Morven North Offshore Wind Array Project

Environmental Impact Assessment Report

Volume 2, Chapter 12: Commercial Fisheries

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12.1 Introduction

12.1.1.1 This chapter of the Morven North Offshore Wind Array Project (hereafter "Morven North") Environmental Impact Assessment (EIA) Report (hereafter, the EIA Report) presents the assessment of the likely significant effects (as per the EIA Regulations as defined in Volume 1, Chapter 2: Policy and Legislation) on commercial fisheries. Specifically, this chapter considers the potential impacts of Morven North seaward of Mean High Water Springs (MHWS) during the construction, operations and maintenance (O&M) and decommissioning phases. Where relevant, this chapter also assesses the likely significant effects of Morven North on receptors landward of MLWS during the construction, O&M and decommissioning phases.

12.1.1.2 The assessment presented in this chapter has relied upon, or informed the following technical chapters and reports:

- Volume 2, Chapter 9: Fish and Shellfish Ecology where impacts on the ecology of fish and shellfish, including species of commercial interest, are assessed;
- Volume 2, Chapter 13: Shipping and Navigation where impacts on the navigational safety aspects of fishing activity are assessed.
- Volume 2, Chapter 17: Socio-Economics.
- Volume 2, Chapter 19: Major Accidents and Disasters.
- Volume 2, Chapter 20: Human Health.

12.1.1.3 The assessment presented is supported by the following annexes:

- Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report;
- Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1).

12.1.1.4 Commercial fisheries was reported on in the Scoping Report for the Morven Option Lease Agreement Site (hereafter, "the Morven Site Scoping Report"). (Morven Offshore Wind Limited (MvOWL), 2023). As described in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives, the Morven Option Lease Agreement Site (hereafter "Morven Site") has since been divided into two smaller projects, Morven North and Morven South Offshore Wind Array Project (hereafter "Morven South").

12.1.1.5 The potential impacts to commercial fisheries are considered to generally be the same (or less) for Morven North as identified in the Morven Site Scoping Report. Consequently, there has been no change in the methodology or impacts that were scoped in or out in the Morven Site Scoping Report for commercial fisheries. The advice provided by the Marine Directorate Licensing Operations Team (MD-LOT) in the Morven Site Scoping Opinion (MD-LOT, 2023) relevant to Morven North, has therefore been considered for the development of this chapter.

12.1.1.6 This chapter presents and assesses up-to-date parameters for Morven North and explains if and how any assessment aspects differ from the information set out in the Morven Site Scoping Report.

12.1.1.7 In this chapter, 'Commercial Fishing' is defined as any form of fishing activity legally undertaken where the catch is sold for taxable profit.

12.2 Study areas

12.2.1.1 Morven North is located within the International Council for the Exploration of the Seas (ICES) Division 4b (Central North Sea) statistical area; within United Kingdom (UK) Exclusive Economic Zone (EEZ) waters. For the purpose of statistical analysis, ICES Division 4b is divided into statistical rectangles which are consistent across all Member States operating in the North Sea. Each ICES statistical rectangle is '30 min latitude and 1 degree longitude' in size, which equates to approximately 30nm^2.

12.2.1.2 Two study areas have been defined for commercial fisheries and are shown in Figure 12.1:

- The Morven North Local Commercial Fisheries Study Area comprised of ICES rectangles 42E8 and 42E9;
- The Morven North Regional Commercial Fisheries Study Area comprised of the Morven North Local Commercial Fisheries Study Area and adjacent ICES rectangles 41E7 to 41F0, 42E7, 42F0, and 43E7 to 43F0 (i.e. 12 ICES rectangles in total).

12.2.1.3 The Morven North Local Commercial Fisheries Study Area provides a focus on the overlap between Morven North and the relevant ICES rectangles.

12.2.1.4 To understand fishing activity in adjacent waters, a Morven North Regional Commercial Fisheries Study Area has also been defined, encompassing the Morven North Local Commercial Fisheries Study Area and the surrounding ICES rectangles. Analysis at this scale recognises that most commercial fish and shellfish populations are distributed more widely and ensures that potential implications of displaced fishing activity can be assessed across a reasonable area. This approach is consistent with the Good Practice Guidance for Assessing Fisheries Displacement by Other Licensed Marine Activities (Scottish Government, 2022a), which advises that fishing activity should be described both in the ICES rectangles where a development is located and in adjacent rectangles where necessary. Defining study areas in this way ensures that potential displacement effects are assessed within an ecologically and operationally meaningful framework.

12.2.1.5 The Morven North Local Commercial Fisheries Study Area for commercial fisheries for the Morven Site was presented and agreed during the scoping process for the Morven Site. The underlying principles used to define the study area(s) for Morven North for commercial fisheries have not changed, other than the limits have been applied relative to the Morven North Boundary, rather than the Morven Site Boundary. In addition to the agreed Morven North Local Commercial Fisheries Study Area, a more expansive Morven North Regional Commercial Fisheries Study Area has been defined as described and justified immediately above.

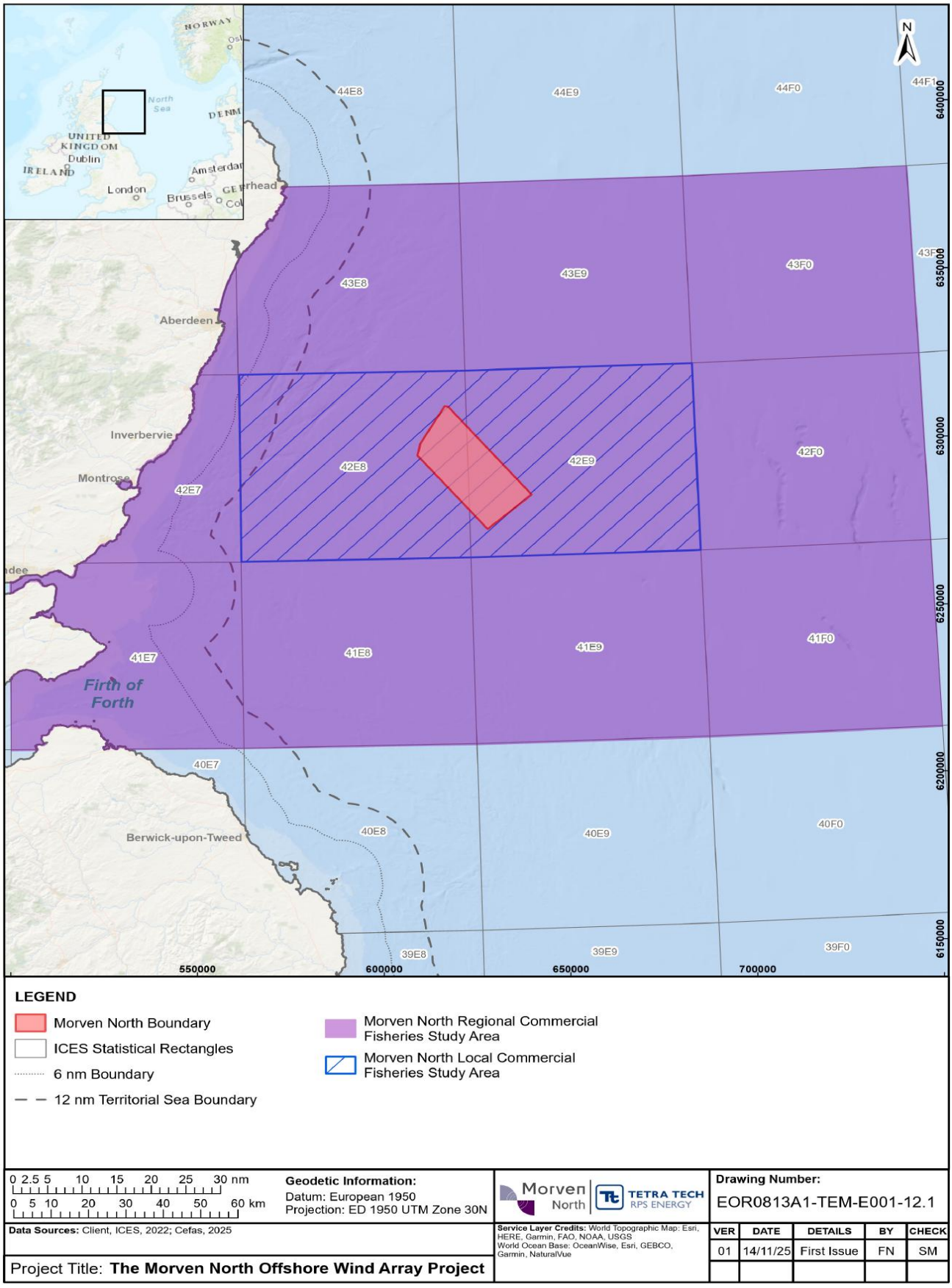

Figure 12.1: Commercial Fisheries Study Areas for Morven North

12.3 Legislative and policy context

12.3.1.1 Policy and legislation on renewable energy infrastructure is presented in Volume 1, Chapter 2: Policy and Legislation. Policy and legislation specific to commercial fisheries, is contained in the following:

- Marine (Scotland) Act 2010;
- Sea Fish (Conservation) Act 1967;
- The Sea Fishing (Licences and Notices) (Scotland) Regulations 2011;
- Inshore Fishing (Scotland) Act 1984;
- The Inshore Fishing (Prohibition of Fishing and Fishing Methods) (Scotland) Order 2004;
- The Sandeel (Prohibition of Fishing) (Scotland) Order 2024;
- Aquaculture and Fisheries (Scotland) Act 2007;
- Fisheries Act 2020;
- Scottish National Marine Plan (NMP) (Scottish Government, 2015);
- Sectoral Marine Plan (SMP) for Offshore Wind Energy (Scottish Government, 2020; Scottish Government, 2025 (update in draft))1;
- United Kingdom (UK) Marine Policy Statement (MPS) (HM Government, 2011).

12.3.1.2 A summary of the pertinent policy provisions relevant to commercial fisheries impact assessment are provided in Table 12.1 to Table 12.4 below.

Table 12.1: Summary of provisions within the Sectoral Marine Plan of relevance to commercial fisheries

Summary of relevant policy	How and where considered in the EIA report
The Sectoral Marine Plan (SMP) and draft updated SMP identify plan option areas for Offshore Wind Farm (OWF) development and identify key consenting issues associated with development. Potential impacts on commercial fishing are identified as a key risk factor to development in the East Region plan option areas in both the SMP and draft updated SMP. The draft updated SMP states that a key socio-economic risk identified for the East Region is a 'Reduction in fishing activity by vessels over 12m utilising demersal trawls, midwater trawls, demersal seines and mechanical dredges, pots and traps and surrounding nets'. The draft updated SMP Social and Economic Impact Assessment[2] (Scottish Government, 2025c) notes that the Morven Site is associated with relatively lower predicted socio-economic impacts on commercial fishing than several other East Region Plan Option Areas.	Reflecting the key risk factors identified in the East Region Plan Option Areas (POAs), this chapter presents an assessment of potential impacts on commercial fisheries in Section 12.11.

[1] At the time of preparation of this Chapter (November 2025), a draft version of the updated SMP is subject to public consultation: https://www.gov.scot/publications/draft-updated-sectoral-marine-plan-offshore-wind-energy-2025/pages/9/

[2] See Table 39 and supporting text in the draft SMP Social and Economic Impact Assessment: Draft Updated Sectoral Marine Plan for Offshore Wind Energy: Social and Economic Impact Assessment

Table 12.2: Summary of provisions within the National Marine Plan of relevance to commercial fisheries

Summary of relevant policy	How and where considered in the EIA report
Contains sector-specific policies relevant to offshore wind and commercial fisheries. Policies under Chapter 4 General Policies are of relevance to commercial fisheries, specifically GEN 4 which encourages proposals to enable co-existence and developments that do not result in areas being unsuitable for future use by others.	Reflecting the desire for co-existence, this chapter presents an assessment of potential impacts on commercial fisheries in Section 12.11 and identifies measures to encourage co-existence in Section 12.10.
Policies under Chapter 6 Sea Fisheries are considered relevant to commercial fisheries EIA. Policies seek to safeguard existing fishing opportunities and activities wherever possible (FISHERIES 1) and advise that mechanisms for managing conflicts between the fishing sector and other users of the marine environment should be in place (FISHERIES 1). Preparation of a Fisheries Management and Mitigation Strategy (FMMS) is recommended where existing fishing opportunities and activity cannot be safeguarded (FISHERIES 3). Chapter 6 Sea Fisheries provides principles for interactions with other users (paragraph 6.22), including short-term displacement of fishing during installation (paragraph 6.23), potential damage to both infrastructure and fishing equipment (paragraph 6.24) and following best practice guidance (paragraph 6.26).	Reflecting the key concerns and issues that should be addressed in an impact assessment and any FMMS (now referred to as FMMCP under current Marine Directorate guidance (Scottish Government, 2025a)), this chapter: • assesses the potential impacts of Morven North on commercial fisheries in Section 12.11; • sets out measures to mitigate any constraints that Morven North may place on commercial fishing activity in Section 12.10; A FMMCP is presented in Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1). In relation to participation in 'working groups', the Applicant is a member of the East Region Commercial Fisheries Working Group, with evidence of active engagement in the group summarised in Section 12.4. In relation to potential interactions between submarine cables and other users, the Applicant's commitments regarding cable burial, protection and monitoring, and to fisheries liaison are set out in both Table 12.12 and in Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1).
Chapter 11 Offshore Wind and Marine Renewable Energy provides principles for interactions with other users (paragraphs 11.26-11.29), including physical competition for space due to the impact of the physical presence of structures and encourages an inclusive approach to minimise and avoid impacts; and participation in working groups to develop co-existence and mitigation.	
Policies under Chapter 14 Submarine Cables (CABLES 2) are considered relevant to commercial fisheries. Policies seek to minimise impacts on the environment and other users, reduce conflict with other users, ensure suitable protection where burial is not feasible and use of post-lay surveys, monitoring and remedial action where required. In addition, Chapter 14 Submarine Cables provides principles for interactions with other users (paragraphs 14.8-14.11), including burial and protection to reduce	

Summary of relevant policy	How and where considered in the EIA report
conflict with other users and prevent damage to cables, engagement with stakeholders and provision of information under the Kingfisher Information Service – Offshore Renewable & Cable Awareness (KIS-ORCA) project.	

Table 12.3: Summary of provisions within the United Kingdom Marine Policy Statement of relevance to commercial fisheries

Summary of relevant policy	How and where considered in the EIA report
The Marine Policy Statement recognises commercial fisheries as an important marine activity and sets out objectives for their sustainable management (Section 3.8). However, the Statement does not afford automatic priority to any single sector. Instead, its high-level approach to marine planning seeks to enable the co-existence of compatible activities wherever possible. In particular, paragraph 2.3.1.5 emphasises the need to reduce real and potential conflict, maximise compatibility between uses, and identify areas where multiple activities may be accommodated.	Reflecting the desire for co-existence, this chapter presents an assessment of potential impacts on commercial fisheries in Section 12.11 and identifies measures to encourage co-existence in Section 12.10.

12.4 Consultation

12.4.1.1 The approach to consultation for Morven North is set out in Volume 1, Chapter 5: Consultation. A summary of the issues raised during consultation activities undertaken to date specific to commercial fisheries is presented in Table 12.4, together with how these issues have been considered in the production of this commercial fisheries EIA Report chapter. Further detail is presented within Volume 3, Annex 5.1: Consultation.

12.4.1.2 Further engagement with the fishing industry has been undertaken to develop an understanding of fishing activity in and around Morven North. This engagement has taken the form of gathering data on fishing activity from individual fishers during port visits and via issue of questionnaires aimed at data gathering to fishing industry representative organisations. Questionnaires were issued across April to July 2025 to the following organisations and individuals:

- Scottish Fishermen's Federation (SFF);
- Scottish White Fish Producers Association (SWFPA);
- Scottish Pelagic Fishermen's Association (SPFA);
- National Federation of Fishermen (NFFO);
- Scottish Seafood Association (SSA);
- Communities Inshore Fisheries Alliance (CIFA);
- Orkney Fisheries Association (OFA);
- North East of Scotland Fishermen's Organisation (NESFO);
- Shetland Fishermen's Association (SFA);
- Fraserburgh fisher;
- Peterhead fishers.

12.4.1.3 Regular engagement between the Applicant and fishing industry representatives has been ongoing since spring 2023 and is summarised in Table 12.4. In addition to this, as detailed in Volume 1, Chapter 5: Consultation, a Public Information Day relevant to both Morven North and Morven South was held in Stonehaven on 29 October 2025, to allow members of the public and stakeholders to meet the Applicant and discuss the proposals. The event was publicised, and advance notice was provided directly to relevant fisheries representative bodies with whom the Applicant had been engaging on a regular basis. A representative of the SWFPA attended the event.

Table 12.4: Summary of key consultation issues raised during consultation activities undertaken for Morven North of relevance to commercial fisheries

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
18 April 2023	EIA Scoping workshop (virtual meeting). Attendees as follows: • North and East Coast Regional Inshore Fisheries Group (N&EC RIFG); • SFF; • SPFA; • SWFPA; • The Applicant; • Company Fisheries Liaison Officer; • Lead EIA Consultant.	Applicant and team presented proposed approach to commercial fisheries EIA. SWFPA requested clarity on the marshalling port and highlighted concern with regard to the potential increase in vessel traffic and effects on static fishing gear. SWFPA requested baseline consider 10 years of data to capture long-term trends and influence of Brexit and COVID-19. SWFPA queried if the assessment would include cumulative impacts with other projects. SFF noted their preference for cable burial.	Workshop feedback was considered in preparation of the Morven Site Scoping Report (July 2023). Regarding baseline temporal coverage, where data allows, a time series that exceeds five years has been presented. VMS and landings data covering at least a ten-year period has been used in describing the commercial fisheries baseline, as confirmed in Table 12.6. The Cumulative Effects Assessment includes consideration of other offshore wind farm projects, as confirmed in Section 12.12. Cable burial assessment assumptions are presented in the Maximum Design Scenario (MDS) in Section 12.9.1. Applicant commitments regarding cable burial and protection are provided in Table 12.12.
21 June 2023	Scoping workshop follow-up (email correspondence) with SFF and SWFPA	Discussion of SWFPA member vessel activity within Morven Site, highlighting its seasonal intensity and quota-driven variability.	Workshop feedback was considered in preparation of the Morven Site Scoping Report (July 2023) and in development of the commercial fisheries baseline described in Section 12.7 of this chapter and in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report. Baseline characterisation has considered long-term patterns in fisheries activity, exploring fisheries data across a 10-year period where possible, and examined seasonality in landings from the Morven

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
			North Local and Regional Commercial Fisheries Study Areas.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	The Scottish Ministers are content with the study area for commercial fisheries.	Noted; the Morven North Local Commercial Fisheries Study Area and Morven North Regional Commercial Fisheries Study Area are confirmed in Section 12.2 of this chapter.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	The Scottish Ministers are also broadly content with the data sources presented in Section 9.1.3 of the Scoping Report, however, in line with the MD-SEDD advice, advise that the Marine Management Organisation Vessel Monitoring Systems dataset should also be used to produce figures presenting the fishing effort for vessels, which will provide further information about the commercial fisheries baseline to assess possible displacement of fishing effort. Additionally, the Scottish Ministers direct the Developer to the MD-SEDD advice regarding the use of heat maps for vessels under 12 meters and advise these are used to further inform the baseline characterisation.	The advice regarding baseline data sources has been noted and applied in the EIA. This is evidenced by confirmation of the datasets used to characterise the baseline provided in Section 12.6 of this chapter.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	The Scottish Ministers agree with the impacts scoped into the EIA Report.	Noted; this chapter presents an assessment of potential impacts on commercial fisheries in Section 12.11 to 12.15.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	With regards to approach to assessment, for the avoidance of doubt, the Scottish Ministers advise that the Developer undertakes a fisheries displacement assessment in line with the Xodus 2022 "Good practice guidance for assessing fisheries displacement by other licensed marine activities" as per the MD-SEDD advice.	Guidance applied in assessment, including the Xodus guidance, is confirmed in Section 12.6.2 of this chapter.

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	The Scottish Ministers advise that the Developer must adopt a clear position on whether it will be content for fishing to continue over the Proposed Development after construction is complete and whether overtrawl trials will be included as a mitigation measure. This position must be adopted prior to the fisheries displacement assessment so the implications from this can be included in the assessment.	As confirmed by the MDS in Section 12.9.1, it is assumed that fishing activity will resume during the operational phase of Morven North. In response to the comment regarding 'overtrawl trials', the Applicant confirms that cable burial and protection monitoring will be undertaken throughout the operational phase to assess the status of cable burial and any deployed protection. Survey outcomes will be shared to inform ongoing coexistence. This commitment is confirmed in Table 12.12 (commitment reference number MM-2) and in Section 3.5 of Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1).
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	The Scottish Ministers advise that in identifying appropriate mitigation measures, the Developer must consider the different types of fishing that take place within the Proposed Development and engage with the wider fishing industry to seek broad agreement on measures proposed.	The commercial fisheries baseline has been developed based on a wide range of data sources and validated through engagement with the fishing industry. The baseline is described in Section 12.7 of this chapter and in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report. Mitigation measures are described in Section 12.10 and in Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1). The FMMCP has been shared with fishing industry representatives and feedback sought on FMMCP content ahead of application for consent being lodged.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	The Scottish Ministers also direct the Developer to the SFF representation and the MD-SEDD advice with regards to design aspects of the Proposed Development and advise	The SFF position is noted. The Applicant will continue to engage with the fishing industry as the final design of Morven North is determined.

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
		that these must be fully considered when finalising the design parameters for the Proposed Development.	SFF will be consulted on post-consent plans that confirm final design details, prior to their approval by Scottish Ministers.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	With regards to the approach to Cumulative Effects Assessment, as outlined in Section 9.1.9 of the Scoping Report, the Scottish Ministers advise that this takes into account other wind farm areas, in particular floating wind farms where some types of fishing may be restricted and also any MPAs and other protected areas with fisheries management measures in place, in line with the MD-SEDD advice.	The advice has been noted and applied in EIA. Section 12.13 of this chapter confirms that the assessment of cumulative effects takes into account other offshore wind farms, including floating wind farms and MPAs and associated proposed fisheries management measures.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	The Scottish Ministers welcome the engagement with fisheries representatives that has been undertaken so far and recommend that early engagement with fisheries representatives is continued as outlined in the SFF representation. The Scottish Ministers strongly recommend consultation with fishing industry while finalising design parameters for the Proposed Development.	The Applicant will continue to engage with the fishing industry as the final design of Morven North is determined. SFF will be consulted on post-consent plans that confirm final design details, prior to their approval by Scottish Ministers.
30 November 2023	Morven Site Scoping Opinion. MD-LOT.	Given the turbines will have fixed foundations MD-SEDD recommend consideration of turbine spacing and wind farm configuration to facilitate coexistence with commercial fisheries.	Minimum wind turbine spacing is confirmed at 1,000m in Table 12.11. As confirmed by the MDS in Section 12.9.1, it is assumed that fishing activity will resume during the operational phase of Morven North.
30 November 2023	Morven Site Scoping Opinion. MD-SEDD response.	MD-SEDD note that the MMO VMS dataset has been used to produce figures for average VMS value (Figure 9.4). MD-SEDD advise that the VMS dataset is also used to produce figures presenting the fishing effort (kW per hour) for vessels, which will provide further information about the commercial fisheries baseline and help to assess possible displacement of fishing effort.	The advice regarding baseline data sources has been noted. Mapping of fishing effort has been considered in characterisation of the commercial fisheries baseline as confirmed in Section 12.6.3 of this chapter. Mapping of fishing effort based on Fisheries Sensitivity Mapping and Displacement Modelling

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
			(FiSMaDiM) data is presented in Section 12.7 of this chapter.
30 November 2023	Morven Site Scoping Opinion. MD-SEDD response.	The MD has recently published Heat Maps of fishing data (2017-2021) for under 12 metre boats. MD-SEDD advise that this data is used to provide further information for the fisheries baseline.	The advice regarding baseline data sources has been noted and applied in the EIA. This is evidenced by confirmation of the datasets used to characterise the baseline provided in Section 12.6.3 with NMPi data for under 12m vessels mapped in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report.
30 November 2023	Morven Site Scoping Opinion. MD-SEDD response.	MD-SEDD advise undertaking a fisheries displacement assessment and referring to the 'Good practice guidance for assessing fisheries displacement by other licensed marine activities' (Xodus, 2022).	Guidance applied in assessment, including the Xodus guidance, is confirmed in Section 12.6.2 of this chapter.
30 November 2023	Morven Site Scoping Opinion. MD-SEDD response.	MD-SEDD advise that the Cumulative Effects Assessment takes into account other wind farm areas, in particular floating wind farms where some types of fishing may be restricted and also any Marine Protected Areas and other protected areas with fisheries management measures in place.	The advice has been noted and applied in EIA. Section 12.13 of this chapter confirms that the assessment of cumulative effects takes into account other offshore wind farms and MPAs and associated proposed fisheries management measures.
30 November 2023	Morven Site Scoping Opinion. SFF response[3].	Being concerned of fishing vessels safety, SFF would like to see that maximum efforts are made by the Developer to ensure 100% cables (IACs, inter-connector and export cables) burial is achieved. In the event of cable burial is not achievable due to technical difficulties, we would recommend using industry standard size (1"-5") rock dump than concrete mattress and followed by overtrawl	The SFF position is noted. The commercial fisheries assessment is based on a MDS, as confirmed in Section 12.9.1 of this chapter. The MDS confirms the intention to bury cables, and where burial is not feasible, cable protection options are identified.

[3] SFF feedback relevant to benthic ecology and fish and shellfish ecology is considered in those respective chapters of the EIA Report.

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
		sweep and long-term monitoring programme. The fishing industry is contended of using concrete mattresses in open water.	The Applicant will continue to engage with the fishing industry as the final design of Morven North is determined. SFF will be consulted on post-consent plans that confirm final design details, prior to their approval by Scottish Ministers. The Applicant is not aware of an offshore wind 'industry standard size' in relation to the rock used in cable protection. The design of any cable protection option will be informed by the outcomes of a Morven North-specific Cable Burial Risk Assessment and will meet relevant design standards. In response to the comment regarding 'overtrawl sweep and long-term monitoring', the Applicant confirms that cable burial and protection monitoring will be undertaken throughout the operational phase to assess the status of cable burial and any deployed protection. Survey outcomes will be shared to inform ongoing coexistence. This commitment is confirmed in Table 12.12 (commitment reference number MM-2) and in Section 3.5 of Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1).
30 November 2023	Morven Site Scoping Opinion. SFF response.	SFF also note from pages 24-25, that the cable and pipeline crossing will occurring while laying the IAC or inter-connector cables. As crossing points create obstacles and snagging hazard to fishing industry, we 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 fishing industry to ensure their impacts are mitigated.	The SFF position is noted. The commercial fisheries assessment is based on a MDS, as confirmed in Section 12.9.1 of this chapter.

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
			The Applicant will continue to engage with the fishing industry as the final design of Morven North is determined. SFF will be consulted on post-consent plans that confirm final design details, prior to their approval by Scottish Ministers.
30 November 2023	Morven Site Scoping Opinion. SFF response.	SFF note from the page 26, section 3.6, that the Developer will submit a decommissioning programme for approval by Scottish Ministers. To reiterate safety concern of the fishing vessels, SFF would like to see all development related infrastructures are recovered/removed to shore and the seabed is restored to its pre-development condition post-decommissioning, and it is safe for fishing industry to fully resume in the area.	The SFF position is noted. The Applicant commits to the preparation of a Decommissioning Programme; see Section 12.10.
30 November 2023	Morven Site Scoping Opinion. SFF response.	SFF appreciates the Applicants effort on scoping 9.1.6.3 No potential impacts to commercial fisheries have been scoped out of the assessment.	Noted; this chapter presents an assessment of potential impacts on commercial fisheries in Section 12.11 to 12.15.
30 November 2023	Morven Site Scoping Opinion. SFF response.	Designed-in Measures: MM-20, Development of a Fisheries Management and Mitigation Strategy (FMMS)) by the developer. However, we would propose the FMMS to be developed and adopted pre-consent/development in consultation with fishing industry to ensure all fishing industry's concerns are considered and addressed accordingly.	Mitigation measures are described in Section 12.10 and in Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1). The FMMCP has been shared with fishing industry representatives and feedback sought on FMMCP content ahead of application for consent being lodged. Whilst the version of the FMMCP submitted with the consent application is considered complete, the Applicant note that future updates (at condition discharge) may be required to reflect the final design of Morven North and any changes to relevant policy and guidance.

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
30 November 2023	Morven Site Scoping Opinion. SFF response.	MM-11, "Promulgation of information as required (e.g., Notices to Mariners, Kingfisher Bulletin).". We would like to see any such information are shared with fishing industry with sufficient amount of time in advance to ensure no disruption is caused to fishing industry.	The SFF request is noted and acknowledged in Applicant commitments; see Section 12.10.
30 November 2023	Morven Site Scoping Opinion. SFF response.	MM-22, "Consideration of the principle of cooperation agreements in instances where static gears may be required to be temporarily relocated." SFF welcome this approach and suggest that the cooperation agreement should also be considered for the mobile gears where they are required to be relocated.	The Applicant position on Cooperation Agreements is set out in MM-22 in Table 12.12.
09 February 2024	Post-scoping fisheries engagement meeting (face-to-face meeting) Attendees as follows: • SFF • SWFPA • The Applicant	SFF/SWFPA preference for monopile foundations due to their smaller footprint and reduced impact on fishing operations. SFF/SWFPA expressed concerns about cable protection methods, with a preference for rock placement over concrete mattresses to avoid fishing gear entanglement. SFF/SWFPA emphasised the need for clear vessel management planning.	The SFF/SWFPA position is noted. The commercial fisheries assessment is based on a MDS, as confirmed in Section 12.9.1 of this chapter. The Applicant will continue to engage with the fishing industry as the final design of Morven North is determined. SFF will be consulted on post-consent plans that confirm final design details, prior to their approval by Scottish Ministers.
14 June 2024	Quarterly update meeting (virtual meeting). Attendees as follows: • SFF • SPFA • SWFPA	Morven project update provided. The SWFPA expressed concerns regarding the increasingly limited sea space between the Morven North and the Ossian array given the high number of cable developments.	The Applicant notes the concern. Cumulative effects on commercial fisheries resulting from Morven North and other offshore wind farm developments are assessed in Section 12.12. The Cumulative Effects Assessment includes consideration of Ossian. Impacts on the navigational safety aspects of fishing activity are assessed in Volume 2, Chapter

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
	• N&EC RIFG • The Applicant		13: Shipping and Navigation, where consideration is given to sea space between Morven North and Morven South, and Ossian.
04 December 2024	Scotwind East Region Commercial Fisheries Working Group (CFWG) meeting (virtual meeting). Attendees as follows: • SFF • SWFPA • N&EC RIFG • The Applicant • Other East region ScotWind developers.	First CFWG meeting to establish terms of reference, agree on objectives, and discuss early engagement between offshore wind developers and fisheries representatives. Updates were provided on Bellrock, Ossian, Morven, Muir Mhor, Campion, and Bowdun projects.	The Applicant is committed to continued participation in the East Region CFWG, as confirmed in Section 12.10.
12 December 2024	Post-scoping fisheries engagement email update to SFF (email correspondence)	Email informing SFF of revised scoping of potential impacts within the fish and shellfish ecology assessment. The email was supported by a technical note on the revised scoping, provided ahead of, and to inform discussion with stakeholders in the meeting on 14 January 2025.	Not applicable.
14 January 2025	Post-scoping fisheries engagement meeting (virtual meeting). Attendees as follows: • SWFPA	Morven project update provided; confirmed project will make two separate consent applications for Morven North and Morven South. Discussion of temporal coverage of the commercial fisheries baseline with SWFPA preference to see 10-years of baseline data presented.	Feedback on fishing activity relevant to Morven North has informed the baseline characterisation presented in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report. Regarding baseline temporal coverage, where data allows, a time series that exceeds five years has

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
	• SFF • N&EC RIFG • The Applicant • Company Fisheries Liaison Officer • Lead EIA Consultant	SWFPA identified potential for a return of a haddock fishery in the area around the Morven Site, targeting small haddock, in response to the emergence of processing facilities to support this fishery. Approach to baseline data gathering via issue of questionnaires proposed and discussed. Fishing industry noted the need for broader engagement with fleets operating beyond the immediate Morven North area. Regarding the revised scoping of potential impacts within the fish and shellfish ecology assessment (see table row immediately above), no material feedback was received from stakeholders.	been presented. VMS and landings data covering at least a ten-year period has been used in describing the commercial fisheries baseline. Regarding reference to the potential emergence of a small haddock fishery, this is described and considered within the impact assessment presented in Section 12.11 (paragraph 12.11.2.11). Fisheries engagement in relation to the Morven Site has been extensive and has involved Applicant-led engagement with fishing industry representative bodies, public events and direct engagement with fishers via the appointed Company Fisheries Liaison Officer (CFLO). Engagement is summarised in this section of the chapter.
17 to 28 April 2025	Post-scoping fisheries engagement with various stakeholders[4] (email correspondence)	Issue of baseline data collection questionnaires to fisheries stakeholders. Second email sent requesting further feedback to issued questionnaires. Stakeholder feedback on the questionnaires was also obtained during the baseline characterisation meeting on 24 June 2025 (described below).	Feedback on fishing activity relevant to Morven North obtained via questionnaire responses has informed the baseline characterisation presented in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report.
24 June 2025	Baseline characterisation meeting (virtual meeting) Attendees as follows:	Presentation of the commercial fisheries baseline to fisheries stakeholders. The Applicant presented the outcomes of the questionnaire consultation exercise as well as data on	Feedback on fishing activity relevant to Morven North has informed the baseline characterisation presented in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report.

[4] A list of stakeholders contacted in this instance is provided in Table 5.1 within Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
	• SFF; • SWFPA; • N&EC RIFG ; • SPFA; • The Applicant; • Company Fisheries Liaison Officer; • Lead EIA Consultant.	demersal trawl fishing grounds across a nine-year period. The SWFPA expressed concerns over the low number of responses and relevance of the questionnaires. The SWFPA expressed concerns that fishing activity in the area cannot be accurately captured using a five-year dataset given the effects of Brexit and Covid on the small haddock market. SWFPA noted that their plotter shot data shows presence of fishing activity within Morven North and Morven South. Email communications followed on 01/07/2025 and 10/07/2025 to share meeting minutes and meeting slide pack.	With regard to questionnaires issued to stakeholders, responses were used to validate the baseline, which is described based on a wide range of data sources. Regarding baseline temporal coverage, where data allows, a time series that exceeds five years has been presented. Whilst not all commercial fisheries data types allow for ten-year coverage, core VMS and landings data covering at least a ten-year period have been used in describing the commercial fisheries baseline, as set out in Section 12.6.3. The Applicant concurs that SFF-provided vessel plotter data indicates the presence of some fishing activity in the Morven Site, most notably across the southeastern corner of Morven South. This is validated by publicly available VMS data, which indicates that activity levels are relatively low within the context of the Morven North Local and Regional Commercial Fisheries Study Areas.

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
11 December 2025	SFF shared snapshots of member vessel plotter data with the Applicant. A subsequent virtual meeting was held to discuss the data and aid interpretation of it. Attendees as follows: • SFF; • Commercial Fisheries Lead.	The plotter data was shared on screen in the meeting and discussed. The Commercial Fisheries Lead noted the following key observations relevant to the commercial fisheries baseline characterisation: • Relatively low levels of member vessel activity across Morven North and Morven South are indicated by plotter data. • Activity that is captured includes: demersal pair and single trawlers targeting haddock; demersal seine netting vessels also targeting haddock. • Whilst the data provided is not time-stamped, SFF are able to interrogate the data and verbally confirmed that most demersal trawl and seine vessel activity has taken place between the months of September to December. • A notable portion of vessel tracks are attributable to Shetland-based vessels, fishing further south in winter months to avoid more challenging weather conditions off Shetland. • The southeast corner of Morven South is considered to be, in the context of the Morven Site, of most importance for SFF members.	The plotter data was provided in confidence to the Applicant by SFF. SFF instructed that the data was not for sharing or publication. The data has been used by the EIA Commercial Fisheries Lead to inform the baseline characterisation presented in Section 12.7.

Date	Consultee and type of consultation	Summary of issue(s) raised	Applicant's response to issue raised and, if applicable, where considered in this chapter
15 January 2026 and 30 January 2026	Draft FMMCP issued on 15 January 2026 to: • N&EC RIFG; • SFF; • SPFA; • SWFPA; Written feedback on draft FMMCP received from SFF 30 January 2026.	A detailed summary of issues raised, and Applicant responses is provided in Appendix A of Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1); information is not duplicated here.	
12 February 2026	In-person and virtual meeting with the following attendees to discuss feedback on the draft FMMCP: Attendees as follows: • SFF; • SPFA; • SWFPA; • The Applicant; • Lead EIA Consultant; • Commercial Fisheries Lead.	A detailed summary of issues raised, and Applicant responses is provided in Appendix A of Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1); information is not duplicated here.	

12.5 Scope of the assessment

12.5.1 Impacts scoped into the assessment

12.5.1.1 The scope of this EIA Report has been developed in consultation with relevant statutory and non-statutory consultees as detailed in Table 12.4. Taking into account the scoping and consultation process, Table 12.5 summarises the potential impacts which have been scoped into this assessment. Where an impact is likely to occur within a specific development phase of the project, this is indicated within each relevant topic chapter (a '✓' is used to denote the phase the potential impact can occur, conversely a '✗' outlines there is no impact within this project phase), where relevant.

12.5.1.2 Although slightly different terminology is used in this chapter to describe scoped-in commercial fisheries impacts compared to the Morven Site Scoping Report, the same suite of impacts is assessed within this EIA, with more detailed impact headings applied for greater clarity.

Table 12.5: Potential impacts scoped into the commercial fisheries assessment

C= Construction, O= Operations and Maintenance, D= Decommissioning phases

"✓" is used to denote the phase the potential impact can occur, "✗" outlines there is no impact within this project phase

Potential impact	Phase			Activity
	C	O	D	
Reduction in access to, or exclusion from established fishing grounds within Morven North	✓	✓	✓	Construction, O&M, and decommissioning of Morven North infrastructure. The physical presence of infrastructure and any restrictions on fishing activity (e.g. presence of Safety Zones) are relevant to this potential impact.
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	✓	✓	✓	Construction, O&M, and decommissioning of Morven North infrastructure. The physical presence of infrastructure and any restrictions on fishing activity (e.g. presence of Safety Zones) are relevant to this potential impact.
Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity	✓	✓	✓	Construction, O&M, and decommissioning of Morven North infrastructure. Disturbance of fish and shellfish is assessed in Volume 2, Chapter 9: Fish and Shellfish Ecology. The consequences of that disturbance for fishing activity are assessed in this chapter.
Increased vessel traffic associated with Morven North within fishing grounds leading to interference with fishing activity	✓	✓	✓	Construction, O&M, and decommissioning of Morven North infrastructure. The presence of vessels engaged in Morven North activities is relevant to this potential impact.
Additional steaming to alternative fishing grounds for vessels that would otherwise fish within Morven North	✓	✓	✓	Construction, O&M, and decommissioning of Morven North infrastructure. The physical presence of infrastructure and any restrictions on fishing activity (e.g. presence of Safety Zones) are relevant to this potential impact.
Increased snagging risk, which could result in loss or damage to fishing gear	✓	✓	✓	Construction, O&M, and decommissioning of Morven North infrastructure.

Potential impact	Phase			Activity
	C	O	D	
				The physical presence of infrastructure above the seabed, which there is a risk of fishing gear interacting with, is relevant to this potential impact.

12.5.2 Impacts scoped out of the assessment

12.5.2.1 No impacts have been scoped out of the commercial fisheries assessment.

12.6 Approach to baseline characterisation

12.6.1.1 The commercial fisheries baseline environment has been characterised based upon extensive and thorough analysis of data and literature, sources of which are referenced in this Chapter and in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report.

12.6.1.2 Baseline characterisation encompasses both publicly available data sets and data obtained through specific requests. Landings statistics have been analysed using Microsoft Excel, while Vessel Monitoring System (VMS) data and Automatic Identification System (AIS) data have been evaluated using ArcMap Geographic Information System (GIS) software.

12.6.1.3 In addition to quantitative data, qualitative insights have been gathered through direct engagement with the fishing industry by the Applicant and Company Fisheries Liaison Officer (CFLO). The CFLO has been appointed specifically to facilitate engagement with the local fishing industry in relation to Morven North. The CFLO maintains regular contact with fisheries stakeholders and individual fishers via face -to-face meetings, email and phone communications.

12.6.2 Relevant guidance

12.6.2.1 Technical guidance relevant to the assessment undertaken for commercial fisheries includes:

- Guidance on preparing Mitigation and Monitoring Plans: Fisheries Monitoring, Mitigation and Communication Plan (Scottish Government, 2025a);
- Offshore windfarms - monitoring impacts on the commercial fishing industry: good practice guidance (Scottish Government, 2025b);
- Good Practice Guidance for assessing fisheries displacement by other licensed marine activities (Scottish Government, 2022a);
- Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments (United Kingdom Fisheries Economic Network and Seafish, 2012);
- Fisheries Liaison with Offshore Wind and Wet Renewables group (FLOWW) Best Practice Guidance for Fisheries Liaison with Offshore Renewables Developments (FLOWW, 2025);
- Guidance on Commercial Fisheries Mitigation and Opportunities from Offshore Wind commissioned by Collaborative Offshore Wind Research into the Environment (COWRIE) (Blyth-Skyrme, 2010a);
- Developing guidance on fisheries Cumulative Impact Assessment for wind farm developers (Blyth-Skyrme, 2010b);
- Guidelines for liaison with the fishing industry on the United Kingdom Continental Shelf UKCS – Issue 8 (Offshore Energies UK, 2023);
- European Subsea Cables Association (ESCA) Guideline 01 and Appendices (ESCA, 2018);
- Guidance on Licensing and EIA requirements for offshore wind farms (Cefas, 2004);
- Fishing and Submarine Cables – Working Together (International Cable Protection Committee, Drew 2009);
- The North and East Coast Regional Inshore Fisheries Group Fisheries Management Plan 2019 (North and East Coast Regional Inshore Fisheries Group, 2019);

- Recommendations for positive interactions between offshore wind farms and fisheries. European Innovation Council and SMEs Executive Agency (European Commission) (Dupont et al., 2020).

12.6.2.2 It is noted that updated fisheries liaison best practice guidance has been published through the FLOWW in November 2025, consolidating earlier guidance documents and setting out detailed operational principles for fisheries liaison and disruption management.

12.6.2.3 It is further noted that, as of September 2025, the Scottish Fishermen's Federation and its constituent associations have withdrawn from the FLOWW process and do not currently endorse that guidance. No replacement Scottish-specific fisheries liaison guidance has been published at the time of writing.

12.6.2.4 In undertaking this assessment, the Applicant has had regard to established fisheries liaison and mitigation good practice as reflected within current Scottish Government and Marine Directorate guidance, together with a wider pool of relevant industry publications listed above. The assessment is evidence-led and proportionate to the available data and the nature and scale of Morven North. Should new or replacement Scottish-specific guidance be issued, this will be taken into account in future iterations of the FMMCP.

12.6.3 Desktop study

12.6.3.1 Information on commercial fisheries within the Morven North Local and Regional Commercial Fisheries Study Areas was collected through a detailed desktop review of existing studies and datasets. These are summarised in Table 12.6 below.

12.6.3.2 Data has been sourced from ICES, the European Union (EU) Data Collection Framework (DCF), the Marine Directorate National Marine Plan interactive (NMPi), the UK Marine Management Organisation (MMO), the European Maritime Safety Agency (EMSA), the SPFA and SFF.

12.6.3.3 Where data sources allow, a five-to-ten-year (or longer) trend analysis has been undertaken, using the most recent annual datasets available at the time of writing. The temporal extent of this period is dependent on each data source analysed (e.g. 2012 to 2016; 2016 to 2020; or 2011 to 2022).

12.6.3.4 Relevant literature from several sources has also been reviewed in the preparation of this report. A full list of references is provided at the end of this report. References are cited within the text where appropriate.

12.6.3.5 Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report includes further details of the analysis undertaken to develop the commercial fisheries baseline.

Table 12.6: Summary of key data used to characterise the commercial fisheries baseline

Title	Source	Year	Author
Landings Statistics			
Landings statistics data for UK registered vessels, with data query attributes for: landing year; landing month; vessel length category; ICES rectangle; vessel/gear type; port of landing; species; live weight (tonnes); and value (£)	MMO	2010 to 2024[5]	MMO, annual landings statistics publications
Landings statistics for EU registered vessels with data query attributes for: landing year; landing quarter; ICES rectangle; vessel length; gear type; species; and, landed weight (tonnes)	EU DCF database	2012 to 2016	EU DCF, 2023
Spatial Data			
VMS data for UK registered vessels ≥15m length. Note that UK vessels ≥12m in length have VMS on board, however, to date, the MMO provide amalgamated VMS datasets for ≥15m vessels only. VMS data sourced from MMO displays the first sales value (£) of catches	MMO	2013 to 2021	MMO, 2022a
Positional data for Scottish registered vessels under 12m length	NMPi	2018 to 2022	Marine Directorate, 2025
Fishing vessel route density, based on vessel AIS positional data. AIS is required to be fitted on fishing vessels ≥15m length	EMSA	2023	EMSA, 2024
Surveillance data indicating vessel nationality and gear type for actively fishing vessels	MMO	2013 to 2022	MMO, 2025
SPFA member vessel plotter data	SFPA	Data not time-stamped	SPFA, 2025
SWFPA member vessel plotter data	SWFPA	Data not time-stamped	SWFPA, 2025
SFF vessel plotter data indicating location of fishing (confidential data provided direct to Applicant; not for publication)	SFF	Long-term data series	SFF, 2025
Fisheries Sensitivity Mapping and Displacement Modelling (FiSMaDiM)	Cefas	2012 to 2021	Cefas, 2025
Morven Site marine traffic (AIS and radar) survey data	Anatec	2024	Anatec, 2024 and 2025

[5] UK sea fisheries annual landings statistics for 2024 were published by the Marine Management Organisation in December 2025, at the time of preparing this document. The statistics have been incorporated into the baseline overview presented in Section 12.7.1.

12.6.4 Site specific surveys

12.6.4.1 No site specific surveys have been undertaken to inform the EIA for commercial fisheries. Baseline data sources have been validated via engagement with fisheries stakeholders and consideration has also been given to the results of site specific marine traffic surveys that are described in Volume 2, Chapter 14: Shipping and Navigation.

12.7 Baseline environment

12.7.1 Overview of baseline environment

12.7.1.1 A summary of the commercial fisheries baseline environment is provided in the following sections. Further details of the analysis undertaken to develop the commercial fisheries baseline is provided in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report.

Overview of landings statistics

12.7.1.2 Landings statistics over the period 2010 to 2024 are considered. Noting scoping consultation responses and fisheries stakeholder feedback, this time series intentionally captures the period in which the COVID-19 pandemic (core period 2020 to 2022) and EU-exit (2020 onwards) may have affected fishing activity. For the purposes of this summary of the baseline description, focus is given to the most recent datasets across a six-year period (2019 to 2024), with context for longer-term trends provided where relevant.

12.7.1.3 On average, £1 million in first sales value is landed into UK ports from the Morven North Local Commercial Fisheries Study Area per annum, based on six years from 2019 to 2024. Peak landings across this six-year period occurred in 2024 at a value of £1.6 million. The average annual value landed from the Morven North Regional Commercial Fisheries Study Area over the same period is £22.5 million, peaking in 2022 at £27.3 million (Figure 12.2).

12.7.1.4 Trends in landings from the Morven North Local Commercial Fisheries Study Area across a longer time period from 2010 to 2024 show a significant drop from 2016 onwards (landings were valued at £3.4 million in 2016) (Figure 12.3). Following that decline, landings values and volumes have been relatively consistent but displayed minor fluctuations; for example, there is a decline in landed value and volume from 2019 to 2020, and it is noted that this may reflect the impacts of COVID-19, when restrictions associated with the pandemic affected normal business operations and market trade. Landings at a national level follow a similar trend to those in the Morven North Local Commercial Fisheries Study Area over this same period; for example, the total first sales value of commercial landings from Scottish vessels decreased from a high of £735 million in 2016, to a low of £520 million in 2020 (Scottish Government, 2023). The total value landed by Scottish vessels has since increased, reaching £617 million in 2022. Landings values associated with the Morven North Local Commercial Fisheries Study Area have shown an increasing trend since 2022. Within the Morven North Regional Commercial Fisheries Study Area long-term trends in landings values differ, showing an overall increase across the 2010 to 2023 period and peaking in 2022 (Figure 12.4). The reasons for different long-term landings trends across the two study areas are likely to be multiple, though some of the difference can be explained by the growth in value of pelagic and shellfish fisheries across the Morven North Regional Commercial Fisheries Study Area in recent years; fisheries which are less prevalent in the Local Commercial Fisheries Study Area.

12.7.1.5 The statistics, as depicted in Figure 12.5 to Figure 12.7, indicate that across the 2019 to 2024 time period, king scallop (*Pecten maximus),* lobster (*Homarus Gammarus)*, brown crab (*Cancer Pagurus)* and haddock (*Melanogrammus aeglefinus)* have been the most economically important species as demonstrated by landed value (with an annual average landed value of £613,000, £130,000, £103,000 and £113,000 respectively across 2019 to 2024). Landings of these species have varied annually across the longer 2010 to 2023 time series. Landings of king scallop declined across 2019 to 2023, though in looking at longer term landings statistics this may be expected and reflects long-

established periodic cycles in king scallop fishing activity whereby particular grounds are heavily targeted and then less heavily targeted as stocks replenish. 2024 landings of king scallop show a marked increase in value, adhering to this cyclical pattern in the fishery. Landings of haddock have shown overall decline over the 2010 to 2024 time series, though have shown some increase since 2019. Landings values of lobster and brown crab have increased over the 2010 to 2024 time period with lobster landings showing relatively more annual variation than brown crab. Long-term landings statistics indicate that across 2010, 2011 and 2015 there were notable landings of squid *Loligo* spp. from the Morven North Local Commercial Fisheries Study Area whilst across 2019 to 2024 landings have been minimal. Notable annual landings of Nephrops (*Nephrops norvegicus)* are recorded in 2011 and 2023 but otherwise have been relatively low across all other years of the 2010 to 2024 time period.

12.7.1.6 Most landings by UK fishing vessels from the Morven North Local Commercial Fisheries Study Area are made by vessels registered in Scotland (85% by value), with a smaller proportion by English and Northern Irish vessels. Landings by English and Northern Irish vessels have declined over the 2019 to 2024 time series. Key local landings ports include Peterhead, Arbroath, Fraserburgh, Aberdeen and Stonehaven.

12.7.1.7 Landed value by gear type for the Morven North Local Commercial Fisheries Study Area is shown in Figure 12.8. Landings are primarily associated with scallop dredges, pots and demersal trawls. Relatively lower landings values are associated with demersal seine gear and pelagic trawls.

12.7.1.8 Landings from the Morven North Regional Commercial Fisheries Study Area are broadly aligned with those for the Morven North Local Commercial Fisheries Study Area, with similar key target species and fishing gear types identified. Notably within the Morven North Regional Commercial Fisheries Study Area landings statistics indicate relatively more activity by demersal trawlers targeting Nephrops. For the purposes of baseline characterisation, this demonstrates that commercial fishing activity within the Morven North Local Commercial Fisheries Study Area reflects broader regional patterns, while highlighting the increased relative importance of Nephrops trawling at the regional scale.

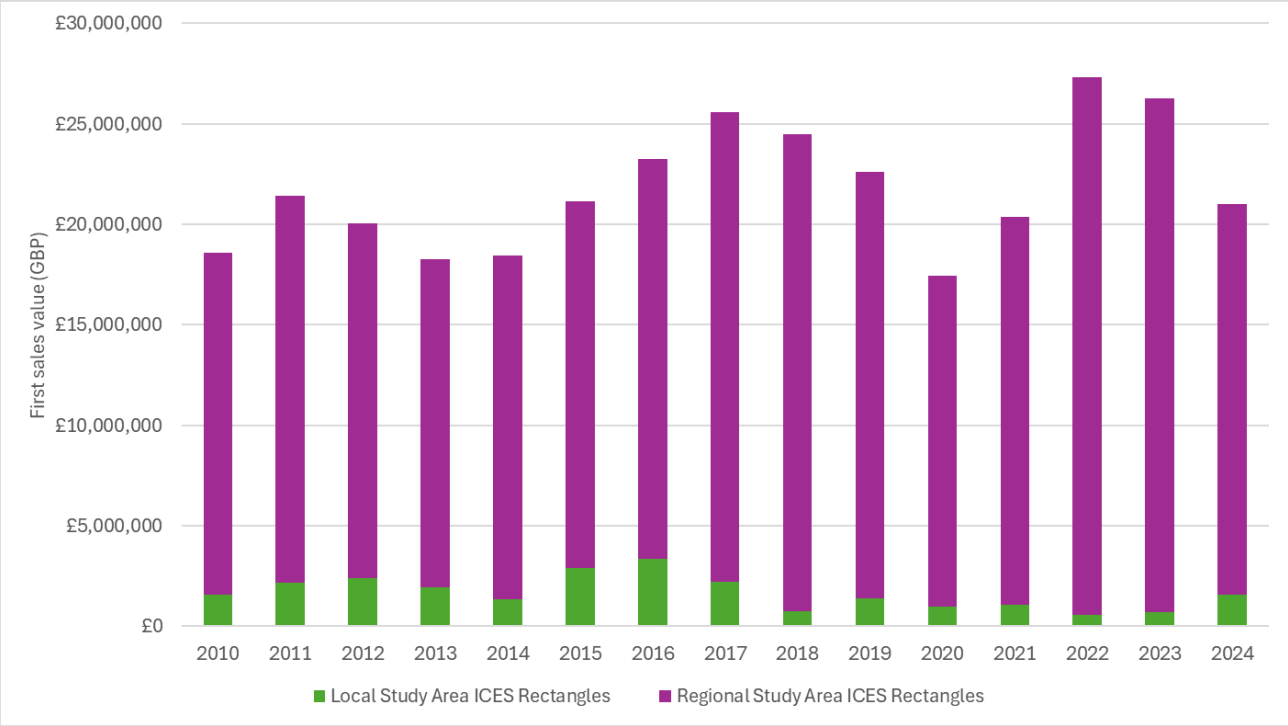

Figure 12.2: Annual landed value from the Morven North Regional Commercial Fisheries Study Area indicating landings from the Morven North Local Commercial Fisheries Study Area (shown in green) and from the other ICES Rectangles within the Morven North Regional Commercial Fisheries Study Area (shown in purple) (data source: MMO, 2025)

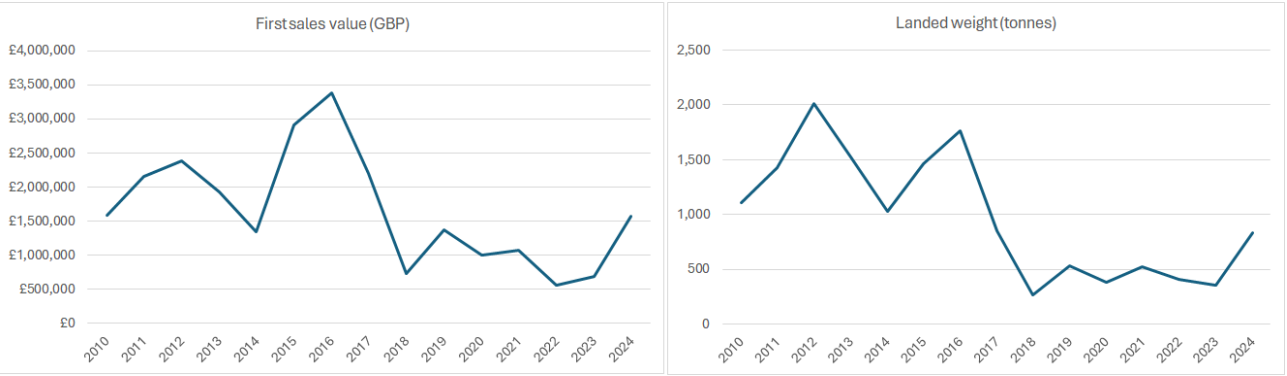

Figure 12.3: Annual landed value (left) and landed weight (right) from the Morven North Local Commercial Fisheries Study Area across 2010 to 2024 (data source: MMO, 2025)

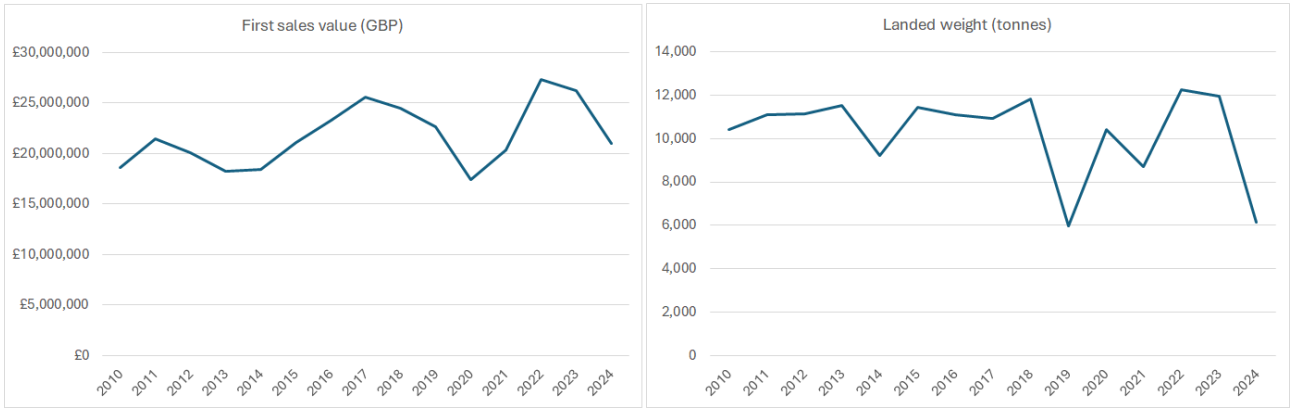

Figure 12.4: Annual landed value (left) and landed weight (right) from the Morven North Regional Commercial Fisheries Study Area across 2010 to 2024 (data source: MMO, 2025)

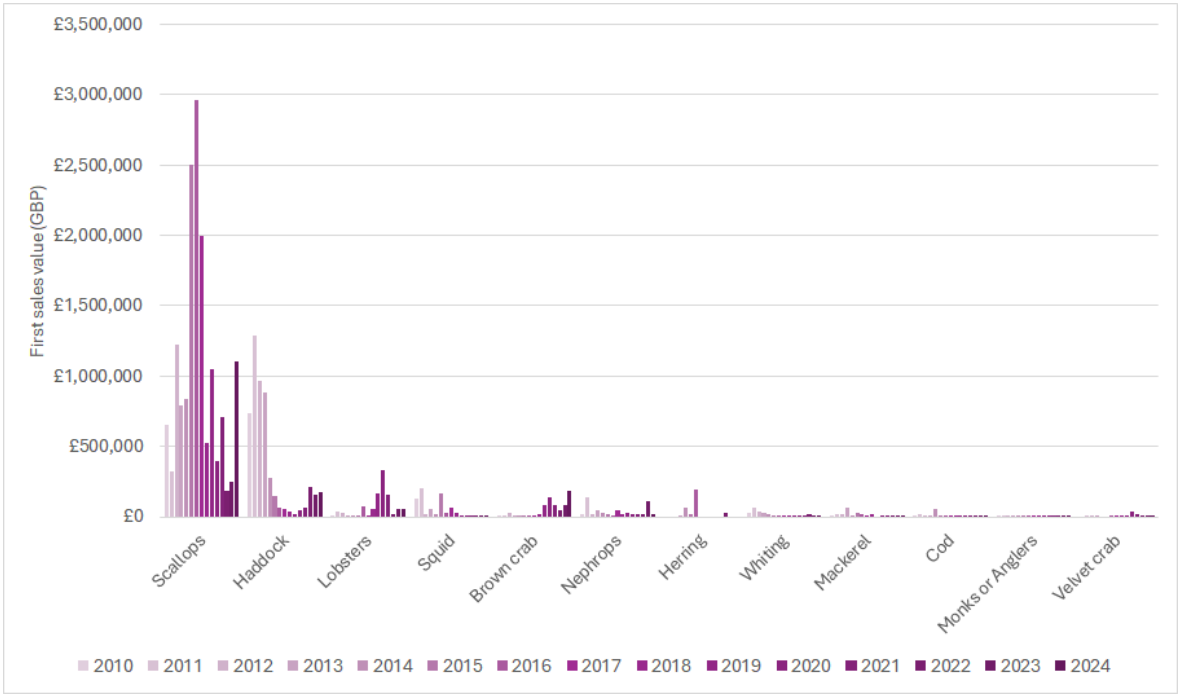

Figure 12.5: Annual landed value (and average annual value in green) of key species from the Morven North Local Commercial Fisheries Study Area From 2010 to 2024 (data source: MMO, 2025)

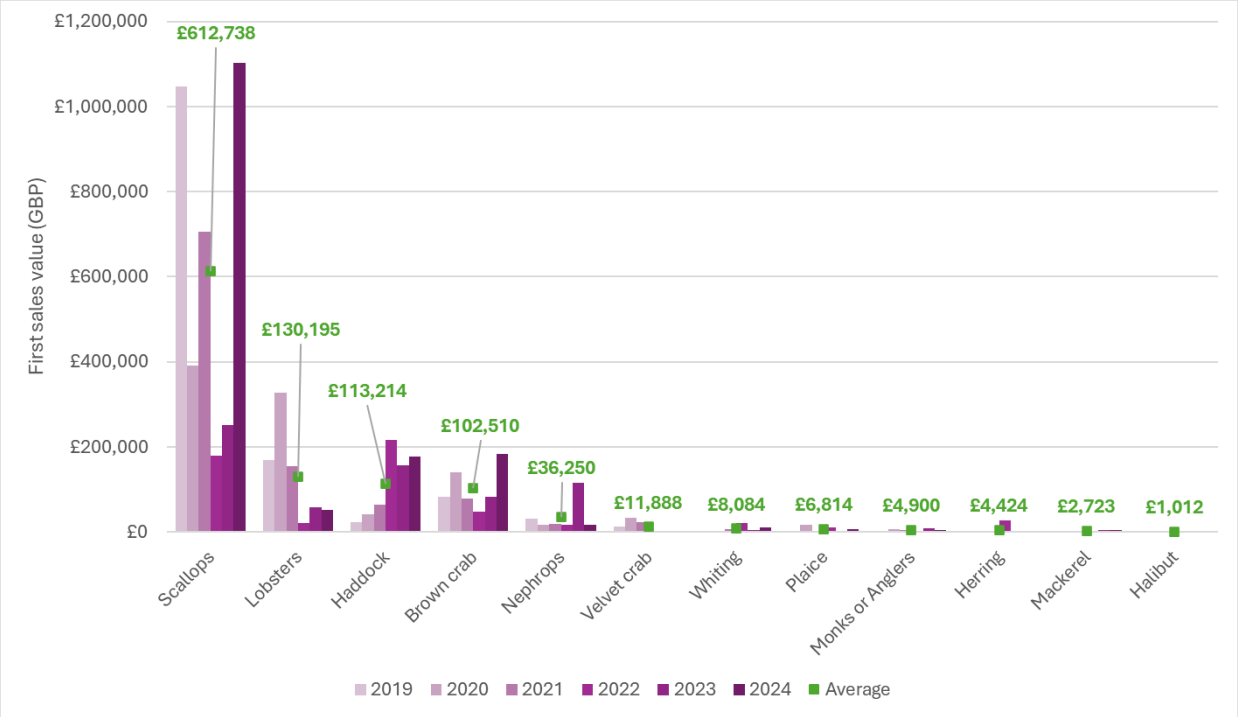

Figure 12.6:Annual landed value (and average annual value in green) of key species from the Morven North Local Commercial Fisheries Study Area From 2019 to 2024 (data source: MMO, 2025)

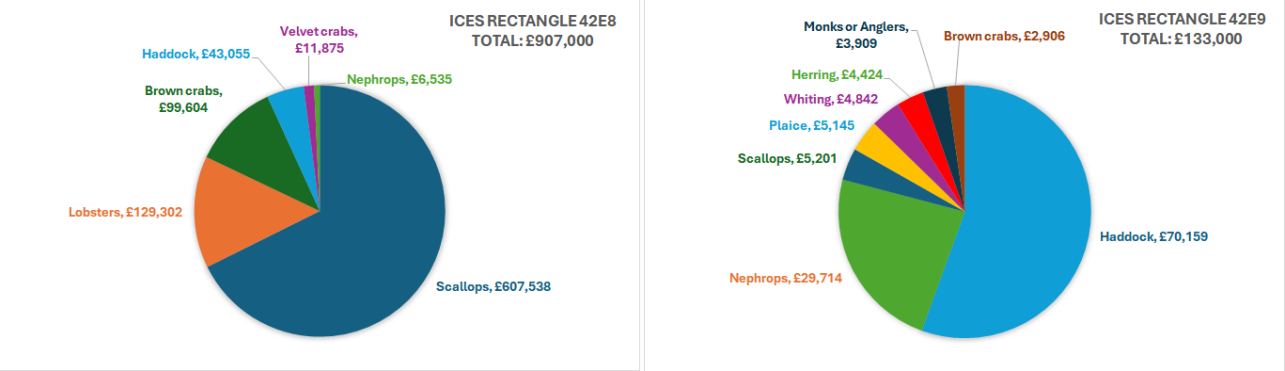

Figure 12.7: Average annual landed value of key species from the Morven North Local Commercial Fisheries Study Area From 2019 to 2024 by Morven North Local Commercial Fisheries Study Area ICES Rectangle (data source: MMO, 2025)

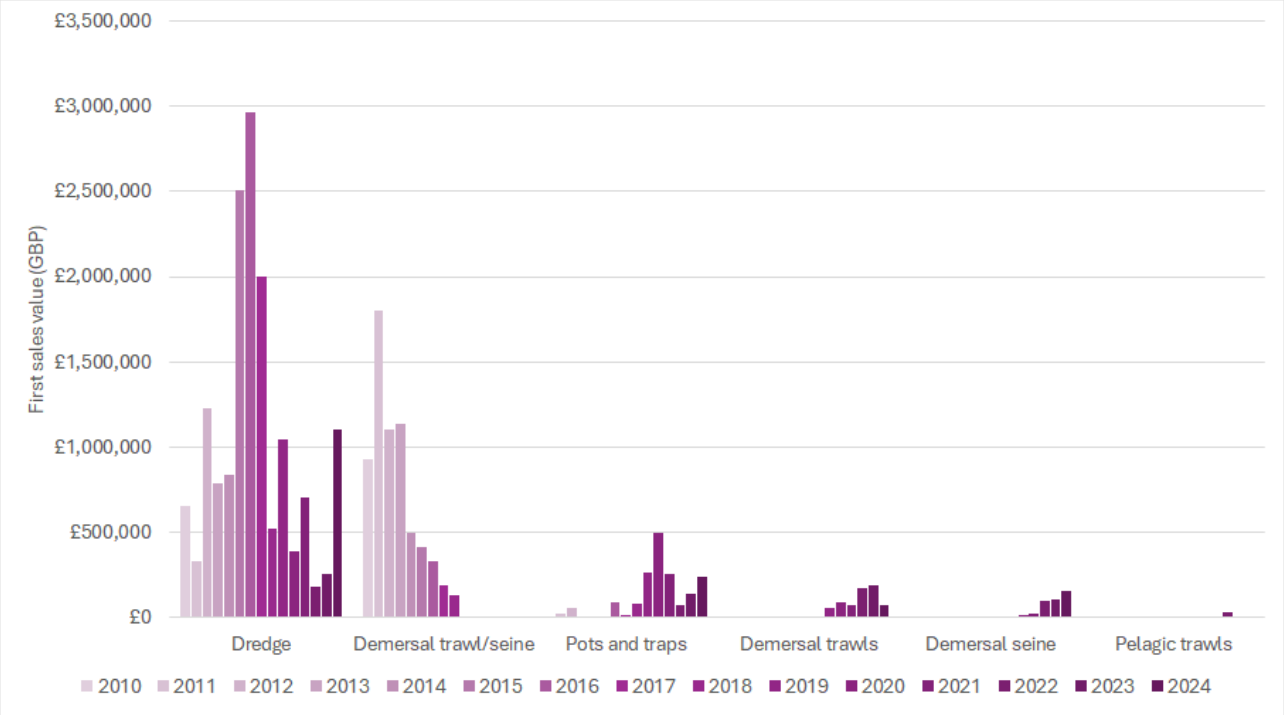

Figure 12.8: Annual landed value by gear type from the Morven North Local Commercial Fisheries Study Area From 2010 to 2024 (data source: MMO, 2025)[6]

Overview of spatial fisheries data

12.7.1.9 Spatial mapping data and information available to inform the location and intensity of fishing across the Morven North Local and Regional Commercial Fisheries Study Areas, and at a wider spatial scale as available is presented in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report.

12.7.1.10 Mapping presented in this section is supplementary to that in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report, and included to ensure the most up-to-date information sources have been utilised to describe the commercial fisheries baseline.

Fisheries sensitivity mapping and displacement mapping

12.7.1.11 The Fisheries Sensitivity Mapping & Displacement Mapping (FiSMaDiM) project is funded by The Crown Estate and led by Cefas, in collaboration with University of St Andrews and Scottish Government. It aimed to fill key evidence gaps, including identification of fishing activities at a high-spatial resolution in potential OWF areas and improvement of methods to estimate fishing intensity of fishing vessels in UK waters (Mendo *et.al*., 2024).

12.7.1.12 The FiSMaDiM Public Web App was published in 2025 (Cefas, 2025), and the following FiSMaDiM mapping, based on merged AIS and VMS data obtained from the MMO, has been obtained from the App:

- Demersal trawl fishing effort (based on number of fishing hours and indicating the intensity of fishing activity) and vessel activity (based on number of fishing vessels present and indicating

[6] Note that up to 2018, annual MMO-published fisheries landings statistics did not disaggregate between demersal trawl and demersal seine fishing gear types. Data from 2019 onwards does disaggregate the two gear types.

how many different vessels are active) (Figure 12.9 and Table 12.10 respectively), indicating limited effort across Morven North, with the northeastern boundary and particularly the southeastern corner of Morven North aligning with the fringes of demersal trawl grounds located to the north and east.

- Demersal seine effort and vessel numbers (Figure 12.11, Figure 12.12) indicating very limited effort across Morven North with some evidence of low levels of fishing effort to the northeast of Morven North boundaries.
- Dredge effort and vessel numbers (Figure 12.13, Figure 12.14), indicating no effort across Morven North, with dredge grounds present inshore to the west of the Morven North Boundary.
- Pelagic trawl effort (Figure 12.15), indicating no effort within the Morven North Boundary, with potential areas of pelagic trawl activity located north of Morven North;
- Potting effort (Figure 12.16), indicating no effort within the Morven North Boundary, with potting activity focused on waters further inshore.

Fishing intensity based on Automatic Identification System data

12.7.1.13 Fishing vessel route density, based on vessel AIS positional data is shown in Figure 12.17 for 2023. AIS is required to be fitted on fishing vessels ≥15m length. The data is specific to fishing vessels and indicates the route density per square kilometre (km^2) per year. This data does not distinguish between transiting vessels and active fishing but does provide a useful source to corroborate fishing grounds.

12.7.1.14 AIS data indicates does not indicate any sustained fishing vessel presence across Morven North.

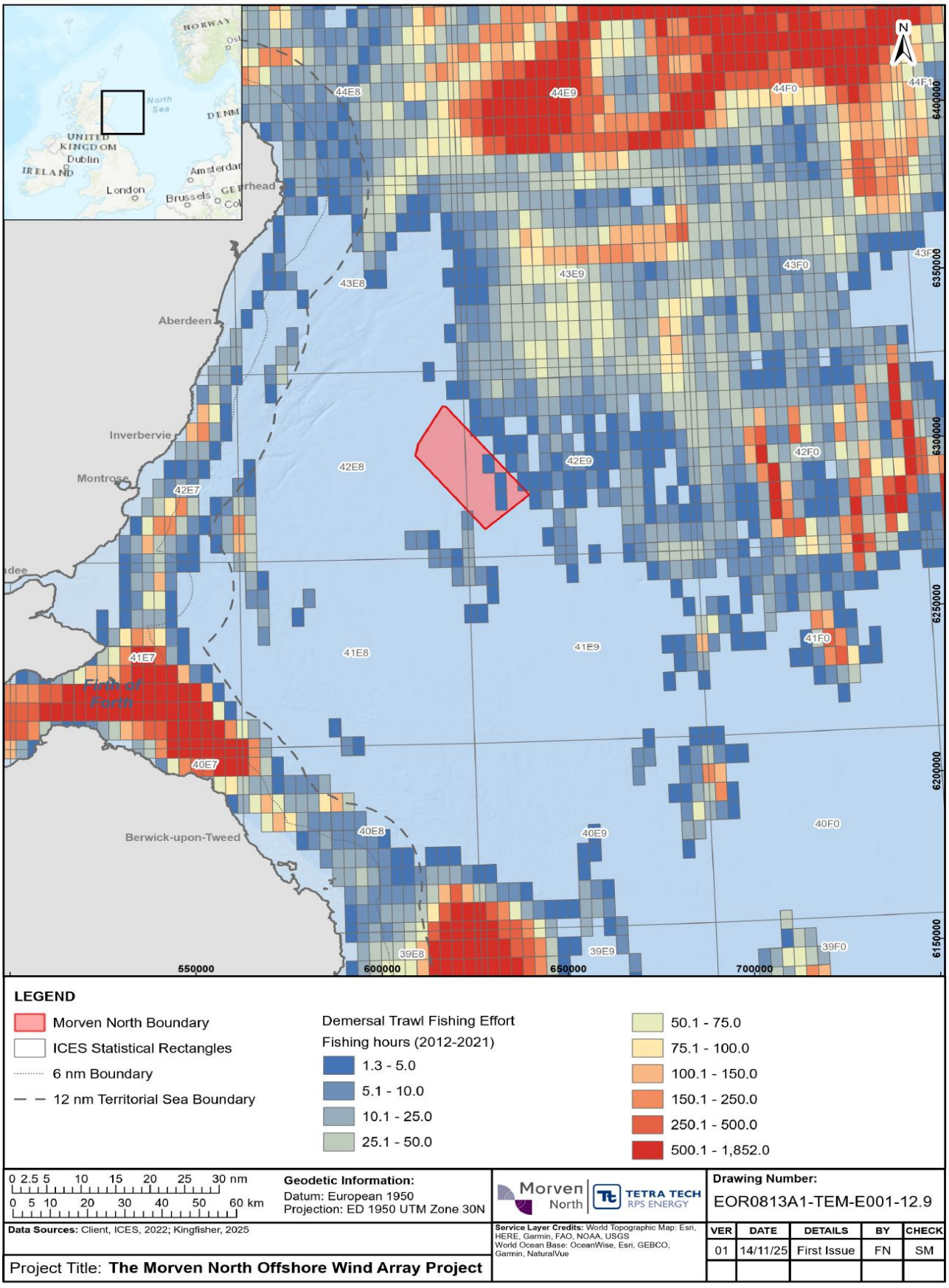

Figure 12.9:Demersal trawl effort based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

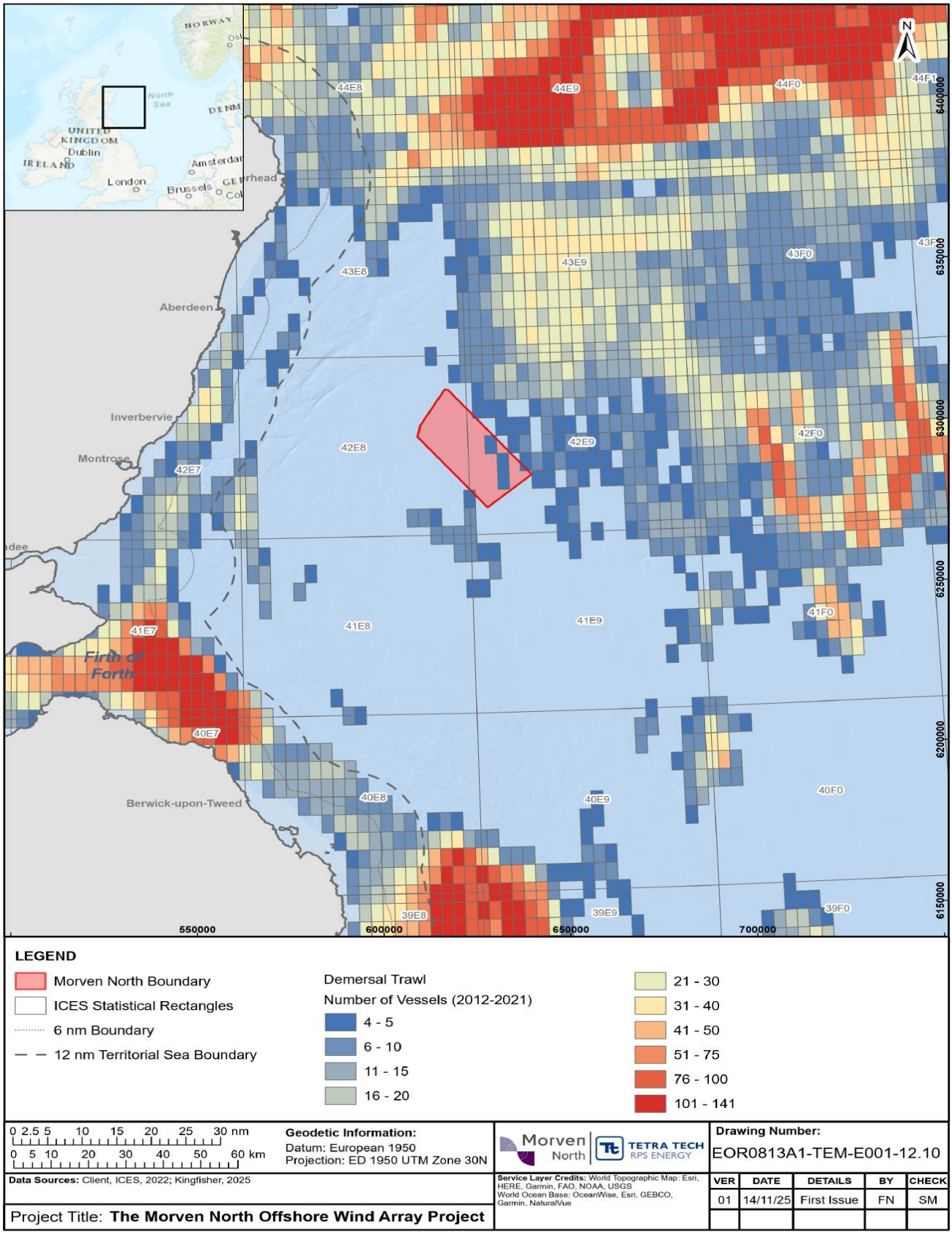

Figure 12.10: Demersal trawl vessel numbers based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

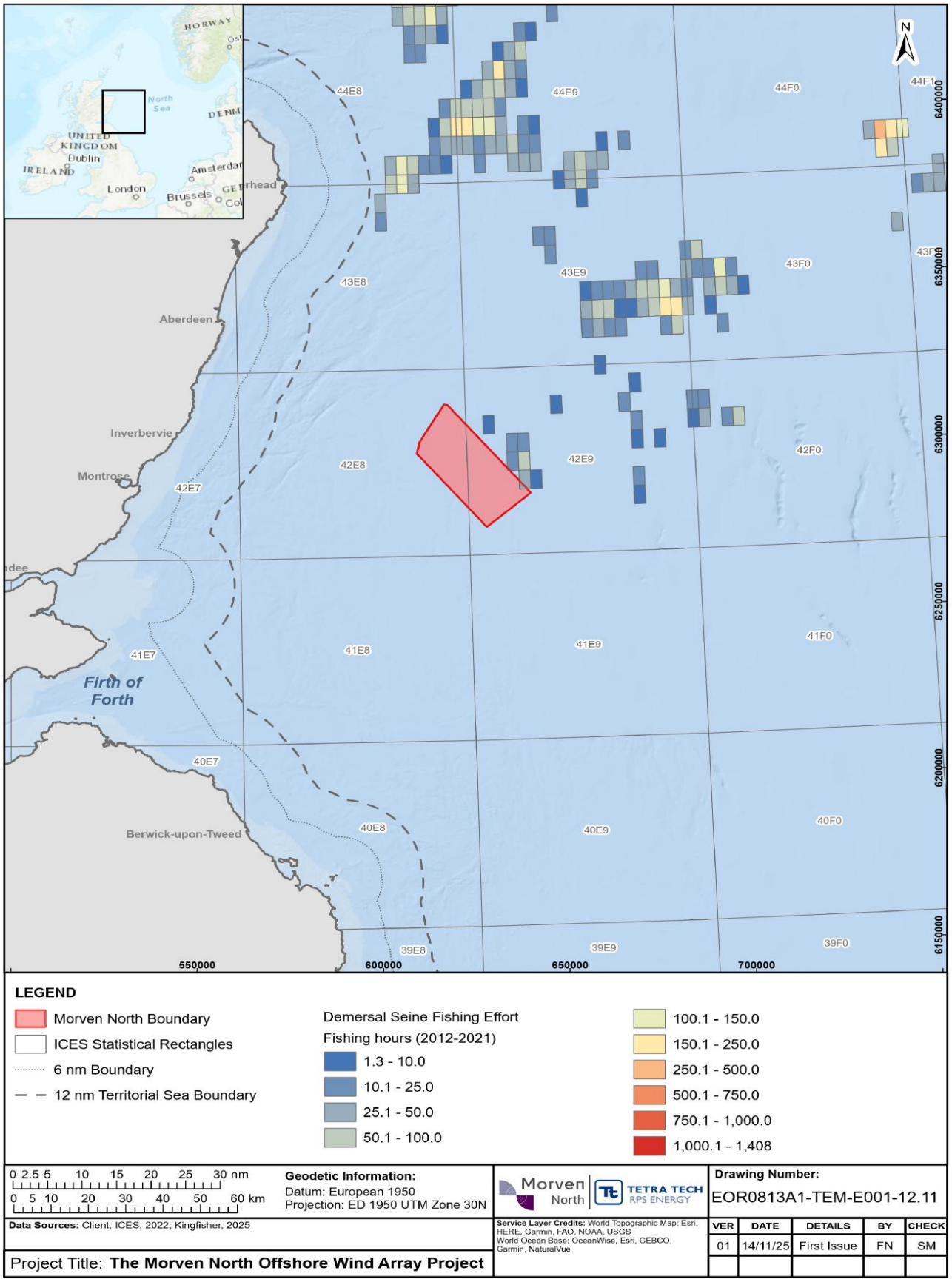

Figure 12.11: Demersal Seine effort based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

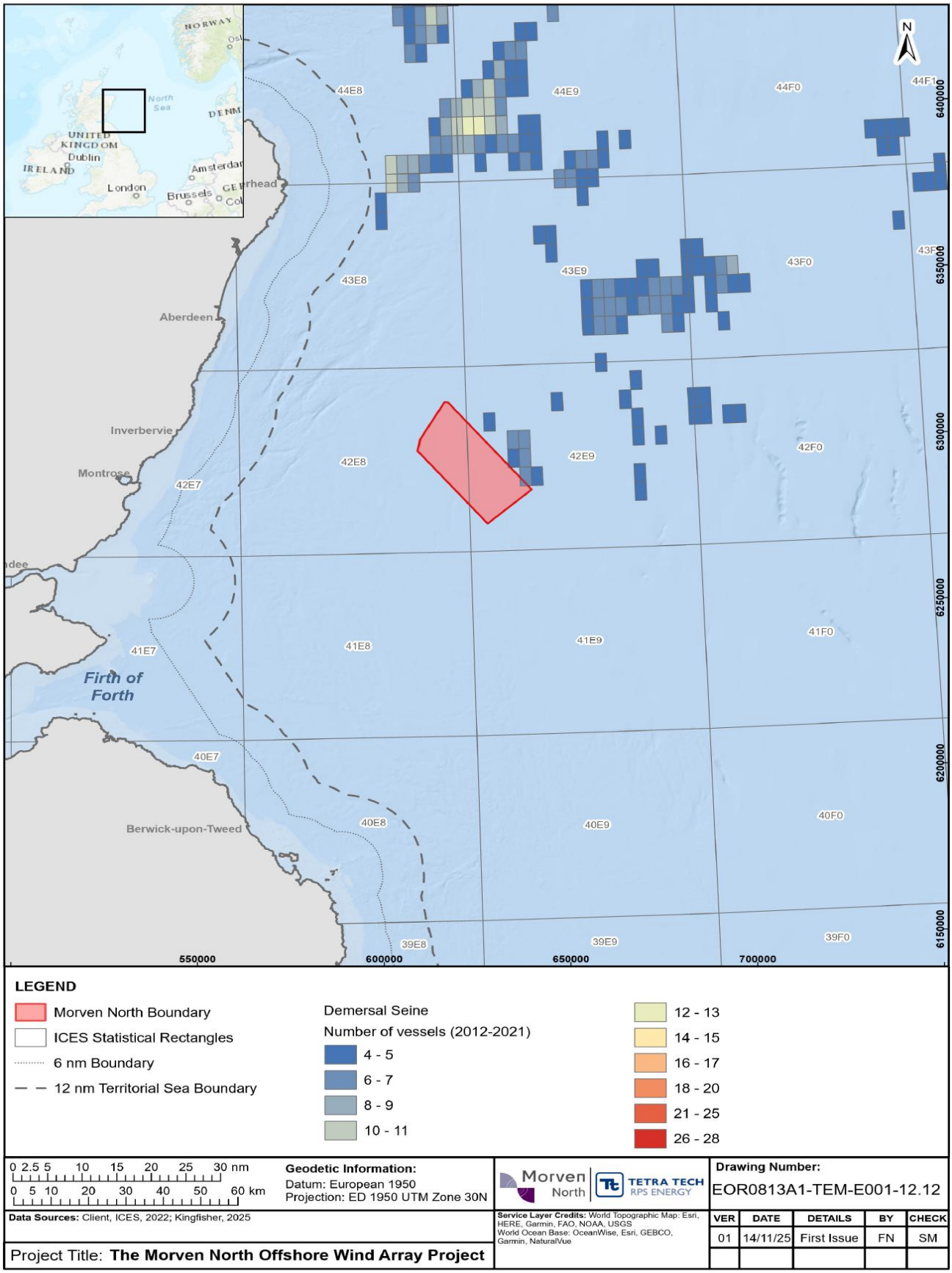

Figure 12.12: Demersal Seine vessel numbers based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

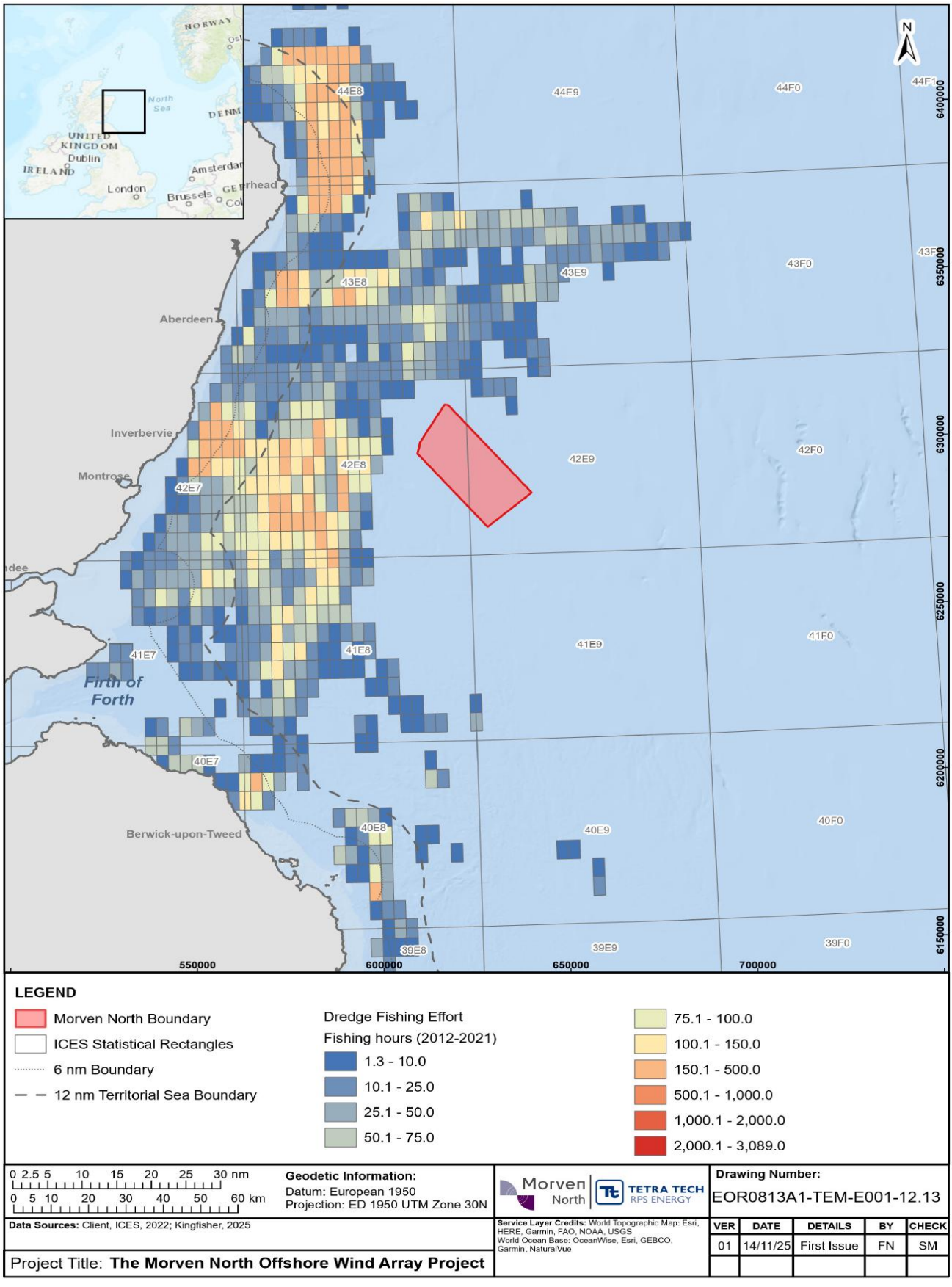

Figure 12.13: Dredge effort based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

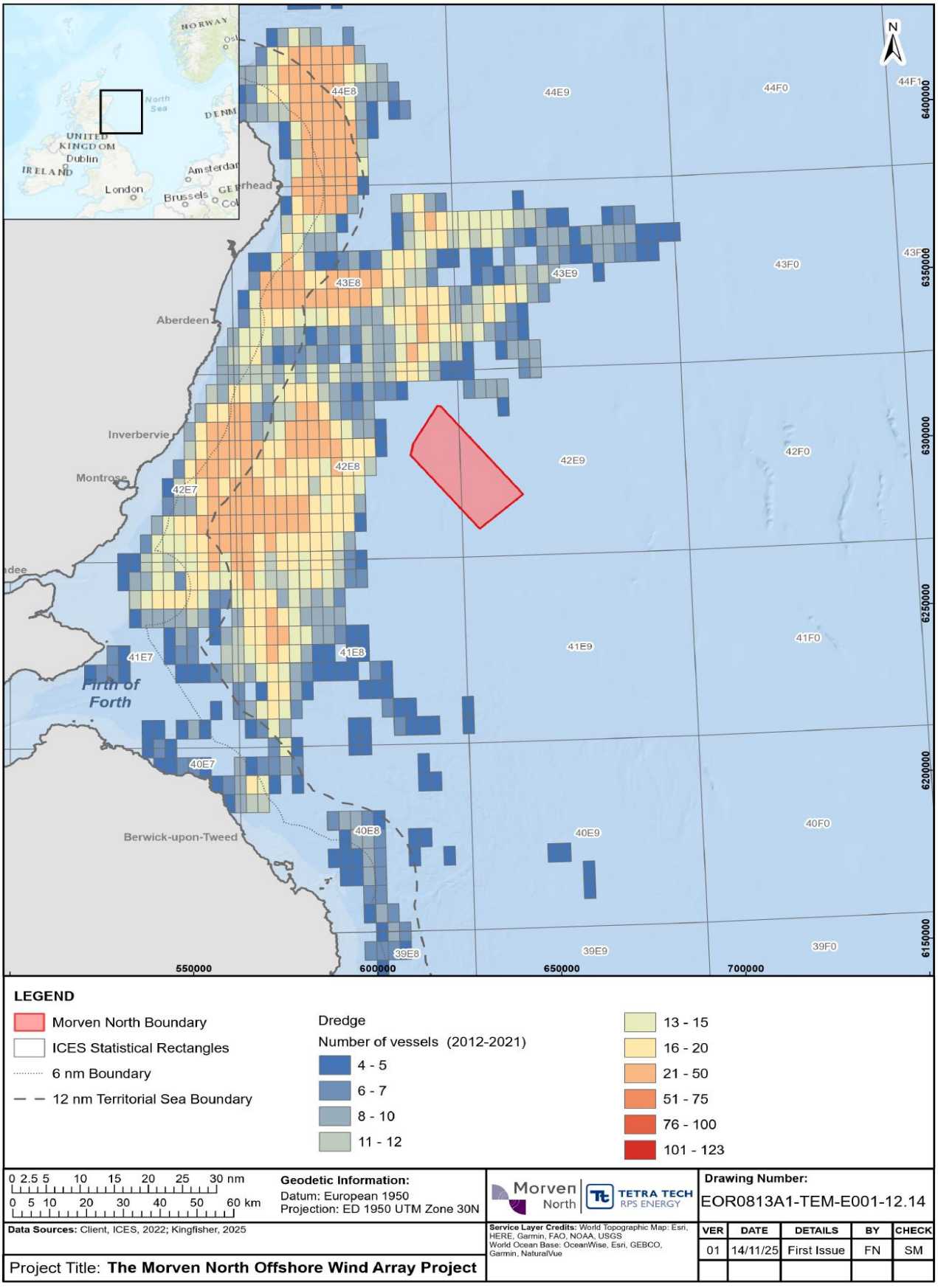

Figure 12.14: Dredge Vessel numbers based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

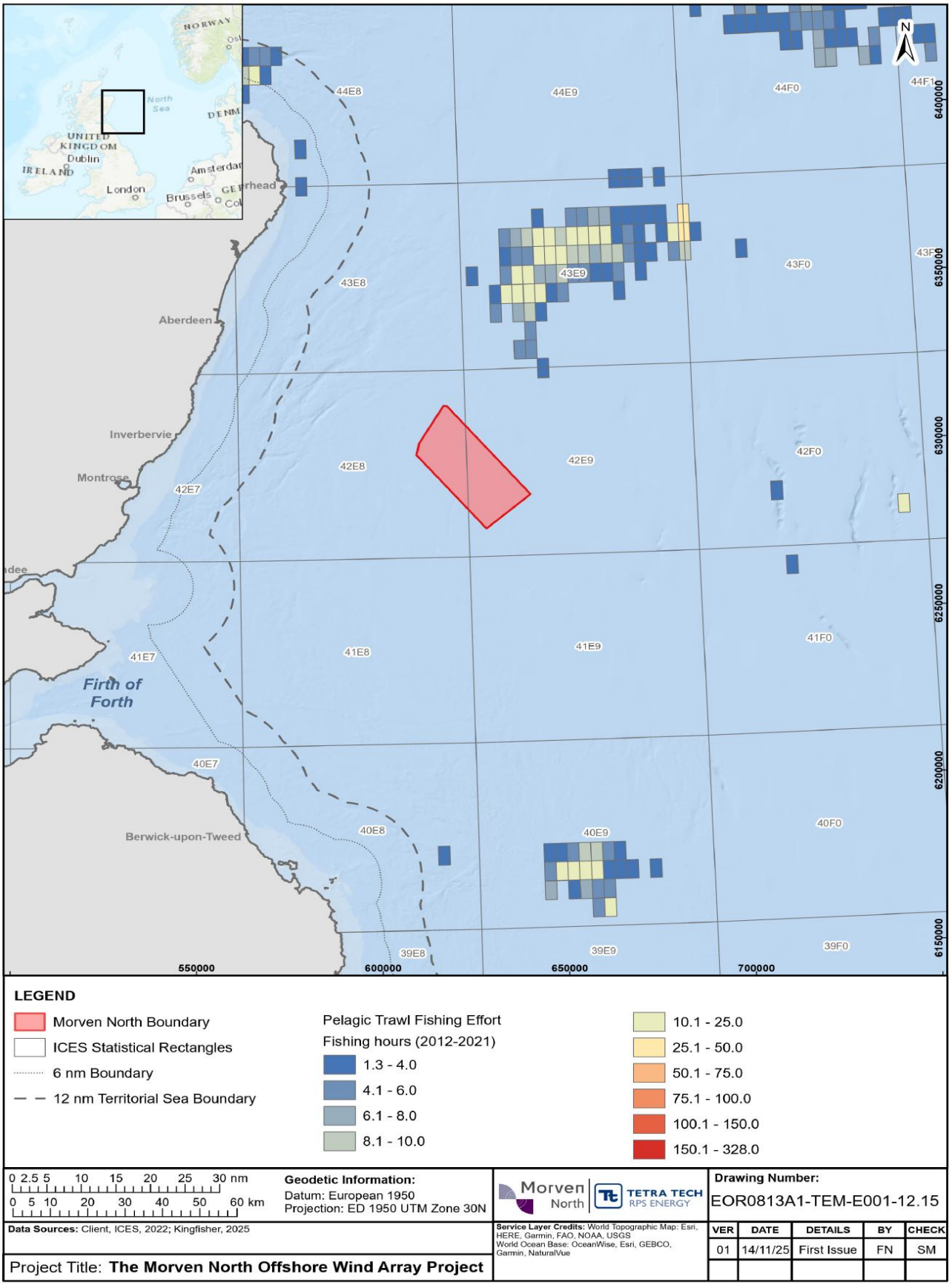

Figure 12.15: Pelagic trawl fishing effort based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

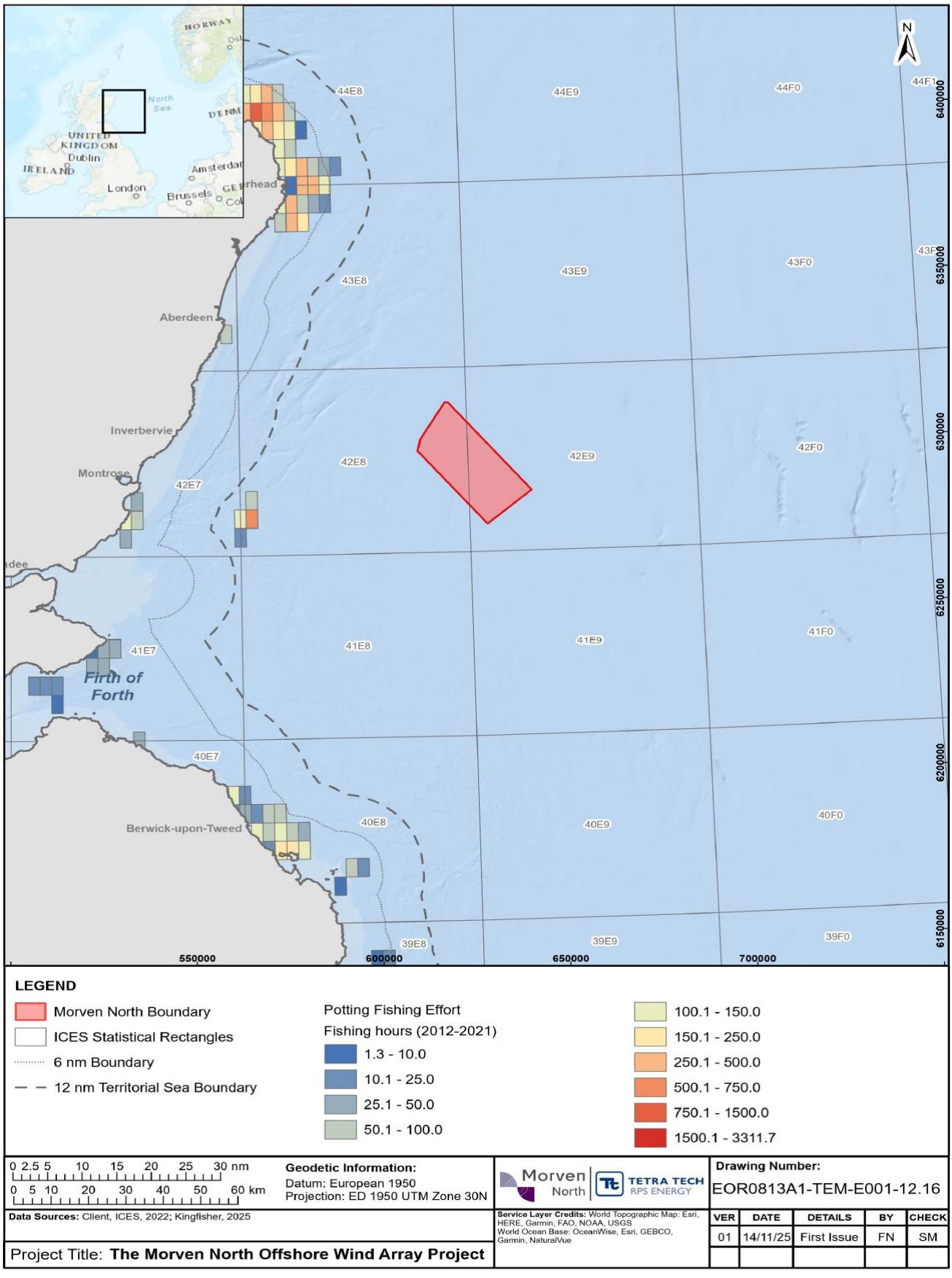

Figure 12.16: Potting Fishing effort based on fisheries sensitivity mapping and displacement mapping data (cumulative 2012 to 2021) (data source: Cefas, 2025)

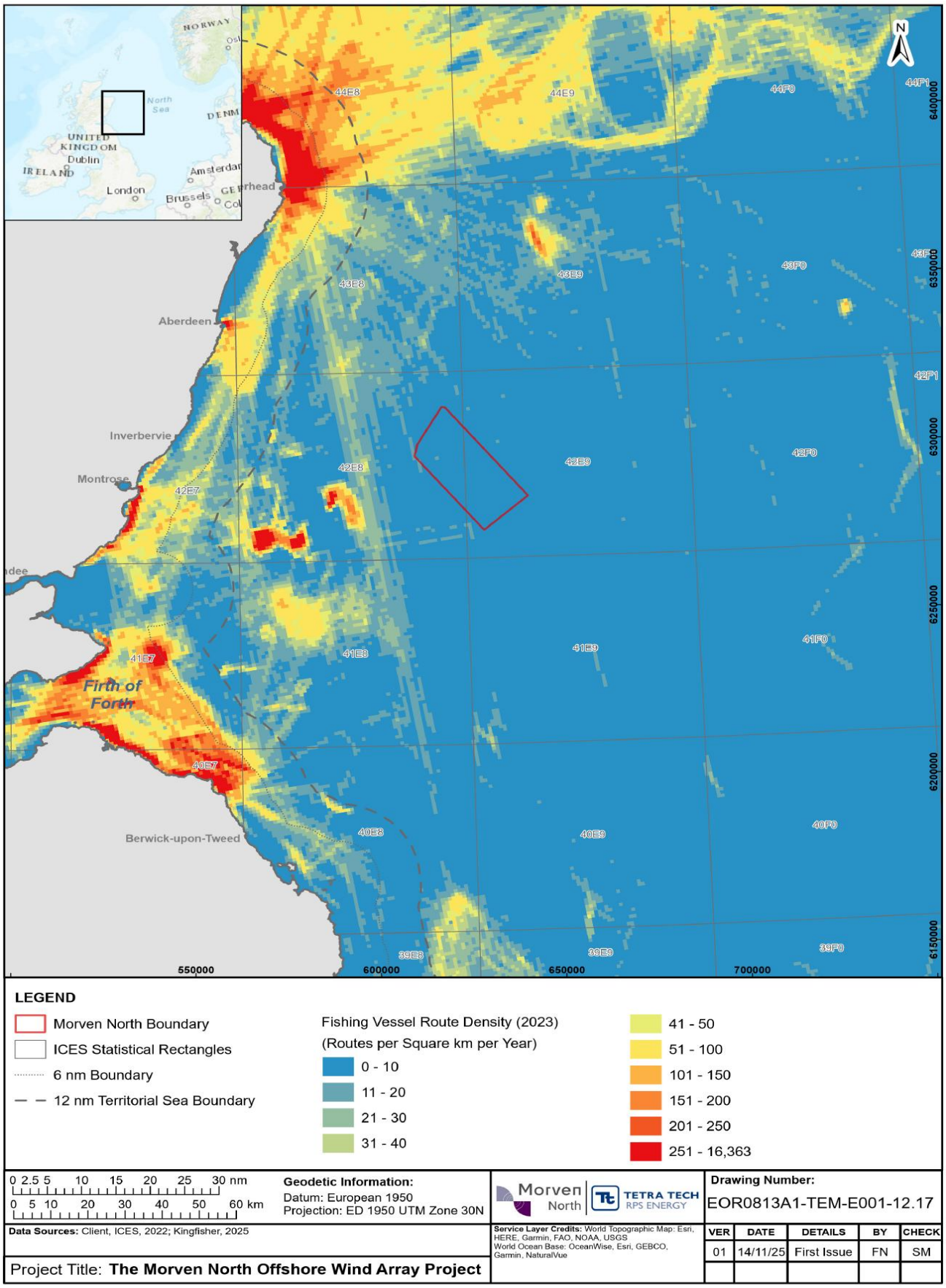

Figure 12.17: Automatic Information System fishing vessel route density for 2023 (Source: EMSA, 2024)

Morven Site marine traffic surveys

12.7.1.15 Project-specific marine traffic surveys were undertaken in June/July 2024 and November/December 2024 (Anatec Ltd, 2024 and 2025 and Figure 12.18), using AIS and radar tracking and visual observations to record vessel activity across a survey area comprising the Morven Site and a surrounding 10nm buffer. The marine traffic surveys are described in Volume 2, Chapter 14: Shipping and Navigation, and have primarily been used to aid description of and validate the shipping and navigation baseline.

12.7.1.16 During the summer 2024 survey, an average of two unique fishing vessels per day were recorded within the survey area during the 14 day survey period. The majority of these vessels were seen inshore of the Morven Site, with only three intersections recorded within the Site itself. The majority of activity was from a single potting vessel. A second vessel also appeared to be engaged in active fishing at the northern extent of the survey area.

12.7.1.17 During the winter 2024 survey, an average of between one and two fishing vessels were recorded within the survey area per day of the 14-day survey period, and none recorded within the Morven Site. Potential active fishing behaviour was recorded in the north of the survey area, with transiting fishing vessels noted on general north-northwest/south-southeast courses across the area. Recorded fishing vessels were a potter and demersal trawler.

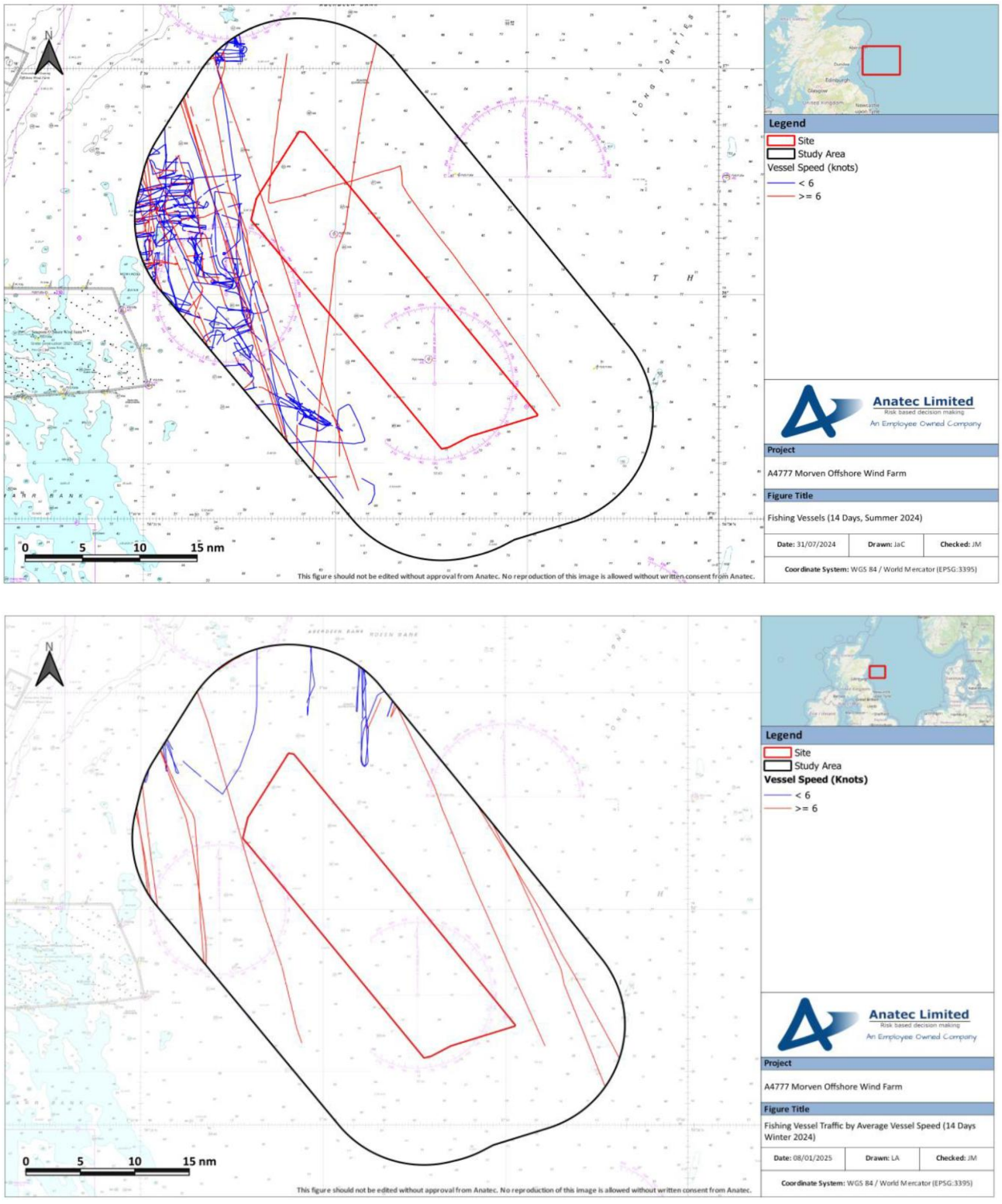

Figure 12.18: Fishing Vessel traffic by average vessel speed during summer (top) and winter (bottom) 2024 marine traffic surveys (data source: Anatec Ltd, 2024 and 2025)[7]

[7] As a general rule, average speeds of below 6 knots indicate potential active fishing behaviour.

Fishing vessel plotter data

12.7.1.18 A representative sample of fishing vessel plotter data for the Morven Site has been provided in confidence to the Applicant by the SFF. SFF requested that this is not published, but the data has been used in validating the commercial fisheries baseline described here and in Volume 3, Annex 12.1: Commercial Fisheries Shared Technical Report.

12.7.1.19 The plotter data depicts the activity of SFF member vessels and indicates the presence of some fishing activity within the Morven North Boundary, with fishing vessel tracks present across the northwest portion and along the southwest boundary of Morven North. Data indicates relatively higher levels of member vessel activity outside of the Morven North boundaries.

12.7.1.20 Fishing vessel plotter data has also been provided by the SWFPA and SPFA and is described in Volume 3, Annex 12.1: Commercial Fisheries Technical Report.

Fishing activity by gear type

Dredge fishery[8]

12.7.1.21 Within the Morven North Local Commercial Fisheries Study Area, the dredge fishery primarily operates in ICES rectangle 42E8. The dredge fishery accounted for £614,000 first sales value landed annually on average from the Morven North Local Commercial Fisheries Study Area between 2019 and 2024. This value decreased over the period from 2019 (£1 million landed value) to 2023 (253,000 landed value), but increased again in 2024 (£1.1 million).

12.7.1.22 Spatial data indicates that the dredge fishery operates inshore of Morven North and that activity is not expected to overlap Morven North boundaries.

12.7.1.23 Landings by dredge vessels are made into Peterhead, Fraserburgh and Aberdeen. Landings data indicates peak scallop landings across April to June, with lower levels of landings in winter months.

Demersal otter trawl fishery[9]

12.7.1.24 Within the Morven North Local Commercial Fisheries Study Area demersal trawlers predominantly target demersal whitefish such as haddock and Nephrops. The majority of landings are attributed to ICES rectangle 42E9. The demersal trawl fishery accounted for £110,000 first sales value landed annually on average from the Morven North Local Commercial Fisheries Study Area between 2019 and 2023. Landings values attributed to demersal trawl have generally increased over the time period within the Morven North Local Commercial Fisheries Study Area, peaking in 2023 at £188,000, though showed decline in 2024 at £73,000.

12.7.1.25 Spatial data indicates low levels of demersal trawl activity within the Morven North Boundary, with some fishing effort overlapping the northeastern boundary and southwest corner of Morven North. Demersal trawl activity is generally focused outside of the Morven North Local Commercial Fisheries Study Area to the north and east. Morven North does not overlap with suitable Nephrops habitat and the demersal trawl activity present around the fringes of Morven North is therefore associated with trawlers targeting haddock and other whitefish.

[8] In this chapter, "dredge fishery" refers to the king scallop (*Pecten maximus*) dredge fishery.

[9] In this chapter, "demersal otter trawl" refers to both whitefish (TR1: ≥100 mm mesh) and Nephrops (TR2: 70–99 mm mesh) demersal otter trawl fisheries. The difference in mesh size reflects the type and size of species being targeted by the fishery.

12.7.1.26 Landings data indicates a June/July peak in landings values attributed to demersal trawlers in the Morven North Local Commercial Fisheries Study Area. Landings are primarily made into Peterhead, with some into Methil and Leven, and Fraserburgh.

Potting fishery

12.7.1.27 The potting fishery primarily targets lobster, brown crab and velvet crab and accounts for £244,000 first sales value landed annually from the Morven North Local Commercial Fisheries Study Area. Across the 2019 to 2024 period, landings values from the Morven North Local Commercial Fisheries Study Area peaked in 2020 at £500,000 and were at their lowest in 2022 at £69,000.

12.7.1.28 Spatial data makes it apparent that activity by potters is largely focused inshore of Morven North with negligible levels of potting activity expected within the Morven North Boundary. During consultation, SFF indicated that potting activity is occurring progressively further offshore off the east coast of Scotland, including in the vicinity of Morven North; however, this pattern is not reflected in the publicly available spatial datasets.

12.7.1.29 Landings by the potting fishery from the Morven North Local Commercial Fisheries Study Area are consistent year-round with a slight peak in late spring. Landings are made into Arbroath and Stonehaven.

Demersal seine fishery

12.7.1.30 Within the Morven North Local Commercial Fisheries Study Area, the demersal seine fishery primarily operates in ICES rectangle 42E9. It accounted for £68,000 first sales value landed annually on average from the Morven North Local Commercial Fisheries Study Area between 2019 and 2024. Landings values attributed to demersal seine have increased over the time period within the Morven North Local Commercial Fisheries Study Area, peaking in 2024 at £154,000.

12.7.1.31 The demersal seine fishery targets haddock and landings data indicates peaks in landed value in June and December. Almost all landings are made into Peterhead.

12.7.1.32 Spatial data indicates limited demersal seine activity within the Morven North Boundary, with some fishing effort identified along the northeastern boundary of Morven North. Demersal seine activity is generally focused outside of the Morven North Local Commercial Fisheries Study Area to the north.

Pelagic trawl fishery

12.7.1.33 Within the Morven North Local Commercial Fisheries Study Area, landings data indicates a single catch of herring across the 2019 to 2024 period, which occurred in October 2022 and was valued at £27,000. No landings by pelagic seine are recorded in the Morven North Local Commercial Fisheries Study Area. Spatial data indicates no overlap of pelagic trawl activity with the Morven North Boundary.

Haddock fishery

12.7.1.34 Long-term landings data indicate that a haddock fishery was more prominent in the Morven North Local and Regional Commercial Fisheries Study Areas prior to 2016, targeted by both the demersal otter trawl and demersal seine fisheries described above. A marked reduction in haddock landings is evident from 2016 onwards. This decline has been attributed to a combination of factors, including implementation of the Landing Obligation (from 2016–2017), which altered fishing practices in the North Sea, alongside wider market influences affecting demand for smaller size classes of fish.

12.7.1.35 Industry consultation feedback has indicated the potential for this haddock fishery to strengthen in the region, informed in part by recent investment in automated processing capacity in Peterhead capable of handling smaller size classes of fish. While such developments may influence fleet behaviour within the wider North Sea, the scale and timing of any change remain uncertain and subject to a range of market and regulatory drivers.

12.7.1.36 Notwithstanding the historic prominence of the haddock fishery in the Morven North Local and Regional Commercial Fisheries Study Areas, current evidence does not demonstrate the presence of core demersal trawl or demersal seine grounds within the Morven North Boundary.

Commercial fisheries receptors

12.7.1.37 The key fishing fleets operating across the Morven North Local and Regional Commercial Fisheries Study Areas are listed in Table 12.7.

Table 12.7: Summary of fishing fleets active in the study areas, and identified as commercial fisheries Environmental Impact Assessment receptors

Fishing Fleet	Morven North	Morven North Local and Regional Commercial Fisheries Study Areas
Dredge fishery	No dredge activity occurring with any regularity.	Dredge activity evident and focused in areas to the west of Morven North. Primarily Scottish, and some English-registered vessels, mostly over 15m length, targeting king scallop.
Demersal Otter Trawl Fishery	Limited demersal trawl activity.	High levels of demersal trawl activity focused to the northeast of Morven North. Primarily Scottish, and some English and Northern Irish-registered vessels, under and over 15m length, targeting Nephrops and haddock and other whitefish species.
Potting Fishery	Limited potting activity.	Potting activity evident and focused in areas to the west of Morven North. Scottish registered vessels, mostly under 15m length, targeting lobster, brown crab and velvet crab.
Demersal Seine Fishery	No demersal seine activity occurring with any regularity.	Low levels of demersal seine activity, focused to the north and east of Morven North, with some activity to the immediate northeast of Morven North. Primarily Scottish registered vessels, over 15m length, targeting haddock.
Pelagic Trawl Fishery	No pelagic trawl activity occurring with any regularity.	Low levels of pelagic trawl activity, focused in discrete areas to the north and south of Morven North. Primarily Scottish, and some Northern Irish-registered vessels, over 40m length, targeting herring. Occasional presence of non-UK pelagic trawlers from France, Denmark, the Netherlands, Germany and Norway within the Morven North Local Commercial Fisheries Study Area.

12.7.2 Future baseline scenario

12.7.2.1 The EIA Regulations require the following to be included within the EIA Report: "a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the

likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort, on the basis of the availability of environmental information and scientific knowledge."

12.7.2.2 In the event that Morven North does not come forward, an assessment of the future baseline conditions has been carried out and is described within this section.

12.7.2.3 Commercial fisheries patterns change and fluctuate based on a range of natural and management-controlled factors. These factors include the following:

- Offshore development: Response to existing offshore developments, including other ScotWind projects and INTOG projects.
- Market demand: commercial fishing fleets respond to market demand, which is impacted by a range of factors, such as changes in consumer preferences and international trade policies, and including the 2020 to 2021 COVID-19 pandemic which disrupted the seafood supply chain with, for example, lockdowns and restaurant closures.
- Market prices: commercial fishing fleets respond to market prices by focusing effort on higher value target species when prices are high.
- Stock abundance: fluctuation in the biomass of individual species stocks in response to the status of the stock, recruitment, natural disturbances (e.g. due to storms), climate change, and changes in fishing pressure etc.
- Fisheries management: including new management for specific species where overexploitation has been identified, or changes in Total Allowable Catches (TACs) leading to the relocation of effort, or an overall increase/decrease of effort and catches from specific areas.
- Environmental management: including the potential restriction of certain fisheries within protected areas. Consultation with fisheries stakeholders indicated potential for increased use of 'lighter' fishing gear in the future, such as seine nets, in response to perceived impacts of trawling.
- Improved efficiency and gear technology: with fishing fleets constantly evolving to reduce operational costs (e.g. by moving from beam trawl to demersal seine to respond to increasing fuel costs).
- Sustainability: with seafood buyers more frequently requesting certification of the sustainability of fish and shellfish products, such as the Marine Stewardship Council certification, industry is adapting to improve fisheries management and wider environmental impacts.

12.7.2.4 A recent example of how fisheries management can change the baseline relates to sandeel (Ammodytidae); the sandeel fishery has significantly reduced in the UK EEZ over the past five years, with very low quotas relevant for this area (i.e. sandeel area 4). It is noted that the UK Government has prohibited UK vessels from catching sandeel from the North Sea from the period 2021 to 2023. As of 2024, catching sandeel from the North Sea has been prohibited for all UK and non-UK vessels in the UK EEZ[10].

12.7.2.5 Another example of changing fisheries patterns relates to the recent prohibition of scallop dredging in the Dogger Bank Special Area of Conservation (SAC). Many of the UK scallop vessels that operate outside 12nm will target areas throughout the UK, including central North Sea, English Channel, Irish Sea and West of Scotland. Restrictions on fisheries due to environmental management can displace the activity and also lead to higher reliance on existing grounds.

[10] In Scottish waters this is imposed via The Sandeel (Prohibition of Fishing) (Scotland) Order 2024; in English waters this is applied via Government-imposed closure/quota withdrawal rather than via a statutory instrument.

12.7.2.6 The variations and trends in commercial fisheries activity are an important aspect of the baseline assessment and forms the principal reason for considering up to five years of key baseline data. Given the time periods assessed, the future baseline scenario would typically be reflected within the current baseline assessment undertaken. However, in this case, existing baseline data do not capture any potential changes in commercial fisheries activity resulting from the withdrawal of the UK from the EU.

12.7.2.7 Following withdrawal, the UK and the EU have agreed to a Trade and Cooperation Agreement (TCA), applicable on a provisional basis from 01 January 2021. The TCA sets out fisheries rights and confirms that from 01 January 2021, and during a transition period until 30 June 2026, UK and EU vessels will continue to access respective EEZs (12nm to 200nm) to fish. In this period, EU vessels will also be able to fish in specified parts of UK waters between 6nm to 12nm.

12.7.2.8 Twenty five percent of the EU's fisheries quota in UK waters will be transferred to the UK over the five-year transition period; most of this quota has already been transferred and distributed across the four nations of the UK. After the five-year transition there will be annual discussions on fisheries opportunities. Across the Morven North Regional Commercial Fisheries Study Area, where UK fisheries primarily target non-quota shellfish species, it is expected that fleets are unlikely to be impacted by quota transfers. It is possible that UK vessels will seek to exploit additional quota species opportunities, but vessels would need to access quota holdings.

12.7.2.9 In May 2025, the UK and EU reached a new agreement extending reciprocal fishing access until 30 June 2038. This 12-year extension maintains the status quo, allowing EU vessels continued access to UK waters, including the 6–12 nautical mile zone, based on historical catch data from 2012 to 2016. The initial 25% quota transfer from the EU to the UK, as stipulated in the TCA, is still set to complete by 30 June 2026. While the new agreement extends access rights, it is expected that annual negotiations on specific quotas and fishing opportunities will continue, similar to the current framework.

12.7.2.10 Market changes have the potential to impact fishing activity in the Morven North Regional Commercial Fisheries Study Area; some of the catch landed by UK vessels is exported to EU markets (e.g. brown crab) and potential tariff/non-tariff barriers could affect which species are targeted and to what extent.

12.7.2.11 In relation to the effects of the COVID-19 pandemic, MMO annual reporting notes that the effects of the pandemic on the UK fishing industry were felt from March 2020. The MMO UK Sea Fisheries Statistics 2021 report observes that an increase in overall UK landings quantity and value in 2021 (relative to 2020) largely reflected recovery from the COVID-19 pandemic period and additional quota available to the UK fleet after leaving the EU (MMO, 2022b).

12.7.2.12 Commercial fisheries receptors (i.e. relevant fishing fleets) could theoretically be impacted by climate change over the lifetime of Morven North. Increased sea temperature/change in pH levels have the potential to affect the distribution of commercially targeted fish and shellfish stocks in the Regional and Morven North Local Commercial Fisheries Study Area s. Scientific research to date indicates the following for key commercially targeted species (Núñez-Riboni et.al., 2019; OSPAR, 2023; European Environment Agency, 2024; Sailley *et.al*., 2025; and Garrett and Pinnegar, 2022):

- of relevance to the Nephrops fishery, most shellfish are sedentary but have a high tolerance to changes in temperature. Some warming in this part of the North Sea is unlikely to significantly impact this target species;
- any evidence around scallops and how changes in temperature will impact upon them is varied and not conclusive;
- for white fish fisheries, such as those targeting haddock, climate change could have a large impact via warming sea, in turn reducing the area within the North Sea that is suitable for these fish species. This could cause fish to migrate further north, making areas of the northern North Sea more important as a fishery.

12.7.2.13 Changes in the distribution of target species may in turn affect commercial fishing activity in the Regional and Morven North Local Commercial Fisheries Study Areas over the long-term; for example, altering fishing methods, targeted grounds and seasonal patterns in activity.

12.7.2.14 An increase in storm events may also directly impact fishing activity in the Regional and Morven North Local Commercial Fisheries Study Areas, with changes with seasonal fishing patterns in response to changes in weather and periods of safe fishing conditions.

12.7.3 Data limitations and assumptions

12.7.3.1 Limitations of landings data include the spatial size of ICES rectangles, which can misrepresent actual activity across Morven North, and care is therefore required when interpreting the data.

12.7.3.2 It is noted that all commercial landings by UK registered vessels are subject to the Registration of Buyers and Sellers (RBS) legislation and therefore landings by UK vessels of all lengths are recorded within the MMO Integrated Fisheries System Holding (iFish) database. Whilst it is recognised that there is no statutory requirement for owners of vessels 10m and under to declare their catches, registered buyers are legally required to provide sales notes of all commercially sold fish and shellfish due to the 2005 Registration of Buyers and Sellers of First Sale Fish Scheme (RBS legislation) (MMO, 2021). The RBS legislation is applicable to licenced fishing vessels of all lengths and requires name and Port Letters and Numbers (PLN) of the vessel which landed the fish to be recorded in relation to each purchase. For the 10m and under sector, landing statistics are recorded on sales notes provided by the registered buyers (MMO, 2021). Information that may not be formally recorded on the sales note, such as gear and fishing area, is added by coastal staff based on local knowledge of the vessels they administer. For example, from observations of the vessel during inspections at ports or from air and sea surveillance activities as well as discussions with the owner or operator of the vessel (MMO, 2021). There are occasions when fish are not subject to the RBS legislation and therefore are not represented within the MMO iFish landings database, for instance when purchases of first sale fish direct from a fishing vessel are wholly for private consumption, and less than 25kg is bought per day.

12.7.3.3 Lack of recent landings statistics for EU (non-UK) fleets is also recognised as a data limitation; based on the most recent European Commission data call, more recent (from 2017 onwards) landings data is no longer available by ICES rectangle. Data at a scale of ICES division (the whole of the North Sea) is less useful to understand fishing activity specific to the area overlapping Morven North.

12.7.3.4 Limitations of VMS data are primarily focused on the coverage being limited to vessels ≥15m for MMO data. It is important to be aware that where mapped VMS data may appear to show inshore areas as having lower (or no) fishing activity compared with offshore areas, this is not necessarily the case, because VMS data does not include vessels typically operating in inshore areas (which typically comprises vessels <15m in length). To assist in mitigating the risk of under-representing smaller inshore vessels, site specific marine traffic survey data, comprising information on vessel movements gathered by AIS and radar, has been analysed alongside VMS data.

12.7.3.5 Fishing vessel route density data from the EMSA is based on AIS data, representing activity for vessels with AIS (≥15m in length). A limitation of AIS data is that it does not distinguish between steaming and actively fishing; nevertheless, it provides corroboration for key fishing grounds and insight into transit routes to alternative fishing grounds.

12.7.3.6 Data limitations have been managed by ensuring accurate interpretation of the data and clear understanding of its scope, together with cross-referencing between data sources and consultation with the fishing industry. As data forms only part of the evidence base, the limitations identified are not considered to significantly affect the certainty, or reliability, of the impact assessments in Section 12.11.

12.8 Methodology for assessment of effects

12.8.1 Overview

12.8.1.1 The commercial fisheries assessment of effects has followed the methodology set out in Volume 1, Chapter 6: EIA Methodology. Specific to the commercial fisheries assessment of effects, the guidance documents listed in Section 12.6.2 have been considered where relevant.

12.8.2 Assessment criteria

12.8.2.1 The approach for determining the significance of effects is a two-stage process that involves defining the magnitude of the potential impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 4: EIA Methodology. The approach applied in this chapter follows the same methodological framework described in Volume 1, Chapter 4. The only difference is that the generic definitions of magnitude and sensitivity have been elaborated to ensure they are meaningful and proportionate for commercial fisheries receptors. Receptor-specific definitions and indicators for commercial fisheries have been included in response to stakeholder feedback received over a number of projects, with the aim of improving transparency and consistency in the application of the EIA methodology.

12.8.2.2 The criteria for defining magnitude in this chapter are outlined in Table 12.8 below.

Table 12.8: Definition of terms relating to the magnitude[11]

Magnitude of impact	Definition	Example indicators
High (Adverse)	Impact is expected to result in one or more of the following: • Substantial loss of target fish or shellfish biological resource (e.g. loss of substantial proportion of resource within Morven North); • Substantial loss of ability to carry on fishing activities (e.g. substantial proportion of effort within Morven North). Or: Impact is of long-term duration (e.g. greater than 12 years duration) or is of extended physical extent.	• Affected area represents core or critical fishing ground. • High dependence confirmed through data and consultation. • Long-term or effectively irreversible reduction in fishing activity anticipated. • No viable alternative grounds within normal fleet operating range.
High (Beneficial)	Impact is expected to result in one or more of the following: • Substantial of resource quality, measurable against biomass reference points;	• Measurable long-term improvement in stock productivity, recruitment, or biomass relative to baseline conditions.

[11] Beneficial magnitude categories are included for completeness and consistency with the EIA methodology. While no significant beneficial effects on commercial fisheries are predicted for this project, the indicators provide a transparent framework should beneficial effects be identified.

Magnitude of impact	Definition	Example indicators
	• Extensive restoration or enhancement of habitats supporting commercial fisheries resources.	• Creation or restoration of habitat of high functional importance for commercially targeted species. • Benefits realised across a wide spatial area or over multiple fishing seasons. • Benefits expected to be sustained over the long-term and relevant to a substantial proportion of the affected fleet.
Medium (Adverse)	Impact is expected to result in one or more of the following: • Partial loss of target fish or shellfish biological resource (e.g. moderate loss of resource within Morven North); • Partial loss of ability to carry on fishing activities (e.g. moderate reduction of fishing effort within Morven North). Or: Impact is of medium-term duration (e.g. less than 12 years) or is of moderate physical extent.	• Grounds contribute materially to seasonal or annual income. • Evidence of displacement pressures (e.g., competition, increased pressure on grounds, gear conflict). • Effects are partially reversible but may require extended timeframes or adaptation measures to be realised. • Consultation indicates moderate reliance or operational challenge in adapting to impact presence.
Medium (Beneficial)	Impact is expected to result in one or more of the following: • Moderate improvement of resource quality; • Moderate restoration or enhancement of habitats supporting commercial fisheries resources.	• Localised or seasonal improvement in catch potential or fishing efficiency. • Habitat enhancement likely to support improved stock resilience or distribution. • Benefits relevant to a defined subset of fleets or gear types. • Benefits expected to persist over the medium term.
Low (Adverse)	Impact is expected to result in one or more of the following: • Minor loss of target fish or shellfish biological resource (e.g. minor loss of resource within Morven North); • Minor loss of ability to carry on fishing activities (e.g. minor reduction of fishing effort within Morven North). Or: Impact is of short-term duration (e.g. one to two years) or is of limited physical extent. The short-term time period is based on professional judgement and is not definitive dependent on the nature of the impact.	• Affected grounds contribute to a small portion of annual fishing activity. • Consultation indicates low economic or operational dependence. • Displacement or resource loss is readily reversible or can be offset within normal fleet operating range.

Magnitude of impact	Definition	Example indicators
Low (Beneficial)	Impact is expected to result in one or more of the following: • Minor benefit to or minor improvement of resource quality; • Minor restoration or enhancement of habitats supporting commercial fisheries resources.	• Short-term or small-scale localised improvement in fishing conditions. • Limited habitat enhancement with modest ecological function. • Benefits easily absorbed within existing fishing practices. • Benefits of low economic importance to the fleet.
Negligible	Impact is expected to result in one or more of the following: • Slight loss of target fish or shellfish biological resource (e.g. slight loss of resource within Morven North); • Slight loss of ability to carry on fishing activities (e.g. slight loss of fishing effort within Morven North). Or: Impact is of very short-term duration (e.g. less than one year) or physical extent of impact is negligible and broadly undetectable from pre-development baseline conditions.	• Very low or no fishing activity recorded. • Industry consultation confirms negligible operational reliance. • Any effect is short-lived, fully reversible, and easily absorbed.

12.8.2.3 EIA regulations and guidelines recognise the importance of defining the duration of impacts, through terms like 'long-term', 'medium-term', and 'short-term' and these durations can vary based on context and sector, such as in commercial fisheries. While there is no universally standardised definition of these terms, general guidelines can inform their appropriate use. For context, the EU EIA Directive (2011/92/EU) and related regulations focus more on assessing the significance of impacts rather than rigidly defining timeframes, but they emphasise the need for a comprehensive analysis of impacts over different temporal scales. Similarly, the International Energy Agency and UK EIA guidelines recommend considering the temporal relevance of impacts in relation to a project's lifecycle.

12.8.2.4 In relation to commercial fisheries, the following timeframes are considered appropriate to Morven North:

- Short-term:
  - These are typically impacts that last for a relatively brief period, often in the range of one to two years.
  - Short-term impacts generally refer to temporary changes that are expected to reverse quickly once the disturbance has ceased. This timeframe is consistent with the natural recovery cycles of many environmental systems.
- Medium-term:
  - Medium-term impacts are often those expected to last several years but not beyond 10 to 12 years.
  - The recovery or restoration of affected systems might take this amount of time, especially when it comes to ecosystems or species that require longer periods to recover or regenerate.
- Long-term:

- Long-term impacts typically extend beyond 12 years and could be permanent or only partially reversible within the human timescale[12].
- Long-term impacts could involve major habitat changes, loss of biodiversity, or irreversible degradation of fisheries resources, which may take decades or longer to recover, if they recover at all.

12.8.2.5 The criteria for defining sensitivity in this chapter are outlined in Table 12.9 below.

Table 12.9: Definition of terms relating to the sensitivity of the receptor

Value (sensitivity of the receptor)	Description	Example indicators
Very High	Receptor is very highly vulnerable to impacts that may arise from Morven North and recoverability is long-term or not possible. Or: No alternative fishing grounds are available.	• Area represents only fishing ground. • Gear types/location highly specific with no feasible alternatives. • Full economic dependency on affected activity[13]. • Permanent loss anticipated.
High	Receptor is highly vulnerable to impacts that may arise from Morven North and recoverability is long-term or not possible. Or: Low levels of alternative fishing grounds are available or fishing fleet has limited operational range.	• Area represents core or primary fishing ground. • Gear types/location highly specific with no feasible alternatives. • Economic dependency on affected activity. • Long-term or permanent loss anticipated.
Medium	Receptor is somewhat vulnerable to impacts that may arise from Morven North and has moderate levels of recoverability. Or: Moderate levels of alternative fishing grounds are available or fishing fleet has moderate operational range.	• Affected grounds contribute materially to seasonal income. • Some difficulty relocating effort without displacement or loss. • Limited spatial mobility or operational constraints (e.g. gear type, vessel size).
Low	Receptor is not generally vulnerable to impacts that may arise from Morven North or has high recoverability. Or: High levels of alternative fishing grounds are available or fishing fleet has	• Area represents a small portion of fleet activity. • Similar grounds are accessible within normal operational range.

[12] 'Human timescale' refers to a period extending beyond the Morven North lifetime and the period in which fishing businesses could reasonably plan, adapt, or recover economically, over which recovery would take several decades or longer.

[13] For commercial fisheries, economic value is considered as an integral component of sensitivity and is not assessed as a separate criterion.

Value (sensitivity of the receptor)	Description	Example indicators
	large to extensive operational range; fishing fleet is adaptive and resilient to change.	• Flexible gear use or target species.
Negligible	Receptor is not vulnerable to impacts that may arise from Morven North or has high recoverability. Or: Extensive alternative fishing grounds available or fishing fleet is highly adaptive and resilient to change.	• No reliance on affected grounds. • Vessel(s) operate across multiple regions or grounds. • Impacts are spatially or temporally insignificant to operations.

12.8.2.6 Vulnerability is the susceptibility of a receptor to experience the impact of a change in baseline conditions:

- For example, very high vulnerability relates to a very high sensitivity: receptor cannot adapt, avoid or tolerate the impact.
- For example, very low vulnerability relates to a negligible sensitivity: receptor has a high capacity to adapt to, tolerate, or avoid the impact, such that any change would be minimal and difficult to distinguish from baseline conditions.

12.8.2.7 Recoverability is a measure of how well a receptor recovers following exposure to an effect:

- For example, very low recoverability relates to a very high sensitivity: receptor does not have the ability to recover, or recovery is long-term (e.g. greater than 12 years).
- For example, very high recoverability relates to a negligible sensitivity: receptor is highly likely to recover fully to levels not detectable against baseline.

12.8.2.8 The significance of the effect upon commercial fisheries is determined by correlating the magnitude of the impact and the sensitivity of the receptor (i.e. fishing fleet). The particular method employed for this assessment is presented in Table 12.10.

12.8.2.9 In cases where a range is suggested for the significance of effect, there remains the possibility that this may span the significance threshold (i.e. the range is given as minor to moderate). In such cases the final significance is based upon the expert's professional judgement as to which outcome delineates the most likely effect, with an explanation as to why this is the case.

12.8.2.10 For the purposes of this assessment:

- a level of effect of moderate or more will be considered a ‘significant’ effect in terms of the EIA Regulations;
- a level of effect of minor or less will be considered ‘not significant’ in terms of the EIA Regulations.

12.8.2.11 Effects of moderate significance or above are therefore considered important in the decision-making process, whilst effects of minor significance or less warrant little, if any, weight in the decision-making process.

Table 12.10: Matrix used for the assessment of the significance of the effect

Sensitivity of receptor	Magnitude of impact				
		Negligible	Low	Medium	High
	Negligible	Negligible	Negligible to minor	Negligible to minor	Minor
	Low	Negligible to minor	Negligible to minor	Minor	Minor to moderate
	Medium	Negligible to minor	Minor	Moderate	Moderate to major
	High	Minor	Minor to moderate	Moderate to major	Major
	Very high	Minor	Moderate to major	Major	Major

12.9 Parameters for assessment

12.9.1 Maximum Design Scenario

12.9.1.1 The Maximum Design Scenarios (MDSs) identified in Table 12.11 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the details provided in Volume 1, Chapter 3: Project Description. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (PDE) (e.g. different infrastructure layout), to that assessed here, be taken forward in the final design scheme.

12.9.1.2 In assessing the potential disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity, the assessment presented in this chapter draws on the findings of the fish and shellfish ecology assessment presented in Volume 2, Chapter 9: Fish and Shellfish Ecology. The linkages between this assessment and that in Volume 2, Chapter 9: Fish and Shellfish Ecology are clearly explained in Section 12.11.

12.9.1.3 In assessing potential effects on commercial fishing activity associated with the presence of project vessel activity and increased steaming times, the assessment presented in this chapter draws on information presented in Volume 2, Chapter 13: Shipping and Navigation. The linkages between this assessment and that in Volume 2, Chapter 13: Shipping and Navigation are clearly explained in Section0.

Table 12.11: Maximum Design Scenario considered for the assessment of potential impacts on commercial fisheries

C= construction, O= O&M, D= decommissioning phases

"✓" is used to denote the phase the potential impact can occur, "X" outlines there is no impact within this project phase

Potential impact	Phase			Maximum Design Scenario	Justification
	C	O	D		
Reduction in access to, or exclusion from established fishing grounds within Morven North	✓	✓	✓	**Construction:** • Construction phase to last up to 5 years; • Total Area of the Morven North Boundary: 511.1km^2. <u>Safety Zones</u> • 500m Safety Zones around construction activities; • 50m Safety Zones around partially complete structures or complete structures; • 500m rolling advisory safety distance around construction vessels. <u>Seabed preparation</u> • Activities to be undertaken across Morven North: UXO clearance, Pre-lay Grapnel Run, rock picking, dredging, removal of out of service cables, pre-cable lay plough. <u>Wind turbines, offshore substation platforms and foundations</u> • Maximum number of wind turbines: 96 • Maximum number of OSPs: five • Maximum number of foundations: 102 (allowing for a bridge link OSP) • Maximum seabed footprint occupied by wind turbine and OSP foundations: 59,112 m^2	**Construction:** The MDS represents the maximum duration and extent of fishing exclusion throughout the construction phase and, hence, the greatest potential to restrict access to fishing grounds. It is assumed that construction activities could occur anywhere within Morven North at any given time. **O&M:** The MDS represents the maximum duration and extent of fishing exclusion throughout the O&M phase and hence the greatest potential to restrict access to fishing grounds. During the O&M phase it is assumed that fishing will resume within Morven North. **Decommissioning:** In the absence of detailed methodologies and schedules, decommissioning works and associated implications for commercial fisheries are considered analogous with those assessed for the construction phase.

Potential impact	Phase			Maximum Design Scenario	Justification
	C	O	D		
				• Maximum seabed footprint occupied by wind turbine and OSP foundations and including scour protection: 161,883 m^2 • Minimum wind turbine spacing: 1,000 m <u>Inter-array cabling</u> • Maximum length of inter-array cabling: 424km • Cable protection methods: burial to a target depth of 1m, or external cable protection that may take the form of concrete mattresses, rock placement, rock bags, grout bags, cement bags, sandbags, articulated pipes, cast iron shells, bend restrictors/stiffners, Cable Protection Systems (CPS), frond mats • Maximum length of cabling requiring protection: 42,375 m • Maximum cable protection dimensions: 3m high x 10m wide • Maximum number of cable crossings: 5 • Maximum length of crossings: 400 m • Maximum cable crossing protection dimensions: 4m high x 36m wide x 80m long <u>Interconnector cabling</u> • Maximum length of interconnector cabling: 484km • Cable protection methods: burial to a target depth of 1m, or external cable protection that may take the form of concrete mattresses, rock placement, rock bags, grout bags, cement bags, sandbags, articulated pipes, cast iron shells, bend restrictors/stiffeners, Cable Protection Systems (CPS), frond mats • Maximum length of cabling requiring protection: 48,400 m • Maximum cable protection dimensions: 3m high x 10m wide	

Potential impact	Phase			Maximum Design Scenario	Justification
	C	O	D		
				• Maximum number of cable crossings: 5 • Maximum length of crossings: 400 m • Maximum cable crossing protection dimensions: 4m high x 36m wide x 80m long **O&M:** • Operational lifetime: up to 35 years; • All other parameters as for the Construction phase above. <u>Maintenance activities</u> • 500m Safety Zones around major maintenance activities; • 500m rolling advisory safety distance around construction vessels; • Up to 15 vessels in Morven North at any one time supporting maintenance activities. **Decommissioning:** A Decommissioning Programme will be submitted to MD-LOT for consultation and approval. The Decommissioning Programme will be updated during Morven North's lifespan to take account of changing best practice and new technologies. The approach for decommissioning is yet to be determined, however, for the purposes of this MDS total removal of all offshore infrastructure including buried cables and cable protection has been assumed, and as such the environmental impact of decommissioning will be the same if not lower than construction.	
Displacement leading to gear conflict and	✓	✓	✓	**All phases:**	**Construction:** The MDS represents the maximum duration and extent of fishing exclusion throughout the

Potential impact	Phase			Maximum Design Scenario	Justification
	C	O	D		
increased fishing pressure on adjacent grounds				As described for the potential impact of "reduction in access to, or exclusion from established fishing grounds" above.	construction phase and, hence, the greatest potential to lead to displacement of fishing effort. **O&M:** The MDS represents the maximum duration and extent of fishing exclusion throughout the O&M phase and, hence, the greatest potential to lead to displacement of fishing effort. **Decommissioning:** In the absence of detailed methodologies and schedules, decommissioning works and associated implications for commercial fisheries are considered analogous with those assessed for the construction phase.
Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity	✓	✓	✓	**All phases:** As described for Volume 2, Chapter 9: Fish and Shellfish Ecology.	**All phases:** The MDS for fish and shellfish ecology receptors represents the maximum potential disturbance to commercial fisheries resources.
Increased vessel traffic associated with Morven North within fishing grounds leading to interference with fishing activity	✓	✓	✓	**Construction:** • Maximum number of construction vessels on site at any one time (per year): 41 • Inclusive of: – Main installation and support vessels: 15 vessels (165 return trips per year)	**Construction:** The maximum number of wind turbines and associated offshore infrastructure will lead to the highest level of construction activities and therefore highest level of construction vessel round trips.

Potential impact	Phase			Maximum Design Scenario	Justification
	C	O	D		
				– Tug/anchor handling vessels: 8 (104 return trips) – Cable lay, installation and support vessels: 4 (81 return trips) – Guard vessels: 2 (65 return trips) – Survey vessels: 2 (85 return trips) – Seabed preparation vessels: 3 (25 return trips) – Crew Transfer Vessels: 6 (544 return trips) – Scour/cable protection installation vessels: 1 (80 return trips) **O&M:** • Maximum number of maintenance vessels on site at any one time (per year): 15 • Inclusive of: – Crew Transfer Vessels: 8 (219 return trips per year) – Jack-Up Vessels: 2 (13 return trips) – Cable repair vessels: 2 (3 return trips) – Other vessels: 3 (59 return trips) **Decommissioning:** A Decommissioning Programme will be submitted to MD-LOT for consultation and approval. The Decommissioning Programme will be updated during Morven North's lifespan to take account of changing best practice and new technologies. The approach for decommissioning is yet to be determined, however, for the purposes of this MDS total removal of all offshore infrastructure including buried cables and cable protection has been assumed, and as such the environmental impact of decommissioning will be the same if not lower than construction.	The maximum number of vessels transits and the maximum duration of the construction would result in the greatest potential for interference. **O&M:** The maximum number of wind turbines and associated offshore infrastructure will lead to the highest level of maintenance activities and therefore highest level of maintenance vessel round trips. **Decommissioning:** In the absence of detailed methodologies and schedules, decommissioning works and associated implications for commercial fisheries are considered analogous with those assessed for the construction phase.

Potential impact	Phase			Maximum Design Scenario	Justification
	C	O	D		
Additional steaming to alternative fishing grounds for vessels that would otherwise fish within Morven North	✓	✓	✓	**All phases:** As described for the potential impact of "reduction in access to, or exclusion from established fishing grounds" above.	**Construction:** The MDS represents the maximum duration and extent of fishing exclusion throughout the construction phase and, hence, the greatest potential for additional steaming to alternative fishing grounds. **O&M:** The MDS represents the maximum duration and extent of fishing exclusion throughout the O&M phase and, hence, the greatest potential for additional steaming to alternative fishing grounds. **Decommissioning:** In the absence of detailed methodologies and schedules, decommissioning works and associated implications for commercial fisheries are considered analogous with those assessed for the construction phase.
Increased snagging risk, which could result in loss or damage to fishing gear	✓	✓	✓	**All phases:** As described for the potential impact of "reduction in access to, or exclusion from established fishing grounds" above.	**Construction:** The MDS represents the maximum number and extent of project offshore infrastructure being constructed and, hence, the greatest potential for gear snagging to occur. **O&M:** The MDS represents the maximum number and extent of project offshore infrastructure and,

Potential impact	Phase			Maximum Design Scenario	Justification
	C	O	D		
					hence, the greatest potential for gear snagging to occur. **Decommissioning:** In the absence of detailed methodologies and schedules, decommissioning works and associated implications for commercial fisheries are considered analogous with those assessed for the construction phase.

12.10 Designed-in measures and mitigation

12.10.1.1 As part of the project design process, a number of measures (primary and tertiary) have been adopted to reduce the potential for impacts on commercial fisheries (see Table 12.12). For the purposes of the EIA process, the term 'designed-in measure' is used to include the following measures (adapted from IEMA, 2016 and IEMA, 2024):

1. Measures included as part of the design of Morven North. These include modifications to the location or design of Morven North, which are integrated into the application for consent. These measures are considered standard industry practice for this type of development and are referred to as primary mitigation in IEMA, 2016 and IEMA, 2024.
2. Measures required to meet legislative requirements, or actions that are generally standard practice used to manage commonly occurring environmental effects. These measures are secured through the conditions of the marine licences and referred to as tertiary mitigation in IEMA, 2016 and IEMA, 2024.

12.10.1.2 As there is a commitment to implementing these measures, they are considered inherently part of the design of Morven North and have therefore been considered in the assessment presented in Section 12.11 (i.e. the determination of magnitude and therefore significance assumes implementation of these measures).

12.10.1.3 The requirement for any additional mitigation measures is dependent on the significance of the effects on commercial fisheries. Where significant effects have been identified, further mitigation measures (referred to as secondary mitigation in IEMA, 2016 and IEMA, 2024) have been identified to reduce the significance of effect to acceptable levels following the initial assessment. These are measures that could further prevent, reduce and, where possible, offset any adverse effects on the environment. These measures are set out, where relevant, in Section 12.11.

12.10.1.4 All designed-in measures and mitigation are detailed in Volume 3, Annex 6.3: EIA Commitments Register.

Table 12.12: Designed-in (primary and tertiary) measures adopted as part of Morven North

Reference number	Designed-in measures adopted as part of Morven North	Justification	Primary or tertiary
MM-1	Development of and adherence to a Scour Protection Management Plan	There is the potential for scouring of seabed sediments to occur due to interactions between metocean regime (wave and currents) and foundations or other seabed structures. This scouring can develop into depressions around the structure. The use of scour protection around offshore structures and foundations will be employed, as described in Volume 1, Chapter 3: Project Description. The SPMP will set out the approach to scour protection installation and monitoring. This will maximise protection of offshore infrastructure as far as possible during the project lifecycle	Primary
MM-2	Development of and adherence to a Cable Plan which will include a cable	A CaP will set out the approach to protection of cables during the project lifecycle. It will reduce the risks of vessel underwater allision	Primary -

Reference number	Designed-in measures adopted as part of Morven North	Justification	Primary or tertiary
	burial risk assessment (CBRA) and cable burial and protection monitoring throughout the operational phase.	with cable protection, anchor or fishing gear interaction with subsea cables and interference with magnetic position fixing equipment. The Cable plan will implement management and monitoring of cable protection (via burial or external protection where adequate burial depth, as identified via risk assessment, is not feasible) with any damage, destruction or decay of cables notified to Maritime and Coastguard Agency (MCA), Northern Lighthouse Board (NLB), Kingfisher and UK Hydrographic Office (UKHO) no later than 24 hours after discovered. This will reduce the probability of cables becoming unburied and impacting other sea users and marine ecology receptors Cable burial and protection monitoring will be undertaken throughout the operational phase to assess the status of cable burial and any deployed protection. It will include the requirement of minimum burial depths of 0.5m or the use of cable protection around inter-array and interconnector cables and will include a Cable Burial Risk Assessment. Cable protection may be necessary in some locations where sufficient cable burial depth cannot be achieved or where cables become exposed during the lifetime of Morven North. The CBRA will consider relevant activities in the vicinity of inter-array and interconnector cables and confirm appropriate means of protection taking account of the final inter-array and interconnector cable. The CBRA will identify the appropriate target burial depth to ensure the cable remain buried, or appropriately protected, where target burial depths cannot be achieved, for the duration of the Morven North, to reduce the risk of interaction with other sea users or cable exposure.	
MM-3	Development of and adherence to an Operation and Maintenance Plan (OMP) that will include the requirement for any cable rock protection re-installed during the operations phase to follow industry standard guidelines for	The OMP will provide details of routine inspections which may be required post-construction including of inter-array and interconnector cables to ensure target burial depth is maintained. Routine inspections of cable and scour protection will be detailed, to monitor impact to physical processes and determine if remedial works are required. If secondary scour is identified, remedial works may be undertaken to both mitigate	Primary

Reference number	Designed-in measures adopted as part of Morven North	Justification	Primary or tertiary
	slope angle and rock grading.	environmental impacts and to provide asset security.	
MM-4	Development of and adherence to a Construction Method Statement (CMS), which will require the use of durable materials within the offshore substation platform structures, in line with appropriate design standards for offshore wind in the North Sea.	The CMS will ensure that all works are carried out efficiently, safely, and in compliance with environmental and regulatory requirements. The CMS will outline the planned approach, procedures, and safety measures for the offshore construction activities. Ensures resilience to future climate change, in particular from the risk of increased wear from sea level rise, extreme weather events and increased precipitation and changes to wind patterns.	Tertiary
MM-7	Development of and adherence to a Navigation Safety Plan and Vessel Management Plan (NSPVMP)	A NSPVMP will be developed to reduce the risk introduced due to the presence of Morven North vessels. The NSPVMP will describe the measures related to navigational safety, including information on Safety Zones, charting, construction buoyage, temporary lighting and marking and means of notification of Morven North activity to other sea users (e.g. via NtMs). It will confirm the types and numbers of vessels engaged in Morven North construction and O&M and consider vessel coordination, including indicative transit route planning. To ensure Morven North vessels are suitably managed to reduce the likelihood of involvement in incidents and maximise the ability to assist in the event of a third-party incident. The NSPVMP will include the requirement for Morven North vessels to comply with international marine regulations as adopted by the Flag State, including the International Regulations for Preventing Collisions at Sea (COLREGs) (International Maritime Organization (IMO), 1972/77) and the International Convention for the Safety of Life at Sea (SOLAS) (IMO, 1974) through the NSP and VMP.	Primary -
MM-11	Timely and efficient distribution of NtMs, Kingfisher notifications and other navigational warnings of the position and nature of works.	To ensure other sea users and marine infrastructure receptors are aware of Morven North, to allow relevant vessels to plan passage and thereby reduce potential for allision.	Primary -
MM-15	Development of and adherence to a	The DSLP will confirm final layout and design of Morven North and Morven South. This will be agreed in consultation with the MCA and	Primary -

Reference number	Designed-in measures adopted as part of Morven North	Justification	Primary or tertiary
	Development Specification and Layout Plan (DSLP).	NLB and will ensure the final layout of Morven North and Morven South is suitable for both surface and air based (for Search and Rescue purposes) navigation and to ensure accurate mapping for navigation, and to ensure compliance with Marine Guidance Note 654.	
MM-18	Development of and adherence to a Fisheries Mitigation, Monitoring and Communication Plan (FMMCP).	The FMMCP will detail the Applicant's proposed approach to mitigation, compensation and fisheries liaison, and facilitation of coexistence. The FMMCP will include details of the measures which are proposed to be implemented to reduce impacts on commercial fishing, the approach to monitoring fisheries activity and the approach to fisheries liaison and procedures to manage interactions between Morven North and the fishing industry.	Tertiary
MM-19	To appoint a Company Fisheries Liaison Officer (CFLO).	The Company Fisheries Liaison Officer (CFLO) will support ongoing liaison and ensure clear communication between the Applicant and commercial fishers. They will provide a point of contact to liaise and engage with the fishing industry and to facilitate productive relationships with commercial fishers.	Tertiary -
MM-20	Installation of infrastructure over or adjacent to existing cables will be subject to crossing or proximity agreements between Morven North and other parties, prior to the start of the construction phase.	To ensure close communication and planning between both parties to ensure disruption of activities is reduced and coexistence is facilitated.	Tertiary
MM-21	Member of and engagement in Regional Commercial Fisheries working groups.	Participation in the East Region Commercial Fisheries Working Group (or equivalent) and liaison with Fisheries Industry Representatives, as appropriate and adherence to recognised fisheries liaison good practice.	Tertiary -
MM-22	Consideration of the principle of Cooperation Agreements in instances where static gears may be required to be temporarily relocated.	To reduce potential adverse interactions between Morven North and Morven South and fishing activities.	Tertiary

Reference number	Designed-in measures adopted as part of Morven North	Justification	Primary or tertiary
MM-23	Development of and adherence to a Decommissioning Programme.	As required under Section 105 of the Energy Act 2004 (as amended by the Energy Act 2008 and the Scotland Act 2016). A decommissioning programme will consider best practice at the time of decommissioning.	Tertiary
MM-33	An application for the use of Safety Zones of up to 500m during construction, periods of major maintenance, decommissioning and up to 50m for installed structures pre-commissioning.	To protect third-party vessels from Morven North vessels involved in construction and major maintenance activities, which may be Restricted in their Ability to Manoeuvre.	Tertiary
MM-34	Development of and adherence to a Lighting and Marking Plan (LMP)	The LMP will detail compliance with legal requirements including IALA G1162 (IALA, 2021), and will assist with SAR operations and will ensure that appropriate lighting and marking of wind turbines and offshore substation platforms will be established in accordance with Civil Aviation Authority (CAA) regulations and guidance (CAP 393 and the Air Navigation Order (ANO)) and in accordance with the Civil Aviation Authority CAA and the Defence Infrastructure Organisation (DIO), which is responsible for the safeguarding of Ministry of Defence (MOD) assets. Secured through the LMP. The approach to Aids to Navigation will be outlined in the LMP. Adopting the LMP, and therefore reducing lighting to be compliant with MM-34, will provide the minimum amount and intensity of lighting that Morven North can legally have whilst remaining compliant with mandatory Health and Safety lighting requirements.	Primary -
MM-37	Appropriate marking on UKHO Admiralty Charts.	To maximise awareness of Morven North, allowing other vessels, sea users and marine infrastructure receptors to plan their activities in advance.	Tertiary
MM-38	The construction and decommissioning area are marked by buoyage in agreement with the Northern Lighthouse Board.	To protect third-party vessels from Morven North vessels involved in construction and major maintenance activities which may be Restricted in their Ability to Manoeuvre (RAM).	Tertiary
MM-39	Use of guard vessels as required.	To reduce potential conflict between Morven North and Morven South and fishing activities by maximising awareness of temporary hazards.	Tertiary

Reference number	Designed-in measures adopted as part of Morven North	Justification	Primary or tertiary
MM-48	Any objects dropped on the seabed during works associated with Morven North will be reported in line with MD-LOT procedures, as set out in the EMP, and objects will be recovered where they pose a hazard to other marine users and where recovery is practicable.	Reporting of dropped objects is standard and follows Marine Directorate procedure to decrease the risk of fishing gear snagging.	Tertiary

12.11 Assessment of significant effects

12.11.1.1 The potential impacts arising from the construction, O&M and decommissioning phases of Morven North are listed in Table 12.11, along with the MDS against which each impact has been assessed.

12.11.1.2 An assessment of the likely significance of the effects of Morven North on commercial fisheries receptors caused by each identified impact is given below.

12.11.2 Reduction in access to, or exclusion from established fishing grounds within Morven North

12.11.2.1 This impact relates to the reduction in access to, or exclusion from, established fishing grounds within Morven North due to construction, O&M and decommissioning activities related to wind turbines, OSPs, their foundations, and the installation of inter-array and interconnector cables.

Construction phase

12.11.2.2 During the construction phase, this impact relates to the *temporary* loss or *temporary* restricted access to fishing grounds due to construction activities related to the installation of wind turbines, OSPs, their foundations, and the installation of inter-array and interconnector cables.

12.11.2.3 During the construction phase this impact is considered temporary because it is only applicable throughout the duration of the construction phase. Long-term loss of access is considered for the O&M phase below.

Magnitude of impact

12.11.2.4 During construction of Morven North, commercial fisheries will be prevented from fishing where construction activities are taking place, plus 500m Safety Zones around structures where active construction works are ongoing, and otherwise 50m Safety Zones around partially complete structures or complete structures yet to be operational. In addition, it is assumed that up to 500m advisory safe passing distance for mobile installation vessels will be in place. The total construction duration for Morven North is anticipated to be five years, with construction activities occurring anywhere within the Morven North Boundary at any given time and a number/range of construction activities being undertaken simultaneously.

12.11.2.5 A buoyed construction area will be implemented around construction activities and with an anticipated single phase of construction, it is feasible that this buoyed construction area could

surround the entirety of Morven North throughout the anticipated five-year period. Given that construction activities and project infrastructure could be located anywhere within the Morven North Boundary at any given time, it is assumed that fishing is not likely to resume within Morven North until completion of construction. This is a conservative and precautionary assumption in the absence of detailed construction scheduling being known.

12.11.2.6 This impact will lead to loss of access to fishing grounds and access to the fish and shellfish resources within these grounds for a range of fishing opportunities during the construction phase, which will directly affect fleets over a medium-term duration (i.e. greater than two years and less than 12 years).

12.11.2.7 The impact is of relevance to national and international fishing fleets and is described below on a fishery-by-fishery basis.

12.11.2.8 Dredge: The dredge fleet does not operate across Morven North as evidenced by VMS and surveillance data. Scallops are found on clean firm sand and fine gravel and in currents which provide good feeding conditions. The targeted scallop grounds that run parallel to east coast of Scotland are well established and do not extend into Morven North. There is no evidence to indicate potential for emergence of scallop grounds across Morven North, and whilst exploratory fishing on transit to and from established scallop grounds is possible, it is considered unlikely to be routine noting grounds are located inshore.

12.11.2.9 The impact is predicted to be of local spatial extent, temporary with a medium-term duration, and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude of impact is therefore considered to be negligible for the dredge fleet.

12.11.2.10 Demersal otter trawl: Within the Morven North Local Commercial Fisheries Study Area, UK demersal otter trawlers target haddock and other whitefish, and Nephrops. Landings statistics and spatial data indicate that the Nephrops fishery is not targeted within the Morven North Boundary but to the northeast, within areas of Nephrops-suitable habitat. The same data sources indicate potential for low levels of demersal trawl activity targeting haddock and whitefish along the northeast boundary of Morven North. Again, activity is relatively higher outside of Morven North and to the east and north and is considered negligible across the majority of Morven North.

12.11.2.11 Landings statistics indicate that haddock/whitefish landings were historically more significant in the Morven North Local Commercial Fisheries Study Area, and particularly in ICES rectangle 42E9 across the period 2010 to 2013. VMS data also indicates relatively higher levels of demersal trawl activity overlapping the northeast boundary of Morven North during this period. Member vessel plotter data provided by the SFF further corroborates the historically more notable presence of this fishery in the Morven North Local Commercial Fisheries Study Area, with evidence of demersal otter trawling within parts of Morven North. Feedback from industry consultation has indicated that the area within ICES rectangle 42E9 had been targeted for a smaller size class of haddock. In the period 2010 to 2013, the area overlapping the Morven North Local Commercial Fisheries Study Area was understood to support this small size class of haddock. The subsequent decline of this fishery may be related to a number of possible factors, including the Landing Obligation (MMO, 2015) legislation implemented in 2016 and 2017 for haddock in the North Sea, together with changes in processing capabilities and availability of EU labour to process 'small' haddock post Brexit. Landings statistics indicate a slight increase in the value of demersal trawl landings from the Morven North Local Commercial Fisheries Study Area across 2022 to 2024 (peaking in 2023 at £188,000 across ICES rectangles 42E8 and 42E9), though values remain substantially lower than those recorded across 2010 to 2013. It is understood that new seafood processing facilities established on the northeast coast of Scotland are able to support the automated processing of smaller whitefish[14]. Increased

[14] New processing venture for small MSC haddock - Fishing News

processing capacity may support smaller whitefish landings; however, there is insufficient evidence at present to assume a sustained increase in landings for the future baseline.

12.11.2.12 The impact is predicted to be of local spatial extent, intermittent, temporary with a medium-term duration, and medium reversibility. It is predicted that the impact will affect the receptor directly. Based on the current baseline assessment, the magnitude of impact is therefore considered to be low for the demersal otter trawl fleet.

12.11.2.13 Demersal seine: Demersal seine activity and trends are broadly aligned with those described above for the demersal otter trawl fishery targeting haddock/whitefish. Landings data indicate increased demersal seine activity in the Morven North Local Commercial Fisheries Study Area in recent years, across 2022 to 2024. On that basis, the impact is predicted to be of local spatial extent, medium term duration, intermittent and medium reversibility. It is predicted that the impact will affect the receptor directly. Based on the current baseline assessment, the magnitude of impact is therefore considered to be low for the demersal seine fleet.

12.11.2.14 Potting: the UK potting fleet targets lobster and crab across a wide area, from inshore grounds, extending out towards and beyond the 12nm limit. The potting fleet does not operate routinely across Morven North as evidenced by VMS data and surveillance data and supported by landings statistics. The limitations of VMS data, in that they are not representative of vessels under 15m in length is noted and therefore the assessment draws upon surveillance data and landing statistics as more robust and representative data sources of potting activity.

12.11.2.15 The impact is predicted to be of local spatial extent, temporary with a medium-term duration, and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude of impact is therefore considered to be negligible for the potting fleet.

12.11.2.16 Pelagic trawl: Landing statistics indicate that pelagic species (notably herring) are occasionally caught by UK and non-UK fishing fleets within the Morven North Local Commercial Fisheries Study Area. Pelagic trawling vessels are typically large (typically > 25m in length), targeting highly mobile species (herring or mackerel *Scomber scombrus*) that consistently move/shoal during spawning migrations. Any activity by pelagic vessels within the Morven North Boundary is highly likely to be a sporadic, transitory event. Highly mobile pelagic species, which move in shoals and are not associated with specific seabed habitats, are assumed to be available to catch across large areas.

12.11.2.17 All available evidence, including VMS, plotter data, surveillance data, landings statistics and industry consultation indicate that very limited landings are taken by pelagic vessels from within the Morven North Local Commercial Fisheries Study Area or Morven North.

12.11.2.18 The impact is predicted to be of local spatial extent, temporary with a medium-term duration, and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude of impact is therefore considered to be negligible for the UK and non-UK pelagic trawl fleets.

Sensitivity of the receptor

12.11.2.19 The mobile fleets targeting demersal, pelagic and dredge fisheries across the Morven North Local Commercial Fisheries Study Area are typically >15m in length and operate across large areas of the North Sea. Given adequate notification, it is expected that these vessels will be in a position to avoid construction areas. All mobile fleets are considered to have a large operational range. All pelagic gear fleets (typically >25m in length) are considered to have an extensive operational range, be highly adaptive and resilient to change.

12.11.2.20 The mobile fleets targeting pelagic and dredge fisheries are considered to have moderate-high levels of alternative fishing grounds; are deemed to be of low vulnerability, high recoverability and low-medium value. The sensitivity of these receptors is therefore, considered to be low.

12.11.2.21 The mobile demersal otter trawl and demersal seine fisheries are considered to have moderate to high levels of alternative fishing grounds; are deemed of low to medium vulnerability, high recoverability and medium value. However, unlike the pelagic and dredge fisheries, there is evidence that some small areas of Morven North have been/are fished by demersal otter trawl and demersal seine gear. This recorded activity, coupled with the inability to deploy these gear types within the Morven North Boundary during the construction phase, has therefore led to the sensitivity of these receptors to be assessed as medium.

12.11.2.22 The UK potting fleet are typically <15m in length and operate across more distinct areas of ground, typically 0 to 12nm from shore, but also extending beyond 12nm, in areas that are already heavily exploited and are therefore more sensitive to disruption. The UK potting fleet are deemed to be of medium vulnerability, medium recoverability and medium value. The sensitivity of the receptor is therefore, considered to be medium.

Significance of the effect

12.11.2.23 Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.2.24 Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the 5-year construction phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

12.11.2.25 Potting fishery: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the 5-year construction phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

Secondary mitigation and residual effect

12.11.2.26 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Operation and maintenance phase

12.11.2.27 During the O&M phase, the assessment assumes that within Morven North, commercial fisheries will be prevented from actively fishing within an area of 0.16km^2 due to the physical presence of infrastructure and scour protection, including 96 wind turbines and five OSPs; plus across areas of inter-array and interconnector cable protection. Minimum turbine spacing is 1,000m between wind turbines. In addition, during the lifetime of Morven North, major maintenance may be undertaken, including component replacement and remedial cable burial, and as such there may be some temporary displacement of fishing activities within associated 500m maintenance Safety Zones and advisory safety distances around maintenance vessels. The assessment assumes that fishing will otherwise be possible within Morven North where turbine spacing and turbine layout allow productive grounds to be targeted.

12.11.2.28 The individual decisions made by the skippers of fishing vessels with their own perception of risk will determine the likelihood of whether their fishing will resume within Morven North. Inclement weather will be a significant contributor to this risk perception. The type and dimension of fishing gear also influences the potential opportunities within the Morven North Boundary. For example, pelagic trawl, multi-rig otter trawl and demersal seine/fly shooting gear require a greater distance for

safe operation and these gears are unlikely to target grounds in the vicinity of infrastructure. This is considered when assessing impact magnitude.

Magnitude of impact

12.11.2.29 This impact will lead to highly localised loss of access to fishing grounds, which will directly affect fleets over a long-term duration, noting an operational lifetime of approximately 35 years. The impact is predicted to be continuous with low reversibility for the lifetime of Morven North and is of relevance to national and international fishing fleets.

12.11.2.30 As described for the construction phase, there are negligible levels of activity within Morven for dredge, demersal otter trawl, pelagic trawl, and potting and the magnitude of impact is therefore assessed at negligible for these fisheries.

12.11.2.31 Some activity is noted along the northeastern boundary of Morven North for demersal otter trawl/seine targeting haddock and other whitefish. It is assumed that this activity can resume within the operational wind farm with the exception of across those highly localised areas of exclusion described in paragraph 12.11.2.27. On this basis the magnitude of impact is assessed as low for these fisheries.

Sensitivity of the receptor

12.11.2.32 The sensitivity of the commercial fishing receptors is the same or similar to that assessed during the construction phase as described in paragraphs 12.11.2.19 to 12.11.2.22 and summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.

Significance of the effect

12.11.2.33 Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.2.34 Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase.

12.11.2.35 Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase.

Secondary mitigation and residual effect

12.11.2.36 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Decommissioning phase

12.11.2.37 During the decommissioning phase, this impact relates to the *temporary* loss or *temporary* restricted access to fishing grounds due to decommissioning activities related to the removal of wind turbines, OSPs, their foundations, and the installation of inter-array and interconnector cables.

Magnitude of impact

12.11.2.38 The approach to decommissioning is yet to be determined, though for the purposes of this assessment, at the end of Morven North's operational lifetime, it is expected that all infrastructure will be fully removed where feasible. Legislation, guidance and good practice will be kept under review throughout the lifetime of Morven North and will be followed at the time of decommissioning. Environmental conditions and sensitivities will also be considered since removal of structures may result in greater environmental impacts in comparison to leaving *in situ*.

12.11.2.39 The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and numbers of vessels and equipment. It is assumed that the decommissioning phase will have a similar duration as the construction phase (i.e. across five years).

12.11.2.40 The magnitude of impact is the same or similar to that assessed during construction as described in paragraphs 12.11.2.4 to 12.11.2.18.

12.11.2.41 The impact is predicted to be of local spatial extent, medium term duration, intermittent and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be low for the demersal trawl and demersal seine fleets and negligible for all other commercial fishing fleets.

Sensitivity of the receptor

12.11.2.42 The sensitivity of the commercial fishing receptors is the same or similar to that assessed during the construction phase as described in paragraphs 12.11.2.19 to 12.11.2.22 and summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.

Significance of the effect

12.11.2.43 Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.2.44 Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the 5-year construction phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

12.11.2.45 Potting fishery: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the 5-year construction phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

Secondary Mitigation and Residual Effect

12.11.2.46 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

12.11.3 Displacement leading to gear conflict and increased fishing pressure on adjacent grounds

Construction phase

12.11.3.1 Reduced access or exclusion from fishing grounds due to Morven North may lead to increases in fishing effort in other areas that may already be exploited thereby leading to increased pressure and gear conflict. The effect of displacement during construction is therefore directly correlated to the previous impact of reduced access to fishing grounds (i.e. if there is no reduction in access, then there will be no displacement). In this assessment, gear conflict refers to conflict between different commercial fishing methods.

12.11.3.2 This assessment of displacement has been undertaken with due regard to Xodus (2022) guidelines in defining the magnitude of impact to each receptor group and sensitivity of each commercial fishing fleet. The displacement considers both primary and secondary displacement, defined as follows (Xodus, 2022):

- Primary displacement refers to the first instance of displacement where fishing effort is relocated to another area as a result of a change in the spatial environment. In the context of this guidance, this corresponds to displacement that is a direct result of other licensed marine activities and associated infrastructure.
- Secondary displacement is an indirect effect of the other licensed marine activity and associated infrastructure. This occurs when the fishing effort that is relocated through primary displacement also displaces fishing effort.

12.11.3.3 The guidance provides details on baseline data sources, highlighting that "no single source of data can be used to comprehensively describe commercial fishing activity, due to the inherent limitations of each data source". Data sources are detailed in Section 12.6 and 12.7, together with associated limitations and uncertainties. The guidance specifically recommends the following steps (Scottish Government, 2022a):

- Clear understanding of the commercial fishing 'receptors' for which impacts will be assessed, the fishing methods which are operated in the study area, including the areas where fishing activity may be relocated.
- Identification of the likely maximum distance of displacement by the receptors, and the potential spatial extent of displacement effects for the fishing vessels which are already operational in the area which vessels are displaced to.
- Identification of potential impacts on displaced commercial fisheries from the area that vessels are initially displaced from.
- Identification of potential impacts on any fishing vessel operators/owners which are already active in the area in which vessels are displaced to and the potential for competition for space.
- Establishing the sensitivity of each commercial fisheries receptor to displacement, with reference to the specifications.
- If possible, a quantitative assessment of magnitude (e.g. taking account of spatial extent, duration, fishing effort, number of vessels).
- Consideration of primary and secondary displacement where applicable.

Magnitude of impact

12.11.3.4 Dredge: Displacement from Morven North is not expected to affect the dredge fishery, reflecting that the fishery operates inshore and to the west of the Morven North, and that there is no evidence of dredge fisheries operating within the Morven North Boundary. Negligible levels of displacement are anticipated.

12.11.3.5 Demersal otter trawl and demersal seine: These vessels have an operational range throughout the Morven North Regional Commercial Fisheries Study Area and further into the North Sea. These fishing fleets are expected to target a range of grounds across the North Sea, but noting the proximity

of grounds within the Regional and Morven North Local Commercial Fisheries Study Area s to key local ports, it could be considered that vessels active across these grounds have a higher dependence on them relative to more distant grounds and so proportionally may experience a higher degree of displacement. These fleets exhibit limited existing dependence on Morven North, with low levels of fishing activity along the northeastern boundary of Morven North. It is considered that a proportion of fishing effort that interacts with this very northeastern edge of Morven North will be redirected to alternative fishing grounds that have been routinely fished, with the remainder focused on alternative fishing grounds not routinely fished. The former may cause an increase pressure on alternative grounds, and the latter may cause increase conflict between fishers. Given the low levels of fishing activity within a small portion of Morven North, low levels of displacement are anticipated.

12.11.3.6 Potting: Conflict over diminished grounds may occur if displaced vessels operating mobile gear (e.g. demersal trawl) explore grounds traditionally fished by potters; or displaced potting gear is relocated into other actively fished potting grounds. Displacement of mobile gear may therefore increase the risk of interaction with potting gear. Based on the very low levels of fishing activity in Morven North and no evidence of potting taking place within the Morven North Boundary, negligible levels of displacement impacting the potting fleet are anticipated.

12.11.3.7 Pelagic trawl: Pelagic trawlers may very sporadically operate within the Morven North Boundary, however, these vessels operate throughout the entirety of the North Sea, west of Scotland and Celtic Sea across a range of established fishing grounds. Displacement is not expected to affect pelagic fleets due to the fishing not being directly associated with seabed types and the target species being highly mobile.

12.11.3.8 The impact is predicted to be of regional spatial extent, medium term duration, intermittent and reversible. It is predicted that the impact will affect the receptor indirectly. Reflecting the nature and level of fishing activity in and around Morven North, the magnitude of the impact is considered to be low for demersal trawl and seine fisheries, and negligible for dredge, potting and pelagic trawl fisheries.

Sensitivity of the receptor

12.11.3.9 The sensitivity is as described for reduction in access to, or exclusion from established fishing grounds within the Morven North Boundary, summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.

Significance of the effect

12.11.3.10 Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.3.11 Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the 5-year construction phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

12.11.3.12 Potting fishery: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the 5-year construction phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

Secondary mitigation and residual effect

12.11.3.13 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Operation and maintenance phase

12.11.3.14 Loss of access or exclusion from fishing grounds during O&M of Morven North may lead to increases in fishing effort in other areas that may already be exploited thereby leading to gear conflict and increased pressure on adjacent fishing grounds.

Magnitude of impact

12.11.3.15 During the operational phase it is assumed that fishing will resume within the Morven North Boundary. On this basis the magnitude of impact of displacement during the operational and maintenance phase is expected to be similar or more likely lower than the magnitude assessed during construction.

12.11.3.16 Reflecting the ability to resume fishing and existing negligible activity in Morven North by the dredge, Nephrops trawl, potting and pelagic trawl fleets, displacement from Morven North is not expected to affect these fisheries and the magnitude of the impact is assessed as negligible, and as low for the demersal trawl and demersal seine fleets targeting haddock and other whitefish. This impact will indirectly affect fleets over a long-term duration, noting an operational lifetime of approximately 35 years. The impact is predicted to be continuous with low reversibility for the lifetime of Morven North and is of relevance to national and international fishing fleets.

Sensitivity of the receptor

12.11.3.17 The sensitivity is as described for reduction in access to, or exclusion from established fishing grounds within the Morven North Boundary, summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.

Significance of the effect

12.11.3.18 Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.3.19 Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase.

12.11.3.20 Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase.

Secondary mitigation and residual effect

12.11.3.21 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Decommissioning phase

Magnitude of impact

12.11.3.22 Exclusion from fishing grounds during the decommissioning phase of Morven North may lead to increases in fishing effort in other areas that may already be exploited thereby leading to gear conflict.

12.11.3.23 The magnitude of impact of displacement during the decommissioning phase is expected to be the same or similar to that during construction for all commercial fishing fleets (see paragraphs 12.11.3.4 to 12.11.3.8). The impact is predicted to be of regional spatial extent, medium term duration, intermittent and with high reversibility. It is predicted that the impact will affect the receptor indirectly. Based on the explanations above, the magnitude is therefore, considered to be negligible for the dredge, Nephrops trawl, potting and pelagic trawl fleets, and low for the demersal trawl and demersal seine fleets targeting haddock and other whitefish.

Sensitivity of the receptor

12.11.3.24 The sensitivity is as described for reduction in access to, or exclusion from established fishing grounds within the Morven North Boundary, summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.

Significance of the effect

12.11.3.25 Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.3.26 Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the potential duration of the decommissioning phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

12.11.3.27 Potting fishery: overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the potential duration of the decommissioning phase and recognition that while fishing activity is negligible, the ability for any exploratory fishing within the Morven North Boundary is lost.

Secondary mitigation and residual effect

12.11.3.28 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

12.11.4 Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity

12.11.4.1 Noise and seabed disturbances during the construction, O&M and decommissioning phases may displace commercially important fish and shellfish populations from the area. This section assesses the subsequent effect for the owners of fishing vessels, where commercially important stocks may be disturbed or displaced to a point where normal fishing practices would be affected.

Construction phase

Magnitude of impact

12.11.4.2 Detailed assessments of the following potential construction impacts have been undertaken in Volume 2, Chapter 9: Fish and Shellfish Ecology:

- temporary habitat loss or disturbance;
- long-term habitat loss or disturbance;
- increased Suspended Sediment Concentrations (SSCs) and associated deposition;
- underwater sound impacting fish and shellfish receptors.

12.11.4.3 With respect to the magnitude of this impact on commercial fisheries, the overall significance of the effect on fish and shellfish species is considered (i.e. both the magnitude and sensitivity of fish and shellfish species are considered to assess the magnitude on commercial fishing fleets). This is because the overall effect on the fish or shellfish species relates directly to the availability and amount of exploitable resource. For instance, where an effect of minor adverse significance is assessed for a species, a low magnitude is assessed for commercial fishing, and so on.

12.11.4.4 Details of the fish and shellfish ecology assessment, together with the supporting evidence and justification are provided in Volume 2, Chapter 9: Fish and Shellfish Ecology. The fish and shellfish ecology assessment found all construction impacts to be of minor adverse significance for all fish and shellfish receptors. The magnitude of impact is predicted to be of local spatial extent, of relevance to international fishing fleets, and of medium-term duration. It is predicted that the impact will affect the receptor directly through loss of resources. The magnitude is therefore considered to be low adverse for all species; in relation to commercial fisheries receptors, all fleets are deemed to have a low adverse magnitude.

Sensitivity of the receptor

12.11.4.5 Exposure to the impact is likely and commercial fleets targeting key species may be affected, including haddock and demersal finfish, king scallop, Nephrops, brown crab and lobster.

12.11.4.6 Due to the range of areas targeted and the distribution of key commercial species throughout the northern, central and southern North Sea, all fleets are deemed to be of low vulnerability and high recoverability. The sensitivity of the receptor for all fisheries is therefore, considered to be low.

Significance of the effect

12.11.4.7 All fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in both the fish and shellfish ecology and commercial fisheries impact assessments, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.4.8 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Operation and maintenance phase

12.11.4.9 Habitat loss, Electromagnetic Field (EMF) and other impacts during the O&M phase may decrease or displace commercially important fish and shellfish populations from the area. This section assesses the subsequent effect for the owners of fishing vessels, where commercially important stocks may be disturbed or displaced to a point where normal fishing practices would be affected.

Magnitude of impact

12.11.4.10 Detailed assessments of the following potential O&M impacts have been undertaken in Volume 2, Chapter 9: Fish and Shellfish Ecology:

- temporary habitat loss or disturbance;
- long-term habitat loss or disturbance;
- colonisation of hard structures and associated fish aggregation;
- increased SSCs and associated deposition;
- EMF from subsea electrical cables.

12.11.4.11 The fish and shellfish ecology assessment found all O&M impacts to be of minor adverse significance for all fish and shellfish receptors. The potential effect on resources is not expected to be beyond what could be discernible from baseline conditions for fish and shellfish resources.

12.11.4.12 The magnitude of impact is predicted to be of local spatial extent, of relevance to national and international fishing fleets, of long-term duration and to affect the receptor directly. The magnitude is considered to be low adverse for all species and all fishing fleets.

Sensitivity of the receptor

12.11.4.13 Exposure to the impact is likely and commercial fleets targeting key species may be affected, including haddock and demersal finfish, scallop, Nephrops, crab and lobster.

12.11.4.14 Due to the range of areas targeted and the distribution of key commercial species throughout the northern, central and southern North Sea, all fleets are deemed to be of low vulnerability and high recoverability. The sensitivity of the receptor for all fisheries is therefore, considered to be low.

Significance of the effect

12.11.4.15 All fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in both the fish and shellfish ecology and commercial fisheries impact assessments, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.4.16 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Decommissioning phase

Significance of the effect

12.11.4.17 The effects of decommissioning activities are expected to be the same or similar to the effects from construction and as such assessment descriptions are not repeated in full.

12.11.4.18 All fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in both the fish and shellfish ecology and commercial fisheries impact assessments, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.4.19 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

12.11.5 Increased vessel traffic associated with Morven North within fishing grounds leading to interference with fishing activity

12.11.5.1 This section assesses the likely effects arising from Morven North-related vessel traffic and changes to shipping patterns associated with Morven North, leading to interference with fishing activity (reduced access).

Construction phase

Magnitude of impact

12.11.5.2 Vessel movements (construction vessels transiting to and from areas undergoing construction works) related to the construction of Morven North will add to the existing level of shipping activity in the area, see Volume 2, Chapter 13: Shipping and Navigation for a full assessment of additional vessel movements.

12.11.5.3 Up to 41 construction vessels may be on site at one time throughout the construction phase and this will include vessels which are Restricted in their Ability to Manoeuvre (RAM). Construction vessels will be managed by Marine Coordination, including the use of traffic management procedures such as the designation of entry and exit points to and from the buoyed construction area. Construction vessels will also carry AIS and be compliant with relevant Flag State regulations, including the Convention on the International Regulations for Preventing Collisions at Sea (COLREGs), and comply with the procedures set out in the Navigational Safety Plan and Vessel Management Plan (NSPVMP) (which will be a condition of consent) (Volume 4, Annex 5: Navigation Safety Plan and Vessel Management Plan (NSPVMP) (Version 1)).

12.11.5.4 Safety Zones will be applied for including up to 500m around structures where vessels are undertaking construction work and 50m around partially completed or completed surface piercing structures prior to commissioning of Morven North. Such Safety Zones will protect construction vessels involved in construction which may be RAM. If on site as deemed necessary via risk assessment, guard vessels will also assist with monitoring Safety Zones and alerting third party traffic to their presence.

12.11.5.5 Details of construction activities, including the presence of Safety Zones and any use of advisory safe passing distances, as defined by risk assessment, will be suitably promulgated to maximise awareness of ongoing construction activities.

12.11.5.6 Additionally, the use of International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) G1162 (IALA, 2021) compliant lighting and marking including lights, marks, sounds, signals and other aids to navigation as required by the Northern Lighthouse Board (NLB) and the Maritime and Coastguard Agency (MCA) will further maximise awareness, both in day and night conditions including in restricted visibility. This includes the buoyed construction area which will be agreed with the NLB prior to construction and within which project vessels undertaking construction activities will most likely be located during construction activities. In addition, the Applicant will endeavour, via the NSPVMP (Volume 4, Annex 5: Navigation Safety Plan and Vessel Management Plan (NSPVMP) (FMMCP)), to identify areas not appropriate for vessels to shelter in. These areas, where identified, will take fishing activity into consideration including relevant consultation, to minimise impacts on fishing activities to the extent practicable.

12.11.5.7 It is noted that continuous liaison with the fishing industry will be undertaken including location and duration of construction activities; further details are provided in Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1).

12.11.5.8 All fishing fleets are considered to be able to avoid vessel movements related to construction of Morven North based on prior provision of construction details (timings and locations) allowing fishing vessels to plan their activities; use of traffic management procedures including entry and exit points for Morven North related vessels; use of buoyed construction area and adherence to the VMP. The magnitude of impact is therefore, considered to be low for all fisheries.

Sensitivity of the receptor

12.11.5.9 Due to its static nature, potting gear can be vulnerable to increased construction vessel movements within supply routes to and from entry and exit points due to risk of entanglement of construction vessel propellers with marker buoys of fishing gear. It is noted that construction vessels are likely to follow established shipping routes where possible. The sensitivity of the potting fleet is therefore, considered to be medium.

12.11.5.10 All other fishery fleets are expected to be in a position to avoid construction areas associated with Morven North on the basis of their mobile gear fishing methods. Based on this and their limited presence within the Morven North Boundary, their sensitivity is considered to be low.

Significance of the effect

12.11.5.11 Potting: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is medium. The effect will therefore be of minor adverse significance, which is not significant in EIA terms.

12.11.5.12 All other fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.5.13 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Operation and maintenance phase

Magnitude of impact

12.11.5.14 Up to 15 maintenance vessels may be on site at one time throughout the 35-year O&M phase and this will include vessels which are Restricted in their Ability to Manoeuvre (RAM). As per the construction phase impact, Morven North-related vessels will be managed by Marine Coordination, carry AIS and be compliant with relevant Flag State regulations. Also, Safety Zones will be applied for including up to 500m around structures where vessels are undertaking major maintenance work.

12.11.5.15 The magnitude of impact of interference of fishing activity due to the presence and transiting of maintenance vessels during the O&M phase is decreased compared to in the construction phase given that fewer vessels will generally be on site at any time, noting the much longer duration of the O&M phase. Based on the low level of Morven North-related vessel activity across a long time period, the magnitude is considered to be low for all fisheries.

Sensitivity of the receptor

12.11.5.16 The sensitivity is as described for the construction phase impact, summarised as medium for the potting fishing fleet; and low for all other fleets.

Significance of the effect

12.11.5.17 Potting: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is medium. The effect will therefore be of minor adverse significance, which is not significant in EIA terms.

12.11.5.18 All other fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.5.19 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Decommissioning phase

Significance of the effect

12.11.5.20 The effects of decommissioning activities are expected to be the same or similar to the effects from construction and as such assessment descriptions are not repeated in full.

12.11.5.21 Potting: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is medium. The effect will therefore be of negligible or minor significance. Adopting a precautionary approach the effect is assessed to be of minor adverse significance, which is not significant in EIA terms.

12.11.5.22 All other fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.5.23 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

12.11.6 Additional steaming to alternative fishing grounds for vessels that would otherwise fish within Morven North

12.11.6.1 A detailed Navigational Risk Assessment (NRA) (Volume 3, Annex 13.1: Shipping and Navigation Shared Navigational Risk Assessment) has been undertaken and is discussed in Volume 2, Chapter 13: Shipping and Navigation, which includes full consideration of commercial fishing vessels while transiting (e.g. from a collision and allision perspective). This assessment focuses on the likely significant environmental effects arising from longer steaming distances to alternative fishing grounds that would have otherwise been targeted within the Morven North Boundary.

Construction phase

Magnitude of impact

12.11.6.2 Details of the construction activities will be promulgated in advance of, and during construction via the usual means (e.g. Notice to Mariners (NtMs), Kingfisher bulletin) so that mariners are made aware of the ongoing works. Localised construction works may necessitate minor deviations for fishing vessels, though data does not indicate the presence of key fishing vessel transit routes within

the Morven North Boundary (as confirmed in Volume 2, Chapter 13: Shipping and Navigation, Section 13.7). Localised impacts may occur but will be limited to the immediate area of construction activity and associated construction vessels.

12.11.6.3 For all fishing fleets with prior notification of construction activities, it is not expected that considerable additional steaming would be required to access fishing grounds outside those normally targeted around Morven North. There may be an inconvenience to plan fishing around the construction activities, but this is not expected to result in additional steaming requirements above normal operating practices. The impact is predicted to be of regional spatial extent, medium-term duration, intermittent and with high reversibility. It is predicted that the impact will affect the receptor directly. Based on the justifications above, the magnitude is therefore, considered to be low for all fisheries.

Sensitivity of the receptor

12.11.6.4 The demersal otter trawl, demersal seine, dredge and pelagic trawl fisheries targeting the Morven North Local and Regional Commercial Fisheries Study Areas are understood to operate across wider areas of the North Sea and in the case of larger vessels, beyond this range. Given adequate notification it is expected that these vessels will be in a position to avoid construction areas within the Morven North Boundary with limited impact upon steaming times.

12.11.6.5 The UK potting fleet active in the Morven North Local and Regional Commercial Fisheries Study Areas operate across a range of grounds to haul and re-set different fleets of traps/pots on a daily basis. Their normal operating range is expected to be inshore from Morven North. Further to this, given adequate notification it is expected that these vessels will be in a position to avoid construction areas with limited impact upon steaming times.

12.11.6.6 All commercial fishing fleets are considered to have moderate availability of alternative fishing grounds and an operational range that is not limited to Morven North. Assuming prior notification which will allow fishers to plan fishing activities, the sensitivity of the receptor is considered to be low for all fisheries.

Significance of the effect

12.11.6.7 All fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.6.8 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Operation and maintenance phase

Magnitude of impact

12.11.6.9 The magnitude of impact of increased steaming times due to the presence of the Morven North during the O&M phase is expected to be the same or similar to that during construction for all Commercial Fishing fleets. While the O&M phase is longer duration (30 years) compared to construction, it is expected that fishing vessels will adjust to the presence of Morven North over time. It is also noted that Commercial Fishing vessels may choose to transit through Morven North during the O&M phase. It is predicted that the impact will affect the receptor directly. Based on the justifications above, the magnitude is therefore, consistent with those described for the construction phase impact, summarised as low adverse for all fleets.

Sensitivity of the receptor

12.11.6.10 The sensitivity is as described for the construction phase impact, and low for all fisheries.

Significance of the effect

12.11.6.11 All fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.6.12 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Decommissioning phase

Significance of the effect

12.11.6.13 The effects of decommissioning activities are expected to be the same or similar to the effects from construction and as such assessment descriptions are not repeated in full.

12.11.6.14 All fisheries: overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.6.15 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

12.11.7 Increased snagging risk, which could result in loss or damage to fishing gear

Construction phase

12.11.7.1 The under-construction and physical presence of semi-constructed offshore infrastructure on the seabed represents potential snagging points for fishing gear and could lead to damage to, or loss of, fishing gear. The safety aspects including potential loss of life as a result of snagging risk are assessed within Volume 2, Chapter 13: Shipping and Navigation.

12.11.7.2 Throughout the construction phase, Safety Zones will be applied for including up to 500m around structures where vessels are undertaking construction work and 50m around partially completed or completed surface piercing structures prior to commissioning of Morven North.

Magnitude of impact

12.11.7.3 In the instance that snagging does occur, the Applicant will follow the procedures set out in the FMMCP (Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1)). This includes implementation of an evidence-based process for managing and investigating claims for loss of or damage to fishing gear, consistent with established fisheries liaison and mitigation good practice.

12.11.7.4 Snagging poses a risk to fishing equipment and in extreme cases may potentially lead to capsize of vessel and crew fatalities, as well as damage to subsea offshore infrastructure. Three phases of interaction are possible: initial impact of gear and subsea offshore infrastructure; pullover of gear across subsea offshore infrastructure; and snagging or hooking of gear on the subsea offshore infrastructure. The snagging or hooking of fishing gear with offshore infrastructure/cables on the seabed is the most hazardous to the vessel and crew due to the possibility of capsizing.

12.11.7.5 It is considered likely that fishermen will operate appropriately (adhering to Safety Zones and advisory distances and avoiding under construction offshore infrastructure and cable protection at the defined locations) given adequate notification of the locations of any snagging hazards and are highly likely to avoid the under construction offshore infrastructure and cable protection within the Morven North Boundary.

12.11.7.6 The impact is local in spatial extent, intermittent in nature, limited to the construction phase, and reversible, reflecting the event-based nature of snagging and the application of standard avoidance and mitigation measures.

Sensitivity of the receptor

12.11.7.7 Due to the nature and operation of mobile demersal and dredge gear (it is actively towed and directly penetrates the seabed with near continuous contact) there is increased vulnerability to this impact and the sensitivity is therefore considered to be medium for all mobile demersal/dredge fisheries.

12.11.7.8 Potting and passive gear show a lower vulnerability as the gear is placed, not towed and is less likely to penetrate the seabed. The sensitivity of potters and passive gear vessels is considered to be low.

12.11.7.9 Pelagic trawl gear does not come into contact with the seabed and therefore has low vulnerability to snagging seabed infrastructure, although snagging infrastructure within the water column remains a possibility. The sensitivity of pelagic trawl fleets is considered to be low.

Significance of the effect

12.11.7.10 Demersal otter trawl, demersal seine and dredge: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.7.11 Potting and pelagic trawl: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.7.12 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Operations and maintenance phase

12.11.7.13 The physical presence of offshore infrastructure on the seabed represents potential snagging points for fishing gear and could lead to damage to, or loss of, fishing gear. The safety aspects including potential loss of life as a result of snagging risk are assessed within Volume 2, Chapter 13: Shipping and Navigation.

12.11.7.14 During O&M phase, 500m Safety Zones around major maintenance works will be in place, and 500m advisory safe passing distances around vessels undertaking major maintenance activities will be assumed.

12.11.7.15 Maintenance regimes will include routine monitoring of cable burial and protection status.

Magnitude of impact

12.11.7.16 The protocols outlined for the construction phase impact will be followed during the O&M phase. The magnitude of effect is considered to be the same as during construction, summarised as low adverse for all fleets.

Sensitivity of the receptor

12.11.7.17 The sensitivity is as described for construction, summarised as medium for demersal otter trawl, demersal seine and dredge fishing fleets; and low for potting and pelagic trawl fishing fleets.

Significance of the effect

12.11.7.18 Demersal otter trawl, demersal seine and dredge: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.7.19 Potting and pelagic trawl: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.7.20 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

Decommissioning phase

Significance of the effect

12.11.7.21 The effects of decommissioning activities are expected to be the same or similar to the effects from construction and as such assessment descriptions are not repeated in full.

12.11.7.22 Demersal otter trawl, demersal seine and dredge: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

12.11.7.23 Potting and pelagic trawl: the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in the commercial fisheries impact assessment, **minor adverse** significance has been concluded, which is not significant in EIA terms.

Secondary mitigation and residual effect

12.11.7.24 No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.

12.11.8 Proposed monitoring

12.11.8.1 No commercial fisheries monitoring to test the predictions made within the assessment of Morven North-alone potential effects on commercial fisheries is considered necessary.

12.12 Whole project assessment and Cumulative Effects Assessment methodology

12.12.1 Methodology

12.12.1.1 The Morven Programme comprises four distinct projects: Morven North, Morven South, Morven Hawthorn Pit Grid Connection Project (MHPGC Project), and Morven Branxton Area Grid Connection Project (MBAGC Project).

12.12.1.2 The following assessment scenarios have been considered to identify the Likely Significant Effects (LSE[1]) of Morven North in combination with other projects on the same receptor, as follows (and summarised in Table 12.13):

- Whole project assessment: to identify the potential impacts associated with Morven North together with each grid connection option in turn, (Scenario 1: MHPGC and Scenario 2: MBAGC Project), each of which would comprise a "Whole Project".
- Morven Programme assessment: to identify potential impacts associated with all four components of the Morven Programme together with other relevant projects, plans and activities (Scenario 3).
- Cumulative Effects Assessment (CEA): to identify the potential impacts associated with Morven North together with other relevant projects, plans and activities, including other components of the Morven Programme, using a tiered approach (Scenario 4).

12.12.1.3 The whole project assessment and CEA have been undertaken in accordance with the methodology described in Volume 1, Chapter 6: EIA methodology.

Table 12.13: Scenarios to be considered in the Morven North whole project assessment and Cumulative Effects Assessment for commercial fisheries

Whole project assessment		Morven Programme assessment (Offshore Ornithology and Shipping and Navigation chapters only)	Cumulative Effects Assessment
Scenario 1	**Scenario 2**	**Scenario 3**	**Scenario 4**
Morven North + MHPGC Project	Morven North + MBAGC Project	Not applicable to the commercial fisheries assessment, as described in the text below this table.	Morven North + Tier 1, Tier 2 and Tier 3 Plans/Projects screened in

12.12.1.4 For the purposes of this commercial fisheries chapter, Scenarios 1, 2, and 4 have been taken forward for assessment; Scenario 3 has not been included as it is not applicable to this chapter. As discussed in Volume 1, Chapter 6: EIA Methodology, the Morven Programme assessment (Scenario 3) is only required for specific chapters to provide further context to, and to support, the conclusions of the CEA scenario (Scenario 4), in agreement with the relevant stakeholders for these topics. As Scenario 3 does not form the basis of the CEA conclusions, it is considered a supplementary assessment to the CEA scenario (Scenario 4) for these specific topics. The approach to Cumulative Effects Assessment presented in this commercial fisheries chapter complies with the requirements under the EIA Regulations to assess the LSE[1] on the environment arising from a project cumulatively with other relevant plans, projects and activities, and no supplementary assessment of the Morven

Programme (Scenario 3) is required or has been requested by relevant stakeholders with regard to commercial fisheries.

12.12.1.5 The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 3, Annex 6.1: Cumulative Effects Screening). Each project or plan has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

12.12.1.6 In undertaking the CEA for Morven North, it should be noted that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside Morven North. Therefore, a tiered approach has been adopted, whereby all third-party projects and plans considered have been allocated into 'tiers' reflecting their current stage within the planning and development process. This provides a framework for placing relative weight upon the potential for each project/plan included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the project/plan's parameters. The tiered approach utilised within the Morven North CEA employs the following tiers:

- Tier 1 assessment – Certain existing developments either built (operational) or under construction[15]; approved developments awaiting implementation; and permitted/submitted application(s), but not yet determined, plus Morven South.
- Tier 2 assessment – All plans/projects assessed under Tier 1, plus MHPGC Project and plans/projects where a scoping report has been submitted and is in the public domain.
- Tier 3 assessment – All plans/projects assessed under Tier 1 and 2, plus MBAGC Project, and plans/projects that are reasonably foreseeable (e.g. projects identified in development plans, projects in other plans and programmes, offshore renewable energy projects that have a Crown Estate Scotland Lease Option Agreement).

12.12.1.7 The specific projects and plans screened into the CEA for commercial fisheries are outlined in Table 12.14.

12.12.1.8 The potential impacts that have been considered in the CEA (listed in Table 12.15) represent a subset of those assessed for Morven North alone. While all impacts scoped into the project-level assessment were considered for inclusion in the CEA, a number were screened out at the CEA stage on the basis that they are localised, temporary, and/or event-based in nature, or have been assessed as negligible or low magnitude. These impacts are not considered capable of interacting cumulatively with similar changes arising from other plans or projects in a manner that could give rise to a cumulative impact and have therefore been scoped out of the whole project and cumulative assessment. These impacts include:

- increased vessel traffic within fishing grounds leading to interference with fishing activity;
- additional steaming to alternative fishing grounds for vessels;
- increased snagging risk, which could result in loss or damage to fishing gear.

[15] Note that existing developments are included in Tier 1 CEA long list but are generally screened out of the CEA assessments because they form part of the baseline, aside from the following exceptions:

1) Existing developments which were not present at the time of baseline characterisation, where a potential cumulative impact-receptor pathway has been identified.

2) Existing developments are screened into tier 1 assessments for specific topics where there is a large conceptual, temporal and spatial overlap between project impacts. In these instances, the potential for ongoing effects through cumulative impact-receptor pathways throughout project lifetime, across the development phases, means that they are considered within quantitative assessment for these topic CEAs (e.g., offshore ornithology assessments consider the cumulative effects of operational offshore wind farms).

12.12.1.9 Similarly, some of the potential impacts considered within the Morven North alone assessment are specific to a particular phase of development (e.g. construction, O&M or decommissioning). Where cumulative effects with other plans or projects only have potential to occur where there is spatial or temporal overlap with Morven North during certain phases of development, impacts associated with a certain phase may be omitted from further consideration where no plans or projects have been identified that have the potential for cumulative effects during this period.

12.12.1.10 The Morven North Cumulative Commercial Fisheries Study Area has been defined as the North Sea (inclusive of the North, Central and South North Sea as shown in Figure 12.19), which is considered to be representative of the fishing grounds exploited by the fleets active across the Morven North Local and Regional Commercial Fisheries Study Areas, for all fleets except scallop dredging. For scallop dredging the Cumulative Study Area is defined at a UK level (all shaded ICES Divisions in Figure 12.19); this is because the UK fleet of scallop dredgers are nomadic in nature and target grounds across the North Sea, West of Scotland, Irish Sea and English Channel. The widest extent of the Morven North Cumulative Commercial Fisheries Study Area is therefore presented in Figure 12.19. The projects included in the Cumulative Commercial Fisheries Study Area, relevant to all fishing fleets, are presented in Figure 12.20 and this is mapped with commercial fisheries data for demersal otter trawl (Figure 12.21), dredge (Figure 12.22), pelagic trawl (Figure 12.23) and potting (Figure 12.24).

12.12.1.11 It is considered that other renewable projects in the North Sea, West of Scotland, Celtic Sea and English Channel have the potential to reduce access to fishing grounds, especially where floating foundations are proposed for offshore wind farm developments. This could lead to the potential cumulative effect of temporary (during construction and decommissioning) and long-term (during O&M) loss or restricted access to fishing grounds. This incremental loss of fishing grounds is often termed 'spatial squeeze' and is a growing concern within the fishing industry. The loss of access to fishing grounds may lead to displacement at a cumulative level, where vessels are exploratory fishing and focusing effort in areas outside of cumulative developments. This could lead to the cumulative effect of incremental displacement throughout UK waters. This displacement effect and where a displaced fisher chooses to direct the displaced effort can be difficult to assign to a specific project, given that fishing operators are responding to multiple developments.

12.12.1.12 In addition, incremental disruption to fish and shellfish species could lead to cumulative displacement of the commercial resource. For example, at the ecosystem level, offshore wind farms and other developments in the marine environment could act as aggregation devices, attracting a different assemblage of species (which could in itself provide new commercial opportunity), or there could be barrier effects. The fish and shellfish ecology assessment has considered potential cumulative effects to specific species and species groups, as presented within Volume 2, Chapter 9: Fish and Shellfish Ecology, with potential knock-on effects considered within this chapter for commercially exploited resources.

12.12.1.13 To summarise, impacts that are scoped into the CEA are:

- cumulative reduction in access to, or exclusion from established fishing grounds;
- cumulative displacement leading to gear conflict and increased fishing pressure on adjacent grounds;
- cumulative disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity.

12.12.1.14 The approach to CEA screening of projects for commercial fisheries has taken a wide and inclusive approach, including many developments that are in operational phase. This is because these developments are recognised to continue to pose a potential impact on commercial fisheries through incremental loss of fishing grounds.

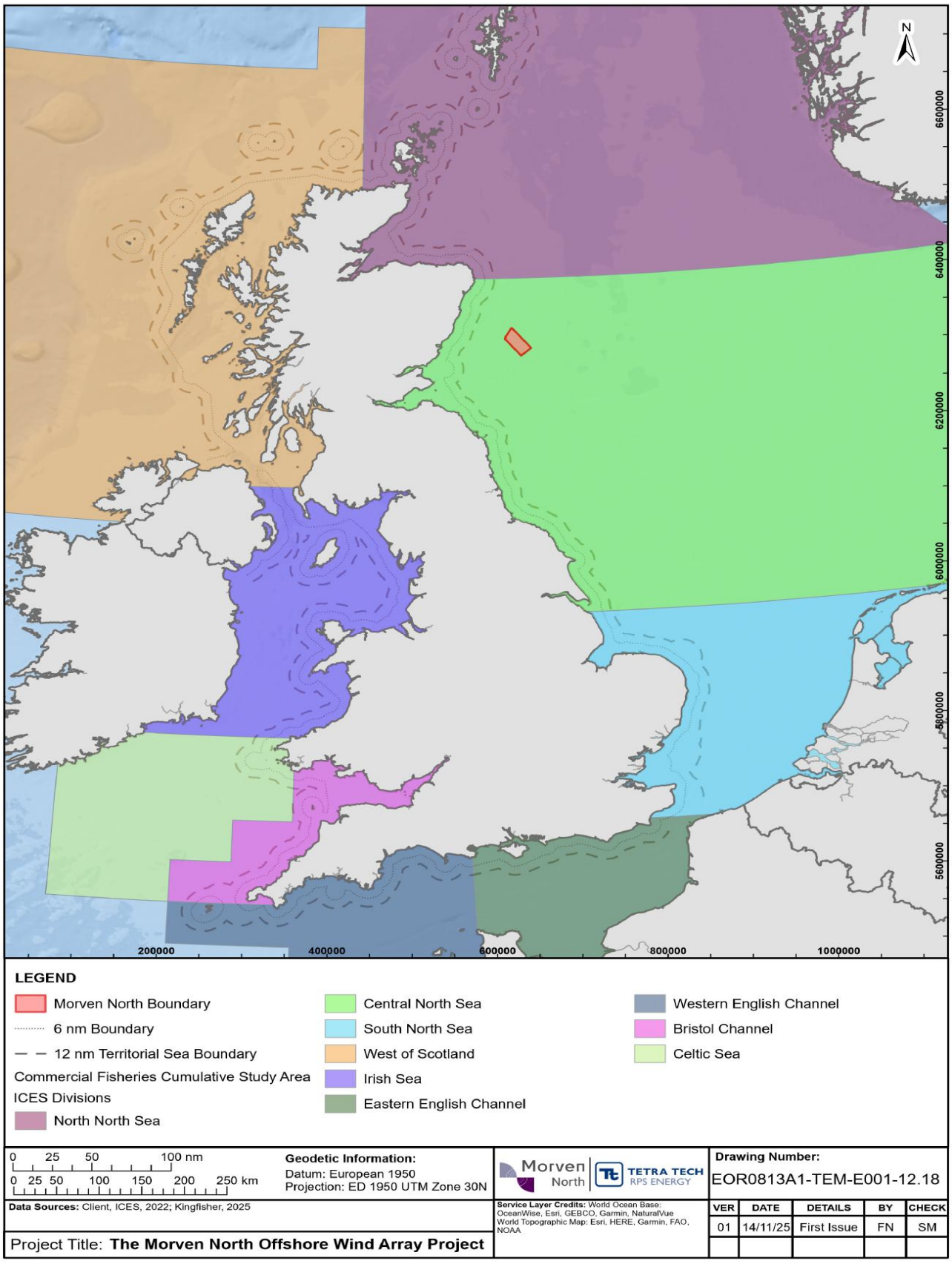

Figure 12.19: Morven North Commercial Fisheries Cumulative Study Area (the dredge fleet Cumulative Study Area encompasses all shaded ICES divisions; the Cumulative Study Area for all other relevant fleets is the North, Central and South North Sea ICES divisions)

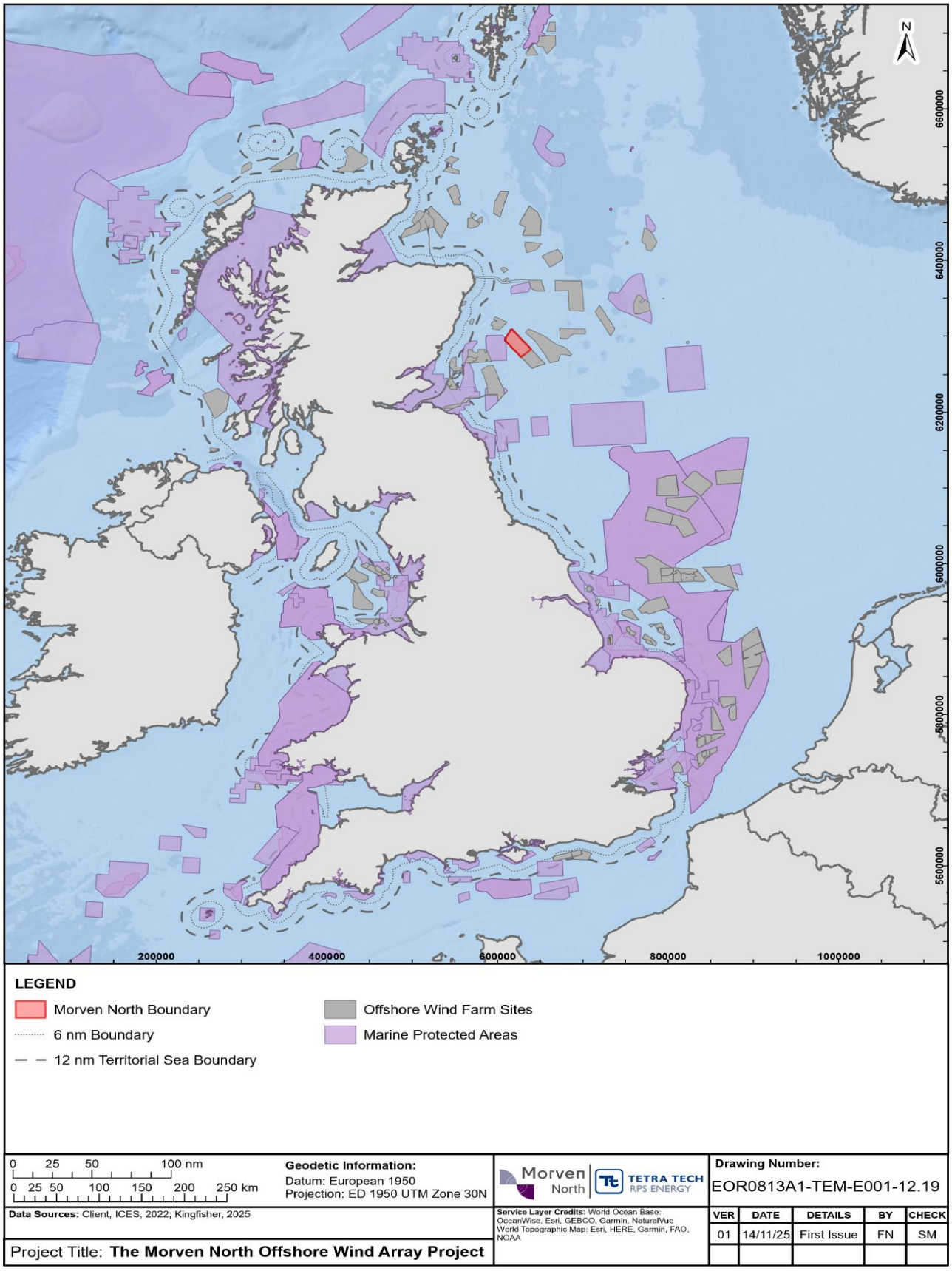

Figure 12.20: Other projects/plans in United Kingdom waters screened into the Cumulative Effects Assessment for commercial fisheries

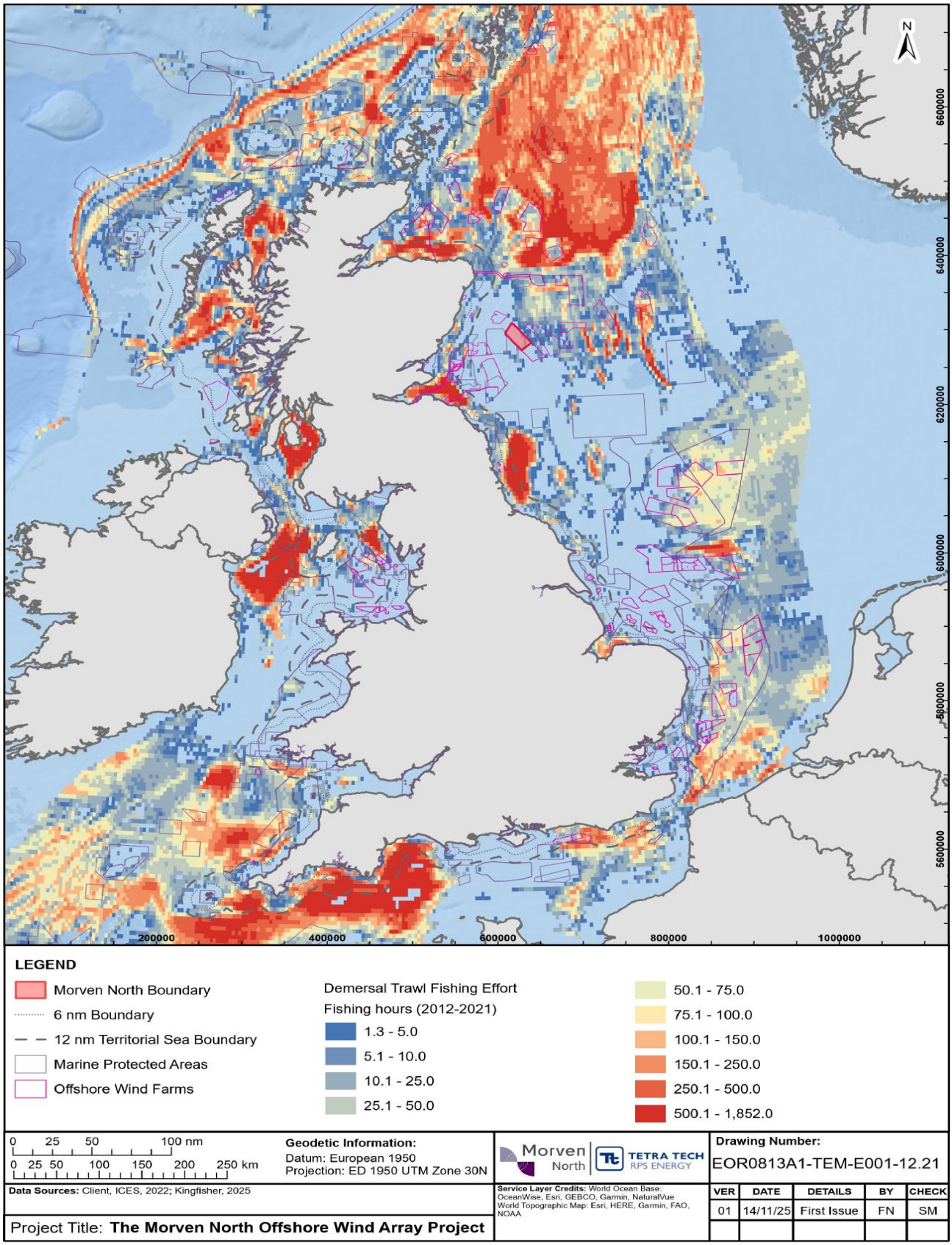

Figure 12.21: Demersal otter trawl activity within the Commercial Fisheries Cumulative Effects Assessment Study Area

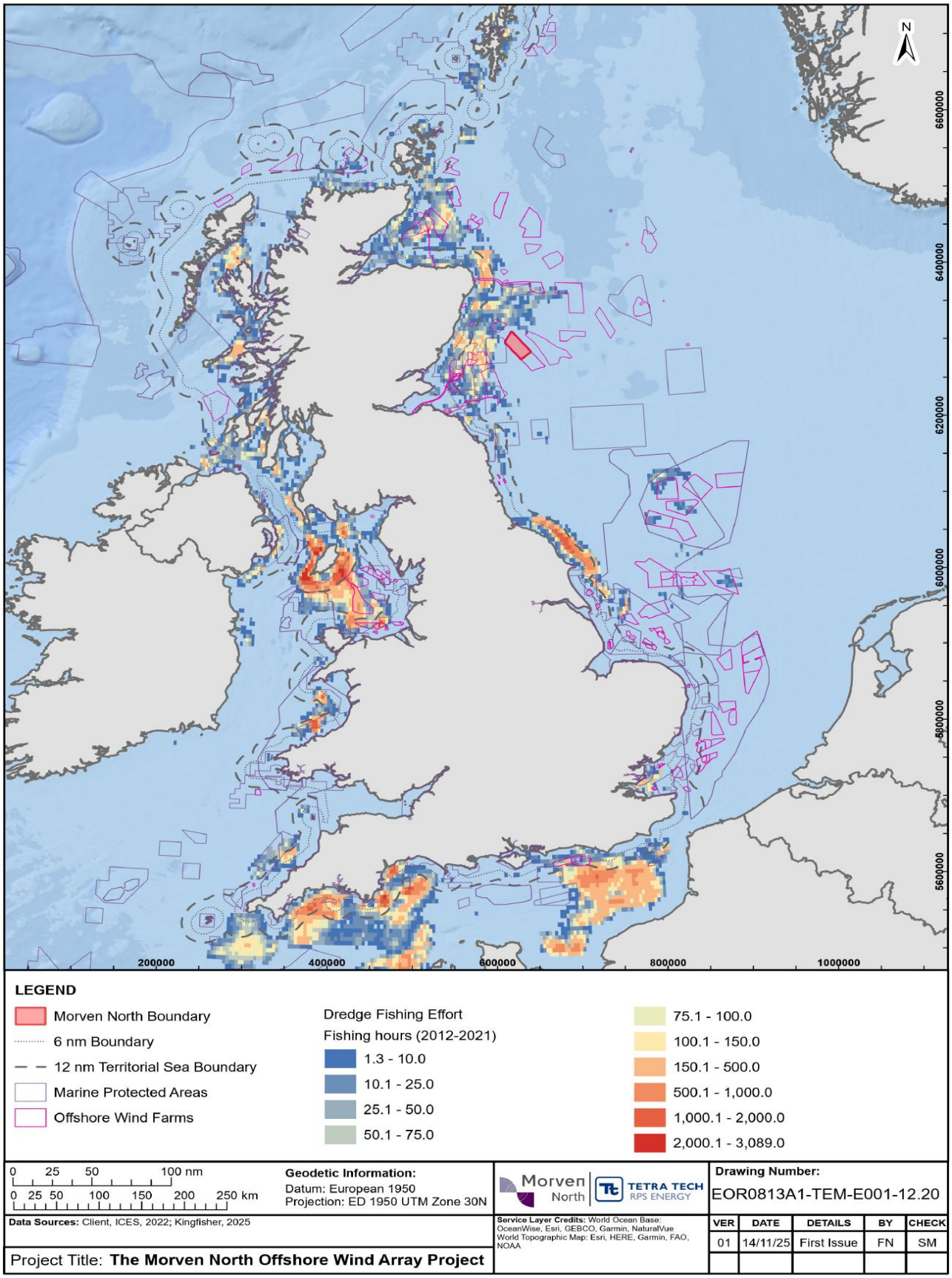

Figure 12.22: Dredge activity within the Commercial Fisheries Cumulative Effects Assessment Study Area

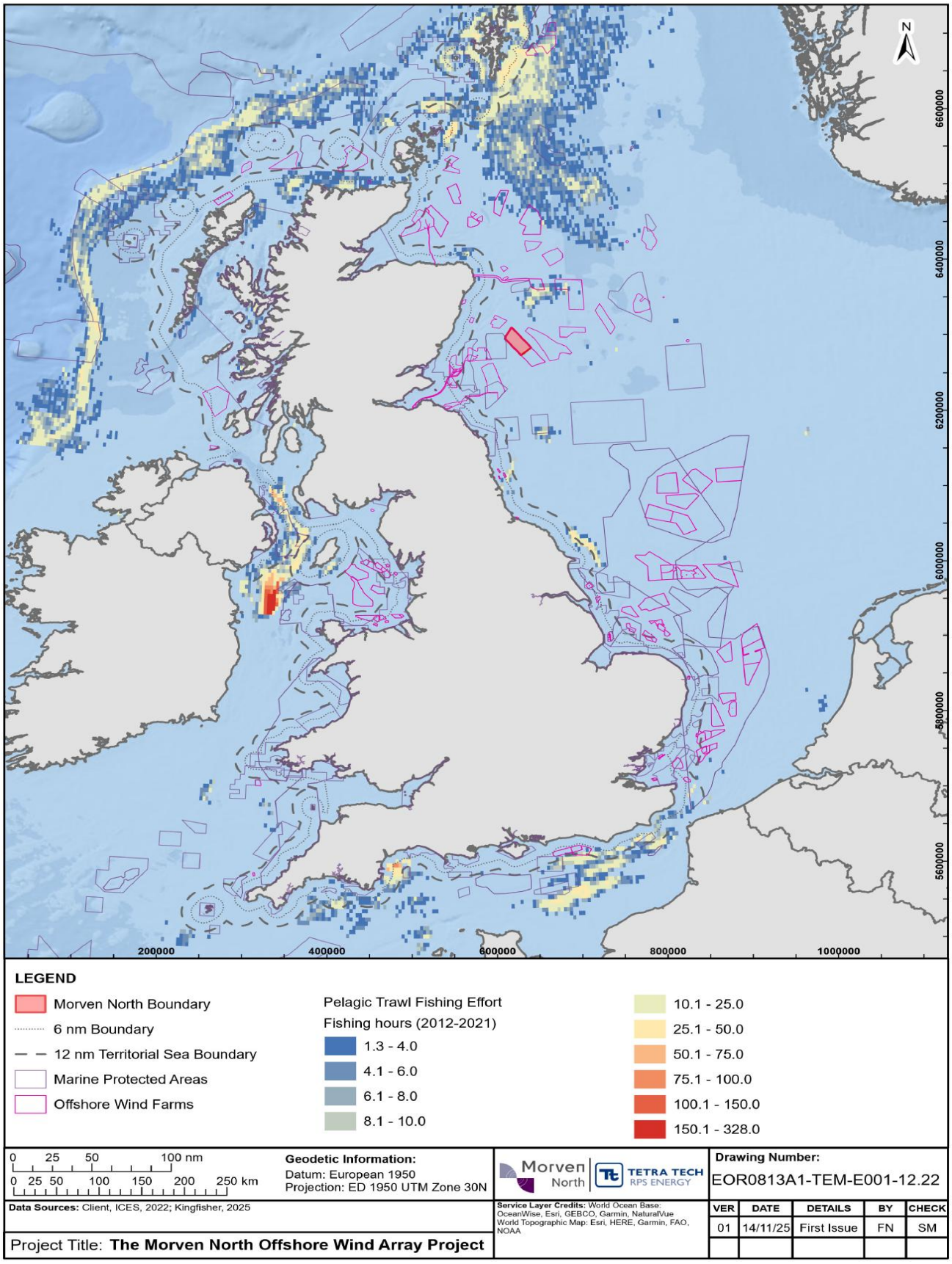

Figure 12.23: Pelagic trawl activity within the Commercial Fisheries Cumulative Effects Assessment Study Area

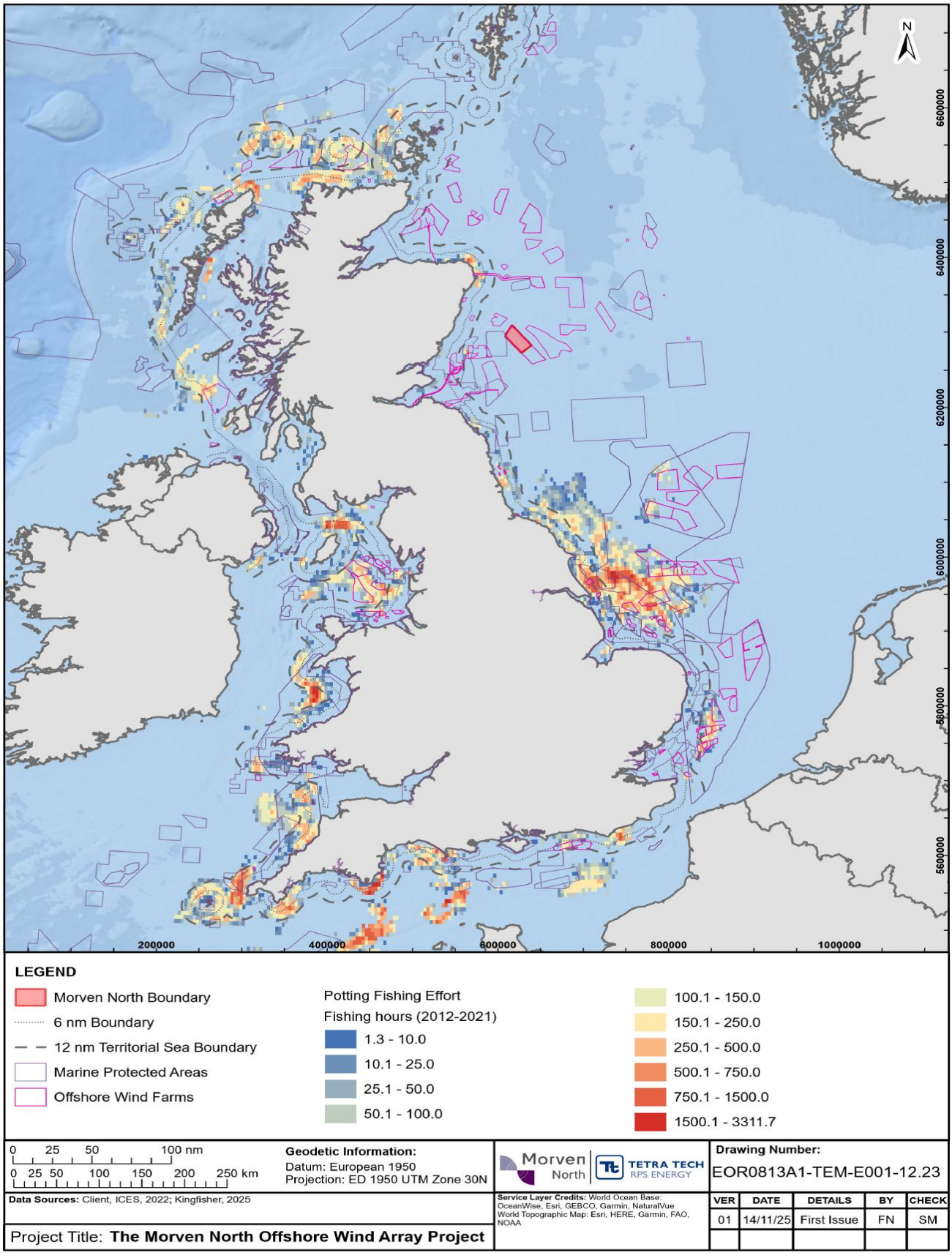

Figure 12.24: Potting activity within the Commercial Fisheries Cumulative Effects Assessment Study Area

Table 12.14: List of other projects and plans considered within the Cumulative Effects Assessment for commercial fisheries

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Tier 1						
Offshore wind projects and associated cables						
Morven South	Application submitted/awaiting decision	0	Proposed for up to 95 turbines with a capacity of up to 1,500 Megawatt (MW).	2033-2042[16]	2038 to 2073-2077[17]	Yes. Overlap of construction phase or operational phase with the construction or operational phases of Morven North.
Hywind OWF and Export Cable Corridor	Operational	66	Hywind OWF consists of up to 5 Wind Turbines at a capacity of 30MW.	N/A	2024-2037	
Beatrice OWF and Export Cable Corridor	Operational	179	Beatrice OWF consists of 84 turbines at a capacity of 588MW.	N/A	2019-2044	
Aberdeen EOWDC	Operational	63	Aberdeen OWF consists of up to 11 Wind Turbines at a	N/A	2018-2043	

[16] Construction dates of Morven South are not currently known, but this will last for a total of five years. However, for the purposes of the assessment it has been assumed that construction for Morven South will commence in 2033 and have a duration of ten years, noting that due to the flexibility in construction order between Morven North and Morven South, Morven South will be built between 2033 and 2042 (as per the high-level indicative construction programme described in Volume 1, Chapter 3: Project Description).

[17] While Morven North and Morven South could be constructed anywhere between 2033 to 2042, the O&M phase has been assumed as commencing in 2038 as a precaution in the instance that one project is constructed first and operational while the other is still in its construction phase. The operational lifecycle of Morven North and Morven South is 35 years and could end between 2073 (e.g., if operational in 2038) and 2077 (e.g., if operational in 2042).

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
			capacity of 96.8MW.			
Methil Demo	Operational	129	Forthwind Offshore Wind Demonstration Project is consented for up to 7 Wind Turbines with no maximum generating capacity.	N/A	2015-2027	
Kincardine	Operational	43	Kincardine OWF consists of 6 Wind Turbines at a capacity of 50MW.	N/A	2021-2046	
Blyth Offshore Demonstrator - Phase 2	Consented	152	Blyth Demonstration 2 is consented for up to 5 floating Wind Turbines at a capacity of 58.4MW.	2025	2025-2050	
Blyth Offshore Demonstrator - Phase 1	Operational	161	41.5MW (15 turbines).	N/A	2000-2044	
Green Volt OWF and Export Cable Corridor	Consented	103	Green Volt OWF is proposed for up to 35 Wind Turbines at a capacity of 560MW.	2025-2029	2030-2059	

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Pentland Floating OWF and Export Cable Corridor	Consented	253	Pentland floating Offshore Wind Farm is consented for up to 10 turbines at a capacity of 100MW.	2026-2029	2030-2057	
Inch Cape OWF and Export Cable Corridor	Under construction	61	Inch Cape OWF is consented for up to 72 Wind Turbines with a capacity of 1.1GW.	2024-2026	2027 onwards	
Moray East OWF and Export Cable Corridor	Operational	123	Moray East OWF consists of up to 100 Wind Turbines at a capacity of 950MW.	N/A	2024-2046	
Moray West OWF and Export Cable Corridor	Operational	131	Moray West OWF is consented for up to 60 Wind Turbines at a capacity of 882MW.	N/A	2024-2048	
Neart Na Gaoithe OWF and Export Cable Corridor	Operational	80	Neart na Gaoithe OWF is consented for up to 54 Wind Turbines at a capacity of 450MW.	N/A	2024-2049	
Seagreen Phase 1 OWF and Export Cable Corridor	Operational	25	Seagreen 1 OWF consists of up to 114 Wind Turbines at a capacity of 1,075MW.	N/A	2023-2048	

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Seagreen 1A Project	Consented	41	Seagreen 1A Offshore Wind Farm is consented for up to 36 turbines with no maximum generating capacity.	2030-31	2032-2046	
West of Orkney OWF and Export Cable Corridor	Consented	276	West of Orkney Wind Farm of up to 125 Wind Turbines at a capacity of 2000MW.	2028-2031	2032-2055	
Berwick Bank OWF	Consented	32	Berwick Bank OWF is proposed for up to 307 Wind Turbines with a capacity of up to 4.1GW.	2025-2032	2033-2065	
Salamander OWF and Export Cable Corridor	Consented	75	Salamander OWF has a proposed capacity of up to 100MW.	2028-2032	2033-2063	
Buchan OWF	Application submitted	149	Buchan OWF is proposed for up to 70 Wind Turbines at a capacity of 1GW.	2028-2030	2031 onwards	
Ossian OWF	Application submitted	9	Ossian OWF is proposed for a capacity of 3.6GW.	2030-2037	2038 onwards	

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Cenos OWF	Application submitted	130	Cenos OWF is proposed for up to 95 Wind Turbines at a capacity of 1350MW.	2030-2034	2034 onwards	
Caledonia North OWF and Export Cable Corridor	Application submitted	157	Caledonia OWF is proposed for up to 150 turbines at a capacity of 2000MW.	2028-2031	2032-2065	
Caledonia South OWF and Export Cable Corridor						
Muir Mhor OWF and Export Cable Corridor	Application submitted	58	Muir Mhor Offshore Wind Farm is proposed for up to 96 Wind Turbines at a capacity of 1GW.	2030-2033	2034 onwards	
Aspen OWF and Export Cable Corridor	Application submitted	93	Aspen OWF is proposed for up to 1008MW.	2027-2029	2030 onwards	
Culzean OWF and Export Cable Corridor	Application submitted	168	Culzean Floating Offshore Wind Turbine Pilot Project is proposed for up to 3MW.	2024-2025	2026-2037	
Other English east coast OWFs and associated export cable corridors (including but not limited to Dogger	Various OWFs either under construction or in operation, with potential for an overlap in cumulative impacts associated with construction activities and the operation phase. There is a potential for cumulative impacts arising from reduction in access to fishing grounds, displacement and fisheries resource effects. See Volume 3, Annex 6.1 Cumulative Effects Screening for detail of projects considered.					

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Bank OWFs, Outer Dowsing, North Falls, Sheringham Shoal Extension and Dudgeon Extension, Norfolk Vanguard West, Norfolk Vanguard East, East Anglia Three, East Anglia Two, East Anglia One North)						
Other OWFs and associated export cable corridors in the North Sea, English Channel, Celtic Sea and Irish Sea	Various OWFs either under construction or in operation, with potential for an overlap in cumulative impacts associated with construction activities and the operation phase. There is a potential for cumulative impacts arising from reduction in access to fishing grounds, displacement and fisheries resource effects. See Volume 3, Annex 6.1 Cumulative Effects Screening for detail of projects considered.					
Other North Sea OWFs and associated export cable corridors off Belgium, Netherlands, Germany, France and Denmark OWF	Various OWFs either under construction or in operation, with potential for an overlap in cumulative impacts associated with construction activities and the operation phase. There is a potential for cumulative impacts arising from reduction in access to fishing grounds, displacement and fisheries resource effects. See Volume 3, Annex 6.1 Cumulative Effects Screening for detail of projects considered.					
Other cables and pipelines						
Gas pipeline Fulmar A - St. Fergus	Decommissioning	68	Gas pipeline from Fulmar A to St Fergus gas processing plant	Decommissioning ongoing to 2033		Yes. Potential for construction phase or operational

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Gas pipeline Brent A - St. Fergus	Decommissioning	83	Gas pipeline from Brent A to St Fergus gas processing plant	Decommissioning ongoing to 2033		phase to interact with the construction or operational phases of Morven North.
Gas pipeline Everest to Teesside	Under construction	78	36 inch Active GAS pipeline owned by Independent Oil & Gas	2024-2026	2027-2043	
Eastern Green Link 1 subsea cable	Under construction	94	176 km cable with a capacity of 2GW	2025-2027	2028 onwards	
Eastern Green Link 2 subsea cable	Under construction	0	515km cable with a capacity of 2GW	2025-2029	2030 onwards	
Spittal to Peterhead HDVC link subsea cable	Application submitted	85	2 GW bi-pole 525kV HVDC link	2026-2030	2031 onwards	
Tier 2						
Offshore wind projects and associated cables						
MHPGC Project	Scoping report published	0	Part of Scenarios 1 and 4	Unknown	Unknown	Part of Scenarios 1 and 4
Marram OWF	Scoping report submitted	125	Marram OWF is proposed for up to 150 Wind Turbines at a capacity of 3000MW.	2026-2029	2030-2054	Yes. Potential for construction phase or operational phase to interact with the construction or
Havbredey OWF and Export Cable Corridor	Scoping report submitted	344	Havbredey OWF is proposed for up to 110 Wind Turbines	2035-2039	2040 onwards	

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
			at a capacity of 1500MW.			operational phases of Morven North.
Bellrock OWF	Scoping report submitted	37	Bellrock Floating Offshore Wind Farm is proposed for a capacity of 1,800MW. Up to 132 wind turbines.	2027-2030	2031 onwards	
Broadshore OWF	Scoping report submitted	141	The Broadshore Hub OWFs (comprising Broadshore OWF, Sinclair OWF and Scaraben OWF) is proposed for up to 72 Wind Turbines at a capacity of 1,100MW across the three projects.	2028-2029	2030 onwards	
Bowdun OWF and Export Cable Corridor	Scoping report submitted	10	Bowdun Offshore Wind Farm is proposed for up to 60 turbines at a capacity of 1,008MW.	2029-2033	2034-2064	
MachairWind Offshore Wind Farm	Scoping report submitted	331	MachairWind OWF is proposed for up to 100 Wind Turbines at a capacity of 2000MW.	Unknown	2033 onwards	

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Talisk OWF and Export Cable Corridor	Scoping report submitted	372	Talisk OWF is proposed for up to 33 Wind Turbines at a capacity of 495MW.	2029-2031	2032 onwards	
Spiorad na Mara OWF and Export Cable Corridor	Scoping report submitted	370	Spiorad na Mara is proposed for a capacity of 900MW.	2028-2030	2031 onwards	
Stromar OWF and Export Cable Corridor	Scoping report submitted	175	Stromar is proposed for up to 1,500MW capacity.	2026-2033	2034 onwards	
Arven OWF and Export Cable Corridor	Scoping report submitted	366	Arven OWF is proposed for a capacity of 2300MW.	2030-2034	2035-2060	
Stoura OWF and Export Cable Corridor	Scoping report submitted	395	Stoura Offshore Wind Farm is proposed for up to 28 wind turbines at a capacity of 500MW.	2030-2035	2036 onwards	
Other OWFs and associated export cable corridors (including in the North Sea, English Channel, Celtic Sea and Irish Sea – (e.g. Dogger Bank D,	Various OWFs at scoping stage, with potential for an overlap in cumulative impacts associated with construction activities and the operation phase. There is a potential for cumulative impacts arising from reduction in access to fishing grounds, displacement and fisheries resource effects. See Volume 3, Annex 6.1 Cumulative Effects Screening for detail of projects considered.					

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
some Irish offshore wind farm projects)						
Other cables and pipelines						
Eastern Green Link 3 subsea cable	Scoping report published	5	2GW HVDC link between Fife and King's Lynn	2027-2033	2034 onwards	Yes. Potential for construction phase or operational phase to interact with the construction or operational phases of Morven North.
Eastern Green Link 4 subsea cable	Scoping report published	68	2GW HVDC link between Fife and King's Lynn	2027-2033	2034 onwards	
Eastern Green Link 5 subsea cable	Scoping report published	27	Scotland to England cable connector of up to 555km in length.	2030–2034	2034 onwards	
Nature conservation designations						
UK MPA network	Network of Special Areas of Conservation (SAC), Special Protected Areas (SPA), Marine Conservation Zones (MCZ) are designated but management measures may not yet be implemented. Implementation of management measures for all Marine Protected Areas (MPAs) expected from 2024 onwards with potential for an overlap in cumulative impacts associated with construction activities and the operation phase. There is a potential for cumulative impacts arising from reduction in access to fishing grounds and displacement.					
Tier 3						
Offshore wind projects and associated cables						
MBAGCP Project	Pre-application	0	Part of Scenarios 2 and 4	Unknown	Unknown	Part of Scenarios 2 and 4
Flora OWF and Export Cable Corridor	Concept/Early Planning	63	Flora Floating Wind Farm is proposed for up to 500 MW	Unknown	Unknown	Yes. Potential for construction phase

Project/plan	Status	Distance from Morven North (km)	Description of project/plan	Estimated dates of construction (If applicable)	Estimated dates of operation (If applicable)	Overlap with Morven North
Cedar OWF and Export Cable Corridor	Concept/Early Planning	89	Cedar Offshore Wind Farm is proposed for up to 1008MW.	Unknown	Unknown	or operational phase to interact with the construction or operational phases of Morven North.
Beech OWF and Export Cable Corridor	Concept/Early Planning	188	Beech Offshore Wind Farm is proposed for up to 1008MW.	Unknown	Unknown	
Judy OWF	Concept/Early Planning	168	Judy Floating Wind Farm is proposed for up to 15MW	Unknown	Unknown	
Malin Sea OWF	Concept/Early Planning	366	Malin Sea Offshore Wind is proposed for up to 100MW	Unknown	Unknown	
Other OWFs and associated export cable corridors in the North Sea, English Channel, Celtic Sea and Irish Sea (e.g. Round 5 Potential Development Areas)	Various OWFs at leasing/concept/early planning stage with potential for an overlap in cumulative impacts associated with construction activities and the operation phase. There is a potential for cumulative impacts arising from reduction in access to fishing grounds, displacement and fisheries resource effects. See Volume 3, Annex 6.1 Cumulative Effects Screening for detail of projects considered.					
Other North Sea OWFs and associated export cable corridors off Belgium, Netherlands, Germany, France and Denmark	Various OWFs at leasing/concept/early planning stage with potential for an overlap in cumulative impacts associated with construction activities and the operation phase. There is a potential for cumulative impacts arising from reduction in access to fishing grounds, displacement and fisheries resource effects. See Volume 3, Annex 6.1 Cumulative Effects Screening for detail of projects considered.					

12.12.2 Maximum Design Scenario

12.12.2.1 The cumulative MDSs identified in Table 12.15 have been selected as those having the potential to result in the greatest potential cumulative effect on an identified receptor or receptor group. The cumulative MDSs have been based on the Morven North alone assessment MDS (Table 12.11), as well as publicly available information on other third party projects and plans that have been screened into the CEA (Table 12.14). Where applicable, the Morven South alone assessment MDS, the Project Description contained within the MHPGC Project Scoping Report and project information available for MBAGC Project have also informed the cumulative MDSs outlined in Table 12.15.

Table 12.15: Maximum Design Scenario considered for the assessment of potential whole project and cumulative effects on commercial fisheries

C= Construction, O= Operations and maintenance, D= Decommissioning phases

"✓" is used to denote the phase the potential impact can occur, "X" outlines there is no impact within this project phase

Potential Cumulative Effect	Phase			Maximum Design Scenario	Justification
	C	O	D		
Cumulative reduction in access to, or exclusion from established fishing grounds	✓	✓	✓	**Scenario 1** MDS as described for Morven North (Table 12.11), assessed cumulatively with MHPGC Project. **Scenario 2** MDS as described for Morven North (Table 12.11), assessed cumulatively with MBAGC Project. **Scenario 4** MDS as described for Morven North (Table 12.11), assessed cumulatively with the following other projects and plans: Tier 1 • 27 offshore wind farms and associated offshore export cables in the proximate North Sea: – Morven South – Hywind OWF and Export Cable Corridor – Beatrice OWF and Export Cable Corridor – Aberdeen EOWDC – Methil Demo – Kincardine – Blyth Offshore Demonstrator - Phase 2 – Blyth Offshore Demonstrator - Phase 1 – Green Volt OWF and Export Cable Corridor	The Morven North Commercial Fisheries Cumulative Study Area has been defined to reflect the spatial extent of fishing activity and potential interaction with offshore developments, and the cumulative scenarios presented represent a conservative assessment of projects and plans falling within or influencing this area.

Potential Cumulative Effect	Phase			Maximum Design Scenario	Justification
	C	O	D		
				– Pentland Floating OWF and Export Cable Corridor – Inch Cape OWF and Export Cable Corridor – Moray East OWF and Export Cable Corridor – Moray West OWF and Export Cable Corridor – Neart Na Gaoithe OWF and Export Cable Corridor – Seagreen Phase 1 OWF and Export Cable Corridor – Seagreen 1A Project – West of Orkney OWF and Export Cable Corridor – Berwick Bank OWF – Salamander OWF and Export Cable Corridor – Buchan OWF – Ossian OWF – Cenos OWF – Caledonia North OWF and Export Cable Corridor – Caledonia South OWF and Export Cable Corridor – Muir Mhor OWF and Export Cable Corridor – Aspen OWF and Export Cable Corridor – Culzean OWF and Export Cable Corridor • Other English east coast OWFs and associated export cable corridors (including Dogger Bank OWFs, Outer Dowsing, Sheringham Shoal Extension and Dudgeon Extension, Norfolk Vanguard West, Norfolk Vanguard East, East Anglia Three, East Anglia Two, East Anglia One North) • Other OWFs and associated export cable corridors in the wider North Sea, English Channel, Celtic Sea and Irish Sea • Other North Sea OWFs and associated export cable corridors off Belgium, Netherlands, Germany, France and Denmark OWF	

Potential Cumulative Effect	Phase			Maximum Design Scenario	Justification
	C	O	D		
				• 3 gas pipelines and 3 subsea cables Tier 2 • 11 offshore wind farms and associated export cables in proximate Scottish waters: – Marram OWF – Havbredey OWF and Export Cable Corridor – Bellrock OWF – Broadshore OWF – Bowdun OWF and Export Cable Corridor – MachairWind Offshore Wind Farm – Talisk OWF and Export Cable Corridor – Spiorad na Mara OWF and Export Cable Corridor – Stromar OWF and Export Cable Corridor – Arven OWF and Export Cable Corridor – Stoura OWF and Export Cable Corridor • Other OWFs and associated export cable corridors (including in the North Sea, English Channel, Celtic Sea and Irish Sea – e.g. Dogger Bank D, some Irish offshore wind farm projects) • MHPGC Project • 3 subsea cables • UK MPA network Tier 3 • 12 offshore wind farms and associated export cables in proximate Scottish waters: o Flora OWF and Export Cable Corridor	

Potential Cumulative Effect	Phase			Maximum Design Scenario	Justification
	C	O	D		
				– Cedar OWF and Export Cable Corridor – Beech OWF and Export Cable Corridor – Judy OWF – Malin Sea OWF • Other OWFs and associated export cable corridors in the North Sea, English Channel, Celtic Sea and Irish Sea (e.g. Round 5 Potential Development Areas) • Other North Sea OWFs and associated export cable corridors off Belgium, Netherlands, Germany, France and Denmark • MBAGC Project	
Cumulative displacement leading to gear conflict and increased fishing pressure on adjacent grounds	✓	✓	✓	As per 'Cumulative reduction in access to, or exclusion from established fishing grounds'	
Cumulative disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity	✓	✓	✓	As described for Volume 2, Chapter 9: Fish and Shellfish Ecology.	

12.13 Whole project assessment and Cumulative Effects Assessment

12.13.1 Overview

12.13.1.1 A description of the significance of whole project and cumulative effects upon commercial fisheries receptors arising from each identified impact is given below. The whole project assessment and CEA for Morven North is presented in Table 12.16 to Table 12.21.

12.13.2 Reduction in access to, or exclusion from established fishing grounds

12.13.2.1 There is potential for cumulative reduction in access to or exclusion from established fishing grounds as a result of activities associated with Morven North and other projects that are under construction, in operation or with planned decommissioning.

12.13.2.2 The summary of the whole project assessment for 'reduction in access to, or exclusion from established fishing grounds' is presented in Table 12.16, and the summary of the Cumulative Effects Assessment is presented in Table 12.17.

Table 12.16: Morven North whole project assessment for reduction in access to, or exclusion from established fishing grounds

	Whole project assessment	
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Construction phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. This impact will lead to temporary loss of access to fishing grounds and access to the fish and shellfish resources within these grounds for a range of fishing opportunities during the construction phase, which will directly affect fleets over a medium-term duration. The impact of Morven North plus the MHPGC Project is not considered likely to cumulatively raise the impact magnitude rating concluded in the Morven North-alone assessment. This reflects that it is not anticipated that there will be full exclusion of fisheries from the MHPGC Project during construction, but rather only within small works areas (e.g. within 500m rolling advisory safety zones around cable lay vessels). The impact is predicted to be of local spatial extent, temporary with a medium-term duration, and medium reversibility. It is predicted that the impact will affect the receptor directly. The impact magnitude is therefore, considered to be low for the demersal trawl and demersal seine fisheries, and negligible for the dredge, potting and pelagic trawl fisheries.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	The sensitivity of the commercial fishing receptors is the same or similar to that assessed for the Morven North-alone assessment and summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting fisheries.	
Significance of effect	Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms. Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the construction phase. Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the construction phase.	

	Whole project assessment	
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	
Operations and maintenance phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. The impact of Morven North plus the MHPGC Project is not considered likely to cumulatively raise the impact magnitude rating concluded in the Morven North-alone assessment. This reflects the assumption that fishing will be possible within the Morven North Boundary where turbine spacing and turbine layout allow productive grounds to be targeted, and within the MHPGC Project with potential exception to this in locations where cable protection is deployed. This impact will lead to highly localised loss of access to fishing grounds, which will directly affect fleets over a long-term duration. The impact is predicted to be continuous with low reversibility for the lifetime of Morven North and the MHPGC Project and is of relevance to national and international fishing fleets. The impact magnitude is therefore, considered to be low for the demersal trawl and demersal seine fisheries, and negligible for the dredge, potting and pelagic trawl fisheries.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	The sensitivity of the commercial fishing receptors is the same or similar to that assessed for the Morven North-alone assessment and summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting fisheries.	
Significance of effect	Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms. Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase. Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase.	

	Whole project assessment	
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	
Decommissioning phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. During the decommissioning phase, this impact relates to the temporary loss or temporary restricted access to fishing grounds due to decommissioning activities related to the removal of wind turbines, OSPs, their foundations, and subsea cabling. The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and numbers of vessels and equipment. It is assumed that the decommissioning phase will have a similar duration as the construction phase. The magnitude of impact is the same or similar to that assessed during construction. The impact is predicted to be of local spatial extent, medium term duration, intermittent and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be low for the demersal trawl and demersal seine fleets and low for all other commercial fishing fleets.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	The sensitivity of the commercial fishing receptors is the same or similar to that assessed during the construction phase and summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.	
Significance of effect	Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms. Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase. Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of O&M phase.	

	Whole project assessment	
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	

12.13.2.3 The rationale to support the summary text relating to 'magnitude of impact' for all project phases considered for Scenario 4 within Table 12.17 is presented immediately below given it is considered too extensive for presentation in the table. The assessment applies the same methodological framework (see Section 12.8) as the project-alone assessment set out in Section 12.11. However, the resulting magnitude of effects may differ where the spatial extent, duration, frequency of interaction, or degree of reversibility is altered due to the presence of other plans or projects within the Cumulative Commercial Fisheries Study Area.

12.13.2.4 There is potential for cumulative reduction in access to or exclusion from established fishing grounds as a result of construction, maintenance and decommissioning activities associated with Morven North and other projects that are under construction, in operation, or to be decommissioned.

Tier 1

12.13.2.5 The Tier 1 projects include fixed OWFs in Scottish and English waters, and beyond including off the coasts of France, Belgium, Netherlands, Germany, and Denmark. For OWFs within the UK jurisdiction, it is assumed that access would be possible for most gear types (with exception of pelagic trawl) and access to export cable routes also possible for most gears (noting that while MGN 661 advises that mobile fishing vessels with penetrative gear avoid submarine cables, cables are typically buried or protected to allow trawling, with the exception of dredging). Floating foundation offshore wind farms are also included in the Tier 1 assessment and it is assumed that fishing will not resume within these floating projects during all their phases.

12.13.2.6 For the purposes of this assessment, this cumulative effect has been assessed within the North Sea, which is considered to be a reasonable extent for the fishing grounds exploited by the commercial fisheries receptors active across the Morven North Local and Regional Commercial Fisheries Study Areas, for all fleets except scallop dredging. For scallop dredging this effect is assessed at a UK level; this is because the UK fleet of scallop dredgers are nomadic in nature and target grounds across the North Sea, west of Scotland, Irish Sea and English Channel.

12.13.2.7 Demersal otter trawl and demersal seine activity occurs throughout the North Sea, with highly defined grounds for targeting Nephrops (related to muddy habitat) and less defined grounds when targeting whitefish/mixed demersal species, including haddock and whiting. Defined grounds for the Nephrops fishery are noted primarily across the cable routes of Tier 1 OWFs, including in the Firth of Forth (Neart na Gaoithe and Inch Cape OWFs) and Moray Firth (Moray West OWF). Lower levels of demersal otter trawl activity are noted across the floating OWFs.

12.13.2.8 Scallop dredging is noted to occur across a number of Tier 1 projects in the North Sea: Caledonia North and South, Moray West and Dogger Bank A OWFs. Scallop dredging is evident within the 12nm boundary adjacent to the northeast coast of Scotland (Figure 12.22).

12.13.2.9 Pelagic trawl activity occurs primarily in the central areas of the northern North Sea (Figure 12.23). There is very limited overlap with Tier 1 projects.

12.13.2.10 Potting VMS spatial data is not fully representative of the UK potting fleet because the data is only available for vessels 15m and over, while the majority of the potting fleet is less than 15m in length. Nevertheless, the potting VMS data does indicate areas of high activity for the 15m and over fleet, specifically in waters out to 12nm (Figure 12.19).

12.13.2.11 A number of operational OWFs are included in the Tier 1 assessment, which throughout their construction provided a range of mitigation directly to commercial fishing businesses. Fishermen have adapted their activities in response to the presence of these offshore wind farms, including both operating within the arrays (for example, by adapting how and where gear is used or set); avoiding construction areas and returning to fishing grounds across export cables post-construction and in certain instances overtrawl surveys to confirm resumption of fishing.

12.13.2.12 The Tier 1 OWFs are located in areas where scallop dredgers, demersal otter trawls and potting activity were likely to have been operated, with varying degrees of effort. Overall, the commercial fishing fleets have adapted to the presence of the OWFs and adjusted practices to allow fishing businesses to continue operation to some extent.

12.13.2.13 The potential for incremental loss of fishing grounds is recognised in the ABPmer (2022) spatial squeeze in fisheries report, which focused on assessment of mobile fishing gears in response to present and future scenarios for restricted access due to MPAs (included in Tier 2 of this assessment) and offshore developments including offshore wind farms and cables.

12.13.2.14 The ABPmer study found that the spatial footprint of activities and policies that constrain mobile trawling gear types represents 23% of the UK EEZ area for the 'present' scenario (i.e. as of 2022). It is noted, however, that the scenarios for loss within the ABPmer (2022) report treat all areas equally (i.e. the report does not distinguish between areas that can actually be utilised (and are currently targeted) for fishing).

12.13.2.15 The 'future 2030' scenario predicted 36% of the UK EEZ would be restricted to trawling and the 'future 2050' worst case scenario predicted 49% of the UK EEZ would be restricted, with an area greater than 30,000km^2 occupied by the renewable offshore wind sector. The 'future 2050' worst case scenario assumes mobile fishing would be restricted within all wind farms, which is noted to not necessarily be the case, but becomes the likely scenario for floating developments.

12.13.2.16 The ABPmer (2022) report highlights that the fishing industry has adapted to the 'present' scenario, based on the majority of restrictions being linked to nature conservation restrictions in waters deeper than 800m, together with OWFs sited in areas not previously intensively trawled.

12.13.2.17 Overall, it is considered that the fishing industry will continue to adapt to operational projects included in the Tier 1 assessment, including active fishing within operational OWFs. This is expected to be the case for Tier 1 fixed foundation OWFs projects; with mitigation at individual project level and resumption of fishing during the operational phase.

12.13.2.18 Several floating OWFs are included in Tier 1. It is understood that these projects are either located in areas that are not expected to cause disruption to commercial fishing fleets or have developed project-specific mitigation to avoid impacts.

12.13.2.19 The cumulative impact magnitude is presented in Table 12.17 below.

Tier 2

12.13.2.20 The Tier 2 cumulative assessment includes all Tier 1 projects plus additional fixed and floating OWFs, together with the network of UK designated MPAs. Fisheries administrators across the UK are at various stages of implementing management measures within MPAs. The MMO recently (March 2024) implemented byelaws with prohibitions on bottom contact fishing gear within nine MPAs (MMO, 2024). In a Scottish context, the Marine Directorate has implemented a series of Marine Conservation Orders (MCOs) and fisheries orders in MPAs and SACs, effective from 2022, and very recently introduced fisheries management measures (to become effective from October 2025) across several offshore MPAs introducing the Offshore Fishing (Prohibition of Fishing Methods) (Scotland) Order 2025 (the 2025 Order)[18]. Measures focus mainly on restricting or excluding demersal mobile gear (e.g. demersal trawls, dredges, seines), with a mix of full-site closures and zonal restrictions depending on site features; for example, within the Firth of Forth Banks Complex Nature Conservation MPA which is proximate to the Morven Site, demersal mobile gear is prohibited

[18] Supporting documents - Offshore Marine Protected Areas - fisheries management measures: supporting guidance on coordinates and restrictions: - gov.scot

in three zonal areas. A series of possible MCOs and fisheries orders for Scottish inshore MPAs remains under consideration and is planned to be subject to future consultation.

12.13.2.21 The scale of potential restrictions to the commercial fishing fleets is recognised, including through the ABPmer (2022) spatial squeeze analysis, as described under the Tier 1 assessment. Overall, there is potential for incremental loss of grounds to occur from Tier 2 OWFs and nature conservation management. Potential mitigation packages for Tier 2 floating OWFs are not yet fully developed and approved and therefore risk of significant cumulative impacts to loss of access remains for fishing fleets that typically operate across wider regional areas when targeting specific species.

12.13.2.22 The cumulative impact magnitude is presented in Table 12.17 below.

Tier 3

12.13.2.23 The additional floating OWFs within Tier 3 cumulatively with Morven North plus Tier 1 and Tier 2 raise the cumulative effect of loss or restricted access to fishing grounds, however this rise is considered to remain within the medium magnitude category (i.e. leading to moderate loss of access to fishing grounds) and does not enter the high magnitude category (i.e. leading to substantial loss of access to fishing grounds). The cumulative impact magnitude is presented in Table 12.17 below.

Table 12.17: Morven North Cumulative Effects Assessment for reduction in access to, or exclusion from established fishing grounds

	Cumulative Effects Assessment
	Scenario 4: Morven North and Tier 1, Tier 2 and Tier 3 Projects
Construction phase	
Magnitude of impact	Detailed in paragraphs 12.13.2.5 to 12.13.2.23 above. The cumulative effects assessment for Scenario 4 considers Morven North together with the Tier 1, Tier 2 and Tier 3 projects as per Table 12.14. Tier 1 The cumulative impact is predicted to be of international spatial extent, medium to long-term duration, continuous and low reversibility. It is predicted that the impact will affect the receptor directly. Given the adaptation of the commercial fishing sector to operational OWF developments and the avoidance of key fishing grounds and project level mitigation for Tier 1 floating OWFs, the magnitude is therefore, considered to be low for Tier 1 projects for all fishing fleets. Tier 2 The cumulative impact is predicted to be of international spatial extent, medium to long-term duration, continuous and low reversibility. It is predicted that the impact will affect the receptor directly. Given the loss of access posed by OWFs, together with the anticipated introduction of fisheries management within the MPA network, the magnitude is therefore, considered to be medium for Tier 2 projects for demersal otter trawl/seine and dredge fisheries and low adverse for all other fishing fleets. Tier 3 The Tier 3 projects are not considered to raise the category of magnitude of impact beyond what is assessed for Tier 2, summarised as medium for demersal otter trawl/seine and dredge fisheries and low for all other fishing fleets.
Sensitivity of receptor	All commercial fishing fleets are sensitive to incremental loss of access to fishing grounds because catching opportunities depend on reliable access to established grounds. All commercial fishing fleets are deemed to be of high vulnerability, reflecting that many fleets show functional dependence on specific grounds and work under operational constraints, such as vessel size and weather limits. Fleets show medium recoverability, reflecting that there may be some capacity to adapt to loss of grounds over the long-term (e.g. by switching to alternative grounds within their

	Cumulative Effects Assessment
	operational range, adjusting target species or modifying gear) but that this adaptive capacity is limited in a cumulative context whereby alternative grounds may already be constrained, and medium-high value with fleets making notable landings contributions. The sensitivity of the receptor is therefore, considered to be medium.
Significance of effect	UK demersal otter trawl/seine and dredge fisheries: the magnitude of the cumulative impact is deemed to be medium, and the sensitivity of the receptor is medium. The cumulative effect will therefore be of **moderate adverse** significance, which is significant in EIA terms. The contribution of Morven North to this cumulative effect is considered limited. All other fleets: the magnitude of the cumulative impact is deemed to be low, and the sensitivity of the receptor is medium. The cumulative effect will therefore be of **minor adverse** significance, which is not significant in EIA terms.
Further mitigation and residual significance	The designed-in mitigation measures support the Morven North-alone assessment outcomes of minor adverse significance during construction, O&M and decommissioning phases. Mitigating the effect of other offshore wind farm developments and management measures being implemented within MPAs is not the responsibility of, nor possible by, the Applicant. However, the Applicant is open to working with the Scottish Government, the fishing industry and other offshore wind developers to explore strategic monitoring options, and monitoring is proposed (see Section 12.13.5 for detail) to acknowledge and respond to the scale of potential cumulative effects on commercial fisheries receptors and the potential benefits of coordinated monitoring at a regional scale to validate Cumulative Effects Assessment outcomes. Monitoring outcomes will be discussed with the regional commercial fisheries working group and any future updates to the FMMCP may be informed by an understanding of any changes in fishing activity as picked up by the monitoring proposed. Whilst no single project or Applicant can define or resolve these potential cumulative effects in isolation, as they result from the combined influence of multiple developments and fisheries management measures over a wider spatial and temporal scale, with this linkage established between the monitoring activity and possible future updates to the FMMCP, in this instance monitoring is considered to be further mitigation. Overall, for the UK demersal otter trawl/seine and dredge fisheries, following mitigation, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The residual effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.
Operations and maintenance phase	
Magnitude of impact	As per construction phase.
Sensitivity of receptor	As per construction phase.
Significance of effect	Over time commercial fishing fleets are expected to adjust to the presence of OWFs and, for certain gears, adapt to operate within fixed foundation array areas. However, given the inclusion of floating OWF projects within Tiers 1, 2 and 3, together with MPAs included at

	Cumulative Effects Assessment
	Tier 3, the effects of O&M activities are expected to be the same or similar to the effects from construction, summarised as **moderate adverse** significance for UK demersal otter trawl/seine and dredge fisheries and **minor adverse** significance for all other fleets. Although the O&M phase is longer in duration than construction, this has been taken into account through consideration of fishing fleet adaptation over time, such that effects do not alter the overall significance conclusion.
Further mitigation and residual significance	As per construction phase.
Decommissioning phase	
Magnitude of impact	As per construction phase.
Sensitivity of receptor	
Significance of effect	
Further mitigation and residual significance	

12.13.3 Displacement leading to gear conflict and increased fishing pressure on adjacent grounds

12.13.3.1 There is potential for cumulative displacement leading to gear conflict and increased fishing pressure on adjacent grounds associated with Morven North and other projects that are under construction, in operation or with planned decommissioning.

12.13.3.2 The summary of the whole project assessment for 'displacement leading to gear conflict and increased fishing pressure on adjacent grounds' is presented in Table 12.18, and the summary of the Cumulative Effects Assessment is presented in Table 12.19.

Table 12.18: Morven North whole project assessment for displacement leading to gear conflict and increased fishing pressure on adjacent grounds

Whole project assessment		
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Construction phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. Reduced access or exclusion from fishing grounds due to Morven North and the MHPGC Project may lead to increases in fishing effort in other areas that may already be exploited thereby leading to increased pressure and gear conflict. The impact of Morven North plus the MHPGC Project is not considered likely to cumulatively raise the impact magnitude rating concluded in the Morven North-alone assessment. This reflects that it is not anticipated that there will be full exclusion of fisheries from the MHPGC Project during construction, but rather only within small works areas (e.g. within 500m rolling advisory safety zones around cable lay vessels). The extent of displacement is therefore expected to be spatially limited. Established spatial management practices, communication between fleets, and avoidance behaviour are expected to limit the likelihood of sustained or widespread gear conflict. The impact is predicted to be of regional spatial extent, medium term duration, intermittent and reversible. It is predicted that the impact will affect the receptor indirectly. Reflecting the nature and level of fishing activity in and around Morven North, the magnitude of the impact is considered to be low for demersal trawl and seine fisheries, and negligible for dredge, potting and pelagic trawl fisheries.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	The sensitivity is as described for reduction in access to, or exclusion from established fishing grounds within the Morven North Boundary, summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.	
Significance of effect	Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms. Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the construction phase. Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor	

Whole project assessment		
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
	range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the construction phase.	
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	
Operations and maintenance phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. Loss of access or exclusion from fishing grounds during O&M of Morven North and the MHPGC Project may lead to increases in fishing effort in other areas that may already be exploited thereby leading to gear conflict and increased pressure on adjacent fishing grounds. The impact of Morven North plus the MHPGC Project is not considered likely to cumulatively raise the impact magnitude rating concluded in the Morven North-alone assessment. This reflects the assumption that fishing will be possible within the Morven North Boundary where turbine spacing and turbine layout allow productive grounds to be targeted, and within the MHPGC Project with potential exception to this in locations where cable protection is deployed, and that the impact of displacement during the operational and maintenance phase is expected to be similar or more likely lower than the magnitude assessed during construction. This impact will lead to very minimal displacement, which will directly affect fleets over a long-term duration. The impact is predicted to be continuous with low reversibility for the lifetime of Morven North and the MHPGC Project and is of relevance to national and international fishing fleets. The impact magnitude is therefore, considered to be low for the demersal trawl and demersal seine fisheries, and negligible for the dredge, potting and pelagic trawl fisheries.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	The sensitivity is as described for reduction in access to, or exclusion from established fishing grounds within the Morven North Boundary, summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.	
Significance of effect	Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms. Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible	

Whole project assessment		
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
	to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the construction phase. Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the construction phase.	
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	
Decommissioning phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. Exclusion from fishing grounds during the decommissioning phase of Morven North may lead to increases in fishing effort in other areas that may already be exploited thereby leading to gear conflict. The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and numbers of vessels and equipment. It is assumed that the decommissioning phase will have a similar duration as the construction phase. The magnitude of impact of displacement is therefore the same or similar to that assessed during construction. The impact is predicted to be of local spatial extent, medium term duration, intermittent and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude of the impact is considered to be low for demersal trawl and seine fisheries, and negligible for dredge, potting and pelagic trawl fisheries.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	The sensitivity is as described for reduction in access to, or exclusion from established fishing grounds within the Morven North Boundary, summarised as low for pelagic and dredge fisheries, and medium for demersal otter trawl, demersal seine and potting.	
Significance of effect	Demersal otter trawl and demersal seine fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms. Pelagic and dredge fisheries: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible	

Whole project assessment		
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
	to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the decommissioning phase. Potting fishery: overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of negligible to minor adverse significance, which is not significant in EIA terms. Within the negligible to minor range as defined in the impact significance matrix, this effect is considered to be **minor adverse** due to the duration of the decommissioning phase.	
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	

Table 12.19: Morven North Cumulative Effects Assessment for displacement leading to gear conflict and increased fishing pressure on adjacent grounds

Cumulative Effects Assessment	
	Scenario 4: Morven North and Tier 1, Tier 2 and Tier 3 Projects
Construction phase	
Magnitude of impact	The cumulative effects assessment for Scenario 4 considers Morven North together with the Tier 1, Tier 2 and Tier 3 projects as per Table 12.14. Tier 1 The effect of displacement during construction leading to gear conflict and increased fishing pressure is directly correlated to the previous impact of reduced access to fishing grounds (i.e. if there is no reduction in access, then there will be no displacement). There is a low magnitude of impact for reduced access to fishing grounds from Tier 1 projects and therefore an ongoing cumulative displacement effect is not expected to be recognisable beyond baseline conditions. Resumption of fishing following construction within existing OWFs included in Tier 1 is assumed for dredge, potting and demersal otter trawl/seine and therefore displacement over time will have dissipated as commercial fishing fleets adapt and operate within fixed foundation OWFs. Pelagic trawl gear does not interact with the seabed and is therefore not constrained by subsea infrastructure or export cables. While pelagic trawl gear would not

Cumulative Effects Assessment	
	Scenario 4: Morven North and Tier 1, Tier 2 and Tier 3 Projects
Construction phase	
	be feasible within the boundaries of Tier 1 OWFs, these are not located across grounds specifically targeted by pelagic trawl, and it is assumed that the opportunity to catch fish outside the OWF area is not wholly lost. Displacement is possible in response to the floating OWF Tier 1 projects. However, it is expected that this will be limited in nature due to the project level mitigation and siting within lower levels of fishing activity. Furthermore, it is assumed that appropriately mitigated loss of access impacts associated with floating OWF projects would limit the effect of displacement. The cumulative impact is predicted to be of international spatial extent, short to medium-term duration and low reversibility. While displacement effects during construction are short-term for individual projects, the cumulative assessment reflects the potential for overlapping construction phases across multiple developments, resulting in a short to medium-term cumulative duration. It is predicted that the impact will affect the receptor directly. Overall, based on the above justifications, the magnitude of impact of displacement is assessed as low for all fleets. Tier 2 The effect of displacement during construction leading to gear conflict and increased fishing pressure is directly correlated to the previous impact of reduced access to fishing grounds (i.e. if there is no reduction in access, then there will be no displacement). There is a medium magnitude of impact for reduced access to fishing grounds from Tier 2 projects cumulatively with Morven North and Tier 1 projects, specifically due to the assumption that fishing will not resume within floating OWFs and therefore displacement is expected. The cumulative impact is predicted to be of international spatial extent, medium to long-term duration and low reversibility. It is predicted that the impact will affect the receptor directly. Given the loss of access posed by floating OWF included in the Tier 1 and 2 assessment and knock-on displacement effects, together with the anticipated introduction of fisheries management within the MPA network, the magnitude is therefore, considered to be medium for Tier 2 projects for demersal otter trawl/seine and dredge fisheries and low for all other fishing fleets. Tier 3 The cumulative impact is predicted to be of international spatial extent, medium to long-term duration and low reversibility. It is predicted that the impact will affect the receptor directly. The additional floating OWFs within Tier 3 cumulatively with Morven North plus Tier 1 and Tier 2 raise the cumulative effect of displacement, however this rise is considered to remain within the medium magnitude category (i.e. leading to moderate loss of access to fishing grounds) and does not enter the high magnitude category (i.e. leading to substantial loss of access to fishing grounds). The Tier 3 projects are not considered to raise the category of magnitude of

Cumulative Effects Assessment	
	Scenario 4: Morven North and Tier 1, Tier 2 and Tier 3 Projects
Construction phase	
	impact beyond that assessed for Tier 2 and, accordingly, the cumulative magnitude remains medium for demersal otter trawl/seine and dredge fisheries, and low for all other fishing fleets.
Sensitivity of receptor	Where any reduction in access to fishing grounds occurs, some degree of effort relocation is required. All fishing fleets are constrained by a combination of target species location, gear limits, operational range and quota/licencing requirements, amongst other factors, and therefore all commercial fishing fleets are sensitive to displacement into other areas. In addition, displacement may increase the likelihood of interaction with other fishing activities, particularly where effort is redistributed into grounds used by different gear types. Static gears are more susceptible to interaction where spatial overlap occurs, while mobile gears may experience increased operational constraints in areas of higher fishing intensity. This susceptibility to gear interaction is an inherent characteristic of the receptor and contributes to sensitivity in the context of displacement. All fleets are deemed to be of high vulnerability and medium recoverability (i.e. the fleets may be considered dependent on specific grounds and recovery to what may be considered normal operations would take time - particularly in a cumulative context where the available fishing area is progressively reduced - noting that even where some fleets have the ability to relocate, there are consequences of having to do so, such as gear conflict). The sensitivity of the receptor is therefore, considered to be medium.
Significance of effect	UK demersal otter trawl/seine and dredge fisheries: the magnitude of the cumulative impact is deemed to be medium adverse and the sensitivity of the receptor is medium. The cumulative effect will therefore be of **moderate adverse** significance, which is significant in EIA terms. All other fleets: the magnitude of the cumulative impact is deemed to be low adverse and the sensitivity of the receptor is medium. The cumulative effect will therefore be of **minor adverse** significance, which is not significant in EIA terms.
Further mitigation and residual significance	The designed-in mitigation measures support Morven North alone assessment outcomes of minor adverse significance during construction, O&M and decommissioning phases. Mitigating the effect of other offshore wind farm developments and management measures being implemented within MPAs is not the responsibility of, nor possible by, the Applicant. However, the Applicant is open to working with the Scottish Government, the fishing industry and other offshore wind developers to explore strategic monitoring options, and monitoring is proposed (see Section 12.13.5 for detail) to acknowledge and respond to the scale of potential cumulative effects on commercial fisheries receptors and the potential benefits of coordinated monitoring at a regional scale to validate Cumulative Effects Assessment outcomes. Monitoring outcomes will be discussed with the regional commercial fisheries working group and any future updates to the FMMCP may be informed by an understanding of any changes in fishing activity as picked up by the monitoring proposed. Whilst no single project or Applicant can define or resolve these potential cumulative effects in isolation, as they result from the combined influence of multiple developments

Cumulative Effects Assessment	
	Scenario 4: Morven North and Tier 1, Tier 2 and Tier 3 Projects
Construction phase	
	and fisheries management measures over a wider spatial and temporal scale, with this linkage established between the monitoring activity and possible future updates to the FMMCP, in this instance monitoring is considered to be further mitigation. Overall, for the UK demersal otter trawl/seine and dredge fisheries, following mitigation, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The residual effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.
Operations and maintenance phase	
Magnitude of impact	As per construction phase.
Sensitivity of receptor	As per construction phase.
Significance of effect	Over time commercial fishing fleets are expected to adjust to the presence of OWFs and for displacement effects to stabilise. However, given the inclusion of floating OWF projects within Tiers 1, 2 and 3, together with MPAs included at Tier 2, the level of displacement has the potential to have long-term effects based on continuous competition for fishing grounds as spatial squeeze pressures increase. The effects of O&M activities are expected to be the same or similar to the effects from construction, summarised as **moderate adverse** significance for UK demersal otter trawl/seine and dredge fisheries and **minor adverse** significance for all other fleets.
Further mitigation and residual significance	As per construction phase.
Decommissioning phase	
Magnitude of impact	As per construction phase.
Sensitivity of receptor	
Significance of effect	

Cumulative Effects Assessment	
	Scenario 4: Morven North and Tier 1, Tier 2 and Tier 3 Projects
Construction phase	
Further mitigation and residual significance	

12.13.4 Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity

12.13.4.1 There is potential for cumulative disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity with Morven North and other projects that are under construction, in operation or with planned decommissioning.

12.13.4.2 The summary of the whole project assessment for 'reduction in access to, or exclusion from established fishing grounds' is presented in Table 12.20, and the summary of the Cumulative Effects Assessment for is presented in Table 12.21.

Table 12.20: Morven North whole project assessment for disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity

Whole project assessment		
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Construction phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. Noise and seabed disturbances during the construction phase may displace commercially important fish and shellfish populations from the area. This section assesses the subsequent effect for the owners of fishing vessels, where commercially important stocks may be disturbed or displaced to a point where normal fishing practices would be affected. With respect to the magnitude of this impact on commercial fisheries, the overall significance of the effect on fish and shellfish species is considered (i.e. both the magnitude and sensitivity of fish and shellfish species are considered to assess the magnitude on commercial fishing fleets). This is because the overall effect on the fish or shellfish species relates directly to the availability and amount of exploitable resource. For instance, where an effect of minor adverse significance is assessed for a species, a low magnitude is assessed for commercial fishing, and so on. Details of the fish and shellfish ecology assessment, together with the supporting evidence and justification are provided in Volume 2, Chapter 9: Fish and Shellfish Ecology. The fish and shellfish ecology assessment found all construction impacts to be of minor adverse significance for all fish and shellfish receptors for Scenario 1. The impact of Morven North plus the MHPGC Project is not considered likely to cumulatively raise the impact magnitude rating concluded in the Morven North-alone assessment. The magnitude of impact is predicted to be of local spatial extent, of relevance to international fishing fleets, and of medium-term duration. It is predicted that the impact will affect the receptor directly through loss of resources. The magnitude is therefore considered to be low for all species; in relation to commercial fisheries receptors, all fleets are deemed to have a low adverse magnitude.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	Due to the range of areas targeted and the distribution of key commercial species throughout the northern, central and southern North Sea, all fleets are deemed to be of low vulnerability and high recoverability. The sensitivity of the receptor for all fisheries is therefore, considered to be low.	

Whole project assessment		
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Significance of effect	All fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in both the fish and shellfish ecology and commercial fisheries impact assessments, **minor adverse** significance has been concluded, which is not significant in EIA terms.	
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	
Operations and maintenance phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. Habitat loss, Electromagnetic Field (EMF) and other impacts during the O&M phase may decrease or displace commercially important fish and shellfish populations from the area. This section assesses the subsequent effect for the owners of fishing vessels, where commercially important stocks may be disturbed or displaced to a point where normal fishing practices would be affected. With respect to the magnitude of this impact on commercial fisheries, the overall significance of the effect on fish and shellfish species is considered (i.e. both the magnitude and sensitivity of fish and shellfish species are considered to assess the magnitude on commercial fishing fleets). This is because the overall effect on the fish or shellfish species relates directly to the availability and amount of exploitable resource. For instance, where an effect of minor adverse significance is assessed for a species, a low magnitude is assessed for commercial fishing, and so on. The magnitude of impact is predicted to be of local spatial extent, of relevance to national and international fishing fleets, of long-term duration and to affect the receptor directly. The magnitude is considered to be low adverse for all species and all fishing fleets.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	Due to the range of areas targeted and the distribution of key commercial species throughout the northern, central and southern North Sea, all fleets are deemed to be of low vulnerability and high recoverability. The sensitivity of the receptor for all fisheries is therefore, considered to be low.	
Significance of effect	All fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in both the fish and shellfish ecology and commercial fisheries impact assessments, **minor adverse** significance has been concluded, which is not significant in EIA terms.	

Whole project assessment		
	Scenario 1: Morven North + MHPGC Project	**Scenario 2: Morven North + MBAGC Project**
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	
Decommissioning phase		
Magnitude of impact	The whole project assessment for Scenario 1 considers Morven North together with MHPGC Project. The effects of decommissioning activities are expected to be the same or similar to the effects from construction and as such assessment descriptions are not repeated in full. The magnitude of impact is predicted to be of local spatial extent, of relevance to international fishing fleets, and of medium-term duration. It is predicted that the impact will affect the receptor directly through loss of resources. The magnitude is therefore considered to be low for all species; in relation to commercial fisheries receptors, all fleets are deemed to have a low adverse magnitude.	Given the lack of publicly available parameters for the MBAGC Project, but its similarity in nature to the MHPGC Project, the magnitude of impact for Scenario 2 is as provided in the column for Scenario 1.
Sensitivity of receptor	Due to the range of areas targeted and the distribution of key commercial species throughout the northern, central and southern North Sea, all fleets are deemed to be of low vulnerability and high recoverability. The sensitivity of the receptor for all fisheries is therefore, considered to be low.	
Significance of effect	All fisheries: overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of negligible to minor adverse significance. Reflecting application of precaution in both the fish and shellfish ecology and commercial fisheries impact assessments, **minor adverse** significance has been concluded, which is not significant in EIA terms.	
Further mitigation and residual significance	No mitigation measures for commercial fisheries are considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 12.12), is not significant in EIA terms.	

Table 12.21: Morven North Cumulative Effects Assessment for disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity

	Cumulative Effects Assessment
	Scenario 4: Morven North and Tier 1, Tier 2 and Tier 3 Projects
Construction phase	
Magnitude of impact	The cumulative effects assessment for Scenario 4 considers Morven North together with the Tier 1, Tier 2 and Tier 3 projects as per Table 12.14. Tier 1 The cumulative effects for fish and shellfish ecology have been assessed in Volume 2, Chapter 9: Fish and Shellfish Ecology, covering the following effects: • temporary habitat loss or disturbance; • long-term habitat loss or disturbance; • colonisation of hard structures and associated fish aggregation; • increased SSCs and associated deposition; • underwater sound impacting fish and shellfish receptors. Overall, cumulative effects on fish and shellfish ecology are assessed to be of minor adverse significance. This informs the magnitude of effect to commercial fisheries resources, which is assessed as low for all commercial fishery fleets. Tier 2 and 3 The Tier 2 and Tier 3 projects are not considered to raise the magnitude of impact beyond what is assessed for Tier 1, summarised as low for all commercial fishing fleets. While Tier 2 and Tier 3 projects contribute additional localised effects when considered cumulatively, these effects remain dispersed in space and time and are not expected, in combination, to give rise to sustained or stock-level effects on fish and shellfish resources. On this basis, the magnitude of impact to commercial fisheries resources remains low for all fleets.
Sensitivity of receptor	All commercial fishing fleets exhibit sensitivity to the disturbance of their target species or resources. This is because fishing operations are dependent on the spatial and temporal distribution of specific target stocks.

	Cumulative Effects Assessment
	All commercial fishing fleets are deemed to be of high vulnerability, medium recoverability and medium-high value. The sensitivity of the receptor is therefore, considered to be medium.
Significance of effect	All fishing fleets: the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is medium. The cumulative effect will therefore be of **minor adverse** significance, which is not significant in EIA terms.
Further mitigation and residual significance	No further mitigation is proposed.
Operations and maintenance phase	
Magnitude of impact	As per construction phase.
Sensitivity of receptor	
Significance of effect	
Further mitigation and residual significance	
Decommissioning phase	
Magnitude of impact	As per construction phase.
Sensitivity of receptor	
Significance of effect	
Further mitigation and residual significance	

12.13.5 Proposed monitoring

12.13.5.1 Commercial fisheries monitoring is proposed to support an improved understanding of how fishing activity may respond to the presence of Morven North in combination with other offshore wind developments in the region. This monitoring is proposed in recognition of the scale and complexity of potential cumulative effects on commercial fisheries receptors, and the current limitations in the publicly available evidence base relating to long-term changes in fishing activity in areas subject to multiple offshore wind developments, including floating offshore wind farms.

12.13.5.2 The assessment of Morven North alone identifies no significant effects on commercial fisheries in EIA terms. Accordingly, Morven North in isolation is not the driver for the monitoring proposed in this section. Rather, monitoring is proposed to acknowledge the potential value of strategic, coordinated monitoring at a regional scale to support validation of the cumulative effects assessment and to contribute to a wider evidence base. The Applicant's contribution to such monitoring would be proportionate to the limited contribution of Morven North to cumulative effects.

12.13.5.3 The Applicant recognises that the design and implementation of effective commercial fisheries monitoring in the context of cumulative offshore wind development is best undertaken through a holistic and inclusive regional approach, rather than through isolated project-specific monitoring programmes. Monitoring arrangements will therefore be developed collaboratively, where appropriate, with other offshore wind developers and relevant stakeholders.

12.13.5.4 In this context, the Applicant commits to engaging with the East Region Commercial Fisheries Working Group (or equivalent) and relevant recognised fisheries representative bodies and MD-LOT to contribute to the development of a strategic, regionally coordinated approach to commercial fisheries monitoring. This approach would seek to make appropriate use of existing data sources and industry knowledge to improve understanding of spatial and temporal patterns in commercial fishing activity over time, in a manner that is consistent across developments and proportionate to the scale of effect.

12.13.5.5 Monitoring outputs may be used, where relevant, to inform future iterations of the Fisheries Mitigation, Monitoring and Communication Plan (FMMCP), subject to consultation and agreement. The scope, methodology, duration and governance of any monitoring will be determined through a collaborative process involving the Applicant, relevant statutory consultees, and recognised fisheries representative bodies, and will reflect relevant guidance, the evolving evidence base, and the cumulative development context.

12.13.5.6 The proposed approach aligns with Scottish Government guidance on commercial fisheries monitoring (Scottish Government, 2025b) and responds to evidence gaps identified through ScotMER (Scottish Government, 2022c) relating to commercial fishing activity in the vicinity of offshore wind farms and associated infrastructure.

12.13.5.7 Proposed Applicant monitoring commitments are presented in Table 12.22 below.

Table 12.22: Monitoring commitments for commercial fisheries

Potential environmental effect	Monitoring commitment	Means of implementation
Cumulative reduction in access to, or exclusion from established fishing grounds	Contribution to the development of a strategic, regionally coordinated approach to commercial fisheries monitoring to support understanding of cumulative effects.	Engagement with the East Region Commercial Fisheries Working Group (or equivalent) and relevant stakeholders to inform the scope, data sources, and governance of monitoring; implementation through the FMMCP, where appropriate and proportionate. Monitoring scope, datasets, duration and reporting arrangements will be defined collaboratively and subject to agreement with MD-LOT following engagement with relevant stakeholders.
Cumulative displacement leading to gear conflict and increased fishing pressure on adjacent grounds		

12.14 Transboundary effects

12.14.1.1 A screening of transboundary impacts has been carried out (see Volume 3, Annex 6.2: Transboundary Effects Screening). The potential for significant transboundary effects with regard to commercial fisheries to result from Morven North upon the interests of other EEA States has been assessed as part of the EIA.

12.14.1.2 The potential transboundary impact screened into the assessment for commercial fisheries is:

- effects on commercial fishing fleets from all EEA countries as a result of constraints on foreign commercial fishing activities operating in and around Morven North, namely non-UK pelagic trawlers. These effects may include reduction in access to fishing grounds and potential displacement of fishing effort from Morven North to alternative fishing grounds in EEA States.

12.14.1.3 Effects on foreign commercial fishing fleets from EEA States, in terms of reduction in access to fishing grounds and displacement into alternative grounds including other EEAs, have already been intrinsically considered throughout the commercial fisheries EIA process and assessment outcomes are presented in the impact assessment (Section 13.9) and CEA (Section 13.11) where effects on the pelagic trawl fishery are described.

12.15 Inter-related effects

12.15.1.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of Morven North on the same receptor. Inter-related effects are considered to be either:

- Lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of Morven North (construction, O&M and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three project stages (e.g. underwater sound effects from piling, wind turbines, vessels and decommissioning).
- Receptor-led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on commercial fisheries, such as loss of access to fishing grounds and displacement, may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short-term, temporary or transient effects, or incorporate longer-term effects.

12.15.1.2 A description of the likely inter-related effects arising from Morven North on commercial fisheries is provided in Volume 2, Chapter 21: Inter-related and Ecosystem Effects.

12.15.1.3 For commercial fisheries, the following potential impacts have been considered within the inter-related assessment:

- reduction in access to, or exclusion from established fishing grounds within Morven North;
- displacement leading to gear conflict and increased fishing pressure on adjacent grounds;
- disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity;
- increased vessel traffic associated with Morven North within fishing grounds leading to interference with fishing activity;
- additional steaming to alternative fishing grounds for vessels that would otherwise fish within Morven North;
- increased snagging risk, which could result in loss or damage to fishing gear.

12.15.1.4 As noted above, effects on commercial fisheries also have the potential to have secondary effects on other receptors and these effects are fully considered in the topic-specific chapters. These receptors and effects are:

- Socio-economics:
  - Socio-economic effects resulting from changes to commercial fisheries;
- Major accidents and disasters:

  Potential for snagging risk to and from existing commercial fisheries receptors to result in major accidents and disasters;
- Human health:
  - Human health effects resulting from changes to employment and income as a result of loss or restricted access to commercial fishing grounds.

Table 12.23: Summary of likely significant inter-related effects on the environment from individual effects occurring across the construction, operations and maintenance and decommissioning phases of Morven North and from multiple effects interacting across all phases (receptor-led effects)

C= Construction, O= O&M, D= Decommissioning phases

"✓" is used to denote the phase the potential impact can occur, "X" outlines there is no impact within this project phase

Description of impact	Phase			Likely significant inter-related effect	Significance
	C	O	D		
Morven North lifetime effects					
Reduction in access to, or exclusion from established fishing grounds within Morven North	✓	✓	✓	Loss or restricted access to fishing grounds is considered to be temporary during construction and decommissioning. A buoyed construction area around the entirety of Morven North as it is constructed and decommissioned will lead to loss of access. In the O&M phase it is assumed fishing can resume in Morven North.	The effects on commercial fisheries across the phases are not anticipated to interact in such a way as to result in combined effects of greater significance than the assessments presented for each individual phase and are therefore **minor adverse** and not significant in EIA terms.
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	✓	✓	✓	Fishing may be disrupted and displaced into other areas due to the loss of access effects described immediately above.	
Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity	✓	✓	✓	Morven North lifetime inter-related effects are unlikely, as the nature of potential impacts differs between the construction and O&M phases, with different mechanisms of effect predominating in each phase, as assessed in Volume 2, Chapter 9: Fish and Shellfish Ecology. These include, but are not limited to, underwater sound during construction, and electromagnetic fields (EMF), habitat loss or disturbance, and changes in suspended sediments during the O&M phase. Temporary and long-term habitat loss occurring across all phases is expected to be proportionally small in relation to habitat availability in the Morven North Local and Regional Commercial Fisheries Study Areas.	
Increased vessel traffic associated with Morven North within fishing grounds leading to interference with fishing activity	✓	✓	✓	With the successful implementation of designed-in mitigation (i.e. issue of NtMs), preparation of a FMMCP, close liaison with the local vessels), no significant effects are predicted for the construction, O&M, and decommissioning phases of Morven North. Potential effects on commercial fisheries differ by project phase and do not act concurrently in a manner that would give rise to inter-related effects.	

Description of impact	Phase			Likely significant inter-related effect	Significance
	C	O	D		
				Vessel traffic with potential to interfere with fishing activity is predicted to peak during construction and decommissioning, with reduced potential for interference during the O&M phase. On this basis, inter-related effects across project phases are not anticipated.	
Additional steaming to alternative fishing grounds for vessels that would otherwise fish within Morven North	✓	✓	✓	Impacts on steaming and transit times are expected to be highest during construction and decommissioning when areas undergoing installation/decommissioning activities will be avoided. Vessels may also choose to avoid transiting through Morven North during the O&M phase, though transit is deemed possible based on wind turbine spacing. As these effects differ by project phase and do not occur concurrently in a manner that would compound effects across phases, inter-related effects on steaming and transit times are not anticipated.	
Increased snagging risk, which could result in loss or damage to fishing gear	✓	✓	✓	Impacts due to gear snagging may occur during the construction and O&M phases due to the presence of Morven North seabed infrastructure. At the end of the operational lifetime, it is expected that all structures above the seabed (with the exception of scour protection and cable protection) will be fully removed where feasible. Environmental conditions and sensitivities will also be considered since removal of structures may result in greater environmental impacts in comparison to leaving in situ. Any snagging events are not expected to overlap in a manner that would result in compounding interactions; inter-related effects across the construction, O&M and decommissioning phases are not anticipated.	
Receptor led effects					
An inter-related receptor-led effect may occur from the combination of a reduction in access to fishing grounds, subsequent displacement of fishing activity, and associated increases in fishing pressure and potential for gear conflict on adjacent grounds. While these two effects may act together, they are individually assessed – taking a precautionary approach to assessment - to be of not more than **minor adverse** significance, and it is considered that any inter-related effect will not be of any greater significance than this.					

12.16 Summary of impacts, mitigation, Likely Significant Effects and monitoring

12.16.1.1 Table 12.24 presents a summary of the potential impacts, mitigation measures and the conclusion of LSE[1] on commercial fisheries in EIA terms. The impacts assessed include:

- reduction in access to, or exclusion from established fishing grounds within Morven North;
- displacement leading to gear conflict and increased fishing pressure on adjacent grounds;
- disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity;
- increased vessel traffic associated with Morven North within fishing grounds leading to interference with fishing activity;
- additional steaming to alternative fishing grounds for vessels that would otherwise fish within Morven North;
- increased snagging risk, which could result in loss or damage to fishing gear.

12.16.1.2 Overall, it is concluded that there will be no likely significant effects arising from Morven North during the construction, O&M or decommissioning phases.

12.16.1.3 Table 12.25 presents a summary of the potential cumulative impacts, mitigation measures and the conclusion of likely significant effects on commercial fisheries in EIA terms. The cumulative effects assessed include:

- cumulative reduction in access to, or exclusion from established fishing grounds;
- cumulative displacement leading to gear conflict and increased fishing pressure on adjacent grounds;
- cumulative disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity.

12.16.1.4 Cumulative impacts of reduced access and associated displacement (the first two bullets above) arising from Morven North together with other projects and plans were assessed and predicted to result in effects of minor adverse significance (not significant in EIA terms) for fishing fleets with the exception of UK demersal otter trawl/seine and dredge fisheries where moderate adverse effects were concluded. These significant cumulative effects result from the presence of other offshore wind farm developments and management measures being implemented within MPAs. The contribution of Morven North to these significant cumulative effects is limited reflecting the low levels of fishing activity in Morven North and the ability for fishing to resume in Morven North. The FMMCP represents a designed-in mitigation measure for Morven North. In addition, strategic, regional-scale monitoring of fisheries activity is proposed as an enhancement to the FMMCP in response to the cumulative context. This monitoring will be delivered through the FMMCP (presented in Volume 4, Annex 3: Fisheries Mitigation Monitoring Communication Plan (FMMCP) (Version 1)), future updates to which may be informed by monitoring outcomes. Overall, this additional monitoring commitment reduces the residual impact of cumulative reduced access and associated displacement to minor adverse and not significant in EIA terms. No significant cumulative effects are concluded in relation to disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity.

12.16.1.5 No likely significant transboundary effects have been identified in regard to effects of Morven North.

Table 12.24: Summary of Likely Significant Effects, mitigation and monitoring

C= Construction, O= Operations and Maintenance, D= Decommissioning phases

"✓" is used to denote the phase the potential impact can occur, "X" outlines there is no impact within this project phase

Description of impact	Phase			Designed-in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
Reduction in access to, or exclusion from established fishing grounds within Morven North	✓	✓	✓	MM-4 MM-7 MM-11 MM-17 MM-18 MM-19 MM-22 MM-33 MM-37 MM-38 MM-39	UK dredge	C: Negligible O: Negligible D: Negligible	Low	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK potting	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Negligible O: Negligible D: Negligible	Low	Minor adverse	N/A	Minor adverse	

Description of impact	Phase			Designed-in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	✓	✓	✓	MM-4 MM-7 MM-11 MM-17 MM-18 MM-19 MM-22 MM-33 MM-37 MM-38 MM-39	UK dredge	C: Negligible O: Negligible D: Negligible	Low	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK potting	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Negligible O: Negligible D: Negligible	Low	Minor adverse	N/A	Minor adverse	
Disturbance of commerciall	✓	✓	✓	As described for Volume 2, Chapter	UK dredge	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	None proposed

Description of impact	Phase			Designed-in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
y important fish and shellfish resources leading to displacement or disruption of fishing activity				9: Fish and Shellfish Ecology	UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK potting	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
Increased vessel traffic associated with Morven North within fishing grounds leading to	✓	✓	✓	MM-3 MM-4 MM-7 MM-11 MM-17 MM_18	UK dredge	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	

Description of impact	Phase			Designed-in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
interference with fishing activity				MM-19 MM_39	UK demersal otter trawl (targeting Nephrops)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK potting	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
Additional steaming to alternative fishing grounds for vessels that would otherwise fish within Morven North	✓	✓	✓	MM-4 MM-7 MM-11 MM-17 MM-18 MM-19 MM-22 MM-33 MM-37	UK dredge	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	

Description of impact	Phase			Designed-in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
				MM-38 MM-39	UK demersal seine	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK potting	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
Increased snagging risk, which could result in loss or damage to fishing gear	✓	✓	✓	MM-2 MM-3 MM-4 MM-6 MM-11 MM-18 MM-19 MM-33 MM-37 MM-38 MM-39	UK dredge	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	

Description of impact	Phase			Designed-in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
					UK potting	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	

Table 12.25: Summary of likely significant cumulative environment effects, mitigation and monitoring,

C= Construction, O= Operations and Maintenance, D= Decommissioning phases

"✓" is used to denote the phase the potential impact can occur, "X" outlines there is no impact within this project phase

Description of impact	Phase			Designed in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
Scenarios 1 and 2											
Reduction in access to, or exclusion from established fishing grounds	✓	✓	✓	None beyond project-specific measures: MM-4 MM-7 MM-11 MM-17 MM-18 MM-19 MM-22 MM-33 MM-37 MM-38 MM-39	UK dredge	C: Negligible O: Negligible D: Negligible	Low	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK potting	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Negligible O: Negligible	Low	Minor adverse	N/A	Minor adverse	

Description of impact	Phase			Designed in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
						D: Negligible					
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	✓	✓	✓	None beyond project-specific measures: MM-4 MM-7 MM-11 MM-17 MM-18 MM-19 MM-22 MM-33 MM-37 MM-38 MM-39	UK dredge	C: Negligible O: Negligible D: Negligible	Low	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK potting	C: Negligible O: Negligible D: Negligible	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Negligible O: Negligible D: Negligible	Low	Minor adverse	N/A	Minor adverse	
Disturbance of	✓	✓	✓	As described for Volume 2,	UK dredge	C: Low	Low	Minor adverse	N/A	Minor adverse	None proposed

Description of impact	Phase			Designed in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
commercially important fish and shellfish resources leading to displacement or disruption of fishing activity				Chapter 9: Fish and Shellfish Ecology		O: Low D: Low					
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK potting	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Low	Minor adverse	N/A	Minor adverse	
Scenario 4											
Reduction in access to, or exclusion from	✓	✓	✓	None beyond project-	UK dredge	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5,	Minor adverse	Monitoring proposed, as set out in

Description of impact	Phase			Designed in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
established fishing grounds				specific measures: MM-4 MM-7 MM-11 MM-17 MM-18 MM-19 MM-22 MM-33 MM-37 MM-38 MM-39					delivered via the FMMCP, which may inform future updates to the FMMCP.		Section 12.13.5
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5, delivered via the FMMCP, which may inform future updates to the FMMCP.	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5, delivered via the FMMCP, which may inform future updates to the FMMCP.	Minor adverse	
					UK demersal seine	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5, delivered via	Minor adverse	

Description of impact	Phase			Designed in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
									the FMMCP, which may inform future updates to the FMMCP.		
					UK potting	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	✓	✓	✓	None beyond project-specific measures: MM-4 MM-7 MM-11 MM-17 MM-18 MM-19 MM-22 MM-33 MM-37 MM-38 MM-39	UK dredge	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5, delivered via the FMMCP, which may inform future updates to the FMMCP.	Minor adverse	Monitoring proposed, as set out in Section 12.13.5
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5, delivered via the FMMCP, which may inform future	Minor adverse	

Description of impact	Phase			Designed in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
									updates to the FMMCP.		
					UK demersal otter trawl (targeting Nephrops)	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5, delivered via the FMMCP, which may inform future updates to the FMMCP.	Minor adverse	
					UK demersal seine	C: Medium O: Medium D: Medium	Medium	Moderate adverse	Monitoring, as set out in Section 12.13.5, delivered via the FMMCP, which may inform future updates to the FMMCP.	Minor adverse	
					UK potting	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	

Description of impact	Phase			Designed in measures	Receptor	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional mitigation measures	Significance of residual effect	Proposed monitoring
	C	O	D								
Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity	✓	✓	✓	As described for Volume 2, Chapter 9: Fish and Shellfish Ecology	UK dredge	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	None proposed
					UK demersal otter trawl (targeting haddock and demersal finfish)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal otter trawl (targeting Nephrops)	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK demersal seine	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK potting	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	
					UK pelagic trawl	C: Low O: Low D: Low	Medium	Minor adverse	N/A	Minor adverse	

12.17 References

ABPmer (2022). 'Spatial Squeeze in Fisheries'. Available online at: https://www.nffo.org.uk/the-frightening-outlook-of-fisheries-displacement-spatial-squeeze-report-published (Accessed October 2025).

Anatec Ltd, (2024). Morven North Offshore Wind Array Project ('Morven North') and Morven South Offshore Wind Array Project ('Morven South') Vessel Traffic Survey Summer 2024.

Anatec Ltd, (2025). Morven North Offshore Wind Array Project ('Morven North') and Morven South Offshore Wind Array Project ('Morven South') Vessel Traffic Survey Winter 2024.

Barents Watch (2025). Norwegian fisheries data. Available online at: https://www.barentswatch.no/en/services/ (Accessed October 2025).

Blyth-Skyrme, R.E. (2010a). Options and opportunities for marine fisheries mitigation associated with wind farms. Final report for Collaborative Offshore Wind Research into the Environment contract FISHMITIG09. COWRIE (Collaborative Offshore Wind Research Into the Environment) Ltd, London. 125 pp. Available online at: https://tethys.pnnl.gov/publications/options-opportunities-marine-fisheries-mitigation-associated-windfarms (Accessed October 2025).

Blyth-Skyrme, R.E. (2010b). Options and opportunities for marine fisheries mitigation associated with wind farms: Summary report for COWRIE contract FISHMITIG09. COWRIE Ltd, c/o Nature Bureau, Newbury, UK. 8pp. Available online at: https://tethys.pnnl.gov/publications/options-opportunities-marine-fisheries-mitigation-associated-windfarms (Accessed October 2025).

Cefas (Centre for Environment, Fisheries and Aquaculture Science) (2004). Guidance on Licensing and EIA requirements for offshore wind.

Cefas (2025). FiSMaDiM Public Web App. Available online at: https://data.cefas.co.uk/view/22030 (Accessed October 2025).

Drew (2009). International Cable Protection Committee: Fishing and Submarine Cables – Working Together.

Dupont, Clément, Frédérick Herpers, and Christophe Le Visage (2020). Recommendations for positive interactions between offshore wind farms and fisheries. Short Background Study. Executive Agency for Small and Medium sized Enterprises.

European Environment Agency (2024). Changes in fish distribution in Europe's seas. Available online at: https://www.eea.europa.eu/en/analysis/indicators/changes-in-fish-distribution-in (Accessed October 2025).

European Maritime Safety Agency (EMSA) (2024). Fishing vessel route density data for annual period of 2023. Available online at: https://www.emsa.europa.eu/combined-maritime-data-menu/data-sources.html

European Subsea Cable Association (ESCA) (2018). European Subsea Cable Association Statement on vessels operating in the vicinity of subsea cables. Available online at: https://www.escaeu.org/documents/ (Accessed October 2025).

European Union Data Collection Framework (EU DCF) database. 2023. Data by quarter-rectangle: Tables and maps of effort and landings by ICES statistical rectangles for 2012 to 2016.

Fisheries Liaison with Offshore Wind and Wet Renewables group (FLOWW) (2014). FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison. January 2014. Available online at: https://repository.oceanbestpractices.org/bitstream/handle/11329/1454/FLOWW-Best-Practice-Guidance-for-Offshore-Renewables-Developments-Jan-2014.pdf?sequence=1 (Accessed October 2025).

Fisheries Liaison with Offshore Wind and Wet Renewables group (FLOWW) (2015). FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds. Available online at: https://www.thecrownestate.co.uk/media/1776/floww-best-practice-guidance-disruption-settlements-and-community-funds.pdf (Accessed October 2025).

Fisheries Liaison with Offshore Wind and Wet Renewables group (FLOWW) (2025). Best Practice Guidance for Fisheries Liaison with Offshore Renewables Developments. Available online at: https://www.datocms-assets.com/136653/1764233603-floww-best-practice-guidance-nov25-update.pdf (Accessed December 2025).

Garrett, A., Pinnegar, J. (2022) Climate change adaptation in the UK (wild capture) seafood industry – watching brief 2020-21. Available at: https://www.seafish.org/document/?id=0f08da6f-54be-4d38-a788-fee919778f59 (Accessed October 2025).

HM Government (2011). UK Marine Policy Statement. Available online at: https://www.gov.uk/government/publications/uk-marine-policy-statement (Accessed October 2025).

ICES (2022). Spatial data layers of fishing intensity/pressure for EU vessels operating within ICES defined Celtic Seas Ecoregion and Greater North Sea Ecoregion.

International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA). (2021). Guideline G1162. Available online at: https://www.iala-aism.org/product-category/publications/guidelines (Accessed October 2025).

International Cable Protection Committee, (2009). Fishing and Submarine Cables - Working Together. Available online at: https://iscpc.org/documents/?id=142 (Accessed October 2025).

International Council for the Exploration of the Sea (ICES). (2022). Spatial data layers of fishing intensity/pressure for EU vessels operating within ICES defined Celtic Seas Ecoregion and Greater North Sea Ecoregion.

International Maritime Organization (IMO) (1974). International Regulations for Preventing Collisions at Sea (COLREGs). Available online at: https://www.imo.org/en/OurWork/Safety/Pages/Preventing-Collisions.aspx (Accessed October 2025).

Kafas, A., Jones, G., Watret, R., Davies, I., Scott, B., 2013.2009 - 2013 amalgamated VMS intensity layers, GIS Data. Marine Scotland, Scottish Government. doi: 10.7489/1706-1

Marine Directorate – Licensing Operations Team (MD-LOT), (2023). Morven Offshore Wind Array Project Environmental Impact Assessment – Scoping Opinion. [online] Available at: https://marine.gov.scot/sites/default/files/morven_-_scop-0028_-_scoping_opinion_-_november_2023.pdf (Accessed October 2025).

Marine Directorate (2022). Fishing - Scottish Under 12m vessels - Other gears - Annual average value (2017-2021) (£). Available online at: https://marine.gov.scot/maps/2024 (Accessed October 2025).

Marine Directorate (2024). Surveillance sightings data for UK and non-UK fishing vessels for the period 2017-2022.

Marine Management Organisation (MMO). (2011 to 2025). UK sea fisheries annual statistics reports, covering 2010 to 2024.

Marine Management Organisation (MMO). (2021). Fishing data collection, coverage, processing and revisions. Available online at: https://www.gov.uk/guidance/fishing-activity-and-landings-data-collection-and-processing (Accessed October 2025).

Marine Management Organisation (MMO). (2022a). Vessel Monitoring System data for non-UK registered vessels for 2016 to 2020 indicating hours fishing for mobile and static vessels to a resolution of 200th of an ICES rectangle.

Marine Management Organisation (MMO). (2022b). UK Sea Fisheries Statistics 2021. Available online at: https://assets.publishing.service.gov.uk/media/63343a0d8fa8f50689de7cdc/UK_Sea_Fisheries_Statistics_2021.pdf (Accessed June 2025).

Marine Scotland MAPS National Marine Plan Interactive (NMPi). 2022. https://marinescotland.atkinsgeospatial.com/nmpi/ (Accessed October 2025).

Maritime and Coastguard Agency (MCA). (2021). Guideline MGN661. Available online at: https://www.gov.uk/government/publications/mgn-661-mf-navigation-safe-and-responsible-anchoring-and-fishing-practices/mgn-661-mf-navigation-safe-and-responsible-anchoring-and-fishing-practices (Accessed October 2025).

Maritime and Coastguard Agency (2024). MCA. Marine Guidance Note (MGN) 654 (Annex 5): Offshore Renewable Energy Installations: Requirements, guidance and operational considerations for SAR and Emergency Response Available at: https://assets.publishing.service.gov.uk/media/65a695fc640602000d3cb75d/OREI_SAR_Requirements_v4_.pdf (Accessed: May 2025).

Morven Offshore Wind Farm Array Project Scoping Report (2023). Available at: https://marine.gov.scot/sites/default/files/230728_-_230717_-_morven_-_scop-0028_-_scoping_-_scoping_submission_scoping_report_-_developer_to_md-lot_redacted.pdf (Accessed October 2025).

Núñez-Riboni, I., Taylor, M. H., Kempf, A., Püts, M., & Mathis, M. (2019). Spatially resolved past and projected changes of the suitable thermal habitat of North Sea cod (Gadus morhua) under climate change. ICES Journal of Marine Science, 76, 2389–2403.

Offshore Energies UK (2023). Guidelines for liaison with the fishing industry on the UKCS – Issue 8. Available online at: https://oeuk.org.uk/product/guidelines-for-liaison-with-the-fishing-industry-on-the-ucks-issue-8/ (Accessed October 2025).

OSPAR, 2023. Fish Thematic Assessment. In: OSPAR, 2023: Quality Status Report 2023. OSPAR Commission, London. Available at: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/fish/ (Accessed October 2025).

Sailley et.al. (2025) Multiple Models of European Marine Fish Stocks: Regional Winners and Losers in a Future Climate. Global Change Biology Volume 31, Issue4, April 2025. Available online at: https://onlinelibrary.wiley.com/doi/10.1111/gcb.70149 (Accessed October 2025).

Scottish Government (2015). Scotland's National Marine Plan. Available online at: https://www.gov.scot/publications/scotlands-national-marine-plan/ (Accessed October 2025).

Scottish Government (2020). Sectoral Marine Plan for Offshore Wind Energy. Available online at: https://www.gov.scot/publications/sectoral-marine-plan-offshore-wind-energy/ (Accessed October 2025).

Scottish Government (2022a). Good Practice Guidance for assessing fisheries displacement by other licensed marine activities. Available online at: https://www.gov.scot/publications/good-practice-guidance-assessing-fisheries-displacement-licensed-marine-activities/pages/8/ (Accessed October 2025).

Scottish Government (2022b). Norway Lobster (Nephrops norvegicus) - Functional Units and suitable habitat in Scottish and adjacent waters. https://marine.gov.scot/?q=information/nephrops-functional-units-derived-sediment-and-vms-data (Accessed October 2025).

Scottish Government (2022c). Fish and fisheries research to inform ScotMER evidence gaps and future strategic research in the UK: review. https://www.gov.scot/publications/review-fish-fisheries-research-inform-scotmer-evidence-gaps-future-strategic-research-uk/ (Accessed October 2025).

Scottish Government (2023). Scottish Sea Fisheries Statistics 2022. Available online at: https://www.gov.scot/publications/scottish-sea-fisheries-statistics-2022/pages/3/ (Accessed October 2025).

Scottish Government (2025a). Guidance on preparing Mitigation and Monitoring Plans. Available online at: https://www.gov.scot/publications/marine-licensing-and-consenting-offshore-renewable-energy-projects/pages/mitigation-and-monitoring-plans/ (Accessed October 2025).

Scottish Government (2025b). Offshore windfarms - monitoring impacts on the commercial fishing industry: good practice guidance. Available online at: https://www.gov.scot/publications/monitoring-offshore-windfarm-impacts-commercial-fishing-industry-good-practice-guidance/ (Accessed August 2025).

Scottish Government ,(2025c). *Social and Economic Impact Assessment: Draft Updated Sectoral Marine Plan for Offshore Wind Energy* (SEIA). https://www.gov.scot/binaries/content/documents/govscot/publications/impact-assessment/2025/05/draft-updated-sectoral-marine-plan-offshore-wind-energy-social-economic-impact-assessment/documents/draft-updated-sectoral-marine-plan-offshore-wind-energy-social-economic-impact-assessment/draft-updated-sectoral-marine-plan-offshore-wind-energy-social-economic-impact-assessment/govscot%3Adocument/draft-updated-sectoral-marine-plan-offshore-wind-energy-social-economic-impact-assessment.pdf (Accessed October 2025).

Scottish Government, (2025d). *Draft Updated Sectoral Marine Plan for Offshore Wind Energy (2025) [Draft SMP document].* https://www.gov.scot/publications/draft-updated-sectoral-marine-plan-offshore-wind-energy-2025/documents/ (Accessed October 2025).

Seafish Kingfisher Information Service. UK Fishing Restrictions. Accessed at https://kingfisherrestrictions.org/ (Accessed October 2025).

Shelmerdine, R.L. and Mouat, B. (2021). Mapping fisheries and habitats in the North and East Coast RIFG area. NAFC Marine Centre UHI report. Available online at: https://pure.uhi.ac.uk/en/publications/mapping-fisheries-and-habitats-in-the-north-and-east-coast-rifg-a (Accessed October 2025).

Szostek, Watson, Trifonova, Beaumont, Scott. (2025). Spatial conflict in offshore wind farms: Challenges and solutions for the commercial fishing industry. Energy Policy Volume 200, May 2025. Available online at: https://www.sciencedirect.com/science/article/pii/S030142152500062X#abs0015 (Accessed October 2025).

The North and East Coast Regional Inshore Fisheries Group. 2019. Fisheries Management Plan 2019.

The Kingfisher Information Service – Offshore Renewable & Cable Awareness (KIS-ORCA). (2019). Available online at: https://kis-orca.org/ (Accessed October 2025).

UK Fisheries Economic Network and Seafish (2012). Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments. Available online at: https://www.seafish.org/document/?id=AA0CB236-1E2A-4D2A-9F86-49CEB2B6DD5E (Accessed October 2025).

UKHO (2004) 'ADMIRALTY Mariner's Handbook (NP100)'. Available online at: https://www.admiralty.co.uk/publications/publications-and-reference-guides/admiralty-mariners-handbook (Accessed October 2025).