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NorthConnect HVDC Infrastructure – UK Fisheries Liaison and Mitigation Action Plan

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0	30/07/18	All	All	Updated in line with Reviewer Comments

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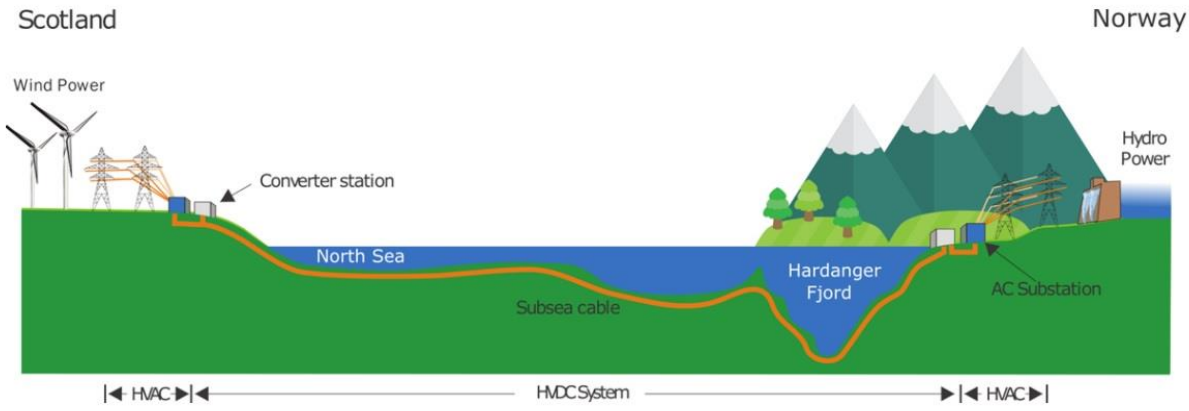
1. ABBREVIATIONS

AIS	Automatic Identification System
BIFA	Buchan Inshore Fisheries Association
CEMP	Construction Environment Management Plan
EIAR	Environmental Impact Assessment Report
FLMAP	Fisheries Liaison and Mitigation Action Plan
FLO	Fisheries Liaison Officer
FLOWW	Fishing Liaison with Offshore Wind and Wet Renewables Group
HVDC	High Voltage Direct Current
JV	Joint Venture
MCA	Marine and Coastguard Agency
MSF	Marine Safety Forum
MW	Mega Watt
NLB	Northern Lighthouse Board
RYA	Royal Yacht Association
SFF	Scottish Fishermen's Federation
SOLAS	Safety of Life at Sea
STW	Scottish Territorial Waters
SWFPA	Scottish White Fish Producers Association
UKEEZ	UK Exclusive Economic Zone

2. PROJECT DESCRIPTION

NorthConnect is a project set up to develop, consent, build, and operate a High Voltage Direct Current (HVDC) electrical interconnector between Peterhead in Scotland and Simadalen in Norway. The 665km long, 1400MW interconnector will provide an electricity transmission link allowing the two nations to exchange power and increase use of renewable energy. The intention is for the HVDC interconnector to be operational by 2023.

NorthConnect is a Joint Venture (JV) project company owned by four community and state-owned partners from Norway and Sweden: Agder Energi AS, E-CO Energi AS, Lyse Produksjon AS, and Vattenfall AB. The partnership was established on 1st February 2011.



One contractor will be appointed by NorthConnect to deliver the HVDC portion of the project (including subsea and land cable infrastructure) in UK waters. The construction methodology for the installation of the cables is provided in the Construction Method Statement NCGEN (NorthConnect, 2018).

3. PURPOSE OF THIS DOCUMENT

NorthConnect is seeking consent from Marine Scotland and Aberdeenshire Council to construct and operate an HVDC interconnector between Scotland and Norway.

This Fisheries Liaison and Mitigation Action Plan (FLMAP) sets out the fisheries liaison and mitigation action measures to be implemented on the subsea cable elements of the project in Scottish Territorial Waters (STW) and within the UK Exclusive Economic Zone (UKEEZ). Similar techniques will be employed for the rest of the North Sea and appropriate arrangements will be in place for the cabling within the Norwegian Fjord but are outwith the scope of this document.

Early in the preparation of the Environmental Impact Assessment Report (EIAR) (NorthConnect, 2018b), NorthConnect initiated contact with members of the local fishing community, undertook meetings with Marine Scotland, Aberdeenshire Council and wider representative fishing bodies, as well as meetings with other commercial and recreational marine users being arranged to discuss the project. Information from these meetings has informed the EIAR and the FLMAP.

The FLMAP will form part of the Marine Licence Submission which will be made available to all stakeholders as part of the formal consultation process along with the Communications Strategy (NorthConnect, 2018). This document may be updated from time to time to take account of stakeholder feedback, or learning gained during the implementation phase.

The purpose of the report is to provide a concise summary of the potential effects and associated mitigation of the NorthConnect HVDC Cable Infrastructure on fisheries and other users of the sea. In addition, it provides detail on the approach to be taken with regard to Fisheries Liaison.

4. MARINE USERS INTERACTIONS

The cable corridor unavoidably crosses commercial marine routes (ferries, offshore wind, oil and gas field maintenance, etc.) as well as fishing grounds in the North Sea. These include demersal trawl grounds, scallop grounds and inshore shellfish grounds. The principal fishing activity along the inshore section of cable route is creel fishing which sees creels and pots laid on the sea bed, year-round, and fished predominantly by vessels under 10m in length. These fisheries target shellfish such as brown crab, lobster and velvet crab. Creel vessels are likely to come from the local ports of Peterhead, Boddam and potentially Fraserburgh.

The next section of the route covers an area where the principle activity is dredging for scallops and trawling for prawns or langoustines. In the most part this activity is carried out by larger vessels (over 10m) and may include vessels from ports further afield than the local ports of Peterhead and Fraserburgh. Throughout the consenting corridor, with the exception of the inshore areas, larger vessels and pelagic trawlers are actively fishing for white fish, mainly cod and haddock, but also hake, monkfish, coley and herring and mackerel.

In addition to the commercial users of the sea, leisure craft also utilise the waters. Activity is highest in coastal waters off Peterhead, with fewer crossings of the cable corridor farther offshore. The consenting corridor is outside of indicative areas of general recreational boating identified by the Royal Yacht Association (RYA), which mainly relate to club training and racing areas.

4.1 Potential Effects on Commercial Fisheries

A full assessment of the effects of the NorthConnect HVDC Cable Infrastructure project on commercial fisheries has been included in Chapter 20 of the EIAR (NorthConnect, 2018b), the potential impacts assessed are provided in Table 4.1.

Table 4.1: Commercial Fisheries Impacts Assessed

Phase	Impact
Installation	Loss of Access to Fishing Grounds – Mobile Vessels.
	Loss of Access to Fishing Grounds – Static Gear.
	Change in Distribution of Target Species.
Operation and Maintenance	Loss of Access to Fishing Grounds.
	Change in Distribution of Target Species.
	Exposed Cable and Degradation of Rock Berms.

The footprint of the installation works is relatively small, with only a small fraction of the Scottish spawning grounds being within the consenting corridor and rapid recover expected.

It is recognised that protection zones required for the installation phases will have an effect on both mobile fishing vessels and static gear fishing. The larger effect being on the static gear fisherman who will be requested to remove their gear prior to installation works. There will be no protection zones during the operation of the cable, minor protection zones may be required to facilitate temporary survey and maintenance activities.

Appropriate cable protection design, installation and ongoing surveys, and if required maintenance, will ensure that the cable does not become exposed and that rock berms degraded such that a snagging risk will arise.

Taking into account mitigation, all impacts were deemed to be negligible or minor, non-significant.

4.2 Potential Effects on Navigation and Shipping

A full assessment of the effects of the project on navigation and shipping has been included in Chapter 19 of the EIAR (NorthConnect, 2018b), the impacts assessed are provided in Table 4.2.

Table 4.2: Navigation and Shipping Impacts Assessed

Phase	Impact
Installation	Collision of a passing (third party) vessel with a vessel associated with the cable installation.
	Cable installation causing disruption to passing vessel routeing.
	Snag risk to fishing vessel while cable is exposed.
	A vessel drags anchor across the cable while it is exposed.
	A vessel drops anchor in an emergency over the cable while it is exposed.
	Cable installation causing disruption to military exercises.
Operation and Maintenance	A vessel drags anchor over the cable.
	A vessel drops anchor in an emergency over the cable.
	A vessel founders (sinks) onto the cable.
	A vessel drops an object e.g., container, onto the cable.
	A vessel grounds due to reduced under keel clearance.
	A vessel engaged in fishing snags its gear on the cable or associated cable protection.
	Collision of a passing vessel with a vessel associated with maintenance works/monitoring of the cable.
	Interference with magnetic compass onboard passing vessels.

The Cable Burial Risk Assessment, Cable Protection Analysis Report and the resultant Construction Method Statement which will be utilised to install the cable, have taken into account anything that could damage the cable e.g. anchors and fishing gear. This in turn ensures that vessels are protected from the cable by design. Magnetic compass deviation was also considered during the design process. Disruption and collision risks can be mitigated by good communications protocols.

Taking into account mitigation, all impacts were assessed to be tolerable or broadly acceptable.

4.3 Mitigation Measures

The mitigation identified in the Commercial Fisheries and Navigation Chapters and incorporated into the Schedule of Mitigation (Chapter 25) of the EIAR (NorthConnect, 2018b), is detailed in Table 4.3 along with the mechanisms for implementation.

Table 4.3 Mitigation Implementation

Mitigation	Implementation
Installation Phase	
Fisheries Liaison Officer will be employed to facilitate communications between the project and the fishing sector.	Details provided in Section 5.2 of this document.
Fisheries Liaison Officer will work with local fishing organisations to identify static gear vessels that will be affected. Arrangements will be made with individual vessel owners.	This work is very similar to that carried out by the FLO and the NorthConnect team for the survey work, so he is well positioned to complete this for the installation phase
Early communications with the fishing sector, to allow preparations to be made for the potential disruption**.**	Requirement incorporated into the Communications Strategy (NorthConnect, 2018a).
Ongoing dialogue to update on progress and when re-entry to protection zone for fishing activities is possible.	Requirement incorporated into the Communications Strategy (NorthConnect, 2018a).
Circulation of information via Notices to Mariners, Radio Navigational Warnings, NAVTEX, and/or broadcast warnings in advance of and during the offshore works. The notices will include a description of the work being carried out.	Requirement incorporated into the Communications Strategy (NorthConnect, 2018a).
Cable vessels will display appropriate marks and lights, and broadcast their status on AIS at all times, to indicate the nature of the work in progress, and highlight their restricted manoeuvrability.	The Construction Environmental Management Plan (CEMP) will require the Contractor to adhere to this requirement.
Temporary aids to navigation will be deployed (if required) to guide vessels around any areas of installation activity.	The requirement for temporary aids will be identified through the Risk Assessed Method Statements for installation activities, a requirement of the CEMP.
Guard vessels will be used to monitor and advise vessels in the vicinity of the installation works as appropriate.	Details provided within Section 5.3 of this document with regard to guard vessel operations.
Compliance with International Regulations for the Prevention of Collision at Sea (International Marine Organisation, 1972/78) and the International Regulations for the Safety of Life at Sea (SOLAS).	The CEMP will require the Contractor to adhere to this requirement.
Temporary (advisory) protection zones will be created around the installation works during the installation phase, and monitored by the guard vessel(s).	Details provided within Section 5.3 of this document with regard to guard vessel operations.
Liaison with local ports and harbours, notably Peterhead.	Ports and harbours included in Stakeholder list, harbours are considered in this document and Communications Strategy (NorthConnect, 2018a).

Mitigation	Implementation
Cable protection works to be completed within three months of cable laying.	This is a specific requirement incorporated within the Cable Contractor tender/contract and included in Section 5.3 of this document.
Circulation of information to the Marine Safety Forum (MSF) whose members represent the oil & gas vessels anchoring in proximity to the cable landfall.	The MSF is included in the Stakeholder list, and considered in this document and Communications Strategy (NorthConnect, 2018a).
Circulation of information to marinas located along the east coast of the UK (including Peterhead and others north and south) to increase the likelihood of non-local sailors being made aware of the temporary installation work.	Included in the Communications Strategy (NorthConnect, 2018a).
Operation & Maintenance Phase	
As built information will be provided to the UKHO for inclusion in admiralty charts, and the Kingfisher Cable awareness charts, with appropriate notes.	As-built information will be provided to the UKHO including information with regard to compass deviation if appropriate, as detailed in the Communication Strategy(NorthConnect, 2018a).
Cable to be installed with appropriate protection as per the Construction Method Statement.	Details of cable protection are provided within the Construction Method Statement (NorthConnect, 2018).
Any protection measures used (e.g. rock placement) will not reduce the existing water depths by greater than 5%.	This is a specific requirement incorporated within the Cable Contractor tender/contract, the shallowest water depth is 26.5m hence there should not be an issue meeting this requirement.
Routine surveys will be carried out to verify that the burial and protection status is adequate.	Cable buried or protected throughout. The Construction Method Statement (NorthConnect, 2018) details construction surveys including post lay survey. The Post Installation Survey Plan (NorthConnect, 2018c) details the planned surveys to ensure the cable is appropriately protected throughout its operational life.

5. FISHERIES AND MARINE USER LIAISON STRATEGY

Communications is a key element to minimising the effects on commercial fisheries, navigation and shipping associated with the project as discussed in Section 4.2 and 4.3. There are well established formal communications routes for users of the sea, for example, Notice to Mariners. NorthConnect will utilise these to ensure that the appropriate information is available at the correct times in line with accepted practice. The formal communications which will be utilised are discussed in more detail within the Communication Strategy. To avoid duplication the detail of their usage is not repeated within this document.

The overall approach to fisheries and marine user liaison couples formal and informal communication methods. This is to ensure the stakeholders have as much notice as practicable with regard to the activities planned and the associated timing, and to facilitate two-way communications allowing the project to respond to stakeholders needs and concerns as far as practicable.

5.1 Fisheries and Marine Stakeholders

NorthConnect have identified fisheries and marine stakeholder groups, and have been consulting with them since the Autumn of 2016. The approach has been 2 pronged: to communicate with fishery organisations and representative bodies, as they can disseminate information down to their members and provide feedback on their members behalf; while also engaging directly with individual fishermen working in the area likely to be affected.

Figure 5.1 below outlines the various categories of marine users in relation to the NorthConnect project.

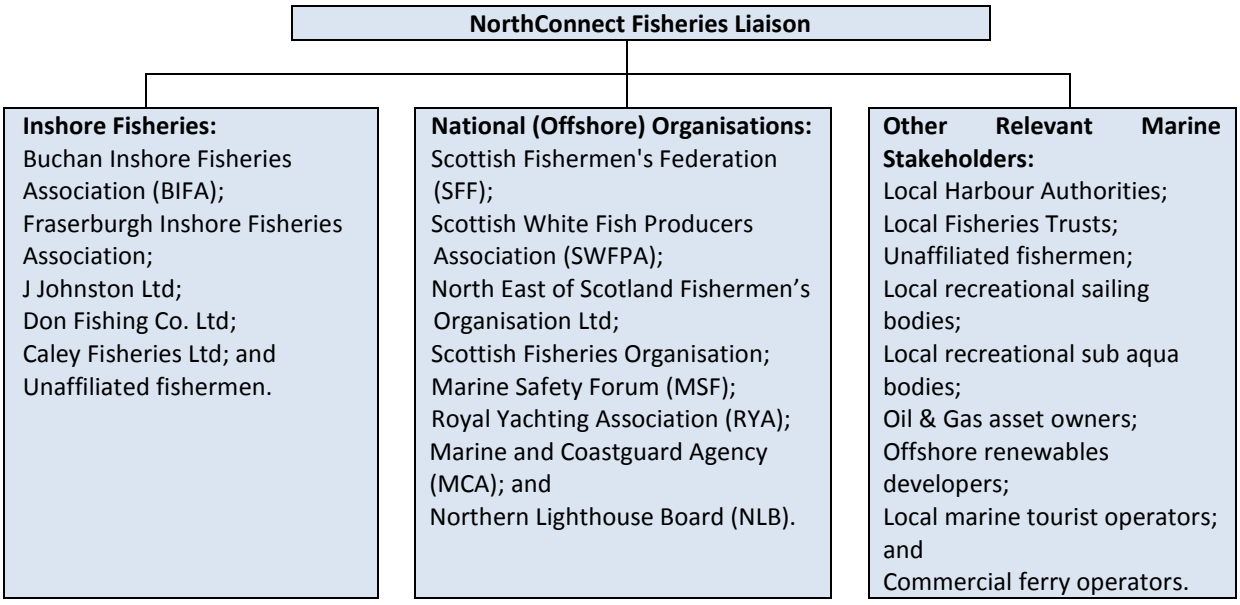


Figure 5.1: Marine User Stakeholders

By understanding the various stakeholders and their specific interests it can be ensured that the appropriate information is provided to each group in a timely manner, and that they have a route by which they can contact the NorthConnect team. The main mechanisms for communication with each group are discussed in the Communications Strategy document.

5.2 Fisheries Liaison Officer (FLO)

The Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) has developed best practice guidance to inform developers and the commercial fishing community on the need for effective communication at all stages of development. "Fishing Liaison Best Practice guidance for offshore renewables developers" was first published in May 2008 and updated by the Crown Estate in 2014 (FLOWW, 2014).

The European Subsea Cables Association (formerly SCUK) has also produced guidance related to fisheries liaison (The European Subsea Cable Association, 2016).

Both recommend that a FLO is appointed and retained through the life of a project, either as an employee of the cable operator or a specialised third-party contractor / consultant. The role of the FLO is to liaise between the cable operator and the fishing industry during the survey and installation period, to communicate and, where possible, mitigate potential hazards to fishing during these times.

The approach to fisheries liaison is based upon both the approach set out in ESCA guidance (The European Subsea Cable Association, 2016) and also, where applicable, the revised FLOWW guidance (FLOWW 2014).

From the outset, NorthConnect has considered that the FLO for this project should be an independent party, capable of providing informed and unbiased advice.

NorthConnect appointed Alan Addison in 2016 to provide fisheries liaison services to this project and to act as FLO. Mr Addison has good relationships with many of the fishermen active in and around the cable route as well as their representative organisations, through having many years of experience working within the fishing industry. Mr Addison's CV and recent experience can be found in Appendix A.

The FLO assisted in the Marine Survey work carried out in December 2016 and the summer of 2017. The FLO worked with fishermen directly to avoid excessive disruption to fishing activity, liaising with the fishermen prior to the surveys and basing himself on the survey vessel communicating with fishermen in the vicinity of the survey throughout the works, and reporting on all contact with fishing and other vessels during the survey period.

The FLO will work with the Communications Manager and the Cables Contractor to ensure that all appropriate communications are in place prior to any works commencing in the marine environment. This will include discussions with fishing associations and individual vessel owners. He will also be involved in ensuring appropriate communications throughout the cable installation activities.

5.3 Guard Vessels

The Cable Lay Vessel and Trenching/Protection Vessel cannot interrupt their work and abandon the site, other than in an emergency. To prevent collisions with merchant, recreation and fishing vessels, Guard Vessels shall be used to alert and redirect vessels which come too close to the working spreads. In addition, Guard Vessels shall be utilised to maintain protection zones around exposed cable sections, in particular crossings with existing cables and pipelines, between laying and trenching or between laying and rock placement activities.

The minimum separation between guard vessels utilised to maintain protection zones associated with exposed cable sections shall be 10-15 nautical miles. Additional guard vessels shall be deployed at cable and pipeline crossings and high fishing areas.

The project will be implemented/installed in cable sections; therefore, the end of each cable section shall be guarded until the jointing and post-lay burial operation of each joint is completed.

Prior to leaving shore the Guard Vessel Skippers shall be verbally briefed and provided with a briefing pack covering their specific tasks, work instructions, sailing instruction and HSE requirements.

The guard vessels shall utilise a combination of visual lookout, RADAR, and Automatic Identification System (AIS) based vessel monitoring to allow them to accurately identify any approaching vessels. They will maintain a 24 hour a day watch, with 2 crew members on watch at all times.

Regular security broadcasts will be issued by the Guard Vessel, alerting vessels in the vicinity to their role and providing them with details of the protection co-ordinates. The frequency of broadcasts will depend on the level of fishing/commercial traffic in the vicinity but shall at least be issued every 2 hours. A brief broadcast, advising protection

co-ordinates, will be issued on Channel 16, requesting vessels to tune into a specific Working Channel for more detailed information.

Any unexpected vessel entering a 6 nautical miles zone or a 30 minute Closest Point of Approach radius of the Guard Location will be closely monitored. Any unexpected vessel coming inside 1.5 nautical mile or clearly heading toward the guard location will be contacted to understand their intent and to ensure they are aware of the protection coordinates and agree actions required (if any).

The actions required will vary depending on what is being guarded. Navigational hazards e.g. work vessels, and cable end will have an appropriate protection area around them which will need to be adhered to by all vessels.

It will be safe for vessels to transit over an unprotected cable, however, they will not be able to anchor in the vicinity of the cable, nor will demersal trawl fishing be acceptable within the protection coordinates.

NorthConnect are committed to minimising the time that protection areas are in place, preferring the prompt installation of cable protection. The cable contractor is required to ensure each section of cable is adequately protected within a maximum of 3 months from laying. As cable burial and protection works progress, the protection zones will be continuously reviewed and reduced to ensure that they only include areas where the cable is yet to be adequately protected.

6. CONCLUSION

NorthConnect recognises that during cable installation works, there is a potential to have an effect on other marine users. The project is committed to minimising these effects and aims to ensure open and honest communications channels are in place with stakeholders prior to, during and after works. The aim is to work collaboratively to minimise effects as far as practicable.

7. REFERENCES

International Maritime Organisation (IMO) (1972/78). *International Regulations for Preventing Collisions at Sea 1972 (COLREGS)*. IMO, London.

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APPENDIX 1: FISHERIES LIAISON OFFICER CURRICULUM VITAE

CURRICULUM VITAE

(Disciplines – Fisheries Liaison Officer & Marine Mammal Observer)

Name:	Alan Wood Addison
Profession:	Fisheries Liaison Officer/Marine Mammal Observer
Residence:	United Kingdom
Nationality:	British
Educational Degree:	Technical College
Languages:	English

Professional Summary

Alan Addison has forty-eight years' experience in fisheries and marine research with 18 years' experience as Fisheries Liaison Officer and being a dedicated Marine Mammal Observer and Lead MMO. He has worked in a variety of locations from the North Sea, West Shetland, North West Atlantic, Norwegian Sea, Norwegian Coast, West Coast of Scotland, River Clyde, Southern North Sea, Western Approaches, Irish Sea, Celtic Sea, Bristol Channel. Offshore Tunisia, Cameroon, Congo, Surinam and Falklands East Basin.

Mr Addison has worked with multi-national crews and local nationals and is an able communicator with strong interpersonal skills, showing attention to detail, working calmly whilst under pressure and working both independently and within teams. Liaising with and providing hands on assistance to independent fishing crews in order to carry out relevant surveys and providing relevant follow-up advice where necessary. He has also liaised with inshore static gear fishermen to ensure site clearance/compensation prior to surveys commencing. Also, liaison with Client conducting the surveys.

Mr Addison has worked in a broad range of maritime environments, from coastal to open oceans, in temperate and tropical regions.

Experienced in species observation and identification, he has deployed on a variety of seismic survey vessels, being responsible for collecting data on marine mammal abundance and distribution in the survey areas. He can advise on mitigation procedures and species avoidance to the seismic operator with diplomacy and tact in a professional manner.

Mr Addison is trained in JNCC and MMS guidelines and has worked in both non-regulatory and regulated waters and is capable of working with locally adapted guidelines for specific tasks. He can provide training and advice to crew regarding shutdown requirements and exclusion zones.

Mr Addison produces comprehensive daily and final FLO/MMO reports and has experience in various computer software packages including Microsoft Office, Word and Excel. He remains fully fit for offshore work and hold the required Offshore Safety and Medical Certificates.

Recently he has acted as Consultant for Northconnect for its Interconnector Cable Lay/ Route Project between Norway and South of Peterhead. This has involved meeting and consulting with both inshore and offshore fishermen to keep them up to date with plans and progress, and address any of their concerns. Also hosted drop-in & day consulting sessions for fishermen, and consulted regularly with Norwegian inshore fishermen. As part of the project we also completed up to date marine offshore surveys and provided advice accordingly.

Specific Expertise

Fishing vessel Skipper/owner/manager for 44 years, managing vessels - from crewing to fish quotas, allocation of days at sea, general safety and maintenance. Director of North East of Scotland Fishermen's Organization Ltd (15yrs) and currently Chairman of United Fish Selling Ltd.

Fisheries Liaison Observer (FLO) – Fishery Industry Representative (FIR) and Dedicated Marine Mammal Observer (MMO) for the past 18 years with – Scottish Fishermen's Federation Ltd, Verif-i Ltd, EIP Ltd, University of Hull, Frontier MEDEX (Exlogs Safety Ltd), NFFO Services Ltd, Natural Power Ltd, RSS Marine, Global Seismic MMO/FLO Ltd, RPS Energy, Vision Project Services Ltd, Port Hill Marine Ltd, Affric Ltd and NorthConnect KS and ScanSeis AS.

Workplace Specialist Areas	
OFFSHORE	Fisheries Liaison Officer Offshore Fisheries Industry Representative Fisheries Liaison Representative Fisheries Consultant Marine Mammal Observer
	Fishing Skipper

Technical Experience – Fisheries Liaison Representative / Officer
- Extensive PC use, including Microsoft Excel to log and process all data - Experience as Fishing Skipper to liaise with/advise fishermen of Seismic surveys and Cable Surveys - Report writing - Radio Communication - Navigation - Seamanship - Team Leadership - Teamwork

Technical Experience – MMO
- Use of digital equipment to photograph and identify marine mammals - Extensive PC use, including Microsoft Excel to log and process all data - Use of Reticule binoculars and range finding stick - Bethnic invertebrates – survey and analysis - Report writing

Recent Technical/Safety Training	
Passport	Expires: 27/04/2025 UK No 55348818
Seaman's Book	Expires: 29/04/2020
Medical	Expires: 22/02/2019 UKOOA Pin: OGUK/200/418
Norwegian Medical	Expires: 22/02/2019
ENG1	Expires: 22/02/2019
Survival	Expires: 03/03/2021 OPITO, HUET, FOET,CA-EBS
Escape Chute Training (Sky Scape)	Expires:03/03/2021
Vantage Card No	737620
	Marine Mammal Observer (MMO) Induction Training (2005) (2007)
	Passive Acoustic Monitoring (PAM) Training (2010)
	Sea Survival Instructor Course (2001)
	Second Hand Certificate of Competency (1984)
Security Related Familiarization	STCW 2010 A-VI/6 13/12/2012
MIST	2011