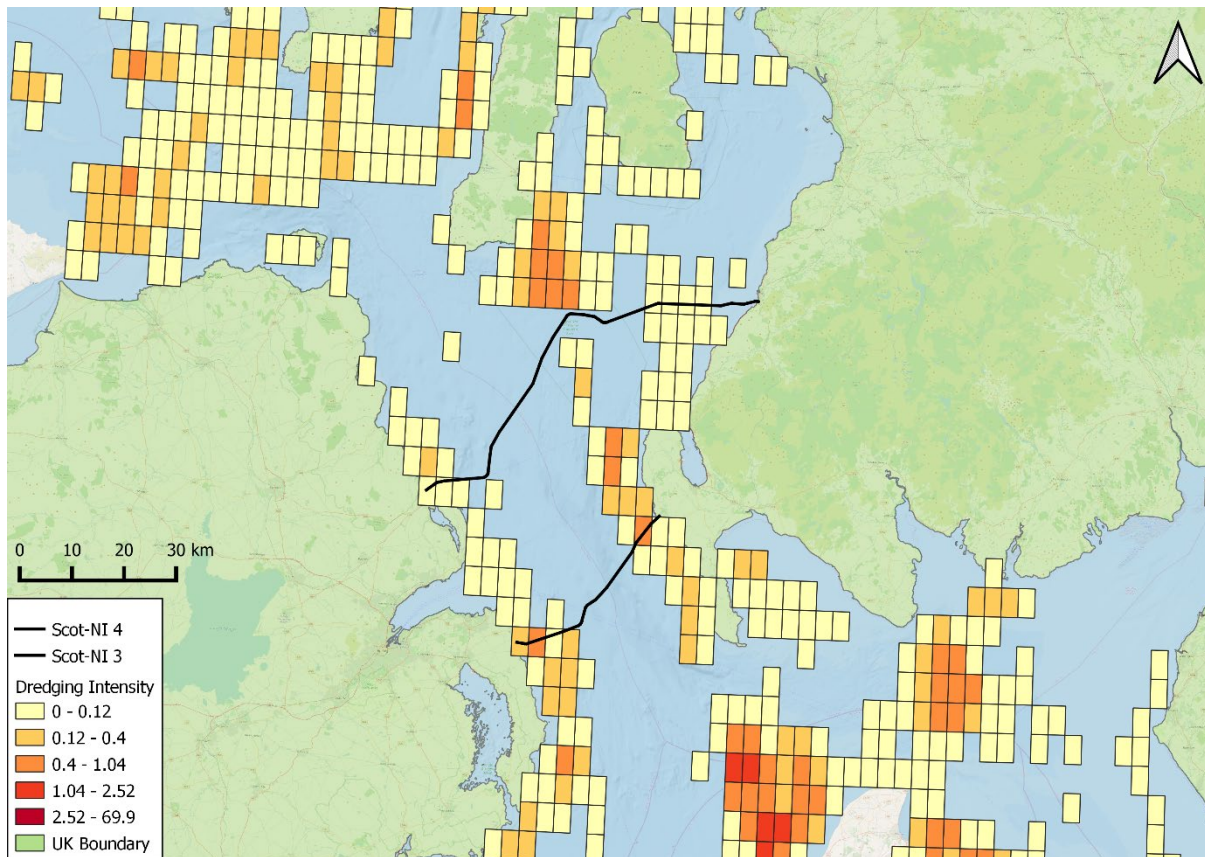


Figure 4. Annual dredge fishing intensity (Subsurface Swept Area Ratio, or SAR) for regions surrounding the proposed cable areas; data shown is from 2016, the most recent OSPAR/ICES dataset available from Marine Scotland (NMPi). Contains data from ICES technical report SR.2017.17" (2009-2016).

Similarly, trawling vessels drag nets across the seabed. Otter trawl gear is outfitted with otter boards, which are weighted to keep the net open and near to the seabed. The boards and other net components can potentially snag on exposed or shallow cables in their path. However, beam trawlers are much more likely to have an impact on vulnerable cables. The latter gear is outfitted with tickler chains meant to agitate the upper layer of the seabed, rather than cruising just above as the otter trawls are designed to do (Figure 5). Total annual otter trawling intensity for 2016 and total annual beam trawling intensity for 2016 are shown below (Figure 6 and Figure 7, respectively).

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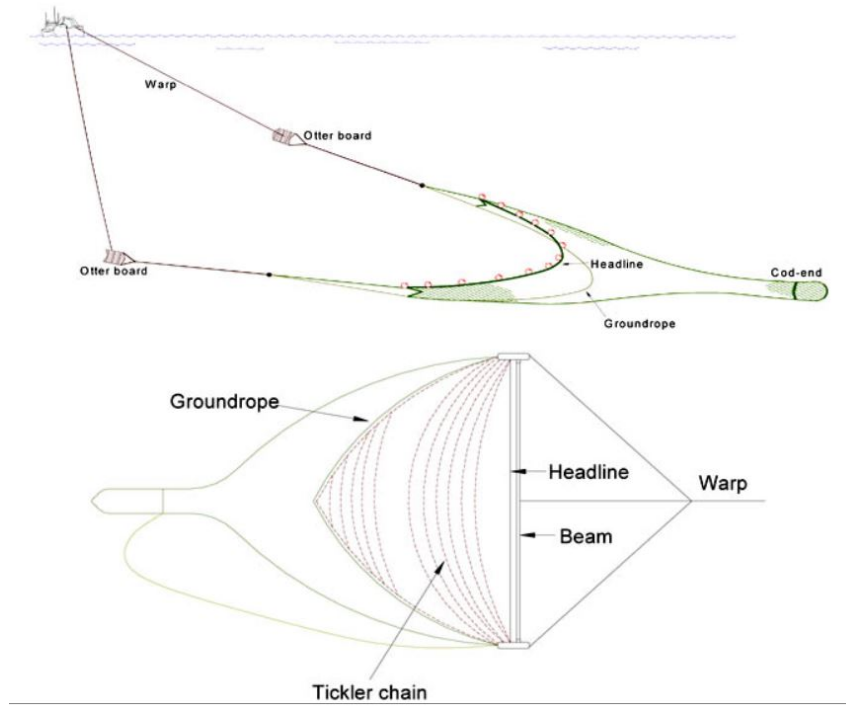


Figure 5. Depiction of otter trawl gear (top) and beam trawl gear (bottom (FAO, 2005).

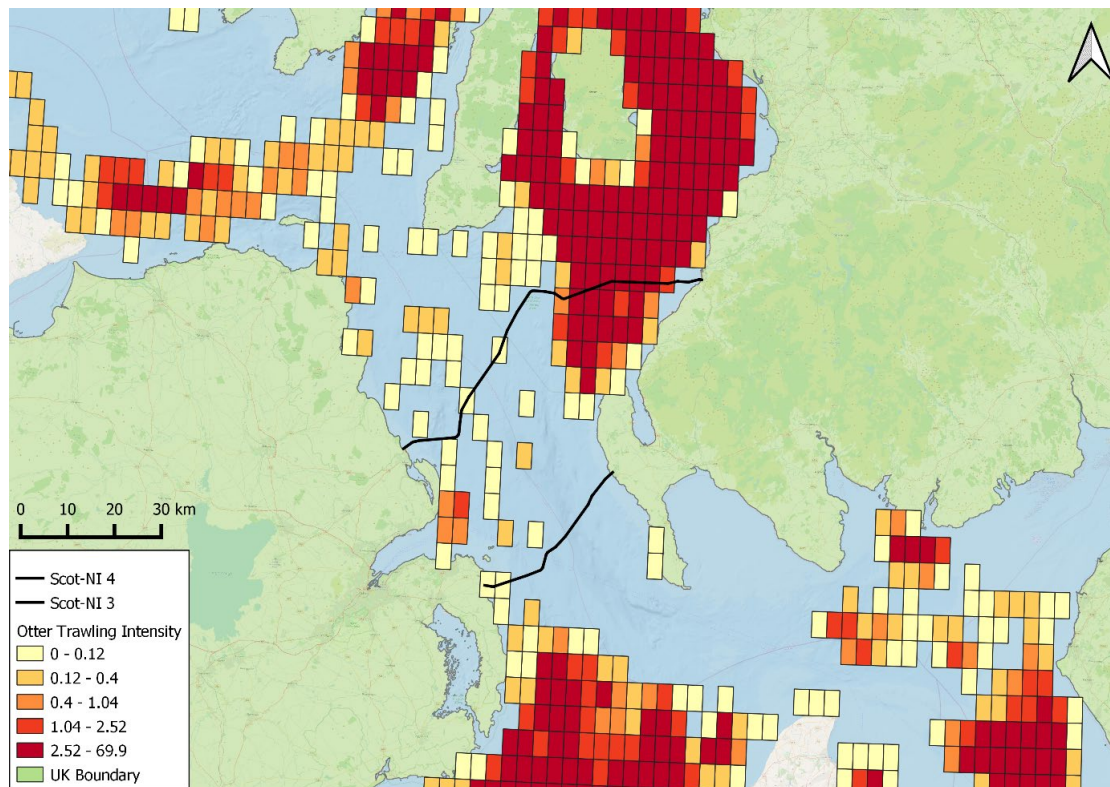


Figure 6. Annual otter trawl fishing intensity (Subsurface SAR) for regions surrounding the proposed cable areas; data shown is from 2016, the most recent OSPAR/ICES dataset available from Marine Scotland (NMPi). Contains data from ICES technical report SR.2017.17" (2009-2016).

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Figure 7. Annual beam trawl fishing intensity (Subsurface SAR) for regions surrounding the proposed cable areas; data shown is from 2016, the most recent OSPAR/ICES dataset available from Marine Scotland (NMPi). Contains data from ICES technical report SR.2017.17" (2009-2016).

An additional sector is that of semi-demersal pelagic fisheries, many of which target whitefish, such as cod, hake, and plaice. According to ICES/OSPAR data for 2016, there are some concentrated areas of fishing for these species, one being farther South into the Irish Sea and the other over the Northernmost points of Northern Ireland. However, concentrations within the cable installation area are low and isolated. As such, we expect semi-demersal fishing in the cable installation areas to be very limited.

Static gear fisheries do not typically pose a threat to subsea cables. However, if pots or lines are placed directly over cables, there could be increased risk due to nearby anchoring or snags during retrieval.

One of the largest and most lucrative fisheries in this region is for Langoustine (*Nephrops norvegicus*), commonly referred to as Nephrops. More than 70% of the fishing vessels targeting Nephrops are small (<10 m) inshore creel vessels, while the remaining tend to be larger trawling vessels (Williams & Carpenter, 2016).

Pot fisheries for lobster (*Homarus gammarus*) and crab (*Cancer pagurus* and *Necora puber*) are also active in the area, with the relative importance of each species varying regionally.



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Nephrops are the only crustacean shellfish species subject to quotas in the region. Annual catch of crab and lobster combined is a small proportion of total landings value (approximately 9% of total landings value for Scotland, Scottish Sea Fisheries Statistics, 2018). However, these fisheries are important for inshore communities, and smaller vessels (<10 m) are particularly active in targeting these species. Recent research has indicated that the likely benthic impact of this installation should be minimal, as telecom cables are quite thin (Scot-NI cable is approximately 50 mm) and ploughing is thought to be among the least disruptive methods for cable burial (Kraus & Carter, 2018).

Fishers engaged in creel methods may experience disruption during the installation and survey periods as they may have to move their gear out of typical fishing grounds during the installation period. High season for target species such as Brown Crab and Nephrops tends to be during the summer months, but fisheries in the region may operate at some level year round. Seasonality also impacts market value, with lobsters fetching higher values later in the year as exports increase. Impacts to static gear fishers during the installation period should be relatively low.

Potential impacts on the cables by fishing vessels are detailed in Table 2 below.

Table 2. Potential impacts by local fisheries.

Gear Type	Action	Result
Scallop Dredge Beam Trawler Otter Trawler	Snags exposed/shallow cable	Resultant fault and repair, potential damage to fishing vessel and safety of crew
Static Gear	Presence impedes installation/repair work	Agreement must be made to remove static gear from cable site during installation/maintenance periods
ALL vessel types	Improper anchoring	May lead to cable damage and subsequent repairs; may also lead to vessel damage and endanger the crew

In the process of mitigating any of these potential cable faults or disruptions, some fishers may be impacted. See Table 3 for details on potential impacts of the cable project on associated fisheries.


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Table 3. Potential impacts on local fisheries.

Impact	Gear Type	Spatial Extent	Temporal Extent
Loss of access to fishing grounds	Benthic Mobile	Within ~ 500 m of vulnerable cable areas	Installation, maintenance, and operational periods
Loss of access to fishing grounds	Static	Immediate cable vicinity	Installation and maintenance periods only
Target species distribution shifts	Benthic Mobile/Static	Immediate cable vicinity	Installation and maintenance periods only
Avoidance of surface lay measures	Benthic Mobile	Immediate vicinity of surface lay measures	Operational period

As seen in the tables above, the majority of potential fisheries disruption will occur during installation and maintenance periods. Static gear fishers working along the installation corridor will likely be asked to move their pots for the duration of the install period (likely only 2-3 days in a given region). The entire installation process is expected to take less than two months, so individual areas along that installation track are unlikely to be impacted for more than a few days at a time. Cable burial to 1 meter is targeted for the entire Scot-NI 3 and 4 cable routes, subject to seabed conditions in the local area. A temporary protection zone of 1NM around the cable vessel will apply during the installation period, as accorded through the Submarine Telegraph Act (1885), and 1/4NM around cable buoys during maintenance operations. Following installation, the cable may be exposed in some limited areas, or the trench may not have backfilled. Fishers should be aware that the cables may pose a hazard and charted submarine cables should be avoided.

Potential Impacts on Shipping and Transit

Potential impacts on the cables due to shipping and transit activities are much more general than those specific to the regional fisheries. Because this project aims to achieve 1 meter burial along most of the route, there is expected to be little risk to or from vessels in the shipping and transit sectors. See Table 4 for a full breakdown of impacts related to shipping and transit.


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Table 4. Potential impacts related to shipping and transit.

Impact	Details
Improper/ emergency anchoring	May result in cable damage/break and endangers vessel crew.
Vessel collision	During installation, transit and shipping vessels will need to take care to avoid cable operations. This will be addressed in the Navigation Risk Assessment (NRA).
Cable snag during lay process	While the cable is being laid, it will likely be suspended in the water between the vessel and the sea floor; passing vessels could damage it.
Disruption of regular vessel operations	Slight disruptions to operations in the vicinity may occur; impacted vessels may include military, cargo, construction, passenger, or fishing vessels.

The presence of guard vessels during this installation period may be used to ensure that potential incidents with passing vessels can be avoided. As previously mentioned, at least two-thirds of Northern Irish shipping traffic travels in or out of Belfast; as such, communication and cable awareness measures will go a long way towards mitigating potential disturbances with vessels that fall into this category. Relative average weekly concentrations of cargo and tanker vessel tracks can be seen below (Figure 8).

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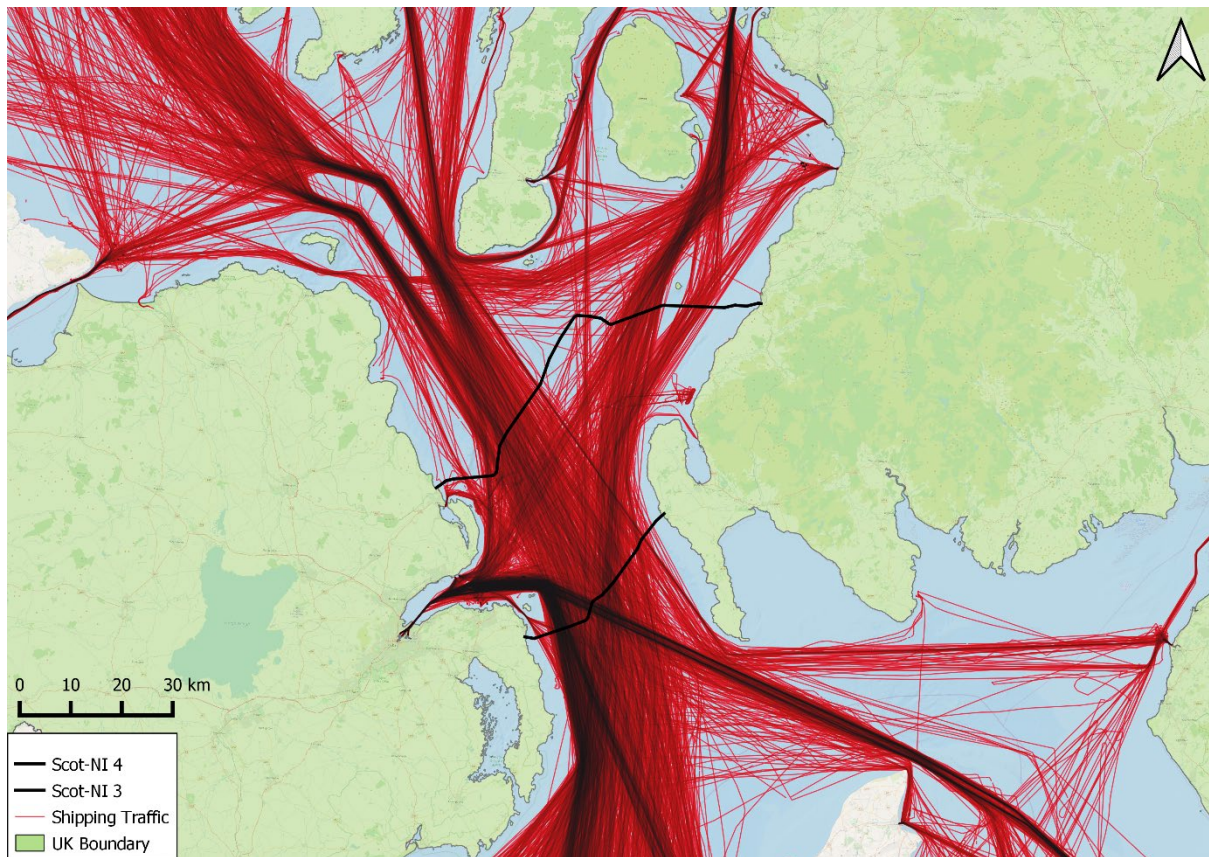


Figure 8. Overview of relative shipping traffic (cargo and tanker vessel) concentrations. Source AIS data: average weekly density of vessels from 2012-2015 (MMO via NMPi). Open Government Licence reproduced with permission of the Marine Management Organisation.

Because a significant number of cargo and tanker vessels pass through the North Channel at any given time, clear and advanced communication between the FLO, potential guard vessels, and transiting vessels will be integral in mitigating any adverse impacts or disruptions.



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Mitigation Plan

Table 5a. Pre-Installation Phase

Action	Date	Details
FLMAP is prepared	July-September 2020	Mitigation plan is crafted according to regional trends and data as well as industry standards for best practice.
Fisheries Consultations on FLMAP	First round: July/August 2020 Second round: October 2020	Feedback on FLMAP is contributed via personal consultations to fisheries stakeholders (static and mobile gear).
FLMAP is refined	October 2020	Stakeholder feedback is incorporated prior to document submission.
FLO undertakes port tours	June - August 2021	Distributes media regarding cable details, safety requirements, and ongoing survey operations.
FLO convenes with static gear fishers	June - August 2021	Plans are made to move static gear during installation periods as needed.

Table 5b. Installation Phase

Action	Details
FLO convenes with affected fishers	Disruption claims will be handled in accordance with ESCA standard operating practices.
FLO is on call	Should any confusion or delay in the project installation arise, the FLO will be available to reconcile the situation.
Guard vessels are coordinated	Guard vessels may be deployed as needed to ensure that cable installation proceeds as safely and efficiently as possible.
Protection zones are agreed	FLO, BT/GMG, and monitoring team may agree any “special protection zones” due to limited cable burial or other vulnerability.
Updates are sent to stakeholders	As installation progresses, updates are sent to stakeholders to ensure that clear communication and information sharing continue to streamline the process.
HM Coastguard are informed of work	Maritime Safety Information (MSI) broadcasts are issued as appropriate.



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Table 5c. Operational Phase

Action	Details
Updates are sent to stakeholders	NtM is distributed informing stakeholders that installation is complete, and the cables are operational.
Post-lay cable burial assessment	Post-lay cable burial is assessed.
Inform mariners of any potential dangers in the region	When potential hazards are identified along the cable route, stakeholders will be notified via NtM and/or Kingfisher to ensure that safety is upheld.
Future survey and maintenance work	Occasional survey and maintenance work will be required; in this case, NtM will be issued with reasonable timescale to alert mariners, particularly if gear will need to be moved.



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Fisheries Liaison and Mitigation Strategies


In response to notes received during stakeholder consultations, port tour dates have been marked as TBD (to be determined) and will be scheduled with adequate time and notice for the FLO to meet with all interested stakeholders.

Table 6. Proposed dates and locations for FLO port tours and open days. Dates are subject to change.

Title	Location	Date
Port Tour, NI	Larne	June 2021 (TBD)
Port Tour, NI	Donaghadee	June 2021 (TBD)
Port Tour, NI	Portavogie	June 2021 (TBD)
Port Tour, NI	Ardglass	June 2021 (TBD)
Port Tour, NI	Kilkeel	June 2021 (TBD)
Port Tour, NI	Warrenpoint	June 2021 (TBD)
Port Tour, Scotland	Kirkcudbright	June 2021 (TBD)
Port Tour, Scotland	Portpatrick	June 2021 (TBD)
Port Tour, Scotland	Stranraer	June 2021 (TBD)
Port Tour, Scotland	Girvan	June 2021 (TBD)
Port Tour, Scotland	Ayr	June 2021 (TBD)
Port Tour, Scotland	Troon	June 2021 (TBD)
Port Tour, Scotland	Campbeltown	June 2021 (TBD)
Port Tour, Scotland	Tarbert	June 2021 (TBD)

This document offers a complete solution for protecting the SCOT-NI 3 & 4 cables before, during, and after installation. This includes early engagement with the local and regional fishing community, the establishment of clear lines of communication with the FLO and may involve discussions concerning disruption, chartering guard vessels during installation, etc. Furthermore, 24/7 monitoring through AIS data will allow the project operations and mitigation team to ensure that potential dangers are dealt with quickly and efficiently.

Where guard vessels are utilised, their selection will be agreed with the local fishing community to determine the most suitable vessel for the given job. Oftentimes, bringing local fisheries stakeholders on in the role of guard vessels represents an effective and welcome solution, both for the success of the cable installation and the local communities. Involving local fishers is beneficial for several reasons: (1) These experienced mariners represent an almost unparalleled wealth of knowledge regarding the seabed within the project area, and (2) contracting local vessels to serve in the role of guard vessels will encourage community buy-in and support of the cable project. The vessel is then managed and coordinated through

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24/7 operations contacts, ensuring that performance and feedback is uniform and consistent with a high-level output.

An integral part of this mitigation strategy is the deployment of the AIS monitoring service. The guard vessels are provided with alerts from AIS and the operations contacts which, when combined with their on-board radar system and AIS systems, will form a complete risk identification strategy.

The combination of a strategic FLO and potential guard vessels results in a complete risk mitigation management structure. Because cable faults are so costly in terms of time, money, and reputability, avoiding potential incidents is extremely valuable. The FLMAP and FLO operations will deliver a solution that ensures that all stakeholders have a clear overview of the project; this facilitates maximum efficiency and ensures we are providing a compliant and effective Risk Management Solution.

All potential guard vessels will be up to date with the protocols and regulations set forth by the UK as well as those international standards as agreed upon within ESCA (European Subsea Cable Association) and the ICPC (International Cable Protection Committee).

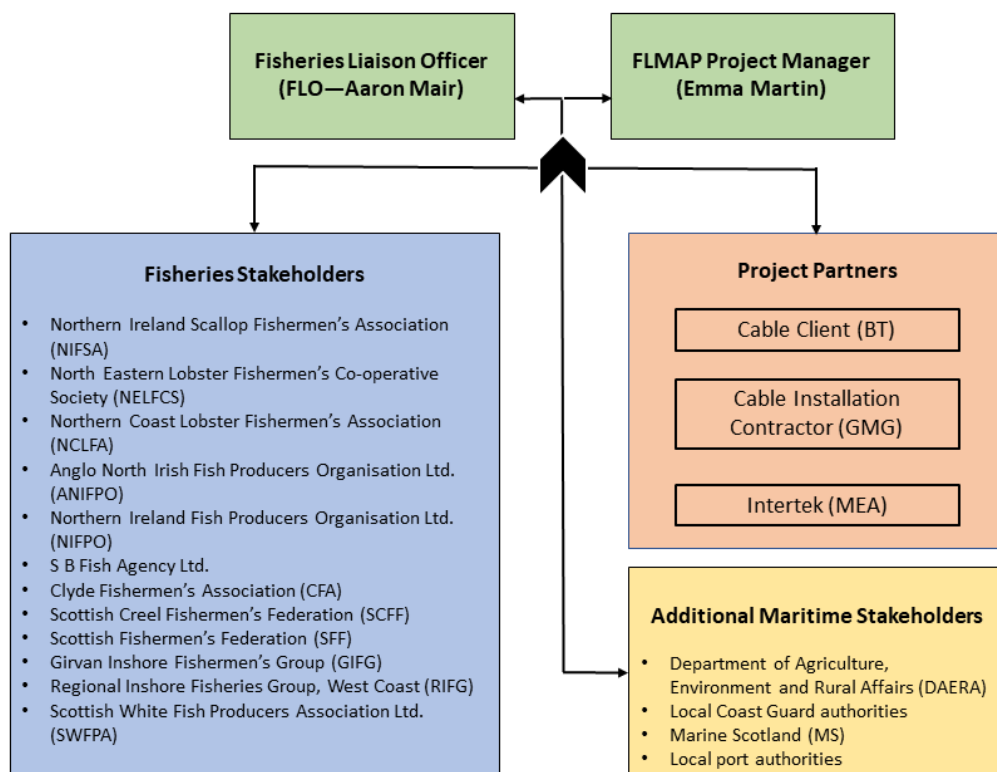



Figure 9. Detail of communications strategy between all relevant stakeholders for the project.

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Additional Key Contacts:

- Marine Scotland. Phone: 0300 244 4000, Email: marinescotland@gov.scot
- Belfast Coast Guard Operations Centre. Phone: 02891 463 933.

Fisheries Liaison Officer

Aaron Mair is Seagard's FLO and is the dedicated fisheries liaison adviser to the European Subsea Cables Association. Aaron has also worked for DEFRA and the MMO and has been involved in 26 cable lay projects to date as well as being successful in his own commercial fishing vessels for 20 years. Aaron has a unique combination of both fishing and offshore industry related work experience, which has given him a clear understanding of offshore industries' needs and how to deliver these requirements.


The project FLO can disseminate information to any guard vessels regarding seasonal variations in fishing patterns. Seasonal fishing patterns for the entire cable route will be monitored and considered.

The FLO will also undertake port visits (as required by BT) prior to the work taking place. We will visit maritime stakeholders such as Fishing Federations, Fish Producer Organisations, local fishing groups (which are not members of larger organisations), and inshore fisheries groups and advise on the work. We have a good working relationship with all these groups and will use these relationships to ensure effective communication between all stakeholders, promoting understanding of the project at the highest level.

We will produce charts and information for distribution to all their fishing masters. The charts will have the contact details for the FLO and other relevant parties, as agreed with BT.

During the installation phase, there will be a designated FLO available 24/7 during Scot-NI 3 and 4 operations. The FLO will be able to record the location and extent of any surface cable protection measures so that these can be accurately mapped and swiftly communicated to fisheries stakeholders to ensure the safety of local marine users. Similarly, the FLO can potentially support the guard vessels as they deflect vessel traffic or other interruptions if appropriate.

The FLO will handle all fishing related responsibilities such as managing project teams and stakeholders, issuing further NtMs, speaking directly with stakeholders and project managers, and facilitating the removal of any fishing gear as requested by the installation team. The FLO will facilitate necessary communications between the offshore installation team, project management team, and other relevant bodies. Whenever possible, NtMs will be issued with at least 10-14 days' notice of upcoming operations.

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Stakeholder Consultations

Fisheries stakeholder consultations were conducted from July 2020 through October 2020 (see Appendix I), with the initial sessions serving to build a communication network and provide local context for potential pinch points or concerns with the proposed cable installation project. Thirteen organisations were contacted for initial comments (Figure 9), 11 of which responded and were included in initial consultation calls. The stakeholder feedback gained from these calls helped to inform the FLMAP draft document and ensure that any potential concerns were addressed early in the project timeline.

Moving forward, clear and efficient communication remains a top priority to ensure mutual satisfaction and proper safety measures are followed during and after the installation process. NtMs will be distributed prior to all project phases (including potential repairs) to ensure that local mariners are made aware of any work in the region or potential safety hazards that may arise.

Stakeholders also have the opportunity to comment on the final version of this document prior to its submission as part of the licensing package; suggestions and comments will be taken into account for incorporation into this final version.

Guard Vessels

This project may use guard vessels, fitting the specifications and availability required during each phase of project development, installation, and maintenance. The Scot-NI project aims to incorporate local mariners as appropriate into the role of guard vessels. This will encourage community involvement with the project, but will also provide a knowledgeable, local crew, many of whom have successfully completed work as guard vessels on similar projects in the past.

If used, guard vessels will be stationed alongside or in close proximity to the installation vessels through appropriate periods of the installation. If any mariners approach the working zone too closely (per any determined protection zones), guard vessels will ensure that they will be redirected around the working zone at a safe distance, avoiding any potential vessel collisions or cable risks.

Additional guard vessels may be deployed as needed to cover high risk cable areas during the installation; these sensitive areas may include areas of high fishing concentrations, exposed cable sections, and cable crossings.

Once the installation process has concluded, guard vessels may remain on site in some of the more sensitive areas to ensure the safety of all marine users and the cable.



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If guard vessels are used, prior to departure from port, skippers will be briefed on their expected duties and given further information regarding updated charts and timelines. Regular updates on vessel sightings, interactions, and operations will be compiled by the guard vessel crew and sent to BT and installation partners as needed.

During guard vessel operations, the crew will utilise AIS, RADAR, and visual detection to identify and monitor potential threats to the installation process; monitoring will continue round the clock until installation operations have ended or as otherwise agreed. Similarly, guard vessels stationed over vulnerable cable areas will remain on 24/7 monitoring duties until such a time that this is deemed no longer necessary.


In addition to the NtM regarding cable installation that will have been previously distributed, mariners in the installation area will receive broadcast updates via radio, including updates on location and installation status. Vessels will be able to transit over the cables once they have been successfully installed and buried. Any seabed invasive activities such as anchoring and benthic trawling/dredging in the vicinity should be avoided until cable burial or other protection has been ensured. The project goal is to achieve as much cable burial extent as possible to minimise the impacts on fishers and other marine users in the region.

Protection Zones

The monitoring team may work with BT to create protection zones along the cable route to monitor vessel activity if appropriate. The behaviour of vessels operating within the protection zones can be analysed against a set of protection zone rules to assess their potential for causing interference with the cable laying operation.

The protection zones can be configured in several ways, but a typical configuration is outlined below:

- Zone 1 (500m either side of cable route). Capable of replicating rules for guard vessel engagement with vessels operating within 500m of the cable route. Can notify users of vessel activity of concern and can trigger monitoring team intervention if guard vessels are unable to intervene.
- Zone 2 (1,000m either side of cable route). Capable of replicating rules for guard vessel engagement with vessels operating within 1km of the cable route. Can notify users of vessel activity of concern and can trigger monitoring team intervention if guard vessels are unable to intervene.
- Zone 3 (1NM either side of cable route). An early warning zone for vessels approaching the cable area. Monitoring team can initiate early contact with vessels of concern before they approach the cable area. The monitoring team can also advise guard vessels of the location and behaviour of vessels before they approach the cable area.

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Safety

The activities of all recommended vessel suppliers have been certified to:

- ISO 9001 for quality management systems.
- ISO 14001 for environmental management systems.
- OHSAS 18001 for health and safety management systems.

All project partners are committed to maintaining the health and safety of the crew and those around them as an utmost priority. In doing so, they will ensure that all activities are conducted according to relevant QHSE policies, as dictated by local and international standards, as well as those of BT.


Each project will have a specified QHSE plan in place and will be periodically updated to represent the most relevant information. All project personnel will be briefed by the Project Manager (or via delegate managers) to be made familiar with the relevant requirements and duties related to their office during the duration of this project.

Regarding emergencies during operation, the first point of contact to which the vessel would relay information will be the Project Manager/QHSE Manager. If the incident is minor, it may be reported as a part of the daily reporting, which will then feedback to GMG. If major, it will be reported to the Project Manager/QHSE Manager immediately, and then will feedback to GMG and BT. If the emergency impacts or reduces the vessel's ability to perform to project requirements, a back-up vessel will be deployed for hand-off of responsibilities; with all relevant project information managed through the operations centre, this hand-off will be seamless and result in limited disruption for GMG and BT.

Vessel management teams and crew will be briefed on all appropriate QHSE regulations according to the standards set forth by GMG, BT, and applicable parties. Any issues requiring intervention beyond the scope of the captain or other vessel management will be dealt with by the Project Manager and/or FLO.

Concluding Remarks

With a two month expected installation timeline and a small installation footprint, the Project aims to minimise disruptions to local fisheries and other maritime proceedings. However, as with any subsea infrastructure installation project, there is a potential for this project to impact other users of the marine environment. The Project recognises this and will work collaboratively to ensure that stakeholder relationships are built around efficient and transparent communication pathways. In doing so, the Project aims to minimise and largely eliminate impacts on others in the industry.

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Works Cited

Agri-Food and Bioscience Institute (AFBI) Fisheries and Aquatic Ecosystems Branch (2017). Scallop Larval Dispersal Background Study.

Boulcott, P. (2012). Scallop Abundance in the Lamash Bay No Take Zone: A Baseline Study.

Carter L., Burnett D., Drew S., Marle G., Hagadorn L., Bartlett-McNeil D., and Irvine N. (2009). Submarine Cables and the Oceans – Connecting the World. UNEP-WCMC Biodiversity Series No. 31. ICPC/UNEP/UNEP-WCMC.

Department for Transport. Northern Ireland Ports Traffic 2018 Published on 26th September 2019.

Drew, S.C. and Hopper, A.G. (2009). Fishing and Submarine Cables: *Working Together*, Second Edition. ICPC Official Report. Accessed on: 17 August 2020. <https://cil.nus.edu.sg/wp-content/uploads/2009/10/ICPC-Fishing-Booklet-090223.pdf>

Eigaard, O. R., Bastardie, F., Breen, M., Dinesen, G. E., Hintzen, N. T., Laffargue, P., Mortensen, L. O., Nielsen, R., Nilsson, H. C., O'Neill, F. G., Polet, H., Reid, D. G., Sala, A., Sköld, M., Smith, C., Sørensen, T. K., Tully, O., Zengin, M., and Rijnsdorp, A. D. (2016) Estimating seabed pressure from demersal trawls, seines, and dredges based on gear design and dimensions. *ICES Journal of Marine Science*, 73 (supplement 1): i27–i43. <https://doi.org/10.1093/icesjms/fsv099>

Food and Agriculture Organization (FAO) of the United Nations (2005). FAO Fisheries Technical Paper 472: Impacts of trawling and scallop dredging on benthic habitats and communities.

Global Marine Group (2020). Scotland to Northern Ireland (Scot-NI) Fibre Optic Cable Installation Overview.

Intertek & GMG (2020). Scot-NI 3 & 4 Marine Environmental Appraisal, Chapter 2: Project Description.

Kraus, Christoph & Carter, Lionel (2018). Seabed recovery following protective burial of subsea cables - Observations from the continental margin. *Ocean engineering*, 157, pp.251–261.

Marine Management Organisation (MMO, 2019). UK Sea Fisheries Statistics 2018.

Scottish Government (2019). Scottish Sea Fisheries Statistics 2018. Scottish Government Marine Scotland Directorate, 2019–09-26.

Williams, C. and Carpenter, G. (2016). NEF Working Paper. The Scottish Nephrops fishery: Applying social, economic, and environmental criteria. Accessed on: 04 August 2020. <https://neweconomics.org/uploads/files/Griffin-Nephrops-latest.pdf>



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Appendix I—Consultation List

Table 7. Stakeholder consultation details.

Name	Agency	Consultation Dates
Mark McCaughan	DAERA (Department of Agriculture, Environment and Rural Affairs)	Initial: 29 July 2020 Follow-up: 19 October 2020
Paul Leeman	NISFA (Northern Ireland Scallop Fisherman’s Association)	Initial: 4 August 2020 Follow-up: 20 October 2020
David Galbraith	NCLFA (Northern Coast Lobster Fishermen’s Association)	Initial: 30 July 2020 Follow-up: 16 October 2020
Alan McCulla OBE Davey Hill	ANIFPO (Anglo North Irish Fish Producers Organisation Ltd); Sea Source	Initial: 6 August 2020 Follow-up: 20 October 2020
Harry Wick Ian Kelly	NIFPO (Northern Ireland Fish Producers Organisation Ltd)	Initial: 5 August 2020 Follow-up: 16 October 2020
Elaine Whyte Tommy Finn	CFA (Clyde Fishermen’s Association)	Initial: 31 July 2020 Follow-up: 20 October 2020
Alistair Sinclair	SCFF (Scottish Creel Fishermen’s Federation)	Initial: 5 August 2020 Follow-up: 16 October 2020
Malcolm Morrison	SFF (Scottish Fishermen’s Federation)	Initial: 31 July 2020 Follow-up: 20 October 2020
Clifford Wilson Ronnie Geddes	GIFG (Girvan Inshore Fishermen’s Group)	Initial: 28 July 2020 Follow-up: 19 October 2020
Simon MacDonald	RIFG (Regional Inshore Fisheries Group)	Initial: 30 July 2020 Follow-up: 15 October 2020
Femke de Boer	SWFPA (Scottish White Fish Producers Association Ltd.)	Initial: 31 July 2020 Follow-up: 20 October 2020