Cenos Offshore Windfarm Limited

Cenos EIA

Chapter 14 – Commercial Fisheries

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CONTENTS

ACRONYMS

ACRONYM	DEFINITION
AIS	Automatic Identification System
CaP	Cable Plan
CPA	Coastal Protection Act
CBRA	Cable Burial Risk Assessment
cm	Centimetre
COLREG	International Regulations for the Prevention of Collision at Sea
DBS	Dogger Bank South
DEFRA	Department for Environment Food and Rural Affairs
DEU	Germany
DNK	Denmark
DoL	Depth of Lowering
DSLP	Development Specification and Layout Plan
DTI	Department of Trade and Industry
DP	Decommissioning Programme
EEZ	Exclusive Economic Zone
EEA	European Economic Area
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EICC	Export / Import Cable Corridor
EMF	Electromagnetic Fields
EMP	Environmental Management Plan
ESCA	European Subsea Cables Association
EU	European Union
FAD	Fish Aggregation Device
FEPA	Food and Environmental Protection Act
FLO	Fisheries Liaison Officer
FLOWW	Fishing Liaison with Offshore Wind and Wet Renewables Group
FMMS	Fisheries Management and Mitigation Strategy
FOIA	Freedom of Information Act
FRA	France
FSA	Formal Safety Assessment

ACRONYM	DEFINITION
FTU	Floating Turbine Unit
FU	Functional Unit
GBR	Great Britain
GEN	General Planning Principles
GVA	Gross Value Added
HDD	Horizontal Directional Drilling
HVDC	High Voltage Direct Current
ICES	International Council of the Exploration of the Sea
IFGs	Inshore Fisheries Groups
IMO	International Maritime Organization
Kg	Kilograms
kWh	Kilowatts per hour
LMP	Lighting and Marking Plan
m	Metre
MCEU	Marine Consents and Environment Unit
MD-LOT	Marine Directorate - Licensing Operations Team
MD-SEDD	Marine Directorate - Science, Evidence, Data and Digital
MGN	Marine Guidance Note
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MPA	Marine Protected Areas
MPI	Multi-Purpose Interconnector
NCMPA	Nature Conservation Marine Protected Area
NECRIFG	North and East Coast Regional Inshore Fisheries Group
NLD	Netherlands
NM	Nautical Mile
NMP	National Marine Plan
NMPi	National Marine Plan Interactive
NtM	Notice to Mariners
NOR	Norway
OFLO	Offshore Fisheries Liaison Officer
OSCP	Offshore Substation Converter Platform
PAC	Pre-Application Consultation

ACRONYM	DEFINITION
PLGR	Pre-Lay Grapnel Run
SOLAS	International Convention for the Safety of Life at Sea
SFF	Scottish Fishermen's Federation
SSC	Suspended Sediment Concentrations
STECF	Scientific, Technical and Economic Committee for Fisheries
SWFPA	Scottish White Fish Producers Association
TAC	Total Allowable Catch
UK	United Kingdom
UKHO	UK Hydrographic Office
UXO	Unexploded Ordnance
VMP	Vessel Management Plan
VMS	Vessel Monitoring System
WTG	Wind Turbine Generator
ZoI	Zone of Influence

GLOSSARY

TERM	DEFINITION
2023 Scoping Opinion	Scoping Opinion received in June 2023, superseded by the 2024 Scoping Opinion.
2023 Scoping Report	Environmental Impact Assessment (EIA) Scoping Report submitted in 2023, superseded by the 2024 Scoping Report.
2024 Scoping Opinion	Scoping Opinion received in September 2024, superseding the 2023 Scoping Opinion.
2024 Scoping Report	EIA Scoping Report submitted in April 2024, superseding the 2023 Scoping Report.
Area of Opportunity	The area in which the limits of electricity transmission via High Voltage Alternating Current (HVAC) cables can reach oil and gas assets for decarbonisation. This area is based on assets within a 100 kilometre (km) radius of the Array Area.
Array Area	The area within which the Wind Turbine Generators (WTGs), floating substructures, moorings and anchors, Offshore Substation Converter Platforms (OSCPs) and Inter-Array Cables (IAC) will be present.
Cenos Offshore Windfarm ('the Project')	'The Project' is the term used to describe Cenos Offshore Windfarm. The Project is a floating offshore windfarm located in the North Sea, with a generating capacity of up to 1,350 Megawatts (MW). The Project which defines the Red Line Boundary (RLB) for the Section 36 Consent and Marine Licence Applications (MLA), includes all offshore components seaward of Mean High Water Springs (MHWS) (WTGs, OSCPs, cables, floating substructures moorings and anchors and all other associated infrastructure). The Project is the focus of this Environmental Impact Assessment Report (EIAR).
Cenos Offshore Windfarm Ltd. (The Applicant)	The Applicant for the Section 36 Consent and associated Marine Licences.
Cumulative Assessment	The consideration of potential impacts that could occur cumulatively with other relevant projects, plans, and activities that could result in a cumulative effect on receptors.
Developer	Cenos Offshore Windfarm Ltd., a Joint Venture between Flotation Energy and Vårgrønn As (Vårgrønn).

TERM	DEFINITION
Environmental Impact Assessment (EIA)	The statutory process of evaluating the likely significant environmental effects of a proposed project or development. Assessment of the potential impact of the proposed Project on the physical, biological and human environment during construction, operation and maintenance and decommissioning.
Environmental Impact Assessment Regulations	This term is used to refer to the Environmental Impact Assessment Regulations which are of relevance to the Project. This includes the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended); and the Marine Works (Environmental Impact Assessment) Regulations 2007.
Environmental Impact Assessment Report	A report documenting the findings of the EIA for the Project in accordance with relevant EIA Regulations.
Export/Import Cable	High voltage cable used to export/import power between the OSCPs and Landfall.
Export/Import Cable Bundle (EICB)	Comprising two Export/Import Cables and one fibre-optic cable bundled in a single trench.
Export/Import Cable Corridor (EICC)	The area within which the Export/Import Cable Route will be planned and the Export/Import Cable will be laid, from the perimeter of the Array Area to MHWS.
Export/Import Cable Route	The area within the Export/Import Export Corridor (EICC) within which the Export/Import Cable Bundle (EICB) is laid, from the perimeter of the Array Area to MHWS.
Floating Turbine Unit (FTU)	The equipment associated with electricity generation comprising the WTG, the floating substructure which supports the WTG, mooring system and the dynamic section of the IAC.
Flotation Energy	Joint venture partner in Cenos Offshore Windfarm Ltd.
Habitats Regulations	The Habitats Directive (Directive 92/43/ECC) and the Wild Birds Directive (Directive 2009/147/EC) were transposed into Scottish Law by the Conservation (Natural Habitats &c) Regulations 1994 ('Habitats Regulations') (up to 12 NM); by the Conservation of Offshore Marine Habitats and Species Regulations 2017 ('Offshore Marine Regulations') (beyond 12 NM); the Conservation of Habitats and Species Regulations

TERM	DEFINITION
	2017 (of relevance to consents under Section 36 of the Electricity Act 1989); the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001; and the Wildlife and Countryside Act 1981. The Habitats Regulations set out the stages of the Habitats Regulations Appraisal (HRA) process required to assess the potential impacts of a proposed project on European Sites (Special Areas of Conservation, Special Protection Areas, candidate SACs and SPAs and Ramsar Sites).
Habitats Regulations Appraisal	The assessment of the impacts of implementing a plan or policy on a European Site, the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site.
High Voltage Alternating Current (HVAC)	Refers to high voltage electricity in Alternating Current (AC) form which is produced by the WTGs and flows through the IAC system to the OSCPs. HVAC may also be used for onward power transmission from the OSCPs to assets or to shore over shorter distances.
High Voltage Direct Current (HVDC)	Refers to high voltage electricity in Direct Current (DC) form which is converted from HVAC to HVDC at the OSCPs and transmitted to shore over longer distances.
Horizontal Directional Drilling (HDD)	An engineering technique for laying cables that avoids open trenches by drilling between two locations beneath the ground's surface.
Innovation & Targeted Oil and Gas (INTOG)	In November 2022, the Crown Estate Scotland (CES) announced the Innovation & Targeted Oil and Gas (INTOG) Leasing Round, to help enable this sector-wide commitment to decarbonisation. INTOG allowed developers to apply for seabed rights to develop offshore windfarms for the purpose of providing low carbon electricity to power oil and gas installations and help to decarbonise the sector. Cenos is an INTOG project and in November 2023 secured an Exclusivity Agreement as part of the INTOG leasing round.
Inter-Array Cable (IAC)	The cables which connect the WTGs to the OSCPs. WTGs may be connected with IACs into a hub or in series as a 'string' or a 'loop' such that power from the connected WTGs is gathered to the OSCPs via a single cable.
Joint Venture	The commercial partnership between Flotation Energy and Vårgrønn, the shareholders which hold the Exclusivity Agreement with CES to develop the Cenos site as an INTOG project.

TERM	DEFINITION
Landfall	The area where the Export/Import Cable from the Array Area will be brought ashore. The interface between the offshore and onshore environments.
Marine Licence	Licence required for certain activities in the marine environment and granted under the Marine and Coastal Access Act 2009 and/or the Marine (Scotland) Act 2010.
Marine Protected Area (MPA)	Marine sites protected at the national level under the Marine (Scotland) Act 2010 out to 12 NM, and the Marine and Coastal Access Act 2009 between 12-200 NM. In Scotland MPAs are areas of sea and seabed defined so as to protect habitats, wildlife, geology, underseas landforms, historic shipwrecks and to demonstrate sustainable management of the sea.
Marine Protected Area (MPA) Assessment	A three-step process for determining whether there is a significant risk that a proposed development could hinder the achievement of the conservation objectives of an MPA.
Mean High Water Springs (MHWS)	The height of Mean High Water Springs is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest.
Mean Low Water Springs (MLWS)	The height of Mean Low Water Springs is the average throughout a year of the heights of two successive low waters during periods of 24 hours (approximately once a fortnight).
Mitigation Measures	Measures considered within the topic-specific chapters in order to avoid impacts or reduce them to acceptable levels. • Primary mitigation - measures that are an inherent part of the design of the Project which reduce or avoid the likelihood or magnitude of an adverse environmental effect, including location or design; • Secondary mitigation – additional measures implemented to further reduce environmental effects to 'not significant' levels (where appropriate) and do not form part of the fundamental design of the Project; and • Tertiary mitigation – measures that are implemented in accordance with industry standard practice or to meet legislative requirements and are independent of the EIA (i.e. they would be implemented regardless of the findings of the EIA). Primary and tertiary mitigation are referred to as embedded mitigation. Secondary mitigation is referred to as additional mitigation.

TERM	DEFINITION
Mooring System	Comprising the mooring lines and anchors, the mooring system connects the floating substructure to the seabed, provides station-keeping capability for the floating substructure and contributes to the stability of the floating substructure and WTG.
Nature Conservation Marine Protected Area (NCMPA)	MPA designated by Scottish Ministers in the interests of nature conservation under the Marine (Scotland) Act 2010.
Offshore Substation Converter Platforms (OSCPs)	An offshore platform on a fixed jacket substructure, containing electrical equipment to aggregate the power from the WTGs and convert power between HVAC and HVDC for export/import via the Export/Import Cable to/from the shore. The OSCPs will also act as power distribution stations for the Oil & Gas platforms.
Onward Development	Transmission projects which are anticipated to be brought forward for development by 3rd party oil and gas operators to enable electrification of assets via electricity generated by the Project. All Onward Development will subject to separate marine licensing and permitting requirements.
Onward Development Area	The area within which oil and gas assets would have the potential to be electrified by the Project.
Onward Development Connections	Oil and gas assets located in the waters surrounding the Array Area will be electrified via transmission infrastructure which will connect to the Project's OSCPs. These transmission cables are referred to as Onward Development Connections.
Project Area	The area that encompasses both the Array Area and EICC.
Project Design Envelope	A description of the range of possible elements that make up the Project design options under consideration and that are assessed as part of the EIA for the Project.
Study Area	Receptor specific area where potential impacts from the Project could occur.
Transboundary Assessment	The consideration of impacts from the Project which have the potential to have a significant effect on another European Economic Area (EEA) state's environment. Where there is a potential for a transboundary effect, as a result of the Project, these are assessed within the relevant EIA chapter.

TERM	DEFINITION
Transmission Infrastructure	The infrastructure responsible for moving electricity from generating stations to substations, load areas, assets and the electrical grid, comprising the OSCPs, and associated substructure, and the Export/Import Cable.
Vårgrønn As (Vårgrønn)	Joint venture partner in Cenos Offshore Windfarm Ltd.
Wind Turbine Generator (WTG)	The equipment associated with electricity generation from available wind resource, comprising the surface components located above the supporting substructure (e.g., tower, nacelle, hub, blades, and any necessary power transformation equipment, generators, and switchgears).
Worst-Case Scenario	The worst-case scenario based on the Project Design Envelope which varies by receptor and/or impact pathway identified.

14 COMMERCIAL FISHERIES

14.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) presents the Commercial Fisheries receptors of relevance to the Project and assesses the potential impacts from the construction, operation and maintenance, and decommissioning of the Project on these receptors. Where required, mitigation is proposed, and the residual impacts and their significance are assessed. Potential cumulative and transboundary impacts are also considered.

For the purpose of this EIAR chapter, Commercial Fisheries are defined as legal fishing activity undertaken for commercial profit. This chapter makes a distinction between various gear types, who are either "passive gear" or "mobile gear". Hereby, passive gear is defined as any gear where the catching operation does not require an active movement of the gear within the marine environment and mobile gear is defined as fishing gear that is actively moved through the water.

Table 14-1 below provides a list of all the supporting studies which relate to and should be read in conjunction with the Commercial Fisheries impact assessment. All supporting studies are appended to this EIAR.

Table 14-1 Supporting studies

DETAILS OF STUDY	SUPPORTING STUDIES AND LOCATION (WHERE RELEVANT)
Navigational Risk Assessment Report	EIAR Vol. 4 Appendix 26

The impact assessment presented herein draws upon information presented within other impact assessments as part of this EIAR, including:

- EIAR Vol. 3, Chapter 10: Benthic Ecology – assesses the impacts of the Project on benthic habitats which have the potential to support commercially valuable fish and shellfish species. This chapter has been used to inform the presence/absence and spatial distribution of benthic habitats which have the potential to support commercially valuable fish and shellfish species;
- EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology – assesses the impacts of the Project on important fish and shellfish species. This chapter has been used to inform the presence/absence and spatial distribution of commercially important fish and shellfish species within the Commercial Fisheries Study Area;
- EIAR Vol. 3, Chapter 15: Shipping and Navigation – assesses the impacts of potential interference or risk to commercial fishing vessels navigating through the Project as a result of the physical presence of Project vessels and infrastructure; and
- EIAR Vol. 3, Chapter 19: Socio-economics, Tourism and Recreation – assesses the impacts of works associated with the construction, operation and maintenance and decommissioning phases of the Project on the fishing sector and fishing communities.

Where information from other chapters is used to inform the impact assessment, reference to the relevant EIAR chapter is given. Impacts relating to navigational safety for vessels within the marine environment (including potential collision risk for commercial fishing vessels navigating through the marine environment) are discussed in EIAR Vol. 3, Chapter 15: Shipping and Navigation and are not considered within this chapter.

The following specialists have contributed to the assessment:

- [Redacted] , Xodus Group; and
- [Redacted] Xodus Group.

14.2 Legislation, policy, and guidance

The wider marine planning, legislation, policy and guidance is discussed in EIAR Vol. 2, Chapter 3: Policy and Legislative Context. The following legislation, policy, and guidance are relevant to the assessment of impacts from the Project on Commercial Fisheries:

- Legislation:
  - International
    - Fisheries Act 2020: Following the exit of the United Kingdom (UK) as a member state of the European Union (EU), governance of UK waters is now the sole responsibility of sovereign state. The UK Government is responsible for managing for both territorial waters (out to 12 Nautical Miles (NM)) and to the Exclusive Economic Zone (EEZ) (between 12-200 NM). Under Section 16 of the Fisheries Act 2020 and the Trade Cooperation Agreement, non-UK vessels now require a licence to fish within UK waters. A transition period up to the year 2026 is in place, as such licenced EU fishing vessels are able to fish specific Total Allowable Catch (TAC) and non-quota stocks within UK waters (between 12-200 NM) and within territorial waters (between 6-12 NM) where there is historic evidence of fishing. TAC quotas will be gradually changed until 2026, including a gradual reduction in EU quota shares within UK waters and the transfer of 25% of EU fishing rights within UK waters to UK fishing fleets (European Commission, 2020; European Council, 2021).
  - National
    - At the time of writing this EIAR, it is acknowledged that the 'Fisheries management measures within Scottish Offshore Nature Conservation Marine Protected Areas (NCMPAs)'[1] (Scottish Government, 2024a) legislation is undergoing consultation and has not been formally published. The recommendations from the legislation would be to cease all mobile demersal fishing gear (including demersal trawls and dredges) activity within the East of Gannet and Montrose Fields NCMPA. This has the potential to reduce the magnitude of effect of the Project on fisheries operating demersal gears within the NCMPA. However, the assessment has been undertaken in consideration of the worst-case scenario, therefore, the assessment of potential effects (as presented within Section 14.6) has been undertaken on the basis that existing fishing activity will continue within the NCMPA.

[1] https://www.gov.scot/publications/public-consultation-fisheries-management-measures-within-scottish-offshore-marine-protected-areas-mpas/

- Policy:
  - Scotland's National Marine Plan (NMP)[2] (Marine Scotland, 2015) outlines the policies and objectives for marine planners and decision-makers to consider the potential impacts of an offshore plan, project or development on fisheries interests. This plan also identifies some of the key concerns which should be considered in relation to fisheries when undertaking an Environmental Impact Assessment (EIA). In addition to the consideration of Commercial Fisheries interests under NMP Chapter 4: General Planning Principles GEN 1, GEN 2, GEN 3, GEN 4 and GEN 17, the following NMP policies are applicable to the assessment of Commercial Fisheries:
    - *"FISHERIES 1: Taking account of the EU's Common Fisheries Policy, Habitats Directive and Marine Strategy Framework Directive, marine planners and decision makers should aim to ensure:*
      - *Existing fishing opportunities and activities are safeguarded whenever possible;*
      - *An ecosystem-based approach to the management of fishing which ensures sustainable and resilient fish stocks and avoids damage to fragile habitats;*
      - *Protection of vulnerable stocks (in particular for juvenile and spawning stocks through continuation of sea area closures where appropriate);*
      - *Improved protection of the seabed and historical and archaeological remains requiring protection through effective identification of high-risk areas and management measures to mitigate the impacts of fishing, where appropriate;*
      - *That other sectors take into account the need to protect fish stocks and sustain healthy fisheries for both economic and conservation reasons;*
      - *Delivery of Scotland's international commitments in fisheries, including the ban on discards; and*
      - *Mechanisms for managing conflicts between fishermen and/or between the fishing sector and other users of the marine environment".*
    - *"FISHERIES 2: The following key factors that should be taken into account when deciding on uses of the marine environment and the potential impact on fishing:*
      - *The cultural and economic importance of fishing, in particular to vulnerable coastal communities;*
      - *The potential impact (positive or negative) of marine developments on the sustainability of fishing and shellfish stocks and resultant fishing opportunities in any given area;*
      - *The environmental impact on fishing grounds (such as nursery, spawning areas), commercially fished species, habitats and species more generally; and*
      - *The potential effect of displacement on: fish stocks, the wider environment, use of fuel, socio-economic costs to fishers and their communities and other marine users".*
    - *"FISHERIES 3: Where existing fishing opportunities or activity cannot be safeguarded, a Fisheries Management and Mitigation Strategy should be prepared by the proposer of development or use involving, full engagement with local fishing interests (and other interests as appropriate) in the development of the Strategy. All efforts should be made to agree the Strategy with those interests. Those interests should also undertake to engage with the proposer and provide transparent and accurate information and data to help complete the Strategy. The Strategy should be drawn up as part of the discharge of conditions of permissions granted";*

[2] *Following the most recent review of the National Marine Plan in 2021, the Scottish Ministers announced, in 2022, their intention to update the National Marine Plan. This update is underway but has not yet reached a draft consultation stage. A stakeholder engagement strategy and statement of public participation was published in August 2024.*

- *"FISHERIESs 5: Inshore Fisheries Groups (IFGs) should work with all local stakeholders with an interest to agree joint fisheries management measures. These measures should inform and reflect the objectives of regional marine plans";*
- *"CABLES 2: The following factors will be taken into account on a case by case basis when reaching decisions regarding submarine cable development and activities:*

    - *Cables should be suitably routed to provide sufficient requirements for installation and cable protection;*
    - *New cables should implement methods to minimise impacts on the environment, seabed and other users, where operationally possible and in accordance with relevant industry practice;*
    - *Cables should be buried to maximise protection where there are safety or seabed stability risks and to reduce conflict with other marine users and to protect the assets and infrastructure;*
    - *Where burial is demonstrated not to be feasible, cables may be suitably protected through recognised and approved measures (such as rock or mattress placement or cable armouring) where practicable and cost-effective and as risk assessments direct; and*
    - *Consideration of the need to reinstate the seabed, undertake post-lay surveys and monitoring and carry out remedial action where required".;*

- Chapter 6 Sea Fisheries Interactions with Other Users: advises on how interactions between the fishing industry and other marine users should be considered as part of any proposal or development within the Scottish marine region;
- Chapter 11 Offshore Wind and Marine Renewable Energy, Interactions with Other Users: which advises on how to minimise physical competition for space, navigational restrictions and the impact of physical structures in the sea; and
- Chapter 14 Submarine Cables, Interactions with Other Users: which advises on methods to minimise the risk of adverse interactions between subsea cables and the offshore fishing industry.

- Guidance:
    - Best practice guidance for fishing industry financial and economic impact assessments (UKFEN, 2012) which provides information on the impacts to the fishing industry as a result of closed or restricted fishing grounds;
    - Options and opportunities for marine fisheries mitigation associated with wind farms (Blyth-Skyrme, 2010) which provides useful measures to reduce the potential impacts of offshore floating wind developments on Commercial Fisheries;
    - Fishing and Submarine Cables – Working Together (ICPC, 2009) which provides guidance on promoting high standards of reliability and safety in the submarine cable environment;
    - Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison (FLOWW, 2014) which informs developers within the offshore renewable energy sector and the Commercial Fisheries community on the need for effective communication throughout all phases of the development lifecycle;
    - FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendation for Fisheries Disruption Settlements and Community Funds (FLOWW, 2015) which is used to inform discussions between developers and the fishing industry in conjunction with the guidance document above;
    - Good Practice Guidance for Assessing Fisheries Displacement by Other Licensed Marine Activities (and associated Literature Review) (Scottish Government and Xodus Group, 2022) which provides good practice guidance for assessing fisheries displacement as a result of other licenced marine activities;

- Developing Guidance on Fisheries Cumulative Impact Assessment for Wind Farm Developers (Blyth-Skyrme, 2010);
- Guidelines for Data Acquisition to Support Marine Environmental Assessments of Offshore Renewable Energy Projects. Contract report: ME5403 (Cefas, 2012);
- Guidelines for liaison with the fishing industry on the United Kingdom Continental Shelf UKCS – Issue 8 (Offshore Energies UK, 2023);
- Fishing and Submarine Cables-Working Together (International Cable Protection Committee, 2014); and
- Offshore Wind Farms-Guidance Note for Environmental Impact Assessment in respect of Food and Environmental Protection Act (FEPA) and the Coastal Protection Act (CPA) requirements (Cefas), Marine Consents and Environment Unit (MCEU), Department for Environment Food and Rural Affairs (DEFRA) and Department of Trade and Industry (DTI), 2004).

14.3 Scoping and consultation

Stakeholder consultation has been ongoing throughout the EIA process and has played an important part in ensuring the scope of the baseline characterisation and impact assessment are appropriate with respect to the Project and the requirements of the regulators and their advisors.

A Scoping Workshop was held on the 29th February 2024 (as detailed in EIAR Vol. 2, Chapter 1: Introduction). Relevant points specific to Commercial Fisheries are provided in Table 14-2 below, which sets out how these points have been addressed within the EIAR.

The 2024 Scoping Report was submitted to Marine Directorate – Licensing Operations Team (MD-LOT) in April 2024, and relevant stakeholders were consulted by MD-LOT. The Scoping Opinion was received in September 2024. The 2024 Scoping Report and Scoping Opinion supersedes the 2023 Scoping Report and Scoping Opinion for the Project. Relevant comments from the Scoping Opinion specific to Commercial Fisheries are provided in Table 14-2 below, which provides a high-level response on how these comments have been addressed within the EIAR. Further consultation has been undertaken throughout the pre-application phase. The list below summarises the consultation activities carried out relevant to Commercial Fisheries:

- Direct consultation through the Fisheries Liaison Officer (FLO) – to discuss survey works and address concerns regarding the potential impacts of Export/Import Cable to relevant crab species;
- Meeting in Peterhead with the fishing industry – to discuss survey works, concerns regarding Electromagnetic Fields (EMF) and the data that will be gathered and used to inform the Commercial Fisheries impact assessment;
- Meeting(s) with the Scottish Fishermen's Federation (SFF) and Scottish White Fish Producers Association (SWFPA)- to discuss design details of the Project (including details of the proposed EICC) and proposed construction and maintenance activities; and
- Meeting with the SFF, SWFPA and North and East Coast Regional Inshore Fisheries Group (NECRIFG) representatives – to discuss outcomes of the Commercial Fisheries impact assessments.

Table 14-2 Comments from the Scoping Opinion relevant to Commercial Fisheries

REGULATOR/CONSULTEE	COMMENT	RESPONSE
Scottish Ministers	Scottish Minsters are broadly content with the data sources listed by the Developer as detailed in table 13.4 of the Scoping Report. However, in line with the MD-SEDD advice, in addition to the sources listed, the EIA should also include Automate Identification System ("AIS") data as provided by EMODNet. This data provides a time-weighted picture of fishing activity, including annual and seasonal activity, so gives an accurate representation to inform the baseline. Vessel Monitoring System ("VMS") and relevant National Marine Plan Interactive ("NMPi") data layers should also be included to provide a clearer indication of fishing activities by gear type throughout the Study Area as well as allowing assessment of VMS value and fishing effort. Additionally, the Scottish Ministers recommend that the new gridded fisheries data for under 12m vessels, available on NMPi, should be included as this can be split by gear type and provides accurate, up to date information regarding the activity of the inshore fleet. Furthermore, the Developer is advised that consideration should be given to fisheries data gathered prior to the UK leaving the European Union and to obtaining fish plotter data from fisheries organisations, as this will include data from vessels not obliged to use AIS or VMS. This is in line with the SFF representation. Finally, the Scottish Ministers highlight the MD-SEDD advice in relation to the reliance on MMO surveillance sightings and advised to take this into consideration in undertaking the EIA.	The full list of data and information sources that have been used to inform this EIAR have been summarised in Table 14-3. Consideration has been given to AIS, VMS and relevant NMPi data layers (as listed in Table 14-3) to inform the characterisation of the existing baseline environment for Commercial Fisheries. Consideration has been given to gridded data for inshore fisheries within Section 14.4.4.4.1. Plotter data provided by the SFF has been described in Section 14.4.4.5. Consideration has been given to Marine Management Organisation (MMO) surveillance sightings within Section 14.4.4.1.2.
Scottish Ministers	The Developer defines the study area in Section 13.3 of the Scoping Report. The Scottish Ministers advise that the study area must include International Council for the Exploration of the Seas rectangles adjacent	The Commercial Fisheries Study Area for this EIAR is defined within Section 14.4.1. In line with the recommendations made in 'Assessing fisheries displacement by other licenced marine activities: good

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	to the current study area in order to capture the effects on those areas of the fishing. activities which have been displaced, the Developer is referred to the MD-SEDD advice in this regard.	practice guidance' (Scottish Government and Xodus, 2022), the Commercial Fisheries Study Area considers both the International Council of the Exploration of the Sea (ICES) rectangles within which the Project is located and those ICES rectangles immediately adjacent to the Project Area to give consideration to the potential for displacement of fishing activity from within the Project Area to adjacent waters.
Scottish Ministers	The Scottish Ministers agree with the impact pathways scoped in and out of the assessment as described in table 10-4 of the Scoping Report. However, the Scottish Ministers refer the Developer to the SFF representation in relation to snagging hazards and gear conflict as a result of displacement and advise that this is given consideration in the EIA Report.	Table 14-5 summarised the impacts requiring assessment which have been considered within this EIAR. The potential effects of snagging hazards and gear conflicts have been considered as part of the assessment of potential effects during construction, operation and maintenance, and decommissioning within Sections 14.6.1.5, 14.6.2.5 and 14.6.3 respectively.
Scottish Ministers	The Scottish Ministers are content with the embedded mitigation measures detailed in table 13.5 of the Scoping Report. In relation to the development of a Fisheries Management and Mitigation Strategy ("FMMS"), the Scottish Ministers refer the Developer to the SFF representation and advise that the FMMS be developed in consultation with the SFF.	The Outline FMMS (EIAR Vol. 4, Appendix 34), which has been developed in support of the Project has been developed in consideration of relevant guidance, supplemented by consultation with stakeholders including SFF.
Scottish Ministers	The Scottish Ministers are also content with the Developers approach to the assessment of cumulative effects on commercial fisheries arising from the Proposed Development cumulatively with other developments.	Noted.
Scottish Ministers	The Scottish Ministers are in agreement with the Developer's proposal to scope in transboundary impacts to non-UK fisheries for assessment in the EIA Report.	Noted.

REGULATOR/CONSULTEE	COMMENT	RESPONSE
Marine Directorate - Science, Evidence, Data and Digital (MD-SEDD)	MD-SEDD are content that the key commercial fisheries receptors have been identified and agree that all impact pathways have been scoped in.	Noted.
MD-SEDD	MD-SEDD note that the study area for Commercial Fisheries includes the ICES rectangles that overlap with the development, but no adjacent rectangles. The document, "Assessing fisheries displacement by other licenced marine activities: good practice guidance" recommends that the Study Area should include any area that fishing effort may be displaced to. MD-SEDD therefore advise that a wider regional Study Area is also defined which should include any adjacent ICES rectangles that fishing may be displaced to. This will assist in the assessment of potential fisheries displacement within the EIA.	As above the Commercial Fisheries Study Area for this EIAR is defined within Section 14.4.1 and gives consideration to both the ICES rectangles within which the Project is located and those ICES rectangles immediately adjacent to the Project Area to give consideration to the potential for displacement of fishing activity from within the Project Area to adjacent waters.
MD-SEDD	Data-MD-SEDD note that the Commercial Fisheries baseline appears to have been summarised within the scoping report based solely on the UK landings data for the ICES rectangles. No spatial Vessel Monitoring System (VMS) data or National Marine Plan Interactive (NMPi) data layers have been presented as figures, despite both being listed in Table 13-4 as data sources. MD-SEDD advise that these data sources, especially the VMS data, are used to present spatial maps of fishing activity. These will provide detail of where each gear type is fishing on a much finer spatial scale than that of the ICES rectangles and will give a clearer visual indication of where the project may overlap with fishing grounds.	The full list of data and information sources that have been used to inform this EIAR have been summarised in Table 14-3 and gives consideration to AIS, VMS and relevant NMPi data layers to inform the characterisation of the existing baseline environment for Commercial Fisheries.
MD-SEDD	When using MMO VMS datasets to produce spatial maps of fishing activity, MD-SEDD advise that the data is used to present figures showing both average VMS value and also fishing effort (kW per hour). Areas of high value may not necessarily equate to areas of high effort, so it is advised to visualise the fishing activity using both indices. This will	Within the characterisation of the existing baseline environment for commercial fisheries (Section 14.4.4) VMS data for gear types has been described in the context of both value and effort. Figures for value and effort for each gear type present within the Commercial Fisheries Study Area are also provided within the relevant sections.

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	provide further information about the commercial fisheries baseline and help in the assessment of possible displacement of fishing effort.	
MD-SEDD	MD-SEDD note that the Scotmap data from 2014 has been mentioned and advise that this dataset should not be relied upon to provide information on the commercial fisheries baseline for the inshore fleet as it is out of date. MD-SEDD advise that this dataset should be used only to validate information gathered from local fishers and stakeholders. The new gridded fisheries data for Under 12m vessels (2017-2021) which is available on NMPi and split by gear type, provides a more up to date visualisation of the fishing activity of the inshore fleet.	Consideration has been given to gridded data for inshore fisheries within Section 14.4.4.4.1 The characterisation of inshore fishing effort has been supplemented by engagement with stakeholders (as detailed within Section 14.3.
MD-SEDD	MD-SEDD note that the scoping report states that AIS data collated in the Shipping and Navigation assessment will be referred to within the Commercial Fisheries chapter as appropriate. However, no mention of AIS data is included within Table 13-4 of data sources that will be used within the Commercial Fisheries chapter. MD-SEDD advise that the developers include the AIS data provided by EMODNet which gives the amount of time spent by fishing vessels in a location. This data can be found via emodnet.ec.europa.eu under "vessel density" and presents averaged data from 2017-2022. MD-SEDD note that AIS traffic data is included in the Shipping and Navigation chapter. This gives a 28 day description of the vessel types and routes in the vicinity of the development. The EMODNet data provides a deeper view into annual and seasonal activity and also provides a time weighted picture of the activity of vessels, including fishing vessels. As such, this data will provide a better representation of fishing activity in the area.	As above the full list of data and information sources that have been used to inform this EIAR have been summarised in Table 14-3, with consideration given to AIS data to inform the characterisation of the existing baseline environment for Commercial Fisheries. This has been further informed by the Cenos Offshore Wind Farm Long-Term AIS Assessment (EIAR Vol. 4, Appendix 26: NRA Report) to provide site-specific context on AIS vessel activity within the Project Area.
MD-SEDD	MD-SEDD advise against the reliance of MMO surveillance sightings within the EIA for informing the fishing activity baseline. This data has a sampling bias due to risk-based taskings in Scotland leading to uneven	While MMO surveillance sightings data has been presented within Section 14.4.4.1.2 this has been supplemented by a range of data and information sources (as presented within Table 14-3) to provide a

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	survey effort, so may not give an accurate representation of fishing activity in the Study Area. It can however be used to give an indication of the nationality of vessels present in the area and can be used to validate information from other sources.	comprehensive representation of fishing activity within the Commercial Fisheries Study Area.
North and East Coast Regional Inshore Fisheries Group (NECRIFG)	My response is included with the SFF response so if you could note that NECRIFG has made representation please.	Noted.
Scottish Fishermen's Federation (SFF)	Firstly, the SFF object to the use of PDE since it will not give a realistic picture of the ORIEs impact on fisheries. Noting the former objection on use of PDE, the following comments are based on existing details provided in this Scoping Report and further comments will be shared in due course once the Project's designed is finalised.	As detailed within **EIAR Vol. 2, Chapter 5: Project Description,** the Project has utilised a Project Design Envelope (PDE) approach to inform this EIAR. The PDE approach enables a range of values to be presented for each Project aspect, providing the flexibility to allow for further refinement of the Project design. The first version of the PDE was presented within the 2023 Scoping Report, submitted to MD-LOT in 2023, and thereafter refined for the 2024 Scoping Report submitted to MD-LOT in April 2024. MD-LOT has accepted this approach within the Scoping Opinion which was received in September 2024. The PDE has been further refined based on the results of environmental surveys, technical and engineering studies and discussions with stakeholders and the community, as part of the EIA process. The PDE approach has been adopted in accordance with the Scottish Government (2022a) Guidance for applicants on using the design envelope for applications under Section 36 of the Electricity Act 1989.
SFF	Wind Turbine Generator (WTGs) foundation/spatial footprint	As detailed within **EIAR Vol. 2, Chapter 5: Project Description** the final design of the Floating Turbine Unit (FTU) will be selected post-consent to ensure flexibility in supply chain options. The final FTU layout will be determined post-consent through the design

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	SFF notes from sub-section 3.5.2.4 (p67) that the WTG supplier has not been selected yet and specific WTG details cannot be provided at the time of writing. We also note from sub-section 3.5.2.7 (p68) that the main types of floating substructure under consideration are semi-submersible and Tension Leg Platform (TLP) designs. Being concerned with the spatial footprint of floating WTGs and the potential snagging hazard that their moorings system creates to fishing vessels, SFF's preferred WTG floating foundation option is TLP since they have least spatial footprint on the seabed. SFF note from sub-section, 3.7.1.7 the mooring systems will be pre-laid and stored temporarily on the seabed during WTGs installation. As pre-laid mooring systems on the seabed create snagging hazards to fishers, we would propose guard vessels to be deployed to such sites to inform fishers of the snagging hazards.	optimisation process. The final FTU layout will be selected in consideration of WTG model choice, navigational safety, seabed characteristics, metocean conditions, existing infrastructure and environmental constraints. As detailed within **EIAR Vol. 2, Chapter 5: Project Description** and within Section 14.5.4, guard vessels will be used throughout the construction phase of the Project, alongside the implementation of statutory and advisory safety zones, which will ensure the ongoing safe operations of fishing vessels throughout the construction phase of the Project (as detailed within Section 14.5.5 and considered as part of the assessment of potential effects within Section 14.6).
SFF	Offshore substation platforms (OSPs) SFF request to be consulted on the OSPs or Offshore Substation and Converter Platform (OSCP) site selections to ensure they do not sit on any prime fishing ground and fish and shellfish spawning and nursery areas.	Throughout the post-consent phase of the Project consultation will continue with stakeholders. The final design and layout of Project infrastructure will be selected in consideration of minimising potential effects to the receiving environment (including Commercial Fisheries and fish and shellfish spawning and nursery grounds) as far as practicable.
SFF	Inter-Array Cable (IAC) and Export Cable SFF note from sub-section 3.5.2.25 (p77) that during the design process, the dynamic cable configuration will be optimised in conjunction with the design of the floating substructure and mooring system.	As detailed within **EIAR Vol. 2, Chapter 5: Project Description** the exact layout and design of Inter-Array Cables (IACs) and Export/Import Cable infrastructure will be determined post-consent. Cenos Offshore Windfarm Limited has entered into a binding agreement to acquire NorthConnect Limited (the "Acquisition"). Completion of the

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	Considering the footprint of the dynamic IACs sections, SFF's preferred configuration is free hanging vs lazy wave and steep wave. We also note from sub-section 3.5.3.3 that there will be two HVDC cables (230km) laid in up to two trenches (either bundled and laid in one trench or laid separately in two trenches). If laid separately, SFF would require the Applicant to ensure there is at least 50m space between the surface laid and protected areas of cables to allow trawl doors to regain stability should they interact with cable protections. In addition, we would propose that if seabed conditions allow, simultaneous trench, lay and burial method of cable installation for export cables lay to be used to avoid further disruptions to fishers.	Acquisition is subject to receipt of customary regulatory approvals. Once this Acquisition is complete, Cenos will hold the benefit of the Marine Licences granted in respect of the NorthConnect project as well as the planning permissions that have been granted for the onshore substation and cable infrastructure. Discussions remain ongoing as to whether Cenos will utilise the full NorthConnect route to develop a Multi-Purpose Interconnector (MPI) that connects the Project (as well as future oil and gas Onward Development Connections) to Scotland and Norway. Cenos intends to utilise the shoreward part of the NorthConnect cable corridor for its offshore transmission infrastructure, although it is applying for new Marine Licences to reflect the fact that its transmission infrastructure would not be part of an exempt interconnector cable and instead connected to an offshore generating station. For the avoidance of doubt, only one set of infrastructure will be placed within the consented cable corridor. Engagement meetings have been undertaken with the SFF, SWFPA and NECRIFG representatives to discuss outcomes of the Commercial Fisheries impact assessments. Further discussions with the fishing industry were undertaken during the Pre-Application Consultation (PAC) event. Full details on stakeholder engagement undertaken for the Project are presented within **EIAR Vol. 2, Chapter 6: Stakeholder Engagement** and are briefly summarised in Section 14.3 above.
SFF	Cable Burial and Protection SFF notes from sub-sections 3.5.2.26 (p77) and 3.5.3.4 (p79) that for the static sections of IAC cable, and Export Cables the preference is to bury	As detailed within **EIAR Vol. 2, Chapter 5: Project Description** the approach to cable burial and protection will be determined post-consent. Burial is the preferred method of cable protection, however

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	cables wherever practicable, but rock protection may be required for asset crossings and where depth of burial (DoB) cannot be achieved. We also note from sub-section 3.7.1.16 (p86) that the Applicant prefers use of concrete mattresses over rock dump. With fishermen's safety being paramount SFF would suggest to the Applicants that they make all efforts to reach the required depth of cable burial and avoid using cable protection measures as much as possible since the volume of cable protection mass will disrupt the marine habitat and would create snagging hazard for fishing vessels within Array Area. In terms of using cable protections, SFF is opposed to using concrete mattresses and rock bags in open water since they create severe snagging hazards for bottom trawl fishing vessels and static gears. SFF's preferred cable protection measure is rock dump/protection considering industry standard rock size (1"- 5") with a 1:3 profile followed by an over trawl sweep alongside a long-term monitoring programme. We do not object to use of sandbags in cable protection works as long as their size is not significant to create snagging hazards for fishing vessels. In terms of crossing points, as they create obstacles and snagging hazard to the fishing industry, SFF would suggest that the cable crossing should be avoided as much as possible otherwise the design of cables and pipelines crossing points should be consulted with the fishing industry to ensure their impacts are mitigated.	where burial to the target Depth of Lowering (DoL) is not possible, any additional cable protection will be minimised as far as practicable. As detailed within EIAR Vol. 2, Chapter 5: Project Description up to 20 cable / pipeline crossings have been identified along the length of the Export/Import Cable and within the Array Area. The location and nature of cable / pipeline crossings will be finalised post-consent. Engagement meetings have been undertaken with the SFF, SWFPA and NECRIFG representatives to discuss outcomes of the Commercial Fisheries impact assessments. Further discussions with the fishing industry were undertaken during the PAC event. Full details on stakeholder engagement undertaken for the Project are presented within EIAR Vol. 2, Chapter 6: Stakeholder Engagement and are briefly summarised in Section 14.3 above.
SFF	Wet storage	The project understands the concerns raised by SFF regarding wet storage. At present, the temporary assembly and storage of non-generating floating wind turbines, or parts thereof, is not a licensable

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	SFF note from sub-section 3.7.1.6 that the wet storage of turbines outside of the Array Area in close proximity to a port is linked to a decision on construction and marshalling port(s) and as such potential impacts associated with wet storage are proposed to be scoped out of this assessment. SFF wants the location of the wet storage to be selected in consultation with fishing industry to mitigate its spatial footprint on the fishing grounds and we ask that the wet storage is scoped for the afore mentioned reason.	activity, as these assets are classified and insured as vessels in the context of port operations. Rather, the temporary storage of these assets within the bounds of the port authority forms part of the suite of vessel-related activities associated with port marshalling to support construction activities offshore, as it would for the oil and gas industry (e.g. through the temporary mooring of drill rigs, FPSOs, etc.). As such, the environmental impact assessment has not included turbine storage and assembly associated with port marshalling; rather, the scope of the EIAR covers the licensable activities for which the Project seeks consent. The Project is still considering which port(s) will be used for construction and operations purposes and will continue to engage with relevant stakeholders on this topic. In this regard, Cenos welcomes further advice from the SFF on how marshalling activities within ports may affect commercial fishing stakeholders.
SFF	Pre-construction Works -Boulder Clearance As pre-construction activities include boulder clearance and where the relocation of boulders from their natural positions and re-positioning them on new surface causes snagging hazard for fishing vessels, SFF would suggest avoiding the relocation of boulders as much as possible. However, where boulders relocation is unavoidable, we recommend the new locations/coordinates of the relocated boulders should be recorded and shared with fishermen. Fishermen require geographical readings to decimal of a minute format (3 decimal places sufficient) rather than going down to actual seconds and the datum should be WGS84 rather than ED50.	As detailed within **EIAR Vol. 2, Chapter 5: Project Description** the requirement of boulder clearance will be minimised with micro-routeing within the Export/Import Cable Corridor (EICC). Where boulder relocation is required, the location of relocated boulders will be recorded and shared with fishers and other sea users, where feasible.

REGULATOR/CONSULTEE	COMMENT	RESPONSE
SFF	Decommissioning SFF note from sub-section 3.7.3.2 (p88) of the SR that a decommissioning programme (DP) will be prepared prior to construction, in line with the requirements of the Energy Act 2004 (as amended). SFF would propose that the DP be prepared pre-consent in consultation with fishing industry. With the safety of fishing activities in mind SFF would like to see all development related infrastructures are recovered/removed to shore followed by over-trawl sweeps (seabed sweeps using fishing gears). The seabed is restored to its pre-development condition post-decommissioning, and it is safe for fishing operations to fully resume in the area.	As detailed within **EIAR Vol. 2, Chapter 5: Project Description** the Decommissioning Programme will be submitted for approval at the pre-construction phase and reviewed and updated throughout the operational lifespan of the Project, with the final revision process due to commence two years prior to the initiation of decommissioning activities. The Decommissioning Programme will comply with all relevant legislation and best practice at the time, further informed by consultation with Scottish Ministers and stakeholders.
SFF	Question: Do you agree with the listed data sources in Table 13-4 and are there any additional datasets that you feel should be reviewed to characterise the commercial fisheries baseline? SFF's response: SFF would want to see the pre-Brexit data used for the EIA Report to present a realistic baseline of the fishing activities within the study area. In general collection of fishing plotter data from the fisheries organisations, and in specific data from smaller vessels that are not legally liable to use AIS or VMS is recommended.	The existing baseline environment for Commercial Fisheries receptors has been defined using pre-Brexit MMO and ICES data. Plotter data provided by the SFF has been described in Section 14.4.4.5.

REGULATOR/CONSULTEE	COMMENT	RESPONSE
SFF	Question: Do you agree with the key commercial fisheries receptors identified as requiring assessment (lobster and crab fishery, scallop dredging, demersal trawling for *Nephrops* and fish and the pelagic fishery for herring)? SFF's response: SFF would propose the squid and mackerel jigging/handline near shore/inshore to be included in the assessment too.	Inshore effort for mackerel lines is available from ScotMap (2013) data and has been described within Section 14.4.4.4.1 and assessed within Section 14.6.
SFF	Embedded mitigation measures SFF has the following comments on the proposed embedded mitigation: • We would appreciate the inclusion of 'the Fisheries Management and Mitigation Strategy (FMMS)' to be developed and adopted pre-consent in consultation with the fishing industry to ensure all fishing industry's concerns are considered and addressed accordingly. • In relation to 'notice to mariners' (NtM) we note that the Applicant commits to timely and efficient distribution of Notice(s) to Mariners' (NtM), Kingfisher notifications and other navigational warnings of the position and nature of works associated with the Project, that will include Notice to Mariners (via Kingfisher Bulletins or other appropriate methods)'. We suggest the NtM are issued in sufficient time, at least 14 day in advance, to avoid any disruptions to the fishing activities in the intended area. • We note from 'COM-012' that the Applicant would undertake of post-lay and burial inspection surveys and, where appropriate and practicable, undertaking of rectification works. SFF would	Details on embedded mitigation measures proposed for Commercial Fisheries receptors are presented within Table 14-8.

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	emphasise that the only way to give fishers assurance that areas with cable protection is safe to resume fishing is through undertaking over trawl survey.	
SFF	We would propose the following mitigation measures to be considered: • As part of the proposed commitments, there is no measure for disruption payments for fishing vessels. SFF suggest that cooperation agreements should be considered for both the static and mobile gears where they are required to be relocated, or the impact is deemed to be significant. • No mention has been made to mitigation once the site is operational and therefore loss of fishing opportunities to the fishing industry within the floating Array Area.	Details on embedded mitigation measures proposed for Commercial Fisheries receptors are presented within Table 14-8. The Applicant will continue engagement with the fishing industry and stakeholders directly impacted by construction works and will adhere to the FLOWW guidance, where applicable.
SFF	Scoping in and out of impact pathways in relation to commercial fisheries • SFF propose that the following points be considered: • SFF notes from the Table 10.4 (p306) that 'Increased risk of loss or damage to gear snagging' has been scoped in. We agree with this being scoped in; however, since snagging in some limited cases has human casualties, we propose that the possibility of a loss of life should also be highlighted as to a risk of snagging hazards not just to fishing gear. • SFF notes that the 'Displacement of fishing effort to other areas' have been scoped in; however, the potential for gear conflict in	The potential effects of increased risk of loss of or damage to fishing gear (snagging risk) for construction and operation and maintenance is presented within Sections 14.6.1.5 and 14.6.2.5 respectively. These assessments give consideration to the possibility of loss of life as a result of potential snagging risk. The assessment of displacement of fishing effort (as presented for the construction and operation and maintenance phases within Sections 14.6.1.5 and 14.6.2.5 respectively) gives consideration to the potential for secondary displacement effect to fleets as a result of displacement from the Project Area.

REGULATOR/CONSULTEE	COMMENT	RESPONSE
	other areas as a result of displacement of fishing efforts from the project area must be scoped in too.	
SFF	Question: How do MD-LOT and its advisors anticipate the management of compensation, mitigation, alternative investment etc? SFF's response: FH: my understanding is the MD do not want to be involved in management of compensation, mitigation, alternative investment etc. Therefore, I assume this question needs to be address by MD. Any input is welcomed.	Noted.
Scoping Workshop – 29th February 2024		
MD-SEDD	There are no commercial fisheries stakeholders on the call.	Engagement meetings have been undertaken separately. With the SFF, SWFPA and NECRIFG representatives to discuss outcomes of the Commercial Fisheries impact assessments. Further discussions with the fishing industry were undertaken during the PAC event. Full details on stakeholder engagement undertaken for the Project are presented within EIAR Vol. 2, Chapter 6: Stakeholder Engagement and are briefly summarised in Section 14.3.
MD-SEDD	What would be in questionnaire for industry?	Instead of a questionnaire, Cenos has been actively engaging with the SFF, SWFPA and NECRIFG representatives to discuss outcomes of the Commercial Fisheries impact assessments. Further discussions with the fishing industry were undertaken during the PAC event. Full details on stakeholder engagement undertaken for the Project are presented within EIAR Vol. 2, Chapter 6: Stakeholder Engagement and are briefly summarised in Section 14.3 above.

REGULATOR/CONSULTEE	COMMENT	RESPONSE
MAU	Wanted to see socioeconomic impacts considered in questionnaire	Instead of a questionnaire, Cenos has been actively engaging with the SFF, SWFPA and NECRIFG representatives to discuss outcomes of the Commercial Fisheries impact assessments. Further discussions with the fishing industry were undertaken during the PAC event. Full details on stakeholder engagement undertaken for the Project are presented within **EIAR Vol. 2, Chapter 6: Stakeholder Engagement** and are briefly summarised in Section 14.3. Socio-economic impacts on the commercial fishing industry are further assessed in **EIAR Vol. 3, Chapter 19: Socio-economic Tourism and Recreation.**
MD-LOT	Advise to set up more engagement with SFF and SWFPA and discuss our approach with them.	Engagement meetings have been undertaken with the SFF, SWFPA and NECRIFG representatives to discuss outcomes of the Commercial Fisheries impact assessments. Further discussions with the fishing industry were undertaken during the PAC event. Full details on stakeholder engagement undertaken for the Project are presented within **EIAR Vol. 2, Chapter 6: Stakeholder Engagement** and are briefly summarised in Section 14.3.

14.4 Baseline characterisation

This Section outlines the current baseline for Commercial Fisheries within the Commercial Fisheries Study Area. The Commercial Fisheries baseline characterisation has been undertaken through a desk-based assessment of publicly available data sources (as summarised in Table 14-3 below) and is informed by stakeholder engagement and consultation (as detailed in Section 14.3 above).

14.4.1 Study Area

The Commercial Fisheries Study Area is defined on a local (the Project Study Area) and regional (the Regional Study Area). In line with the recommendations made within the 'Good Practice Guidance for Assessing Fisheries Displacement by Other Licensed Marine Activities' (Scottish Government and Xodus Group, 2022), the Commercial Fisheries Study Area includes the ICES rectangles adjacent to the Project. The Project Study Area is defined as those ICES rectangles within which the Project is situated, and the Regional Study Area is defined as ICES rectangles adjacent to the Project therefore giving consideration to the potential for displacement of fishing activity from within the Project Area to adjacent waters These study areas are cumulatively described as the Commercial Fisheries Study Area.

As such, the ICES rectangles which define the Commercial Fisheries Study Area (Figure 14-1) are:

- Project Study Area:
  - 43E8; 44E8; 44E9; 44F0; 43F0; and 43F1.
- Regional Study Area
  - 45E7; 45E8; 45E9; 45F0; 45F1; 44E7; 44F1; 44F2; 43E7; 43E9; 43F2; 42E7; 42E8; 42E9; 42F0; 42F1; and 42F2.

Where relevant, reference is made to waters outside of the defined Commercial Fisheries Study Area to provide information on the wider regional context of commercial fishing activity and for the purpose of the assessment of potential cumulative effects.

The Commercial Fisheries temporal scope is defined as the entire lifetime of the Project including construction, operation and maintenance and decommissioning.

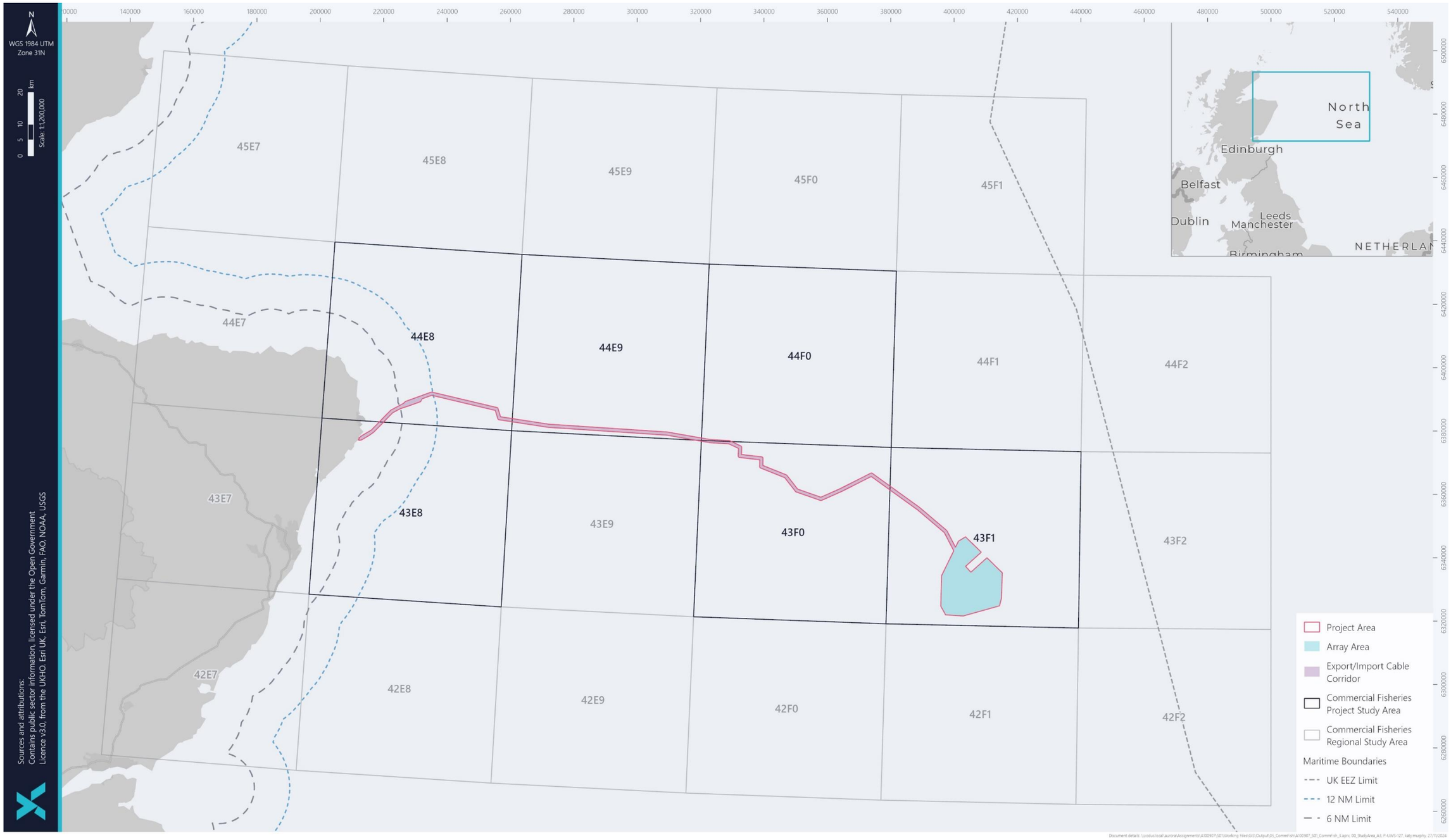

Figure 14-1 Commercial Fisheries Study Area

14.4.2 Data sources

The existing data sets and literature with relevant coverage to the Project, which have been used to inform the baseline characterisation for Commercial Fisheries are outlined in Table 14-3. Project specific data obtained and used to inform this topic assessment are presented in Section 14.4.3.

Table 14-3 Summary of key datasets and reports

TITLE	SOURCE	YEAR	AUTHOR
Surveillance Sightings (2011-2019)	Access via request under the Freedom of Information Act (FOIA).	2020	MMO
Spatial data on fisheries (e.g. areas where fishing is restricted or prohibited)	https://kingfisherrestrictions.org/	2024	Kingfisher Information Service
MMO UK Sea Fisheries Annual Statistics (2018-2022)	https://www.gov.uk/government/collections/uk-sea-fisheries-annual-statistics	2023	MMO
MMO VMS (2017-2020)	https://environment.data.gov.uk/	2020	MMO
Marine Scotland VMS (2010-2020)	https://marine.gov.scot/maps/1680 https://marine.gov.scot/maps/1832 https://marine.gov.scot/maps/1679	2021, 2022	Marine Scotland
ICES VMS	https://ices-library.figshare.com/articles/dataset/OSPAR_request_2018_for_spatial_data_layers_of_fishing_intensity_pressure/18596120	2023	ICES
AIS data	https://environment.data.gov.uk/	2024	Defra
Scotland's NMPi	https://marinescotland.atkinsgeospatial.com/nmpi/	2024	Marine Scotland
ScotMap – Inshore Fisheries Mapping Project in Scotland (2013)	https://marine.gov.scot/information/scotmap-inshore-fisheries-mapping-project-scotland	2013	Kafas *et al.*

TITLE	SOURCE	YEAR	AUTHOR
Gridded fisheries data within Scottish waters for Scottish fishing vessels under 12m overall length-annual averages 2018 to 2022	https://www.data.gov.uk/dataset/215c13fd-0f7f-4258-bd7a-866a2e69ff6d/fishing-statistics-gridded-fisheries-data-within-scottish-waters-for-scottish-fishing-vessels-under-12m-overall-length-annual-averages-2018-to-2022	2024	Scottish Government
Mapping fisheries and habitats in the North and East Coast RIFG	https://rifg.scot/storage/article/57/NAFC%20Report%20Final%20-%20Mapping%20fisheries%20and%20habitats%20-%20North-%20East%20Coast%20-%202021-09-%2027.pdf	2021	Shelmerdine and Mouat
Sectoral Marine Plan: Regional Locational Guidance	https://www.gov.scot/publications/sectoral-marine-plan-regional-locational-guidance/documents/	2020	Scottish Government
EU Data Collection Framework Database landings statistics (2014-2020)	https://stecf.ec.europa.eu/index_en	2020	Scientific, Technical and Economic Committee for Fisheries (STECF)
Where possible, data on commercial fishing grounds as received during consultation	Various	2024	Various

14.4.3 Project site-specific surveys

In addition to the data sources listed in Table 14-3 above, the existing baseline characterisation of the Commercial Fisheries impact assessment has been further informed by the Cenos Offshore Windfarm Long-Term AIS Assessment (EIAR Vol. 4, Appendix 26: NRA Report).

This assessment is informed by data collected as part of a 21 day summer survey (between 22nd August – 12th September 2023) and 12 months of AIS data (entirety of 2023) (EIAR Vol. 4, Appendix 26: NRA Report). The assessment identified seasonal variations in vessel traffic across vessel counts, vessel type and vessel size. The existing baseline characterisation for Commercial Fisheries will only consider the detailed review of fishing vessel activity. The assessment of other vessel activity (including oil and gas, cargo, tanker and recreational) is presented within EIAR Vol. 3, Chapter 15: Shipping and Navigation.

14.4.4 Existing baseline

A review of literature and available data sources (as summarised in Table 14-3 above), and information gathered through consultation and Project site-specific surveys, has been undertaken to describe the current baseline environment for Commercial Fisheries.

14.4.4.1 Overview

14.4.4.1.1 Regional Overview

The North Sea is one of the most productive fishing areas in the world, with the estimated total annual landings within the North Sea estimated at two million tonnes (Akbari *et al*., 2022). Within Scottish waters, Scottish vessels landed a total of 429 thousand tonnes of sea fish and shellfish, with a gross value of £617 million in 2022 (Scottish Government, 2023a). While this demonstrates a 4% increase in value (driven by demersal and shellfish species) and a 2% decrease in tonnage compared to 2021, the value of the Scottish fishing industry has not yet returned to pre-pandemic levels (Scottish Government, 2023a).

The fishing industry is important to rural and coastal communities across Scotland, supporting the local economy through the provision of food and employment. Within Aberdeenshire, the county within which the Project will make landfall, the fishing Gross Value Added (GVA) was recorded at £176 million in 2022 (accounting for 52% of all fishing GVA within Scotland) (Scottish Government, 2024d). Aberdeenshire is also home to the largest fishing port in the UK, Peterhead, which is located approximately 6 km to the north of the Project landfall. Further information regarding the impacts of the fishing sector on socio-economics within the local area are considered further within EIAR Vol 3. Chapter 19: Socio-economics, Tourism and Recreation.

14.4.4.1.2 Surveillance Sightings

MMO surveillance sightings data between 2011-2019 are presented within Figure 14-2. Across the Commercial Fisheries Study Area, the majority of fishing vessels are registered within Great Britain (GBR).

Within the inshore waters of the Commercial Fisheries Study Area (i.e., <12 NM within ICES rectangles 44E7, 44E8, 43E7, 43E8, 42E7 and 42E8), almost all of the vessels recorded between 2011-2019 were registered with GBR nationality (Figure 14-2). Further offshore, vessels from France (FRA) and the Netherlands (NLD) are present in ICES rectangle 44E9 and vessels registered in Norway (NOR), Germany (DEU) and Denmark (DNK) are present within ICES rectangle 43F0. Within the Array Area, only GBR registered vessels were operating between 2011-2019.

To the south of the EICC within ICES rectangles 43E8 and 43E9 there is an area of diverse vessel nationality, with vessels registered in GBR, DEU, DNK, FRA, NLD and NOR operating within this region between 2011-2019. Furthermore, within ICES rectangles 45E9, 45F0, 45F1, 44F0 and 44F1 there is a similar trend in diverse vessel nationality (GBR, DEU, DNK, FRA, NLD and NOR) (Figure 14-2). These vessels are primarily associated with the FU 7 (Fladen) *Nephrops* habitat (Figure 14-7). Within ICES rectangles 44F2, 43F2 and 42F2 there were no recorded vessels between 2011-2019.

As detailed in Section 14.4.7, it is well established that available data and information sources do not provide a complete representation of commercial fishing activities, particularly for fleets operating within the inshore environment. Surveillance sightings data provides a general overview of the nationality of vessels operating within the Commercial Fisheries Study Area. However, it should be noted that surveillance sightings are not undertaken on a regular basis, and as such the vessels recorded with Figure 14-2 only present a snapshot in time.

14.4.4.1.3 Fisheries Statistics

Landings within ICES rectangles that constitute the Commercial Fisheries Study Area have been compiled from the MMO UK sea fisheries annual statistics report 2022 (MMO, 2023) and are presented within Figure 14-3. Within the Commercial Fisheries Study Area, the total landed value of fish was £291 million (Figure 14-3). Within the Commercial Fisheries Study Area, the ICES rectangles that contributed the largest catch value between 2018-2022 were 45E9 (representing 14% of the total value caught between 2018 and 2022 (MMO, 2023), 44E7, 45F0, 44E8, 44E9, 44F0 and 45E8. With increasing distance offshore the catch value of ICES rectangles decreases, with the total catch value of rectangle 43F2 (located adjacent to the Array Area) between 2018-2022 recorded as £62,000 (or 0.02% of the total catch value for the Commercial Fisheries Study Area between 2018-2022 (MMO, 2023).

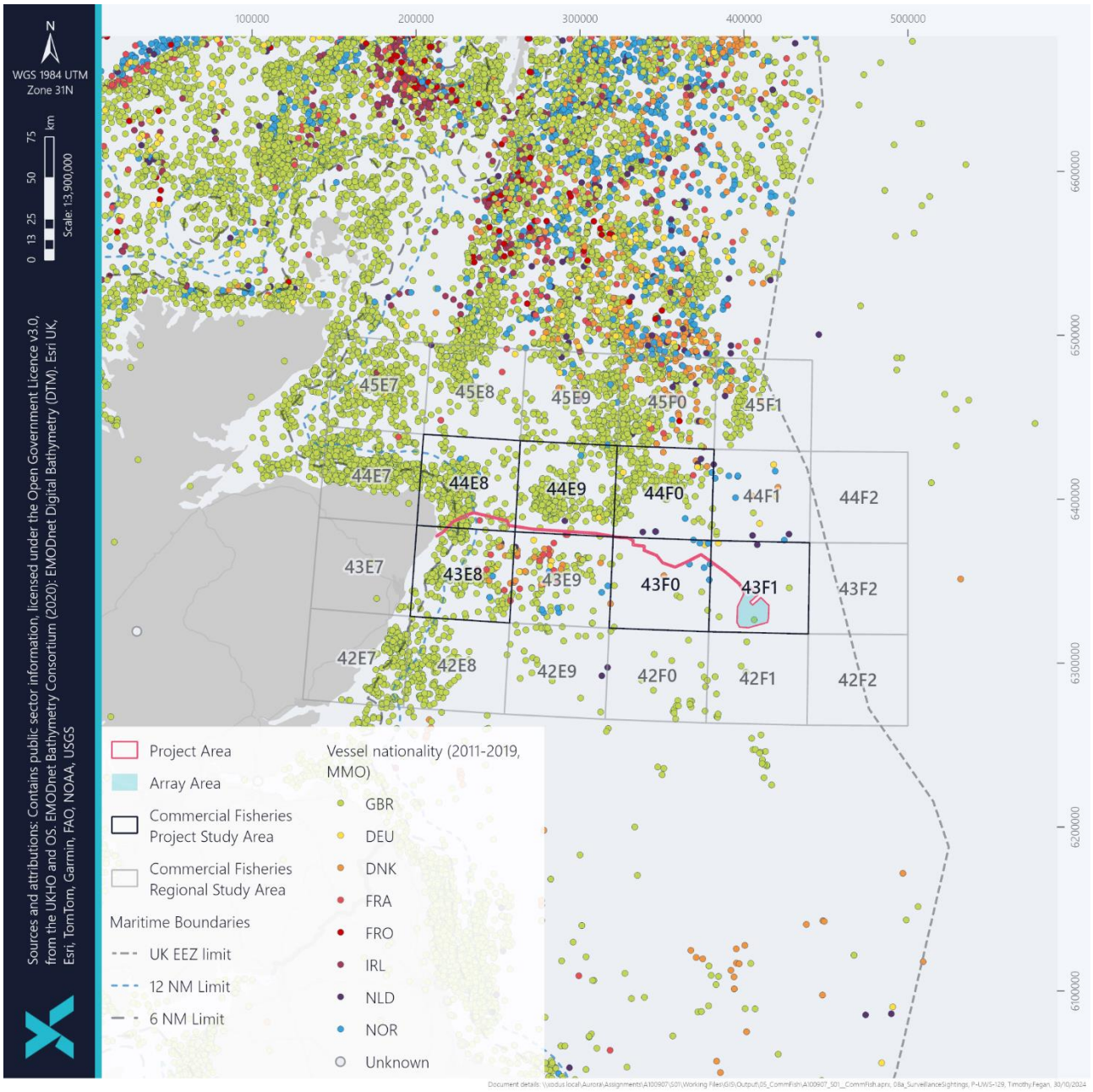

Figure 14-2 Commercial Fisheries surveillance sightings[3] (MMO, 2020a)

[3] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

	2018	2019	2020	2021	2022
45F1	1707311.3	4399529.59	1616020.752	4213291.985	5418572.473
45F0	1683238.82	3510921.28	9754890.455	6092181.83	5759993.617
45E9	5472859.75	12921261.76	9518083.185	4352766.901	8679467.01
45E8	3375785.72	9487610.08	2505591.176	2702282.851	3776093.544
45E7	2023316.28	4331239.49	2341247.473	2119692.889	1211117.634
44F2	88401.94	130566.68	86910.79	0	76656.093
44F1	624825.08	2184940.9	1400308.832	1175681.225	1307685.062
44F0	3090060.43	7767887.49	3727319.821	3889511.27	4773781.596
44E9	4587396.53	7149206.16	2688841.376	4032788.994	4935514.389
44E8	5093596.803	5488100.137	4786060.463	5293780.462	4750559.728
44E7	7535958.56	7142692.22	4672566.247	4674365	4794731.02
43F2	21617.06	20299.98	4540.69	1078.81	14545.89
43F1	78566.64	168587.47	477675.4404	211765.7095	146864.4149
43F0	1106465.62	852074.3	2084072.762	425239.7286	380867.6509
43E9	1853896.26	525466.4	2658233.882	3738652.476	5686396.67
43E8	951227.58	736845.87	873218.8046	1382714.408	2132743.902
43E7	116872.86	325164.37	173656.1722	217299.2984	263100.6175
42F2	88427.43	33048.38	18195.72	5366.05	49.2
42F1	570019.93	964016.29	782916.8081	972108.2003	1564560.57
42F0	1703173.53	2302119.89	1093924.647	1013962.592	1649312.208
42E9	98173.04	52552.17	101901.1906	116734.4711	213747.0063
42E8	664529.9	1299111.16	898449.92	947386.538	336192.1333
42E7	5690737.49	4718211.27	2769438.023	3390394.212	3331009.517

Year

Figure 14-3 Catch value for the Commercial Fisheries Study Area between 2018-2022 (MMO, 2023)

14.4.4.1.3.1 Vessel length

14.4.4.1.3.1.1 Project Study Area

Within the inshore environment (<12 NM) associated with the EICC (ICES rectangles 44E8 and 43E8), the average vessel length ranges from under 8 metres (m) to over 40 m, with over 50% of vessels operating within these waters between 18 m and 40 m in length (Figure 14-4) (MMO, 2023). With increasing distance offshore along the length of the EICC within ICES rectangles 44E9 and 44F0, the average vessel length increases, with the majority of vessels between 18 m to 24 m in length, and over 75% of all vessels operating within these ICES rectangles between 18 m to 40 m in length (MMO, 2023). Further along the EICC within ICES rectangle 43F0 the total number of vessels operating decreases significantly, however, the average length of these vessels increases, with the average vessel length between 24 m to 40 m, with over 25% of vessels operating within this ICES rectangle over 40 m in length. Within the Array Area (ICES rectangle 43F1) the number of vessels operating is very low, with the average vessel length between 18 m to 40 m in length (MMO, 2023).

14.4.4.1.3.1.2 Regional Study Area

In ICES rectangle 44E7, in areas closer inshore, the average vessel length ranges from under 8 m to 40 m. A large portion of vessels operating within this ICES rectangle are small vessels (under 12 m in length). Within ICES rectangles 45E7, 45E8, 45E9, 45F0 and 45F1 (the north of the Regional Study Area), the vessel length is at its largest, with approximately 90% of all vessels operating within ICES rectangles 45E8, 45E9, 45F0 and 45F1 over categorised as large vessels (over 18 m in length) (Figure 14-4) (MMO, 2023).

Across the Regional Study Area, the largest number of operational vessels is located within ICES rectangle 45E9. The number of vessels operating within ICES rectangles 42E8, 42E9, 42F0 and 42F1 (the south of the Regional Study Area) is significantly lower than those operating within the north of the Regional Study Area, with vessels generally large (over 18 m in length).

14.4.4.1.3.2 Species

14.4.4.1.3.2.1 Project Study Area

Within the inshore environment (<12 NM) associated with the EICC (ICES rectangles 44E8 and 43E8), the types of species landed is highly variable, with crabs (mixed sexes) (*Cancer pagurus*), haddock (*Melanogrammus aeglefinus*), and *Nephrops (Nephrops norvegicus)* the most commonly landed species in ICES rectangle 44E8, and scallops (*Pecten maximus*) the most commonly landed species within ICES rectangle 43E8 (Figure 14-4). With increasing distance offshore along the length of the EICC within ICES rectangles 44E9 and 44F0, *Nephrops* are the most commonly landed species (accounting for over 50% of species landed). Haddock is the second most commonly landed species within these two ICES rectangles. Further along the EICC within ICES rectangle 43F0 the most commonly landed species are haddock and herring (*Clupea harengus*), with both species accounting for approximately 75% of the total species landed. Within the Array Area (ICES rectangle 43F1) the most commonly landed species is *Nephrops*.

14.4.4.1.3.2.2 Regional Study Area

Within ICES rectangle 44E7 the types of species landed is highly variable, however, the most commonly landed species is *Nephrops* (accounting for over 25% of species landed), with ling (*Calluna vulgaris*) the second most commonly landed species (accounting for slightly less than 25% of species landed). Within ICES rectangles 45E7, 45E8, 45E9, 45F0 and 45F1 (the north of the Regional Study Area), *Nephrops* and mackerel (*Scomber scombrus*) are the most commonly landed species (Figure 14-4), with monks or anglers (*Lophius piscatorius*) also commonly landed within these ICES rectangles. To the south of the Regional Study Area the species landed varies, with herring and

lobsters (*Homarus gammarus*) the most commonly landed species within ICES rectangles 43E9 and 42E7 respectively. To the south of the Array Area *Nephrops* remain the most commonly landed species.

14.4.4.1.3.3 Gear type

14.4.4.1.3.3.1 Project Study Area

Within the inshore environment (<12 NM) associated with the EICC (ICES rectangles 44E8 and 43E8), the most commonly operated gear types are demersal trawlers, and pots and traps, and dredges (Figure 14-4). The use of these gears is consistent with the species most commonly landed within these ICES rectangles (crabs, haddock and *Nephrops* (as detailed in Section 14.4.4.1.3.2 above). With increasing distance offshore along the length of the EICC within ICES rectangles 44E9 and 44F0, demersal trawlers account for approximately 90% of gear types, with demersal seine and pelagic trawls accounting for the remaining gear types within both ICES rectangles. Further along the EICC within ICES rectangle 43F0 demersal trawlers remain the dominant gear type (accounting for over 50% of gear type), with pelagic trawls accounting for over 25% of the remaining gear types within this area. Within the Array Area (ICES rectangle 43F1) the most commonly operated gear type is demersal trawls, followed by pelagic trawls and demersal seines.

14.4.4.1.3.3.2 Regional Study Area

Within ICES rectangle 44E7 demersal trawlers are the most commonly operated gear type (accounting for approximately 75% of gear type operating within this area). Pots and traps are the next most commonly utilised gear type within ICES rectangle 44E7. To the north of the Regional Study Area demersal trawlers remain the most commonly utilised gear type accounting for between 60-90% of all gear types within ICES rectangles 45E8, 45E9, 45F0 and 45F1, with pelagic trawls the next most commonly utilised gear type (Figure 14-4). To the south of the Regional Study Area demersal trawlers remain the most commonly utilised gear type within ICES rectangles 43F0, 42F0 and 42F1. Within ICES rectangle 43E9 pelagic trawls is the most commonly utilised gear type, followed by demersal trawlers. Within ICES rectangles 43E8 and 42E8 dredges are the most commonly utilised gear types. Within ICES rectangle 42E7, pots and traps are the most commonly utilised gear types, followed by demersal trawlers and dredges.

Further details on commercial fishing activity by vessel type is presented in Section 14.4.4.2 below.

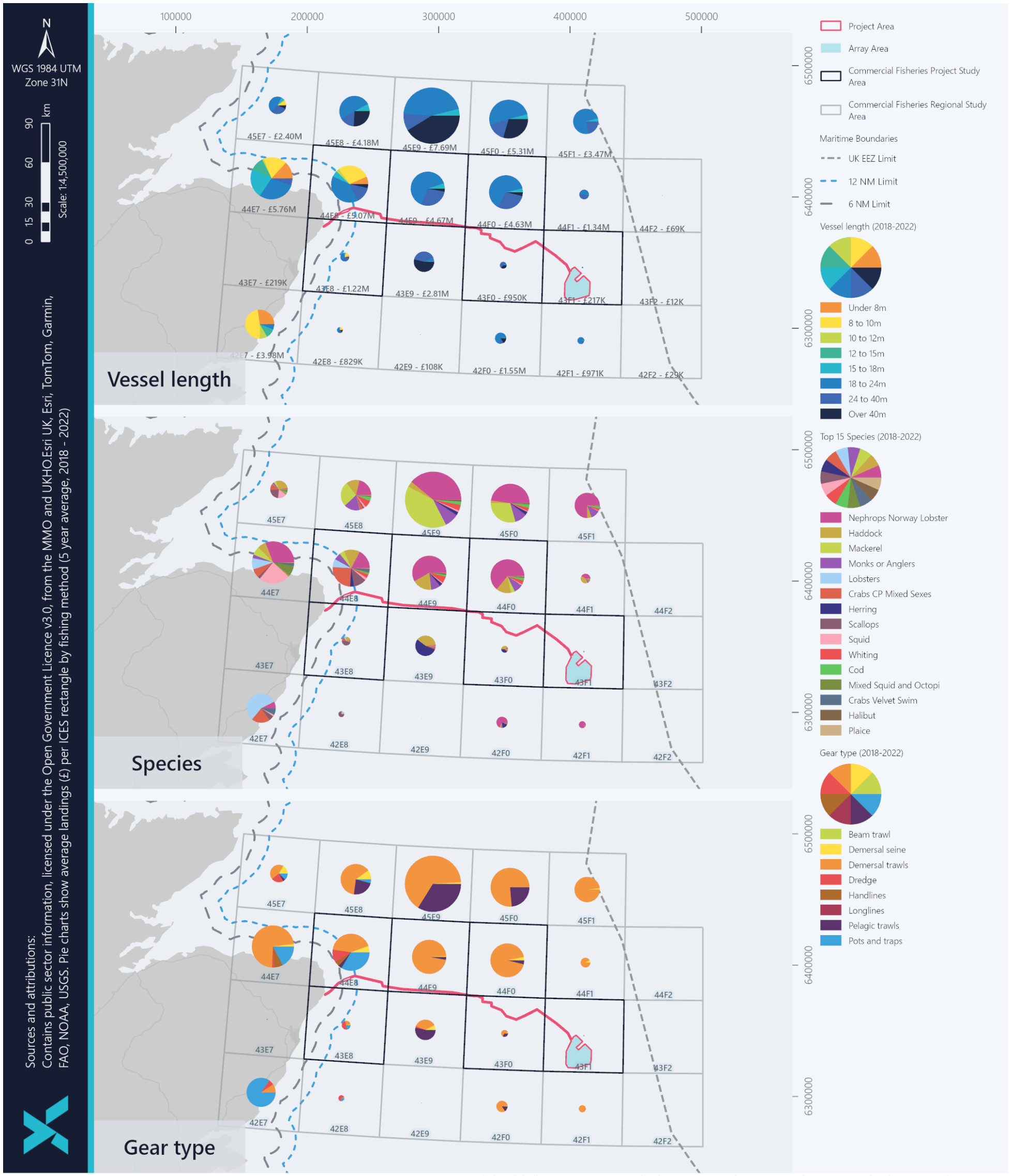

Figure 14-4 Average landings values for the Commercial Fisheries Study Area[4] (MMO, 2023)

[4] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.2 Vessel Monitoring System Data

VMS data for dredges, demersal trawlers, pelagic trawls, and passive gear are presented within Section 14.4.4.2.1 below. While all fishing vessels over 12 m in length must be fitted with a VMS system, as detailed in Section 14.4.7, MMO VMS datasets only present fishing vessel effort and landings value data for vessels over 15 m in length. As such, any reference to vessels effort or value presented within this Section are likely to be an underestimation of fishing activity, particularly when describing fishing vessel activity within the inshore (<12 NM) environment. Where MMO VMS data is not available for a fleet, ICES VMS data has been presented to inform the distribution, effort, and value of fishing activity within the Commercial Fisheries Study Area.

14.4.4.2.1 MMO VMS Data

14.4.4.2.1.1 Demersal trawlers

Demersal trawling targets demersal fish species such as *Nephrops*, whitefish (including cod (*Gadus morhua*), haddock and hake (*Merluccius merluccius*) and flatfish (such as halibut (*Hippoglossus stenolepis*) and sole (*Solea solea*)) (Seafish, 2024a; Marine Stewardship Council, 2024). VMS effort and average VMS value for UK vessels over 15 m in length operating demersal trawlers within the Commercial Fisheries Study Area is available from MMO VMS data (2017-2020) (MMO, 2020b).

14.4.4.2.1.1.1 Project Study Area

Average VMS effort along the length of the EICC is generally low (with an average VMS effort of between 0-10,000 kWh). The EICC passes through an area of moderate demersal trawl effort within ICES rectangle 43F0 (with a maximum effort of between 10,000-50,000 kWh) (Figure 14-5). Within the Array Area the average VMS effort is moderate (between 1,000-50,000 kWh). Effort east and south of the Array Area is higher than the effort within the Array Area itself, as it is consistent with the spatial distribution of suitable *Nephrops* habitats within the area (as presented within Figure 14-7). There is little to no demersal trawler effort located to the north and west of ICES rectangle 43F1 (Figure 14-5).

Along the length of the EICC, the average VMS value for UK vessels operating demersal gear (2017-2020) is low to moderate. At landfall, the average value is between £0-£100 (Figure 14-6). With increasing distance offshore along the length of the EICC the average value of landings by vessels operating demersal gear increases, with the average VMS value ranging from a minimum of £0-£50,000 (Figure 14-6). VMS effort within the Array Area is low (between £500-£10,000). As detailed in Section 14.4.7 vessels under 15 m in length are generally poorly represented within publicly available AIS and VMS data. As such, the effort and value of vessels under 15 m and inshore fisheries is often underrepresented.

14.4.4.2.1.1.2 Regional Study Area

Within the Regional Study Area, VMS effort for vessels over 15 m in length operating demersal trawlers is mostly concentrated to the north (ICES rectangles 45E8, 45E9, 45F0, 45F1, 44E9, and 44F) and within the inshore environment to the north of the EICC landfall (ICES rectangle 44E7) (Figure 14-5). Within these rectangles, average VMS effort is characterised by vessels operating from 10,000-100,000 kWh (MMO, 2020b). Average VMS effort for UK vessels operating demersal trawlers is generally lower within the southern and eastern portion of the Regional Study Area, with an average effort of between 0-5,000 kWh for ICES rectangles 42E8, 42E9, 44F2, 43F2, and 42F2 (Figure 14-5). To the south of the Array Area, within ICES rectangles 42F0 and 42F1, VMS effort increases, with an average effort of between 1,000-100,000 (Figure 14-5). This reflects the average landings value (as presented in Figure 14-4) which notes an increased *Nephrops* catch within ICES rectangles 42F0 and 42F1.

Within the north of the Regional Study Area and the inshore environment to the west (broadly in ICES rectangles 45E7, 45E8, 45E9, 45F0, 45F1, and 44E7), the average VMS value ranged from £0->£100,000 (MMO, 2020b) (Figure 14-6). The areas of highest demersal gear value are located within 6 NM off the coast of Aberdeenshire. As is consistent with trends in demersal trawl effort, average VMS value for UK vessel operating demersal gear within the south and east of the Regional Study Area is low (between £0-£1,000). Within ICES rectangles 42F0 and 42F1 the average VMS value is recorded as between £1,000-£100,000, consistent with the increased demersal trawl fishing effort within the area (Figure 14-6).

The location and distribution of demersal trawling activity throughout the Regional Study Area is consistent with *Nephrops* functional habitats within the North Sea (Figure 14-7). While the EICC is wholly located within two *Nephrops* Functional Units (FU): FU9 (Moray Firth) and FU7 (Fladen), the EICC does not directly interact with any suitable *Nephrops* habitats. The uplift in demersal trawling effort and value within the Array Area is consistent with the overlap with the suitable *Nephrops* habitat (derived from VMS data) within FU34 (Devil's Hole). Within the Regional Study Area, inside ICES rectangle 44E7, demersal trawler fishing effort is located within the suitable *Nephrops* habitat (derived from sediment data) located within the FU9 (Moray Firth). In the north of the Regional Study Area (ICES rectangles 45E8, 45E9, 45F0, 45F1, 44E9, and 44F0) demersal trawler fishing effort is located within the suitable *Nephrops* habitat (derived from sediment data) located within the FU7 (Fladen).

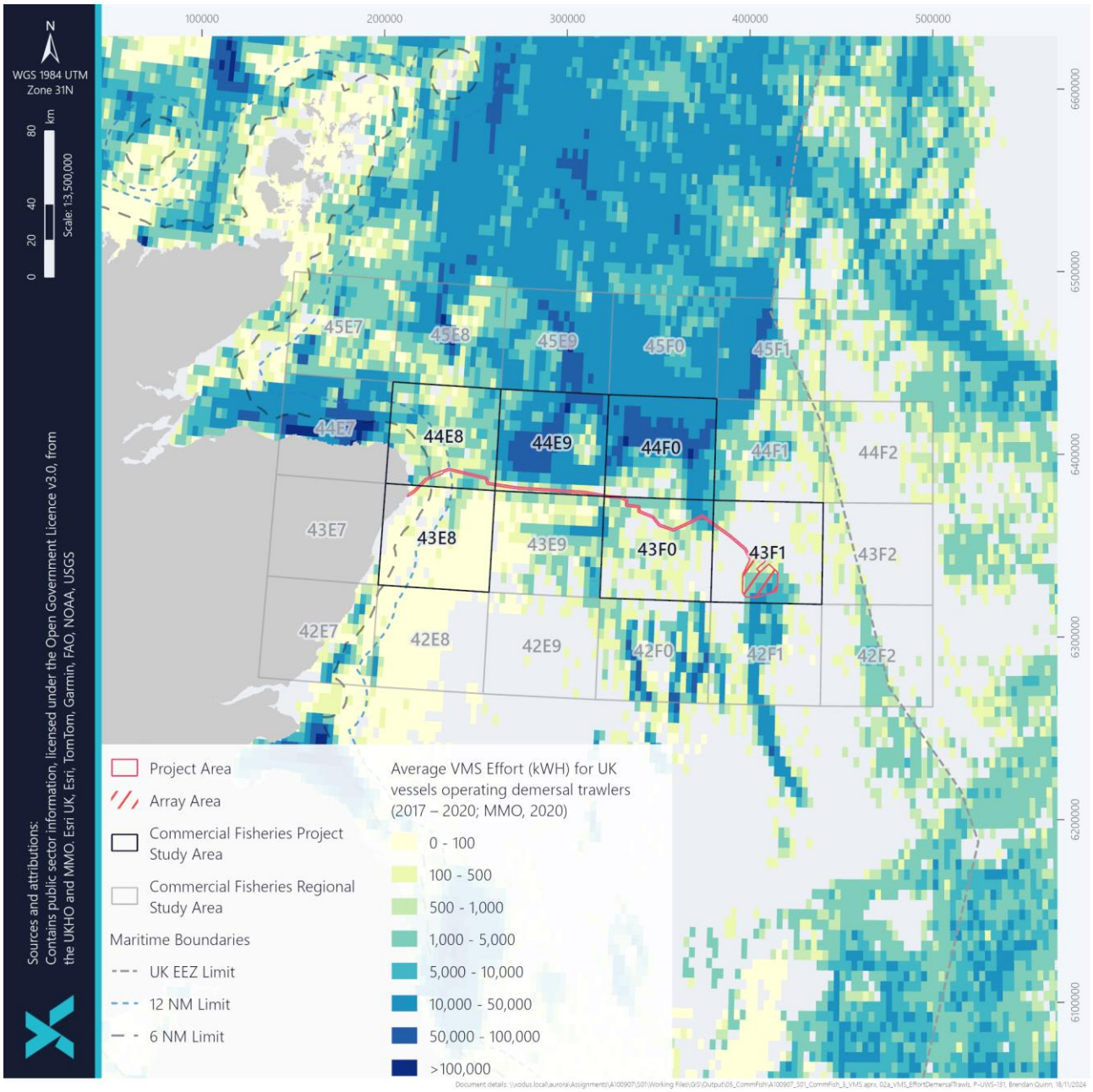

Figure 14-5 Average VMS effort for UK vessel operating demersal trawlers[5] (2017-2020) (MMO, 2020b)

[5] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

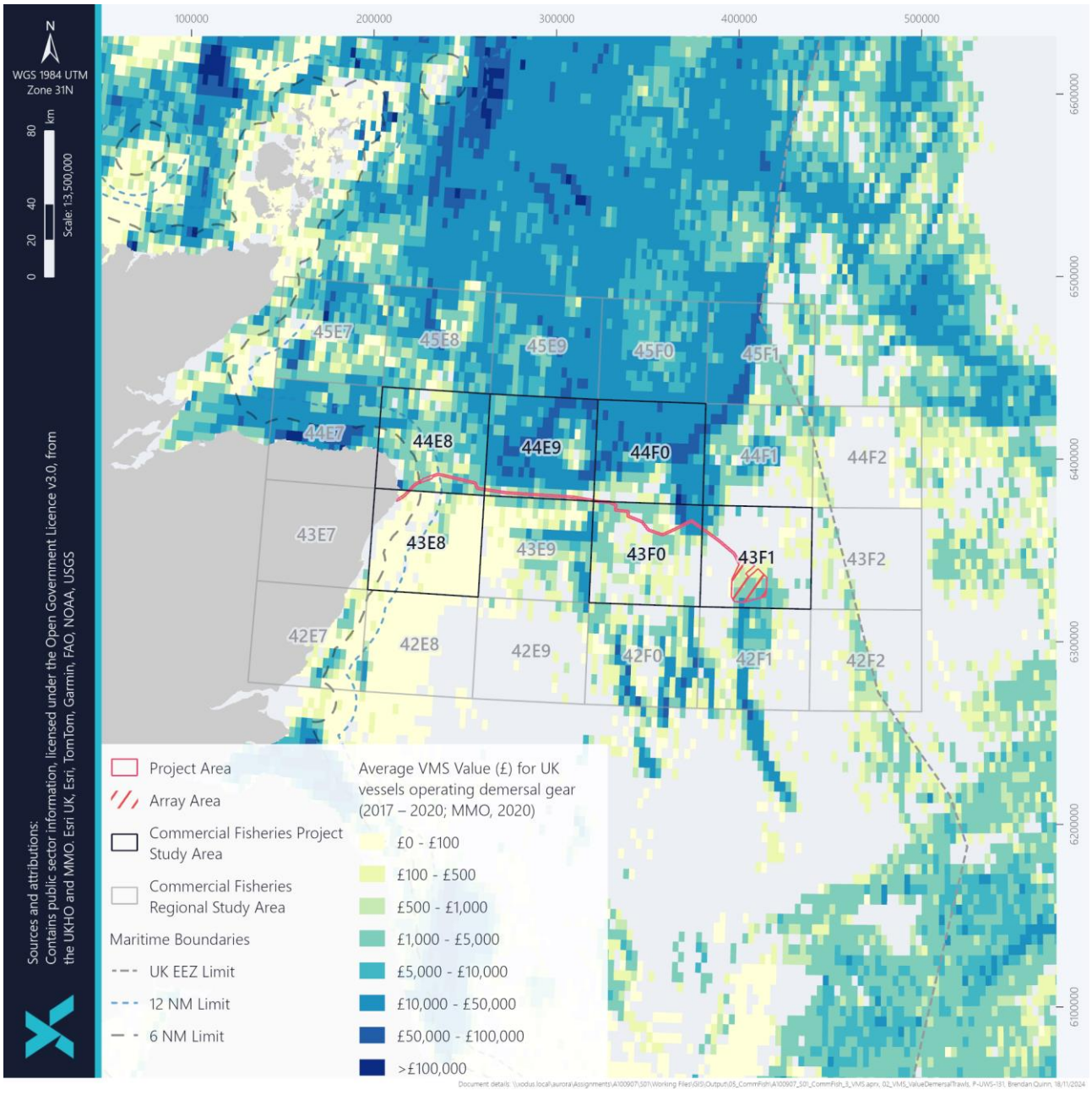

Figure 14-6 Average VMS value for UK vessels operating demersal trawlers[6] (2017-2020) (MMO, 2020b)

[6] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

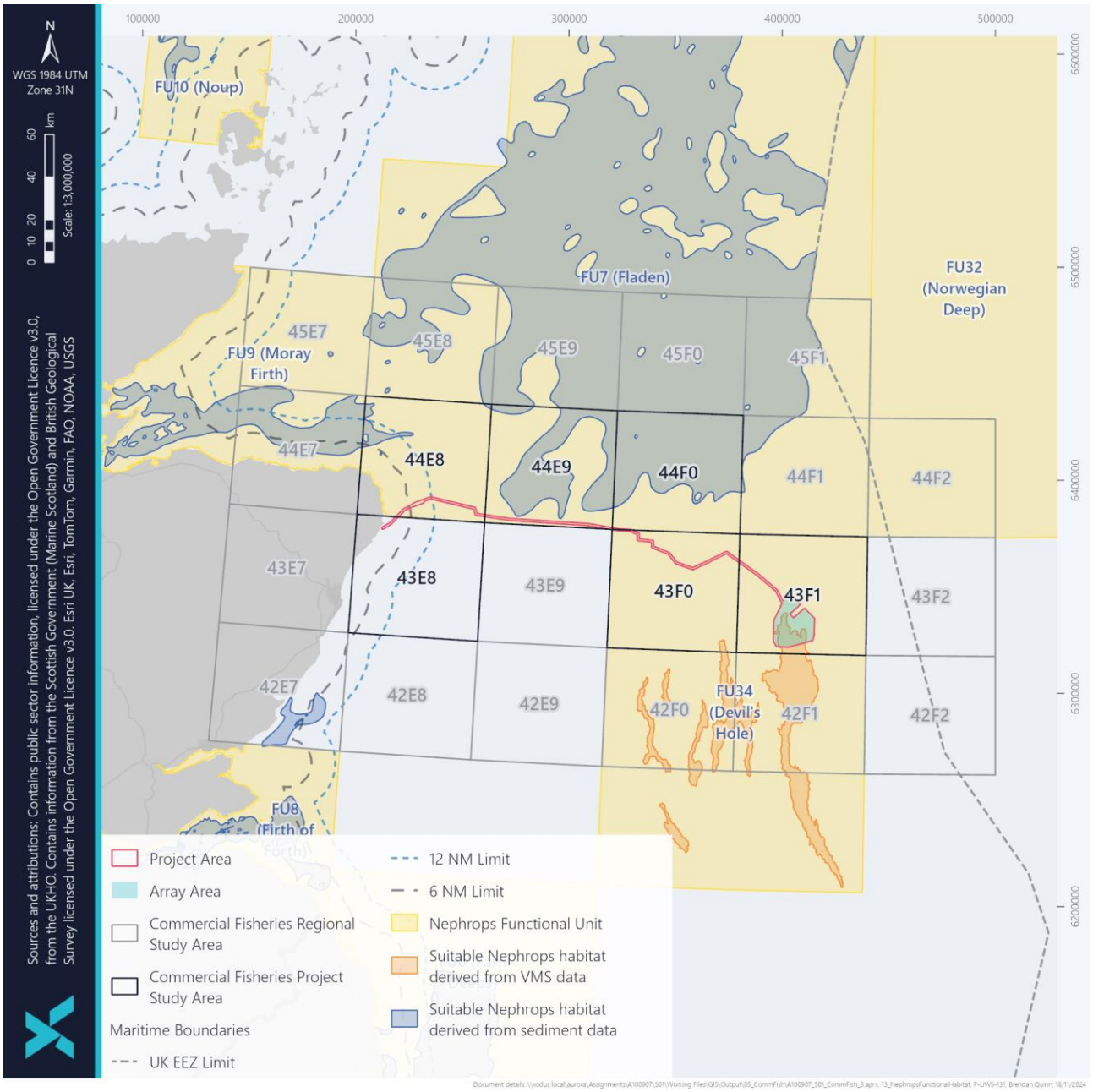

Figure 14-7 Nephrops Functional Units and suitable habitats[7] (Scottish Government, 2024b)

[7] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.2.1.2 Pelagic Trawls

Pelagic trawling is a method of towing a trawl in mid-water with no intentional contact with the seabed (Seafish, 2024b). Pelagic trawling is generally used to target shoaling fish species such as mackerel, herring and sprat (*Sprattus sprattus*). VMS effort and average VMS value for UK vessels over 15 m in length operating pelagic trawls within the Commercial Fisheries Study Area is available from MMO VMS data (2017-2020) (MMO, 2020b).

14.4.4.2.1.2.1 Project Study Area

Average VMS effort along the length of the EICC is generally low, with average effort between 0-100 kWh (Figure 14-8). The EICC passes through an area of moderate effort in the south east of ICES rectangle 44E9 (with an effort of between 1,000-50,000 kWh) (Figure 14-8). Within the Array Area the average VMS effort ranges from 0-1,000 kWh.

Along the length of the EICC, the average VMS value of UK vessels operating pelagic trawls (2017-2020) is low, with the average value between £0-£100 (Figure 14-9). The EICC passes through an area of moderate value in the south east of ICES rectangle 44E9 (£10,000-£100,000) (Figure 14-9). Within the Array Area the average VMS value ranges from £0-£500.

14.4.4.2.1.2.2 Regional Study Area

VMS effort within the Regional Study Area is most concentrated to the north within ICES rectangles 45E8, 45E9, 45F0 and 44F0 (Figure 14-8). Within these rectangles, average VMS effort is characterised by vessels operating from 100-50,000 kWh (MMO, 2020b). There is also an area of pelagic trawling activity within 43E9 (Figure 14-8), characterised by average VMS effort between 100-50,000 kWh (MMO, 2020b). Within the inshore environment (<12NM) there is an area of pelagic trawling effort within ICES rectangle 44E7 with an average VMS effort of between 100-5,000 kWh (MMO, 2020b). Throughout the rest of the Regional Study Area average VMS effort is low (between 0-100 kWh).

Between 2017-2020, the average VMS value for pelagic trawls to the north of the Regional Study Area (ICES rectangles 45E8, 45E9, 45F0 and 44F0) ranges from £0->£100,000 (MMO, 2020b) (Figure 14-9). Within ICES rectangles 43E9 and 42F0, the average VMS value for pelagic trawls ranges from £100-£100,000 (MMO, 2020b). Pelagic trawling effort within inshore waters (<12NM) has an average VMS value of between £100-£500 (MMO, 2020b).

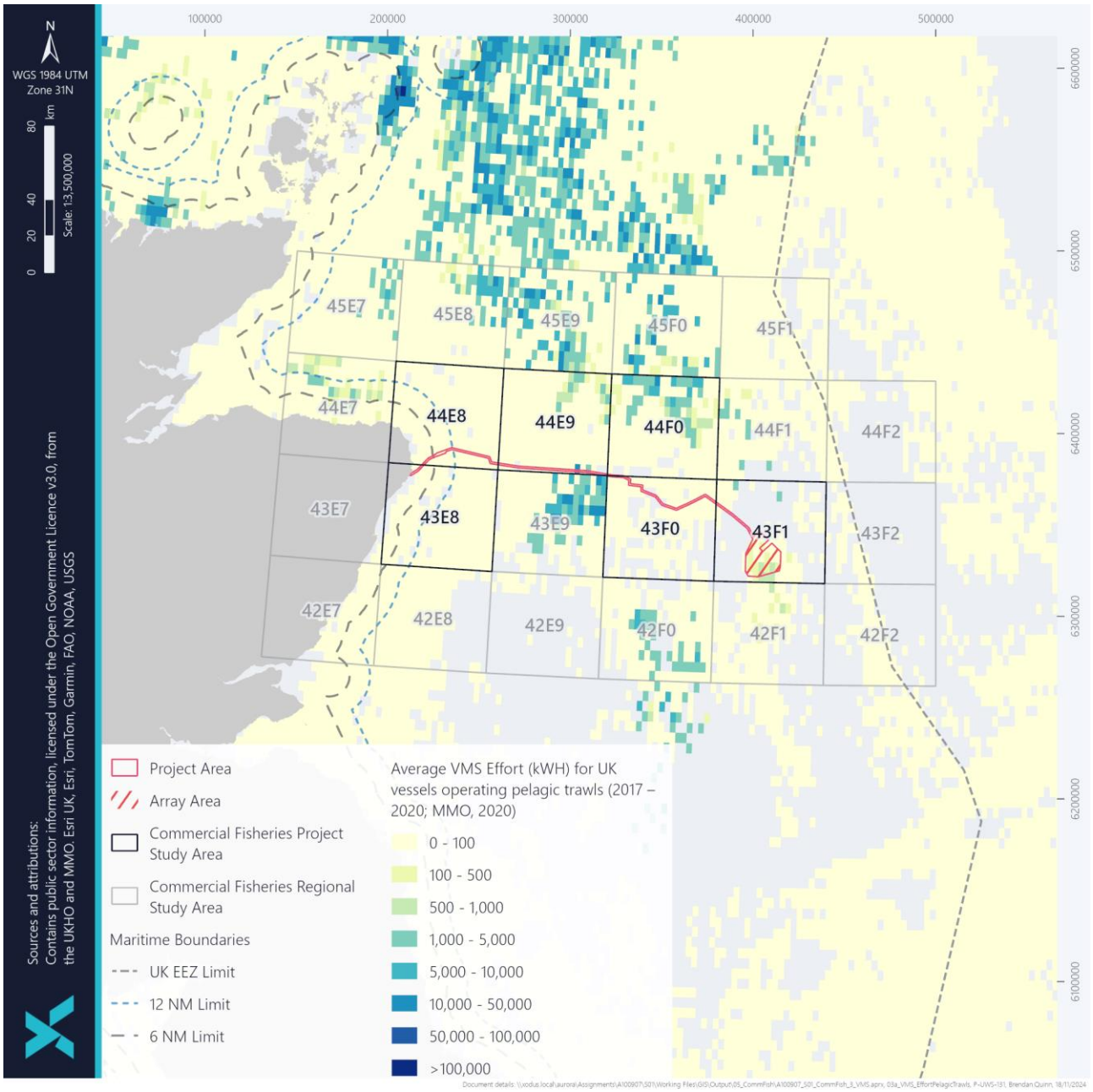

Figure 14-8 Average VMS effort for UK vessels operating pelagic trawls[8] (2017-2020) (MMO, 2020b)

[8] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

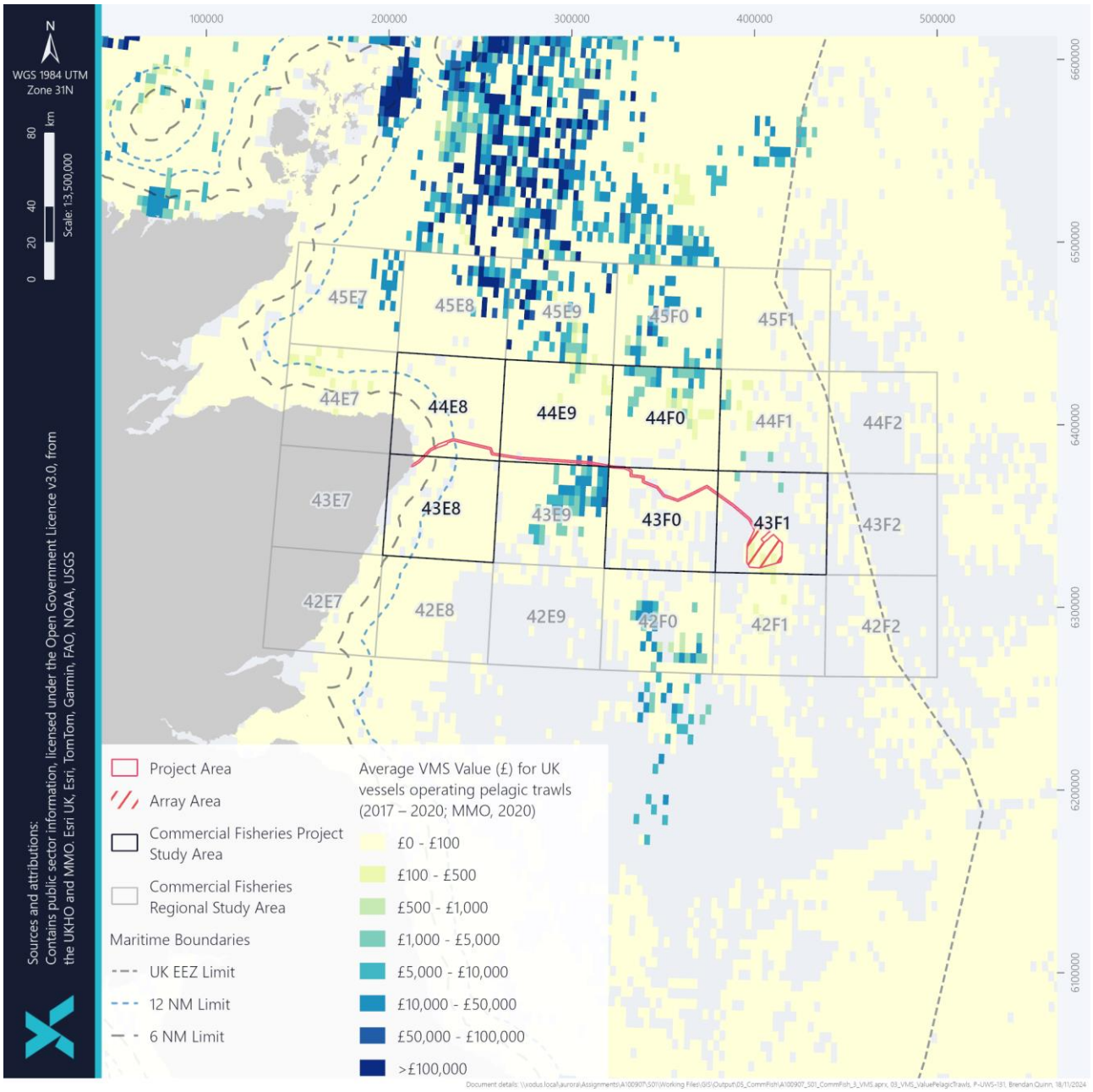

Figure 14-9 Average VMS value for UK vessels operating pelagic trawls[9] (2017-2020) (MMO, 2020b)

[9] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.2.1.3 Dredges

Dredging is a fishing method which utilises a rigid structure which is towed across the sea floor behind a vessel, either scraping or penetrating the sea floor to catch target species (including scallops) (Seafish, 2024c). VMS effort and average VMS value for UK vessels over 15 m in length operating dredges within the Commercial Fisheries Study Area is available from MMO and the Marine Directorate VMS database (2017-2020) (MMO, 2020b).

14.4.4.2.1.3.1 Project Study Area

Between 2017-2020, the VMS data shows dredge vessel effort heavily concentrated within the inshore environment (<12 NM) (Figure 14-10). The EICC, will pass through a small area of moderate to high dredging effort (10,000-50,000 kilowatts per hour (kWh)) between 6-12 NM offshore (within ICES rectangle 44E8). Aside from the inshore section and areas further offshore, average fishing effort for vessels operating dredges is low (0-100 kWh). This includes dredge vessel effort along the length of the EICC from 12 NM to the Array Area and within the Array Area itself (MMO, 2020b).

14.4.4.2.1.3.2 Regional Study Area

Average VMS value between 2017-2020 (MMO, 2020b) for vessels operating dredges within the inshore environment (<12 NM) (Figure 14-11) range in value from a minimum of £0 to a maximum of £50,000. Within ICES rectangle 44E8, within which the EICC overlaps with an area of dredging vessel activity, average VMS value ranges from £100-£10,000. In accordance with decreasing dredging vessel effort with distance offshore, average VMS value decreases with distance offshore. Along the length of the EICC from 12 NM to the Array Area, and within the Array Area itself, average VMS value for UK vessels operating dredges was between £0-£100 (MMO, 2020b).

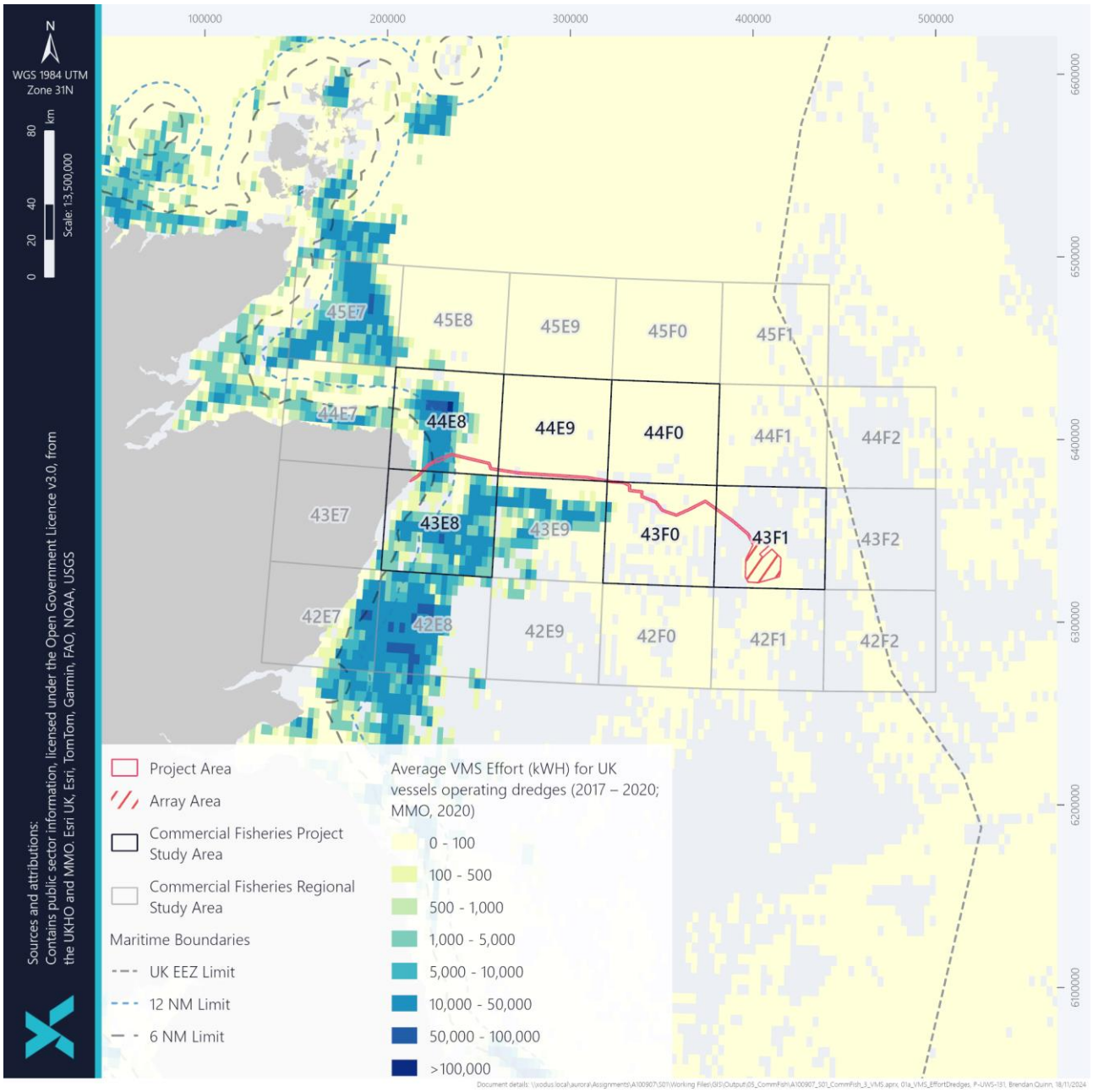

Figure 14-10 Average VMS effort for UK vessel operating dredges[10] (2017-2020) (MMO, 2020b)

[10] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

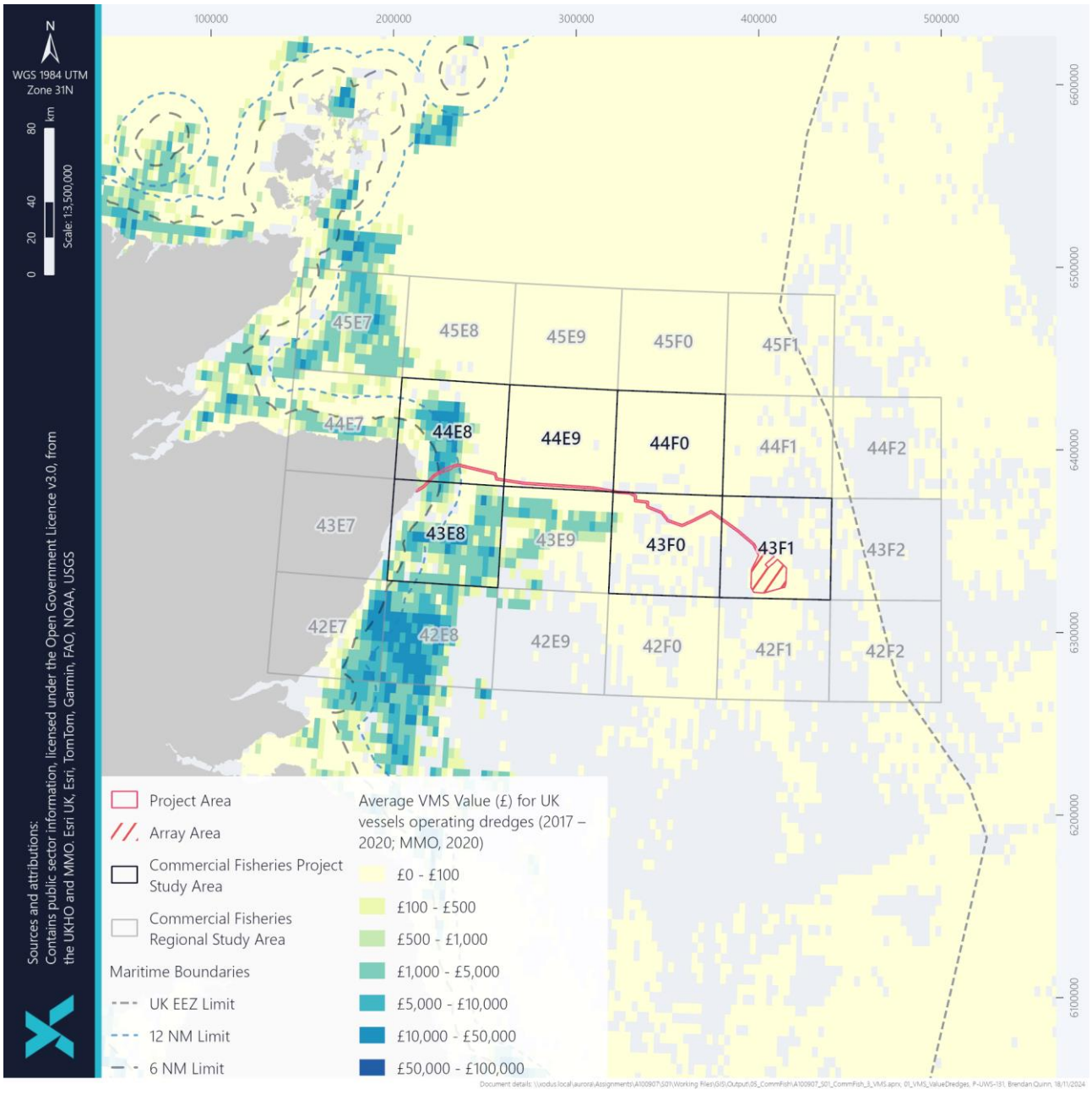

Figure 14-11 Average VMS value for UK vessel operating dredges[11] (2017-2020) (MMO, 2020b)

[11] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.2.1.4 Passive Gears

Passive fishing gear (or 'static gear') refer to any gear where the catching operation does not require an active movement of the gear within the marine environment, targeting species such as crab and lobster (MMO, 2016; Seafish, 2024d). Passive gears include handlines and pots/traps (creels) (as described in Section 14.4.4.1.3.3). VMS effort and average VMS value for UK vessels over 15 m in length operating passive gears within the Commercial Fisheries Study Area is available from MMO VMS data (2017-2020) (MMO, 2020b).

14.4.4.2.1.4.1 Project Study Area

VMS effort for vessels over 15 m in length operating passive fishing gear throughout the Project Study Area is generally low, with a slightly increased effort inside of the 6-12 NM limit around the EICC and at the landfall (Figure 14-12). The rest of the EICC and within the Array Area have low effort between 0-100 kWh (MMO, 2020b). Within ICES rectangles 45E7 and 45E8, passive gear effort is higher, with an average VMS effort of between 100-1,000 kWh (MMO, 2020b). Within the inshore environment (between landfall and 12 NM) within ICES rectangle 44E8 and 43E8 there is evidence of more intensive passive gear effort, with an average VMS effort of between 100-5,000 kWh.

Between 2017-2020, the average VMS value from 12 NM offshore along the length of the EICC and within the Array Area was low, between £0-£100 (Figure 14-13) (MMO, 2020b). Where passive gear effort is higher within the inshore environment (between landfall and 12 NM offshore within ICES rectangles 44E8 and 43E8), the average effort of vessels operating passive gear ranges from £100-£5,000. Within ICES rectangle 42E7, passive gear effort has a maximum value of £50,000 (MMO, 2020b).

14.4.4.2.1.4.2 Regional Study Area

Within the Regional Study Area, the highest passive gear effort (between 10,000-50,000 kWh) and value (between £100-50,000) is located within ICES rectangle 42E7.

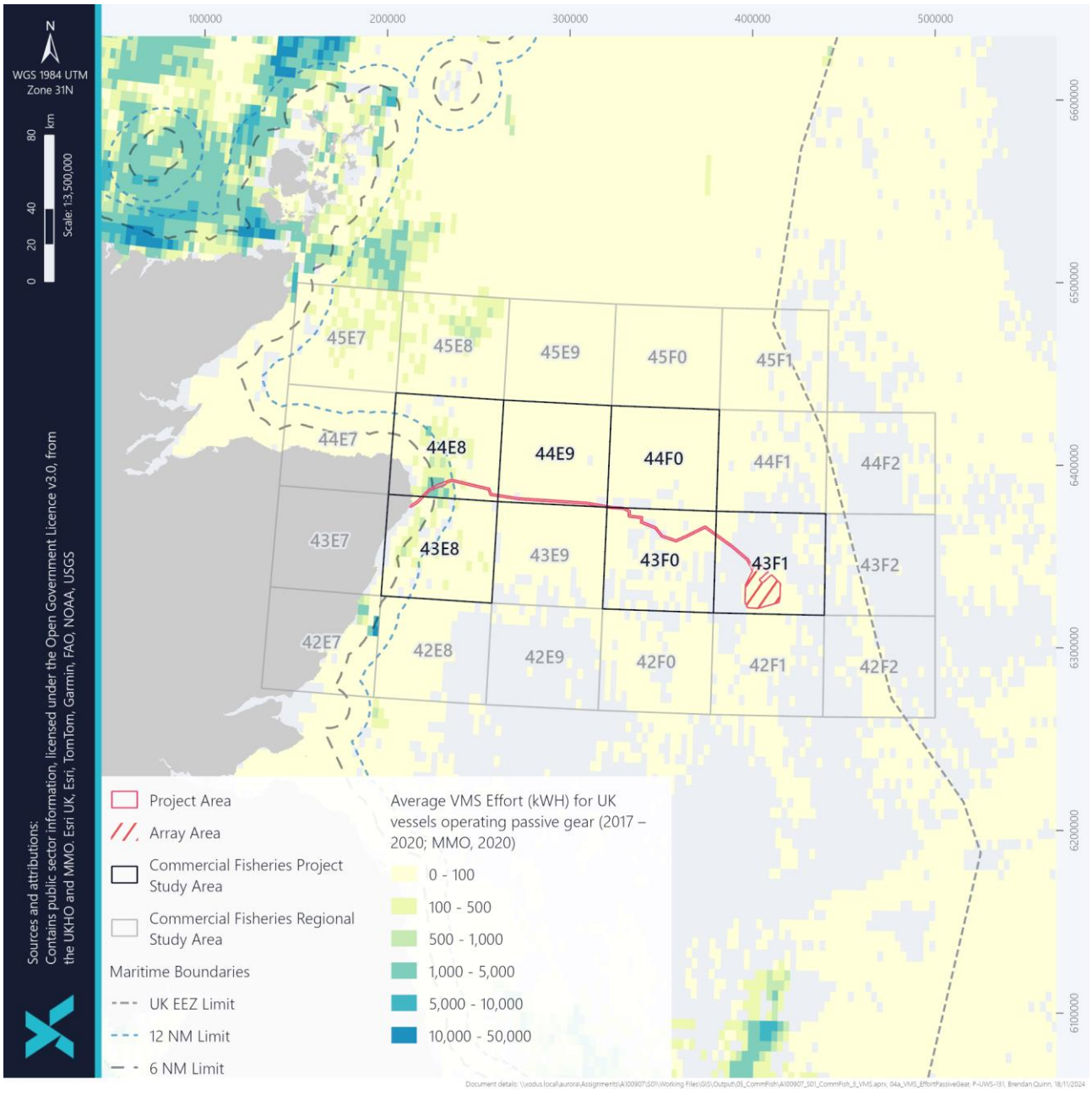

Figure 14-12 Average VMS effort for UK vessels operating passive gear[12] (2017-2020) (MMO, 2020b)

[12] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

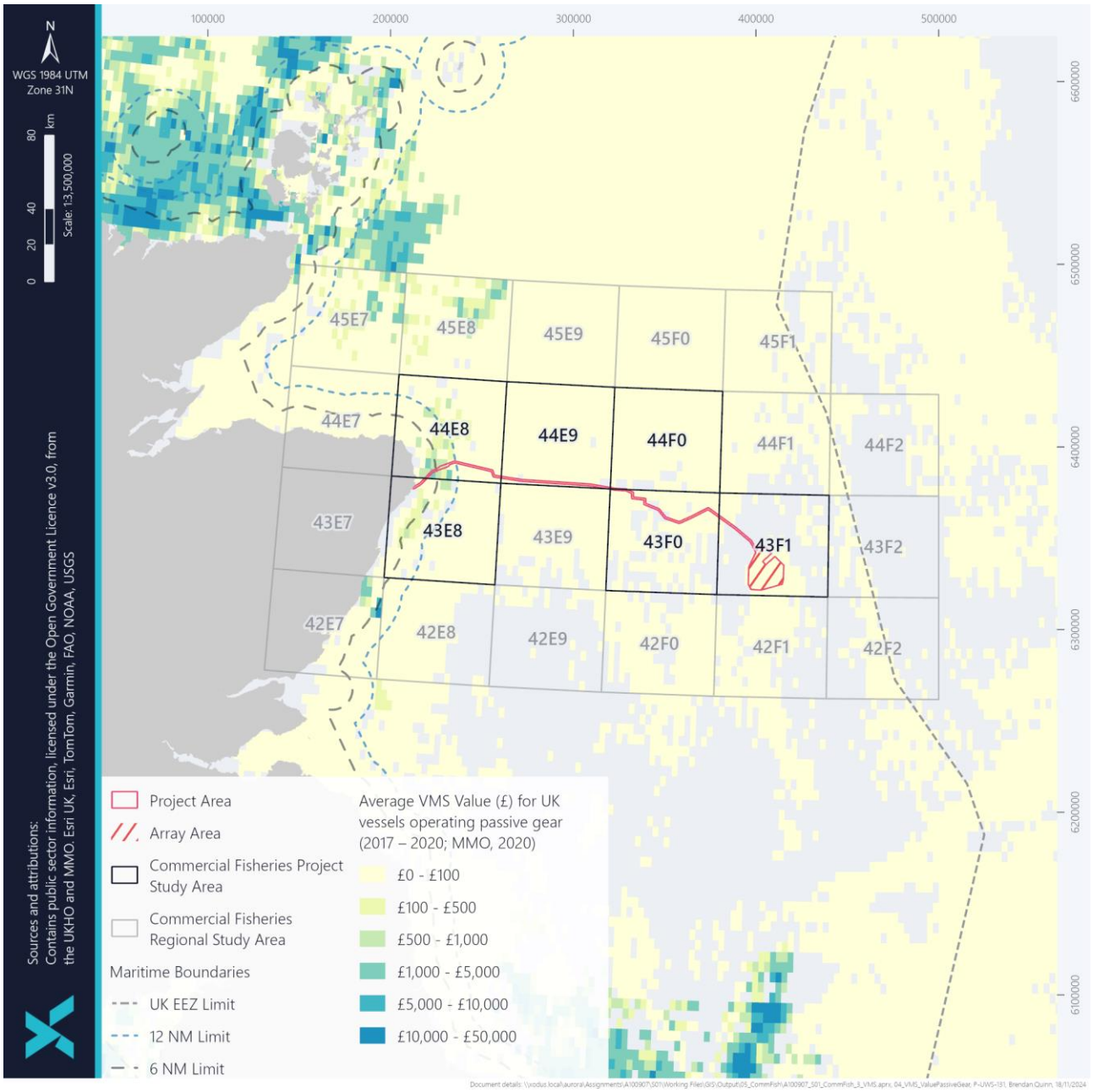

Figure 14-13[13] Average VMS value for UK vessels operating passive gear (2017-2020) (MMO, 2020b)

[13] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.2.2 ICES VMS Data

14.4.4.2.2.1 Otter Trawls

Otter trawls are a type of demersal trawlers characterised by a cone-shaped net, which spread is maintained through trawl doors ("otter boards" which penetrate the seafloor to a maximum of 20 centimetre (cm). Otter trawls are towed behind a vessel to target *Nephrops* and other bottom-dwelling fish and shellfish species (Seafish, 2024a). VMS effort and average VMS value for UK vessels operating otter trawls within the Commercial Fisheries Study Area is available from ICES VMS data (2009-2017) (ICES, 2018).

14.4.4.2.2.1.1 Project Study Area

Average VMS effort along the length of the EICC is generally low to moderate. At landfall and <12 NM the average effort is low (0-1,000 kWh) (Figure 14-14). With increasing distance offshore along the length of the EICC the average VMS effort ranges from 0-50,000 kWh. Within the Array Area (ICES rectangle 43F1) the average VMS effort is low (100-10,000 kWh).

Along the length of the EICC, the average VMS value is low, ranging from €0 (£0) (at the landfall and for the portion of the Export/Import Cable <12 NM) and increasing in value with distance offshore along the length of the EICC (to a maximum of €10,000 (approx. £8,350[14]) (Figure 14-15). Within the Array Area (ICES rectangle 43F1) the average VMS value is €1,000-€10,000 (approx. £835 - £8,350).

14.4.4.2.2.1.2 Regional Study Area

VMS effort for UK vessels within the Regional Study Area is moderate to high, with effort concentrated to the northern portion of the Regional Study Area (ICES rectangles 45E8, 45E9, 45F0, 45F1 and 44F0), with an average VMS effort for UK vessels between 100 kWh->100,000 kWh. There is also an area of higher otter trawl effort within the waters surrounding the Array Area in ICES rectangles 42F0 and 42F1 with an average effort of between 10,000-50,000 kWh to a maximum effort of 100,000 kWh. Within the inshore environment there is a concentrated area of otter trawl effort located within ICES rectangle 44E7, with an average effort of between 10,000 -50,000 kWh and a maximum effort of >100,000 kWh (Figure 14-14).

Within the Regional Study Area the average VMS effort to the north (ICES rectangles 45E8, 45E9, 45F0, 45F1 and 44F0) and within the inshore environment to the north of the landfall (ICES rectangle 44E7) the average VMS value ranges from €0 (£0) to a maximum of €50,000 (approx. £41,500) (Figure 14-15). Across the remainder of the Regional Study Area, the average VMS value for ICES member countries[15] operating otter trawls is between €0-€1,000 (approx. £0-£8,350) (ICES, 2018).

As detailed in Section 14.4.4.2.1.1, the location and distribution of otter trawling effort within the Regional Study Area is consistent with *Nephrops* suitable habitats within the North Sea (Figure 14-7). Otter trawling effort within the north of the Regional Study Area (ICES rectangles 45E8, 45E9, 45F0, 45F1, 44E9 and 44F0) is located within the suitable *Nephrops* habitat (derived from sediment data) located within the FU7 (Fladen). Otter trawling effort within ICES rectangle 42F0 and 42F1 is located within the suitable *Nephrops* habitat (derived from VMS data) located within the

[14] *Approximation based on the XE Currency Converter, where €1 = £0.83 (25/11/2024)*
[15] *Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Latvia, Lithuania, The Netherlands, Norway, Poland, Portugal, Russian Federation, Spain, Sweden, United Kingdom, United States of America (ICES, N.D.)*

FU34 (Devil's Hole). Otter trawling effort within ICES rectangle 44E7 is located within the suitable Nephrops habitat (derived from sediment data) located within the FU9 (Moray Firth).

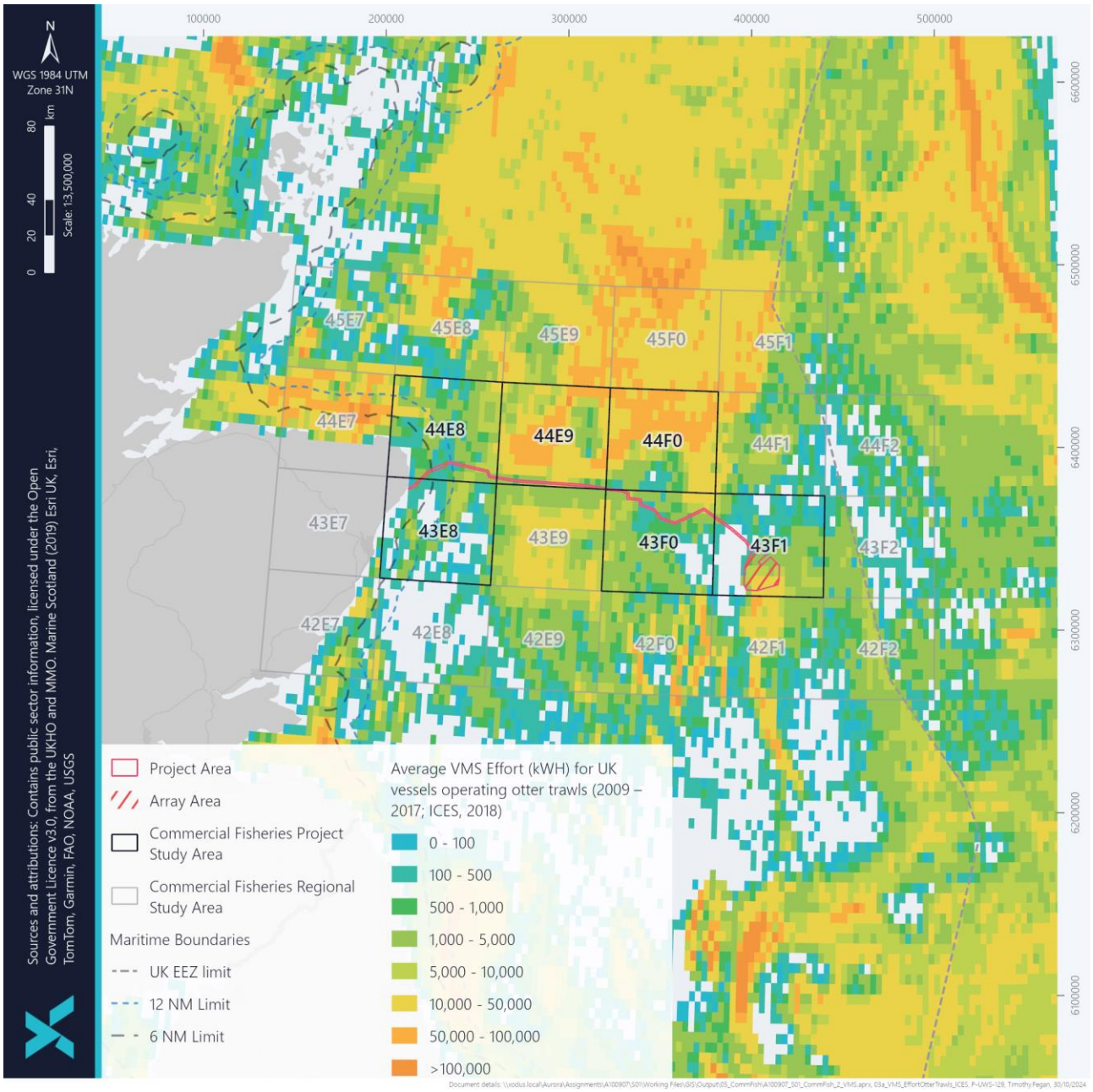

Figure 14-14 Average VMS effort for UK vessels operating otter trawls[16] (2009-2017) (ICES, 2018)

[16] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

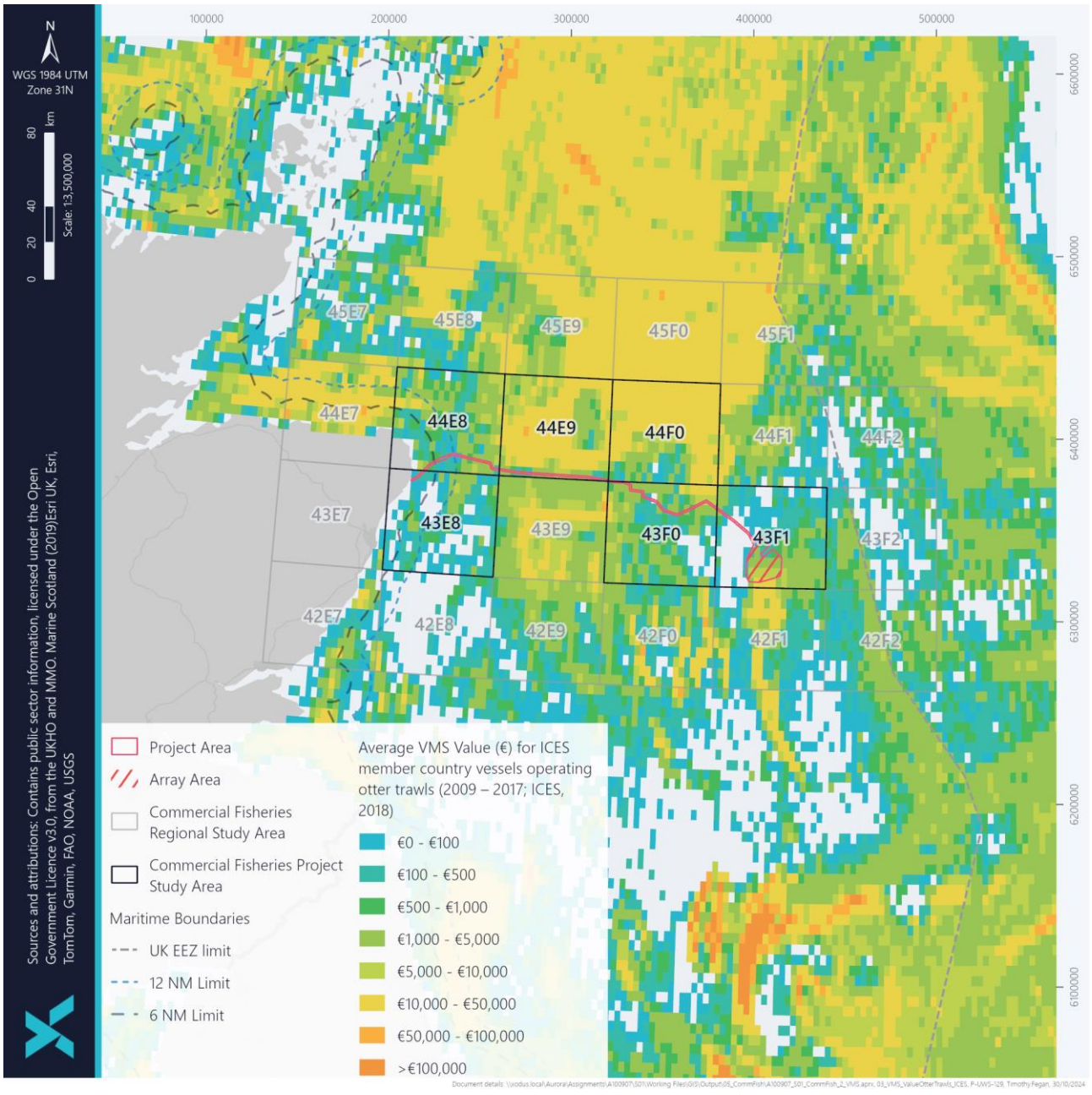

Figure 14-15 Average VMS value for ICES member country vessels operating otter trawls[17] (2009-2017) (ICES, 2018)

[17] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.2.2.2 Beam Trawls

Beam trawls are characterised by cone shaped nets kept open by a beam supported by steel trawl heads ("shoes") which penetrate the seabed up to a maximum of 20 cm. Beam trawls are towed behind a vessel operating a series of tickler chains at the mouth of the net designed to stimulate target flatfish species, which dwell on soft sand and muddy sediments, into the net (Seafish, 2024e). VMS effort and average VMS value for UK vessels operating beam trawls within the Commercial Fisheries Study Area is available from ICES VMS data (2009-2017) (ICES, 2018).

VMS effort for vessels operating beam trawls throughout the Commercial Fisheries Study Area is low, with the only activity between 2009-2017 located within ICES rectangles 45E9, 45F0 and 44F2 (Figure 14-16). Beam trawl average effort within these ICES rectangles ranges from 0-500 kWh. There is no beam trawl effort at any point along the EICC or within the Array Area. Between 2009-2017 the average VMS value for ICES member country vessels operating beam trawls within ICES rectangles 45E9, 45F0 and 44F2 is low (€0-€100 (approx. £0-£85)) (Figure 14-17). It is noted that there is an area of intense beam trawl effort outside the UK EEZ and to the east of the Commercial Fisheries Study Area (Figure 14-16). As such it is expected that vessels targeting these grounds will largely be non-UK registered vessels.

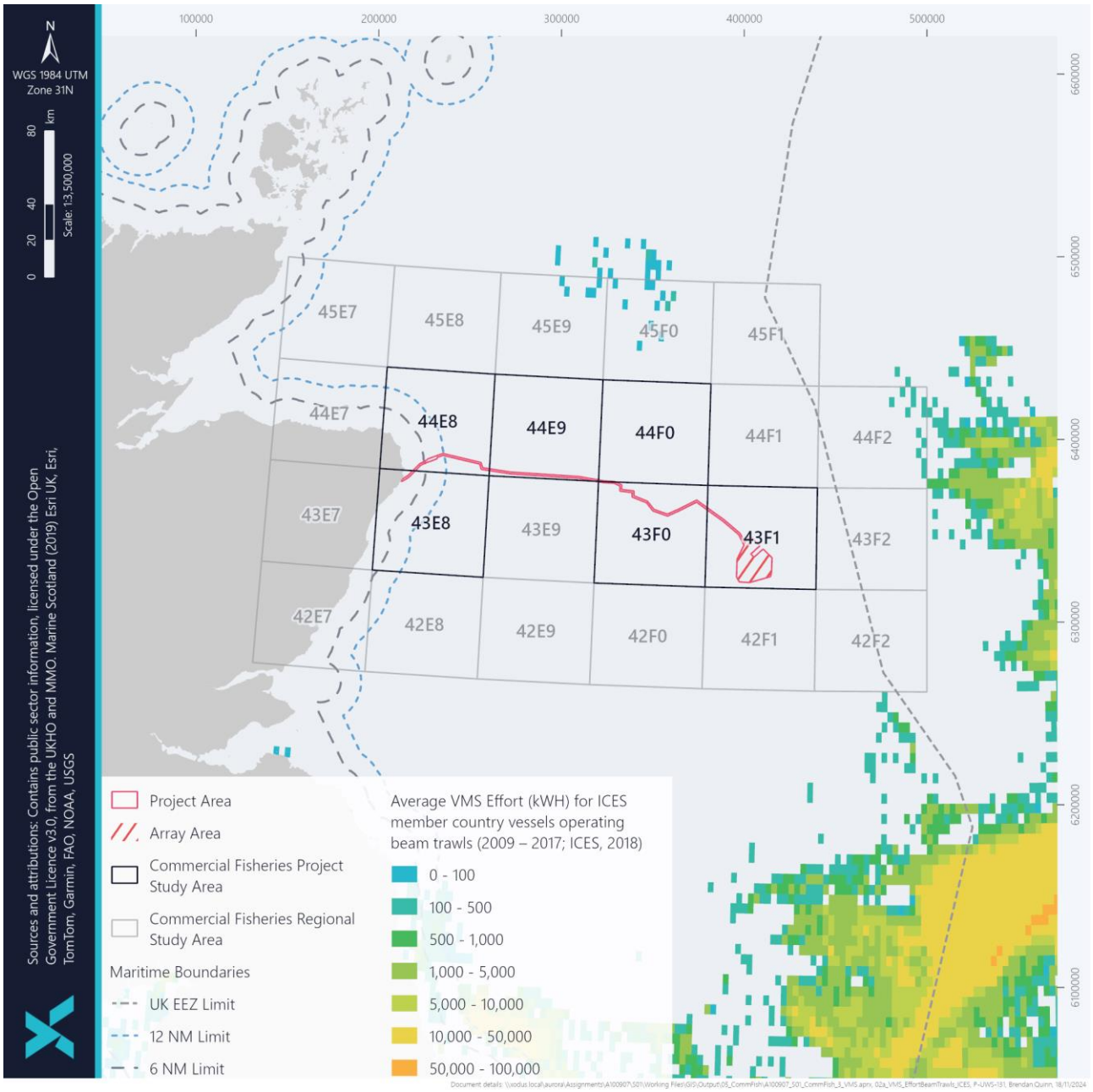

Figure 14-16 Average VMS effort for ICES member country vessels operating beam trawls[18] (2009-2017) (ICES, 2018)

[18] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

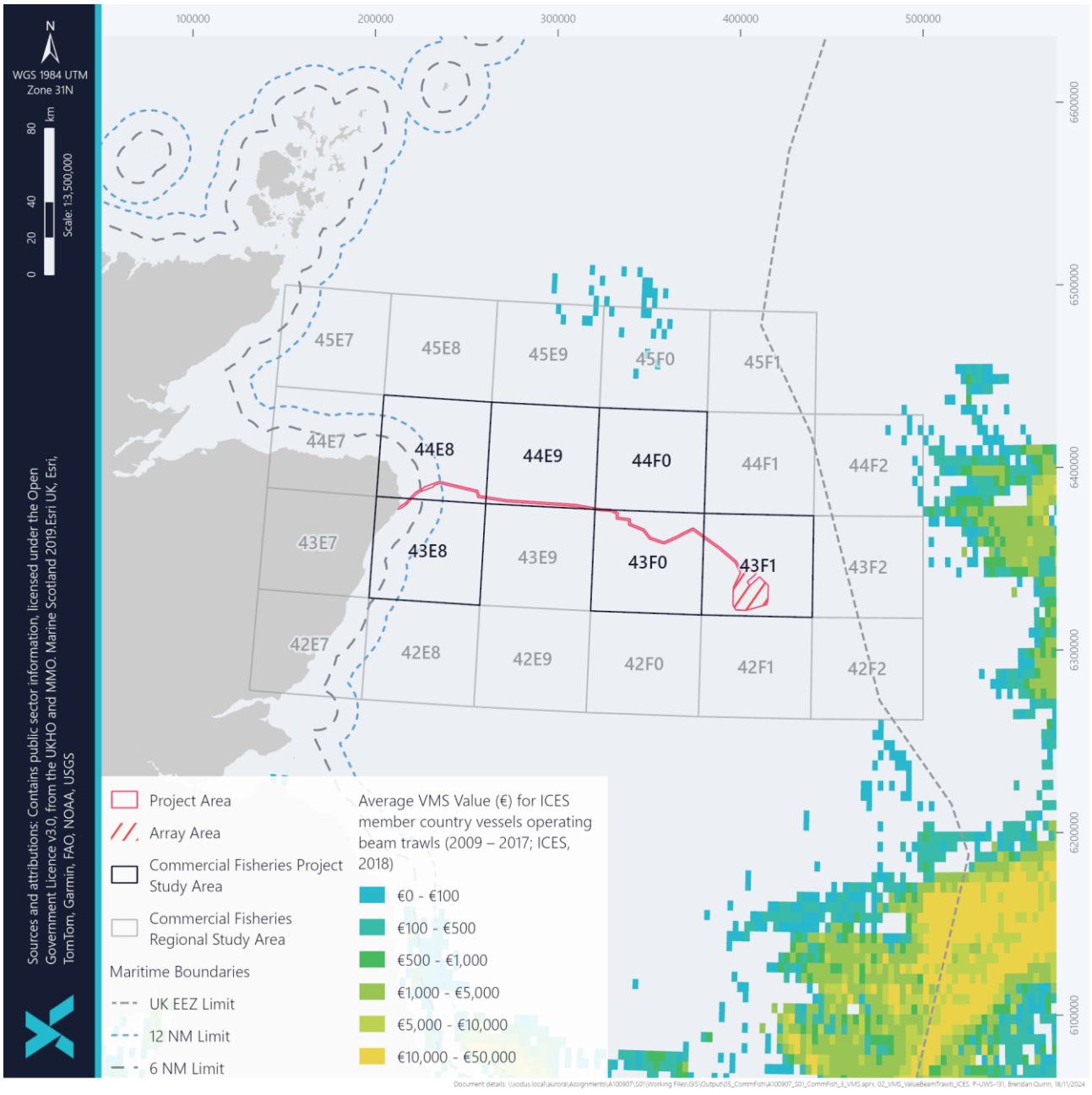

Figure 14-17 Average VMS value for ICES member country vessel operating beam trawls[19] (2009-2017) (ICES, 2018)

[19] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.2.2.3 Demersal Seines

Demersal seining is a fishing method used to capture demersal roundfish and flatfish species (FishFocus, 2024). VMS effort and average VMS value for UK vessels operating demersal seines within the Commercial Fisheries Study Area is available from ICES VMS data (2009-2017) (ICES, 2018).

14.4.4.2.2.3.1 Project Study Area

Average VMS effort along the length of the EICC is low to moderate, with average effort ranging from 0 kWh to a maximum of 10,000 kWh. Immediately at the landfall and within the Array Area there is no demersal seine effort recorded (Figure 14-18).

The EICC and Array Area do not directly interact with any areas of high value demersal seines (i.e., between €10-000, €50,000 (approx. £8,350-£41,500). Generally, the average VMS value for demersal seine effort within the Project Study Area is between €500-€10,000 (approx. £420-£8,350).

14.4.4.2.2.3.2 Regional Study Area

VMS effort for demersal seines within the Regional Study Area is concentrated to the north-west and south (ICES rectangles 45E7, 45E8, 44E7, 44F0, 43E9, 42E9 and 42F0) (Figure 14-18). Average VMS effort across the Regional Study Area is low to moderate (100-10,000 kWh, a maximum of 50,000 kWh effort in some areas). There is no recorded demersal seine effort between 2009-2017 within ICES rectangles 43E7, 42E7, 42F1 or 42F2 (Figure 14-18).

Between 2009-2017, the average VMS value for ICES member vessels operating demersal seines is low to moderate, with value ranging from a minimum of €0 (£0) to a maximum of €50,000 (approx. £41,500) within isolated areas of ICES rectangles 44E8, 44E9, 44F0, 43E9 and 43F0. (Figure 14-19).

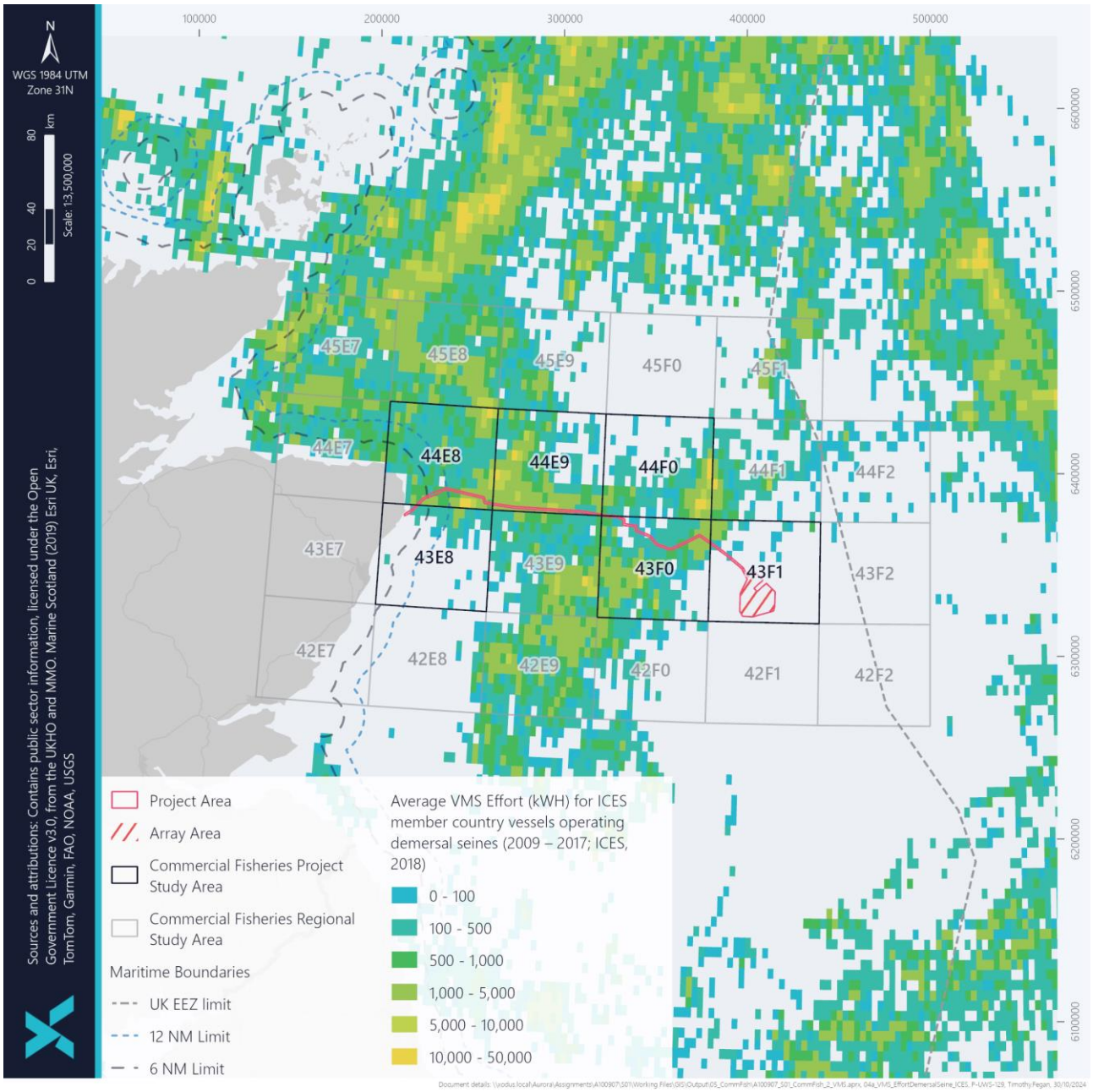

Figure 14-18 Average VMS effort for ICES member country vessel operating demersal seines[20] (ICES, 2018)

[20] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

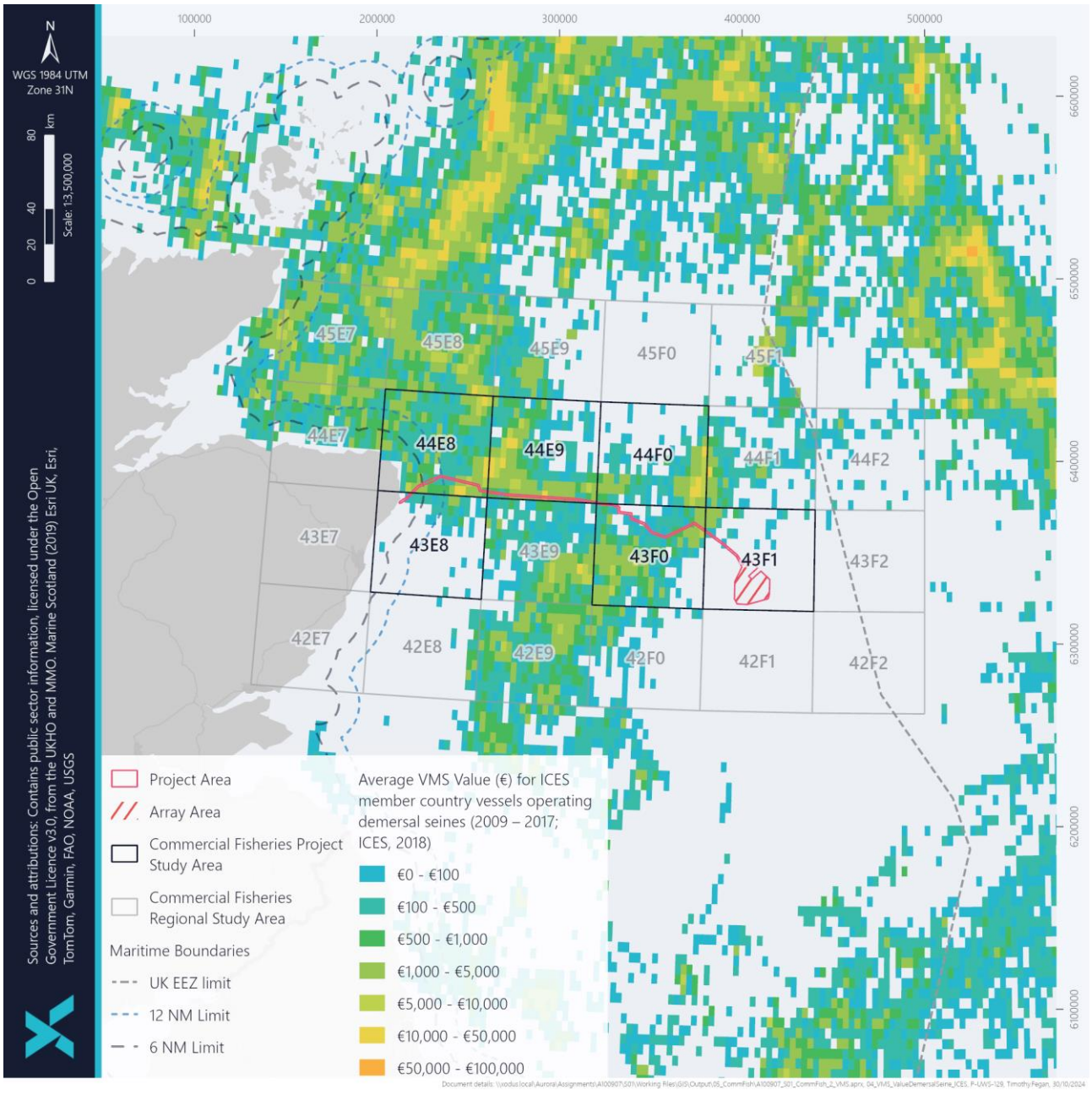

Figure 14-19 Average VMS value for ICES member country vessel operating demersal seines[21] (ICES, 2018)

[21] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.4.3 AIS Data

AIS is a vessel tracking system which enables vessels to transmit and receive vessel position data via an AIS transponder. All fishing vessels of over 15 m in length are required to operate an AIS system on board which must meet the standards of the International Convention for the Safety of Life at Sea (SOLAS) regulations. While fishing vessels under 15 m in length are not legally required to operate an AIS tracking system on board, some fishers choose to operate an AIS system. As detailed in Section 14.4.7 vessels under 15 m in length are generally poorly represented within publicly available AIS and VMS data. As such, the effort and value of vessels under 15 m and inshore fisheries is often underrepresented. AIS fishing vessel tracks within the Commercial Fisheries Study Area are presented within Figure 14-20.

AIS data (2015-2019) shows vessel activity throughout the Commercial Fisheries Study Area, with vessel activity decreasing with distance offshore. There is evidence of vessels over 15 m in length originating from Aberdeen and Peterhead harbours, transiting north towards the Orkney and Shetland Isles and south towards the Firth of Forth and English waters. Within ICES rectangles 45E9, 44F0, 45F1, 43E9, 43F0, 42F0 and 42F1 there is evidence of fishing vessel activity for vessels over 15 m in length, characterised by AIS vessel tracks moving back and forth over a single, isolated area. With increasing distance offshore there is limited evidence of AIS fishing vessel tracks along the length of the EICC and within the Array Area (ICES rectangle 43F1).

As presented within Cenos Offshore Windfarm Long Term Fishing Analysis (EIAR Vol. 4, Appendix 26: NRA Report), an analysis of three years of fishing vessels AIS data presented evidence of fishing vessels transiting through the Array Area, with limited evidence of active fishing occurring (Figure 14-22). A full data presentation and analysis of this AIS data is presented within the supporting document Cenos Offshore Windfarm Long Term Fishing Analysis (EIAR Vol. 4, Appendix 26: NRA Report).

For vessels under 10 m and between 10-15 m in length there is evidence of AIS fishing vessel tracks transiting from Fraserburgh, Peterhead and Aberdeen harbours (within ICES rectangles 44E8 and 43E8). These vessels generally transit along the coast (within the 12 NM limit), however there is evidence of vessels under 10 m in length transiting offshore to fishing grounds located within ICES rectangles 44E9 and 42F0. There is a significant concentrated area of fishing vessel activity (under 10 m in length) located within ICES rectangle 42E7 off the coast of Fife.

As fishing vessels under 15 m in length are not required to operate an AIS vessel tracking system, AIS vessel tracks for any vessel under 10 m or between 10-15 m in length are likely to be underrepresented by AIS vessel data. Therefore, it is likely that there is a greater level of vessel activity within the Commercial Fisheries Study Area than presented by AIS within Figure 14-20. AIS activity for all other vessels within the marine environment is presented within EIAR Vol. 3, Chapter 15: Shipping and Navigation.

Across the Commercial Fisheries Study Area, AIS data for the average number of hours fished per km^2 per month (2019-2023) for fishing vessels is generally low, with the most concentrated effort located <12 NM at the landfall and extending north along the coast to Fraserburgh (Figure 14-21). Within this area the average fishing vessel density is between 0.5-20 hours per km^2 per month. With increasing distance offshore along the length of the EICC and within the Array Area, fishing vessel density is low (between <0.1-1 hours per km^2) between 2019-2023.

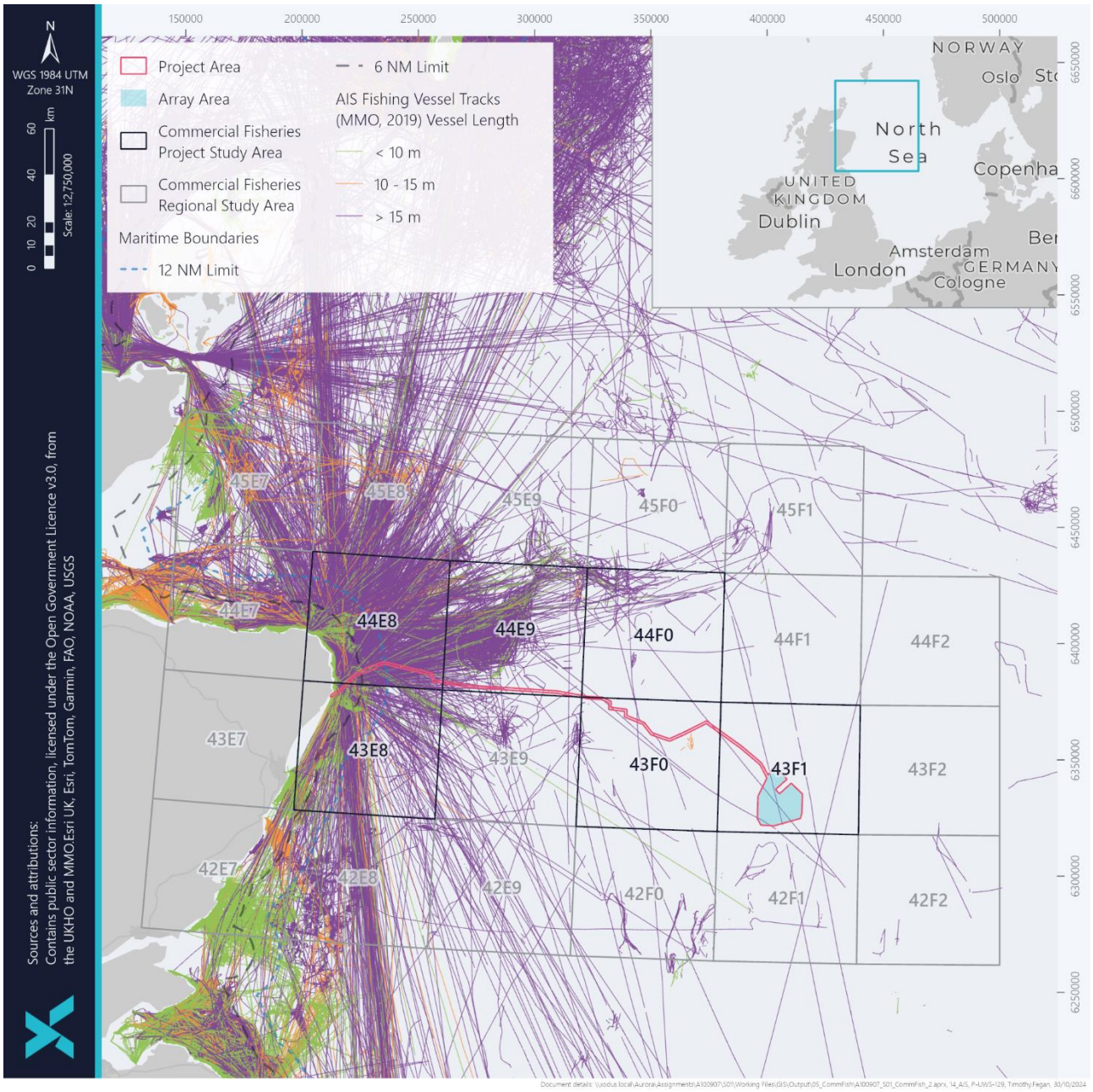

Figure 14-20 AIS fishing vessel tracks[22] (MMO, 2019)

[22] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

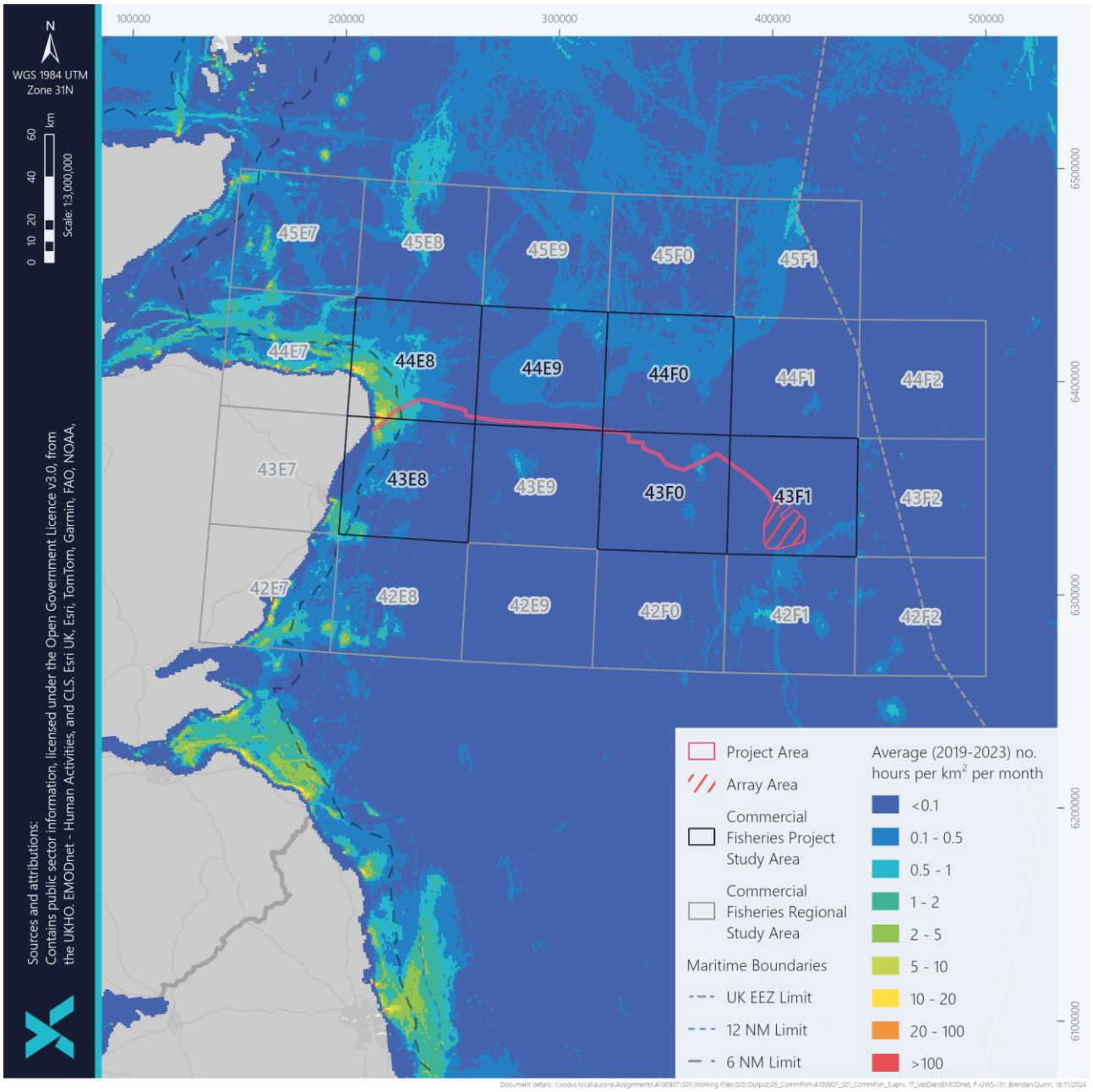

Figure 14-21 Fishing vessel average number of hours per km2 per month[23] (2019-2023) (EMODNET, 2019)

[23] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

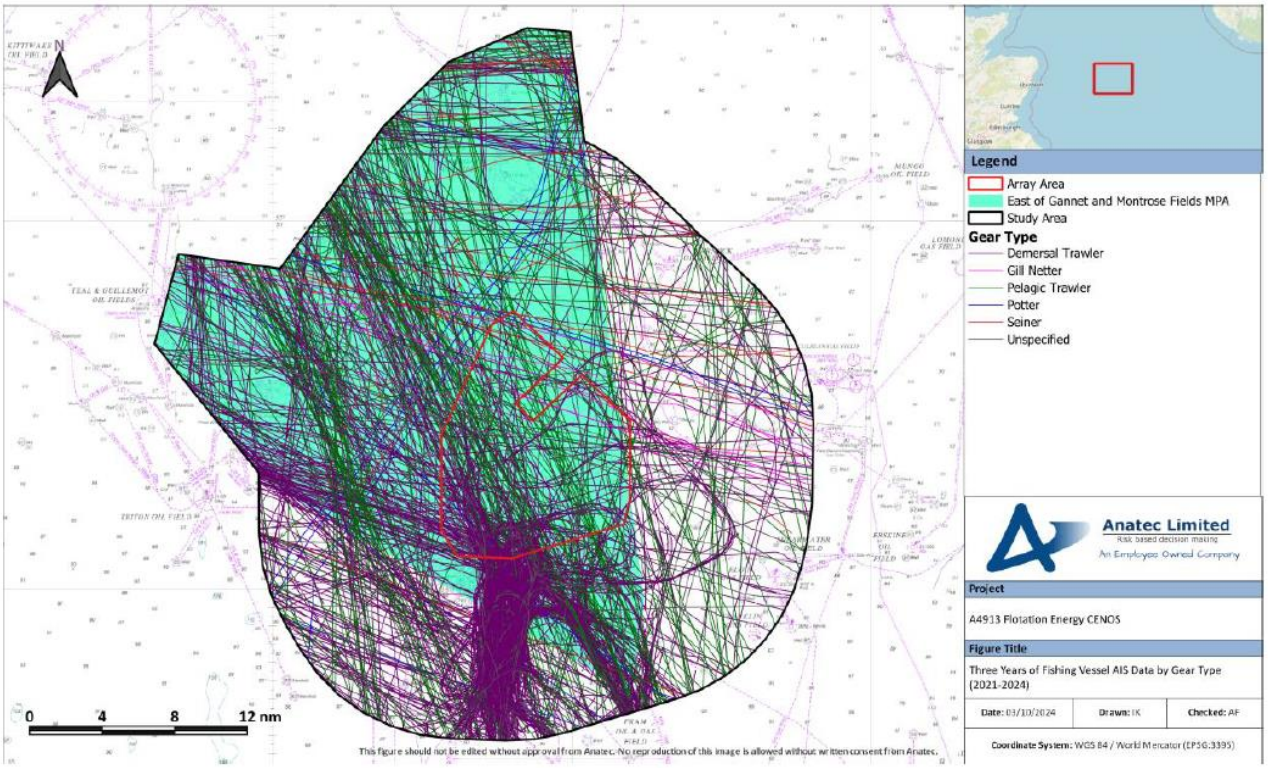

*Figure 14-22 Three years of fishing vessel AIS data by gear type (2021-2024) (**EIAR Vol. 4, Appendix 26: NRA Report**)*

14.4.4.4 Inshore Fisheries

14.4.4.4.1 Gridded Data

The gridded fisheries data for Scottish fishing vessels under 12 m in length shows the annual averages (2018-2022) of vessel distribution and trends for the total number of vessels.

The distribution of fishing vessels between 2018-2022 is heavily concentrated to the waters near the EICC and landfall and extending north along the coast of Fraserburgh and towards the south-west of the Commercial Fisheries Study Area within ICES rectangle 42E7 (as is consistent with the ScotMap (2013) data (Figure 14-26 to Figure 14-28). Gear type distribution for fishing vessels operating rods and lines and pots and traps between 2018-2022 is consistent with the distribution of mackerel lines, and crab and lobster pots effort distribution recorded by ScotMap (2013).

The average value of inshore fishing within the Commercial Fisheries Study Area is moderate. The portion of the EICC at landfall and the EICC <12 NM (ICES rectangles 43E8 and 44E8) are located within an area of moderate average value (£2,000-£5,000). To the north of the landfall off the coast of Fraserburgh (ICES rectangle 44E7) the average value for inshore fishing vessels is £5,000-£20,000. Within the south-west of the wider Commercial Fisheries Study Area (ICES rectangle 42E7) the average value of inshore fishing increases to a maximum of >£50,000. The average weight of catch landed across the inshore waters of the Commercial Fisheries Study Area (inclusive of the landfall and EICC) is between 0-15 Kilograms (kg) between 2017 to 2021. The average weight (kg) landed by Scottish fishing vessels under 12 m in length within the Commercial Fisheries Study Area is consistent with the distribution of the number and value of fishing vessels.

14.4.4.4.2 ScotMap

ScotMap (2013) was a Marine Directorate initiative which provided information on the spatial distribution of inshore fishing activity for vessels under 15 m in length (Marine Scotland, 2018). The data available from ScotMap (Figure 14-23 to Figure 14-25) was gathered through face-to-face engagement with 1,090 individual fishers with a 72% overall coverage for Scottish inshore waters (Marine Scotland, 2018).

The landfall and the EICC <12 NM are located within an area of moderate to high total numbers of vessels, ranging from <10 to a maximum of 94 vessels (Figure 14-23 to Figure 14-25). Scallop dredges are not recorded in areas that overlap with the EICC and landfall. Vessels "not operating *Nephrops* trawls" is low (<10 vessels). The number of vessels operating crab and lobster pots within the EICC and at landfall is moderate, characterised by 10-25 vessels, with some areas of 25-50 vessels within ICES rectangle 44E8. The number of vessels operating mackerel lines within the EICC and at landfall is moderate (25-50 vessels) (Figure 14-23 to Figure 14-25).

Within the wider Commercial Fisheries Study Area, inshore fishing activity is heavily concentrated to the north of the landfall along the coast of Fraserburgh within ICES rectangles 44E7. Between 10-94 fishing vessels were operating within this ICES rectangle. Inshore fishing activity also increases towards the south-west of the wider Commercial Fisheries Study Area within ICES rectangle 42E7, with between 10-50 vessels operating. Fishing for crab and lobster pots is present along the coastline of the Commercial Fisheries Study Area in low to moderate levels (<10 vessels to a maximum of 50 vessels). Inshore fishing with mackerel lines is concentrated north along the coast of Fraserburgh, with 25-50 vessels operating within these waters. Inshore fishing effort for scallop towed dredges and fishers operating "not *Nephrops* trawls" is low (<10 vessels) along the coastline of the wider Commercial Fisheries Study Area.

14.4.4.5 Plotter data

Plotter data provided by the SFF confirmed the baseline findings of vessels active predominantly in the southern section of the Array Area, although the plotter data showed more activity throughout the Array Area. However, as the plotter data is not date stamped, this could also be historic activity, as it has not been captured within the VMS or AIS datasets. Due to confidentiality reasons, any figures based on this data cannot be included within this chapter.

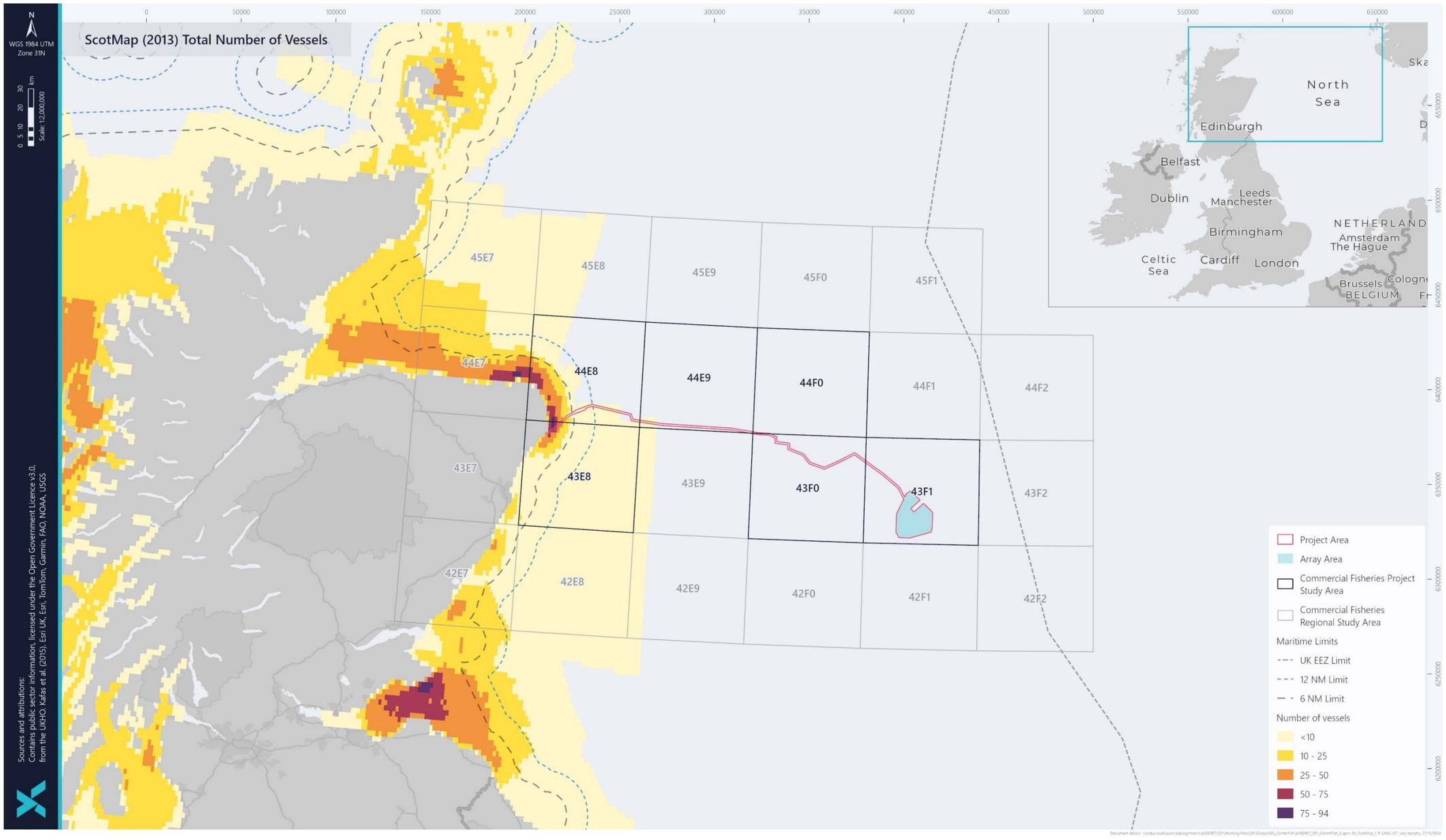

Figure 14-23 ScotMap Number of Vessels[24] (2013) (ScotMap, 2013)

[24] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

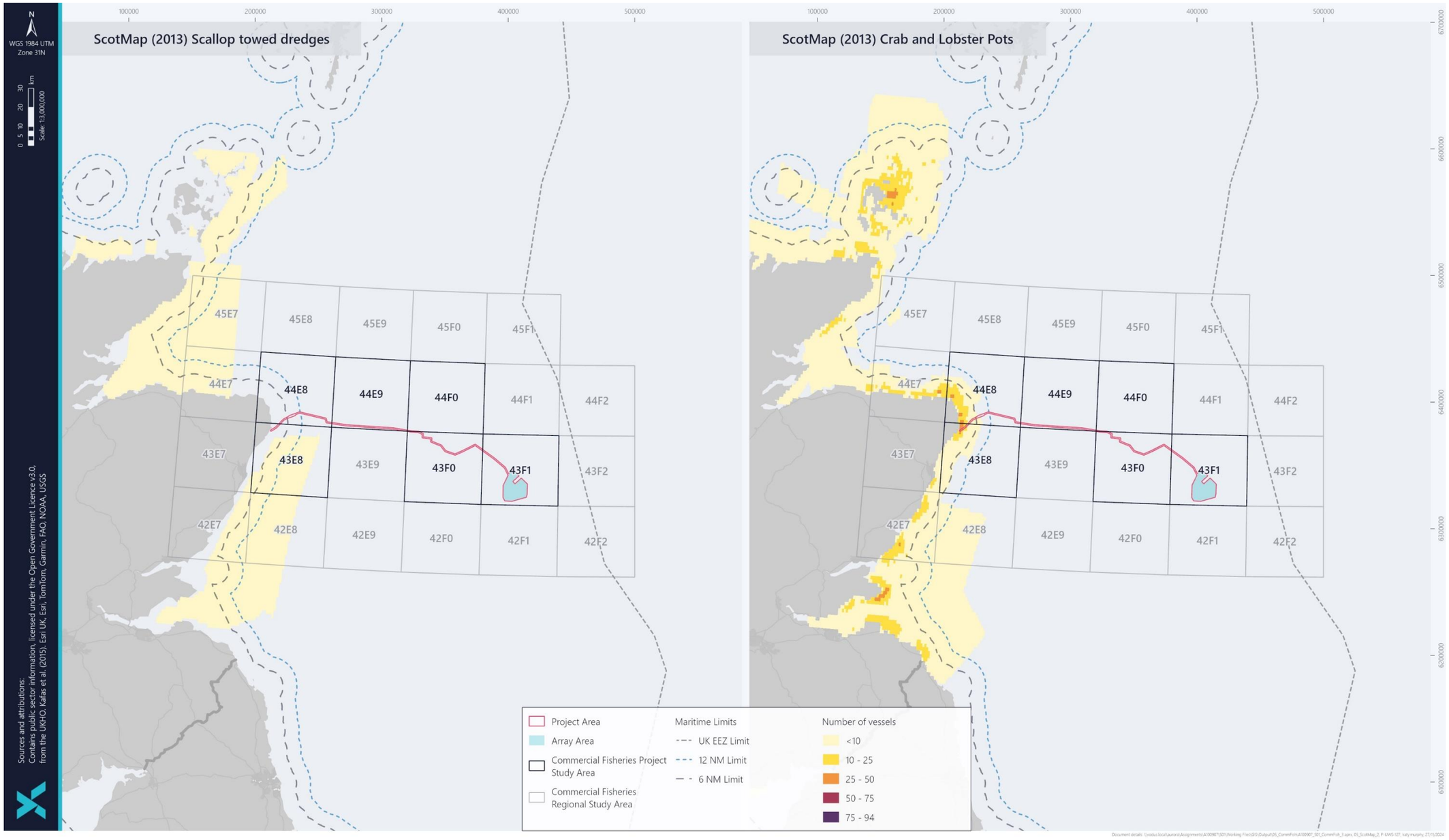

Figure 14-24 ScotMap vessels operating scallop and towed dredges and crab and lobster ports[25] (2013)

[25] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

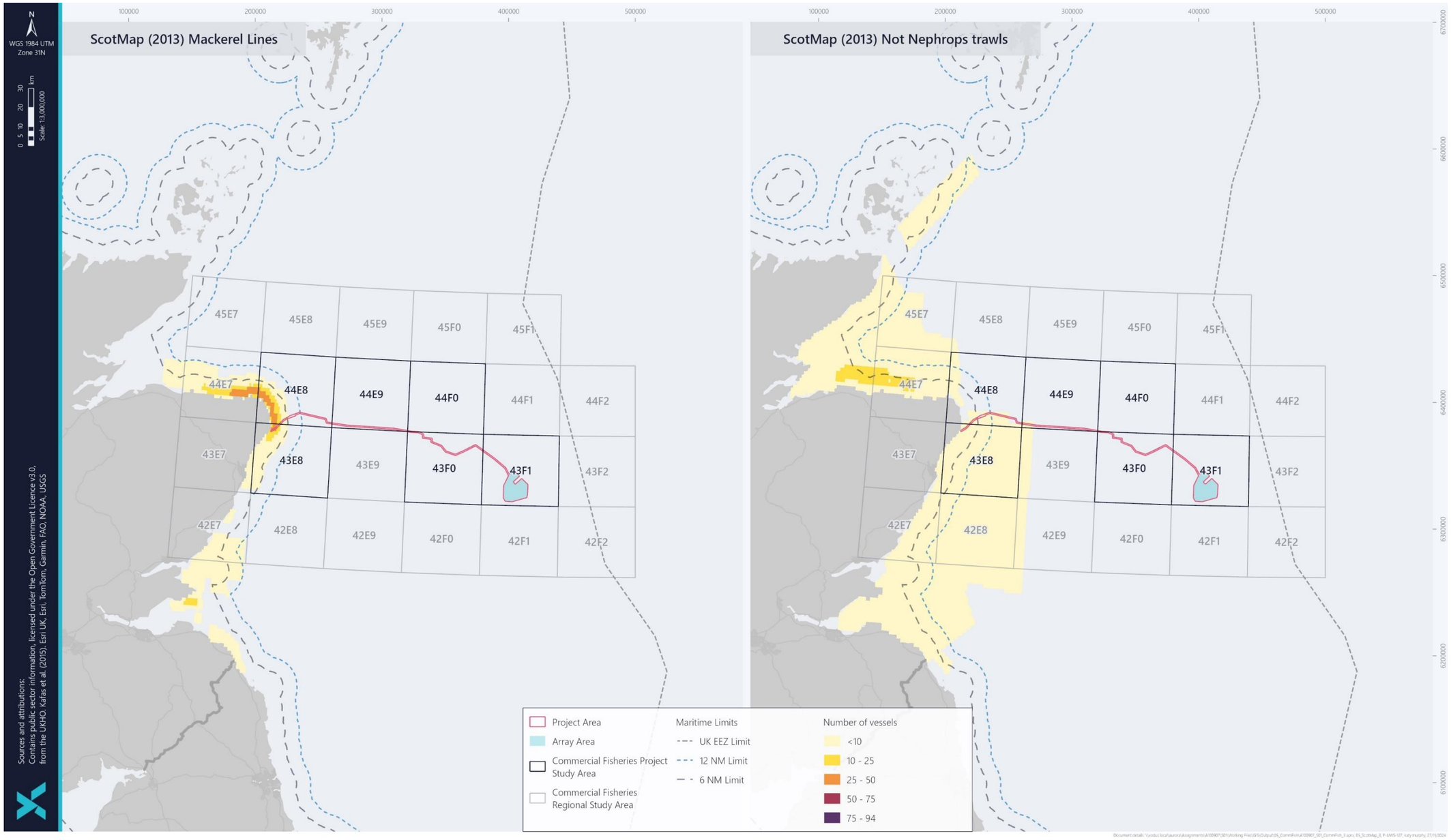

Figure 14-25 ScotMap vessels operating mackerel lines and not Nephrops trawls[26] (201

[26] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

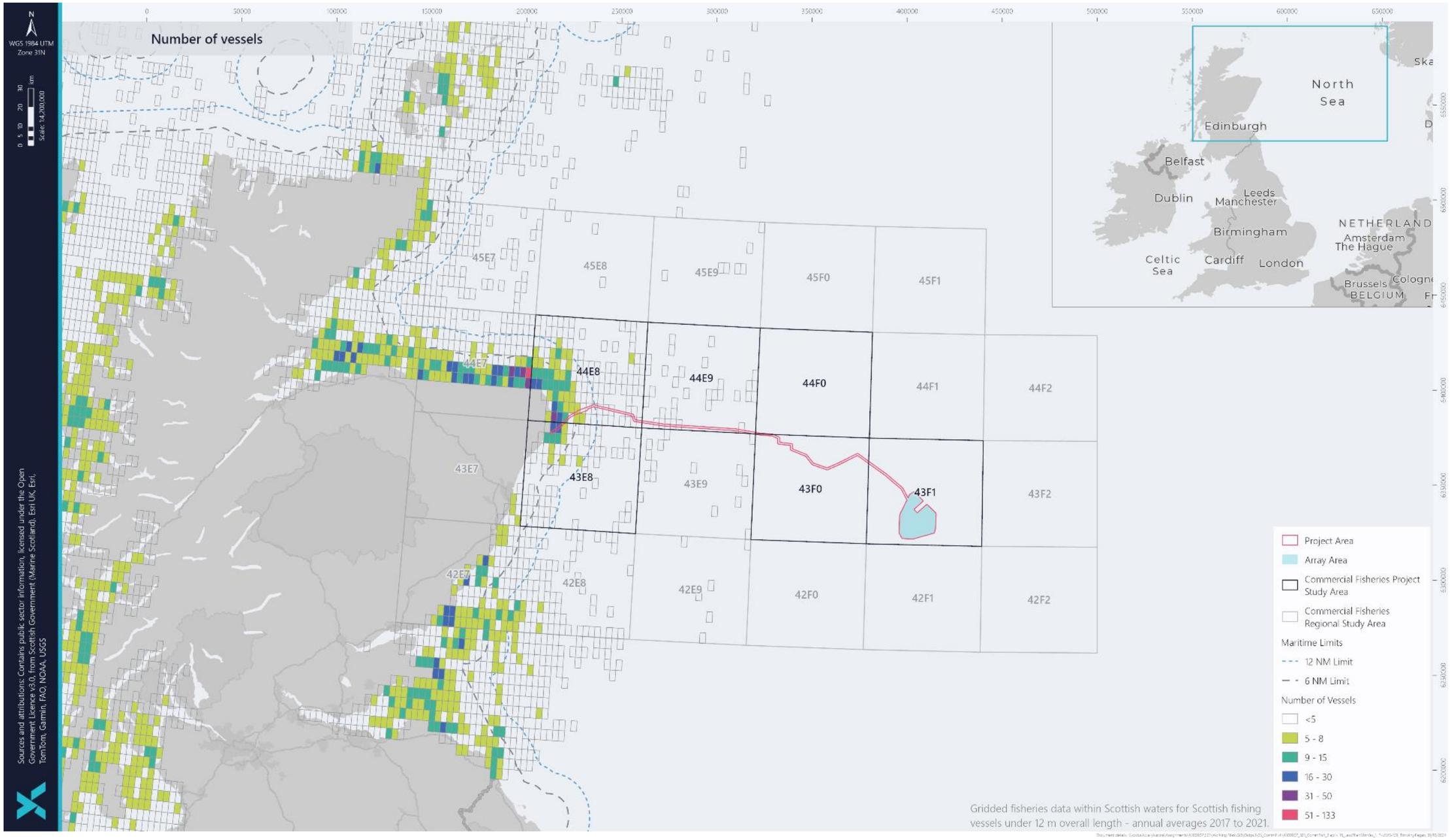

Figure 14-26 Number of vessels operating under 12 m in length[27] (2017-2021) (Scottish Government, 2024c)

[27] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

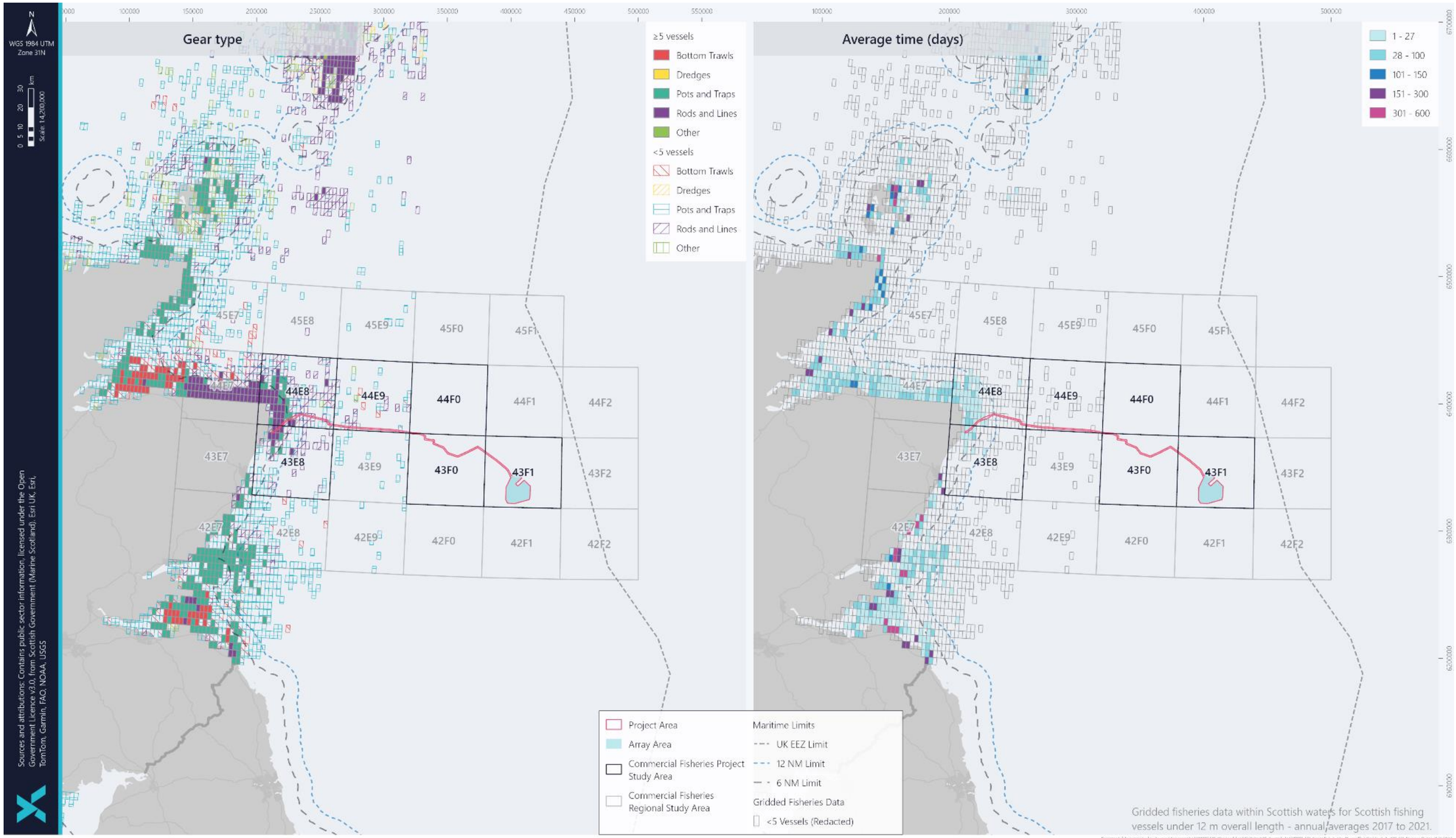

Figure 14-27 Gear type and average time (days) for vessels under 12 m in length[28] (2017-2021) (Scottish Government, 2024c)

[28] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

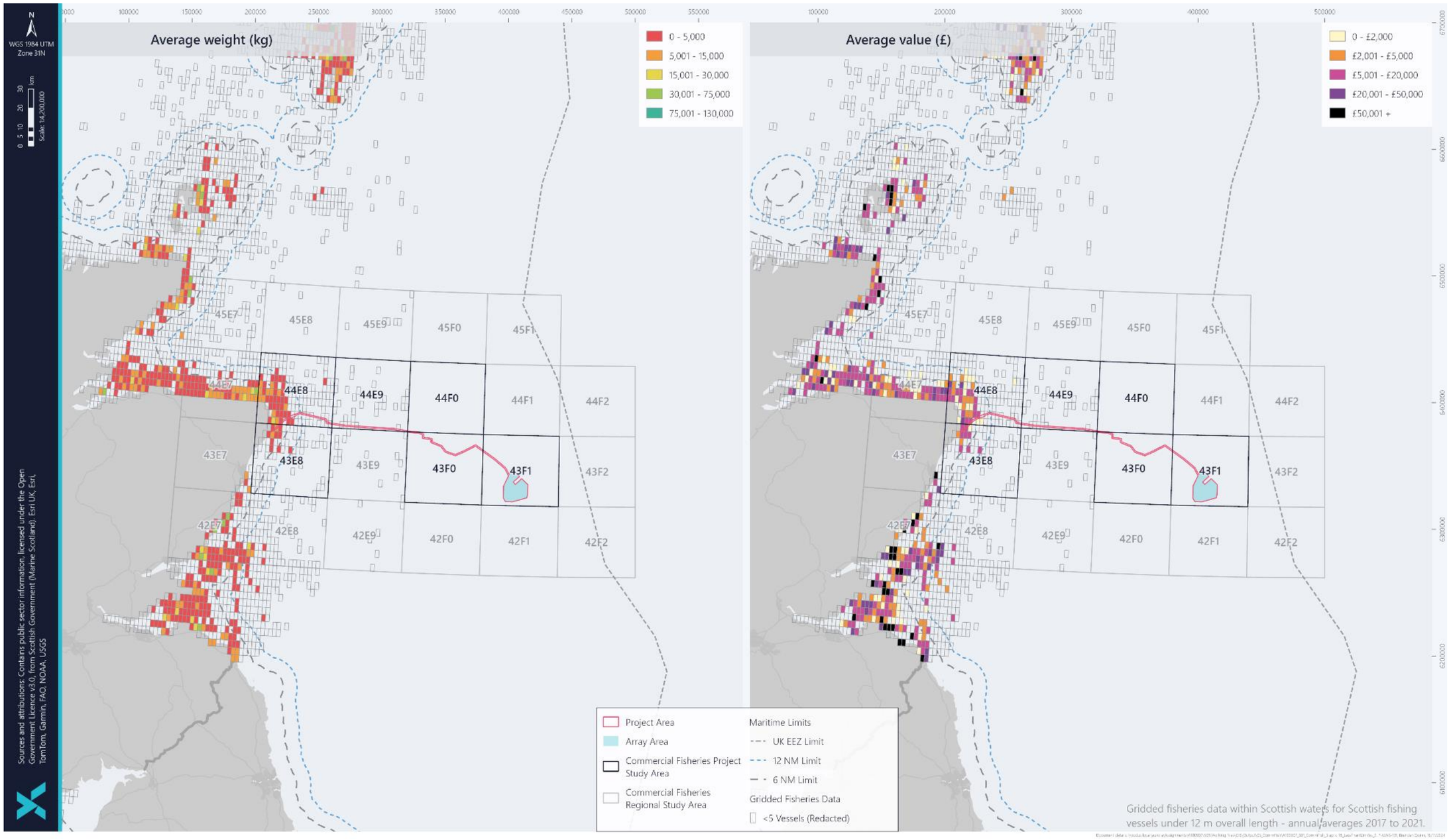

Figure 14-28 Average weight (kg) and average value (£) for vessels under 12 m in length[29] (2017-2021) (Scottish Government, 2024b)

[29] *The EICC is part of the Project Area within this figure, but is shown separately in the Study Area figure (Figure 14-1)*

14.4.5 Future baseline

As described in Section 14.2, it is anticipated that, as a result of the UK's exit as a member state from the EU, gradual changes to quota shares and TACs are being implemented to reduce the EU quota share in UK waters.

The future baseline environment may also change as a result of changes in:

- Stock abundance (e.g., as a result of range shifts for commercially valuable fish and shellfish species as a result of climate change);
- Fisheries management measures and licencing (such as changes in TAC, quota, NCMPA regulations);
- Changes to gear technology and/or efficiency;
- Fuel costs and/or maintenance costs; and
- Market prices (which could drive changes in target species).

The existing baseline described within Section 14.4.4 considers data over a minimum of three years in most cases. As such it is considered that the future baseline will be generally consistent with the trends described within the existing baseline above, whilst recognising that a multitude of factors can alter commercial fishing activity throughout the UK.

14.4.6 Summary and key issues

Table 14-4 Summary and key issues for Commercial Fisheries

SUMMARY AND KEY ISSUES	**PROJECT AREA**
	Array Area
	• The most commonly operated gear type within the Array Area are demersal trawls, followed by pelagic trawls, and otter trawls. • The most commonly landed species within the Array Area are *Nephrops*. • VMS effort and value data for all gear types is low to moderate within the Array Area. • According to available AIS evidence, there are limited fishing vessel tracks within the Array Area.
	EICC
	• The most commonly operated gear type within the inshore environment are demersal trawlers, and pots and traps, with some scallop dredging in the inshore section of the EICC. • With increasing distance offshore along the EICC the most commonly operated gear type is demersal trawlers, followed by demersal seines, and pelagic trawls. • The most commonly landed species within the inshore environment are crabs, haddock and *Nephrops*. • With increasing distance offshore along the EICC the most commonly landed species is *Nephrops*, followed by haddock and herring. • VMS effort and value data for all gear types is low to moderate along the length of the EICC. • According to available AIS evidence, there are limited fishing vessel tracks within the Project Area, with AIS data showing vessels activity decreases within increasing distance offshore along the length of the EICC.

14.4.7 Data gaps and uncertainties

It is well established that available data and information sources do not provide a complete representation of commercial fishing activities, particularly for fleets operating within the inshore environment. Vessels under 15 m in length are generally poorly represented within publicly available datasets, such as AIS and VMS. As such, the effort and value of vessels under 15 m and inshore fisheries is often underrepresented. The "*Gridded fisheries data within Scottish waters for Scottish fishing vessels under 12 m overall length (2024)*" provides one of the most comprehensive data sources for inshore fisheries within Scotland, however, the data is not collected continuously. It builds on the ScotMap data, which is outdated as the dataset is over 10 years old. Furthermore, surveillance sightings are not undertaken on a regular basis, and as such the vessels recorded only present a snapshot in time. Finally, any consultation data may include inaccuracies as the data may be subject to human error.

While all data and information sources identified in Table 14-3 have been carefully reviewed and described within the existing baseline characterisation, consideration has been given to each data source on a case-by-case basis to account for known limitations and uncertainties associated with them. Where relevant, the characterisation of the existing baseline has been supplemented by Project-specific consultation and engagement with stakeholders to identify and fill these data gaps and uncertainties as far as possible.

14.5 Impact assessment methodology

14.5.1 Impacts requiring assessment

The impacts identified as requiring consideration for Commercial Fisheries are listed in Table 14-5. Information on the nature of impact (i.e. direct or indirect) is also described.

Table 14-5 Impacts requiring assessment for Commercial Fisheries

POTENTIAL IMPACT	NATURE OF IMPACT
Construction and decommissioning	
Temporary loss of or restricted access to fishing grounds	Direct
Displacement of fishing effort to other areas	Direct/indirect
Interference with fishing activity as a result of increased vessel traffic	Direct
Increased steaming distances and times	Direct
Increased risk of loss or damage to fishing gear (snagging risk)	Direct
Changes to exploited fish and shellfish resources	Direct/indirect
Operation and maintenance	
Long-term loss of or restricted access to fishing grounds	Direct
Displacement of fishing effort to other areas	Direct/indirect
Interference with fishing activity as a result of increased vessel traffic	Direct
Increased steaming distances and times	Direct
Increased risk of loss or damage to fishing gear (snagging risk)	Direct
Changes to exploited fish and shellfish resources	Direct/indirect
Decommissioning*	

* In the absence of detailed information regarding decommissioning works, and unless otherwise stated, the impacts during the decommissioning phase are considered analogous with, or likely less than, those of the construction phase. Where this is not the case, decommissioning impacts have been listed separately and have been assessed in Section 14.6.2.1

14.5.2 Impacts scoped out of the assessment

No impacts have been scoped out of the Commercial Fisheries assessment.

14.5.3 Assessment methodology

An assessment of potential effects is provided separately for the construction, operation and maintenance, and decommissioning phases.

The assessment for Commercial Fisheries is undertaken following the principles set out in EIAR Vol. 2, Chapter 7: EIA Methodology. The sensitivity of the receptor is combined with the magnitude of effect to determine the impact significance. Topic-specific sensitivity and magnitude criteria are assigned based on professional judgement, as described in Table 14-6 and Table 14-7. It should be noted that there is currently no guidance available in relation to the definition of receptor sensitivity and magnitude of the effect for Commercial Fisheries receptors. Whilst the application of a systematic receptor sensitivity and magnitude of effect approach to determine impact significance helps guide the assessment of potential effects, it is difficult to apply standard definitions to sensitivity and magnitude consistently across the range of impacts and receptors requiring assessment in respect to Commercial Fisheries. Furthermore, impacts of offshore developments to Commercial Fisheries receptors cannot be easily categorised using this approach. As such, the assessment of potential effects to Commercial Fisheries receptors largely adopts a qualitative assessment approach and relies on expert judgement to draw conclusions on the sensitivity of the receptor and the magnitude of the effect.

The criteria for the assessment of safety risk to Commercial Fisheries (i.e., increased risk of loss or damage to fishing gear (snagging risk) in Section 14.6.1.5, Section 14.6.2.5, Section 14.7.2.5 and Section 14.7.3.5) differs from the assessment approach outlined within EIAR Vol. 2, Chapter 7: EIA Methodology. The assessment of safety risk for commercial fishing vessels considers the severity of consequence and frequency of occurrence (potential risk). This approach aligns with the recommendations made in Marine Guidance Note (MGN) 654 and the International Maritime Organization (IMO) Formal Safety Assessment (FSA) process (as detailed in EIAR Vol. 3, Chapter 15: Shipping and Navigation).

The sensitivity of the receptor considers the ability of the receptor to tolerate, adapt to and recover from a change within the marine environment. The sensitivity of a receptor is defined in consideration of the following factors, supplemented by expert judgement:

- The ability of a receptor to withstand or tolerate change;
- The ability of a receptor to recover from an impact (i.e., return to its baseline state);
- The ability of a receptor to adapt to an impact;
- The value of a receptor (i.e., the conservation value, protected status or economic value of a receptor).

The sensitivity of a receptor can be classed as 'negligible', 'low', 'medium', or 'high'. The definitions of receptor sensitivity which have been applied to the assessment of potential effect to Commercial Fisheries receptors are summarised in Table 14-6 below.

Table 14-6 Sensitivity criteria

SENSITIVITY OF RECEPTOR	DEFINITION
High	• Limited operational range and/or limited gear / target species versatility; and • High dependence upon a single fishing ground.
Medium	• Moderate extent of operational range and/or limited gear / target species versatility; and • Dependence upon a limited number of fishing grounds.
Low	• Extensive operational range and/or some gear / target species versatility; and • Ability to fish a number of fishing grounds.
Negligible	• Extensive operational range and high gear / target species versatility; and • Vessels are able to exploit a large number of fishing grounds.

The impact magnitude of effect is defined in consideration of the following factors:

- The spatial extent of the effect (i.e., the area over which the effect is likely to occur);
- The duration of the effect (i.e., the period of time over which the effect is likely to occur);
- The frequency of the effect (i.e., the number of times that an effect is likely to occur over the lifecycle of the Project);
- The intensity of the effect (i.e., severity of the effect); and
- The likelihood that the effect will occur.

The definitions of magnitude of effect which have been applied to the assessment of potential effects to Commercial Fisheries receptors are summarised in Table 14-7 below.

Table 14-7 Magnitude criteria

MAGNITUDE CRITERIA	DEFINITION
High	• The area affected by the impact sustains high levels of activity by the fleet and covers a moderate extent of its grounds; and/or • The impact is permanent or long-term (temporary but occurs over a long period (i.e., years)).
Medium	• The area affected by the impact sustains medium / high levels of activity by the fleet and covers a small extent of its grounds; and/or • The impact is temporary but occurs over a relatively long period (i.e., months).
Low	• The area affected by the impact sustains medium / low levels of activity by the fleet and covers a small extent of its grounds; and/or • The impact is temporary and occurs over a relatively short timescale (i.e., weeks).
Negligible	• The fleet has very little or no history of fishing in the area affected; and/or • The impact is short-term (i.e., days).
No change	• No change from baseline conditions.

The consequence and significance of effect is then determined using the matrix provided in EIAR Vol. 2, Chapter 7: EIA Methodology.

14.5.4 Embedded mitigation

Certain measures (primary and tertiary mitigation) have been adopted as part of the Project development process in order to reduce the potential for impacts to the environment, as presented in Table 14-8. These have been accounted for in the assessment presented below. The requirement for additional mitigation measures (secondary mitigation) will be dependent on the significance of the effects on Commercial Fisheries receptors.

Table 14-8 Embedded mitigation measures relevant to Commercial Fisheries

CODE	MITIGATION MEASURE	TYPE	DESCRIPTION	SECURED BY
MM-005	Target Depth of Lowering (DoL).	Primary	Static cables will be trenched and buried to a minimum depth of 0.4 m. Where this cannot be achieved, remedial cable protection will be applied. The cable burial target depth is informed by a Cable Burial Risk Assessment (CBRA) and implemented through the Cable Plan (CaP), which will be produced post-consent. EMF emissions associated with the cabling will be reduced by burial of between 90-100% of the cables at the DoL between 0.4 – 1.5 m.	Final cable design will be informed by the CBRA and detailed within the CaP, required under Section 36 Consent and/or Marine Licence conditions.
MM-008	Cable Plan (CaP).	Tertiary	The CaP will be provided post-consent and will detail the location / route and cable laying techniques of the IACs and Export/Import Cable and detail the methods for cable surveys during the operational life of the cables for the Project. This will be supported by survey results from the geotechnical, geophysical and benthic surveys. The CaP will also detail EMF of the cables deployed and methods to mitigate against any effects of EMF. A CBRA will also be undertaken and results included within the CaP which will detail cable specifications, cable installation, cable protection, target burial depths / depth of lowering and any hazards the cable will present during the lifespan of the cable. The CaP will also include methodologies of post construction and operational surveys and methodologies for cable inspection with measures to address and report any exposure of cables.	Final cable design will be informed by the CBRA and detailed within the CaP, required under Section 36 Consent and/or Marine Licence conditions.
MM-021	Vessel Management Plan (VMP)	Tertiary	A VMP will be developed and adhered to for the Project. The VMP will detail types, specifications and numbers of vessels, how vessel management will be coordinated and the location of ports, routes of passage and number of transits for the Project. The VMP will refer to the Scottish Marine Wildlife Watching Code and Guide to Best	A VMP will be required under the Section 36 Consent and/or Marine Licence conditions.

CODE	MITIGATION MEASURE	TYPE	DESCRIPTION	SECURED BY
			Practice for Watching Marine Wildlife for guidance on how vessels should behave around Marine Wildlife.	
MM-023	Consideration of commercial fisheries receptors in Project design.	Primary	Consultation on Project design and infrastructure specifications will be undertaken with Scottish Ministers and stakeholders throughout the post-consent phase of the Project. The final cable route and design will be informed by the CBRA and will be detailed within the CaP. The final FTU layout will be presented within the Development Specification and Layout Plan (DSLP).	The final cable route and design will be informed by the CBRA and will be detailed within the CaP. The final FTU layout will be presented within the DSLP. The CaP and DSLP are required under Section 36 and/or Marine Licence conditions.
MM-024	Boulder relocation.	Primary	As part of site preparation activities, any boulders removed from the Project Area and relocated will be accurately recorded and charted where feasible.	Secured under Section 36 and/or Marine Licence conditions.
MM-025	The use of guard vessels and Offshore Fisheries Liaison Officers (OFLOs).	Primary	Where required, guard vessels and OFLOs will be in place within the marine environment during the construction phase, major maintenance and decommissioning works where required. Guard vessels will ensure that effective communication between the Project and other sea users (including commercial fishers) is maintained, therefore reducing the potential for interactions between fishers and Project vessels and activities.	Requirements will be detailed within the FMMS, required under Section 36 Consent and/or Marine Licence conditions. An outline FMMS is provided as part of the Application EIAR Vol. 4 Appendix 34: Outline FMMS.

CODE	MITIGATION MEASURE	TYPE	DESCRIPTION	SECURED BY
MM-026	Fisheries Management and Mitigation Strategy (FMMS).	Tertiary	The FMMS will be developed further in consultation with the fishing industry post consent. The FMMS will expand on the detail of the Project's approach to fisheries liaison and co-existence within the marine environment	Required under Section 36 Consent and/or Marine Licence conditions. An outline FMMS is provided as part of the Application **EIAR Vol. 4 Appendix 34: Outline FMMS**. The outline FMMS also contains details on the proposed approach for fisheries liaison.
MM-027	Appointment of a Fisheries Liaison Officer (FLO).	Tertiary	A FLO has been appointed by the Project. The FLO will maintain communication with the fishing industry and other users of the sea, where required, throughout all phases of the Project (including pre-construction, construction, operation and maintenance and decommissioning). The FLO will distribute information on the safe operations of fishing activities at the site and will be a contact for fishermen and other sea users during the lifetime of the Project. The details of fisheries liaison for the Project, including the roles and responsibilities of the FLO will be detailed within the FMMS.	Appointment of an FLO will be required under Section 36 Consent and/or Marine Licence conditions. Details on the fisheries liaison for the Project, will be detailed in the FMMS, required under Section 36 Consent and/or Marine Licence conditions. An outline FMMS is provided as part of the Application **EIAR Vol. 4 Appendix 34: Outline FMMS**. The outline FMMS also contains details on the proposed approach for fisheries liaison.

CODE	MITIGATION MEASURE	TYPE	DESCRIPTION	SECURED BY
MM-028	Promulgation of information, such as Notice to Mariners (NtM), Kingfisher notifications and other navigational warnings.	Tertiary	Timely and efficient distribution of NtM and Kingfisher notifications will inform third party vessels of the position and nature of works associated with the Project. Information will include but not be limited to vessel routes, timings and locations, safety zones and advisory safe passing distances as required.	Procedures will be detailed within the Navigational Safety Plan (NSP) and the FMMS, required under Section 36 and/or Marine Licence Conditions. An outline FMMS is provided as part of the Application **EIAR Vol. 4 Appendix 34: Outline FMMS**.
MM-029	Compliance from all project vessels with International Regulations for the Prevention of Collision at Sea (COLREGs) and International Regulations for the Safety of Life at Sea (SOLAS).	Tertiary	All Project vessels will comply with the provisions of COLREGs and SOLAS, including displaying appropriate lights and shapes to indicate the nature of the work in progress and when vessels are restricted in their ability to manoeuvre. All project vessels will also broadcast via AIS.	Legislative requirement that will be detailed within the Environmental Management Plan (EMP), NSP and the FMMS, required under Section 36 Consent and/or Marine Licence conditions. An outline FMMS and EMP is provided as part of the Application **EIAR Vol. 4 Appendix 34: Outline FMMS** and **EIAR Vol. 4 Appendix 32: Outline EMP**.
MM-030	Procedure for accidental deposit of object(s) at sea.	Tertiary	A procedure will be developed and implemented to manage and mitigate the effects of any accidental deposit of object(s) on the seabed during works associated with the Project. This procedure will align with the Marine Directorate's (2024) Accidental Deposit of an Object at Sea Guidance. Accidental deposit(s) will be reported using published reporting forms (Marine Directorate, November 2024) and relevant parties	Procedures will be detailed within the EMP and FMMS, required under Section 36 and/or Marine Licence conditions.

CODE	MITIGATION MEASURE	TYPE	DESCRIPTION	SECURED BY
			will be notified at the time of recognition. Recovery will be attempted by the Project for all deposits and confirmed whether successful with the regulator and relevant stakeholders.	An outline FMMS and EMP is provided as part of the Application EIAR Vol. 4 Appendix 34: Outline FMMS and EIAR Vol. 4 Appendix 32: Outline EMP
MM-033	Charting of installed infrastructure.	Tertiary	Notification to the UK Hydrographic Office (UKHO) and Kingfisher of the proposed location and programme of works will facilitate the promulgation of maritime safety information and updating of nautical/admiralty charts and publications. All Project infrastructure (including FTUs, substations, subsea cables and mooring lines) will be marked on appropriately scaled nautical charts.	Charting requirements will be secured under a Marine Licence condition. Details will also be included in the FMMS, Lightning and Marking Plan (LMP), and NSP also required under the Section 36 Consent and/or Marine Licence conditions. An outline FMMS is provided as part of the Application EIAR Vol. 4 Appendix 34: Outline FMMS.
MM-035	Application for and implementation of safety zones.	Primary	Safety zones will be applied during construction and periods of major maintenance, and either statutory or advisory safety zones during operation (to be agreed during further consultation). Full details will be provided in the safety zone application; however, it is likely that the standard set of safety zones will be applied for: • Statutory 500 m rolling safety zones around FTUs and OSCPs where construction is ongoing as denoted by the presence of a construction vessel; • Safety zones of 50 m will be in place around FTUs and OSCPs during the construction phase when construction is not underway prior to commissioning of the windfarm; and; and	An application for safety zones will be made in accordance with Section 95 of the Energy Act 2004 and the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007.

CODE	MITIGATION MEASURE	TYPE	DESCRIPTION	SECURED BY
			• Temporary 500 m safety zones around structures where major maintenance is ongoing (as defined in The Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007). Where safety zones do not apply (e.g., around cable installation), use of advisory safe passing distances will be implemented.	Details will be included within the NSP, required under Section 36 Consent and/or Marine Licence conditions.

14.5.5 Worst-case scenario

As detailed in EIAR Vol. 2, Chapter 7: EIA Methodology, this assessment considers the worst-case scenario for the Project parameters which are predicted to result in the greatest environmental impact, known as the 'realistic worst-case scenario'. The worst-case scenario represents, for any given receptor and potential impact, the scenario that would result in the greatest potential for change.

Given that the worst-case scenario is based on the design option (or combination of options) that represents the greatest potential for change, confidence can be held that development of any alternative options within the design parameters will give rise to no worse effects than assessed in this impact assessment. Table 14-9 presents the worst-case scenario for potential impacts on Commercial Fisheries during construction, operation and maintenance and decommissioning.

Table 14-9 Worst-case scenario specific to Commercial Fisheries impact assessment

POTENTIAL IMPACT	WORST-CASE SCENARIO	JUSTIFICATION
Construction		
Displacement of fishing effort to other areas	• Pre-construction activities including: – Project specific surveys and site investigation; – Unexploded Ordnance (UXO) clearance (as required); – Pre-Lay Grapnel Runs (PLGR) along the length of the Export/Import Cable and IACs (seabed) routes; and – Boulder clearance: a total of 59.9 km of the Export/Import Cable route will require bounder clearance (with 100% of the Export/Import Cable route between Mean High Water Springs (MHWS) and 12 NM requiring boulder clearance), and 100% of total route length of IACs along seabed (280 km). • FTUs and OSCPs: – Maximum of 95 FTUs; – The floating substructures will each occupy a (surface) spatial footprint of 5,600 m^2; and – Up to two OSCPs, each will occupy a spatial footprint of 3,000 m^2; • IACs: – Up to 120 IACs with a total length of 280 km (on the seabed); – Total 5.6 km^2 area of seabed disturbance for the Array Area; • Export/Import Cable: – Maximum total route length of 230 km between landfall and the OSCPs; – Two High Voltage Direct Current (HVDC) cables and one fibre optic cable bundled in a single trench; and	This would result in the maximum spatial extent and duration of construction works which have the potential to result in the displacement of fishing effort from the Project Area.

POTENTIAL IMPACT	WORST-CASE SCENARIO	JUSTIFICATION
	– At landfall the Export/Import Cable will be installed via Horizontal Directional Drilling (HDD), one exit point with three boreholes in a water depth of approximately 26.5 m below MHWS; • Statutory 500 m safety zones will be in place on a 'rolling' basis around FTUs and OSCPs during construction works and while Restricted in Ability to Manoeuvre vessels are present. Safety zones will be reduced to 50 m around any FTUs and OSCPs where construction works are completed, but are awaiting commissioning; • Advisory 500 m safety zones will be in place around Project vessels. These safety zones will move with the vessel during its operation; • Up to six year construction period; • Up to 22 vessels operating simultaneously within the marine environment during the construction phase; and • Construction works typically undertaken 24 hours a day, seven days a week offshore, dependent on weather conditions.	
Temporary loss of or restricted access to fishing grounds	• As displacement from the Project Area is considered to result in the greatest potential for the temporary loss of or restricted access to fishing grounds, the worst-case scenario defined for displacement of fishing effort is considered applicable to this assessment.	This would result in the maximum spatial extent and duration of construction works which have the potential to result in the temporary loss of or restricted access to fishing grounds.
Interference with fishing activity as a result of increased vessel traffic	• Up to 22 vessels operating simultaneously during the construction phase, making a total of 319 transits per year across the six year construction period.	The maximum number of Project vessel activities within the marine environment throughout the construction phase which would result in the greatest possible interference/conflict with existing Commercial Fisheries activities.

POTENTIAL IMPACT	WORST-CASE SCENARIO	JUSTIFICATION
Increased steaming distances and times	• As per worst-case scenario for displacement of fishing effort.	This would result in the maximum spatial extent and duration of construction works which have the potential to displace fishing activities from the Project Area and, therefore, result in increased steaming distances and times.
Increased risk of loss or damage to fishing gear (snagging risk)	• As per worst-case scenario for displacement for fishing effort; and • Any objects dropped by Project personnel, contractors or subcontractors (which are regarded as a hazard).	This would result in the maximum spatial extent and maximum number of Project infrastructure which would result in the greatest potential for safety issues for fishing vessels.
Changes to exploited fish and shellfish resources	• As per worst-case scenario for displacement of fishing effort.	This would result in the maximum spatial extent of Project infrastructure which has the potential to result in the temporary loss of spawning and nursery grounds for commercially valuable fish and shellfish species.
Operation and maintenance		
Displacement of fishing effort to other areas	• Operational life of 35 years; • FTUs and OSCPs: – Minimum FTU spacing (depending on WTG choice) between 928-1,080 m; – The FTU floating substructures will each occupy a (surface) spatial footprint of 5,600 m^2; – Up to six mooring chains per FTU, with a maximum length of 4,541 m; and	The maximum physical spatial presence of infrastructure during the operational life of the Project which would result in the long-term displacement of fishing effort from the Project Area.

POTENTIAL IMPACT	WORST-CASE SCENARIO	JUSTIFICATION
	– OSCPs jacket leg spacing (at seabed and surface) 40-45 m between corners; • IACs: – Total length of 350 km with 70 km maximum length of IACs within water column, and 280 km on the seabed; – 0.4 m minimum Depth of Burial (DoB); – 0.0325 km^2 total footprint area of IACs protection (excluding crossings); and – Cable protection methods including rock bags, concrete mattresses, cast iron shells or rock placement. • Export/Import Cable: – Maximum total length of 230 km between landfall and the OSCPs; – 0.4 m minimum DoB; – Installation via ploughing, trenching or jetting and assumes – 100% cable buried within the East of Gannet and Montrose Fields NCMPA (except for cable/pipeline crossings); and – 95% cable buried between 12 NM and NCMPA (except for cable/pipeline crossings). • Up to eight crossings within the Array Area with a total spatial footprint of 36,480 m^2. Total volume of rock per crossing of 3,056 m^3; • Up to 20 cable / pipeline crossings along the length of the Export/Import Cable route with a total spatial footprint of 9,063 m^2 per crossing; and • Temporary statutory 500 m safety zones around heavy maintenance vessels and while Restricted in Ability to Manoeuvre vessels are present and 50 m advisory clearance distances from all other maintenance vessels during operations within the marine environment	

POTENTIAL IMPACT	WORST-CASE SCENARIO	JUSTIFICATION
Long-term loss of or restricted access to fishing grounds	• As per worst-case scenario for displacement of fishing effort.	The maximum physical spatial presence of infrastructure during the operational life of the Project which would result in the long-term loss of or restricted access to fishing grounds within the Project Area.
Interference with fishing activity as a result of increased vessel traffic	• Up to ten vessels operating simultaneously during the operation and maintenance phase of the Project; and • Temporary statutory 500 m safety zones around heavy maintenance vessels and while Restricted in Ability to Manoeuvre is engaged. and 50 m advisory clearance distances from all other maintenance vessels during operations within the marine environment	The maximum number of Project vessel activities within the marine environment throughout the operation and maintenance phase which would result in the greatest possible interference/conflict with existing Commercial Fisheries activities.
Increased steaming distances and times	• As per worst-case scenario for displacement of fishing effort.	This would result in the maximum spatial extent and duration of operation and maintenance works which have the potential to displace fishing activities from the Project Area and, therefore, result in increased steaming distances and times.
Increased risk of loss or damage to fishing gear (snagging risk)	• As per worst-case scenario for displacement of fishing effort; and • Any objects dropped by Project personnel, contractors or subcontractors (which are regarded as a hazard).	The maximum physical spatial presence of infrastructure during the operational life of the Project which would result in the long-term loss of or restricted access to fishing grounds within the Project Area.

POTENTIAL IMPACT	WORST-CASE SCENARIO	JUSTIFICATION
Changes to exploited fish and shellfish resources	• As per worst-case scenario for displacement of fishing effort.	This would result in the maximum spatial extent of Project infrastructure which has the potential to result in the long-term loss of spawning and nursery grounds for commercially valuable fish and shellfish species.
Decommissioning		
In the absence of detailed information regarding decommissioning works, the implications for Commercial Fisheries are considered analogous to or likely less than those of the construction phase. Therefore, the worst-case parameters defined for the construction stage are also applicable to the decommissioning phase. The approach to decommissioning for the Project is outlined in EIAR Vol 2, Chapter 5: Project Description.		

14.6 Assessment of potential effects

14.6.1 Potential effects during construction

14.6.1.1 Temporary loss of or restricted access to fishing grounds

The construction phase for the Project will be undertaken over a period of up to six years, with up to one year for Export / Import Cable construction and five years for Array Area construction. Construction activities undertaken 24 hours a day, seven days a week offshore dependent on weather conditions, which will likely limit the majority of major construction works to seasonal campaigns. During the construction phase of the Project, it is expected that a statutory 500 m safety zone is placed around the outer edge of the proposed FTU and OSCPs locations. This will be applied for under Section 95 of the Energy Act and in accordance with Schedule 16 of the Energy Act 2004, the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007. These safety zones will be implemented on a 'rolling' basis where construction work is ongoing and while Restricted in Ability to Manoeuvre vessels are in operation around FTUs and OSCPs. As such, when construction is completed at one location, the 500 m statutory safety zone will be lifted, and a subsequent 500 m statutory safety zone will be placed around the next construction location. It is expected that there will be a maximum of five statutory safety zones at one time during construction. Where construction work is not ongoing, the safety zones will be reduced to 50 m around any completed structure prior to commissioning. The EICC will not have a statutory construction safety zone, however, heavy maintenance Project vessels for the Export/Import Cable will have a 500 m advisory safety zone around them while undertaking construction works. By adopting this approach, the area occupied by statutory safety zones will increase and decrease across the Project Area over the six year construction phase, owing to the transient nature of construction activities.

While the implementation of statutory safety zones during the construction phase will result in a temporary loss of or restricted access to fishing grounds, the implementation of embedded mitigation measures (Table 14-8) will minimise potential effects to Commercial Fisheries. Construction activities and vessel movements will be communicated to the commercial fishing industry via the FLO and promulgation of information through NtMs and Kingfisher notifications. Where required, guard vessels and/or an Offshore Fisheries Liaison Officer (OFLO) will be used throughout the construction phase to aid communication between Project vessels and active fishing vessels within the area.

14.6.1.1.1 Demersal trawlers

As detailed within Section 14.4.4.2.1.1, demersal trawler VMS effort is present at low effort and value along the length of the EICC, with moderate effort and value within the Array Area. Effort for demersal trawlers is higher within the north of the Regional Study Area (ICES rectangles 44E7, 45E8, 45E9, 45F0, 45F1 and 44F0) (Figure 14-5).

While some fleets operating demersal trawlers have the ability to target a wide range of species, some demersal species are dependent upon specific seabed habitats and are therefore spatially constrained to areas where these habitats are available (e.g., *Nephrops*). Demersal trawl effort within the Project Area and Regional Study Area is closely associated with the spatial distribution of *Nephrops* and suitable *Nephrops* habitats. It is acknowledged however that the majority of landings for demersal trawlers within the EICC and Array Area are by larger vessels, and consequently the operational range of these vessels is wide, and these vessels are expected to have the ability to fish a number of fishing grounds. Therefore, demersal trawlers are considered to be of low sensitivity to temporary loss of or restricted access to fishing grounds during the construction phase within both the EICC and Array Area.

Any temporary loss of or restricted access to fishing grounds along the EICC will only occur as a result of the physical presence of Project vessels or due to 500 m advisory safety zones around Project vessels during construction activities or 50 m advisory zones in areas with unburied cable (i.e., areas of cable awaiting burial or protection). As detailed in Section 14.6.1.1 above, statutory 500 m safety zones will be in place around Project vessels while in Restricted in Ability to Manoeuvre, and 50 m statutory safety zones will be in place around partially constructed infrastructure (FTU's and OSCPs) awaiting commissioning on a 'rolling' basis throughout the construction phase. Therefore, any loss of or restricted access to fishing grounds will be highly localised and temporary in nature, owing to the transient nature of installation activities. Furthermore, any temporary loss of or restricted access to fishing grounds will be mitigated through the implementation of the embedded mitigation measures (as detailed in Table 14-8) which will ensure the timely dissemination of information to fishers of the location and nature of works being undertaken throughout the construction phase of the project. Accordingly, the effect of temporary loss of or restricted access to fishing grounds is considered to have a low magnitude for demersal trawlers operating within the EICC.

Within the Array Area, VMS effort and value data shows moderate demersal trawling activity, therefore any loss of or temporary restricted access to fishing grounds will occur as a result of the physical presence of Project vessels or due to 500 m safety zones around Project vessels or partially constructed infrastructure.

As detailed within EIAR Vol. 2, Chapter 5: Project Description the construction phase for the Project will be undertaken over a period of up to six years, with up to two years for Export/Import Cable construction and five years for Array Area construction. Construction activities undertaken 24 hours a day, seven days a week offshore dependent on weather conditions, which will likely limit the majority of major construction works to seasonal campaigns. During the six year total construction phase of the Project (inclusive of the Export/Import Cable and the Array Area), statutory safety zones will be in place on a 'rolling' basis throughout this six year construction period. As such, access to fishing grounds within the Array Area may be partially restricted throughout the six year construction phase of the Project. Consequently, the effect of temporary loss of or restricted access to fishing grounds is considered to have a medium magnitude for demersal trawlers operating within the Array Area.

Evaluation of significance

EICC - taking the low sensitivity of demersal trawlers and the low magnitude of effect within the EICC, the overall effect of temporary loss of or restricted access to fishing grounds for demersal trawlers within the EICC is considered to be minor and therefore not significant in EIA terms.

Array area – taking the low sensitivity of demersal trawlers and the medium magnitude of effect within the Array Area, the overall effect of temporary loss of or restricted access to fishing grounds for demersal trawlers within the Array Area is considered to be minor and therefore not significant in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Medium	Minor
Impact significance-NOT SIGNIFICANT			

14.6.1.1.2 Pelagic trawlers

As detailed within Section 14.4.4.2.1.2, VMS data for pelagic trawl effort and value is low along the length of the EICC and within the Array Area, with effort heavily concentrated in the northern portion of the Regional Study Area (ICES rectangles 45E7, 45E8, 45E9, 45F0, 44F0), to the south of the EICC within ICES rectangle 43E9 and in the south of the Regional Study Area within ICES rectangle 42F0 (Figure 14-8). It is acknowledged that the majority of pelagic trawlers are larger vessels, and consequently the operational range of these vessels is wide, and these vessels are expected to have the ability to fish a number of fishing grounds. Recognising the low value and effort of pelagic trawling activity within the Project Area, and the availability of higher value pelagic fishing grounds within the Regional Study Area, pelagic trawlers are considered to be of low sensitivity to loss of or restricted access to fishing grounds during the construction phase within both the EICC and Array Area.

During the construction phase of the Export/Import Cable, advisory safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning (i.e., areas of cable awaiting burial or protection) will be implemented on a 'rolling' basis throughout the construction phase (as detailed in Section 14.6.1.1 above). Therefore, any loss of or restricted access to fishing grounds will be highly localised and temporary in nature, owing to the transient nature of Export/Import Cable installation activities. Furthermore, any temporary loss of or restricted access to fishing grounds will be mitigated through the implementation of the embedded mitigation measures (as detailed in Table 14-8) which will ensure the timely dissemination of information to fishers of the location and nature of works being undertaken throughout the construction phase of the project.

As detailed above and within EIAR Vol. 2, Chapter 5: Project Description the construction phase for the Project will be undertaken over a period of up to six years, with construction activities undertaken 24 hours a day, seven days a week offshore dependent on weather conditions, which will likely limit the majority of major construction works to seasonal campaigns. During the six year construction phase of the Project, statutory safety zones will be in place on a 'rolling' basis throughout this six year construction period. Given the low effort of pelagic trawlers within the EICC,

the highly localised and transient nature of construction works and the ability of fleets to utilise other, higher value fishing grounds nearby, the effect is considered to have a **low magnitude** within both the EICC and Array Area.

Evaluation of significance

EICC - taking the low sensitivity of pelagic trawlers and the low magnitude of effect within the EICC, the overall effect of temporary loss of or restricted access to fishing grounds for pelagic trawlers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity of pelagic trawlers and the low magnitude of effect within the Array Area, the overall effect of temporary loss of or restricted access to fishing grounds for pelagic trawlers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Low	Minor
Impact significance-NOT SIGNIFICANT			

14.6.1.1.3 Scallop dredgers

As detailed within Section 14.4.4.2.1.3, VMS data for dredge vessel effort and value within the Commercial Fisheries Study Area is heavily concentrated to the inshore environment of ICES rectangles 45E7, 44E7, 44E8, 43E8, 43E9, 42E7 and 42E8 (Figure 14-10). The EICC within ICES rectangle 44E8 and 43E8 will pass through a small area of moderate to high dredging effort between 6-12 NM. VMS dredge vessel effort and value is low along the remaining length of the EICC and within the Array Area.

Scallop dredgers are characteristically nomadic in nature and operate in waters around the UK to target the fluctuating location and density of scallops over time. As such, the spatial distribution of scallop dredgers and available fishing grounds is widespread throughout the Commercial Fisheries Study Area, adjacent waters and the wider UK marine environment. Despite this however, the implementation of dredge fishing restrictions across the UK and the ongoing development of renewable energy infrastructure within the UK's marine environment has restricted some ability of scallop dredgers to easily and freely move from one dredging location to another. As such scallop dredgers are considered to have a **medium sensitivity** to the temporary loss of or restricted access to fishing grounds during the construction phase.

Given the low VMS effort and value of vessels operating dredgers along the EICC between 12 NM and the Array Area, and within the Array Area itself, the temporary loss of or restricted access to fishing grounds will primarily affect scallop dredgers operating between the Export/Import Cable landfall and the 12 NM limit (within ICES rectangles 44E8 and 43E8). As detailed in Section 14.6.1.1 above, safety zones around Project vessels and partially constructed infrastructure (i.e., areas of cable awaiting burial or protection) will be implemented on a 'rolling' basis throughout the construction phase. Therefore, any loss of or restricted access to fishing grounds will be highly localised and

temporary in nature, owing to the transient nature of the installation activities. Furthermore, any temporary loss of or restricted access to fishing grounds will be mitigated through the implementation of the embedded mitigation measures (as detailed in Table 14-8) which will ensure the timely dissemination of information to fishers of the location and nature of works being undertaken throughout the construction phase of the project. Therefore, the effect of temporary loss of or restricted access to fishing grounds is considered to have a **low magnitude** for scallop dredgers operating within both the EICC and Array Area.

Evaluation of significance

EICC - taking the medium sensitivity of scallop dredgers and the low magnitude of effect within the EICC, the overall effect of temporary loss of or restricted access to fishing grounds for scallop dredgers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the medium sensitivity of scallop dredgers and the low magnitude of effect within the Array Area, the overall effect of temporary loss of or restricted access to fishing grounds for scallop dredgers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor

Impact significance-**NOT SIGNIFICANT**

14.6.1.1.4 Passive gears

As detailed in Section 14.4.4.2.1.4, VMS effort and value for passive fishing gear throughout the Commercial Fisheries Study Area is generally low, with a moderate increase in both effort and value between the EICC landfall and the 12 NM limit (ICES rectangles 44E8 and 43E8). Within the Commercial Fisheries Study Area, gridded fisheries data (Section 14.4.4.4.1) indicated that fishing fleets utilising passive gears are primarily operating mackerel lines and crab and lobster pots. The number of vessels operating passive gears within the portion of the EICC located within ICES rectangles 44E8 and 43E8 is low to moderate, with a maximum annual average of 30 vessels between 2017-2021 (Section 14.4.4.2.1.4).

Fleets operating passive gears have less mobility within the marine environment, owing to both the (usually smaller) size of the vessels and the nature of the gear that is being deployed (i.e., directly on the seabed). The implementation of 'rolling' safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning (i.e., FTU's and OSCPs) <12 NM limit will be highly localised, temporary and transient in nature. However, given the limited mobility of passive gears within the Commercial Fisheries Study Area and the moderate effort of fleets operating passive gears <12 NM limit of ICES rectangles 44E8 and 43E8, passive gears are considered to be of **medium sensitivity** to loss of or restricted access to fishing grounds during the construction phase.

The temporary loss of or restricted access to fishing grounds during the construction phase may occur throughout the EICC and Array Area, with fishers operating passive gears requested to relocate their gear outside of active construction areas. As safety zones will be implemented on a 'rolling' basis, during periods where no construction activity is occurring within the EICC or Array Area, guard vessels will be present in areas of partially constructed infrastructure (i.e., areas of cable awaiting burial or protection), with 50 m safety zones in operation around any completed structure awaiting commissioning. The embedded mitigation measures detailed in Table 14-8 will reduce potential effects to fishers operating passive gears through ensuring ongoing and efficient communication between the Project and the fishing industry. The promulgation of information on the presence of safety zones and the location of any partially constructed infrastructure will be facilitated in a timely manner through a FLO and pre-established communication channels (including Kingfisher Bulletins and NtMs).

While the VMS value of passive gears within this area is low to moderate, ScotMap (2013) and gridded data (as presented in Section 14.4.4.4) highlight a moderate to high number of vessels under 15 m in length operating within 12 NM of the landfall (ranging from <10 to a maximum of 94 vessels). The portion of the EICC which extends from landfall to the 12 NM limit passes through the area of highest vessel activity across the Commercial Fisheries Study Area. The smaller operational range of these smaller vessels results in limited number available grounds that can be accessed. Therefore, the effect to fishers operating passive gears within the EICC is considered to have a **high magnitude**.

Given the limited number of vessels operating passive gears within the Array Area, the effect is considered to have a **low magnitude**.

Evaluation of significance

EICC - Taking the medium sensitivity of passive gears and the high magnitude of effect within the EICC, the overall effect of temporary loss of or restricted access to fishing grounds for passive gears within the EICC is considered to be **moderate** and therefore **significant** in EIA terms.

Array Area - Taking the low sensitivity of passive gears and the low magnitude of effect within the Array Area, the overall effect of temporary loss of or restricted access to fishing grounds for passive gears within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	High	Moderate
Array Area	Medium	Low	Minor

EICC Impact significance-**SIGNIFICANT**

Array Area Impact significance – **NOT SIGNIFICANT**

In addition to the embedded mitigation measures mentioned above and detailed within Table 14-8, the Applicant will continue engagement with the fishing industry and stakeholders directly affected by construction works and, as secondary mitigation, will adhere to the FLOWW guidance, where applicable. With consideration given to the implementation of these secondary mitigation measures, the evaluation of significance for passive gears within the EICC would reduce to having a **low magnitude** of effect. Therefore, the residual consequence is **minor** and **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor

Residual EICC Impact significance – **NOT SIGNIFICANT**

Residual Array Area Impact significance – **NOT SIGNIFICANT**

14.6.1.1.5 Non-UK vessels

Non-UK vessels targeting fishing grounds within UK waters are expected to have a large operational range. As detailed within Section 14.4.4.1.2, the number of non-UK vessels operating within the Commercial Fisheries Study Area is low across the EICC and Array Area in comparison to GBR registered vessels, with non-UK vessel activity closely associated with the FU7 (Fladen) *Nephrops* grounds to the north of the Project Area (Figure 14-7) and within ICES rectangles 43E8 and 43E9 to the south of the EICC. With consideration given to the large operational ranges of non-UK vessels and the wider availability of fishing grounds throughout the Commercial Fisheries Study Area and adjacent waters, non-UK vessels are considered to have a **negligible sensitivity** to the temporary loss of or restricted access to fishing grounds during the construction phase.

Surveillance sightings data for the Commercial Fisheries Study Area indicates that non-UK vessel activity within the EICC and Array Area is very low (Figure 14-2) (MMO, 2019).Given the very low presence of non-UK vessels within the EICC and Array Area, in addition to the highly localised and temporary nature of any loss of or restricted access to fishing grounds during the construction phase, the effect is considered to have a **negligible magnitude**.

Evaluation of significance

EICC - taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect the overall effect of temporary loss of or restricted access to fishing grounds for non-UK fishing fleets in the EICC is considered to be **negligible** and therefore **not significant** in EIA terms.

Array Area - taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect, the overall effect of temporary loss of or restricted access to fishing grounds for non-UK fishing fleets in the Array Area is considered to be **negligible** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Negligible	Negligible	Negligible
Array Area	Negligible	Negligible	Negligible

Impact significance-**NOT SIGNIFICANT**

14.6.1.2 Displacement of fishing effort to other areas

During the construction phase of the Project, the temporary loss of access to fishing grounds has the potential to displace fishing activity from within the Project Area to alternative areas. Displacement of fishing activity can result in competition for both space and resources both within a fleet (e.g., if passive gears are displaced from within the Project Area to an area which is already utilised by passive gears) or between fleets (e.g., if passive gears are displaced from the Project Area and into an area utilised by mobile gears). Displacement of fishing activity from within the Project Area to other areas can result in both a direct effect (i.e., the fleet that is being displaced) and an indirect effect (i.e., secondary displacement effects) to fishing fleets.

During the construction phase, displacement may occur as a result of 500 m safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning (as applied for under the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007).

This assessment of displacement of fishing effort to other areas considers the direct and indirect effect of fishing fleets being displaced from within the Project Area. It is acknowledged that the concept of displacement is complex and is influenced by a number of different factors. As such, in consideration of producing a proportionate EIA, this assessment has been developed based on the following assumptions:

- The mobile gear fishing vessels displaced from within the Project Area have a greater operational range than the spatial extent of the Project Area;
- Alternative fishing grounds for mobile gear vessels have a wider availability and will be less sensitive to displacement effects;
- The static fishing gear vessels displaced from within the Project Area have a smaller operational range than the mobile gear fishing vessels; and
- Alternative fishing grounds for static gear vessels are not as widely available and will be more sensitive to displacement effects.

14.6.1.2.1 Demersal trawlers

As detailed above, demersal trawler VMS effort is present at low effort and value along the length of the EICC, with moderate effort and value within the Array Area. Effort for demersal trawlers is higher within the Regional Study Area within ICES rectangles 44E7, 45E8, 45E9, 45F0, 45F1 and 44F0 (Figure 14-5).

While some fleets operating demersal trawlers have the ability to target a wide range of species, some demersal species are depended upon specific seabed habitats and are therefore spatially constrained to areas where these habitats are available (e.g., *Nephrops*). It is acknowledged however that the majority of landings for demersal trawlers within the EICC and Array Area are by larger vessels, and consequently the operational range of these vessels is wide, and these vessels are expected to have the ability to fish a number of fishing grounds. Therefore, demersal trawlers are considered to be of low sensitivity to displacement from fishing grounds during the construction phase within both the EICC and Array Area.

Any temporary displacement of fishing effort from within the EICC to other areas will only occur as a result of the physical presence of Project vessels and associated 500 m safety zones and 50 m advisory safety zones in areas with unburied cable (i.e., areas of cable awaiting burial or protection). As detailed in Section 14.6.1.1 above, safety zones around Project vessels and partially constructed infrastructure will be implemented on a 'rolling' basis throughout the construction phase, with any loss of or restricted access to fishing grounds will be highly localised and temporary in nature. Furthermore, any temporary loss of or restricted access to fishing grounds will be mitigated through the implementation of the embedded mitigation measures (as detailed in Table 14-8) which will ensure the timely dissemination of information to fishers of the location and nature of works being undertaken throughout the construction phase of the project. Therefore, the effect of displacement from fishing grounds is considered to have a low magnitude for demersal trawlers operating within the EICC.

Within the Array Area VMS effort and value data is moderate, and any loss of or temporary restricted access to fishing grounds will occur as a result of the physical presence of vessels and associated 500 m safety zones and partially constructed infrastructure.

As detailed above and within EIAR Vol 2, Chapter 5: Project Description the construction phase for the Project will be undertaken over a period of up to six years, with up to one year for EICC construction and five years for Array Area construction. Construction activities undertaken 24 hours a day, seven days a week offshore dependent on weather

conditions, which will likely limit the majority of major construction works to seasonal campaigns. During the six year total construction phase of the Project (inclusive of the EICC and Array Area), statutory safety zones will be in place on a 'rolling' basis throughout this six year construction period. As such, fleets operating demersal trawlers within the Array Area may be displaced from parts of the Array Area throughout the construction phase. Therefore, the effect of displacement from fishing grounds is considered to have a **medium magnitude** for demersal trawlers operating within the Array Area.

Secondary displacement effects on demersal trawlers may also occur as a result of fleets being displaced from within the EICC and Array Area. Vessels operating other types of mobile gear typically also have a wider operational range and are therefore less likely to compete for resources and space with any demersal trawlers displaced from the Project Area. It is also anticipated that any displaced passive gears will largely avoid fishing grounds established for demersal trawlers, reducing any potential for damage to static gear as a result of displaced mobile gear.

Evaluation of significance

EICC – taking the low sensitivity of demersal trawlers and the low magnitude of effect within the EICC, the overall effect of displacement from fishing grounds for demersal trawlers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity of demersal trawlers and the medium magnitude of effect within the Array Area, the overall effect of displacement from fishing grounds for demersal trawlers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Medium	Minor
Impact significance-**NOT SIGNIFICANT**			

14.6.1.2.2 Pelagic trawlers

As detailed above VMS data for pelagic trawl effort and value is low along the length of the EICC and within the Array Area, with effort heavily concentrated to the northern portion of the Regional Study Area (ICES rectangles 45E7, 45E8, 45E9, 45F0, 44F0), to the south of the EICC within ICES rectangle 43E9 and to the south of the Regional Study Area within ICES rectangle 42F0 (Figure 14-8). Recognising the low value and effort of pelagic trawling activity within the Project Area, and the availability of higher value pelagic fishing grounds within the Regional Study Area, pelagic trawlers are considered to be of low sensitivity to displacement from fishing grounds during the construction phase within both the EICC and Array Area.

During the construction phase of the EICC, safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning will be implemented on a 'rolling' basis throughout the construction phase (as detailed in Section 14.6.1.2.1). Therefore, any displacement of fishing effects will be highly localised and temporary in nature. Furthermore, any temporary loss of or restricted access to fishing grounds will be mitigated through the implementation of the embedded mitigation measures (as detailed in Table 14-8) which will ensure the timely dissemination of information to fishers of the location and nature of works being undertaken throughout the construction phase of the project.

As detailed above and within EIAR Vol. 2, Chapter 5: Project Description the construction phase for the Project will be undertaken over a period of up to six years, with construction activities undertaken 24 hours a day, seven days a week offshore dependent on weather conditions, which will likely limit the majority of major construction works to seasonal campaigns. During the six year construction phase of the Project, statutory safety zones will be in place on a 'rolling' basis. As such, fishing effort will be displaced throughout the six year construction phase of the Project. Given the low effort of pelagic trawlers within the EICC, the highly localised and transient nature of construction works and the ability of fleets to utilise other, higher value fishing grounds nearby, the effect is considered to have a low magnitude within both the EICC and Array Area.

It is expected that secondary displacement effects on pelagic trawlers will be minimal due to a very limited number of vessels that may be displaced from within the EICC and Array Area. It is also anticipated that vessels operating other types of mobile gear typically have a wider operational range and are therefore less likely to compete for resources and space with any pelagic trawlers displaced from the Project Area. Furthermore, it is not anticipated that any displaced passive gears will move into established pelagic fishing grounds, as these are usually further offshore.

Evaluation of significance

EICC – taking the low sensitivity of pelagic trawlers and the low magnitude of effect within the EICC, the overall effect of displacement from fishing grounds for pelagic trawlers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

*Array Area - t*aking the low sensitivity of pelagic trawlers and the low magnitude of effect within the Array Area, the overall effect of displacement from fishing grounds for pelagic trawlers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Low	Minor

Impact significance-**NOT SIGNIFICANT**

14.6.1.2.3 Scallop dredgers

As detailed above, VMS data for dredge vessel effort within the Commercial Fisheries Study Area is heavily concentrated along the coast and within the inshore environment associated with the EICC (between landfall and the 12 NM limit). VMS dredge effort along the EICC between 6-12 NM limit is moderate to high, with effort and value low along the remaining length of the EICC >12 NM offshore and within the Array Area.

Given the characteristically nomadic nature of scallop dredgers and the wide availability of alternative fishing grounds throughout the UK, the spatial distribution of scallop dredgers and available fishing grounds are widespread throughout the Commercial Fisheries Study Area, adjacent waters and the wider UK marine environment. Despite this however, the implementation of dredge fishing restrictions across the UK and the ongoing development of renewable energy infrastructure within the UK's marine environment has restricted the ability of scallop dredgers to easily and freely move from one dredging location to another. As such scallop dredgers are considered to have a **medium sensitivity** to the displacement of fishing effort to other areas during the construction phase.

Given the low VMS effort and value of vessels operating dredgers along the EICC between 12 NM and the Array Area, and within the Array Area itself, the displacement of fishing effort to other areas will primarily affect scallop dredgers operating between the Export/Import Cable landfall and the 12 NM limit. Statutory safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning (i.e., FTU and OSCPs infrastructure) will be implemented on a 'rolling' basis throughout the construction phase. Any displacement of fishing effort to other areas will be highly localised and temporary in nature, owing to the transient nature of Export/Import Cable installation activities. Furthermore, any potential effects will be mitigated through the implementation of the embedded mitigation measures (as detailed in Table 14-8) which will ensure the timely dissemination of information to fishers of the location and nature of works being undertaken throughout the construction phase of the project. Therefore, the effect of displacement of fishing effort to other areas is considered to have a **low magnitude** for scallop dredgers operating within both the EICC and Array Area.

Secondary displacement effects on scallop dredgers may also occur as a result of fleets being displaced from within the EICC and Array Area. Vessels operating other types of mobile gear typically also have a wider operational range and are therefore less likely to compete for resources and space with any scallop dredgers displaced from the Project Area. It is also anticipated that any displaced passive gears will largely avoid fishing grounds established for scallop dredgers, reducing any potential for damage to static gear as a result of displaced mobile gear.

Evaluation of significance

EICC – taking the medium sensitivity of scallop dredgers and the low magnitude of effect within the EICC, the overall effect of displacement of fishing effort to other areas for scallop dredgers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area – taking the medium sensitivity of scallop dredgers and the low magnitude of effect within the Array Area, the overall effect of displacement of fishing effort to other areas for scallop dredgers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor
Impact significance – **NOT SIGNIFICANT**			

14.6.1.2.4 Passive gears

VMS effort and value for passive fishing gear throughout the Commercial Fisheries Study Area is generally low, with a moderate increase in both effort and value between the EICC landfall and the 12 NM limit. Within the Commercial Fisheries Study Area, gridded fisheries data (Section 14.4.4.4.1) indicated that fishing fleets utilising passive gears are primarily operating mackerel lines and crab and lobster pots. The number of vessels operating passive gears within the inshore portion of the EICC is low to moderate, with a maximum annual average of 30 vessels between 2017-2021 (Section 14.4.4.2.1.4).

Given the size of vessels operating passive gears a large portion of this fleet is confined to local inshore waters, with limited flexibility in terms of where their passive gears can be deployed (i.e., directly on the seabed). The availability of fishing grounds for fleets operating passive gears is limited as a result of their restricted operational range. The implementation of 'rolling' safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning in the <12 NM limit will be highly localised, temporary and transient in nature. However, given the limited mobility of passive gears, potential effects of displacement of fishing effort are considered to be of **medium sensitivity** during the construction phase.

While effects associated with the construction of the EICC <12 NM limit will be highly localised and temporary in nature, with any statutory safety zones implemented on a 'rolling' basis where construction works are undertaken, displacement effects are likely to occur during this time. The embedded mitigation measures detailed in Table 14-8

will reduce potential effects to fishers operating passive gears through ensuring ongoing and efficient communication between the Project and the fishing industry. The promulgation of information on the presence of safety zones and the location of any partially constructed infrastructure will be facilitated in a timely manner through a FLO and pre-established communication channels (including Kingfisher Bulletins and NtMs).

The VMS value for passive gears in the inshore environment of the Commercial Fisheries Study Area is highly concentrated to the waters associated with the landfall and EICC <12 NM limit. Whilst there is evidence of passive gear activity for target species extending along the coast of Fraserburgh (within ICES rectangles 44E7 and 44E8), VMS effort and value suggest that any passive gears displaced from the EICC will have to be relocated to waters with a potentially lower yield. Therefore, the effect displacement to fishers operating passive gears within the EICC is considered to have a high magnitude. Given the limited number of vessels operating passive gears within the Array Area, the effect is considered to have a low magnitude.

Secondary displacement effects on passive gears may also occur as a result of fleets being displaced from within the EICC. Vessels operating types of mobile gear typically have a wider operational range and are therefore less likely to compete for resources and space with any passive gears displaced from the Project Area. It is acknowledged that any displaced passive gears may cause additional constraint on already established passive gear fishing grounds.

Evaluation of significance

EICC - taking the medium sensitivity of passive gears and the high magnitude of effect within the EICC, the overall effect of displacement of fishing effort to other areas for passive gears within the EICC is considered to be moderate and therefore significant in EIA terms.

Array Area - taking the medium sensitivity of passive gears and the low magnitude of effect within the Array Area, the overall effect of displacement of fishing effort to other areas for passive gears within the Array Area is considered to be minor and therefore not significant in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	High	Moderate
Array Area	Medium	Low	Minor

EICC Impact significance-SIGNIFICANT

Array Area Impact significance – NOT SIGNIFICANT

As part of the embedded mitigation measures mentioned above and detailed within Table 14-8, the Applicant will continue engagement with the fishing industry and stakeholders directly affected by construction works and, as secondary mitigation, will adhere to the FLOWW guidance, where applicable. With consideration given to the implementation of these secondary mitigation measures, the evaluation of significance for passive gears within the EICC would reduce to having a **low magnitude** of effect. Therefore, the residual consequence is **minor** and **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor

Residual EICC Impact significance – **NOT SIGNIFICANT**

Residual Array Area Impact significance – **NOT SIGNIFICANT**

14.6.1.2.5 Non-UK vessels

As detailed in Section 14.4.4.1.2 above, the number of non-UK vessels operating within the Commercial Fisheries Study Area is low across the EICC and Array Area, with non-UK vessel activity closely associated with the FU7 (Fladen) *Nephrops* grounds to the north of the Project Area (Figure 14-7) and within ICES rectangles 43E8 and 43E9 to the south of the EICC. With consideration given to the large operational ranges of non-UK vessels and the wide availability of fishing grounds throughout the Commercial Fisheries Study Area and adjacent waters, non-UK vessels are considered to have a **negligible sensitivity** to displacement of fishing effort during the construction phase.

As detailed above, surveillance sightings data for the Commercial Fisheries Study Area indicates that non-UK vessel activity within the EICC and Array Area is low (Figure 14-2) (MMO, 2019). Given the very low presence of non-UK vessels within the EICC and Array Area, the effect is considered to have a **negligible magnitude**.

It is expected that secondary displacement effects on non-UK vessels will be minimal due to a very limited number of vessels that may be displaced from within the EICC and Array Area. It is also anticipated that vessels operating other types of mobile gear typically have a wider operational range and are therefore less likely to compete for resources and space with any non-UK vessels displaced from the Project Area. Furthermore, it is not anticipated that any displaced passive gears from UK vessels will move into established non-UK vessel fishing grounds, as these are usually further offshore.

Evaluation of significance

EICC – taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect, the overall effect of displacement of fishing effort to other areas for non-UK fishing fleets is considered to be **negligible** and therefore **not significant** in EIA terms.

Array Area - taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect, the overall effect of displacement of fishing effort to other areas for non-UK fishing fleets is considered to be **negligible** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Negligible	Negligible	Negligible
Array Area	Negligible	Negligible	Negligible

Impact significance-**NOT SIGNIFICANT**

14.6.1.3 Interference with fishing activity as a result of increased vessel traffic

The physical presence of Project vessels during construction in the Commercial Fisheries Study Area has the potential to result in interference with fishing activity. Interference with fishing activity (e.g., fouling of static gear markers, damage to or loss of fishing gear etc.) can result in an economic effect to fishers and fleets as a result of the time it would take to replace or recover lost gear. Any potential snagging risks are discussed in Section 14.6.2.5, and potential effects of navigational safety to commercial fishing vessels steaming through as a result of the physical presence of Project vessels is not considered within this chapter and is assessed fully within **EIAR Vol. 3, Chapter 15: Shipping and Navigation**.

As detailed within Table 14-8, the Applicant has adopted a series of embedded mitigation measures that will facilitate ongoing communication between the Project and the fishing industry via a series of pre-established communication channels and liaisons (including an FLO). The promulgation of information on the presence and movement of Project vessels throughout the Project Area and Commercial Fisheries Study Area will be facilitated in a timely manner via Kingfisher Bulletins and NtMs. Furthermore, statutory vessel routes and anchorages will be in place for all Project vessels throughout the construction phase, as detailed within the FMMS that will be finalised post-consent. All Project vessels will adhere to the provisions of COLREGs and SOLAS. Where required, guard vessels and an OFLO will be used throughout the construction phase of the Project to aid in communication between Project vessels and fishing vessels, to warn of any potential hazards associated with the Project vessel operations.

The potential effect of interference with fishing activity as a result of increased vessel traffic is considered to be consistent along the length of the EICC and within the Array Area. With consideration given to the embedded mitigation measures identified above, all fishing fleets are considered to have a **low sensitivity** to interference as a result of increased vessel traffic. As potential interference with fishing activity as a result of increased vessel traffic has the potential to result in significant economic damage to fishing vessels, or damage or loss of fishing gear, the potential effect is defined as having a **high magnitude**.

Evaluation of significance

Taking the low sensitivity of fishing activity and the high magnitude of the effects across the EICC and within the Array Area, the overall effect of interference with fishing activity as a result of increased vessel traffic is considered to be minor and therefore not significant in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC and Array Area	Low	High	Minor

Impact significance – NOT SIGNIFICANT

14.6.1.4 Increased steaming times and distances

As detailed in the Sections above, the physical presence of Project vessels and safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning has the potential to result in the temporary loss of or restricted access to fishing grounds and the displacement of fishing vessels from the Project Area into adjacent waters. These potential effects consequently have the potential to result in fishing vessels having to adopt alternative transit routes throughout the Commercial Fisheries Study Area, therefore resulting in a potential increase to steaming times and distances to and from fishing grounds.

14.6.1.4.1 Small vessels (under 12 m)

As detailed within Section 14.4.4.1.3.1 and within Figure 14-4, small vessels (under 12 m) operating within the Commercial Fisheries Study Area are largely active in inshore waters between the 0-12 NM offshore (within ICES rectangles 44E7, 44E8, 43E8 and 43E7). As such, small vessels are anticipated to be more affected by increased steaming times and distances when compared to vessels over 12 m in length, given their limited operational range. Work associated with the construction of the EICC between landfall and the 12 NM limit (within ICES rectangles 44E8 and 43E8) have the potential to effect small vessel fishing operations through the physical presence of Project vessels and safety zones around construction vessels and partially constructed infrastructure. However, steaming times to fishing grounds would only be affected if the Export/Import Cable construction activities overlap with the fishing activity. Given the transient nature of construction activities for the Export/Import Cable and the implementation of safety zones around Project vessels on a 'rolling' basis, small fishing vessels are considered to have a low sensitivity to increased steaming times and distances.

With consideration given to the transient nature of construction activities for the EICC, the spatial extent of any effects associated with the physical presence of Project vessels and associated safety zones are considered to be highly localised and short-term in nature. Furthermore, with consideration given to the embedded mitigation measures detailed in Table 14-8, the movement of Project vessels within the EICC and the timing of construction activities will be communicated with the fishing industry in a timely manner (via the FLO and the promulgation of information via Kingfisher Bulletins and NtMs). Therefore, the potential effect of increased steaming times and distances for small vessels within the EICC is defined as having a low magnitude. As detailed above, there are a limited number of small vessels operating within the Array Area. As such the potential effect of increased steaming times and distances for small vessels within the Array Area is defined as having a negligible magnitude.

Evaluation of significance

EICC - taking the low sensitivity of small vessels and the low magnitude of effect within the EICC, the overall effect of increased steaming times and distances for small vessels within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity of small vessels and the negligible magnitude of effect within the Array Area, the overall effect of increased steaming times and distances for small vessels within the Array Area is considered to be **negligible** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Negligible	Negligible

Impact significance – **NOT SIGNIFICANT**

14.6.1.4.2 Large vessels (over 12 m)

As detailed in Section 14.4.4.1.3.1 and within Figure 14-4, large vessels (over 12 m) are operational throughout the Commercial Fisheries Study Area, with the greatest number of large vessels operational within the northern portion of the wider Commercial Fisheries Study Area (ICES rectangles 45E8, 45E9, 45F0) and along the portion of the EICC within ICES rectangle 44E9. Given the larger operational range of large vessels, it is expected that they will be less affected by increased steaming times and distances than small vessels (under 12 m). The implementation of safety zones around Project vessels and partially constructed infrastructure will be applied on a 'rolling' basis in consideration of the transient nature of construction works. Large vessels are considered to have a **low sensitivity** to increased steaming times and distances across the EICC and within the Array Area.

As detailed in Table 14-8, the Applicant has adopted a number of embedded mitigation measures that will ensure the timely dissemination of Project vessel activities and construction timelines to the fishing industry (via the FLO and the promulgation of information via Kingfisher Bulletins and NtMs). Any vessels temporarily displaced from the EICC and Array Area during the construction period may seek alternative transit routes through waters which may be utilised by other large vessels. However, given the short-term nature of construction works, and the highly localised spatial extent of any effects associated with the physical presence of Project vessels and associated rolling safety zones, the effect for large vessels is considered to be of **low magnitude.**

Evaluation of significance

EICC-taking the low sensitivity of large vessels and the medium magnitude of effect within the EICC, the overall effect of increased steaming times and distances for large vessels within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area-Taking the low sensitivity of large vessels and the low magnitude of effect within the Array Area, the overall effect of increased steaming times and distances for large vessels within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Low	Minor

Impact significance – **NOT SIGNIFICANT**

14.6.1.5 Increased risk of loss or damage to fishing gear (snagging risk)

This Section of the assessment of potential effects considers safety issues for fishing vessels actively fishing. This Section does not consider fishing vessels transiting through, as those are assessed as part of **EIAR Vol. 3, Chapter 15: Shipping and Navigation.**

14.6.1.5.1 Passive gears

Passive gears may be dragged along the seabed for a short amount of time when being deposited. During this time, the physical presence of partially constructed infrastructure on the seabed has the potential to present a snagging risk. During the construction phase of the Project, partially constructed infrastructure will include the Export/Import Cable, OSCPs) and associated foundations, IACs, and dropped objects. Across the Project Area potential snagging points include areas where partially constructed infrastructure is awaiting burial or protection (e.g., Export/Import Cable and IACs) and dropped objects.

As detailed above, 500 m safety zones around partially constructed infrastructure awaiting commissioning will be implemented on a 'rolling' basis. Further embedded mitigation measures, detailed in Table 14-8, will be adopted by the Applicant to reduce the potential increased risk of loss or damage to fishing gear. Fishers operating passive gears will be requested to relocate their gear outside of construction areas, with the location of any partially constructed infrastructure shared with fishers in a timely manner through the FLO and pre-established channels (including Kingfisher Bulletins and NtMs). Where required, guard vessels and an OFLO will be present to facilitate communication between Project vessels and the fishing industry.

Vessels operating passive gears are considered to have a **serious** safety risk (through potential injury to crew members or loss of life). However, the frequency of occurrence in consideration of safety risk is considered to be **extremely unlikely**.

Evaluation of significance

EICC – with consideration to the serious severity and the **extremely unlikely** frequency of occurrence, the overall risk is considered to be **tolerable** and within **acceptable limits**.

Array Area – with consideration to the serious severity and the extremely unlikely frequency of occurrence, the overall risk is considered to be **tolerable** and within **acceptable limits**.

Project Area	Severity	Frequency	Significance
EICC	Serious	Extremely unlikely	Tolerable
Array Area	Serious	Extremely unlikely	Tolerable

Impact significance – **NOT SIGNIFICANT**

14.6.1.5.2 Mobile gears

Partly constructed infrastructure and infrastructure awaiting commissioning, such as the Export/Import Cable, FTUs and associated foundations, OSCPs and associated foundations, and IACs, present a potential snagging risk to mobile fishing gear towed along the seabed.

As detailed above, 500 m safety zones around partially constructed infrastructure will be implemented on a 'rolling' basis. Further embedded mitigation measures, detailed in Table 14-8, will be adopted by the Applicant to reduce the potential increased risk of loss or damage to fishing gears. Fishers operating mobile gears will be requested to fish outside of safety zones, with the location of any partially constructed infrastructure shared with fishers in a timely manner through an FLO and pre-established channels (including Kingfisher Bulletins and NtMs. Where necessary, guard vessels and an OFLO will be present to facilitate communication between Project vessels and the fishing industry.

Vessels operating mobile gears are considered to have a **serious** safety risk (through potential injury to crew members or loss of life). However, the frequency of occurrence in consideration of safety risk is considered to be **extremely unlikely**.

Evaluation of significance

EICC – with consideration to the serious severity and the extremely unlikely frequency of occurrence, the overall risk is considered to be tolerable and within acceptable limits.

Array Area – with consideration to the serious severity and the extremely unlikely frequency of occurrence, the overall risk is considered to be tolerable and within acceptable limits.

Project Area	Severity	Frequency	Significance
EICC	Serious	Extremely unlikely	Tolerable
Array Area	Serious	Extremely unlikely	Tolerable

Impact significance – NOT SIGNIFICANT

14.6.1.6 Changes to exploited fish and shellfish resources

During the pre-construction surveys and construction phase of the Project, there is the potential for changes to occur to exploited fish and shellfish resources. These impacts may arise as a result of works which will directly interact with the seabed (including seabed preparation works, cable lying and FTU and OSCPs foundation installation) and through the introduction of anthropogenic underwater noise, which may result in physiological or behavioural impacts to commercially important species. The assessment of potential effects to fish and shellfish species, which are considered commercially important, have been assessed within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology. This fish and shellfish ecology assessment considers the following pathways for potential effects during the construction phase:

- Temporary effects to the seabed and sensitive fish habitats (e.g. spawning and/or nursery habitats);
- Underwater noise and vibration; and
- Potential changes to Suspended Sediment Concentrations (SSC).

Species that are landed commercially within the Study Area are described in the baseline (Section 14.4.4). Some species (e.g. cod) are likely to be present along the length of the EICC and within the Array Area, whereas some species (e.g. whiting) are present within isolated areas of the Project Area (further details are available in EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology).

As detailed within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology, owing to the highly localised, short-term and temporary nature of works associated with the pre-construction and construction phase of the Project, it is considered that there is no potential for significant effects to fish and shellfish species which are considered to be commercially important. Therefore, the potential for changes to exploited fish and shellfish resources considered to have a low sensitivity for Commercial Fisheries receptors.

As detailed within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology, a series of embedded mitigation measures have been adopted for the Project in order to reduce the potential for effects on fish and shellfish receptors, including through micro-siting Project infrastructure to avoid areas of important habitats (where possible) and through

reducing the spatial footprint of the Project on the seafloor as far as practicable (i.e., through the burial of the EICC and therefore reduced requirement for additional cable protection). For all effect pathways listed above, potential effects to commercial fish and shellfish species are considered to occur over a highly localised spatial extent. Overall, the potential effect of changes to exploited fish and shellfish resources is assessed as being of **negligible magnitude**.

Evaluation of significance

EICC - taking the low sensitivity and the negligible magnitude of the effect across the EICC, the overall effect of changes to exploited fish and shellfish resources is considered to be **negligible** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity and the negligible magnitude of the effect within the Array Area, the overall effect of changes to exploited fish and shellfish resources is considered to be **negligible** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Negligible	Negligible
Array Area	Low	Negligible	Negligible

Impact significance – **NOT SIGNIFICANT**

14.6.2 Potential effects during operation and maintenance

14.6.2.1 Long-term loss of or restricted access to fishing grounds

The 35 year operation and maintenance phase will commence once the Project is commissioned. Throughout the operation and maintenance phase, long-term loss of or restricted access to fishing grounds may arise as a result of the physical presence of Project infrastructure within the Array Area. Although Cenos agrees with the European Subsea Cables Association (ESCA) advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables.

Within the Array Area, the FTU layout has not been confirmed, however the indicative layout for 95 WTGs will be installed on floating substructures, held in location by a mooring system comprising mooring lines, anchors, connectors and chains. The Export/Import Cable will be comprised of two HVDC cables and one fibre optic cable bundled in a single trench, sited within a one km wide EICC with a maximum length of 230 km between landfall and touchdown at the OSCPs. The preferred primary method of Export/Import Cable installation is burial, with potential requirement for additional cable protection above the seafloor where the cable is exposed.

The presence of Project vessels and associated advisory 500 m safety zones may also result in a temporary loss of access to parts of the Project Area during the operation and maintenance phase. It is anticipated that Project infrastructure will operate day-to-day with minimal requirements for intervention.

A detailed description of all infrastructure proposed within the EICC and Array Area can be found in EIAR Vol. 2, Chapter 5: Project Description.

14.6.2.1.1 Demersal trawlers

As detailed in Section 14.4.4.2.1.1 above, demersal trawler VMS effort is present at low effort and value along the length of the EICC, with moderate effort and value within the Array Area. Effort for demersal trawlers is higher within the Regional Study Area. While some fleets operating demersal trawlers have the ability to target a wide range of species, some demersal species are dependent upon specific seabed habitats and are therefore spatially constrained to areas where these habitats are available (e.g., *Nephrops*). Demersal trawler effort across the Commercial Fisheries Study Area is closely associated with the spatial distribution of *Nephrops* and suitable *Nephrops* habitats. It is acknowledged however that the majority of landings for demersal trawlers within the EICC and Array Area are by larger vessels, and consequently the operational range of these vessels is wide, and these vessels are expected to have the ability to fish a number of fishing grounds. Consequently, demersal trawlers are considered to be of low sensitivity to long-term loss of or restricted access to fishing grounds during the operation and maintenance phase within both the EICC and Array Area.

As detailed within EIAR Vol. 2, Chapter 5: Project Description, the primary method of Export/Import Cable installation is burial, with the requirement for additional cable protection at exposed areas of cable minimised as far as possible. Any operation and maintenance works required will be highly localised along isolated sections of the Export/Import Cable. Any routine or emergency operation and maintenance works required for the Export/Import Cable will be highly localised and over a small spatial scale, with information on the presence of Project vessels and safety zones disseminated to fishers within a timely manner through pre-established communication channels and contacts (as detailed in Section 14.5.4). Although the Applicant agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that demersal trawling operations will resume over the EICC at the discretion of the skipper. The effect of long-term loss of or restricted access to fishing grounds is considered to have a low magnitude for demersal trawlers operating within the EICC.

Whilst it is recognised that fishing efforts within operational fixed-bottom offshore windfarms has successfully returned (Gray *et al.*, 2016), due to the nature of the Project infrastructure proposed within the Array Area (including the presence of FTUs and associated mooring lines), it is considered unlikely that demersal trawling activity will be able to resume within the Array Area throughout the operational life of the Project (i.e., 35 years). While it is acknowledged that alternative fishing grounds are available throughout the wider Commercial Fisheries Study Area, the long-term nature of displacement from within the Array Area and the associated moderate value suitable *Nephrops* habitat is considered to have a high magnitude for demersal trawlers.

Evaluation of significance

EICC - taking the low sensitivity of demersal trawlers and the low magnitude of effect within the EICC, the overall effect of long-term loss of or restricted access to fishing grounds for demersal trawlers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array area - taking the low sensitivity of demersal trawlers and the high magnitude of effect within the Array Area, the overall effect of long-term loss of or restricted access to fishing grounds for demersal trawlers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	High	Minor

Impact significance-**NOT SIGNIFICANT**

14.6.2.1.2 Pelagic trawlers

As detailed above VMS data for pelagic trawl effort and value is low along the length of the EICC and within the Array Area, with effort heavily concentrated to the northern portion of the wider Commercial Fisheries Study Area. Recognising the low value and effort of pelagic trawling activity within the Project Area, and the availability of higher value pelagic fishing grounds within the wider Commercial Fisheries Study Area, pelagic trawlers are considered to be of **low sensitivity** to loss of or restricted access to fishing grounds during the operation and maintenance phase within both the EICC and Array Area.

Any routine or emergency operation and maintenance works required for the Export/Import Cable will be highly localised and over a small spatial scale, with information on the presence of Project vessels and safety zones disseminated to fishers within a timely manner through pre-established communication channels and contacts (as detailed in Section 14.5.4). It is considered unlikely that trawling activity will be able to resume within the Array area throughout the operational life of the Project (i.e., 35 years) owing to the nature of FTUs and mooring line infrastructure proposed within the Array Area. As pelagic trawling effort and value within the Array Area and EICC is low and a range of alternative high-value fishing grounds are available throughout the Regional Study Area, the effect of long-term loss of restricted access to fishing grounds is considered to have a **low magnitude** for pelagic trawlers.

Evaluation of significance

EICC - taking the low sensitivity of pelagic trawlers and the low magnitude of effect within the EICC, the overall effect of long-term loss of or restricted access to fishing grounds for pelagic trawlers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity of pelagic trawlers and the low magnitude of effect within the Array Area, the overall effect of long-term loss of or restricted access to fishing grounds for pelagic trawlers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Low	Minor
Impact significance-**NOT SIGNIFICANT**			

14.6.2.1.3 Scallop dredgers

As detailed above, VMS data for scallop dredgers is heavily concentrated within the inshore environment, with the EICC passing through a small area of moderate to high dredging effort between 6-12 NM limit. VMS effort for scallop dredgers is low along the remaining length of the EICC and within the Array Area. Due to the implementation of dredge fishing restrictions across the UK and the ongoing development of renewable energy infrastructure within the UK's marine environment has restricted some ability of scallop dredgers to easily and freely move from one dredging location to another. As such scallop dredgers are considered to have a **medium sensitivity** to the temporary loss of or restricted access to fishing grounds during the operation and maintenance phase.

Owing to the nature of infrastructure associated with the Project, there is the potential for scallop dredgers to be displaced from the Project Area during the operation and maintenance phase. As detailed within **EIAR Vol. 2, Chapter 5: Project Description**, the primary method of Export/Import Cable installation is burial, with the requirement for additional cable protection at exposed areas of cable minimised as far as possible. As additional cable protection (where required) will be highly localised along isolated lengths of the Export/Import Cable. Any routine or emergency operation and maintenance works required for the Export/Import Cable will be highly localised and over a small spatial scale, with information on the presence of Project vessels and associated safety zones disseminated to fishers within a timely manner through pre-established communication channels and contacts (as detailed in Section 14.5.4). Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that scallop dredging operations will resume over the EICC at the discretion of the skipper. Consequently, the effect of long-term loss of or restricted access to fishing grounds is considered to have a **low magnitude** for scallop dredgers operating within the EICC.

Although the effect of loss of or restricted access to fishing grounds during the operational phase of the Project will be long-term (i.e., 35 years), scallop dredging is very limited in the Array Area. Therefore, the effect of long-term loss

of or restricted access to fishing grounds is considered to have a **negligible magnitude** for scallop dredgers operating within the Array Area.

Evaluation of significance

EICC - Taking the medium sensitivity of scallop dredgers and the low magnitude of effect within the EICC, the overall effect of long-term loss of or restricted access to fishing grounds for scallop dredgers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - Taking the medium sensitivity of scallop dredgers and the negligible magnitude of effect within the Array Area, the overall effect of long-term loss of or restricted access to fishing grounds for scallop dredgers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor

Impact significance-**NOT SIGNIFICANT**

14.6.2.1.4 Passive gears

VMS effort and value for fleets operating passive fishing gear throughout the Commercial Fisheries Study Area is generally low, with a moderate increase in both effort and value between the EICC landfall and the 12 NM limit. Within the Commercial Fisheries Study Area, gridded fisheries data (Section 14.4.4.4.1) indicated that fishing fleets utilising passive gears are primarily operating mackerel lines and crab and lobster pots. The number of vessels operating passive gears within the portion of the EICC located within ICES rectangles 44E8 and 43E8 is low to moderate, with a maximum annual average of 30 vessels between 2017-2021 (Section 14.4.4.2.1.4).

By nature of the size of vessels which operate passive gears, this fleet has less operational range and are therefore restricted in their ability to withstand long-term loss of or restricted access to fishing grounds. As detailed in Section 14.6.1.1.4, passive gears are considered to be of **medium sensitivity** to loss of or restricted access to fishing grounds.

Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that fleets operating passive gears will be able to resume operations within the EICC during the operation and maintenance phase. As detailed within **EIAR Vol. 2, Chapter 5: Project Description**, the primary method of Export/Import Cable installation is burial, with the requirement for additional cable protection above the seafloor protection exposed areas of cable minimised as far as possible. As additional cable protection (where required) will be highly localised along isolated lengths of the Export/Import Cable. Any routine or emergency operation and maintenance works required for the Export/Import Cable will be highly localised and over a small spatial scale, with information on the presence of Project vessels and associated safety zones disseminated to fishers within a timely manner through pre-established communication channels and contacts (as detailed in Section 14.5.4). Therefore, the

effect of long-term loss of or restricted access to fishing grounds is considered to have a **low magnitude** for passive gears operating within the EICC.

While the long-term loss of or restricted access to fishing grounds within the Array Area will occur throughout the operational life of the Project (i.e., 35 years), the effect is considered to have a **low magnitude** given the limited number of vessels operating passive gears within the Array Area.

Evaluation of significance

EICC - taking the medium sensitivity of passive gears and the low magnitude of effect within the EICC, the overall effect of long-term loss of or restricted access to fishing grounds for passive gears within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the medium sensitivity of passive gears and the low magnitude of effect within the Array Area, the overall effect of long-term loss of or restricted access to fishing grounds for passive gears within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor

Impact significance – **NOT SIGNIFICANT**

14.6.2.1.5 Non-UK vessels

As detailed in Section 14.6.1.1.5, the number of non-UK vessels operating within the Commercial Fisheries Study Area is low. With consideration given to the large operational ranges of non-UK vessels and the wider availability of fishing grounds throughout the Commercial Fisheries Study Area and adjacent waters, non-UK vessels are considered to have a **negligible sensitivity** to the long-term loss of or restricted access to fishing grounds during the operation and maintenance phase.

Surveillance sightings data for the Commercial Fisheries Study Area indicates that non-UK vessel activity within the EICC is very low, with no surveillance sightings of non-UK vessels within the Array Area between 2011-2019. Given the very low presence of non-UK vessels within the EICC and Array Area, in addition to the very small portion of available fishing grounds for non-UK vessels occupied by the Project Area, the effect is considered to have a **negligible magnitude**.

Evaluation of significance

EICC - taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect the overall effect of long-term loss of or restricted access to fishing grounds for non-UK fishing fleets in the EICC is considered to be negligible and therefore not significant in EIA terms.

Array Area - taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect, the overall effect of long-term loss of or restricted access to fishing grounds for non-UK fishing fleets in the Array Area is considered to be negligible and therefore not significant in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Negligible	Negligible	Negligible
Array Area	Negligible	Negligible	Negligible

Impact significance-NOT SIGNIFICANT

14.6.2.2 Displacement of fishing effort to other areas

As detailed within Section 14.6.1.2, the physical presence of Project infrastructure within the marine environment and the implementation of any temporary statutory 500 m safety zones around maintenance vessels (as applied for under the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007) have the potential to result in the displacement of fishing effort to alternative grounds. The impact assessment considers the potential effects of both primary and secondary displacement effects.

14.6.2.2.1 Demersal trawlers

As described in Section 14.6.1.2.1, demersal trawlers are considered to be of low sensitivity to displacement from fishing grounds during the operation and maintenance phase within both the EICC and Array Area.

As detailed within EIAR Vol. 2, Chapter 5: Project Description, the primary method of Export/Import Cable installation is burial, with the requirement for additional cable protection minimised as far as possible. As additional cable protection (where required) will be highly localised along isolated sections of the Export/Import Cable. Any routine or emergency operation and maintenance works required for the Export/Import Cable will be highly localised and over a small spatial scale, with information on the presence of Project vessels and associated safety zones disseminated to fishers within a timely manner through pre-established communication channels and contacts (as detailed in Section 14.5.4). Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that demersal trawling operations will resume over the EICC at the discretion of the skipper. Consequently, the effect of long-term loss of or restricted access to fishing grounds is considered to have a low magnitude for demersal trawlers operating within the EICC.

Given the nature of fishing gears operated by demersal trawlers, and the nature of proposed FTU infrastructure within the Array Area (further details provided in EIAR Vol, 2, Chapter 5: Project Description), it is unlikely that demersal

trawlers will resume fishing efforts within the Array Area during operation and maintenance. Therefore, the displacement of demersal trawlers from the Array Area is likely to occur throughout the operational life of the Project (35 years). While it is acknowledged that alternative fishing grounds are available throughout the Regional Study Area, the long-term nature of displacement from within the Array Area is considered to have a **high magnitude** for demersal trawlers.

Similar to Section 14.6.1.2.1, the potential for secondary displacement effects is anticipated to be limited.

Evaluation of significance

EICC - taking the low sensitivity of demersal trawlers and the low magnitude of effect within the EICC, the overall effect of displacement from fishing grounds for demersal trawlers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity of demersal trawlers and the high magnitude of effect within the Array Area, the overall effect of displacement from fishing grounds for demersal trawlers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	High	Minor

Impact significance-**NOT SIGNIFICANT**

14.6.2.2.2 Pelagic trawlers

As described in Section 14.6.1.2.2, pelagic trawlers are considered to be of **low sensitivity** to displacement from fishing grounds during the operation and maintenance phase within both the EICC and Array Area.

Any routine or emergency operation and maintenance works required for the Export/Import Cable will be highly localised and over a small spatial scale, with information on the presence of Project vessels and safety zones disseminated to fishers within a timely manner through pre-established communication channels and contacts (as detailed in Section 14.5.4). It is considered unlikely that trawling activity will be able to resume within the Array Area throughout the operational life of the Project (i.e., 35 years) owing to the nature of FTU and mooring line infrastructure proposed within the Array Area. As pelagic trawling effort and value within the Array Area and EICC is low and a range of alternative high-value fishing grounds are available throughout the Regional Study Area, effect of displacement of fishing effort to other areas is considered to have a **low magnitude** for pelagic trawlers operating within the EICC and Array Area.

Similar to Section 14.6.1.2.2, the potential for secondary displacement effects is anticipated to be limited.

Evaluation of significance

EICC – taking the low sensitivity of pelagic trawlers and the low magnitude of effect within the EICC, the overall effect of displacement from fishing grounds for pelagic trawlers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity of pelagic trawlers and the low magnitude of effect within the Array Area, the overall effect of displacement from fishing grounds for pelagic trawlers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Low	Minor

Impact significance-**NOT SIGNIFICANT**

14.6.2.2.3 Scallop dredgers

As described in Section 14.6.2.1.3, scallop dredgers are considered to be of **medium sensitivity** to displacement from fishing grounds during the operation and maintenance phase within both the EICC and Array Area.

Owing to the nature of infrastructure associated with the Project, there is the potential for scallop dredgers to be displaced from the Project Area during the operation and maintenance phase. Given the low VMS effort and value of vessels operating dredgers along the EICC between 12 NM and the Array Area, and within the Array Area itself, the displacement of fishing effort to other areas will primarily affect scallop dredgers operating between the Export/Import Cable landfall and the 12 NM limit. Water adjacent to the EICC and Array Area support moderate levels of value and effort for scallop dredgers. Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that scallop dredging operations will resume over the EICC at the discretion of the skipper. Consequently, the effect of long-term loss of or restricted access to fishing grounds is considered to have a **low magnitude** for scallop dredgers operating within the EICC.

Although the effect of loss of or restricted access to fishing grounds during the operational phase of the Project will be long-term (i.e., 35 years), scallop dredging is very limited in the Array area. Therefore, the effect of long-term loss of or restricted access to fishing grounds is considered to have a **negligible magnitude** for scallop dredgers operating within the Array Area.

Similar to Section 14.6.1.2.3, the potential for secondary displacement effects is anticipated to be limited.

Evaluation of significance

EICC - taking the medium sensitivity of scallop dredgers and the low magnitude of effect within the EICC, the overall effect of displacement of fishing effort to other areas for scallop dredgers within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the medium sensitivity of scallop dredgers and the negligible magnitude of effect within the Array Area, the overall effect of displacement of fishing effort to other areas for scallop dredgers within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor

Impact significance-**NOT SIGNIFICANT**

14.6.2.2.4 Passive gears

As described in Section 14.6.2.1.4, passive gears are considered to be of **medium sensitivity** to displacement from fishing grounds during the operation and maintenance phase within both the EICC and Array Area.

Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that fleets operating passive gears will be able to resume operations within the EICC during the operation and maintenance phase. During the operation and maintenance phase, it is assumed that fishers operating passive gears will be able to return to the Project Area, and therefore any potential displacement effects are anticipated to be limited. Therefore, any potential for displacement from the Project Area during the operation and maintenance phase will be as a result of temporary statutory 500 m safety zones around maintenance vessels while engaging in maintenance activities and in Restricted Ability to Manoeuvre. The requirement for maintenance works on the offshore infrastructure are anticipated to be highly localised, temporary and on an ad-hoc basis. Therefore, the effect of displacement to fishers operating passive gears within the EICC is considered to have a **low magnitude**. Given the limited number of vessels operating passive gears within the Array Area, the effect is considered to have a **low magnitude**.

As the level of displacement is expected to be minimal, it is also expected that secondary displacement is limited.

Evaluation of significance

EICC - taking the medium sensitivity of passive gears and the high magnitude of effect within the EICC, the overall effect of displacement of fishing effort to other areas for passive gears within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the medium sensitivity of passive gears and the low magnitude of effect within the Array Area, the overall effect of displacement of fishing effort to other areas for passive gears within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Medium	Low	Minor
Array Area	Medium	Low	Minor

Impact significance – **NOT SIGNIFICANT**

14.6.2.2.5 Non-UK vessels

As described in Section 14.6.2.1.5, non-UK vessels are considered to be of **negligible sensitivity** to displacement from fishing grounds during the operation and maintenance phase within both the EICC and Array Area.

Non-UK vessel activity within the EICC is very low. Within the Commercial Fisheries Study Area, the Project Area represents a very small portion of available fishing grounds, with alternative grounds available throughout the Regional Study Area and adjacent waters. Given the very low presence of non-UK vessels within the EICC and Array Area, the effect is considered to have a **negligible magnitude**.

Evaluation of significance

EICC - taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect, the overall effect of displacement of fishing effort to other areas for non-UK fishing fleets is considered to be **negligible** and therefore **not significant** in EIA terms.

Array Area - taking the negligible sensitivity of non-UK fishing fleets and the negligible magnitude of effect, the overall effect of displacement of fishing effort to other areas for non-UK fishing fleets is considered to be **negligible** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Negligible	Negligible	Negligible
Array Area	Negligible	Negligible	Negligible

Impact significance-**NOT SIGNIFICANT**

14.6.2.3 Interference with fishing activity as a result of increased vessel traffic

The physical presence of Project vessels during the operation and maintenance phase throughout the Commercial Fisheries Study Area has the potential to result in interference with fishing activity. Interference with fishing activity (e.g., fouling of static gear markers, damage to or loss of fishing gear etc.) can result in an economic effect to fishers and fleets as a result of the time it would take to replace or recover lost gear. Any potential snagging risks are discussed in Section 14.6.2.5, and potential effects of navigational safety to commercial fishing vessels steaming through as a result of the physical presence of Project vessels is not considered within this chapter and is assessed fully within **EIAR Vol. 3, Chapter 15: Shipping and Navigation**.

As detailed in Table 14-8, a series of embedded mitigation measures will be implemented throughout the operation and maintenance phase of the Project which will facilitate ongoing communication between the Project and the fishing industry. The promulgation of information will utilise pre-established communication channels (including Kingfisher Bulletins and NtMs) and through the FLO. Statutory vessel routes and anchorages will be in place for all Project vessels throughout the construction phase, as detailed within the FMMS that will be finalised post-consent and the Vessel Management Plan (VMP). All Project vessels will adhere to the provisions of COLREGs.

The potential effect of interference with fishing activity as a result of increased vessel traffic is considered to be consistent along the length of the EICC and within the Array Area. With consideration given to the embedded mitigation measures identified above and the rare occasions when maintenance vessels will be present within the Project Area, all fishing fleets are considered to have a **low sensitivity** to interference as a result of increased vessel traffic. As potential interference with fishing activity as a result of increased vessel traffic has the potential to result in significant economic damage to fishing vessels and damage to fishing gear, the effect is defined as having a **high magnitude**.

Evaluation of significance

Taking the low sensitivity of fishing activity and the high magnitude of the effects across the EICC and within the Array Area, the overall effect of interference with fishing activity as a result of increased vessel traffic is considered to be minor and therefore not significant in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC and Array Area	Low	High	Minor

Impact significance – NOT SIGNIFICANT

14.6.2.4 Increased steaming times and distances

As detailed in the Sections above, the physical presence of Project operation and maintenance vessels and temporary and statutory 500 m safety zones around Project vessels while Restricted in their Ability to Manoeuvre have the potential to result in the loss of or restricted access to fishing grounds and the displacement of fishing vessels from the Project Area into adjacent waters. These potential effects therefore have the potential to result in fishing vessels to adopt alternative transit routes throughout the Commercial Fisheries Study Area, therefore resulting in a potential increase to steaming times and distances to fishing grounds.

14.6.2.4.1 Small vessels (under 12 m)

During the operation and maintenance phase, vessels are expected to continue to fish, with some potential of increased steaming times during short-term maintenance with any operation and maintenance works and associated safety zones around Project vessels undertaking maintenance activities implemented on a 'rolling' basis, Due to the small-scale effects and the ability to continue to utilise the fishing grounds where maintenance activities are not taking place, small vessels are considered to have a low sensitivity to increased steaming times and distances.

Recognising the short-term and highly localised nature of operation and maintenance works that will be required for the Project, the physical presence of maintenance vessels and any safety zones would be limited. With consideration given to the embedded mitigation measures listed in Table 14-8, details on the location and extent of any Project maintenance activities will be shared with the fishing industry in a timely manner via the FLO and pre-established communication channels (including Kingfisher Bulletins and NtMs). As such the effect of increased steaming times and distances is defined as having a low magnitude.

Evaluation of significance

EICC - taking the low sensitivity of small vessels and the low magnitude of effect within the EICC, the overall effect of increased steaming times and distances for small vessels within the EICC is considered to be **minor** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity of small vessels and the low magnitude of effect within the Array Area, the overall effect of increased steaming times and distances for small vessels within the Array Area is considered to be **minor** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Low	Minor

Impact significance – **NOT SIGNIFICANT**

14.6.2.4.2 Large vessels (over 12 m)

During the operation and maintenance phase, vessels are expected to continue to fish, with some potential of increased steaming times during short-term maintenance activities and associated safety zones around Project vessels Restricted in their Ability to Manoeuvre implemented on a 'rolling' basis. Due to the small-scale effects and the ability to continue to utilise the fishing grounds when maintenance activities are not taking place, large vessels are considered to have a **low sensitivity** to increased steaming times and distances.

Recognising the short-term and highly localised nature of operation and maintenance works that will be required for the Project, the physical presence of maintenance vessels and any safety zones would be limited. With consideration given to the embedded mitigation measures listed in Table 14-8, details on the location and extent of any Project maintenance activities will be shared with the fishing industry in a timely manner via the FLO and pre-established communication channels (including Kingfisher Bulletins and NtMs). As such the effect of increased steaming times and distances is defined as having a **low magnitude.**

Evaluation of significance

EICC - taking the low sensitivity of large vessels and the low magnitude of effect within the EICC, the overall effect of increased steaming times and distances for large vessels within the EICC is considered to be minor and therefore not significant in EIA terms.

Array Area - taking the low sensitivity of large vessels and the low magnitude of effect within the Array Area, the overall effect of increased steaming times and distances for large vessels within the Array Area is considered to be minor and therefore not significant in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Low	Minor
Array Area	Low	Low	Minor

Impact significance – NOT SIGNIFICANT

14.6.2.5 Increased risk of loss or damage to fishing gear (snagging risk)

This Section of the assessment of potential effects considers safety issues for fishing vessels actively fishing. This Section does not consider fishing vessels transiting through, as those are assessed as part of EIAR Vol. 3, Chapter 15: Shipping and Navigation.

14.6.2.5.1 Passive gears

When actively fishing within the Project Area, fishing vessels could lose control and collide with Project infrastructure. Furthermore, passive gears may be dragged along the seabed for a short amount of time when being deposited. During the operation and maintenance phase, infrastructure snagging risk arises from Export/Import Cable, FTUs and associated foundations, OSCPs and associated foundations, IACs, and dropped objects. Although Cenos agrees with the ESCA advise against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, all vessels operating passive gears are allowed to fish within the Project Area (at the discretion of the skipper), with the exception of any 500 m safety zones applied around maintenance vessels Restricted in their Ability to Manoeuvre. As detailed in Table 14-8, communication regarding the location and nature of any operation and maintenance activities will be disseminated in a timely manner through the FLO and pre-established channels (including Kingfisher Bulletins and NtMs). Where necessary, guard vessels and an OFLO will be present during maintenance works to facilitate communication between Project vessels and the fishing industry.

Vessels operating passive gears are considered to have a serious safety risk. This is due to potential injury to crew members or loss of life. However, the frequency of occurrence in consideration of safety risk is considered to be extremely unlikely.

Evaluation of significance

EICC – with consideration to the serious severity and the **extremely unlikely** frequency of occurrence, the overall risk is considered to be **tolerable** and within **acceptable limits**.

Array Area – with consideration to the serious severity and the extremely unlikely frequency of occurrence, the overall risk is considered to be **tolerable** and within **acceptable limits**.

Project Area	Severity	Frequency	Significance
EICC	Serious	Extremely unlikely	Tolerable
Array Area	Serious	Extremely unlikely	Tolerable

Impact significance – **NOT SIGNIFICANT**

14.6.2.5.2 Mobile gears

When actively fishing within the Array Area, fishing vessels could lose control and collide with project infrastructure. Furthermore, Project infrastructure, such as the Export/Import Cable, FTUs and associated foundations, OSCPs and associated foundations, IACs and dropped objects, present a potential snagging risk to mobile fishing gear towed along the seabed.

As detailed in Table 14-8, communication regarding the location and nature of any operation and maintenance activities will be disseminated in a timely manner through the FLO and pre-established channels (including Kingfisher Bulletins and NtMs). Where necessary, guard vessels and an OFLO will be present during maintenance works to facilitate communication between Project vessels and the fishing industry.

Vessels operating mobile gears are considered to have a **serious** safety risk (through potential injury to crew members or loss of life). However, the frequency of occurrence in consideration of safety risk is considered to be **remote,** due to the infrastructure being in place for the whole Project lifetime.

Evaluation of significance

EICC – with consideration to the serious severity and the **remote** frequency of occurrence, the overall risk is considered to be **tolerable** and within **acceptable limits**.

Array Area – with consideration to the serious severity and the **remote** frequency of occurrence, the overall risk is considered to be **tolerable** and within **acceptable limits**.

Project Area	Severity	Frequency	Significance
EICC	Serious	Remote	Tolerable
Array Area	Serious	Remote	Tolerable

Impact significance – **NOT SIGNIFICANT**

14.6.2.6 Changes to exploited fish and shellfish resources

During the operation and maintenance phase of the Project, there is the potential for effects to fish and shellfish species which are targeted by commercial fishers to arise. The potential effects to fish and shellfish species have been assessed fully with **EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology**. During the operation and maintenance phase, this assessment considers the following pathways for potential effects to fish and shellfish receptors:

- Long-term effects to the seabed and sensitive fish habitats (e.g. spawning and/or nursery habitats);
- Underwater noise and vibration;
- Potential effects from EMF and heat generated by cables;
- Operational windfarm may act as a Fish Aggregation Device (FAD); and
- Secondary entanglement.

Fish and shellfish species, including commercially important species, were assessed within **EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology** as having a range of sensitivities (negligible to high) to the impact pathways listed above. Species reliant on the seabed, are considered to have a high sensitivity to habitat disturbance and loss, however the Project Area does not overlap with important herring grounds, therefore the impact is defined as being not significant. There is potential for disturbance, injury, and mortality to fish as a result of underwater noise, and the assessment concluded an overall minor significance of effect. Potential effects as a result of EMF and heat generated by cables, and secondary entanglement, were assessed as negligible and not significant for all fish and shellfish species.

Floating structures and associated moorings have the potential to act as artificial reefs and FADs, which attract fish from other areas and group individuals together into a smaller area. The introduction of hard structures in the marine environment will likely become inhabited by marine organisms, creating new habitats and demonstrating an artificial reef effect. The installation of OWF foundations is generally followed by rapid colonisation of a variety of fouling organisms that attract fish that feed on fouling biota or use the structures for shelter. The potential effect of the operational windfarm acting as an FAD was assessed as a minor effect which could have positive, negative, or neutral consequences and was not significant.

As detailed within **EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology**, a series of primary (designed in) mitigation measures have been adopted for the Project in order to reduce the potential for impacts to fish and shellfish receptors including through the micro-siting of Project infrastructure to avoid areas of rate or important habitats (where possible) and through reducing the spatial footprint of the Project on the seafloor as far as practicable (i.e., through the burial of the EICC and therefore reduced requirement for additional cable protection). Potential effects to fish and shellfish species are considered to occur over a highly localised spatial extent and of a negligible to low magnitude and are considered not significant for all species.

With the above taken into consideration, the potential for changes to exploited fish and shellfish resources is considered to have a **low sensitivity** for Commercial Fisheries receptors. As detailed above and within **EIAR Vol 3, Chapter 13: Fish and Shellfish Ecology**, a series of embedded mitigation measures have been adopted for the Project in order to reduce the potential for effects to fish and shellfish. Overall, the potential effect of changes to exploited fish and shellfish resources is assessed as being of **negligible magnitude**.

Evaluation of significance

EICC - taking the low sensitivity and the negligible magnitude of the effect across the EICC, the overall effect of changes to exploited fish and shellfish resources is considered to be **negligible** and therefore **not significant** in EIA terms.

Array Area - taking the low sensitivity and the negligible magnitude of the effect within the Array Area, the overall effect of changes to exploited fish and shellfish resources is considered to be **negligible** and therefore **not significant** in EIA terms.

Project Area	Sensitivity	Magnitude of effect	Consequence
EICC	Low	Negligible	Negligible
Array Area	Low	Negligible	Negligible
Impact significance – **NOT SIGNIFICANT**			

14.6.3 Potential effects during decommissioning

Effects on Commercial Fisheries receptors associated with decommissioning are anticipated to result from the full removal of the Project components. Decommissioning activities will be subject to consultations and further assessments closer to the time of decommissioning to understand technical feasibility, safety and risk, and environmental considerations in detail. These details will be included in a Decommissioning Programme which will be developed post-consent and updated over the life of the Project.

The decommissioning of the Project intends to complete the full removal of offshore infrastructure to below the mudline (where safe/practicable to do so), in line with the OSPAR Convention and forthcoming guidance from OSPAR's North-East Atlantic Environmental Strategy 2030. The majority of decommissioning works are likely to be undertaken in reverse to the sequence of construction works and involve similar or lesser levels of effects to construction.

A Decommissioning Programme will be prepared prior to construction, in line with the requirements of Section 105 of the Energy Act 2004 (as amended) and any applicable guidance available at the time. Currently it is assumed that:

- FTU substructure and WTG components will be removed and towed to port;
- Mooring lines will be removed, and where possible piles will be removed or cut to a suitable distance below the mudline such that the upper portion is removed;
- Cables no longer required will be removed where safe to do so; where they cross live third-party assets, they may be cut and left in situ to prevent damage to third-party operations; and
- The OSCP(s) will be decommissioned and the jacket and topside(s) will be towed to shore. The piles will be cut a suitable distance below the mudline.

The sensitivities and effect magnitudes for decommissioning are considered to be comparable to those identified for the construction phase. Therefore, in the absence of detailed information regarding decommissioning works, the effects during the decommissioning of the Project are considered analogous with, or likely less than, those of the construction phase.

14.6.4 Summary of potential effects

A summary of the outcomes of the assessment of potential effects from the construction, operation and maintenance and decommissioning of the Project is provided in Table 14-10.

Table 14-10 Summary of potential effects

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction								
Temporary loss of or restricted access to fishing grounds	Demersal trawlers	Low	Low	Medium	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Passive gears	Medium	High	Low	Moderate	Minor	In addition to the above existing mitigation measures, construction works will, as secondary mitigation, adhere to the FLOWW guidance, where applicable.	Minor
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Displacement of fishing effort to other areas	Demersal trawlers	Low	Low	Medium	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
	Passive gears	Medium	High	Low	Moderate	Minor	In addition to the above existing mitigation measures, construction works will, as secondary mitigation, adhere to the FLOWW guidance, where applicable	Minor
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Interference with fishing activity as a result of increased vessel traffic	All vessels	Low	High	High	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased steaming times and distances	Small vessels (under 12 m)	Low	Low	Negligible	Minor	Negligible	None required above existing embedded mitigation measures.	N/A
	Large vessels (over 12 m)	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased risk of loss or damage to fishing gear (snagging risk)	Passive gears	Severity: Serious	Frequency: Extremely unlikely	Frequency: Extremely unlikely	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
	Mobile gears	Severity: Serious	Frequency: Extremely unlikely	Frequency: Extremely unlikely	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
Changes to exploited fish and shellfish resources	All gears	Low	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Operation and Maintenance								
Temporary loss of or restricted access to fishing grounds	Demersal trawlers	Low	Low	High	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Passive gears	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Displacement of fishing effort to other areas	Demersal trawlers	Low	Low	High	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Passive gears	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Interference with fishing activity as a result of increased vessel traffic	All vessels	Low	High	High	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased steaming times and distances	Small vessels (under 12 m)	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Large vessels (over 12 m)	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased risk of loss or damage to fishing gear (snagging risk)	Passive gears	Severity: Serious	Frequency: Extremely unlikely	Frequency: Extremely unlikely	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
	Mobile gears	Severity: Serious	Remote	Remote	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
Changes to exploited fish and shellfish resources	All gears	Low	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Decommissioning								
The sensitivity of receptors and the magnitude of effects to Commercial Fisheries receptors concluded as part of the assessment of potential effects during the construction phase (Section 14.6.1) are also applicable to the decommissioning phase.								

14.7 Assessment of cumulative effects

14.7.1 Introduction

Potential impacts from the Project have the potential to interact with those from other projects (developments), plans and activities, resulting in cumulative effects on Commercial Fisheries receptors. The general approach to the cumulative effects assessment is described in EIAR Vol. 2, Chapter 7: EIA Methodology and in EIAR Vol. 4, Appendix 31: Cumulative Effects Assessment Methodology and further detail is provided below.

As part of the cumulative process, a long list of plans, activities and projects (developments) is first defined. Upon review of this long list, the construction period of some of the identified projects (developments) did not overlap with the construction phase of the Project, so these plans, activities and projects (developments) will not be considered further in this cumulative assessment.

The list of relevant projects (developments) for inclusion within the cumulative effects assessment are outlined in Table 14-11 below. The identification of projects (developments) has been informed by a screening exercise which was undertaken to identify relevant developments within a defined Zone of Influence (ZoI).

The potential for cumulative effects on Commercial Fisheries receptors is influenced by the extent of available fishing grounds for the receptors potentially affected. Many fishing types, especially those using larger vessels, typically have larger operational ranges. Therefore, it is assumed that projects (developments) within 100 km of the Project could have the potential to result in cumulative impacts for this fleet. Consequently, all projects (developments) within 100 km of the Project are considered to have the potential to result in cumulative effects for all fishing methods, with the exception of scallopers who may be affected by cumulative projects (developments) outside of this 100 km ZoI (up to 510 km – see EIAR Vol. 2, Chapter 7: EIA Methodology and EIAR Vol. 4, Appendix 31: Cumulative Effects Assessment Methodology). While some fishing vessels may have a larger operational range than the defined 100 km ZoI, it is considered that the 100 km ZoI will capture developments that have the potential to affect fishing vessels with smaller operational ranges and which are therefore more sensitive to potential cumulative effects.

Projects (developments) outside the 100 km ZoI (up to 510 km) have been considered qualitatively with consideration given to the potential for cumulative effects to scallop dredgers. These vessels have large operational ranges and, as detailed in Section 14.6.1.1.3, typically fish nomadically throughout UK waters on a cyclical basis. As such, developments outside the 100 km ZoI (up to 510 km) which are considered to have the potential to result in a cumulative effect to scallop dredgers have been considered as part of the assessment of cumulative effects.

Table 14-11 List of developments considered for the Commercial Fisheries cumulative effect assessment

LOCATION	PROJECT TYPE	PROJECT NAME	DISTANCE TO PROJECT (KM)	STATUS	CONFIDENCE[30]	RELEVANT FISHERIES RECEPTOR
United Kingdom	Cable	Eastern Green Link 3	0	Pre-Application (Scoping)	Low	All fisheries receptors
United Kingdom	Offshore Wind	Muir Mhòr Offshore Wind Farm	0	Application	Low	All fisheries receptors
United Kingdom	Offshore Wind	Bowdun Offshore Wind Farm	47.49	Pre-Application (Scoping)	Low	All fisheries receptors
United Kingdom	Offshore Wind	Marram Wind	0	Pre-Application (Scoping)	Low	All fisheries receptors
United Kingdom	Offshore Wind	Ossian Offshore Wind Farm	66.12	Application	Low	All fisheries receptors
United Kingdom	Offshore Wind	Caledonia Offshore Wind Farm	67.85	Application	Low	All fisheries receptors

[30] *Confidence ratings have been applied to each cumulative development where: 'Low' = pre-application or application, 'Medium' = consented and 'High' = under construction or operational.*

LOCATION	PROJECT TYPE	PROJECT NAME	DISTANCE TO PROJECT (KM)	STATUS	CONFIDENCE[30]	RELEVANT FISHERIES RECEPTOR
United Kingdom	Offshore Wind	Buchan Offshore Wind Farm	70.89	Pre-Application (Scoping)	Low	All fisheries receptors
United Kingdom	Offshore Wind	Stromar Offshore Wind Farm	93.42	Pre-Application (Scoping)	Low	All fisheries receptors
United Kingdom	Tidal	Westray Tidal Array	192.54	Pre-Application (Scoping)	Low	All fisheries receptors
United Kingdom/ Netherlands	Cable	LionLink	400.76	Pre-Application	Low	Scallopers only
United Kingdom/ Germany	Cable	Tarchon Energy Interconnector	409.43	Pre-Application	Low	Scallopers only
United Kingdom	Offshore Wind	Berwick Bank	105.09	Application	Low	Scallopers only
United Kingdom	Offshore Wind	Ayre Offshore Wind Farm	131.02	Pre-Application (Scoping)	Low	Scallopers only

LOCATION	PROJECT TYPE	PROJECT NAME	DISTANCE TO PROJECT (KM)	STATUS	CONFIDENCE[30]	RELEVANT FISHERIES RECEPTOR
United Kingdom	Offshore Wind	Dogger Bank D Offshore Wind Farm	220.29	Pre-Application (Scoping)	Low	Scallopers only
United Kingdom	Offshore Wind	Dogger Bank South Wind Farms (DBS West and DBS East)	266.97	Application	Low	Scallopers only
United Kingdom	Offshore Wind	Havbredey Offshore Wind Farm	279.13	Pre-Application	Low	Scallopers only
United Kingdom	Offshore Wind	Arven Offshore Wind Farm	286.56	Pre-Application (Scoping)	Low	Scallopers only
United Kingdom	Offshore Wind	Spiorad na Mara Offshore Wind Farm	354.07	Pre-Application (Scoping)	Low	Scallopers only
United Kingdom	Offshore Wind	Outer Dowsing Offshore Wind Farm	382.61	Application	Low	Scallopers only

The following effects have been taken forward for the cumulative effects assessment:

- Construction and decommissioning:
  - Temporary loss of or restricted access to fishing grounds;
  - Displacement of fishing effort to other areas;
  - Interference with fishing activity as a result of increased vessel traffic;
  - Increased steaming times and distances;
  - Increased risk of loss or damage to fishing gear (snagging risk); and
  - Changes to exploited fish and shellfish resources.
- Operation and maintenance:
  - Long-term loss of or restricted access to fishing grounds;
  - Displacement of fishing effort to other areas;
  - Interference with fishing activity as a result of increased vessel traffic;
  - Increased steaming times and distances;
  - Increased risk of loss or damage to fishing gear (snagging risk); and
  - Changes to exploited fish and shellfish resources.

14.7.2 Cumulative construction effects

14.7.2.1 Temporary loss of or restricted access to fishing grounds

As detailed in Section 14.6.1.1, the potential effects of temporary loss of or restricted access to fishing grounds for the Project alone are associated with the implementation of statutory safety zones around Project construction vessels Restricted in their Ability to Manoeuvre or constructed infrastructure awaiting commissioning.

14.7.2.1.1 Demersal trawlers

As described in Section 14.6.1.1.1 above, for the Project alone demersal trawlers are considered to have a low sensitivity to the temporary loss of or restricted access to fishing grounds within the EICC and Array Area.

Demersal trawlers typically have larger operational ranges and as such developments located within 100 km of the Project have the potential to result in a cumulative effect. As presented within Table 14-11 total of eight projects (developments) were identified within 100 km of the Project, including one cable project, and seven offshore wind developments, all of which have a construction period which directly overlaps with the construction phase of the Project.

During the construction phase of the Export/Import Cable and the Array Area, advisory safety zones around Project vessels and vessels associated with construction works of cumulative projects (developments) and partially constructed Project and cumulative projects (developments) infrastructure will be implemented on a 'rolling' basis throughout the construction phase. Any temporary loss of or restricted access to fishing grounds will be highly localised and temporary in nature, with other fishing areas adjacent to the Project Area remaining undeveloped. Considering this, the effect of temporary loss of or restricted access to fishing grounds for demersal trawlers within the EICC and Array Area is still defined as having a medium magnitude.

The cumulative effects of temporary loss of or restricted access to fishing grounds for demersal trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.2.1.2 Pelagic trawlers

As detailed in Section 14.6.1.1.2 above, for the Project alone pelagic trawlers are considered to have a low sensitivity to displacement from fishing grounds during the construction phase within both the EICC and Array Area.

During the construction phase of the Project, statutory and advisory safety zones around Project vessels and partially constructed infrastructure awaiting commissioning will be implemented on a 'rolling' basis throughout the construction phase, with any temporary loss of or restricted access to fishing grounds considered to be highly localised and temporary in nature. It is anticipated that for all cumulative developments identified within Table 14-11, construction works will also be highly localised and temporary in nature, with statutory safety zones implemented on a 'rolling' basis.

It is recognised that vessels operating pelagic gear typically have a wider operational range and therefore any potential effects of cumulative temporary loss of or restricted access to fishing grounds on pelagic trawlers are therefore less likely to result in increased competition for space and resources. Therefore, the effect of temporary loss of or restricted access to fishing grounds for pelagic trawlers within the EICC and Array Area is still defined as having a low magnitude.

The cumulative effects of temporary loss of or restricted access to fishing grounds for pelagic trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.2.1.3 Scallop dredgers

As described in Section 14.6.1.1.3 above, for the Project alone scallop dredgers are considered to have a medium sensitivity to the temporary loss of or restricted access to fishing grounds within both the EICC and Array Area.

Given the characteristically nomadic nature of scallop dredgers and the wide availability of alternative fishing grounds throughout the UK, the spatial distribution of scallop dredgers and available fishing grounds are widespread throughout the Commercial Fisheries Study Area, adjacent waters and the wider UK marine environment. As presented within Table 14-11 a total of 19 projects (developments) have been identified as having the potential to result in a cumulative effect to fleets operating scallop dredgers, all of which currently have scheduled a construction phase which directly overlaps with the construction phase of the Project. Given the low effort and value of vessels operating dredgers along the EICC out with 12 NM and the Array Area, and within the Array Area itself, the potential effects of cumulative temporary loss of or restricted access to fishing grounds will primarily affect scallop dredgers operating between the Export/Import Cable landfall and the 12 NM limit.

Statutory safety zones around Project vessels Restricted in their Ability to Manoeuvre and partially constructed infrastructure awaiting commissioning (i.e., FTU and OSCPs infrastructure) will be implemented on a 'rolling' basis throughout the construction phase. Any temporary loss of or restricted access to fishing grounds will be highly localised and temporary in nature, owing to the transient nature of Export/Import Cable installation activities.

It is recognised that works associated with the EICC within 12 NM and other developments located within the immediate vicinity of the Project (namely Muir Mhòr Offshore Wind Farm) will limit the grounds within which fishing

can be displaced to. However, it is considered that the wide availability of grounds throughout UK waters and the nomadic nature of scallop dredgers will accommodate any loss of access to fishing grounds located within the EICC during the construction phase without a significant increase in gear conflict or completion between fleets. Considering this the effect of temporary loss of or restricted access to fishing grounds for scallop dredgers within the EICC and Array Area is still defined as having a low magnitude.

The cumulative effects of temporary loss of or restricted access to fishing grounds for scallop dredgers within the EICC and Array Area is considered to be minor and not significant.

14.7.2.1.4 Passive gears

As detailed in Section 14.6.1.1.4 above, for the Project alone passive gears are considered to have a medium sensitivity to the temporary loss of or restricted access to fishing grounds both within the EICC and within the Array Area.

Given the size of vessels operating passive gears a large portion of this fleet is confined to local inshore waters, with limited flexibility in terms of where their passive gears can be deployed (i.e., directly on the seabed). The availability of fishing grounds for fleets operating passive gears is limited due to their restricted operational range. It is recognised that works associated with the EICC within 12 NM and other projects (developments) located within the immediate vicinity of the Project (namely Muir Mhòr Offshore Wind Farm) will limit the grounds within which fishing can be displaced to. Furthermore, effort and value data suggest that any passive gears displaced by the Project alone within the EICC or cumulatively with other development will have to be relocated to waters with a potentially lower yield. Therefore, the effect of temporary loss of or restricted access to fishing grounds for passive gears is still defined as having a high magnitude. However, it is anticipated that, similarly to the Project, other developments which will request passive gear operators remove or relocate their gear will, as secondary mitigation, adhere to the FLOWW guidance, where applicable. With consideration given to the implementation of these secondary mitigation measures for passive gears, the magnitude of effect for passive gears within the EICC is revaluated as having a low magnitude of effect.

Owing to very limited number of vessels operating passive gears within the Array Area, the effect of temporary loss of or restricted access to fishing grounds for passive gears is still defined as having a low magnitude.

Therefore, the cumulative effects of temporary loss of or restricted access to fishing grounds for passive gears within the EICC and Array Area is considered to be minor and not significant.

14.7.2.1.5 Non-UK vessels

As described in Section 14.6.1.1.5 above, for the Project alone non-UK vessels are considered to have a negligible sensitivity to the temporary loss of or restricted access to fishing grounds within both the EICC and Array Area.

Considering the wide availability of fishing grounds for non-UK vessels and the low value of the Project Area for these vessels, the cumulative effects is considered to be of negligible magnitude. Therefore, the cumulative effects of temporary loss of or restricted access to fishing grounds is considered to be negligible and not significant for both the EICC and Array Area.

14.7.2.2 Displacement of fishing effort to other areas

14.7.2.2.1 Demersal trawlers

As detailed in Section 14.6.1.2.1 above, for the Project alone demersal trawlers are considered to have a low sensitivity to the displacement of fishing effort to other areas within the EICC and Array Area.

During the construction phase of the Export/Import Cable and Array Area, advisory safety zones will be implemented around Project vessels and partially constructed infrastructure awaiting commissioning. It is assumed that vessels associated with construction works of cumulative developments will also have advisory safety zones in place. Any Project and cumulative project (development) safety zones are assumed to be implemented on a 'rolling' basis throughout the construction phase. Any displacement of fishing effort to other areas will be highly localised and temporary in nature, with other fishing areas adjacent to the Project Area remaining undeveloped. Considering this, the effect of displacement of fishing effort to other areas for demersal trawlers within the EICC and Array Area is still defined as having a medium magnitude.

The cumulative effects of displacement of fishing effort to other area for demersal trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.2.2.2 Pelagic trawlers

As detailed in Section 14.6.1.2.2 above, for the Project alone pelagic trawlers are considered to have a low sensitivity to displacement from fishing grounds during the construction phase within both the EICC and Array Area.

It is anticipated that for all cumulative projects (developments) identified within Table 14-11, construction works will also be highly localised and temporary in nature, with statutory safety zones implemented on a 'rolling' basis.

It is recognised that vessels operating pelagic gear typically have a wider operational range and therefore any potential effects of cumulative displacement and secondary displacement on pelagic trawlers are less likely to result in increased competition for space and resources. Consequently, the effect of displacement of fishing effort to other areas for pelagic trawlers within the EICC and Array Area is still defined as having a low magnitude.

The cumulative effects of displacement of fishing effort to other area for pelagic trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.2.2.3 Scallop dredgers

As described in Section 14.6.1.2.3 above, for the Project alone scallop dredgers are considered to have a medium sensitivity to the displacement of fishing effort to other areas within the EICC and Array Area.

It is recognised that works associated with the EICC within 12 NM and other developments located within the immediate vicinity of the Project (namely Muir Mhòr Offshore Wind Farm) will limit the grounds within which fishing can be displaced to. However, it is considered that the wide availability of grounds throughout UK waters and the nomadic nature of scallop dredgers will accommodate displacement from the EICC during the construction phase without a significant increase in gear conflict or completion between fleets. Considering this the effect of displacement of fishing effort to other areas for scallop dredgers within the EICC and Array Area is still defined as having a low magnitude.

The cumulative effects of displacement of fishing effort to other areas for scallop dredgers within the EICC and Array Area is considered to be minor and not significant.

14.7.2.2.4 Passive gears

As detailed in Section 14.6.1.2.4 above, for the Project alone passive gears are considered to have a medium sensitivity to the displacement of fishing effort to other areas both within the EICC and within the Array Area.

Given the size of vessels operating passive gears a large portion of this fleet is confined to local inshore waters, with limited flexibility in terms of where their passive gears can be deployed (i.e., directly on the seabed). As such the availability of fishing grounds for fleets operating passive gears is limited as a result of their restricted operational range. It is recognised that works associated with the EICC within 12 NM and other developments located within the immediate vicinity of the Project (namely Muir Mhòr Offshore Wind Farm) will limit the grounds within which fishing can be displaced to. Furthermore, effort and value data suggest that any passive gears displaced by the Project alone within the EICC or cumulatively with other projects (developments) will have to be relocated to waters with a potentially lower yield. Therefore, the effect of displacement of fishing effort to other areas for passive gears is still defined as having a high magnitude.

It is anticipated that, similarly to the Project, other projects (developments) which will request passive gear operators to remove or relocate their gear will, as secondary mitigation, adhere to the FLOWW guidance, where applicable. With consideration given to the implementation of these secondary mitigation measures for passive gears, the magnitude of effect for passive gears within the EICC is re-evaluated as having a low magnitude of effect.

Owing to very limited number of vessels operating passive gears within the Array Area, the effect of displacement of fishing effort to other areas for passive gears is also defined as having a low magnitude.

Therefore, the cumulative effects of displacement of fishing effort to other areas for passive gears within the EICC and Array Area is considered to be minor and not significant.

14.7.2.2.5 Non-UK vessels

As described in Section 14.6.1.2.5 above, for the Project alone non-UK vessels are considered to have a negligible sensitivity to the displacement of fishing effort to other areas within both the EICC and Array Area.

Considering the wide availability of fishing grounds for non-UK vessels and the low value of the Project Area for these vessels, the cumulative effects is considered to be of negligible magnitude. The cumulative effects of displacement of fishing effort to other areas is considered to be negligible and not significant for both the EICC and Array Area.

14.7.2.3 Interference with fishing activity as a result of increased vessel traffic

As described in Section 14.6.1.3 above, for the Project alone all fleets operating within the EICC and the Array Area have a low sensitivity to interference with fishing activity as a result of increased vessel traffic.

There is the potential that vessel movements associated with other projects (developments) within 100 km of the Project could result in a cumulative effect associated to interference with fishing activity. However, it is anticipated that, similarly to the Project, all cumulative developments will consult with the fishing industry and local fishers to discuss the nature and spatial extent for construction activities and to inform all fishers of vessel transit routes

associated with developments. Furthermore, all vessels operating on behalf of the Project and other projects (developments) will adhere to COLREGs. Recognising that interference with fishing activity as a result of increased vessel traffic has the potential to ensue in significant economic damage to fishing vessels and damage to gear, the potential effect is still defined as having a high magnitude for both the EICC and Array Area.

The cumulative effects of interference with fishing activity as a result of increased vessel traffic for both the EICC and Array Area is considered to be minor and not significant.

14.7.2.4 Increased steaming times and distances

As detailed in Section 14.6.1.4 the physical presence of Project vessels and safety zones around Project vessels and partially constructed infrastructure has the potential to result in the temporary loss of or restricted access to fishing grounds and the displacement of fishing vessels from the Project Area into adjacent waters.

14.7.2.4.1 Small vessels (under 12 m)

As detailed within Section 14.6.1.4.1 above, for the Project alone all small vessels (under 12 m) operating within the EICC and Array Area are considered to have low sensitivity to increased steaming times and distances.

Owing to their size, small vessels (under 12 m) have a smaller operational range and typically operate within the inshore environment (<12 NM) and close to their home ports. As such it is considered that small vessels are most likely to be affected by construction works of the EICC acting cumulatively with other developments within the immediate vicinity of these works. The closest cumulative project (development) to the EICC within the inshore environment is Muir Mhòr Offshore Wind Farm, the red line boundary of which will directly overlap with the EICC. The construction period for Muir Mhòr Offshore Wind Farm will overlap with the construction phase of the Project.

As detailed within Section 14.6.1.4.1, works associated with the construction of the EICC will be transient in nature, with the spatial extent of any effects associated with the physical presence of Project vessels and associated safety zones considered to be highly localised and short-term in nature. While the red line boundary of Muir Mhòr Offshore Wind Farm (as presented within its scoping report (Muir Mhòr, 2023)) directly overlaps with the EICC, cable construction works for the Muir Mhòr Offshore Wind Farm export cable will be undertaken within a small portion of this red line boundary. As such it is considered that there is limited potential for a spatial and temporal overlap of works associated with the construction of the Export/Import Cable and the Muir Mhòr Offshore Wind Farm export cable. Furthermore, is it considered that any works associated with the construction of the Muir Mhòr Offshore Wind Farm export cable will be of a transient nature, highly localised and short-term in nature. Considering this the effect of increased streaming times and distances for small vessels within the EICC is still defined as having a low magnitude.

As detailed in Section 14.6.1.4.1 there are limited number of small vessels operating within the Array Area. As such the potential effect of increased steaming times and distances for small vessels within the Array Area is still defined as having a negligible magnitude.

The cumulative effects of increased steaming times and distances for small vessels within the EICC is considered to be minor and not significant.

The cumulative effects of increased steaming times and distances for small vessels within the Array Area is considered to be negligible and not significant.

14.7.2.4.2 Large vessels (over 12 m)

As detailed within Section 14.6.1.4.2 above, for the Project alone all small vessels (over 12 m) operating within the EICC and Array Area are considered to have low sensitivity to increased steaming times and distances.

With consideration given to the larger operational range of these vessels, in addition to the transient nature and highly localised spatial extent of construction works and implemented statutory and advisory safety zones associated with the Project and other cumulative projects (developments), the effect is still defined as having a low magnitude for both the EICC and Array Area.

The cumulative effects of increased steaming times and distances for large vessels within the EICC and Array Area is considered to be minor and not significant.

14.7.2.5 Increased risk of loss or damage to fishing gear (snagging risk)

As detailed in Section 14.6.1.5 the assessment of increased risk of loss or damage to fishing gear (snagging risk) considers safety issues for fishing vessels actively fishing with the marine environment and does not consider fishing vessels transiting through, as those are assessed as part of EIAR Vol 3, Chapter 15: Shipping and Navigation.

14.7.2.5.1 Passive gears

Throughout the construction phase of the Project, 500 m safety zones (statutory and/or advisory) will be implemented around partially constructed infrastructure on a 'rolling' basis, with all fishers operating passive gears requested to relocate their gear outside of construction areas. It is anticipated that cumulative projects (developments) will also implement statutory and advisory safety zones throughout construction works and will request the relocation of passive gears from areas of construction activities. Owing to the highly localised, transient and short-term nature of construction activities associated with the Project and cumulative project (developments), the potential for a cumulative effect to arise is considered to be low. However, owing to the potential for increased risk of loss or damage to fishing gear (snagging risk), vessels operating passive gears are considered to have a serious safety risk (through potential injury to crew members or loss of life). However, the frequency of occurrence in consideration of safety risk is considered to be extremely unlikely.

The cumulative effects of increased risk of loss or damage to fishing gear (snagging risk) for fleets operating passive gears with consideration to the serious severity and the extremely unlikely frequency of occurrence, the cumulative overall risk is considered to be tolerable and within acceptable limits.

14.7.2.5.2 Mobile gears

As detailed above 500 m safety zones (statutory and/or advisory) will be implemented around partially constructed infrastructure on a 'rolling' basis throughout the construction phase, with all fishers operating passive gears requested to relocate their gear outside of construction areas. It is anticipated that cumulative developments will also implement statutory and advisory safety zones throughout construction works and will request the relocation of passive gears from areas of construction activities. Owing to the highly localised, transient and short-term nature of construction activities associated with the Project and cumulative developments, the potential for a cumulative effect to arise is considered to be low. However, owing to the potential for increased risk of loss or damage to fishing gear (snagging risk), vessels operating mobile gears are considered to have a serious safety risk (through potential injury to crew members or loss of life). However, the frequency of occurrence in consideration of safety risk is considered to be extremely unlikely.

The cumulative effects of increased risk of loss or damage to fishing gear (snagging risk) for fleets operating mobile gears with consideration to the serious severity and the extremely unlikely frequency of occurrence, the cumulative overall risk is considered to be tolerable and within acceptable limits.

14.7.2.6 Changes to exploited fish and shellfish resources

As detailed in Section 14.6.1.6 above, for the Project alone fishing vessels operating within both the EICC and Array Area are considered to have a low sensitivity to changes to exploited fish and shellfish species.

As presented within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology, a series of embedded mitigation measures have been adopted for the Project in order to reduce the potential for effects to fish and shellfish receptors, including through micro-siting Project infrastructure to avoid areas of important habitats (where possible) and through reducing the spatial footprint of the Project on the seafloor as far as practicable (i.e., through the burial of the EICC and therefore reduced requirement for additional cable protection). For all cumulative projects (developments) identified in Table 14-11 it is anticipated that similar embedded mitigation measures will be adopted as part of development design to minimise any potential effects to fish and shellfish species. A full assessment of potential cumulative effects to fish and shellfish resources is presented within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology.

Considering this, the effect of changes to exploited fish and shellfish resources within the EICC and Array Area is defined as having a low magnitude.

The cumulative effects of changes to exploited fish and shellfish resources within the EICC and Array Area is considered to be minor and not significant.

14.7.3 Cumulative operation and maintenance effects

14.7.3.1 Long-term loss of or restricted access to fishing grounds

14.7.3.1.1 Demersal trawlers

As detailed in Section 14.6.2.1.1 above, for the Project alone demersal trawlers are considered to have a low sensitivity to long-term loss of or restricted access to fishing grounds within the EICC and Array Area.

Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. As a result, it is assumed that demersal trawling operations will resume over the EICC at the discretion of the skipper. Therefore, the effect of long-term loss of or restricted access to fishing grounds is still considered to have a low magnitude for demersal trawlers operating within the EICC as opposed to the not-cumulative assessment.

Due to the nature of the infrastructure proposed within the Array Area (including the presence of FTUs), it is considered unlikely that demersal trawling activity will be able to resume within the Array Area throughout the operational life of the Project (i.e., 35 years). For all cumulative projects (developments) identified within Table 14-11, several offshore wind developments (including the Muir Mhòr Offshore Wind Farm, MarramWind Offshore Wind Farm, Caledonia Offshore Wind Farm, and Stomar Offshore Wind Farm) will also deploy WTGs within their respective array areas. As such it is assumed that demersal trawling activity will not be able to resume within these projects (developments), therefore resulting in a cumulative long-term loss of or restricted access to fishing grounds for

demersal trawlers. As such the effect of displacement of long-term loss of or restricted access to fishing grounds for demersal trawlers within the Array Area is still defined as having a high magnitude.

The cumulative effects of long-term loss of or restricted access to fishing grounds for demersal trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.3.1.2 Pelagic trawlers

As detailed in Section 14.7.3.1.2 above, for the Project alone pelagic trawlers are considered to have a low sensitivity to long-term loss of or restricted access to fishing grounds within both the EICC and Array Area.

Any routine or emergency operation and maintenance works required for the Project or cumulative projects (developments) identified in Table 14-11 will be undertaken over a highly localised spatial scale and over a short period of time when compared to works undertaken during the construction phase. While it is considered unlikely that trawling activity will be able to resume within the Array Area throughout the operational life of the Project (i.e., 35 years) or within array areas of cumulative projects (developments) installing floating infrastructure, a number of high-value fishing grounds are available throughout the wider marine environment. As presented within Section 14.4.4.2.1.2 effort and value for existing pelagic trawling activity within both the EICC and Array Area is low. As such the effect of long-term loss of or restricted access to fishing grounds for pelagic trawlers within the Array Area is still defined as having a low magnitude.

The cumulative effects of long-term loss of or restricted access to fishing grounds for pelagic trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.3.1.3 Scallop dredgers

As described in Section 14.6.1.2.3 above, for the Project alone scallop dredgers are considered to have a medium sensitivity to the long-term loss of or restricted access to fishing grounds within both the EICC and Array Area.

Any routine or emergency operation and maintenance works required for the Project or cumulative projects (developments) identified in Table 14-11 will be undertaken over a highly localised spatial scale and over a short period of time when compared to works undertaken during the construction phase. Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that scallop dredging operations will resume over the EICC at the discretion of the skipper. As such the effect long-term loss of or restricted access to fishing grounds for scallop dredgers within the EICC is still defined as having a low magnitude.

Owing to very limited existing scallop dredging activity within the Array area, the effect of long-term loss of or restricted access to fishing grounds is considered to have a negligible magnitude.

The cumulative effects of long-term loss of or restricted access to fishing grounds for scallop dredgers within the EICC is considered to be minor and not significant.

The cumulative effects of long-term loss of or restricted access to fishing grounds for scallop dredgers within the Array Area is considered to be minor and not significant.

14.7.3.1.4 Passive gears

As described in Section 14.6.2.2.4 above, for the Project alone passive gears are considered to have a **medium sensitivity** to long-term loss of or restricted access to fishing grounds within both the EICC and Array Area.

Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that fleets operating passive gears will be able to resume operations within the EICC during the operation and maintenance phase. It is anticipated that the operational phase of all cumulative developments identified within Table 14-11 will overlap with the operational phase of the Project. As such it is considered that fishers operating passive gears will be able to resume operations within the footprint of all cumulative developments identified. Therefore, the effect of long-term loss of or restricted access to fishing grounds within the EICC is still considered to have a **low magnitude**.

Given the limited number of vessels operating passive gears within the Array Area, the effect is considered to have a **low magnitude**.

The cumulative effects of long-term loss of or restricted access to fishing grounds within the EICC is considered to be **minor** and **not significant**.

The cumulative effects of long-term loss of or restricted access to fishing grounds within the Array Area is considered to be **minor** and **not significant**.

14.7.3.1.5 Non-UK vessels

As described in Section 14.6.2.1.5 above, for the Project alone non-UK vessels are considered to have a **negligible sensitivity** to the long-term loss of or restricted access to fishing grounds within both the EICC and Array Area.

Considering the wide availability of fishing grounds for non-UK vessels and the low value of the Project Area for these vessels, the cumulative effects is considered to be of **negligible magnitude**. Therefore, the cumulative effects of long-term loss of or restricted access to fishing grounds is considered to be **negligible** and **not significant** for both the EICC and Array Area.

14.7.3.2 Displacement of fishing effort to other areas

14.7.3.2.1 Demersal trawlers

As detailed in Section 14.6.2.1.1 above, for the Project alone demersal trawlers are considered to have a **low sensitivity** to displacement of fishing effort to other areas within both the EICC and Array Area.

Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that demersal trawling operations will resume over the EICC at the discretion of the skipper. Therefore, the effect of displacement of fishing effort to other areas is still considered to have a **low magnitude** for demersal trawlers operating within the EICC.

As for the potential cumulative effects of long-term loss of or restricted access to fishing grounds, due to the nature of the infrastructure proposed within the Array Area (including the presence of FTUs and associated mooring lines),

it is considered unlikely that demersal trawling activity will be able to resume within the Array Area throughout the operational life of the Project (i.e., 35 years). For all cumulative projects (developments) identified within Table 14-11, several offshore wind developments (including the Muir Mhòr Offshore Wind Farm, MarramWind Offshore Wind Farm, Caledonia Offshore Wind Farm, and Stomar Offshore Wind Farm) will also deploy WTG infrastructure within their respective array areas. As such it is assumed that demersal trawling activity will not be able to resume within these projects (developments), therefore resulting in a cumulative displacement of fishing effort to other areas for demersal trawlers. As such the effect of displacement of long-term loss of or restricted access to fishing grounds for demersal trawlers within the Array Area is still defined as having a high magnitude.

The cumulative effects of displacement of fishing effort to other areas for demersal trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.3.2.2 Pelagic trawlers

As detailed in Section 14.7.3.2.2 above, for the Project alone pelagic trawlers are considered to have a low sensitivity to displacement of fishing effort to other areas within the EICC and Array Area.

Any routine or emergency operation and maintenance works required for the Project or cumulative projects (developments) identified in Table 14-11 will be undertaken over a highly localised spatial scale and over a short period of time when compared to works undertaken during the construction phase. While it is considered unlikely that trawling activity will be able to resume within the Array Area throughout the operational life of the Project (i.e., 35 years) or within array areas of cumulative projects (developments) installing floating infrastructure, a number of high-value fishing grounds are available throughout the wider marine environment. As presented within Section 14.4.4.2.1.2 effort and value for existing pelagic trawling activity within both the EICC and Array Area is low. As such the effect of displacement of fishing effort to other areas for pelagic trawlers within the Array Area is still defined as having a low magnitude.

The cumulative effects of displacement of fishing effort to other areas for pelagic trawlers within the EICC and Array Area is considered to be minor and not significant.

14.7.3.2.3 Scallop dredgers

As described in Section 14.6.1.2.3 above, for the Project alone scallop dredgers are considered to have a medium sensitivity to the displacement of fishing effort to other areas within the EICC and Array Area.

As described for construction it is recognised that works associated with the EICC within 12 NM and other projects (developments) located within the immediate vicinity of the Project (namely Muir Mhòr Offshore Wind Farm) will limit the grounds within which fishing can be displaced to. Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that scallop dredging operations will resume over the EICC at the discretion of the skipper. Furthermore, owing to the wide availability of grounds throughout UK waters and the nomadic nature of scallop dredgers will accommodate displacement from the EICC during the operation and maintenance phase without a significant increase in gear conflict or completion between fleets. As such the effect of displacement of fishing effort to other areas for scallop dredgers within the EICC is still defined as having a low magnitude.

Owing to very limited existing scallop dredging activity within the Array area, the effect of displacement of fishing effort to other areas is considered to have a **negligible magnitude.**

The cumulative effects of displacement of fishing effort to other areas for scallop dredgers within the EICC is considered to be **minor** and **not significant**.

The cumulative effects of displacement of fishing effort to other areas for scallop dredgers within the Array Area is considered to be **minor** and **not significant**.

14.7.3.2.4 Passive gears

As described in Section 14.6.2.2.4 above, for the Project alone passive gears are considered to have a **medium sensitivity** to displacement of fishing effort to other areas within the EICC and Array Area.

Although Cenos agrees with the ESCA advice against any type of fishing over cables (ESCA, N.D.), Cenos acknowledges that there is no legal way to prevent fishing over their installed cables. Therefore, it is assumed that fleets operating passive gears will be able to resume operations within the EICC during the operation and maintenance phase. It is anticipated that the operational phase of all cumulative projects (developments) identified within Table 14-11 will overlap with the operational phase of the Project, and as such it is considered that fishers operating passive gears will be able to resume operations within the footprint of all cumulative projects (developments) identified. As a result, the effect displacement to fishers operating passive gears within the EICC is still considered to have a **low magnitude**.

Given the limited number of vessels operating passive gears within the Array Area, the effect is considered to have a **low magnitude**.

The cumulative effects of displacement of fishing effort to other area for passive within the EICC and Array Area is considered to be **minor** and **not significant**.

14.7.3.2.5 Non-UK vessels

As described in Section 14.6.2.2.5 above, for the Project alone non-UK vessels are considered to have a **negligible sensitivity** to the displacement of fishing effort to other areas within both the EICC and Array Area.

Considering the wide availability of fishing grounds for non-UK vessels and the low value of the Project Area for these vessels, the cumulative effects is considered to be of **negligible magnitude**. Therefore, the cumulative effects of displacement of fishing effort to other areas is considered to be **negligible** and **not significant** for both the EICC and Array Area.

14.7.3.3 Interference with fishing activity as a result of increased vessel traffic

As described in Section 14.6.2.3 above, for the Project alone all fleets operating within the EICC and the Array Area have a **low sensitivity** to interference with fishing activity as a result of increased vessel traffic.

There is the potential that project vessel movements associated with other developments within 100 km of the Project could result in a cumulative effect associated to interference with fishing activity. However, as detailed above it is anticipated that all cumulative projects (developments) will consult with the fishing industry and local fishers to discuss

the timing and location of operation and maintenance works, with all fishers informed of vessel transit routes associated with the Project and cumulative projects (developments). Furthermore, all vessels operating on behalf of the Project and other projects (developments) will adhere to COLREGs. Recognising that interference with fishing activity as a result of increased vessel traffic has the potential to result in significant damage to fishing vessels, gear and result in potential injury to crew members, the potential effect is defined as having a high magnitude for both the EICC and Array Area.

The cumulative effects of interference with fishing activity because of increased vessel traffic for both the EICC and Array Area is considered to be minor and not significant.

14.7.3.4 Increased steaming times and distances

14.7.3.4.1 Small vessels (under 12 m)

As detailed in Section 14.7.3.4.1 above, for the Project alone small vessels (under 12 m) operating within the EICC and Array Area have a low sensitivity to increased steaming times and distances.

Owing to their size, small vessels (under 12 m) have a smaller operational range and typically operate within the inshore environment (<12 NM) and close to their home ports. Therefore, the potential for cumulative effects of increased steaming times and distances are only likely to occur because of Project maintenance works overlapping with cumulative projects (developments) maintenance works operating within the inshore environment (i.e., any maintenance works associated with the Muir Mhòr Offshore Wind Farm export cable within 12 NM, or from development maintenance vessels transiting through the inshore environment).

Any maintenance works associated with the Project and cumulative projects (developments) are recognised as being short-term and highly localised in nature, with the physical presence of maintenance vessels and safety zones limited on both a spatial and temporal scale when compared to construction works. Considering this, the effect of increased steaming times and distances for small vessels within the EICC and Array Area is still defined as having a low magnitude.

The cumulative effects of increased steaming times and distances for small vessels within the EICC and Array Area is considered to be minor and not significant.

14.7.3.4.2 Large vessels (over 12 m)

As detailed in Section 14.7.3.4.2 above, for the Project alone large vessels (over 12 m) operating within the EICC and Array Area have a low sensitivity to increased steaming times and distances.

During the operation and maintenance phase, vessels are expected to continue to utilise the Project Area as before. Therefore, the potential for cumulative effects of increased steaming times and distances are only likely to occur as a result of Project maintenance works overlapping with cumulative projects (developments) maintenance works or from cumulative projects (developments) maintenance vessels transiting through the marine environment.

Any maintenance works associated with the Project and cumulative projects (developments) are recognised as being short-term and highly localised in nature, with the physical presence of maintenance vessels and associated safety zones limited on both a spatial and temporal scale when compared to construction works. Considering this the effect

of increased streaming times and distances for large vessels within both the EICC and Array Area is still defined as having a low magnitude.

The cumulative effects of increased steaming times and distances for large vessels within the EICC and Array Area is considered to be minor and not significant.

14.7.3.5 Increased risk of loss or damage to fishing gear (snagging risk)

14.7.3.5.1 Passive gears

During the operation and maintenance phase, all vessels operating passive gears are expected to continue to utilise the Project Area (at the discretion of the skipper) as before, with the exception of any 500 m safety zones (statutory and/or advisory) applied around maintenance vessels. It is anticipated that for all cumulative projects (developments) identified within Table 14-11, fishers operating passive gears will also be able to resume operations within the project (development) area during the operation and maintenance phase. However, with consideration given to the potential for increased risk of loss or damage to fishing gear (snagging risk), vessels operating passive gears are considered to have a serious safety risk (through potential injury to crew members or loss of life). However, the frequency of occurrence in consideration of safety risk is considered to be extremely unlikely.

The cumulative effects of increased risk of loss or damage to fishing gear (snagging risk) for fleets operating passive gears with consideration to the serious severity and the extremely unlikely frequency of occurrence, the cumulative overall risk is considered to be tolerable and within acceptable limits.

14.7.3.5.2 Mobile gears

During the operation and maintenance phase, all vessels operating mobile gears are expected to continue to utilise the Project Area (at the discretion of the skipper) as before, with the exception of any 500 m safety zones (statutory and/or advisory) applied around maintenance vessels and Project infrastructure undergoing maintenance. It is anticipated that for all cumulative projects (developments) identified within Table 14-11, fishers operating mobile gears will also be able to resume operations within the project (development) area during the operation and maintenance phase. However, with consideration given to the potential for increased risk of loss or damage to fishing gear (snagging risk), vessels operating mobile gears are considered to have a serious safety risk (through potential injury to crew members or loss of life). However, the frequency of occurrence in consideration of safety risk is considered to be remote.

The cumulative effects of increased risk of loss or damage to fishing gear (snagging risk) for fleets operating mobile gears with consideration to the serious severity and the remote frequency of occurrence, the cumulative overall risk is considered to be tolerable and within acceptable limits.

14.7.3.6 Changes to exploited fish and shellfish resources

As detailed in Section 14.6.2.6 above, for the Project alone fishing vessels operating within the EICC and Array Area are considered to have a low sensitivity to changes to exploited fish and shellfish species.

As presented within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology, during the operation and maintenance phase of the Project the significance for all potential effects assessed were concluded as not significant in EIA terms. Owing to the embedded mitigation measures that will be adopted for the Project, and which are anticipated to be adopted

for cumulative projects (developments) (as presented in Section 14.7.2.6), the effect of changes to exploited fish and shellfish resources within the EICC and Array Area is still defined as having a low magnitude.

Therefore, the cumulative effects of changes to exploited fish and shellfish resources within the EICC and Array Area is considered to be negligible and not significant.

14.7.4 Cumulative decommissioning effects

The decommissioning of the Project intends to complete the full removal of offshore infrastructure to below the mudline (where safe/practicable to do so). The majority of decommissioning works are likely to be undertaken in reverse to the sequence of construction works. However, there is limited information on the details around decommissioning of the Project and around the lifecycle of other projects (developments). Considering this, it is assumed that decommissioning involves similar or lesser levels of effects to construction.

A Decommissioning Programme will be prepared prior to construction, in line with the requirements of Section 105 of the Energy Act 2004 (as amended) and any applicable guidance available at the time.

14.7.5 Summary of cumulative effects

A summary of the outcomes of the assessment of cumulative effects for the construction, operation and maintenance and decommissioning phases of the Project is provided in Table 14-12.

Table 14-12 Summary of assessment of cumulative effects

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Construction								
Temporary loss of or restricted access to fishing grounds	Demersal trawlers	Low	Medium	Medium	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Passive gears	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures	N/A
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Displacement of fishing effort to other areas	Demersal trawlers	Low	Medium	Medium	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
	Passive gears	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures	N/A
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Interference with fishing activity as a result of increased vessel traffic	All vessels	Low	High	High	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased steaming times and distances	Small vessels (under 12 m)	Low	Low	Negligible	Minor	Negligible	None required above existing embedded mitigation measures.	N/A
	Large vessels (over 12 m)	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased risk of loss or damage to fishing gear (snagging risk)	Passive gears	Severity: Serious	Frequency: Extremely unlikely	Frequency: Extremely unlikely	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
	Mobile gears	Severity: Serious	Frequency: Extremely unlikely	Frequency: Extremely unlikely	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
Changes to exploited fish and shellfish resources	All gears	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Operation and Maintenance								
Temporary loss of or restricted access to fishing grounds	Demersal trawlers	Low	Medium	Medium	Minor	Minor	None required above existing embedded mitigation measures.	N/A

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Passive gears	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures	N/A
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A
Displacement of fishing effort to other areas	Demersal trawlers	Low	Medium	Medium	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Pelagic trawlers	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Scallop dredgers	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
	Passive gears	Medium	Low	Low	Minor	Minor	None required above existing embedded mitigation measures	N/A
	Non-UK vessels	Negligible	Negligible	Negligible	Negligible	Negligible	None required above existing embedded mitigation measures.	N/A

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF EFFECT WITHIN EICC	MAGNITUDE OF EFFECT WITHIN ARRAY AREA	CONSEQUENCE WITHIN EICC (SIGNIFICANCE OF EFFECT)	CONSEQUENCE WITHIN ARRAY AREA (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Interference with fishing activity as a result of increased vessel traffic	All vessels	Low	High	High	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased steaming times and distances	Small vessels (under 12 m)	Low	Low	Negligible	Minor	Negligible	None required above existing embedded mitigation measures.	N/A
	Large vessels (over 12 m)	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Increased risk of loss or damage to fishing gear (snagging risk)	Passive gears	Severity: Serious	Frequency: Extremely unlikely	Frequency: Extremely unlikely	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
	Mobile gears	Severity: Serious	Frequency: Remote	Frequency: Remote	Tolerable	Tolerable	None required above existing embedded mitigation measures.	N/A
Changes to exploited fish and shellfish resources	All gears	Low	Low	Low	Minor	Minor	None required above existing embedded mitigation measures.	N/A
Decommissioning								
The sensitivity of receptors and the magnitude of effects to Commercial Fisheries receptors concluded as part of the assessment of potential cumulative effects during the construction phase (Section 14.7.2) are also applicable to the decommissioning phase.								

14.8 Inter-related effects

Inter-related effects are the potential effects of multiple effects affecting one receptor or a group of receptors. Inter-related effects include interactions between the effect of the different phases of the Project (i.e. interaction of effect across construction, operation and maintenance and decommissioning), as well as the interaction between effect on a receptor within a Project phase. The potential inter-related effects for Commercial Fisheries receptors are described below.

14.8.1 Inter-related effects between Project phases

All phases of the Project have the potential to result in effects to Commercial Fisheries receptors. Throughout the construction phase of the Project, the spatial area of effects associated with temporary loss of access, displacement or increased steaming times will increase over time. Standard embedded mitigation measures will be in place to reduce the severity of effects on fishers, including those outlined within the FMMS (EIAR Vol.4, Appendix 34: Outline Fisheries Management and Mitigation Strategy). The interaction of the potential effects relating to loss of, or restricted access, displacement or increased steaming times is anticipated to be minimal between Project phases and is therefore not expected to result in a greater effect on Commercial Fisheries receptors that when the potential effects of each stage are considered in isolation.

Potential effects associated with increased risk of loss or damage to fishing gear (snagging risk) are anticipated to be highly localised and managed through a series of embedded mitigation measures (as detailed within Table 14-8) to reduce any potential risks to gear and personnel safety. It is therefore considered that there is no potential for safety issues between Project phases to interact and result in a greater effect on Commercial Fisheries receptors than when the potential effects of each stage are considered in isolation.

14.8.2 Inter-related effects within a Project phase

The key potential interaction between effects associated within a Project phase are considered to occur between loss of or restricted access to fishing grounds, displacement of fishing effort to other areas, and increased steaming times. Loss of or restricted access to fishing grounds has the potential to result in the displacement of fishing effort to other areas, and/or increased steaming times, resulting in associated effects, such as increased competition for resources, conflict, increased use of fuel through increased steaming times and/or pressure in alternative fishing grounds. This interaction has informed an inherent part of the assessment undertaken for the construction and operation and maintenance phases (as presented in Sections 14.6.1 and 14.6.2 respectively). Furthermore, a series of embedded mitigation measures (as detailed within Table 14-8) have been adopted for the Project in order to minimise the potential effects of displacement and secondary displacement as a result of works associated with the Project. It is therefore considered that there is no additional potential interaction between potential effects assessed for the Project which have the potential to result in an effect of greater significance than those which are considered in isolation within Section 14.6 above.

14.8.3 Inter-relationships

Inter-relationships are defined as the interaction between the effects assessed within different topic assessment chapters on a receptor. The other chapters and effects related to the assessment of potential effects on Commercial Fisheries are provided in Table 14-13.

Table 14-13 Commercial Fisheries inter-relationships

CHAPTER	POTENTIAL EFFECT	DESCRIPTION
EIAR Vol. 3, Chapter 11: Marine Mammal Ecology	Secondary entanglement	There is the potential for lost fishing gear to be become entangled within the mooring lines and subsea infrastructure associated with the Project, leading to an in-direct effect on marine mammal species which may become entangled in the fishing gear. This potential effect has been assessed within EIAR Vol. 3, Chapter 11: Marine Mammals.
EIAR Vol. 3, Chapter 12: Ornithology	Secondary entanglement	There is the potential for lost fishing gear to become entangled within the mooring lines and subsea infrastructure associated with the Project, leading to an in-direct effect on seabirds which may become entangled in the fishing gear. This potential effect has been assessed within EIAR Vol. 3, Chapter 12: Ornithology.
EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology	Effects to the seabed and sensitive fish habitats (e.g., spawning and/or nursery habitats)	Works associated with the construction, operation and maintenance and decommissioning phases of the Project have the potential to result in both the short-term and long-term disturbance or loss of fish spawning and nursery grounds. The loss of these grounds for commercially important species has been assessed within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology.
	Secondary entanglement	There is the potential for lost fishing gear to be become entangled within the mooring lines and subsea infrastructure associated with the Project, leading to an in-direct effect on fish species which may become entangled in the fishing gear. This potential effect has been assessed within EIAR Vol. 3, Chapter 13: Fish and Shellfish Ecology.
EIAR Vol 3, Chapter 14: Shipping and Navigation	Displacement of vessels	There is the potential for the physical presence of Project infrastructure and Project vessels to result in the temporary and long-term displacement of fishing vessels from the Project Area. Furthermore, there is the potential for secondary displacement effects arising as a result of displacement of fishing vessels from

CHAPTER	POTENTIAL EFFECT	DESCRIPTION
		the Project Area. This potential effect has been assessed within EIAR Vol. 3, Chapter 15: Shipping and Navigation.
	Collision risk (third-party to third-party) and collision risk (project to third-party)	There is the potential for safety issues to arise as a result of the physical presence of Project infrastructure and Project vessels, leading to potential third-party to third-party, project to third-party collision risk and allision risk. These potential effects have been assessed within EIAR Vol. 3, Chapter 15: Shipping and Navigation.
	Allision risk	
EIAR Vol 3, Chapter 19: Socio-economics, Tourism and Recreation	Project activities leading to an effect on employment.	There is the potential for works associated with the construction, operation and maintenance and decommissioning of the Project to result in potential effects to commercial fisheries activities. These potential effects may result in direct or in-direct effects (either positive or negative) to socio-economics. These potential effects have been assessed within EIAR Vol. 3, Chapter 19: Socio-economics, Tourism and Recreation.
	Project activities leading to an effect on economic output (Gross Value Added (GVA))	
	Project activities leading to socio-economic impacts	
	Project activities leading to distributional impacts	

14.9 Whole Project assessment

Please refer to EIAR Vol. 2, Chapter 7: EIA methodology for the full description of the Whole Project assessment.

The onshore aspects of the Project (i.e., those landwards of MLWS), including the onshore HDD entry point and the Export/Import Cable pull through, have been consented through the NorthConnect HVDC Cable Planning Consent. Details of the onshore project infrastructure which has been acquired through NorthConnect is presented within EIAR Vol. 2, Chapter 5: Project Description.

The cable installation method at landfall will be via HDD (as described fully within EIAR Vol 2, Chapter 5: Project Description). The potential effects associated with the installation of the Export/Import Cable between landfall and the Array Area have been assessed fully within Section 14.6.1. It is not anticipated that there will be any additional effects from the onshore project on Commercial Fisheries receptors.

14.10 Transboundary effects

Transboundary effects could arise when effects from a development within one European Economic Area (EEA) state's territory affects the environment of another EEA state(s).

As detailed within Section 14.4.4.1.2, non-UK fishing activities within the Commercial Fisheries Study Area are low, with non-UK fishing effort generally associated with the FU 7 (Fladen) *Nephrops* habitat located in the north of the Commercial Fisheries Study Area (Figure 14-7), and a pelagic trawling area within ICES rectangle 43E9. Potential effects of the Project on non-UK fishing fleets during the construction and operation and maintenance phases of the Project have been assessed within Sections 14.6.1 and 14.6.2 respectively. No significant effects on non-UK fishing fleets have been identified and therefore, the potential effects of the Project on Commercial Fisheries receptors are not expected to result in transboundary effects.

14.11 Summary of mitigation and monitoring

As part of the of the assessment of potential effects, one potentially significant impact to passive gear operators during the construction phase was identified. Secondary mitigation has been identified to reduce potentially significant impacts on passive gear operators as a result of temporary loss of or restricted access to fishing grounds and displacement of fishing effort to other areas during the construction phase of the Project. Table 14-14 below provides details on the proposed additional mitigation measures that are proposed as part of the assessment to reduce potential effects to an acceptable level.

Table 14-14 Secondary mitigation requirements

CODE	SECONDARY MITIGATION MEASURE	TYPE	DESCRIPTION	SECURED BY
MM-058	Adherence to the Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) Guidance (FLOWW, 2015) and development of cooperation agreements	Secondary	The Applicant will continue engagement with the fishing industry and stakeholders directly impacted by construction works and will adhere to the FLOWW (2015) guidance by developing evidence-based cooperation agreements for vessels required to relocate their static gear during the construction, maintenance and decommissioning periods.	Details will be included in the FMMS and will be in adherence with the FLOWW (2015) guidance. Secured through the Section 36 Consent and/or Marine Licence conditions. An outline FMMS is provided as part of the Application EIAR Vol. 4 Appendix 34: Outline FMMS.

Furthermore, even though the assessment of long-term loss or restricted access to fishing grounds and displacement of fishing effort for demersal trawlers during the operation and maintenance concluded a minor consequence of effect within the Array Area, it is acknowledged that the magnitude on the demersal trawlers was assessed as high. Therefore, it is proposed that monitoring will be undertaken by the Project to assess the impacts on demersal trawlers, in line with the Monitoring Guidance (awaiting publication). A detailed monitoring programme will be developed through consultation with stakeholders in line with the recommendations made within the ScotMER Fish and Fisheries evidence map. Details of the proposed monitoring programme will be presented within the relevant plan developed post-consent.

14.12 References

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