Eastern Green Link

Marine Environmental Appraisal

Chapter 12 - Commercial Fisheries

Prepared for: Scottish Hydro Electric Transmission plc (SHE-T)

Scottish & Southern Electricity Networks
TRANSMISSION

collaborative environmental advisers

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This document has been checked in line with internal quality control requirements.

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Abbreviations/Glossary

AECOM	Architecture, Engineering, Construction, Operations, and Management
AIS	Automatic Identification Systems
CEA	Cumulative effects assessment
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CEMP	Construction Environmental Management Plan
Defra	Department for Environment, Food and Rural Affairs
DECC	Department of energy and Climate Change
EIA	Environmental Impact Assessment
EGL2	Eastern Green Link 2
EGL 3	Eastern Green Link 3
FLO	Fisheries Liaison Officer
FLOWW	Fishing Liaison with Offshore Wind and Wet Renewables Group)
FMMP	Fisheries Management and Mitigation Plan
HDD	Horizontal Directional Drilling
HVDC	High Voltage Direct Current
ICES	International Council for the Exploration of the Sea
JNCC	Joint Nature Conservation Committee
km	Kilometre
KP	Kilometre Points
m	Metre
MARPOL	Prevention of Pollution at Sea
MCAA	Marine and Coastal Access Act
MD-LOT	Marine Directorate Licensing Operations Team
MEAp	Marine Environmental Appraisal
MLA	Marine Licence Application
MHWS	Mean high water springs
MMO	Marine Management Organisation
MMMP	Marine Mammal Mitigation Plan
MPCP	Marine Pollution Contingency Plan
NEIFCA	North East Inshore Fisheries Conservation Authority
NM	Nautical Miles
NMPI	National Marine Plan Initiative
NtM	Notice to Mariners
OSP	Offshore Substation Platforms
PLONOR	Pose little or no risk
PMF	Priority Marine Feature
RCZ	Recommended clearance zone
RIFG	Regional Inshore Fisheries Groups
RLB	Red line boundary
SFF	Scottish Fishermen's Federation
SOLAS	Safety of Life at Sea

STECF	Scientific, Technical and Economic Committee for Fisheries
VMS	Vessel Monitoring System
ZoI	Zone of Influence

12. Commercial Fisheries

12.1. Introduction

This chapter of the Marine Environmental Appraisal (MEAp) describes the potential impacts arising from the construction, operation and maintenance and decommissioning of the Proposed Development on commercial fisheries. For the purposes of seeking the necessary consents, the Eastern Green Link (EGL) 3 Project has been split into different 'Schemes' i.e. English Onshore Scheme, English Offshore Scheme, Scottish Onshore Scheme and the Scottish Offshore Scheme (with the latter herein after referred to as 'the Proposed Development'). Collectively all components of EGL 3 are referred to as "the Project".

A description of the works expected to be undertaken during construction, operation and maintenance and decommissioning of the Proposed Development is provided in **Chapter 3: Project Description**. The Proposed Development, defined spatially by the Red Line Boundary (RLB), includes approximately 145 kilometres (km) of subsea High Voltage Direct Current (HVDC) cables. The RLB extends from mean high water springs (MHWS) at the proposed landfall at Sandford Bay, Scotland, to the boundary with adjacent English waters and is nominally 700 metres (m) wide. This width is considered adequate to micro-route around a sensitive seabed feature or habitat, or to allow for the footprint of installation vessels and is the maximum extent of seabed in which construction and operation of the Proposed Development may take place. The RLB is shown in **Figure 12-1 (Drawing reference C01494-EGL3-MEA-FISH-012-C)**.

As set out in **Chapter 1: Introduction**, cable installation and some associated activities beyond 12 nautical miles (NM) are exempt from the requirement to obtain a Marine Licence under the Marine and Coastal Access Act 2009 (MCAA) as well as repair of the installed cable in inshore and offshore waters. This chapter presents an assessment of the effects of the Proposed Development from MHWS at the Sandford Bay landfall to the border with English adjacent waters. This is to provide a holistic view of the Proposed Development and any associated impacts. However, consent is not being sought for the exempt cable (either construction or repair) and only cable protection would be included in the Marine Licence beyond 12 NM.

Kilometre Points (KPs) are used throughout this chapter to provide context as to where within the Study Area a feature lies (see **Section 12.1.1** for definition of Study Area). KP 436 is defined at the border with adjacent English waters, while KP 580 is defined at the proposed landfall in Sandford Bay, Peterhead.

This chapter should be read in conjunction with:

- **Chapter 3: Project Description;**
- **Chapter 8: Fish and Shellfish** which identifies the extent of potential impacts on commercially and ecologically important fish and shellfish species in the Study Area;
- **Chapter 11: Shipping and Navigation** which identified the extent of potential impacts on shipping and navigation activities in the Study Area.

This chapter is supported by the following appendices:

- **Appendix 12A: Fisheries Management and Mitigation Plan**
- **Appendix 3B: Outline Construction Environmental Management Plan (CEMP)**

12.1.1. Study Area

The Proposed Development will route from MHWS at Sandford Bay, Peterhead, to the border between Scottish and English adjacent waters. The Study Area for commercial fisheries, relevant to this Marine Environmental Assessment (MEA), includes the RLB to MHWS, plus an additional 15 km buffer each side, representative of one tidal excursion (hereafter referred to in this chapter as the 'Study Area'). This Study Area incorporates the area within which there is potential for indirect impacts associated with the deposition of suspended sediments and is consistent with the conclusions reached in **Chapter 6: Marine Physical Processes.** The Study Area acts as a precautionary maximum zone of influence (ZoI).

12.2. Data Sources

The commercial fisheries baseline characterisation has been determined based on a review of publicly available information, project-specific survey data and consultation with relevant organisations. This provides a robust, up-to-date characterisation of commercial fisheries fleet dynamics within the Study Area in accordance with relevant guidance for this topic.

12.2.1. Site-Specific Survey Data

Extensive information is available to characterise the commercial fisheries of the North Sea. Following a detailed review to inform the scope of the data and assessment, as presented, no site-specific surveys were undertaken for this topic.

12.2.2. Publicly Available Data

A desk-based review of publicly available data sources (literature and GIS mapping files) has been used to describe the baseline environment. **Table 12-1** lists the key data sources which have been used to characterise the commercial fisheries baseline.

Table 12-1: Key data sources used to inform the assessment

Data Source	Description	Reference
Department of Energy & Climate Change (DECC)	Offshore Energy Strategic Environmental Assessment 4	DECC, (2022)
Marine Management Organisation (MMO)	UK Sea Fisheries annual statistics report 2023 and accompanying datasets which includes species catch list for the relevant ICES rectangles. Landings statistics for the period 2019- 2023 Aerial surveillance data for the period 2019- 2023 (the 2023 data have been used for assessments)	MMO, (2024)
MMO	Fishing vessel information, including numbers of vessels with/without various licences.	MMO, (2025)
Vessel Monitoring System (VMS) data	VMS data for the period 2019 - 2023	Defra, (2024)
European Marine Observation and Data Network (EMODnet)	Interactive reference website which shows fish abundance and distribution.	EMODnet (2023)
Marine Scotland National Marine Plan Interactive (NMPI)	Provides information on Scottish designated sites and priority marine features (PMFs).	Marine Scotland (2025)
Scottish Fishermen's Federation (SFF)	Organisation representing Scottish fishermen	Scottish Fishermen's Federation, (2025)
Regional Inshore Fisheries Groups (RIFGs)	Scottish commercial fishers' forum to explore local fisheries management initiatives.	Regional Inshore Fisheries Groups, (2025)
Eastern Green Link 2 Marine Scheme	Environmental Appraisal report for the EGL 2 project.	AECOM, (2022)
Publication	Mapping fisheries and habitats in the North and East Coast RIFG area	Shelmerdine & Mouat, (2021)
Report	Scottish White Fish Producers Association Gear Locations	Scottish White Fish Producers Association Ltd, (2022)
Scientific, Technical and Economic Committee for Fisheries (STECF) interactive data tool	Fisheries-dependent information for EU fisheries	STECF, (2025)

12.3. Consultation

12.3.1. Non-Statutory Scoping

In January 2024, a MEA Non-Statutory Scoping Report (SSE & NGET, 2023) was submitted to the Scottish Government Marine Directorate - Licensing Operations Team (MD-LOT) as part of a pre-application consultation exercise for the Proposed Development. Responses from consultees were received on 15 July 2024.

Table 12-2 summarises the comments received relevant to the commercial fisheries assessment, and the regard given to these in preparing this chapter.

Table 12-2: Summary of Scoping Opinion responses for commercial fisheries

Consultees	Comment	How addressed in the MEA
SFF	The SFF notes from Table 12-13: Scoping assessment of impacts on commercial fisheries (228) that loss of grounds for bottom drift netting has been scoped in during operation phase but scoped out during construction and decommissioning. SFF is of the view that as the project construction will take place from 2027 and operationalised in 2030/2031 and the cable will be laid in and protected in planned phases (not at once), there will be a period/gap between the end of construction works and commencement of operation that the bottom drift netting may loss fishing ground as they do during operation phase. The same scenario is applicable during decommissioning stage. Therefore, SFF proposes the loss of grounds for bottom drift netting be scoped in during construction and decommissioning stages too.	Loss of grounds for bottom drift netting has been assessed in **Section 12.8.3**.
SFF	SFF notes from Table 12-1: Key publicly available data sources for commercial fisheries, that the landings statistics, aerial surveillance data and VMS has been used for the period 2018- 2022 to set fisheries baseline for the cable route. SFF would propose to use fishing data prior to the Brexit to set a realistic fisheries baseline for fisheries as some types of fisheries (e.g. small haddock) has been ceased post-Brexit within the cable route areas. In addition, the data should be sense checked with fishing federations and associations to ensure they represent the accurate fishing activities in the areas.	As the UK left the European Union on 31 January 2020, such statistics have been covered within the MEA Non-Statutory Scoping Report, which was used to inform the scoped in/out impacts. Within this MEAp, 2023 data have also been included for an up-to-date representation of the fishing industry. Brexit is now mentioned within the text.

12.3.2. Other Consultations

No further non-statutory consultation, outside of scoping, has been undertaken for commercial fisheries.

12.4. Baseline Characterisation

12.4.1. Overview

The baseline characterisation describes the key commercial fisheries along the route of the Proposed Development, the local fishing fleet, any fishing restrictions, and provides landings data to contextualise the value of the fishing industry in the region for the purposes of reviewing the proposed scope of the assessment and data collection approach that have been adopted in the MEAp.

The section has been informed by the latest publicly available catch statistics available from the MMO (MMO 2024), automatic identification systems (AIS) and VMS data and consultation undertaken by The Applicant, and the Fisheries Liaison Officer (FLO) for the Proposed Development with local fishing organisations and vessels. It should be noted that AIS, VMS and landings data derived from MMO catch statistics only provide a general overview of fishing effort, and do not accurately reflect the effort in the region i.e., not all vessels will carry AIS, and smaller vessels do not directly report landings data to the MMO. However, the Applicant considers that the combination of data and consultation undertaken to inform the MEA provides an appropriate characterisation of the receiving environment in which the Proposed Development would be constructed, which is adequate for the purposes of the MEA.

In 2023, 5,418 fishing vessels were registered in the UK, 79% of which were represented by vessels < 10 m length (MMO, 2024a). In 2023 and registered to Scotland, the > 40 m vessels accounted for 1 % of vessel numbers, though they land almost half the landings value (Scottish Government, 2024a). The Scottish fleet is otherwise dominated by vessels ≤ 10 m, with numbers of these vessels having increased by 6 % since 2014 (Scottish Government, 2024a). Scottish vessels landed 501,000 t of wild-caught fish and shellfish in 2023, worth £652 m at the first point of sale (Scottish Government, 2024a). Further, Scottish vessels landed £163 m of fish and shellfish abroad, worth £163 m at the first point of sale, which account for up to 38 % of total landings volume and 25 % of total value (Scottish Government, 2024a). The most valuable species caught by Scottish vessels was mackerel (*Scomber scombrus*), worth £248 m and contributing to 38 % of total landings in 2023, whereas haddock (*Melanogrammus aeglefinus*) was the most valuable demersal species (contributing to 6 % of total landings in 2023), and for shellfish, nephrops (*Nephrops norvegicus*) was worth £16 m to the creel fleet, and £64 m to the trawl fleet (Scottish Government, 2024a).

The Proposed Development crosses several different commercial fishing areas. The North Sea contains important fishing grounds not only by the local Scottish fleet, but also by international vessels from England, Belgium, the Netherlands, Denmark, France, Ireland,

Spain, and Germany. To enable accurate monitoring the sea is divided into rectangles by the International Council for the Exploration of the Sea (ICES). Each ICES rectangle is approximately 30 NM squared and is 30 min latitude and 1° longitude in size (ICES, 2022).

The Proposed Development lies within three ICES rectangles within Scottish waters (42E8, 42E9, 43E8) and one (41E9) in both English and Scottish territorial waters. These rectangles are presented in **Figure 12-1 (Drawing reference C01494-EGL3-MEA-FISH-012-C)**. The Study Area also intercepts rectangles 44E8 and 43E9; as such, they have been included in the assessment.

600000

700000

6300000

44E8

KP 580

KP 560

KP 540

43E8

43E9

KP 520

KP 500

KP 480

42E8

42E9

KP 460

KP 440

KP 436

41E9

600000

700000

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Commercial Fisheries Study Area

C01494-EGL3-MEA-FISH-012-C

Legend

- Red Line Boundary
- Study Area (15km Buffer)
- KPs (Labelled every 20km)
- KPs
- Sandford Bay Landfall
- ICES Rectangle within Study Area
- ICES Rectangle
- Scottish Adjacent Waters
- 12NM Limit
- EEZ

0 10 20 30 KM

0 5 10 15 NM

N

Date	27/06/2025
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Unit	meters
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Created	JC
Reviewed	AN/CB
Authorised	JDM

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Table 12-3 shows the key gear types used in the Study Area and the KP points where these fisheries interact with the RLB. Note that whilst beam trawling occurs within the Study Area, their activities do not interact with the RLB.

Table 12-3: Key fisheries that spatially overlap with the Study Area

Fishery	Gear Type	KP points - spatial overlap between the fishery and the Proposed Development
1	Static Gears	KP 453 – KP 457, KP 512 – KP 514, KP 520 – KP 524, KP 532 – KP 535, KP 548 – KP 575
2	Dredging	KP 495 – KP 572
3	Pelagic Trawl	KP 472 – KP 477, KP 482 – KP 489, KP 495 – KP 498, KP 501 – KP 508, KP 512 – KP 520, KP 528, KP 544 – KP 550, KP 555 – KP 558, KP 562 – KP 572
4	Bottom Otter Trawl	KP 434, KP 440, KP 446 – KP 487, KP 501 – KP 506, KP 514 – KP 518, KP 528 – KP 532, KP 535 – KP 548, KP 550 – KP 554, KP 562, KP 566 – KP 572
5	Beam Trawling	-

Figure 12-2 and **Figure 12-3** show the top five ports (Fraserburgh, Peterhead, Boddam, Aberdeen and Gardenstown) fishers operating in the Study Area land their catch to, with catch values for vessels under 10 m and over 10 m in length respectively. For clarity, for commercial fisheries, the Study Area has been defined by those ports which catch is landed to, from ICES rectangles 42E8, 42E9, 43E8, 43E9, 44E8, and 43E9. For vessels under 10 m length, landings across all three species categories were highest into Fraserburgh, followed by Peterhead, Boddam, Aberdeen, then Gardenstown **(Figure 12-2**). For vessels over 10 m length, demersal landings were highest into Peterhead, though shellfish landings were highest into Fraserburgh. Lerwick, Egersund, and Alesund received pelagic landings only (**Figure 12-3**).

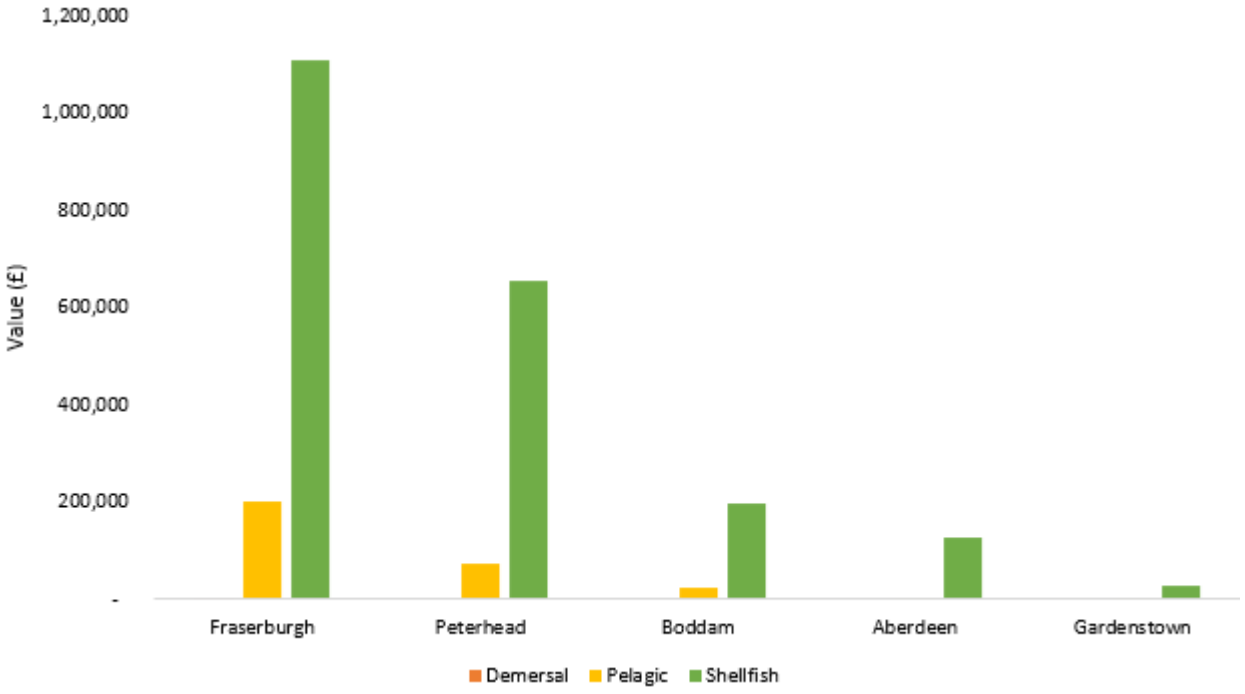

Figure 12-2: Top 5 Ports for fish landings (ordered by value) from the Study Area for under 10 m vessel catches (MMO, 2024)

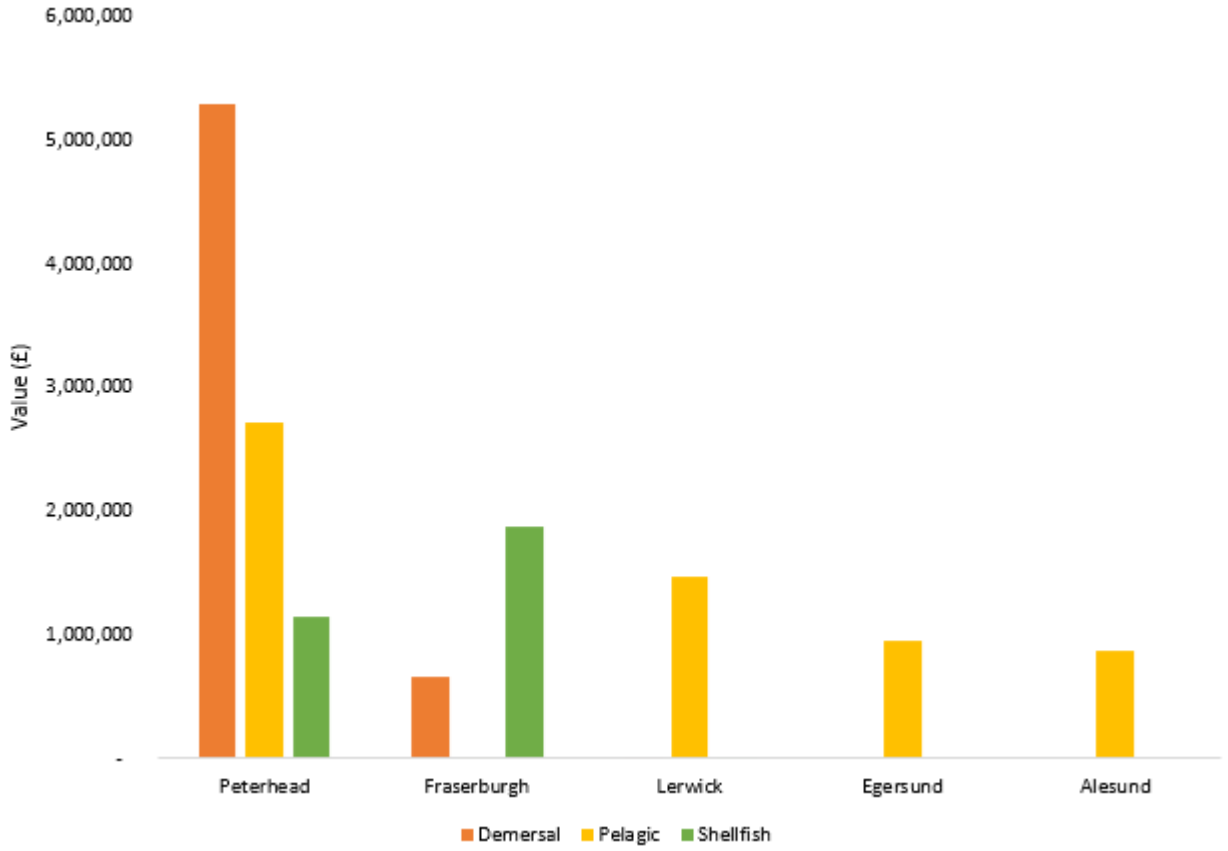

Figure 12-3: Top 5 Ports for fish landings (ordered by value) from the Study Area for over 10 m vessel catches (MMO, 2024)

Based on the MMO's UK Fishing Vessel Registry list from February 2025, it is estimated that there are a total of 375 registered and licensed fishing vessels operating in the vicinity of the Study Area. Of these vessels, 245 were ≤10 m in length and 130 are over 10 m. Demersal, pelagic, and shellfish were landed within the Study Area, with demersal landings worth £4,103,538.89, pelagic landings worth £7,826,417.49, and shellfish landings worth £5,449,584.40; these are similar to those in 2023.

12.4.1.1. Shellfish

Pots/creels target species such as edible/brown crabs and velvet swimmer crabs *(Cancer pagurus* and *Necora puber,* respectively*)* and European lobster (*Homarus gammarus).*

Scallop (*Pecten maximus*) is caught using dredge gear; the scallop fishery is cyclical in nature with the production grounds rotating around the UK on a seven-to-eight-year cycle. Scallops are one of the most targeted shellfish by Scottish fishers and it is the top species caught by weight and value in ICES rectangle 42E8 within the Study Area. The main landing ports for scallops caught in the Study Area are Fraserburgh and Peterhead.

Other shellfish species such as nephrops (also known commonly as Norway Lobster, langoustine, Dublin prawn, prawn, and scampi), squid (multiple species*)*, and octopus (*Eledone cirrhosa*) are caught using demersal trawl gear. These latter species are landed in small abundances, indicating they may be caught as bycatch, rather than as a target species. Nephrops, on the other hand, are a valuable fishery, targeted by otter trawlers over muddy grounds.

Lobster, crab, and nephrops were caught consistently throughout the year in 2023. Scallops were also caught during each month, though landings were smaller during winter. This may however be indicative of inclement weather which limited fishing opportunities. Further, except for a small reduction in value from creel/trap landings in 2020 (which may be attributed to Britain's exit from the EU), landings values have been consistent since 2018.

12.4.1.2. Demersal fish

A variety of demersal (bottom contact) trawl gear methods are used in the North Sea to target demersal species such as whiting (*Merlangius merlangus*), haddock (*Melanogrammus aeglefinus*), cod (*Gadus morhua*), monkfish/anglerfish (*Lophius piscatorius*), and plaice (*Pleuronectes platessa*). They are fished not only by the UK fleet but also by international vessels from Belgium, the Netherlands, Denmark, France, Ireland, Spain and Germany. **Figure 12-4 (Drawing reference C01494-EGL3-MEA-FISH-001-C)** shows vessel nationality which fished in and around the Study Area during 2023; whilst most vessels operating within the Study Area were from Great Britain, sightings of Netherlands vessels and Swedish vessels were also noted. Outside the Study Area, in ICES rectangle 43E9,

a cluster of activity was noted from Danish, Great Britain, Norwegian, and German vessels. Further, landings from gears targeting demersal fish have fluctuated in recent years; whilst some fluctuation may be attributed to Britain's exit from the EU, landing statistics prior to this event also saw fluctuations. These are summarised within **Table 12-4 and Table 12-5.**

Demersal fish capture in the Study Area is primarily via demersal trawls (which contributed to £5,449,858 of landings in 2023), followed by demersal seine trawls (£1,608,867 of landings).

12.4.1.3. Pelagic fish

In 2023, only three species of pelagic fish were landed to the Study Area: herring (*Clupea harengus*), mackerel (*Scomber scombrus*), and horse mackerel (*Trachurus trachurus*). Mackerel were caught consistently from April until October, whereas herring and horse mackerel were caught during the later summer months.

Pelagic fish captured in the Study Area is primarily via pelagic trawls (£7,696,438 of landings), followed by handlines (£312,517 of landings). Demersal seine nets, pelagic seine nets, and pots and traps also caught pelagic species, though in small values, which could imply that in these cases, pelagic species were caught as bycatch.

550000 600000 650000 700000

6400000 6350000 6300000 6250000

44E8 43E8 43E9 42E8 42E9 41E9

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Surveillance Sightings By Vessel Nationality During 2023

C01494-EGL3-MEA-FISH-001-D

Legend

- Red Line Boundary
- Study Area (15km Buffer)
- Sandford Bay Landfall
- ICES Rectangle within study area
- ICES Rectangle

Scottish Fishing Vessel Sightings By Nationality

- Germany
- Denmark
- Great Britain
- Latvia
- Netherlands
- Norway
- Sweden
- Scottish Adjacent Waters
- 12NM Limit

0 10 20 30 KM

0 5 10 15 NM

N

Date	15/05/2025
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Unit	meters
Scale at A3	1:600,000
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Reviewed	AN/CB
Authorised	JDM

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12.4.1.4. Local fishing fleet

Table 12-4 shows that live weight landed from the Study Area has been relatively consistent from 2019-2023 for vessels 10 m and under, though for vessels >10 m, weight landed was far greatest in 2023. Notably, the year 2019 saw a low value of landings from pelagic trawls; one possible explanation for this is the uplift in mackerel quota by 41% between 2019 and 2020 (seafoodcource.com, 2021)**. Table 12-5** presents the annual catch value by gear type within the Study Area. This table shows that over the last five years, pelagic trawls have generated the highest catch value, followed by demersal trawl, creels and traps, demersal seine, dredge, and gears using hooks. Landings from beam trawl, drift/fixed nets, and pelagic seine throughout the five years were trivial (less than £4,000).

Table 12-4: Live weight (t) and value (£) within the Study Area from 2019-2023

Year	Live Weight (Tonnes) 10m or under	Live Weight (Tonnes) over 10m	Value - Under 10m	Value - Over 10m	Value per tonne (£/tonne)
2019	820	2,868	£2,487,198	£5,656,337	£2,208
2020	769	6,969	£1,925,141	£7,392,392	£1,337
2021	712	7,867	£2,230,067	£9,274,026	£1,341
2022	803	10,548	£2,243,657	£10,879,842	£1,244
2023	796	19,331	£2,496,611	£17,118,481	£974.57
Total for 5-year period	2,328	47,583	£11,382,674	£50,321,078	£7,104
Average	776	9,516	£2,276,535	£10,064,216	£1,421

Table 12-5: Annual catch value (£) from 2019-2023 by Gear Type within the Study Area

Year	Demersal Trawl	Pelagic Trawl	Pelagic seine	Creels and Traps	Dredge	Demersal seine	Gears using hooks	Beam Trawl	Drift/fixed nets
2019	£3,290,422	£221		£2,492,183	£1,662,726	£454,057	£24,392		
2020	£2,872,939	£1,969,222		£1,889,695	£1,930,340	£452,218	£199,680	£3,437	
2021	£4,165,349	£1.923,889		£2,168,454	£2,490,324	£502,820	£252,953	£304	
2022	£4,493,993	£3,944,539		£2,323,447	£1,142,181	£1,037,369	£272,969		
2023	£5,449,858	£7,696,438	£13	£2,946,024	£1,600,943	£1,608,867	£312,517	£134	£297
Total	£20,272,561	£15,534,309	£13	£11,819,803	£8,826,514	£4,055,331	£1,062,511	£3,875	£297

In terms of annual landed weight in 2023 within the Study Area, pelagic species contributed to 58.6% of landings followed by demersal species (32.7%) and shellfish (8.5%). ICES rectangle 43E8 was responsible for the highest landed weight of demersal species, and 44E8 was responsible for the highest landed weight of pelagic and shellfish (**Table 12-6**).

Table 12-6: Species group landings (t) within the Study Area

Species group	42E8	42E9	43E8	44E8	43E9	Total
Demersal	132.42	61.81	2,593.31	1,521.25	2,083.9	6,392.69
Pelagic	2.66		2,700.86	8,268.98	455	11,427.53
Shellfish	137.61	17.66	312.76	1,172.85	33.95	1,674.84
Total	272.68	79.48	5,606.93	10,963.08	2,572.89	19,495.06

Table 12-7 shows the top five species caught within the Study Area that intersect the ICES rectangles. From rectangle 42E8, the most valuable species was scallops, followed by haddock. From rectangle 42E9, the most valuable species was nephrops, followed by haddock. From rectangle 43E8, the most valuable species was haddock, followed by herring (as was the case for rectangle 43E9), and from rectangle 44E8, the most valuable species was herring, followed by edible crab.

Table 12-7: Top five landed species by value (£) in 2023 in ICES Rectangles within Study Area

		ICES Rectangles				
		42E8	42E9	43E8	44E8	43E9
Landed Species	1	Scallop	Nephrops	Haddock	Herring	Haddock
	2	Haddock	Haddock	Herring	Crab (edible)	Herring
	3	Crab (edible)	Monkfish	Scallop	Mackerel	Scallop
	4	Lobster	Squid/octopus	Crab (edible)	Haddock	Lobster
	5	Mackerel	Whiting	Lobster	Scallop	Whiting

Table 12-8 and **Table 12-9** give an overview of all species landed from the Study Area, by weight and value, respectively, Where zero values exist within **Table 12-9**, this is due to the rounding of figures to two decimal places. Where a '-' exists, the species was not landed from that particular rectangle. **Table 12-8** shows that in 2023, the most valuable species landed in 42E8 was scallop, in 42E9 was nephrops, in 43E8 and 43E9 was haddock, and in 44E8 was herring. Rectangle 42E8 accounted for the most valuable catch overall (£521,973) and across all rectangles, herring was the most valuable species (£6,814,914). The highest volume of catch in 2023 (**Table 12-9)** was haddock in rectangle 42E8, 42E9, 43E8, and 43E9, and herring in rectangle 44E8. Rectangle 44E8 accounted for the most valuable catch overall (11,122.1 t) and across all rectangles, herring was landed in the highest volume (10,502.2 t).

Table 12-8: 2023 landings value (£) between rectangles of the Study Area (MMO, 2024)

Species	42E8	42E9	43E8	43E9	44E8	Total
Bass	100	14	23	63		200
Blue Ling					4	4
Brill	0		3	8	675	686
Catfish		3	54	37	601	695
Cod	430	749	33,182	27,187	145,538	207,087
Conger eel					1	1
Crabs - Velvet (Swim)	748		27,735	24	186,492	214,998
Crabs (C.P.Mixed Sexes)	82,137		233,492	9,535	1,669,527	1,994,690
Cuckoo Ray		3			840	843
Cuttlefish		3		2	33	37
Dabs	-		20	66	439	524
Deep-Water Redfish (Rose Fish)			6			6
Dogfish (Scyliorhinidae)					46	46
Green Crab			5		222	227
Gurnard and Latchet			673	150	28	851
Gurnards - Grey		134	378	116	4,027	4,655
Gurnards - Red	13	33	183	88	188	505
Haddock	114,811	42,711	2,140,516	1,562,538	881,741	4,742,318
Hake	9	217	634	32,155	13,429	46,445
Halibut	3	557	2,717	343	20,156	23,776
Herring			1,795,697	261,206	4,758,011	6,814,914
Horse Mackerel					551	551
John Dory			2	38	2	42
Lemon Sole	0	787	490	276	8,187	9,740

Species	42E8	42E9	43E8	43E9	44E8	Total
Lesser Spotted Dog		28	2	22	1,040	1,092
Ling		106	614	422	9,447	10,590
Lobsters	58,236		124,690	39	548,993	731,958
Mackerel	3,614		96,767	14,978	1,171,778	1,287,137
Megrim			153	15	2,340	2,508
Mixed Squid and Octopi	815	1,548	5,997	8,193	32,596	49,150
Monks or Anglers	3,292	6,246	7,530	32,946	294,350	344,365
Mullet - Other			28		5	33
Nephrops (Norway Lobster)	1,803	113,230	8,787	6,463	777,117	907,400
Octopus		10		4	937	951
Plaice	1,766	543	23,000	49,159	21,311	95,780
Pollack			5		271	276
Saithe		41	8,235	19,572	12,473	40,320
Scallops	251,315		481,082	67,669	793,486	1,593,553
Sea Catfishes					2	2
Skates and Rays					60	60
Sole			1			1
Spotted Ray				330	78	408
Spurdog	48			40	703	791
Squid		337	14,032	3,232	33,280	50,882
Surmullet	0	28		19	618	665
Thornback Ray		3	65	40	628	735
Torsk (Tusk)			25	20	10	55
Tub Gurnard					4	4
Turbot	74	522	1,295	332	7,758	9,980
Unid DS Squal Sharks & Dogfish					3	3
Unidentified Dogfish					73	73
Whelks					901	901
Whiting	2,760	1,333	118,489	138,134	151,379	412,095
Witch		480	10	89	8,906	9,484
Total	**521,973**	**169,668**	**5,126,616**	**2,235,551**	**11,561,284**	**19,615,092**

Table 12-9: 2023 landings weight (t) between rectangles of the Study Area (MMO, 2024)

Species	42E8	42E9	43E8	43E9	44E8	Total
Bass	0.0	0.0	0.0	0.0		0.0
Blue Ling					0.0	0.0
Brill	-		0.0	0.0	0.1	0.1
Catfish		0.0	0.0	0.0	0.3	0.3
Cod	0.4	0.3	13.6	9.1	40.2	63.6
Conger eel					0.0	0.0
Crabs - Velvet	0.3		11.5	0.0	84.7	96.4

Species	42E8	42E9	43E8	43E9	44E8	Total
Crabs (edible/brown)	31.0		84.9	2.6	579.4	697.9
Cuckoo Ray		0.0			1.9	1.9
Cuttlefish		0.0		0.0	0.0	0.0
Dabs	0.0		0.0	0.1	0.8	0.9
Deep-Water Redfish			0.0			0.0
Dogfish					0.0	0.0
Green Crab			0.0		0.2	0.2
Gurnard and Latchet			1.2	0.3	0.0	1.5
Gurnards - Grey		0.2	0.6	0.2	6.8	7.9
Gurnards - Red	0.0	0.0	0.3	0.2	0.4	0.9
Haddock	139.3	59.9	2,675.0	2,047.2	1,240.0	6,161.3
Hake	0.0	0.1	0.3	9.2	5.2	14.7
Halibut	0.0	0.1	0.3	0.0	1.7	2.1
Herring			2,634.1	442.3	7,425.8	10,502.2
Horse Mackerel					2.9	2.9
John Dory			0.0	0.0	0.0	0.0
Lemon Sole	-	0.2	0.2	0.1	3.8	4.3
Lesser Spotted Dog		0.1	0.0	0.1	5.6	5.7
Ling		0.1	0.3	0.2	5.2	5.7
Lobsters	3.3		8.1	0.0	34.8	46.2
Mackerel	2.7		66.8	12.7	840.3	922.5
Megrim			0.1	0.0	0.8	0.9
Mixed Squid and Octopi	0.2	0.3	1.1	1.7	6.7	10.1
Monks or Anglers	1.1	1.9	2.7	3.6	86.8	96.2
Mullet - Other			0.0		0.0	0.0
Nephrops (Norway Lobster)	0.4	32.6	2.1	1.5	191.2	227.8
Octopus		0.0		0.0	0.8	0.8
Plaice	1.7	0.6	23.4	46.0	16.6	88.3
Pollack			0.0		0.1	0.1
Saithe		0.0	5.0	11.7	10.5	27.3
Scallops	102.5		203.6	28.0	319.2	653.3
Sea Catfishes					0.0	0.0
Skates and Rays					0.1	0.1
Sole			0.0			0.0
Spotted Ray				0.3	0.1	0.4
Spurdog	0.1			0.1	2.2	2.5
Squid		0.1	2.0	0.5	6.5	9.1
Surmullet	-	0.0		0.0	0.2	0.3
Thornback Ray		0.0	0.0	0.0	0.6	0.6
Torsk (Tusk)			0.0	0.0	0.0	0.1
Tub Gurnard					0.0	0.0

Species	42E8	42E9	43E8	43E9	44E8	Total
Turbot	0.0	0.1	0.1	0.0	0.7	1.0
Unidentified DS Squal Sharks & Dogfish					0.0	0.0
Unidentified Dogfish					0.1	0.1
Whelks					1.1	1.1
Whiting	2.5	1.2	125.1	120.6	187.2	436.7
Witch		0.4	0.0	0.1	10.4	10.9
Total	285.5	98.4	5,862.3	2,738.6	11,122.1	20,106.9

12.4.1.5. Temporal trends

The number of Scottish registered vessels has decreased over the last decade. The Scottish fishing industry has also been affected by the reduction of fishing quotas for all EU member states. As a result of Brexit, 25% of the European Union's fishing quota is being phased to the UK (with completion in June 2026) with the aim of allowing the UK to have greater catch share within UK waters and allowing larger catch quota in some offshore fisheries (European Council of the European Union, 2021). It is considered unlikely that there would be any significant change to fishing effort and activity in the North Sea fishing grounds and in the vicinity of the Study Area in the foreseeable future.

On a monthly basis, landing trends differed depending on ICES rectangle. For example, landings from demersal seine vessels were sporadic from rectangle 42E8 and 42E9, though in 43E8 and 43E9, landings were more consistent throughout the year **(Table 12-10, Table 12-11**, **Table 12-12**, **Table 12-13,)**. Conversely, pots and trap landings were limited to December in rectangle 43E9 (**Table 12-13**), though in other rectangles **(Table 12-10, table 12-12, Table 12-14)**), landings occurred throughout the year, except for rectangle 42E9, from which pots and traps landings were not made (**Table 12-11**).

Table 12-10: Temporal landings (t) by gear type within rectangle 42E8 in 2023 (MMO, 2024)

Gear Type	J	F	M	A	M	J	J	A	S	O	N	D	Total
Demersal seine			12			11						53	76
Demersal trawls	0			15	4	34		6				1	59
Dredge		1	1	13	9	49	3	2		10	11	3	103
Pots and traps		1	2	3	3	2	5	6	3	2	4	3	35
Total	0	3	15	31	16	96	8	14	3	12	15	60	273

Table 12-11: Temporal landings (t) by gear type within rectangle 42E9 in 2023 (MMO, 2024)

Gear Type	J	F	M	A	M	J	J	A	S	O	N	D	Total
Demersal seine										9		37	46
Demersal trawls					5	8	8	1		12		1	34
Total					5	8	8	1		21		38	79

Table 12-12: Temporal landings (t) by gear type within rectangle 43E8 in 2023 (MMO, 2024)

Gear Type	J	F	M	A	M	J	J	A	S	O	N	D	Total
Demersal seine			37		79	171	55	42	28	20	10	13	455
Demersal trawls	77	5	0	43	472	676	546	228	65	72	3		2,187
Dredge			16	26	58	57	25	9	4		5	3	204
Handlines						2	5	10	4	0			21
Pelagic trawls								2,293	343				2,636
Pots and traps	10	5	8	3	8	10	6	11	11	10	15	8	104
Total	86	10	62	72	616	916	637	2,593	455	102	33	24	5,607

Table 12-13: Temporal landings (t) by gear type within rectangle 43E9 in 2023 (MMO, 2024)

Gear Type	J	F	M	A	M	J	J	A	S	O	N	D	Total
Demersal seine			159		173	56	42	97	66	91	61	10	755
Demersal trawls	9				569	371	211	102	50	31			1,343
Dredge					26	1	1	1					28
Pelagic trawls								110	333				444
Pots and traps												3	3
Total	9		159		767	428	254	310	450	122	61	13	2,573

Table 12-14: Temporal landings (t) by gear type within rectangle 44E8 in 2023 (MMO, 2024)

Gear Type	J	F	M	A	M	J	J	A	S	O	N	D	Total
Beam trawl								0					0
Demersal seine	120	95					6	94	48		6		369
Demersal trawls	179	20	46	43	24	90	150	168	160	288	107	31	1,306
Dredge	3		14	87	148	16	12	12	21	8			320
Drift and fixed nets						0							0
Handlines					0	11	73	75	14	2			174
Pelagic seine										0			0
Pelagic trawls								2,801	4,637	655			8,093
Pots and traps	52	50	42	16	20	28	49	65	74	115	95	96	701
Total	353	164	102	146	192	146	289	3,215	4,954	1,067	208	127	10,963

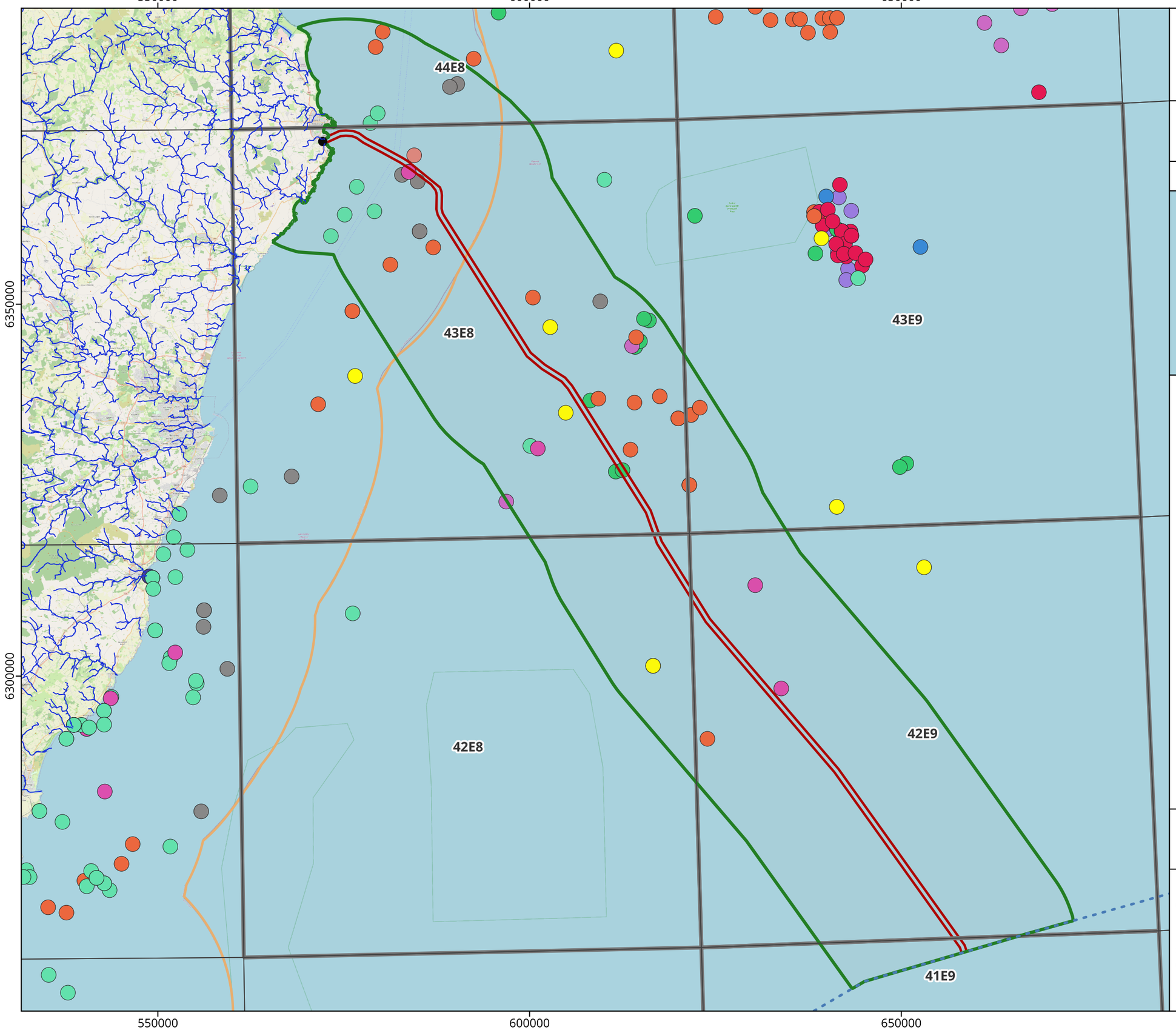
12.4.1.6. Spatial trends

Spatially, within 2023, commercial fishing activities were seen throughout the Study Area and northern North Sea (**Figure 12-5**). Inshore, within Scotland's 12 NM limit, potter/whelker contributed to the most sightings, whereas within the Study Area, vessel types were mixed (potter/whelker, scallop dredger, hand lining, demersal stern trawler, bottom seiner, trawler, pair trawler) and seen throughout most of the area. In the northern part of rectangle 43E9, vessel types included pelagic stern trawler, bottom seiner, stern trawler, trawler, potter/whelker, pair trawler, and demersal stern trawler).

In terms of average annual total fishing effort (calculated as mW fishing hours), effort was low and segregated for beam trawl in 2023, whilst bottom otter trawl effort was apparent throughout most of the Study Area, albeit with the highest effort taking places further offshore, to the northeast **(Figure 12-6 (Drawing reference C01494-EGL3-MEA-FISH-003-C)**). Bottom seine fishing effort was seldom observed southwest of the Study Area and whilst it existed primarily to the north and northeast of the Study Area, intensity was low (**Figure 12-7 (Drawing reference C01494-EGL3-MEA-FISH-004-C))**. Conversely, dredge intensity occurred all around Scotland's east coast, from nearshore to well beyond the 12 NM. Intensity was highest nearest to landfall (**Figure 12-7 (Drawing reference C01494-EGL3-MEA-FISH-004-C)**). Pelagic trawl and seine intensity was highest to the northeast of the Study Area; most so in rectangle 43E9 **Figure 12-8 (Drawing reference C01494-EGL3-MEA-FISH-005-C)**), whereas static gear intensity was consistently low and patchy throughout the Study Area and wider North Sea (**Figure 12-8 (Drawing reference C01494-EGL3-MEA-FISH-005-C)**).

12.4.1.7. Restricted fishing areas

The Scottish zone (extending up to 200 NM from the Scottish coast) has restrictions on catching sandeels, under The Sandeel (Prohibition Of Fishing) (Scotland) Order 2024. The spatial extent of the sandeel fishing ban can be seen at Scottish Government (2024a). This ban has been put in place to benefit the wider marine ecosystem including marine mammals and seabirds which feed on sandeel (Scottish Government, 2024a). As of August 2025, this prohibition still applies, with no apparent intention to repeal the ban; as such, the ban is considered permanent.



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Surveillance Sightings By Gear Type During 2023

C01494-EGL3-MEA-FISH-002-E

Legend

- Red Line Boundary
- Study Area (15km Buffer)
- Sandford Bay Landfall
- ICES Rectangle within Study Area
- ICES Rectangle

Surveillance Sightings By Vessel Type

- Pelagic Stern Trawler
- Stern Trawler
- Demersal Stern Trawler
- Bottom Seiner (Anchor/Danish/Fly/Scots)
- Potter/Whelker
- Scallop Dredger (French/Newhaven)
- Shrimper
- Industrial Trawler
- Trawler
- Pair Trawler
- Hand Gathering/Hand Lining
- Trio Trawler
- Unknown
- Scottish Adjacent Waters
- 12NM Limit

0 10 20 30 KM

0 5 10 15 NM

N

Date	15/05/2025
Coordinate System	WGS 84 / UTM zone 30N
Projection	Universal Transverse Mercator (UTM)
Unit	meters
Scale at A3	1:500,000
Created	JC
Reviewed	AN/CB
Authorised	JDM

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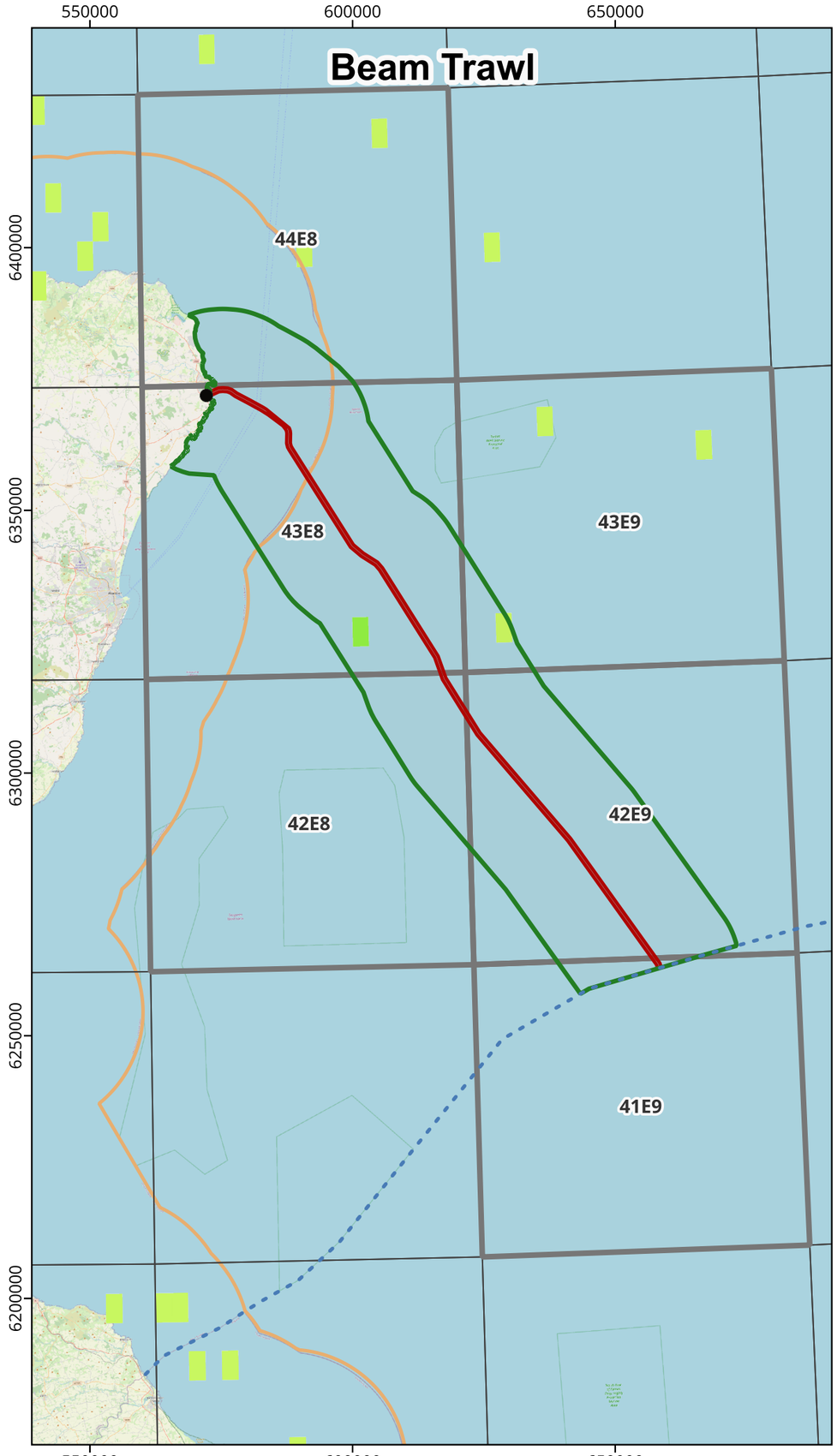

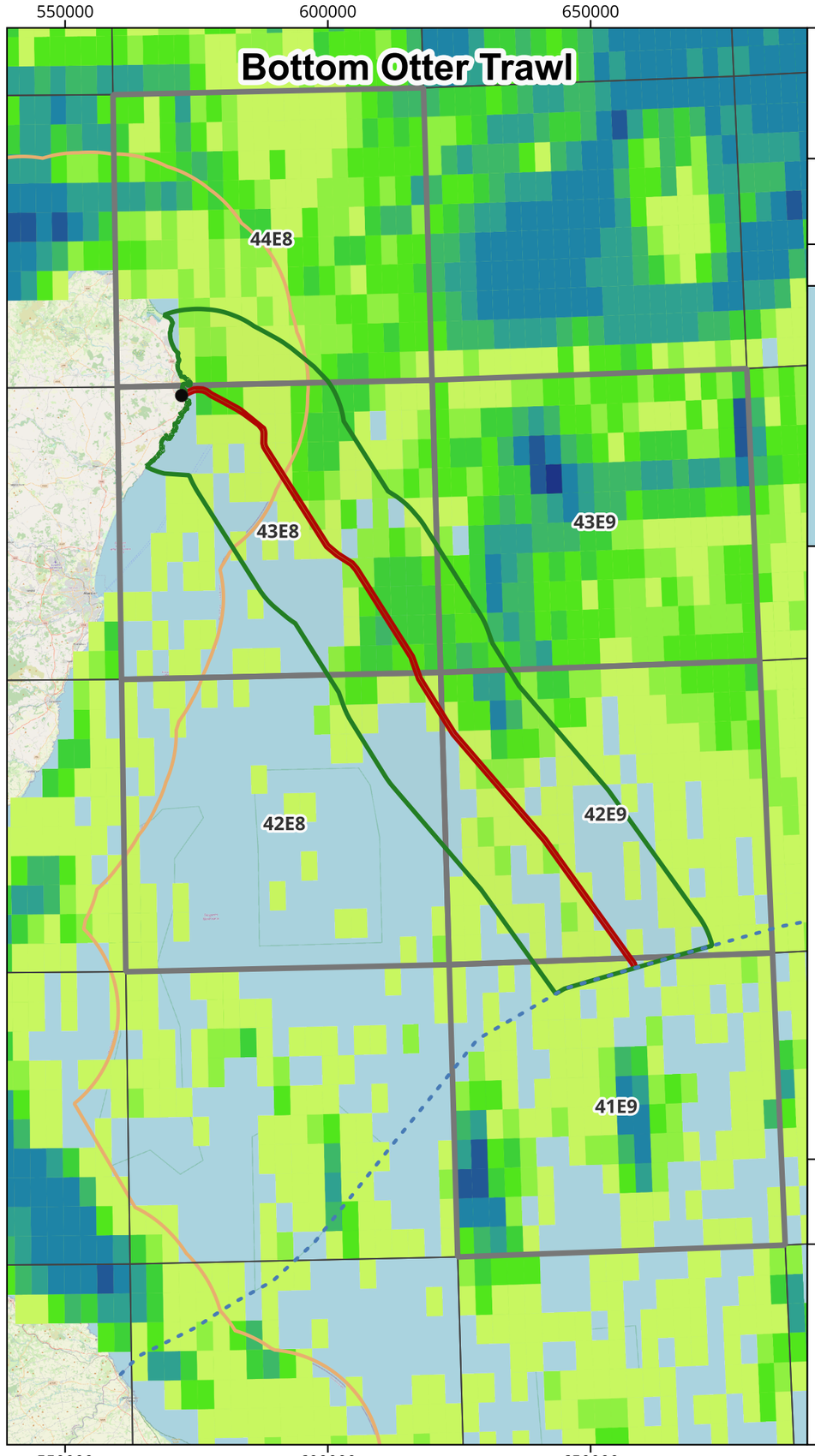

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Beam Trawl And Bottom Otter Trawl Effort Within The Study Area

C01494-EGL3-MEA-FISH-003-D

Legend

- Red Line Boundary
- Study Area (15km Buffer)
- Sandford Bay Landfall
- ICES Rectangle within Study Area
- ICES Rectangle

Average MW Fishing hours

- > 0 <= 1
- > 1 <= 2
- > 2 <= 5
- > 5 <= 10
- > 10 <= 20
- > 20 <= 50
- > 50 <= 100
- > 100 <= 200
- > 200 <= 500
- > 500

- Scottish Adjacent Waters
- 12NM Limit

0 20 40 60 KM

0 10 20 30 NM

N

Date	13/05/2025
Coordinate System	WGS 84 / UTM zone 30N
Projection	Universal Transverse Mercator (UTM)
Unit	meters
Scale at A3	1:1,000,000
Created	JC
Reviewed	AN/CB
Authorised	JDM

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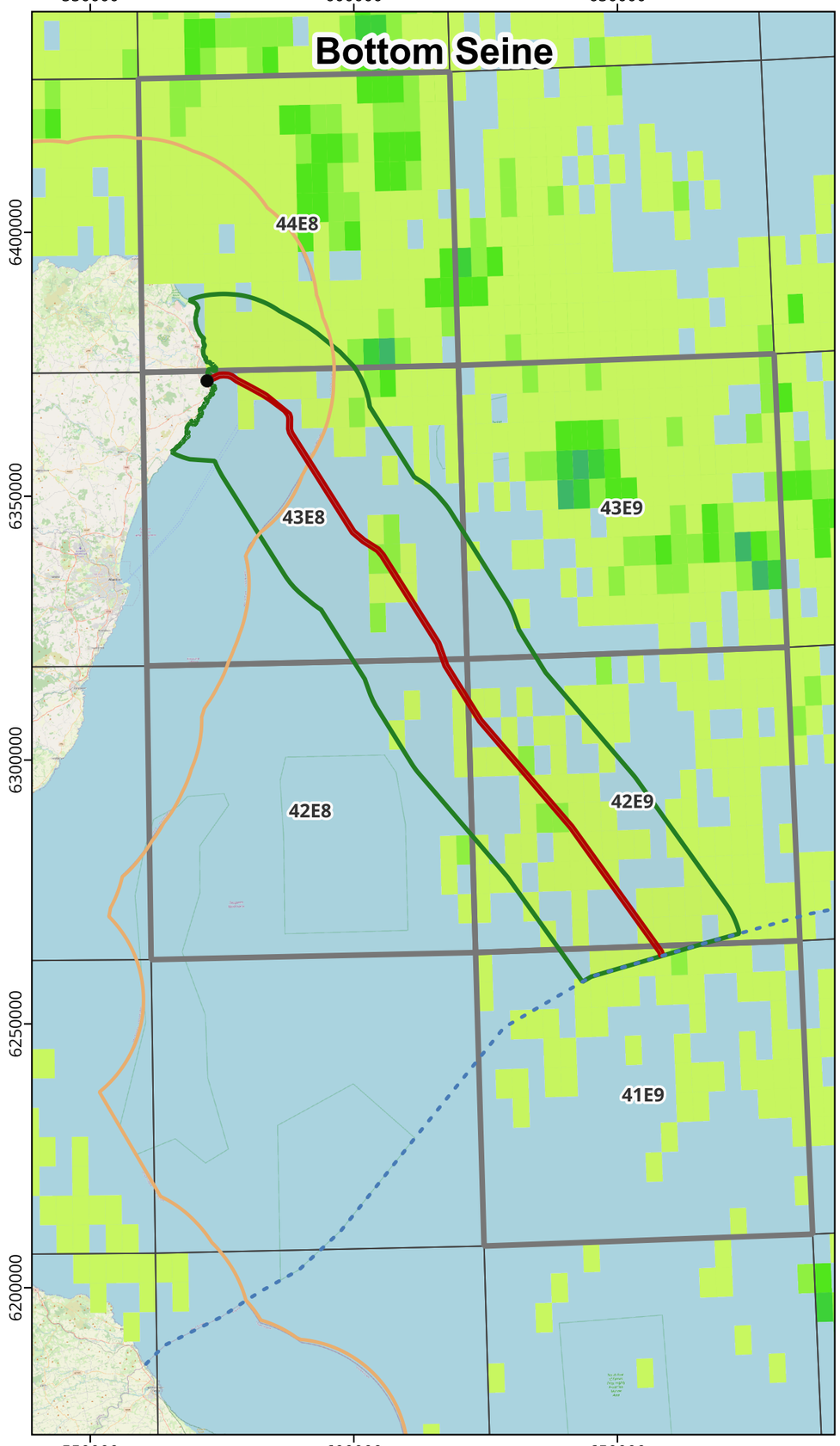

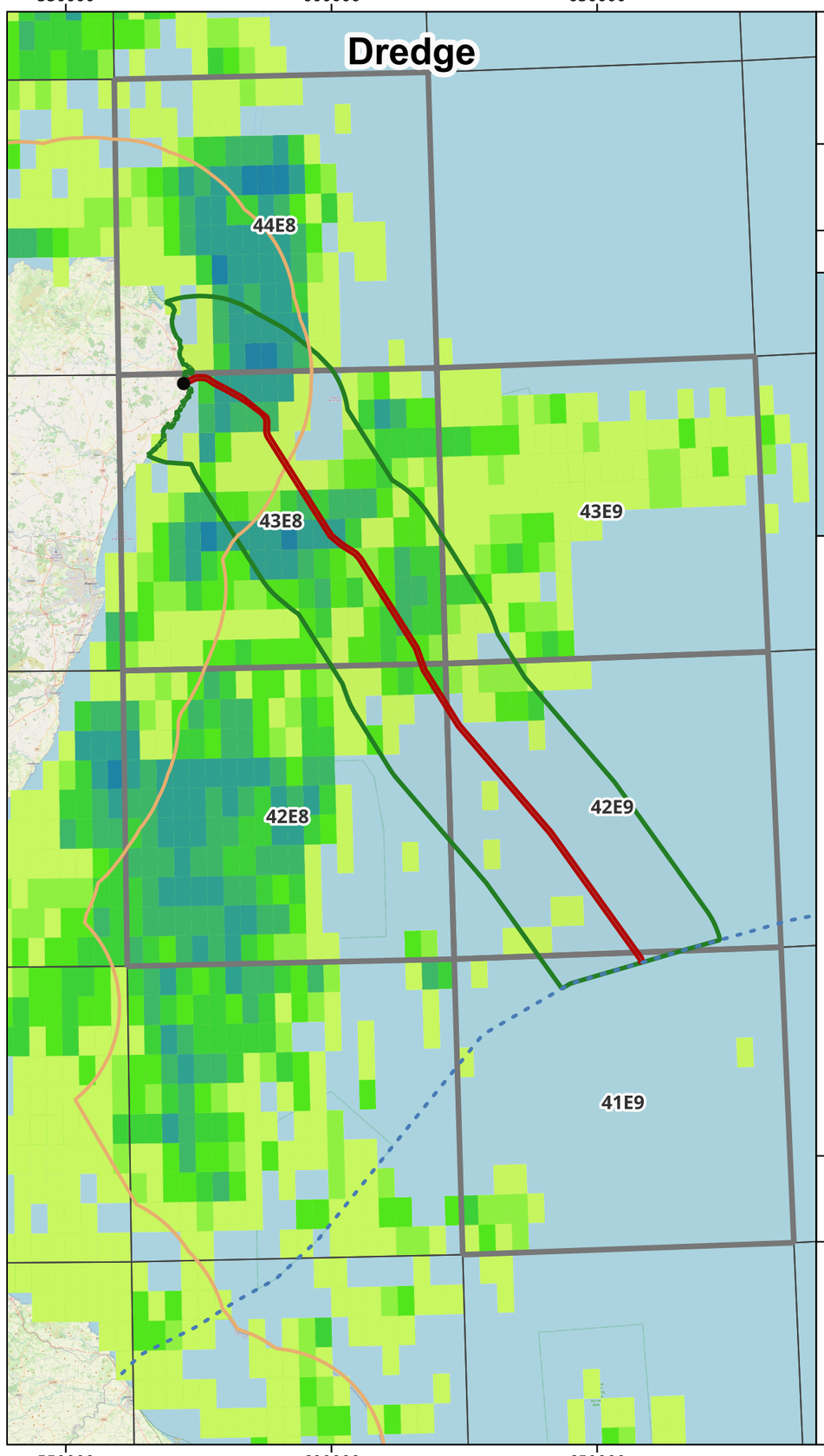

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Bottom Seine and Dredge Effort Within The Study Area

C01494-EGL3-MEA-FISH-004-D

Legend

- Red Line Boundary
- Study Area (15km Buffer)
- Sandford Bay Landfall
- ICES Rectangle within Study Area
- ICES Rectangle

Average MW Fishing hours

- > 0 <= 1
- > 1 <= 2
- > 2 <= 5
- > 5 <= 10
- > 10 <= 20
- > 20 <= 50
- > 50 <= 100
- > 100 <= 200
- > 200 <= 500
- > 500

- Scottish Adjacent Waters
- 12NM Limit

0 20 40 60 KM

0 10 20 30 NM

N

Date	13/05/2025
Coordinate System	WGS 84 / UTM zone 30N
Projection	Universal Transverse Mercator (UTM)
Unit	meters
Scale at A3	1:1,000,000
Created	JC
Reviewed	AN/CB
Authorised	JDM

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Pelagic Trawl and Seine

Static Gear

550000 600000 650000

6400000 6350000 6300000 6250000 6200000

44E8 43E8 43E9 42E8 42E9 41E9

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Pelagic Trawl and Seine and Static Gear Effort Within The Study Area

C01494-EGL3-MEA-FISH-005-D

Legend

- Red Line Boundary
- Study Area (15km Buffer)
- Sandford Bay Landfall
- ICES Rectangle within the Study Area
- ICES Rectangle

Average MW Fishing hours

- > 0 <= 1
- > 1 <= 2
- > 2 <= 5
- > 5 <= 10
- > 10 <= 20
- > 20 <= 50
- > 50 <= 100
- > 100 <= 200
- > 200 <= 500
- > 500

- Scottish Adjacent Waters
- 12NM Limit

0 20 40 60 KM

0 10 20 30 NM

N

Date	13/05/2025
Coordinate System	WGS 84 / UTM zone 30N
Projection	Universal Transverse Mercator (UTM)
Unit	meters
Scale at A3	1:1,000,000
Created	JC
Reviewed	AN/CB
Authorised	JDM

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12.5. Potential Pressure Identification and Zone of Influence

12.5.1. Spatial Scope

The Study Area for commercial fisheries includes the RLB plus an additional 15 km buffer on either side, representative of one tidal excursion. This is consistent with **Chapter 6: Marine Physical Processes** and acts as a precautionary maximum ZoI. The ZoI incorporates the area within which there is potential for indirect impacts associated with the deposition of suspended sediments.

The Study Area for commercial fisheries is also defined by the ICES rectangles in which the Proposed Development lies, as given in **Section 12.4.1** (rectangles 42E8, 42E9, 43E8, 44E8, and 43E9)**.**

12.5.2. Temporal Scope

The temporal scope of the assessment of commercial fisheries is consistent with the period over which the Proposed Development would be carried out. It assumes construction of the Proposed Development would commence at the earliest in 2028 with the latest possible completion by 2033. Within this window, construction (including pre-lay activity) is expected to take 55 months. Operation would commence in 2033 with periodical maintenance required during the operational phase. It is assumed that maintenance and repair activities could take place at any time during the life span of the Proposed Development.

The Proposed Development is expected to have a life span of more than 40 years. If decommissioning requires cessation of operation and removal of infrastructure at this point in time, then activities and effects associated with the decommissioning phase are expected to be of a similar level to those during the construction phase works albeit with a lesser duration of two years. Acknowledging the complexities of completing a detailed assessment for decommissioning works up to 40 years in the future, based on the information available, the Applicant has concluded that impacts from decommissioning would be no greater than those during the construction phase. Furthermore, should decommissioning take place, it is expected that an assessment in accordance with the legislation and guidance at the time of decommissioning would be undertaken and a separate Marine Licence would be sought for decommissioning activities.

12.5.3. Identification of Pressure-Receptor Pathways

Table 12-15 provides a summary of the receptors scoped into the assessment and the potential impacts assessed. The scoping in of these impacts are based on the potential impacts identified within the MEA Non-Statutory Scoping Report. This took a precautionary approach whereby some impacts were scoped 'in' to the assessment if a strong evidence base to scope the impact 'out' was lacking.

Table 12-15: Commercial fisheries receptors scoped in for assessment

Potential impact	Activity	Project Stage	Receptor	Zone of Influence	Justification
Temporary restricted access to fishing ground (including required static gear clearance)	Presence of project vessels and equipment	All phases	All gear types	15 km	The Proposed Development has the potential to affect all commercial fishing activity (both static and mobile gear) during all phases via temporary restricted access to fishing grounds.
Temporary displacement of fishing activity into other areas	Presence of project vessels and equipment	All phases	All gear types	15 km	The Proposed Development has the potential to effect commercial fishing activity (both static and mobile gear) during all phases via temporary displacement. This impact may cause a localised, but temporary, loss of access to fishing grounds and with therefore cause temporary displacement of fishers.
Loss of grounds	Deposit of external cable protection	All phases	Bottom drift netting	15 km	The deposit of external cable protection would cause a localised change in seabed topography. Bottom drift nets are reliant on a flat featureless seabed to operate effectively. The placement of external cable protection would therefore exclude the gear type from being used in that area.
Changes in distribution of target species	Pre-sweeping of sandwaves Cable burial / trenching	All phases	All gear types	15 km	Distributions of fish and shellfish populations have the potential to be affected by the activities during construction.

Potential impact	Activity	Project Stage	Receptor	Zone of Influence	Justification
	Installation of cable protection				

12.5.4. Guidance

The commercial fisheries assessment has been undertaken in accordance with relevant guidance and has been compiled in accordance with professional standards. The guidance and standards which relate to this assessment are:

- Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison (Fishing Liaison with Offshore Wind and Wet Renewables Group) (FLOWW, 2014);
- Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds (FLOWW, 2015);
- Changes to fishing practices around the UK because of the development of offshore windfarms (Gray et al, 2016);
- International Cable Protection Committee – Fishing and Submarine Cables Working together (ICPC, 2009);
- Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Centre for Environment, Fisheries and Aquaculture Science; Cefas, 2012);
- European Subsea Cable Association (ESCA) Guideline 20 on vessels operating in the vicinity of subsea cables (ESCA, 2018);
- Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments (SeaFish, 2012);
- The Sandeel (Prohibition Of Fishing) (Scotland) Order 2024;
- Options and Opportunities for Marine Fisheries Mitigation associated with windfarms (Blythe, Skyrme, 2010);
- MGN 661 (M+F) Navigation - safe and responsible anchoring and fishing practices (Maritime & Coastguard Agency, 2021);
- The Mariner's Handbook (NP100) (UKHO, 2020) – Section 9.45 Submarine Cables;
- National Planning Practice Guidance: Environmental Impact Assessment (HM Government, 2020).

12.6. Key Parameters for Assessment

12.6.1. Realistic Worst-Case Design Scenario

The assessment has followed the Rochdale Envelope approach as outlined **Chapter 3: Project Description.** The assessment of effects has been based on the description of the Proposed Development and parameters outlined in **Chapter 3: Project Description**. Where there is uncertainty regarding a particular design parameter, the realistic worst-case design parameters are provided in **Table 12-16** below with regards commercial fisheries along with the reasons why these parameters are considered worst-case. The assessment for commercial fisheries has been undertaken on this basis. Effects of greater adverse significance are not likely to arise should any other development scenario (e.g., different infrastructure layout within the RLB), to that assessed here, be taken forward in the final design plan, provided the development scenario is within the Rochdale Envelope parameters set out.

Table 12-16: EGL 3 Project Worst-case Assumptions

Impact Pathway	Construction	Operation	Decommissioning	Most sensitive location or scenario
Temporary restricted access to fishing ground	100 km section of RLB (at any one time)	To be confirmed	To be confirmed	All gear types
Temporary displacement of fishing activity into other areas	100 km section of RLB (at any one time)	To be confirmed	To be confirmed	All gear types
Loss of grounds	0.135 km^2 (including 0.035 km^2 from infrastructure crossings)			Bottom drift nets

12.7. Embedded Mitigation Measures

As set out in **Chapter 4: Marine Environmental Appraisal Scope and Methodology** embedded mitigation measures form part of the design for which consent is sought and can be characterised as 'design measures' or 'control and management measures.' This embedded mitigation would be implemented as part of the Proposed Development and secured by way of condition in the Marine Licence as relevant.

Several management plans would be provided to discharge Marine Licence conditions prior to the start of construction. These include a Construction Environmental Management Plan (CEMP), Marine Pollution Contingency Plan (MPCP), Marine Mammal Mitigation Plan (MMMP) and a Fisheries Management and Mitigation Plan (FMMP). These documents will outline measures to be implemented to comply with legislation, such as Prevention of Pollution at Sea (MARPOL) and Safety of Life at Sea (SOLAS), and the mitigation commitments proposed within this MEAp (Embedded Mitigation Measure OMT08). An Outline CEMP is provided as **Appendix 3B: Outline Construction Environmental Management Plan (CEMP)**. In addition, design measures identified through the MEA process have been applied to avoid or reduce potential significant effects as far as possible.

Table 12-17 outlines the embedded mitigation measures that would be implemented for the Proposed Development that have been considered by commercial fisheries MEA.

Table 12-17: Embedded mitigation measures used for Commercial Fisheries assessment

Receptor	Project Activities	Embedded mitigation measures
All gear types	Construction	CF01- A Fisheries Liaison Officer (FLO) and fisheries working group(s) would be maintained throughout installation to ensure project information is effectively disseminated, dialogue is maintained with the commercial fishing industry and access to home ports is maintained during the main fishing season. Details of the FLO will be included in the Fisheries Management and Mitigation Plan (FMMP).
All gear types	Construction	CF02 - Timings of any temporary areas of exclusion from fishing grounds would be clearly communicated via a Notice to Mariners (NtM).
Demersal gears	Construction	CF03 - Cable protection would be designed to prevent the risk of fishing gear snagging.
All gear types	Construction	CF04 - A procedure for the claim of loss of/or damage to fishing gear would be developed and included in the FMMP.
All gear types	Construction	CF05 - During cable route clearance, specific activities would be completed to remove items from the seabed. Out of Service cables would be removed as per industry guidelines, larger debris including lost fishing gear would be removed prior to cable installation and a pre-lay grapnel run would be completed to ensure smaller debris is removed. If abandoned, lost or discarded fishing gear ('ALDFG') is encountered, it may be necessary in certain circumstances to bring ALDFG onto the vessel deck. In these instances, marked ALDFG would be returned to shore for onward retrieval by the owner of the marked gear, in line with existing best practice. Not all gear (particularly 'active' gear) is marked; if necessary to bring onto the vessel deck, unmarked gear would be disposed of via conventional onshore waste channels.
All gear types	Construction	CF06 - Cut cable end locations and associated weights shall be accurately noted and charted and positions given to the FLO at the earliest opportunity for onward communication to the fishing industry
All gear types	Construction	CF07 - If cable exposures are identified during routine surveys, the location of these would be shared with fisheries stakeholders and where necessary, additional temporary measures put in place (e.g., marker buoys, use of guard vessels, etc), until a repair or remediation can be implemented.
All gear types	Construction	OMT02 - Drilling fluids required for trenchless operations would be carefully managed to minimise the risk of breakouts into the marine environment. Specific avoidance measures would include: ▪ the use of biodegradable drilling fluids (pose little or no risk (PLONOR) substances) where practicable, ▪ drilling fluids would be tested for contamination to determine possible reuse or disposal; ▪ if disposal is required drilling fluids would be transported by a licensed courier to a licensed waste disposal site. ▪ Chemicals would be chosen from the list of chemicals approved under the Offshore Chemical Notification Scheme. https://www.cefas.co.uk/data-and-publications/ocns/ and a chemical risk assessment would be provided as part of the Construction Environmental Management plan (CEMP).

Receptor	Project Activities	Embedded mitigation measures
All gear types	Construction	OMT03 - The intention is to bury the cables in the seabed, except in areas where burial is not possible e.g., where ground conditions do not allow burial or at infrastructure crossings.
All gear types	Construction	OMT04 - Cable protection would only be installed where considered necessary for the safe operation of the Proposed Development. This includes the repair of cables due to accidental damage, where depth of lowering is not achieved and at infrastructure crossings.
All gear types	Construction	OMT07 - As-built locations of cable and external protection would be supplied to UKHO (Admiralty), The Crown Estate Scotland and Kingfisher (KIS-ORCA)
All gear types	Construction	OMT10 - Designated (and as minimal as possible) anchoring areas and protocols shall be employed during marine operations to minimise physical disturbance of the seabed
All gear types	Construction	OSU02- Timely and efficient communication would be given to sea users in the area via Notices to Mariners (NtMs), Kingfisher Bulletins, Radio Navigation Warnings Navigational Telex (NAVTEX and Navigational Areas (NAVAREA) warnings and /or broadcast warnings.
All gear types	Construction	OSU01 - For safety purposes, all vessels would be requested to maintain a minimum distance from construction vessels to prevent interactions.
All gear types	Construction	OSU10 - Guard vessel(s), using RADAR with Automatic RADAR Plotting Aid (ARPA) to monitor vessel activity and predict possible interactions, would be employed to work alongside the installation vessel(s) during cable installation works and to protect any temporary cable exposures during construction.
All gear types	Construction	OSU14- All vessels associated with the Proposed Development would display appropriate marks and lights and would always broadcast their status on AIS if appropriate.

12.8. Significance Assessment

The generic project-wide approach to the assessment methodology is set out in **Chapter 4: Marine Environmental Appraisal Scope and Methodology**. However, whilst this has informed the approach that has been used in this commercial fisheries assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this commercial fisheries assessment. Details are provided below.

The criteria provided in **Table 12-18** has been used to characterise the sensitivity of the receptor and the magnitude of the impact. The sensitivity of the receptor is a function of its capacity to accommodate change and reflects its ability to recover if it is affected. The sensitivity of the receptor is therefore quantified via the following factors:

- Tolerance - The ability of a receptor to accommodate temporary or permanent change without a significant adverse impact.
- Recoverability - The temporal scale over and extent to which a receptor will recover following an impact.

Where receptors are considered to be capable of adapting to, tolerating or recovering from indirect impacts, these factors were incorporated into an assessment of their sensitivity.

The assessment criteria referred to in the MEA Non-Statutory Scoping Report have been updated to be more relevant to commercial fisheries.

Table 12-18: Criteria for characterising the sensitivity of receptors

Receptor Value and Sensitivity	Description
High	Receptor has low/no capacity to return to pre-impact conditions, e.g., low tolerance to change and low recoverability such as loss of access with no alternatives.
Medium	Receptor is generally vulnerable to the impacts and recoverability is slow or costly e.g., low levels of alternative fishing grounds are available, and/or the fishing fleet has a low operational range.
Low	Receptor has moderate levels of recoverability. May affect behaviour but is not a nuisance to user, with acceptable financial consequences e.g., short-term, reversible changes.
Negligible	The receptor is tolerant to change with no effect on its character. High levels of alternative fishing grounds are available and/or fishing fleet is adaptive.

The magnitude of an impact provides a useful initial measure of the likelihood of an environmental effect arising. Magnitude is defined for the purposes of assessment via four factors:

- Extent - The area over which an impact occurs.
- Duration - The time for which the impact occurs.
- Frequency - How often the impact occurs.
- Severity - The degree of change relative to the baseline level.

The assessment has used the criteria established in **Table 12-19,** which, since the MEA Non-Statutory Scoping Report, has been updated to be more relevant to commercial fisheries.

Table 12-19: Criteria for characterising the magnitude of an impact

Impact Magnitude	Definition
High	Impacts last >15 years and/or results in total loss of or major alteration to key elements (e.g., target fish or shellfish biological resource), or features (e.g., location of fishery) of the pre-project conditions, such that the post-project character or composition of the feature would be fundamentally changed. Substantial loss of economic value of commercial landings, that is nationally or regionally significant.
Medium	Impacts are of medium term (7-15 years) duration and/or results in loss of or alteration to key elements (e.g., target fish or shellfish biological resource), or features (e.g., location of fishery) of the pre-project conditions, such that the post-project character of the feature would be partially changed. Partial loss of economic value of commercial landings that is locally significant.
Low	Impacts are temporary (<1 year) or short term (1-7 years) in duration and/or is a minor alteration to key elements (e.g., target fish or shellfish biological resource), or features (e.g., location of fishery) of the pre-project conditions. Minor loss of economic value of commercial landings that is not locally significant.
Negligible	Very little or no detectable change from baseline conditions, for any length of time and/or is a slight loss of ability to carry out fishing activities or slight loss of target fish or shellfish biological resources. No or unquantifiable change to pre-project conditions. Minimal loss of economic value of commercial landings.

The significance of an effect, either adverse or beneficial, has been determined using a combination of the magnitude of the impact and the sensitivity of the receptor based on a matrix approach (see **Table 12-20)** which is used throughout all topic areas to ensure a consistent approach within the assessment.

Table 12-20: Significance matrix

		Sensitivity			
		High	**Medium**	**Low**	**Negligible**
Adverse magnitude	**High**	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Minor
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Minor	Minor	Negligible	Negligible
Beneficial magnitude	**Negligible**	Minor	Minor	Negligible	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	Medium	Major	Moderate	Minor	Negligible
	High	Major	Major	Moderate	Minor

12.8.1. Temporary Restricted Access to Fishing Ground (Including Required Static Gear Clearance)

12.8.1.1. Construction

The implementation of advisory clearance distances around construction vessels and safety zones during construction works may result in temporary loss or restricted access to fishing grounds within the Proposed Development. The fishing industry will be consulted on the proposed construction programme and efforts made to ensure co-existence is feasible. Notices to Mariners will be issued in advance of the works.

As set out in **Chapter 3: Project Description**, the construction programme for the Proposed Development is expected to take approximately 55 months, commencing at the earliest in 2028. Works at the landfall may commence in 2028 / 2029 with installation of the horizontal directional drilling (HDD) and ducts ahead of the main works.

For the purposes of assessment, it has been assumed that there would be up to three cable lay and burial campaigns, each campaign covering approximately 60 to 150 km, depending on the cable lay and burial solution selected. The activities that would comprise the campaigns are listed below along with indicative durations. Note that these timescales are for the whole Project and durations in Scottish waters only would be shorter.

- Pre-lay survey: 4 weeks – 30 weeks.
- Cable Installation: 10 weeks – 30 weeks.
- Jointing: 4 weeks – 30 weeks.
- Remedial external cable protection: 8 weeks – 30 weeks.
- Post lay survey: 4 weeks – 30 weeks.

As set out in **Chapter 3: Project Description**, installation vessels are estimated to install the cable at a speed of between 50 m and 1,000 m per hour, depending on seabed conditions and the vessels used. Vessels would be stationary for periods of time when undertaking cable jointing operations.

The HVDC cables would be installed in one trench, with installation methodologies including simultaneous cable lay and trenching, and surface cable lay followed by post lay trenching. Cable burial tools which may be used include jet trenching machines, mechanical trenchers, controlled flow excavators and ploughs. Overall, displacement ploughs/boulder clearance ploughs would result in the greatest seabed disturbance, however this method would only be required within discrete sections of the Proposed Development.

Additional information on the construction techniques is provided in **Chapter 3: Project Description.**

The Proposed Development has the potential to affect commercial fishing activity during the construction via temporary restricted access to fishing grounds. During construction, fishing activity would l be temporarily excluded from discrete areas of the proposed RLB due to the recommendation that vessels stay at least a 500 m radius from project vessels engaged in works. There would also be a requirement for fishing vessels that use static gear such as pots to clear their gear from within the proposed subsea cable corridor, or a part of it, in advance of any construction activities.

Additionally, during the construction phase fishing vessels may be asked to avoid areas of the RLB where the installed cables may be temporarily vulnerable for example where cables are surface laid or exposed and are awaiting trenching or protection. If this is required, it would be requested via NtMs and engagement with fisheries stakeholders via the FLO.

The following section has been sub-divided to consider each receptor, providing an assessment that provides justification for the assigned receptor values/sensitivities and the magnitude of the impact. A summary of the assessment conclusions is provided in **Table 12-21** for ease of reference.

Table 12-21: Summary of assessment conclusions for temporary restricted access to fishing ground

Receptor	Value / Sensitivity	Magnitude	Significance of Effect
Static gear	Medium	Low	Minor
Dredging	Negligible	Low	Negligible
Demersal seine, Beam trawling and Demersal trawl	Negligible	Low	Negligible
Pelagic trawl and seine	Negligible	Low	Negligible
All gear types (operations and maintenance)	Low	Negligible to Low	Minor
All gear types (decommissioning)	Low	Low	Minor

Static gear

This activity would impact vessels using static gear such as pots and traps, especially within ICES rectangle 44E8 where the shellfish (e.g. crab and lobster) catch is of the highest value (**Table 12-8**), though static gear effort is consistently low and patchy throughout the Study Area and wider North Sea (**Figure 12-8**).

During construction, fishing vessels using pot or traps would be required to remove pots from areas under construction and either relocate or bring to shore depending on available grounds and fishing preferences. Potting fishers could therefore experience loss of earnings for the time taken to relocate gear (unless they are able to use other grounds and have sufficient prior notice not to set their gear in the construction area), and, potentially, also a loss of earnings associated with not being able to fish the specific grounds under construction. This would be the case if alternative grounds are either not available, or less productive than the original grounds.

It is very unlikely that all pots deployed by a single vessel would be impacted at any one time. However, it is understood that specific potting grounds may be targeted by fishers and therefore impact magnitude would vary between fishers with some more affected than others.

The fishers who use static gear work in areas which are already heavily exploited and operate from smaller vessels which are therefore more sensitive to change. Whilst some fishers operate from larger vessels (such as potting vessels 15-18 m length), the highest value landings tend to come from those 8 – 10 m length (£1,726,993 of crab and lobster landed from this length group in 2023; MMO, 2024). Therefore, this receptor has been identified as having a **value** and **sensitivity** of **medium** because there are limited areas of alternative fishing grounds that can be used. The **magnitude** has been assessed as **low** because the disruption caused by construction of the Proposed Development is only temporary and would not affect the whole route at any one time.

The overall significance of the effect on static gear fisheries has been assessed as **Minor** and **Not Significant**.

Dredging

Some dredging occurs in the Study Area, with most intensity occurring in ICES rectangles 42E8, 43E8, and 44E8. However, as this is a mobile gear it is thought that there is unlikely to be any significant effect on this type of fishing because the fishing is locationally flexible and they can work around the construction areas, in other areas suitable for dredging (where the target species is present).

The **value** and **sensitivity** of the receptor has been assessed as **negligible**, and the impact on the receptor has been assessed as having a **low magnitude.** The overall **significance** of the effect on dredging fisheries is therefore assessed as **Negligible** and **Not Significant**.

Demersal seine, Beam trawling and Demersal trawl

Effort was low and segregated for beam trawl in 2023, whilst bottom otter trawl effort was apparent throughout most of the Study Area, albeit with the highest effort taking places further offshore, to the northeast (**Figure 12-6**). Bottom seine fishing effort was seldom observed southwest of the Study Area and whilst it existed primarily to the north and northeast of the Study Area, intensity was low (**Figure 12-6**).

The UK demersal seine, beam and demersal trawl fleets are highly mobile and can operate across large areas of the North Sea. The highest catch value by demersal seine within the Study Area was £1,577,621 in 2023, from vessels 18.01 – 24 m length, and for demersal trawls, the highest catch value was from vessels 24.01 – 40 m length (£3,988,325); (MMO, 2024). Given adequate notification via NtM and regular contact with the Proposed Development's FLO, it is expected that these vessels would be able to avoid construction areas. The **value** and **sensitivity** of the receptor has been assessed as **negligible** because of their ability to find alternative fishing grounds and has been assessed as having a **low magnitude** because of their mobile nature. The overall **significance** of the effect on demersal seine, beam and demersal trawl has been assessed as **Negligible** and **Not Significant.**

Pelagic trawl and seine

Pelagic trawl and seine intensity was highest to the northeast of the Study Area; most so in rectangle 43E9 (**Figure 12-8 (Drawing reference C01494-EGL3-MEA-FISH-005-C)**). As with demersal and beam trawl pelagic trawl vessels are also considered to be highly mobile, operating over large areas of the North Sea. The only landings by pelagic seine and pelagic trawls within the Study Area were by vessels over 40 m length (MMO, 2024). Given adequate notification via NtM and regular contact with the Proposed Development's FLO, it is expected that these vessels would be able to avoid construction areas.

The **sensitivity** of the receptor has been assessed as **negligible** because of their ability to find alternative fishing grounds. The receptor has been assessed as having a **low magnitude** because of their mobile nature. The overall significance of the effect on demersal seine, beam and demersal trawl has been assessed as **Negligible** and **Not Significant**.

12.8.1.2. Operation and Maintenance

The Proposed Development would be designed to minimise any maintenance requirements. Following construction, routine maintenance of the Proposed Development is not anticipated. However, the following activities may be required during the operational phase:

- Inspection surveys;
- Cable Repair (if required); and
- Reburial, remedial protection, or maintenance and reinstatement of external cable protection features.

Additional information on the Proposed Development operation and maintenance is provided in **Chapter 3: Project Description.**

All gear types

During operations and maintenance fishing activity would be temporarily excluded from discrete areas of the Study Area due to the need of implementing safety zones around the cable repair vessels and any support vessels such as guard vessels.

It is unknown how many events would happen during the lifetime of the EGL 3 Proposed Development that would require temporary restricted access to fishing grounds. However, any repair or maintenance activities would be temporary and localised rather than affecting the entire Study Area.

Notices to Mariners would be issued in advance of any maintenance works. Vessels using static gear such as pots may be required to temporarily relocate their gear for the duration of any maintenance works.

The vessels that use static gear would be the most sensitive to this impact as they would be required to move their gear. However, any restrictions would be highly localised and therefore should only impact a small number of vessels. Therefore, this receptor has been identified as having a value and **sensitivity** of l**ow.**

The mobile fleet who and can operate across large areas of the North Sea are unlikely to be impacted by operations or maintenance work. Therefore, these receptors have been identified as having a value and **sensitivity** as **low** because of their ability to find alternative fishing grounds due to their mobile nature.

The magnitude of the impact is predicted to localised and of a shorter duration than construction and therefore the **magnitude** has been assessed as **low** for static gear and **negligible** for other fishing methods because the disruption would be temporary and of a short duration.

The overall **significance** of the impact temporary restricted access to fishing grounds (including required static gear clearance) during operations and maintenance effect has been assessed as **Minor** and is **Not Significant.**

12.8.1.3. Decommissioning

At the point of decommissioning, project vessels and equipment would be required in which case the advisory clearance distances would be implemented. The fishing industry would be advised in advance and efforts made to ensure co-existence. Notices to Mariners would be issued in advance of the works.

The minimum life expectancy of the Proposed Development is 40 years, although with repairs, some cable systems last upwards of 60 years.

The environmental impact of decommissioning the Proposed Development would be assessed at the time of decommissioning in line with the legislation at the time. Removal of the cable is a similar process to the installation of the cable but in reverse. The environmental impact can therefore not be fully assessed until the environmental conditions at the time of decommissioning are established.

In any event, it is not anticipated that impacts from decommissioning would present any greater environmental risk than any assessed impacts from the construction phase.

All gear types

As with construction and operations, maintenance vessels using static gear would be impacted more than other vessels using other gear types. Therefore, this receptor has been identified as having a value and **sensitivity** as **medium** because there are limited areas of alternative fishing grounds that can be used. Due to their mobile nature other vessels are unlikely to be significantly impacted. Therefore, these receptors have been identified as having a value and **sensitivity** as **low** because they are able to find alternative fishing grounds due to their mobile nature.

The effects on commercial fishing of decommissioning activities would be to be the same or like those effects during the construction of the Proposed Development. Therefore, the overall **magnitude** for vessels using static gear of **low** and other vessels **low** because the disruption would be temporary and of a short duration and would not affect the whole route at any one time.

The overall **significance** of the impact temporary restricted access to fishing ground (including required static gear clearance) during decommissioning effect has been assessed as **Minor** and is **Not Significant**.

12.8.2. Temporary Displacement of Fishing Activity into Other Areas

12.8.2.1. Construction

The Proposed Development has the potential to effect commercial fishing activity (both static and mobile gear) during construction via temporary displacement. Fishing activity may be temporarily displaced to other areas due to loss of or restricted access to fishing

grounds because of the presence of project vessels and safety zones. Established steaming routes may also be disrupted increasing transit times to fishing areas. Although displacement would be temporary, due to the high level of construction activity in the North Sea there is the potential for cumulative impacts with other projects.

This impact would cause a localised, but temporary, loss of access to fishing grounds and with therefore cause temporary displacement of fishers. Exclusion from fishing grounds within the Study Area may lead to temporary increases in fishing effort in other areas which may already be heavily fished. It may also increase the steaming distances of vessels to reach other fishing grounds.

The following section has been sub-divided to consider each receptor, providing an assessment against each assigned receptor values/sensitivities and the magnitude of the impact. A summary of the assessment conclusions is provided in **Table 12-22** for ease of reference.

Table 12-22: Summary of assessment conclusions for temporary displacement of fishing activity into other areas

Receptor	Sensitivity/Value	Magnitude	Significance of Effect
Static gear	Medium	Low	Minor
Dredging	Negligible	Low	Negligible
Demersal seine	Negligible	Low	Negligible
Beam trawling and Demersal trawl	Negligible	Low	Negligible
All gear types (operations and maintenance)	Medium	Negligible to Low	Minor
All gear types (decommissioning)	Medium	Low	Minor

Static Gear

Prior to construction, potting vessels would be required to remove pots from the Study Area and either relocate them or bring to shore depending on available grounds and fishing preferences.

Though preference is to relocate to alternative fishing ground this may not be possible as adjacent areas may already be heavily fished by other vessels using static gear which could potentially lead to gear conflict. It could also lead to an increase in steaming distances to other fishing grounds.

The fishers who use static gear work in areas which are already heavily exploited and in smaller vessels; as such, they are more sensitive to change. Therefore, this receptor has been identified as having a **value** and **sensitivity** of **medium** because there are limited areas of alternative fishing grounds that can be used.

There is the potential for conflict over the reduced grounds if displaced vessels using mobile gear explore grounds primarily used by potting vessels. Conflict between mobile and static gear has the potential to occur and therefore impact fishing patterns in the area. It is understood that specific potting grounds may be targeted by specific fishers and therefore impact of displacement would vary between fishers with some more affected than others. The **magnitude** has been assessed as **low** because the disruption caused by construction of the project is only temporary and would I not affect the whole Study Area at any one time.

The overall **significance** of the effect on static gear fisheries has been assessed as **Minor** and **Not Significant.**

Dredging

There is some evidence of the use of dredging gear in the Study Area (**Figure 12-7**). Given adequate notification via NtM and regular contact with the Proposed Development's FLO, it is expected that these vessels would I be able to avoid construction areas. As this is a mobile gear it is thought that there is unlikely to be any significant effect on this type of fishing because the fishing is locationally flexible and they can work around the construction areas. Therefore, the receptor has been assessed as having a **value** and **sensitivity** of **negligible**, with the **magnitude** assessed as **low**. The overall **significance of** the effect on dredging fisheries has been assessed as **Negligible** and **Not Significant**.

Demersal seine

Vessels using demersal seine gear are unlikely to be impacted by displacement as they are a mobile gear type and would be able to find alternate grounds to fish in as the excluded areas would be limited and temporary. Given adequate notification via NtM and regular contact with the Proposed Development's FLO, it is expected that these vessels would be able to avoid construction areas. Therefore, it is unlikely there would be any significant effect on this gear type during construction. The receptor has been assessed as having a **negligible** value and **sensitivity**, with the **magnitude** assessed as **low**. The overall significance of the effect on demersal seine fisheries has been assessed as **Negligible** and **Not Significant.**

Beam trawling and Demersal trawl

Beam and demersal trawlers may be impacted if vessels using static gear methods that have been displaced move to grounds used by the trawlers. This could cause potential conflict of gear. The beam and demersal trawlers tend to be larger than the vessels using static gear and should be able to find alternate grounds, even if they need to steam further to reach them. Beam and demersal trawl fleets are highly mobile, due to their size (as mentioned, the highest catch value by demersal seine within the Study Area was £1,577,621 in 2023, from vessels 18.01 – 24 m length, and for demersal trawls, the highest catch value was from vessels 24.01 – 40 m length (£3,988,325); (MMO, 2024)) and can operate across large areas of the North Sea. Given adequate notification via NtM and regular contact with the Project's FLO, it is expected that these vessels would be able to avoid construction areas. Therefore, it is unlikely there would be any significant effect on this gear type during construction. The receptor has been assessed as having a **negligible value** and **sensitivity** with the **magnitude** assessed as **low**. The overall significance of the effect on demersal seine fisheries has been assessed to be **Negligible** and **Not Significant.**

12.8.2.2. Operation and Maintenance

If the cable is installed correctly the likelihood of it requiring maintenance and repair is significantly reduced. However, there remains the potential that localised repair works may be required. In these circumstances the significance of the effect would be of lower magnitude than during construction.

During operations and maintenance if vessels have safety zones established around them this could lead to displacement of fishing activity i.e., fishing vessels would be temporarily excluded from discrete areas of the Study Area.

During operations and maintenance of the Proposed Development there is potential to effect commercial fishing activity (both static and mobile gear) via temporary displacement. This impact would cause a localised, but temporary, loss of access to fishing grounds and with therefore cause temporary displacement of fishers. Exclusion from fishing grounds within the Study Area may lead to temporary increases in fishing effort in other areas which may already be heavily fished and could cause potential conflicts.

All gear types

Any cable repair or maintenance activities would be temporary and localised rather than affecting the entire Study Area.

NtMs would be issued in advance of any maintenance works. Vessels using static gear such as pots may be required to temporarily relocate their gear for the duration of any maintenance works and therefore be temporarily displaced.

The vessels that use static gear would be the most sensitive to this impact as they would be required to move their gear. However, any restrictions would be highly localised and therefore should only impact a small number of vessels. Therefore, this receptor has been identified as having a value and **sensitivity** of **medium** because there are limited areas of alternative fishing grounds that can be used.

The mobile fleet who and can operate across large areas of the North Sea are unlikely to be impacted by operations or maintenance work. Therefore, these receptors have been identified as having a value and **sensitivity** of **low** because of their ability to find alternative fishing grounds due to their mobile nature. The impact is predicted to be highly localised and of a shorter duration than construction and therefore the **magnitude** has been assessed as **low** for static gear and **negligible** for other fishing methods because the disruption would be temporary.

The overall **significance** of temporary displacement of fishing activity into other area during operations and maintenance effect has been assessed has been assessed as **Minor** and **Not Significant.**

12.8.2.3. Decommissioning

As with construction and operations and maintenance, vessels using static gear would be impacted more than other vessels using other gear types. Therefore, this receptor has been identified as having a value and **sensitivity** of **medium** because there are limited areas of alternative fishing grounds that can be used.

The effects on commercial fishing of decommissioning activities would be to be the same or similar or less than those effects during the construction of the Proposed Development. Therefore, the overall **magnitude** for vessels using static gear would be **low** and for other vessels would also be **low** because the disruption would be temporary and of a short duration.

Due to their mobile nature other vessels are unlikely to be significantly impacted. Therefore, these receptors have been identified as having a value and **sensitivity** of **low** because of their ability to find alternative fishing grounds due to their mobile nature.

The overall **significance** of temporary displacement of fishing activity into other areas has been assessed as **Minor** and **Not Significant.**

12.8.3. Loss of Grounds

12.8.3.1. All phases

The deposit of external cable protection would cause a localised change in seabed topography. Bottom drift nets are reliant on a flat featureless seabed to operate effectively. The placement of external cable protection would therefore exclude the gear type from being used in that area during construction, and operation. According to **Chapter 3: Project Description**, up to 10 km of cable may require protection, with 10 m maximum cable protection width on the seabed, with a maximum height of 1.5 m cable protection berm. This equates to 0.1 km^2 of maximum area of seabed covered by cable protection. In addition, rock protection would be used at infrastructure crossings giving a combined total of 0.135 km^2 of rock protection. Further, removal of cable protection during decommissioning could also cause a loss of grounds to bottom drift nets.

Bottom drift netting

Bottom drift nettings can operate across large areas of the North Sea are unlikely to be impacted by construction, operations or maintenance work, and decommissioning. Within the Study Area, bottom drift netting accounted for only £297 of landings, solely from vessels 8 m and under, and only from rectangle 44E8 (MMO, 2024). This receptor has been identified as having a value and **sensitivity** of **medium** because there are limited areas of alternative fishing grounds that can be used. However, whilst the Study Area partially covers rectangle 44E8, this rectangle is not intercepted by the RLB, and it is therefore unlikely that effects from works would be noticed. The **magnitude** has been assessed as **negligible** because loss of grounds would be temporary and the impact is likely to cause only a slight loss of ability to carry out fishing activities during construction.

The overall **significance** of loss of grounds has been assessed as **Minor** and is **Not Significant**.

12.8.4. Changes in Distribution of Target Species

12.8.4.1. All phases

All gear types

Distributions of fish and shellfish populations have the potential to be affected by the activities during construction. Changes in distribution of species may occur due to construction activities such as pre-sweeping, cable burial, and deposition of external cable protection, which could lead to alterations to ecosystem functions. Distributions of fish and shellfish populations have the potential to be affected by the combined effects of multiple impacts on fish and shellfish, which may then impact upon fishers' catches, whether it be by fishers noticing poorer catches, improved catches, or having to switch to targeting another species.

The highest volume of fish landings across rectangles 42E8, 42E9, 43E8, 43E9 and 44E8 was for herring, in 2023 (**Table 12-10**). Data from stomach records of herring in the North Sea, observed during scientific surveys, found this species to be a generalist, with records of (from the database and portal for fish stomach records; Pinnegar et al., 2023) 140 different prey items within stomachs. The largest contributor to the diets of herring were copepods, which are major food sources for many fish species and are abundant throughout the North Sea (Gao et al. 2021). As such, it is likely that fish predators' prey would remain readily available; even if horse mackerel were temporarily displaced, copepod prey items would likely still be readily available in other areas, and as planktonic species, copepods would also likely remain within the project area, acting as prey for commercially important fish species.

The impact is predicted to be of local spatial extent, short-term duration, and affecting only a small proportion of the total area at any one time. The sensitivity of the impact is **low** because of their ability to find alternative fishing grounds due to the mobile nature of gear types, and the **magnitude** of the impact to commercial fisheries is therefore considered to be **negligible**.

The overall **significance** of changes in distribution of target species has been assessed as **Negligible** and **Not Significant.**

12.9. Project Specific Mitigation Measures

The appraisal of the effects of the Proposed Development on commercial fisheries identified effects not exceeding 'minor' significance for the construction, operation and maintenance and decommissioning phases. These effects can be adequately controlled through the design and control measures embedded into the Proposed Development. No additional mitigation is proposed.

12.10. Residual Effects

The appraisal of the effects of the Proposed Development on commercial fisheries receptors identified effects not exceeding 'minor' significance for the construction, operation and maintenance and decommissioning phases. No residual effects are predicted.

12.11. Cumulative Effects

If the construction or decommissioning of other plans and projects have a temporal overlap with the construction of the Proposed Development, there is potential for cumulative adverse effects on commercial fisheries greater than that caused solely by the Proposed

Development. As outlined by **Chapter 4: Marine Environmental Appraisal Scope and Methodology**, a four-stage approach has been undertaken to assess the cumulative adverse effects from other plans and projects in-combination with the construction of the Proposed Development.

12.11.1. Stage 1: Identification of ZOI

Surrounding offshore wind farms (OWFs) and cable projects may cause temporary restricted access to fishing grounds, temporary displacement of fishing activities into other areas, loss of grounds, and changes in distribution of target species impacts. A precautionary ZoI of 30 km has been utilised to take vessel displacement into account, which equates to approximately 16 NM.

12.11.2. Stage 2: Shortlist of Plans and Projects Relevant to Commercial Fisheries

Chapter 4: Marine Environmental Appraisal Scope and Methodology outlines a longlist of plans and projects within 30 km of the Proposed Development. From this longlist, six plans/projects within 30 km of the Proposed Development have been shortlisted to inform the cumulative effects assessment for commercial fisheries (**Table 12-23**). Infrastructure within this ZoI that is already operational has been scoped out, since the effects of the maintenance of operational projects has influenced the baseline assessment.

Table 12-23: Shortlist of projects

Application Reference	Plan or project	Type of project	Distance from Proposed Development	Status
00010686	Flora, BP Northeast Offshore Wind	OWF (Innovation and Targeted Oil and Gas leasing round (INTOG))	19.65 km	Application- EPS Licence
SCOP-0056	Bowdun OWF	OWF	5.78 km	Pre Application – Scoping Report
00011026	Muir Mhòr OWF	OWF	~3 km	Application – EIA Submitted
0010861	Ossian Floating OWF	OWF	2.66 km	Application – EIA Submitted
00010344	Morven OWF	OWF	1.98 km	Pre Application - Scoping Report
06771 & 06870	NorthConnect	Cable	0 km / crosses	Licence expired (cable have has been taken on by Cenos offshore wind farm as detailed below)
SCOP-0020	MarramWind OWF	Export cable	0 km/crosses	Pre Application – Scoping Report
00011091	Cenos Floating OWF – transmission infrastructure	Export cable	0 km/crosses	Application – EIA Submitted
SCOP-0066	Aspen Floating OWF – transmission infrastructure	Export cable	0 km/crosses	Pre-application – Scoping Report
00009943	Eastern Green Link 2 (EGL 2)	Cable	0 km / crosses	Licence granted

12.11.3. Stage 3: Information Gathering and Identification of Pressure-Receptor Pathways

Construction of the Proposed Development is scheduled to commence in 2028 with the latest possible completion by 2033. Within this window, construction (including pre-lay activity) is expected to take 55 months.

Flora OWF is situated approximately 19.65 km from the Proposed Development; details on its proposed construction and operation dates are currently unknown.

Bowdun OWF is situated approximately 5.87 km from the Proposed Development and is due to commence construction in 2029, with commercial operation scheduled to begin in 2032-2033. There may therefore be a small window of overlap in the construction of the Proposed Development and Bowdun OWF.

The export cable corridor of Miur Mhòr OWF is situated approximately 3 km from the RLB of the Proposed Development. Miur Mhòr OWF is currently in its application phase, having submitted EIA in December 2024 (application reference number: 00011026) (Scottish Government, 2024b), and is scheduled to commence construction in 2030, with construction activities lasting up to four years (MMOWF Ltd, 2024). As such, there may be a direct temporal overlap in construction between the two projects and potential for cumulative

adverse effects from temporary restricted access to fishing grounds, temporary displacement of fishing activity into other areas, loss of grounds, and changes in distribution of target species.

MarramWind OWF is currently in pre-application, having submitted the Scoping Report in January 2023 (application reference number: SCOP-0020) (Scottish Government, 2023). Construction is scheduled to begin in the late 2020s, following planning decisions in 2026, and MarramWind OWF is scheduled to be operational in the 2030s. Therefore, there may be a direct temporal overlap in construction between the two projects. The scoping boundary of MarramWind OWF overlaps with the RLB of the Proposed Development at Peterhead nearshore. However, due to the application stage of MarramWind OWF, there is no EIA available for this project and its project-alone impact to Commercial Fisheries receptors is unknown. Therefore, MarramWind OWF cannot be assessed in-combination with the Proposed Development and will not be taken forward to stage 4 of the cumulative effects assessment.

Ossian Floating OWF is situated approximately 2.66 km from the Proposed Development and is anticipated to commence construction from 2031 to 2038, with a total Lease Area of 858 km^2. There may therefore be a window of overlap in the construction of the Proposed Development and Ossian.

Morven OWF's construction is intended to take place from 2027, and simultaneous construction or sequential construction in quick succession of the two projects has the potential for cumulative adverse effects from temporary restricted access to fishing ground, temporary displacement of fishing activity into other areas, loss of grounds, and changes in distribution of target species.

Cenos Floating OWF's transmission crosses the Proposed Development. It is currently in its permitting phase (EIA reports have been submitted) and it is anticipated to begin construction from 2030, with operation in 2031. As such, there may be a direct temporal overlap in construction between the two projects.

Aspen Floating OWF's transmission crosses the Proposed Development and is currently in its pre-application phase. It is anticipated that construction may begin in 2028, with operation in 2029/2030. As such, there may be a direct temporal overlap in construction between the two projects.

NorthConnect was planned to cross the Proposed Development at approximately KP 576. However, construction of Northconnect has been placed on hold by the Norwegian Government, and the current Marine Licence for this project has expired (expiration date 2024) (Northconnect, 2025). It is understood that the Cenos OWF has taken on the planned cable route from NorthConnect and a new licence application has been submitted. NorthConnect is therefore not considered further, however Cenos OWF is detailed further below and taken forward for assessment.

The construction of EGL 2 is currently underway, with cable operation scheduled for 2029 (Eastern Green Link 2, 2025). Additionally, EGL 2 and the Proposed Development share the same landfall at Sandford Bay, Peterhead. Therefore, it is expected that there would be a temporal overlap in construction with the Proposed Development for one year. The MLA for EGL 2 has been submitted and can be viewed using the MD-LOT website (Licence Number: MS-00009943).

12.11.4. Stage 4: Assessment

12.11.4.1. Temporary restricted access to fishing ground

This MEAp concludes in **Section 12.8.2** that there are no significant adverse effects of temporary restricted access to fishing ground as a result of the Proposed Development.

The aforementioned proposed projects may also present the potential for cumulative effect on commercial fishing activity, which lead to tighter restrictions on fishing ground access. The EGL2 development includes a minimum safe distance of 500 m for fishing vessels from the project's anchoring systems, which results in a 1.5 km radius recommended clearance zone (RCZ). As with the Proposed Development, EGL2 has implemented embedded mitigation measures to minimise disturbance to fishers during the construction phase, such as the employment of a FLO, the issuing of a NtMs, and the use of guard vessels to monitor vessel activity. The assessment of the impacts of temporary restricted access to fishing ground did not identify any impacts above minor significance on commercial fisheries receptors (dredging, demersal trawling, and pelagic trawling) except for potters/creelers, which was assessed as having a medium sensitivity to this impact, which was considered to be of medium magnitude and thus at a moderate, significant impact, for EGL2 (AECOM, 2022). This was due to the perceived limited operational ranges and fishing opportunities of small potter/creeler vessels.

Ossian OWF anticipates site preparation activities of 7,334,400 m^2 for boulder clearance along the inter-array cables, 1,416,000 m^2 of boulder clearance along the export cables, and sand wave clearance of 5,867,520 m^2. The export cables have a total length of 1,261 km, with up to 24.45 km^2 of seabed disturbance for these cables. There may be up to 12 Ossian Floating OWF export cables, with a total length of 236 km and with a total seabed disturbance area of 4.72 km^2. Like with the inter-array cables, up to 20% of the export cables may require protection and have a footprint of 944,000 m^2. Like the inter-array cables, the export cables have a total cable crossing area of up to 12,000 m^2. The assessment of the impacts of temporary restricted access to fishing ground did not identify any impacts above minor significance on commercial fisheries receptors (demersal otter trawl and demersal seine, pelagic and dredge, and potting fisheries).

Cenos Floating OWF is to be operational for 35 years, with 500 m safety zones around infrastructure during periods of major maintenance. The transmission infrastructure would consist of either one offshore substation and converter platform (OSCP) fully integrated to provide HVDC power transmission and HVAC power distribution, or two OSCPs to provide HVDC power transmission and HVAC power distribution. The latter scenario would include two OSCP jackets positioned adjacently at the same location, with a 50 m minimum spacing between jackets. There is no anticipated interaction between the offshore wind farm infrastructure and the Proposed Development as the latter is anticipated to interact and cross the export cable only. Cable burial depth is anticipated to be 0.4 m minimum (target of 1 m), with a maximum depth of 1.5 m. During operation, this impact was assessed as having a negligible significance, which is not significant.

An EIA has not yet been published for Flora OWF, Bowdun OWF, or Morven OWF, thus a project alone significance assessment is not available to inform this cumulative effect assessment. For these wind farms to be consented, the projects would need to mitigate any significant adverse impacts that may arise from their developments and, due to the scale of footprint of these wind farms compared to the Proposed Development, the impact would be significantly larger than that of the Proposed Development.

EGL2 have proposed appropriate mitigation to be implemented for affected vessels, following an evidence-based approach via establishment of co-operation agreements in line with FLOWW guidance. EGL 2 concluded that this proposed mitigation would reduce the effect to minor, which was assessed as not significant. Combined with the **Minor** and **Not Significant** assessment for the Proposed Development, the cumulative effect of temporary restricted access to fishing ground is therefore assessed as **Minor** and **Not Significant.**

12.11.4.2. Temporary displacement of fishing activity into other areas

This MEAp concludes in **Section 12.8.2** that there are no significant adverse effects of temporary displacement of fishing activity into other areas as a result of the Proposed Development.

The assessment of temporary displacement of fishing activity into other areas for EGL2 is the same as presented in **Section 12.11.4.1**; a moderate impact significance for potters/creelers during construction.

Ossian Floating OWF has assessed the impacts of temporary displacement of fishing activity into other areas, based on the maximum design scenario presented in **Section 12.11.4.1.** The assessment of the impacts of temporary displacement of fishing activity into other areas did not identify any impacts above minor significance on commercial fisheries receptors (demersal otter trawl and demersal seine, pelagic and dredge, and potting fisheries).

Cenos Floating OWF's parameters are detailed in Section **12.11.4.1** and are assessed as not significant**.**

An EIA has not yet been published for Flora OWF, Bowdun OWF, or Morven OWF, thus a project alone significance assessment is not available to inform this cumulative effect assessment. For these wind farms to be consented, the projects would need to mitigate any significant adverse impacts that may arise from their developments and, due to the scale of footprint of these wind farms compared to the Proposed Development, the impact would be significantly larger than that of the Proposed Development.

As per **Section 12.11.4.1,** EGL2 have proposed appropriate mitigation to be implemented for affected vessels, following an evidence-based approach via establishment of co-operation agreements in line with FLOWW guidance. EGL2 concluded that this proposed mitigation would reduce the effect to minor, which is considered to be not significant. Combined with the **Minor** and **Not Significant** assessment for the Proposed Development, the cumulative effect of temporary displacement of fishing activity into other areas is therefore assessed as **Minor** and **Not Significant.**

12.11.4.3. Loss of grounds

This MEAp concludes in **Section 12.8.4** that there are no significant adverse effects of loss of grounds because of the Proposed Development.

Ossian Floating OWF is scheduled to be operational for 35 years and would include up to 265 wind turbines, 265 floating foundations, a 130m x 110 m foundation surface dimension, and a 1km minimum wind turbine spacing. The mooring systems for the wind turbines are of up to 700 m radius with a 1,539,380 m^2 mooring line cross-sectional area and 407,935,806 m^2 total mooring line area, with a 47.54% proportion of mooring radius compared to the total Lease Area. There may be up to 15 Offshore Substation Platforms (OSPs) including three OSPs of 121 m length and 89 m width (and 12 legs per foundation and total seabed footprint and scour protection of 44,693 m^2) and 12 smaller OSPs of 41 m length and 37 m width (and six legs per foundation and total seabed footprint and scour protection of 50,121 m^2). The scour protection of moorings and anchors are up to 2,385 m^2 of scour protection footprint per foundation, and total scour protection for the Array of 632,196 m^2. Up to 20% of the length of cables may require cable protection (which may include rock, concrete, cast iron, polyurethane, or polyethylene), and the total inter-array cable protection footprint for the Ossian Array is up to 4,889,600 m^2 with 12 inter-array cable crossings which have a total cable crossing area of up to 12,000 m^2. The assessment of the impacts of loss of grounds did not identify any impacts above minor significance on commercial fisheries receptors (demersal otter trawl and demersal seine, pelagic and dredge, and potting fisheries).

Cenos Floating OWF's parameters are detailed in Section **12.11.4.1** and are assessed as not significant**.**

An EIA has not yet been published for Flora OWF, Bowdun OWF, or Morven OWF, thus a project alone significance assessment is not available to inform this cumulative effect assessment. For these wind farms to be consented, the projects would need to mitigate any significant adverse impacts that may arise from their developments and, due to the scale of footprint of these wind farms compared to the Proposed Development, the impact would be significantly larger than that of the Proposed Development.

EGL2 may also have potential for cumulative effect on commercial fisheries, which could lead to a loss of fishing grounds. However, the assessment of the impacts of 'long-term loss of grounds or restricted access to fishing grounds' did not identify any impacts above minor significance on commercial fisheries receptors for EGL2 (AECOM, 2022).

The cumulative effect of loss of grounds has been assessed as **Minor** and **Not Significant**.

12.11.4.4. Changes in distribution of target species

This MEAp concludes in **Section 12.8.4** that there are no significant adverse effects of changes in distributions of target species because of the Proposed Development.

Ossian Floating OWF assessed impacts of temporary habitat loss and disturbance, long term habitat loss and disturbance, colonisation of hard structures, underwater noise from piling and UXO clearance, and effects to fish and shellfish receptors due to electromagnetic fields (EMF) from subsea electrical cabling as part of its fish and shellfish assessments. As effects were assessed as either negligible or minor, it was assumed that effects on target species would also be negligible or minor.

An EIA has not yet been published for Flora OWF, Bowdun OWF, or Morven OWF, thus a project alone significance assessment is not available to inform this cumulative effect assessment. For these wind farms to be consented, the projects would need to mitigate any significant adverse impacts that may arise from their developments and, due to the scale of footprint of these wind farms compared to the Proposed Development, the impact would be significantly larger than that of the Proposed Development.

Cenos Floating OWF's parameters are detailed in Section **12.11.4.1** and are assessed as not significant**.**

EGL2 may also have potential to have a cumulative effect on fish and shellfish species, which could indirectly affect the productivity of the commercial fisheries which target them. However, the assessment of the impacts of temporary physical disturbance of fish and shellfish habitat, permanent loss of fish and shellfish due to displacement of hard substrates on the seabed, temporary increase in suspended sediment concentrations and sediment deposition, reduction in marine water quality, underwater sound effects on fish and shellfish, and accidental leaks and spills from vessels did not identify any impacts above minor significance on fish and shellfish receptors for EGL2 (AECOM, 2022).

The cumulative effect of changes in distribution of target species has been assessed as **Minor** and **Not Significant**.

12.11.4.5. Stage 4 assessment conclusion

Cumulative effects have been assessed for temporary restricted access to fishing ground, temporary displacement of fishing activity into other areas, loss of grounds, and changes in distribution of target species, for projects Flora OWF, Bowdun OWF, Muir Mhòr OWF, Ossian Floating OWF, Morven OWF, NorthConnect, MarramWind OWF, Cenos Floating OWF, Aspen Floating OWF, and EGL2. In all cases, no cumulative effects were concluded.

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