CALEDONIA
Offshore Wind Farm

**Code:** UKCAL-CWF-CON-EIA-RPT-00007-7B50

# Volume 7B Proposed Development (Offshore) Appendices

## Appendix 8-1 Commercial Fisheries Technical Report

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# Volume 7B Appendix 8-1 Commercial Fisheries Technical Report

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|---|---|
| **Code** | UKCAL-CWF-CON-EIA-RPT-00007-7B50 |
| **Revision** | Issued |
| **Date** | 18 October 2024 |

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# Acronyms and Abbreviations

| | |
|---|---|
| **AIS** | Automatic Identification System |
| **DCF** | Data Collection Framework |
| **EEZ** | Exclusive Economic Zone |
| **EIA** | Environmental Impact Assessment |
| **EMSA** | European Maritime Safety Agency |
| **EU** | European Union |
| **FU** | Functional Unit |
| **GIS** | Geographic Information System |
| **ICES** | International Council for the Exploration of the Sea |
| **MCRS** | Minimum Conservation Reference Size |
| **MMO** | Marine Management Organisation |
| **MSY** | Maximum Sustainable Yield |
| **nm** | Nautical Mile |
| **NMPi** | National Marine Plan interactive |
| **OECC** | Offshore Export Cable Corridor |
| **OWF** | Offshore Wind Farm |
| **RBS** | Register of Buyers and Sellers |
| **SAR** | Swept Area Ratio |
| **TAC** | Total Allowable Catch |
| **TCA** | Trade and Cooperation Agreement |
| **UK** | United Kingdom |
| **VMS** | Vessel Monitoring System |

# 1 Introduction

1.1.1.1 This Technical Report provides a detailed characterisation of the commercial fisheries in operation across the Caledonia Offshore Wind Farm (OWF) (Array Areas) and Caledonia Offshore Export Cable Corridor (OECC), together known as the Proposed Development (Offshore). It has been prepared to support the Environmental Impact Assessment (EIA) of the Proposed Development (Offshore).

1.1.1.2 The information on commercial fisheries activity presented in this Technical Report is intended to inform the EIA by providing a detailed understanding of the commercial fisheries baseline with an extended timeline of twelve years (2011 to 2022), against which the potential impacts of the Proposed Development (Offshore) can be assessed.

1.1.1.3 Commercial fisheries activity described in this Technical Report, is defined as fishing activity legally undertaken where the catch is sold for taxable profit.

1.1.1.4 Caledonia Offshore Wind Farm Limited (the Applicant) is expecting the Proposed Development (Offshore) to be developed in two phases (see Volume 1, Chapter 5: Proposed Development Phasing). To support with the deliverability of these phases, the Applicant is submitting two offshore consent applications (Section 36 and associated Marine Licences) for the Proposed Development (Offshore). The two consent applications for each of the phases are referred to as:

- Caledonia North; and
- Caledonia South.

1.1.1.5 This Technical Report is intended to inform and support the assessment of the Proposed Development (Offshore), Caledonia North and Caledonia South as presented in Volumes 2, 3 and 4: Chapter 8: Commercial Fisheries, respectively of the Environmental Impact Assessment Report.

# 2 Study Area

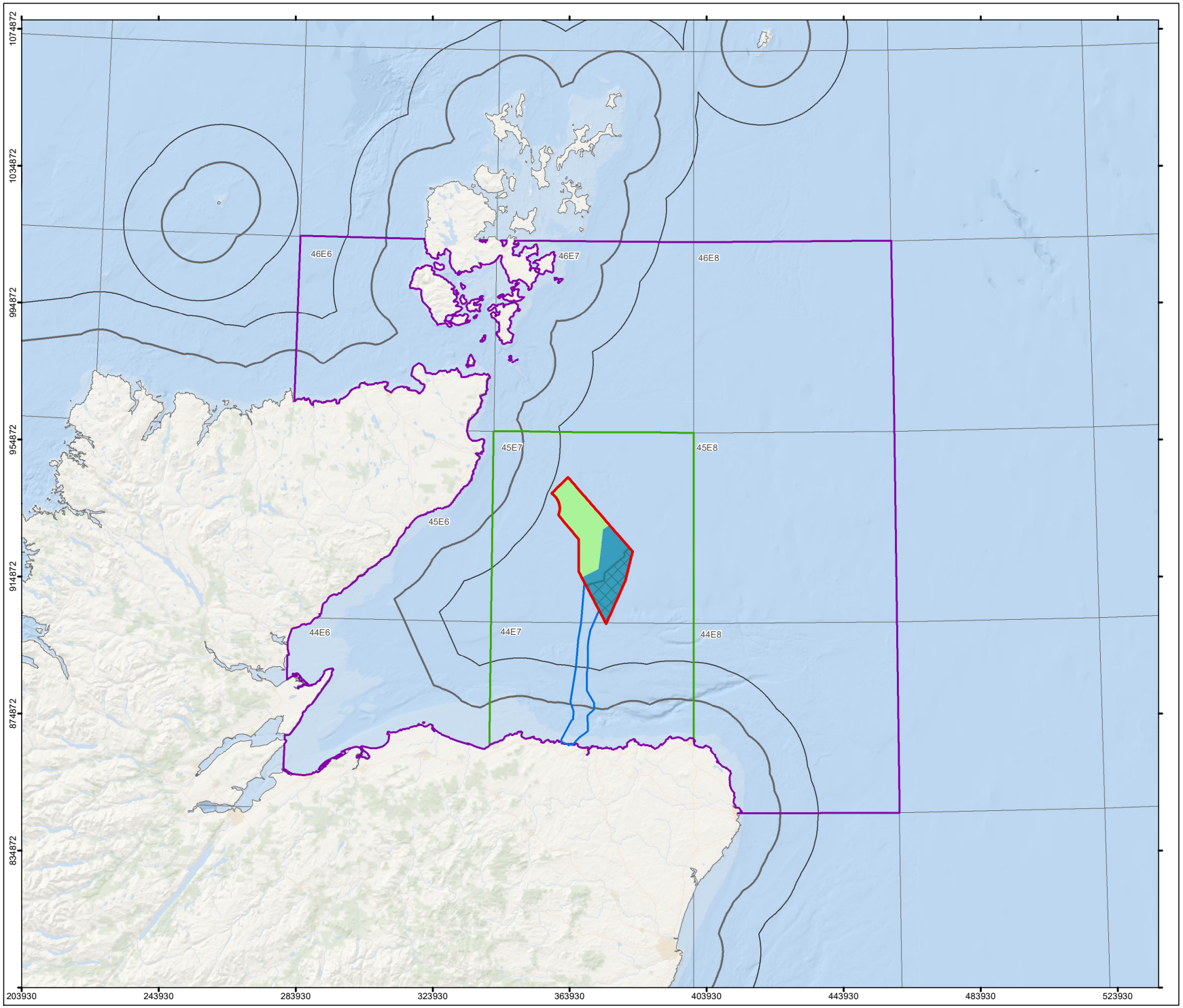
2.1.1.1 The Proposed Development (Offshore) is located within the south-west portion of the International Council for the Exploration of the Sea (ICES) Division 4a (northern North Sea) statistical area; within the United Kingdom (UK) Exclusive Economic Zone (EEZ) waters. The Caledonia OWF is located outside the UK territorial waters 12 nautical miles (nm) boundary and the Caledonia OECC extends outside and inside the 12nm boundary to shore at landfall. For the purpose of statistical analysis, ICES Division 4a is divided into statistical rectangles which are consistent across all Member States operating in the North Sea. Each ICES statistical rectangle is '30 min latitude and 1 degree longitude' in size, which equates to approximately 30nm$^2$.

2.1.1.2 The Caledonia OWF, comprising the Caledonia North Site (Array Area) and Caledonia South Site (Array Area), is primarily located within ICES rectangle 45E7, with the very southern tip entering ICES rectangle 44E7. The Caledonia OECC extends across ICES rectangles 44E7 and 45E7. These two ICES rectangles form the commercial fisheries local study area for the purposes of the EIA (Figure 2-1).

2.1.1.3 To understand fishing activity in waters adjacent to the Proposed Development (Offshore), a commercial fisheries regional study area has been defined to include the commercial fisheries local study area together with surrounding ICES rectangles 44E6, 44F8, 45E6, 45E7, 46E6, 46E7 and 46E8. Analysis of data at the scale of the commercial fisheries regional study area takes into consideration that most commercial fish and shellfish receptor populations are distributed at a wider spatial scale, ensuring that potential implications of displacement of fishing activity can be adequately understood.

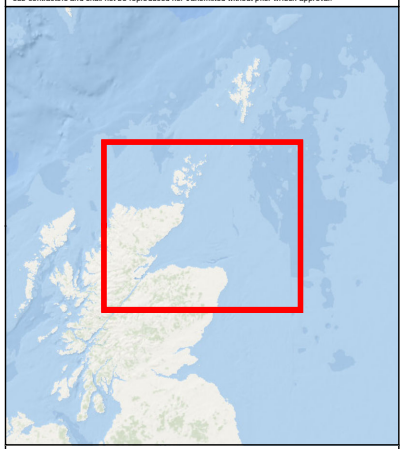
2.1.1.4 To summarise, there are two scales of commercial fisheries study areas as follows:

- Commercial fisheries local study area: 44E7 and 45E7; and
- Commercial fisheries regional fisheries study area: 44E6-E8, 45E6-E8, 46E6-E8.




- Caledonia OWF
- Caledonia North Site
- Caledonia South Site
- Proposed Floating Area
- Offshore Export Cable Corridor
- Commercial Fisheries Regional Study Area
- Commercial Fisheries Local Study Area
- ICES Statistical Rectangles
- 12 nm Boundary
- 6 nm Boundary





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CALEDONIA Offshore Wind Farm

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OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 2-1
## Commercial Fisheries Study Areas

| STATUS | SCALE | |
|---|---|---|
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# 3 Methodology

## 3.1 Approach

3.1.1.1 This Technical Report has been developed through an extensive and thorough analysis of data and literature, sources of which are fully referenced at the end of this document. The assessment encompasses both publicly available data sets and data obtained through specific requests. Landings statistics have been analysed using Microsoft Excel, while vessel monitoring system (VMS) data and Automatic Identification System (AIS) data have been evaluated using ArcMap Geographic Information System (GIS) software.

3.1.1.2 In addition to quantitative data, qualitative insights have been gathered through direct consultation with the fishing industry.

3.1.1.3 This analysis has been through a desktop study, with no specific commercial fisheries survey undertaken.

## 3.2 Desktop Study

3.2.1.1 A detailed desktop review of existing studies and datasets was undertaken to gather information on commercial fisheries within the commercial fisheries local and regional study areas. Table 3-1 summarises the studies and datasets used.

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

3.2.1.3 Where data sources allow, a five to twelve-year trend analysis has been undertaken, using the most recent annual datasets available at the time of writing. The temporal extent of this time period is dependent on each data source analysed (e.g., 2012 to 2016; 2016 to 2020; or 2011 to 2022), as annotated in Table 3-1.

3.2.1.4 Relevant literature from a number of sources has also been reviewed in the preparation of this Technical Report. A full list of references is provided at the end of this report and are cited within the text where appropriate.

3.2.1.5 It is noted that the time period of the baseline data analysis includes years impacted by COVID-19, specifically 2020 and 2021 when restrictions affected normal business operations and market trade. Landings at a national level were seen to decline over this period. For example, the total first sales value of commercial landings Scottish vessels decreased from a high of £735 million in 2016, to a low of £520 million in 2020 due to the impacts of Covid-19 (Marine Directorate, 2023[1]). The total value landed by Scottish vessels has since increased to £617 million in 2022 (Marine Directorate, 2023[1]).

Table 3-1: Summary of Key Data Sources.

| Title | Author | Year |
|---|---|---|
| Landings statistics data for UK-registered vessels, with data query attributes for: landing year; landing month; vessel length category; ICES rectangle; vessel/gear type; port of landing; species; live weight (tonnes); and value (£). | MMO (2022a[2]; 2023a[3]) | 2011 to 2022 |
| Landings statistics for EU registered vessels with data query attributes for: landing year; landing quarter; ICES rectangle; vessel length; gear type; species; and, landed weight (tonnes). | EU Data Collection Framework (EU DCF) (2022[4]) | 2012 to 2016 |
| VMS data for UK registered vessels ≥15m length. Note that UK vessels ≥12m in length have VMS on board, however, to date, the MMO provide amalgamated VMS datasets for ≥15m vessels only. VMS data sourced from MMO displays the first sales value (£) of catches. | MMO (2022b[5]) | 2016 to 2020 |
| VMS data for EU registered vessels ≥12m length. VMS data sourced from ICES displays the surface Swept Area Ratio (SAR) of catches by different gear types and covers EU (including UK) registered vessels 12m and over in length. Surface SAR indicates the number of times in an annual period that a demersal fishing gear makes contact with (or sweeps) the seabed surface. Surface SAR provides a proxy for fishing intensity. | ICES (2022[6]) | 2016 to 2020 |
| Fishing vessel route density, based on vessel AIS positional data. AIS is required to be fitted on fishing vessels ≥15m length. | EMSA (2023[7]) | 2019 to 2022 |
| Surveillance data indicating vessel nationality and gear type for actively fishing vessels. | Marine Directorate (2024[8]) | 2017 to 2022 |
| Fishing intensity based on VMS and landings data for UK vessels ≥15m in length for squid, demersal species, nephrops and scallops. | Kafas *et al* (2013[23]) | 2009 to 2013 |

## 3.3 Data Limitations and Uncertainties

3.3.1.1 A range of data limitations and uncertainty exist for all of the commercial fisheries datasets assessed within this Technical Report. The level of uncertainty and confidence of each data set is defined in Table 3-2 based on expert judgement of the assessment team.

3.3.1.2 Limitations of landings data include the spatial size of ICES rectangles which can misrepresent actual activity across the site boundary; and care is therefore required when interpreting these data.

3.3.1.3 It is noted that all commercial landings by UK registered vessels are subject to the Register of Buyers and Sellers (RBS) legislation and, therefore, landings by UK vessels of all lengths are recorded within the MMO iFish database. While it is recognised that there is no statutory requirement for owners of vessels 10m and under to declare their catches, registered buyers are legally required to provide sales notes of all commercially sold fish and shellfish due to the 2005 Registration of Buyers and Sellers of First-Sale Fish Scheme (RBS legislation) (MMO, 2022a[2]; 2023a[23]). The RBS legislation is applicable to licenced fishing vessels of all lengths and requires name and port letters and numbers of the vessel which landed the fish to be recorded in relation to each purchase. For the 10m and under sector, landing statistics are recorded on sales notes provided by the registered buyers (MMO, 2022a[2]; 2023a[3]). Information that may not be formally recorded on the sales note, such as gear and fishing area, is added by coastal staff based on local knowledge of the vessels they administer - for example, from observations of the vessel during inspections at ports or from air and sea surveillance activities as well as discussions with the owner and/or operator of the vessel (MMO, 2022a[2]; 2023a[3]).

3.3.1.4 Lack of recent landings statistics for EU (non-UK) fleets is also recognised as a data limitation; based on the most recent European Commission data call, more recent landings data (2017 to 2022) is no longer available by ICES rectangle. Data at a scale of ICES division (i.e., the whole of the northern North Sea) is less useful to understand fishing activity specific to the Proposed Development (Offshore).

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

3.3.1.6 Marine Directorate fisheries patrol vessels and surveillance aircraft operate in coordination with the Royal Navy's Fisheries Protection Squadron. Marine Directorate surveillance aircraft are used to construct an on-going picture of fishing activity within the Scottish EEZ and to make effective use of patrol vessel activity by coordinated use of surveillance data. These data cannot be considered to give an accurate picture of the actual level of activity and have a number of limitations, including:

- Patrol effort by the Marine Directorate, Royal Navy Fisheries Patrol Vessels and patrol aircraft are optimised for enforcement purposes and not collection of sightings data. Areas with fewer fisheries enforcement issues are therefore likely to be visited less often and result in lower data confidence;
- Surveillance data are only indicative of areas where fishing activities occur, as there is no continuous monitoring of activities;
- Surveillance data present a snapshot of activity in an area and it cannot be assumed that if no vessels have been sighted then no fishing takes place; and
- Vessels fishing at night would likely remain undetected.

Table 3-2: Data Limitations and Uncertainty (the Uncertainty and Confidence Levels are Defined Based on Judgement and are Intended to Inform the Appropriateness of Data Used to Inform the EIA).

| Source | Type of Data | Limitation and Uncertainty |
|---|---|---|
| MMO (2022a[2]; 2023a[3]) | Landings statistics (2016 to 2022) data for UK-registered vessels. | The data is recorded from sales notes and landing declarations for all vessel lengths. Due to the UK legislation of RBS, data is considered accurate and verifiable.<br>Data assessed with low uncertainty and high confidence. |
| Marine Directorate (2023[1]) | Scottish Sea Fisheries Statistics 2022. | The data is recorded from sales notes and landing declarations for all vessel lengths. Due to the UK legislation of RBS, data is considered accurate and verifiable.<br>Data assessed with low uncertainty and high confidence. |
| Kafas *et al*. (2013[23]) | Amalgamated VMS intensity layer by gear type. | The data is only available for 15m and over vessels, so is not representative of <15m vessels. Data assessed with medium uncertainty and medium confidence. |
| Marine Directorate (2024[8]) | Surveillance data (2017-2022) | The data is for all vessel lengths and UN and non-UK vessels. Data presents a snap-shot of activity at time of surveillance and is not routinely collected. Data assessed with medium uncertainty and medium confidence. |
| EU DCF (2022[4]) | Landings statistics (2012 to 2016) data for EU landings from ICES rectangle 36E6 by country, species and gear type. | The data is submitted by individual member states and therefore limitations vary per country. Vessels under 10m may be omitted or mis-represented by the data. Accuracy is likely to be greater for landings from larger vessels.<br>For UK vessels under 10m length data is assessed with high uncertainty and low confidence.<br>For all other EU vessels data is assessed with low uncertainty and high confidence. |
| MMO (2022b[5]) | UK VMS data for vessels ≥15m length. | The data is only available for 15m and over vessels, so is not representative of <15m vessels. Data assessed with medium uncertainty and medium confidence. |
| ICES (2022[6]) | EU SAR data for vessels ≥12m length. | The data is only available for 12m and over vessels, so is not representative of <12m vessels. Data assessed with medium uncertainty and medium confidence. |
| EMSA (2023[7]) | AIS data for fishing vessels ≥15m length. | The data is only available for 15m and over vessels, so is not representative of <15m vessels. Data assessed with medium uncertainty and medium confidence. |
| Anatec | Marine traffic (AIS and radar) survey data (2023). | An assessment undertaken into fishing vessel activity within Volume 7B, Appendix 9-1: Navigational Risk Assessment undertaken for the Caledonia OWF. Data assessed with low uncertainty and high confidence. |

# 4 Baseline Characterisation

## 4.1 Overview of Landings

### 4.1.1 Local Commercial Fisheries Study Area

4.1.1.1 Commercial fisheries statistics for the annual first sales value and landed weight by UK vessels operating within the specified commercial fisheries local study area (44E7 and 45E7) are shown in Figure 4-1 and Figure 4-2 respectively. These data indicate that *Nephrops norvegicus* (also known as Norway lobster, Dublin Bay prawn, langoustine, nephrops and Nephrops; hereon referred to as Nephrops) and squid *Loligo* spp. are the most economically important species (with an average annual value of £1.8 million and £1.7 million respectively, based on 2011-2022 timeseries). Nephrops landings have varies throughout the time series analysed, with specific peaks in value every four years in 2014, 2018 and 2022. This trend is less pronounced in the data for landed weight, indicating market fluctuations in price. Squid landings have increased markedly from 2016 onwards, but have recently declined in 2021 and 2022.

4.1.1.2 Landings of king scallop *Pectan maximum* vary greatly from year to year, with a marked drop in 2019, landings have increased somewhat since 2019, notably in 2021, but currently remain well below the long term average of £1.1 million (with £448,000 landed in 2022).

4.1.1.3 By weight, landings are primarily dominated by haddock *Melanogrammus aeglefinus* with an average of 900 tonnes, worth just under £1 million per annum. Haddock landings appear to follow a trend of three consecutive years of high catches, followed by two years of low catches. This is likely to be influenced by the quota for this species. Notably catches were near their lowest in 2022, with 415 tonnes, worth £400,000 landed from the commercial fisheries local study area.

4.1.1.4 Landings of brown crab *Cancer pagurus* and lobster *Homarus gammarus* have increased significantly through the timeseries (2011 to 2022), with an average combined value of £1.2 million (2018 to 2022). A pronounced peak in brown crab value is noted in 2019.

4.1.1.5 Mackerel *Scomber scombrus* landings occur in the local study area, targeted by pelagic trawl and handlines. The noticeable peak in 2019 was caught by pelagic trawl.

4.1.1.6 An annual average value of £8.2 million was landed by all UK vessels for the years 2018 to 2022 from the commercial fisheries local study area.

4.1.1.7 The majority of landings by UK fishing vessels are made by vessels registered in Scotland (96% by value), with a small proportion by English (3.7% by

value) and Northern Irish (0.3% by value) vessels. This has been consistent throughout the timeseries analysed (Figure 4-3).

4.1.1.8 The commercial fisheries local study area encompasses two ICES rectangles, with the majority of the Caledonia OWF located within ICES rectangle 45E7. Landings statistics data by ICES rectangle is presented in Figure 4-4, indicating that the highest value is landed from the inshore ICES rectangle 44E7, which overlaps the Caledonia OECC. The average annual value landed by UK vessels from ICES rectangle 45E7 is £2.3 million, compared to landings of £5 million from 44E7.

4.1.1.9 Landed value by gear type and ICES rectangle for the commercial fisheries local study area is shown in Figure 4-5, again highlighting that the majority of landings are from 44E7. Demersal trawl targeting Nephrops, squid, haddock and mixed demersal finfish species dominate the catches, followed by landings by potting vessels targeting brown crab and lobster.

4.1.1.10 The demersal otter trawl fishery targeting Nephrops, haddock and other mixed demersal species is also prominent in the commercial fisheries regional study area, with a combined average annual value of £5.2 million in first sales (from 2018 to 2022). Two different demersal otter trawl gears are used to target these fisheries, each with different mesh size ranges as defined by internationally recognised gear groupings; specifically gear type TR1 (with net mesh size of ≥100mm) to target haddock, and gear type TR2 (with net mesh size of 70mm to 99mm) to target Nephrops. Both gear retain a mix of demersal species as bycatch.

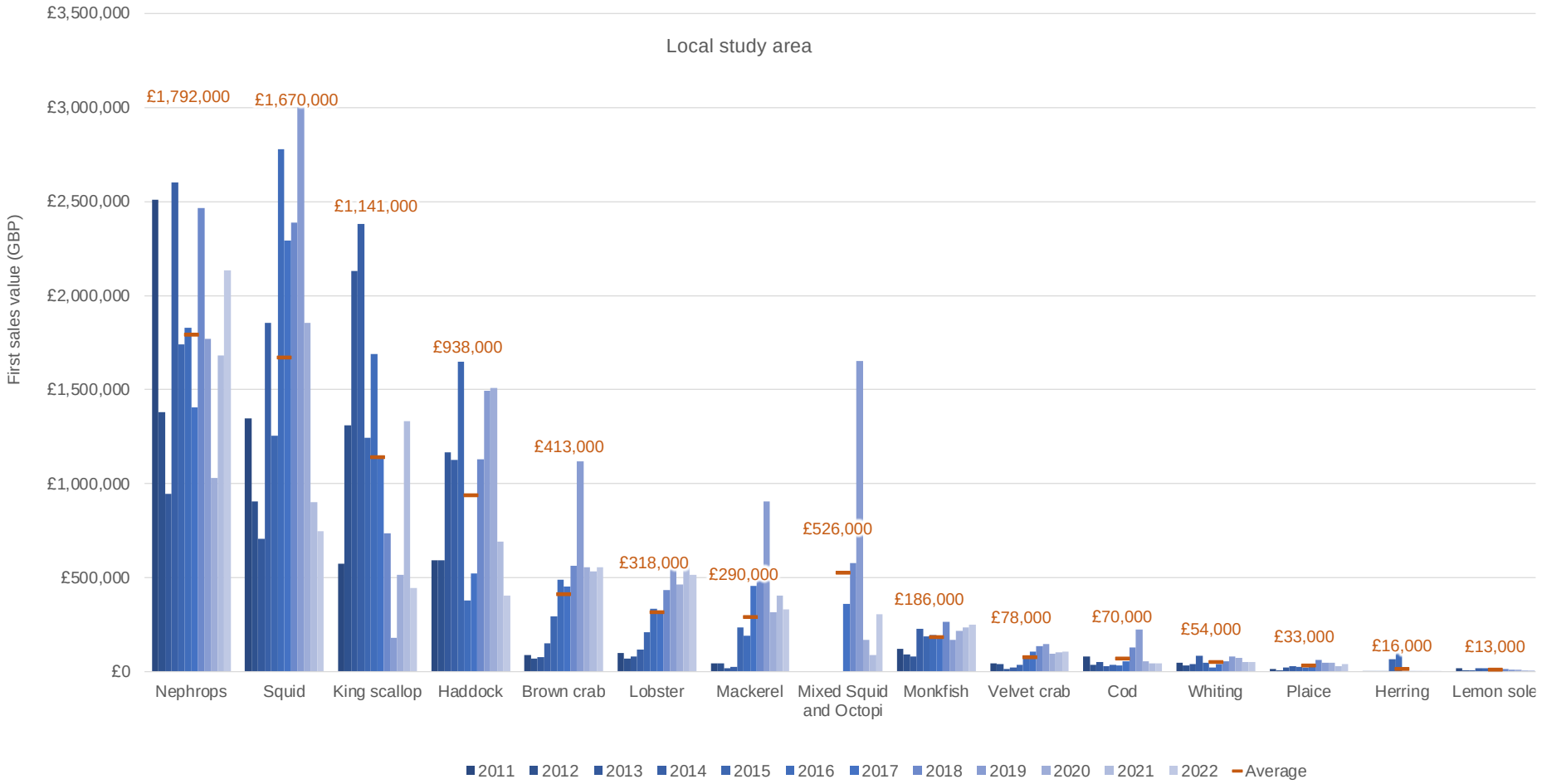



Figure 4-1: Key Species by Annual Landed Value (GBP) (2011 to 2022) from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

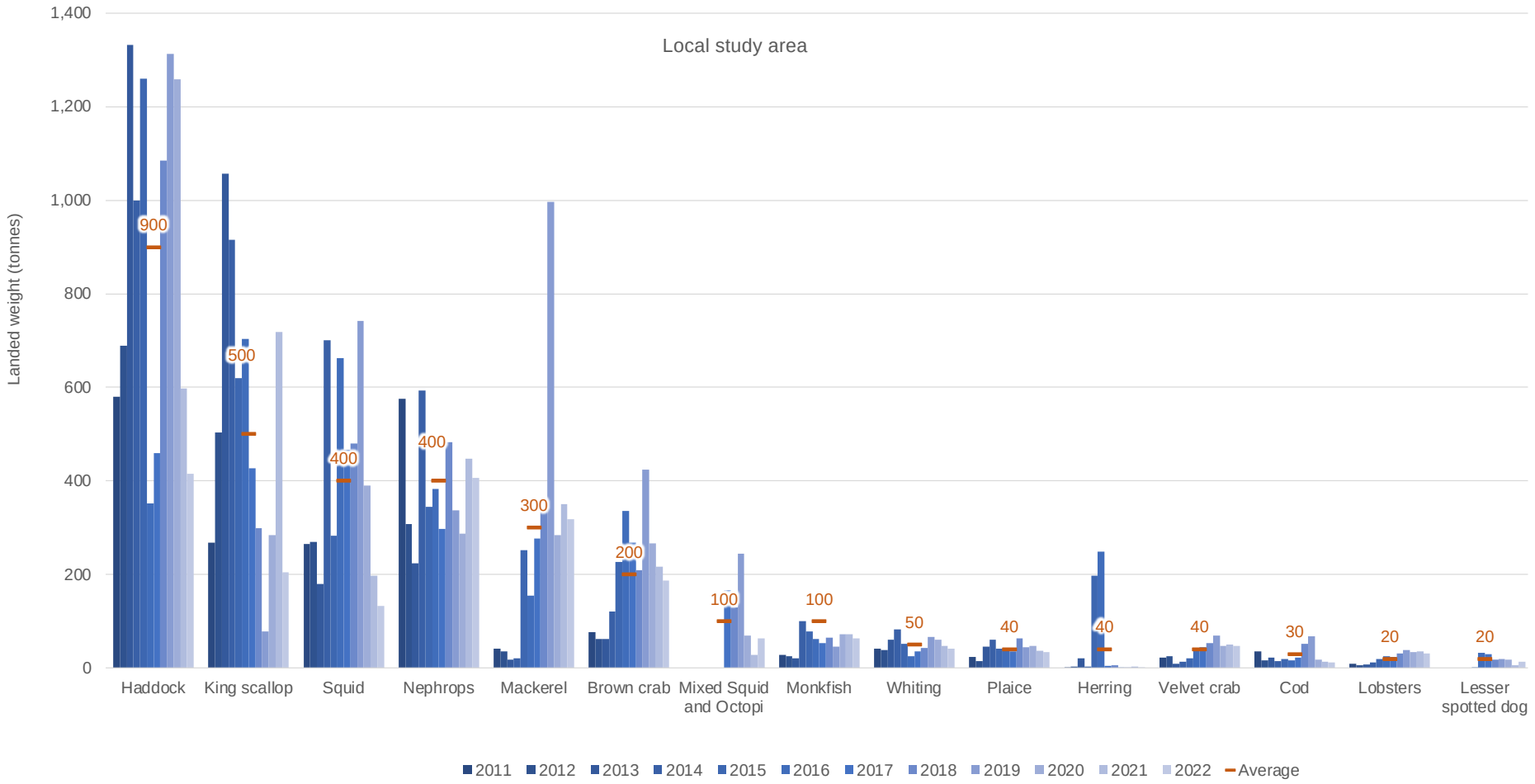



Figure 4-2: Key Species by Annual Landed Weight (tonnes) (2011 to 2022) from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

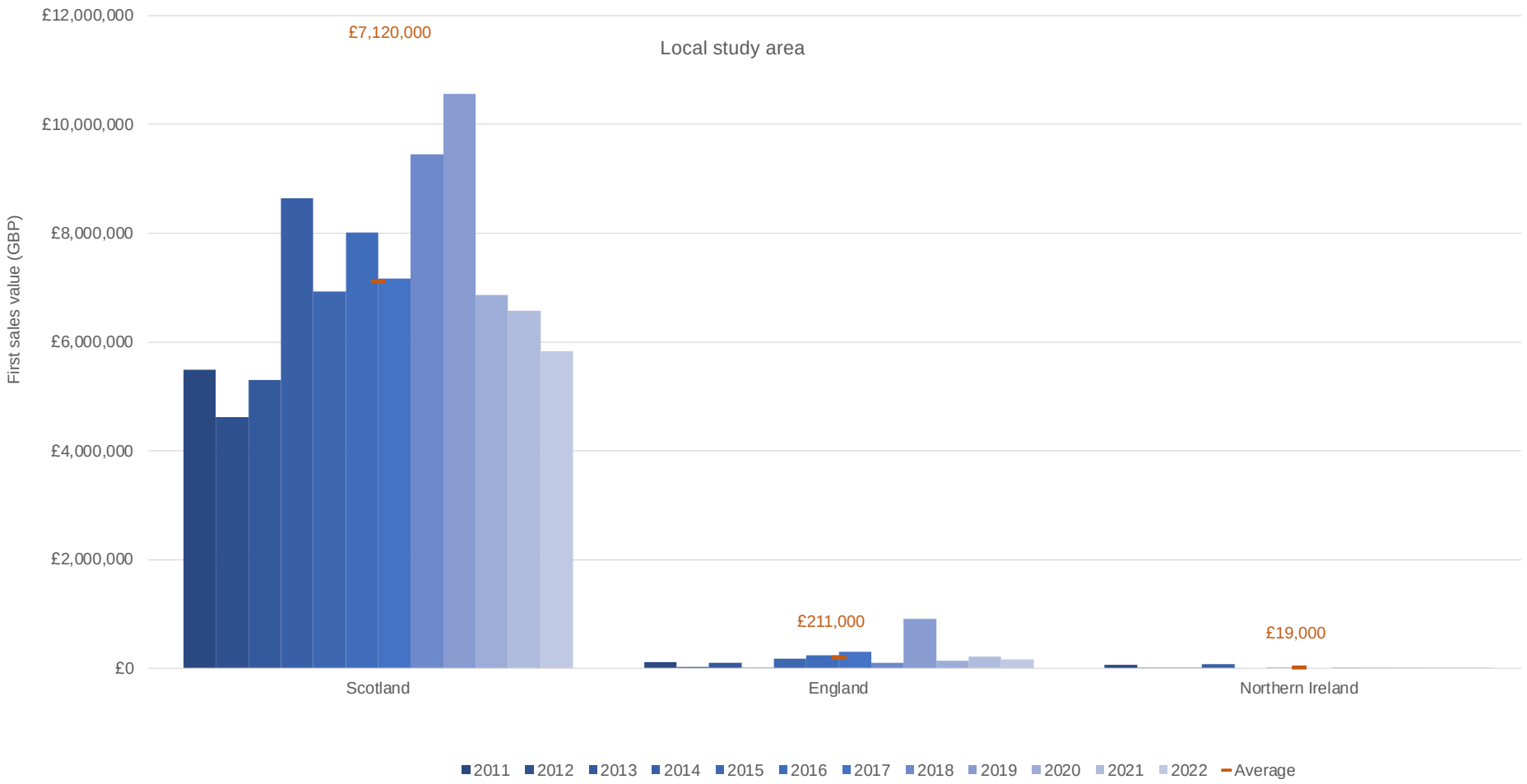



Figure 4-3: Annual Landed Value (GBP) (2011 to 2022) by Vessel Nationality from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

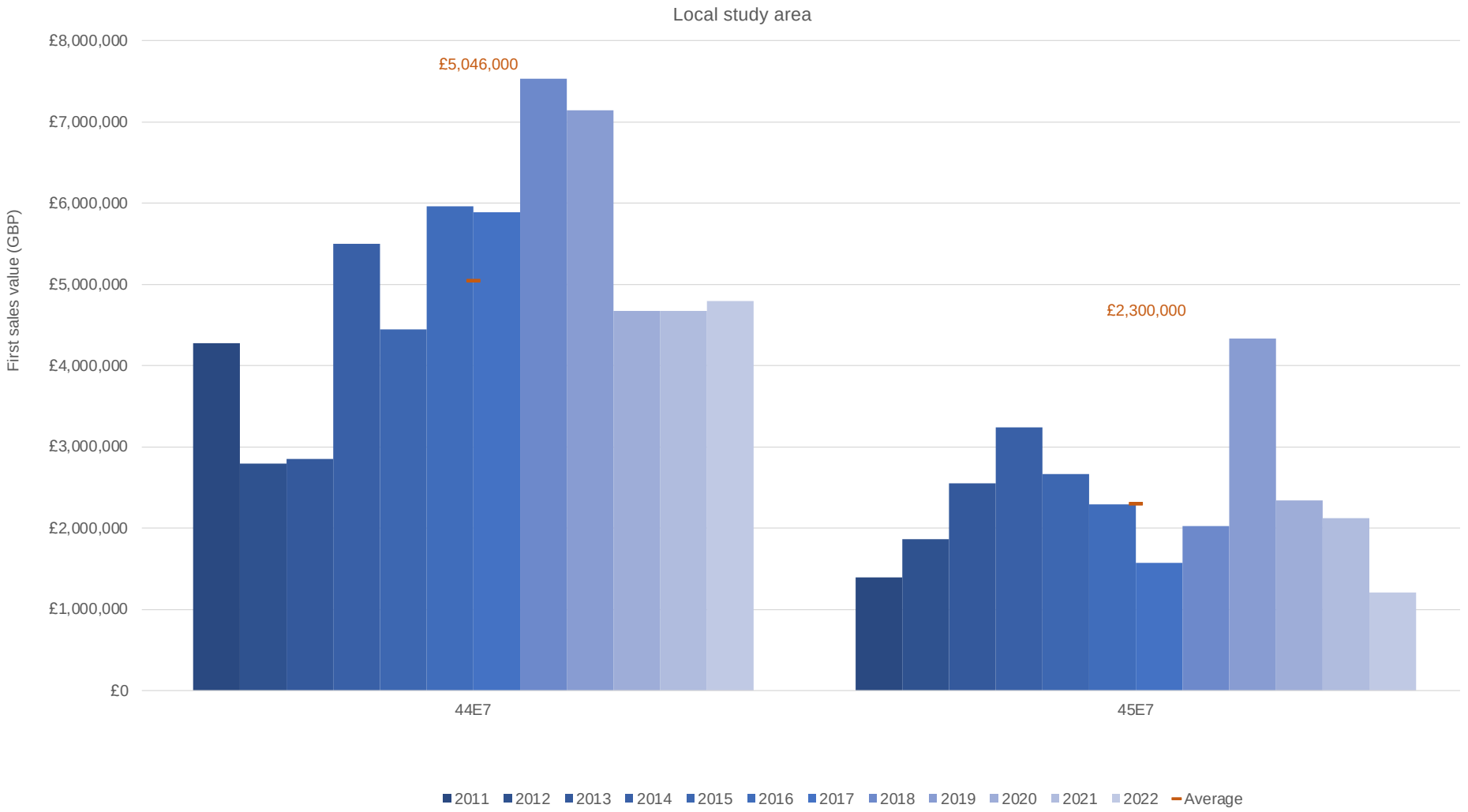



Figure 4-4: Annual Landed Value (GBP) (2011 to 2022) by ICES Rectangle from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

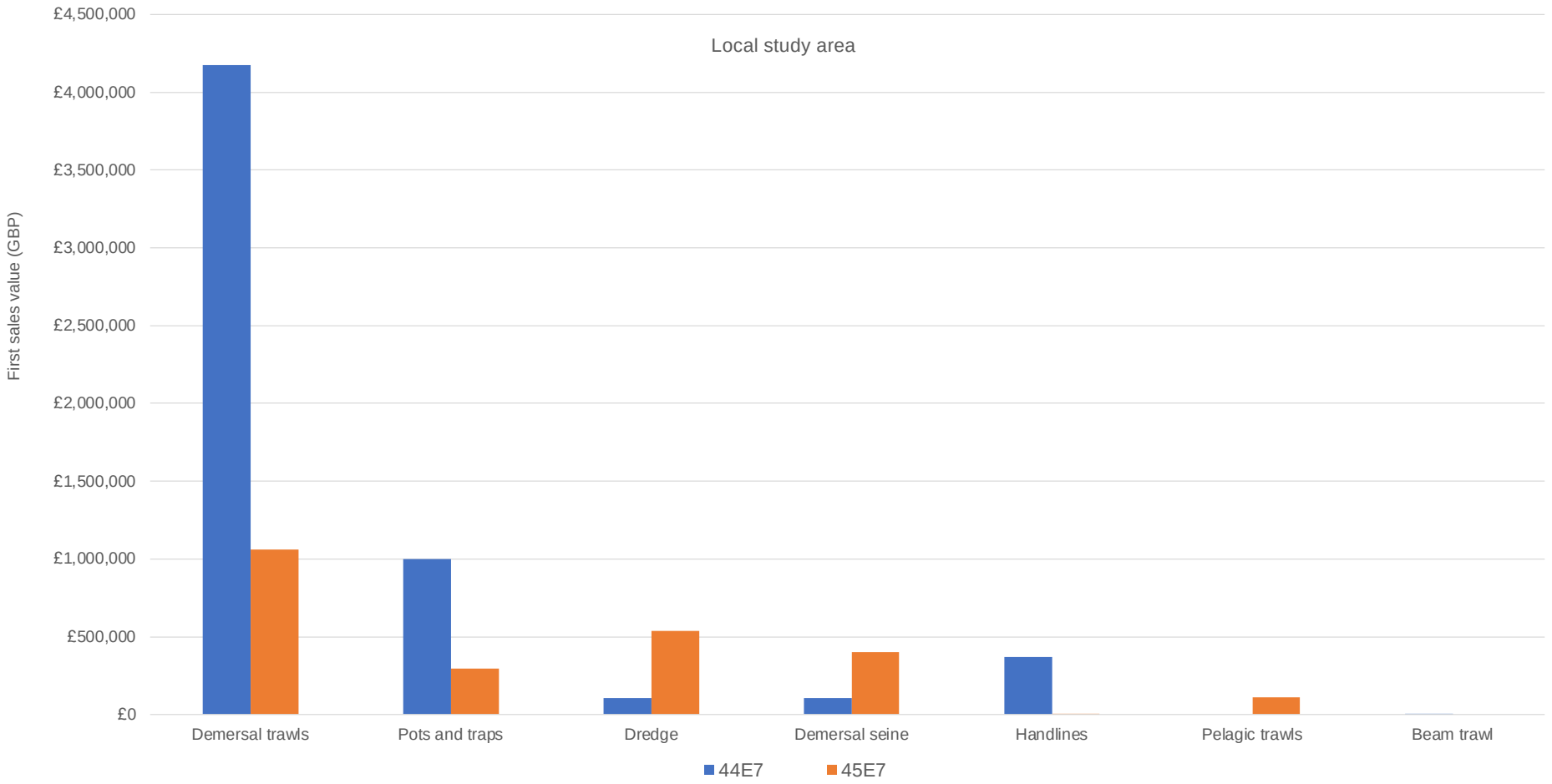



Figure 4-5: Average Annual Landed Value (GBP) (2018 to 2022) by Gear Type and ICES rectangle from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

## Long-term Landings Data

4.1.1.11 Long term landings data is analysed for the top four species from the commercial fisheries local study area indicating the landed weight and first sales value by ICES rectangle from 2011 to 2022 for Nephrops (Figure 4-6), squid (Figure 4-7), king scallop (Figure 4-8) and haddock (Figure 4-9).

4.1.1.12 Nephrops are targeted predominately from the inshore ICES rectangle 44E7 that overlaps with the Caledonia OECC, with a long term average of 375 tonnes and £1.7 million value from 44E7, compared to 16 tonnes and £71,000 from 45E7. Landings fluctuate, but show relative consistency around these averages. In 2022, landings from the local study area valued £2.1 million. Nephrops are caught by demersal otter trawl, with no creel targeted fishery in this area (Figure 4-6).

4.1.1.13 Squid are predominately caught in the inshore ICES rectangle 44E7, peaking from 2016 to 2019. Landings have dropped recently in 2021 to 2022, with total value of £1 million (200 tonnes) from the local study area in 2022. Peak landings occurred in 2019, with a value of £4.7 million, including £1 million from 45E7. The landings data indicated that the squid fishery is an important developing fishery in the local study area (Figure 4-7).

4.1.1.14 King scallop landings are known to be cyclical in nature, with Scottish nomadic vessels moving around the entirety of the UK coastline to target productive grounds on a rotational basis. The Scottish scallop fleet consists of around 200 vessels, with almost all being 12m and above in length. The landing trends for the local study area show a marked drop in landings in 2019 and 2020, followed by an increase in 2021 and a drop again in 2022. The long term average value from the local study area is £1.1 million, peaking in 2014 at £2.4 million (Figure 4-8). The majority of landings are from ICES rectangle 45E7 which overlaps with the Caledonia OWF and a part of the Caledonia OECC.

4.1.1.15 Haddock landings have fluctuated across the time series, showing peaks from 2013-2015 and 2018 to 2020. During these years, the average catch was £1.4 million. This has dropped considerably in 2022 to £406,000 (Figure 4-9). Catches are taken from both ICES rectangles 44E7 and 45E7. Stakeholder consultation has suggested that the commercial fisheries local study area has been more important in the years prior to 2016, specifically for small size classes of haddock. While this does correspond to a peak in landings in 2015, high catches are also noted from 2018 to 2022, as discussed.

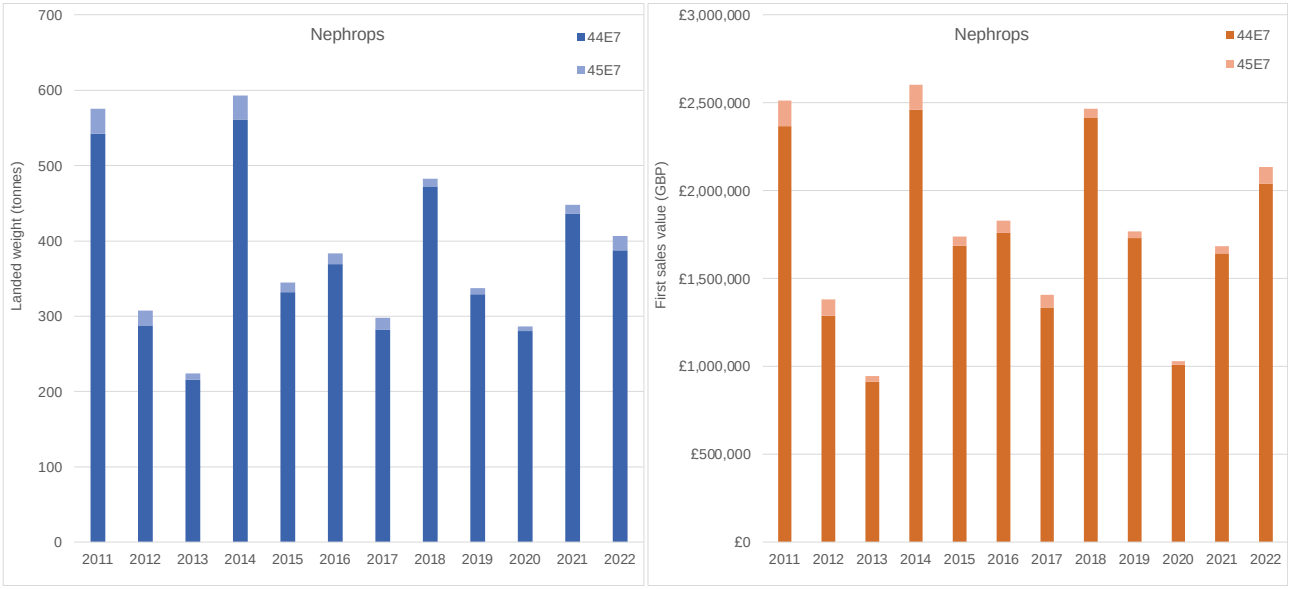



Figure 4-6: Long Term Landing Trends for Nephrops from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

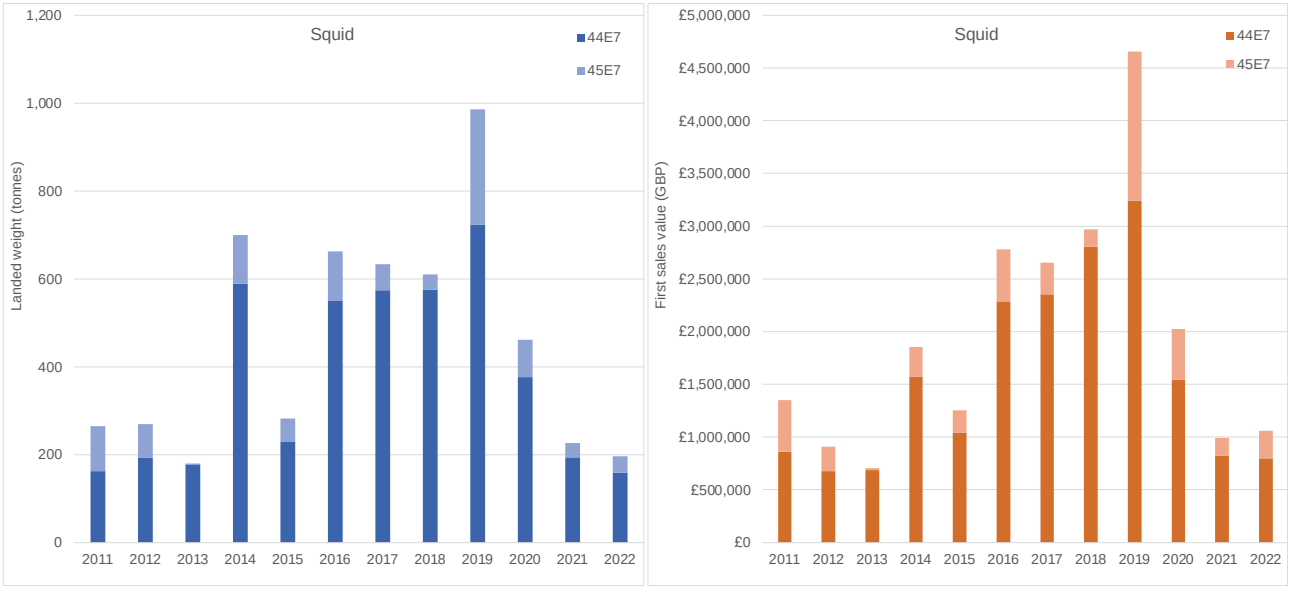



Figure 4-7: Long Term Landing Trends for Squid from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

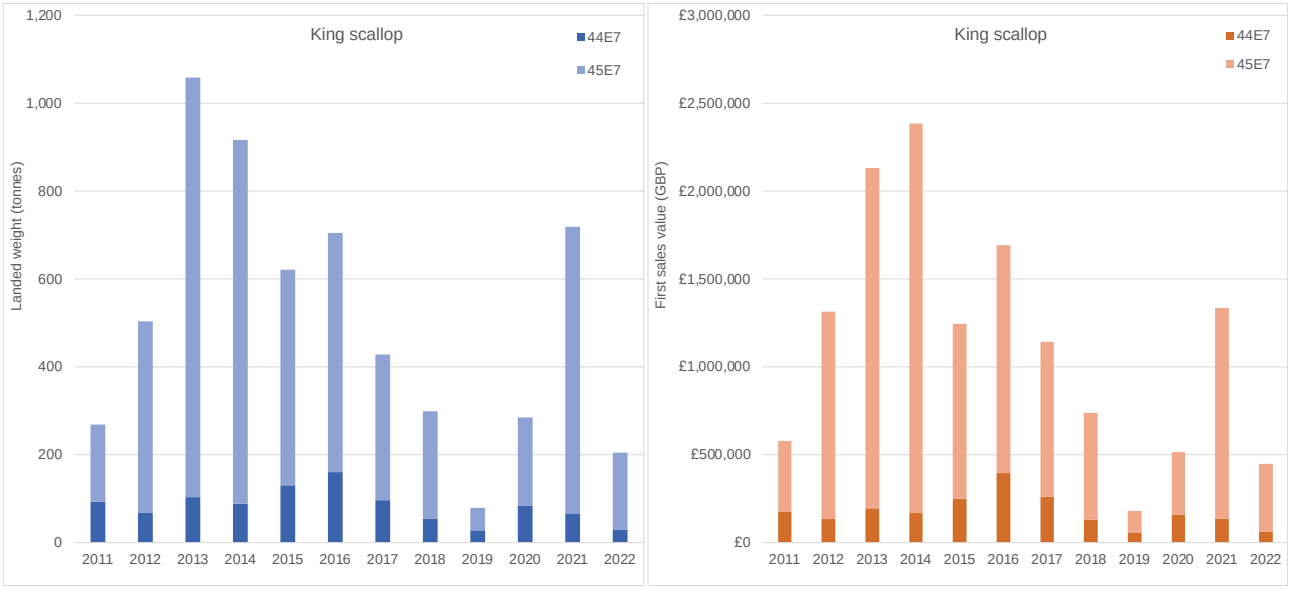



Figure 4-8: Long Term Landing Trends for King Scallop from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

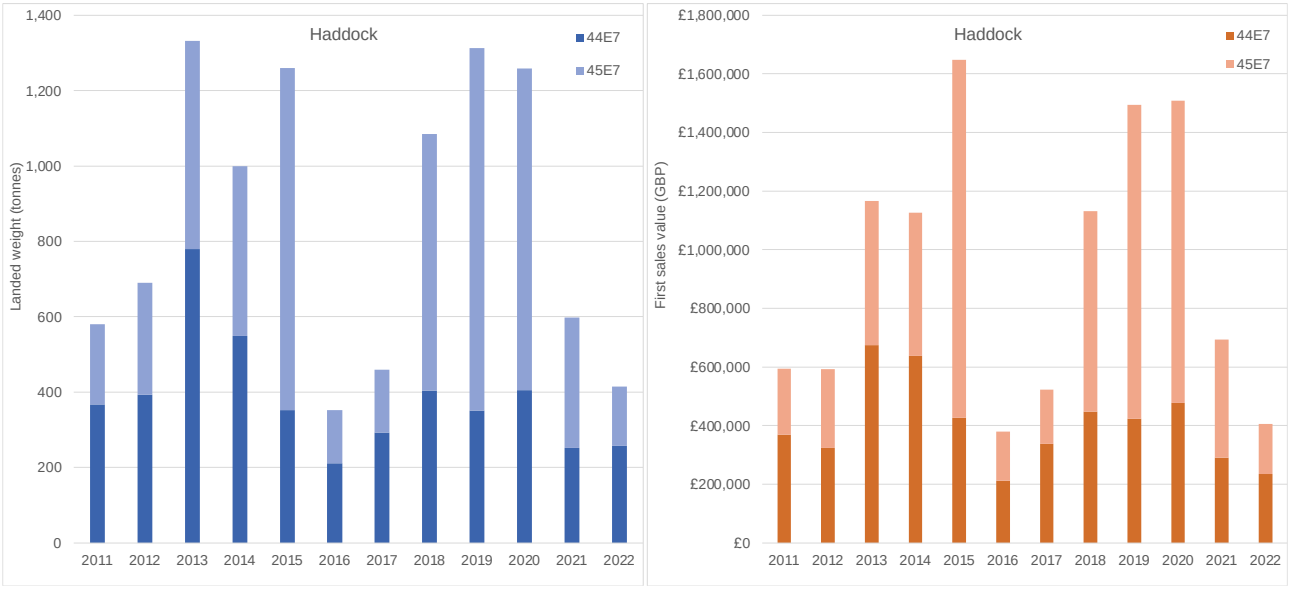



Figure 4-9: Long Term Landing Trends for Haddock from the Commercial Fisheries Local Study Area (MMO, 2022a[2]; 2023a[3]).

### 4.1.2 Commercial Fisheries Regional Study Area

4.1.2.1 Commercial fisheries statistics presenting data for the annual (2011 to 2022) first sale value and landed weight by UK vessels from the commercial fisheries regional study area (nine ICES rectangles) are shown in Figure 4-10 and Figure 4-11 respectively. Average annual values are calculated across this twelve year period (2011 to 2022).

4.1.2.2 The statistics indicate that within this wider commercial fisheries regional study area, landings are dominated by mackerel by value and weight. The region is clearly associated with a pelagic trawl fishery targeting this migratory pelagic shoaling species. Significant peaks in mackerel landings are noted in 2016 (£25.3 million) and 2019 (£21.7 million).

4.1.2.3 Other species caught from the regional study area are similar to those in the local study area: Nephrops, haddock, brown crab, king scallop and squid.

4.1.2.4 Landings are predominately made by Scottish vessels (Figure 4-12), operating demersal otter trawl, pots, pelagic trawl and demersal seine (Figure 4-13).

4.1.2.5 UK fishing vessel landings by ICES rectangle across the commercial fisheries regional study area are shown in Figure 4-14 for first sales value and Figure 4-15 for landed weight.

4.1.2.6 Regionally, the lowest value of landings are taken from 45E6 (£1.4 million average annual value) and 45E7 (£2.4 million average annual value); noting that 45E7 overlaps the Caledonia OWF.

4.1.2.7 The highest value is landed from 46E8 (£9.4 million average annual value), which is north-east of the Caledonia OWF, followed by 44E7 (£5.8 million) which overlaps the Caledonia OECC.

4.1.2.8 The seasonality of landings across the commercial fisheries regional study area for key species are depicted in Figure 4-16. Haddock are targeted throughout the year, with peaks during autumn and winter months. Brown crab catches are also highest during autumn and winter. Nephrops have a marked peak in summer months, as do king scallop. Whiting are caught throughout the year. The squid fishery predominately occurs in late summer and autumn. Mackerel are targeted during their autumn migration in October.

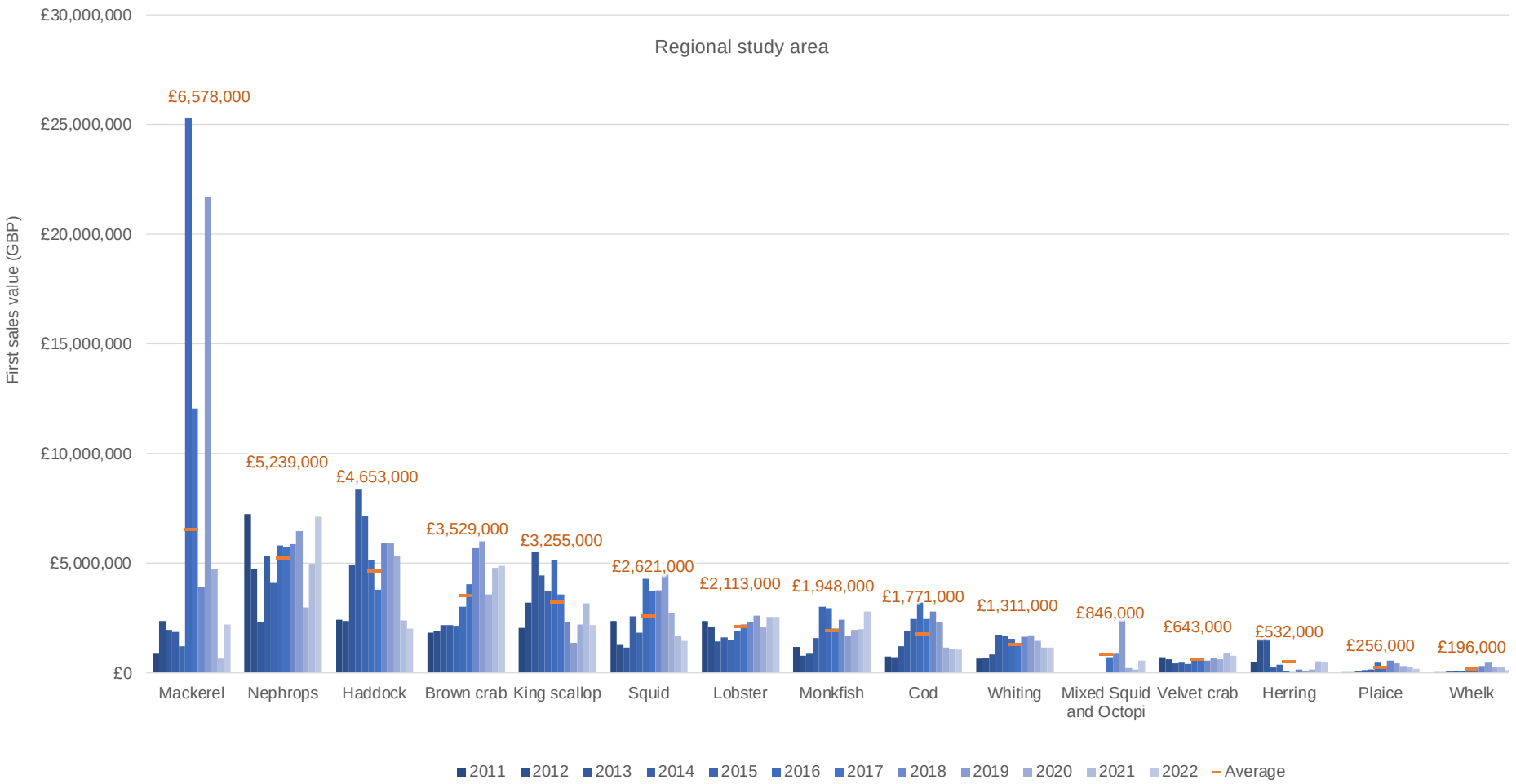



Figure 4-10: Key Species by Annual Landed Value (GBP) (2011 to 2022) from the Commercial Fisheries Regional Study Area (MMO, 2022a[2]; 2023a[3]).

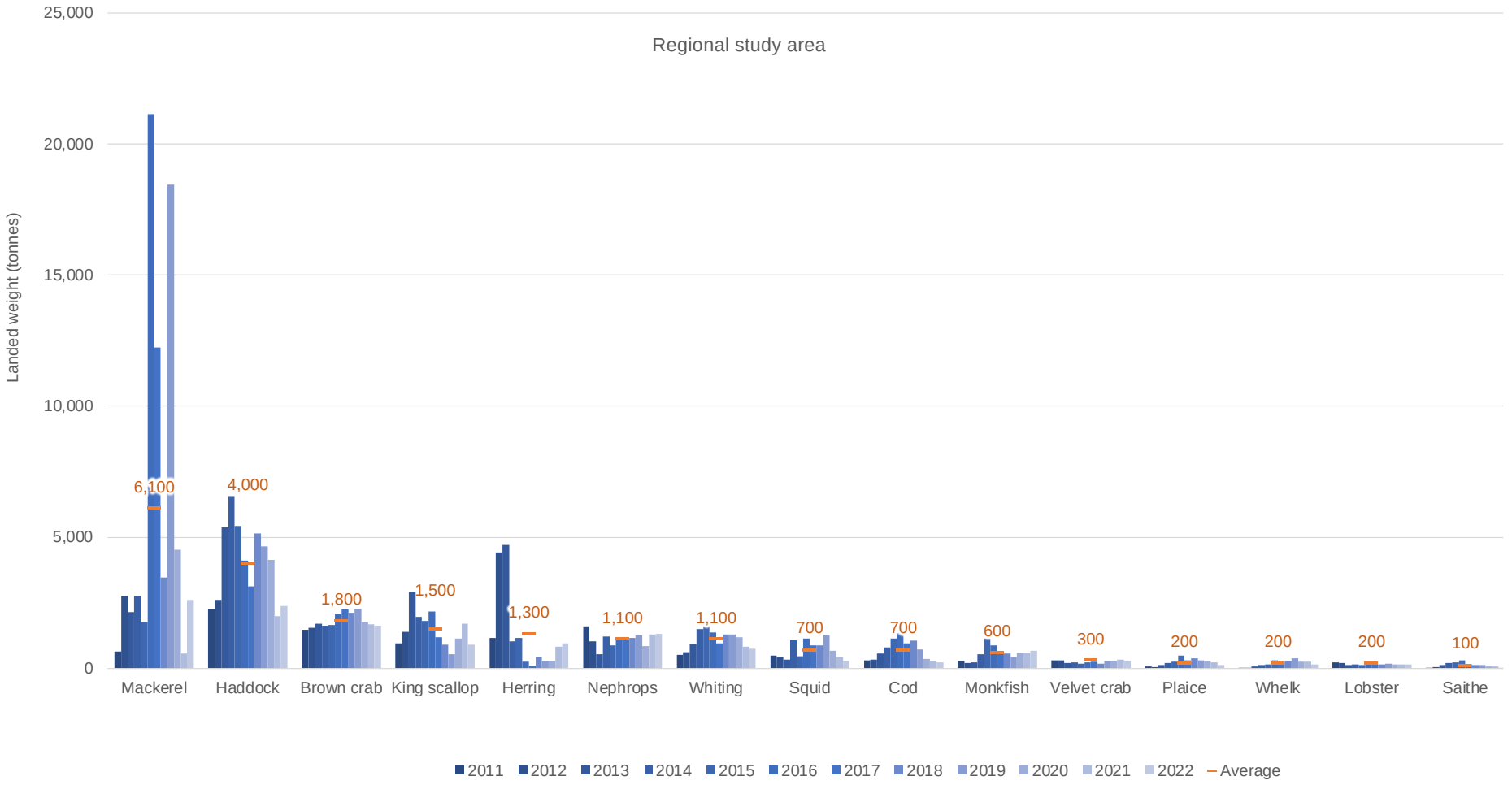



Figure 4-11: Key Species by Annual Landed Weight (tonnes) (2011 to 2022) from the Commercial Fisheries Regional Study Area (MMO, 2022a[2]; 2023a[3]).

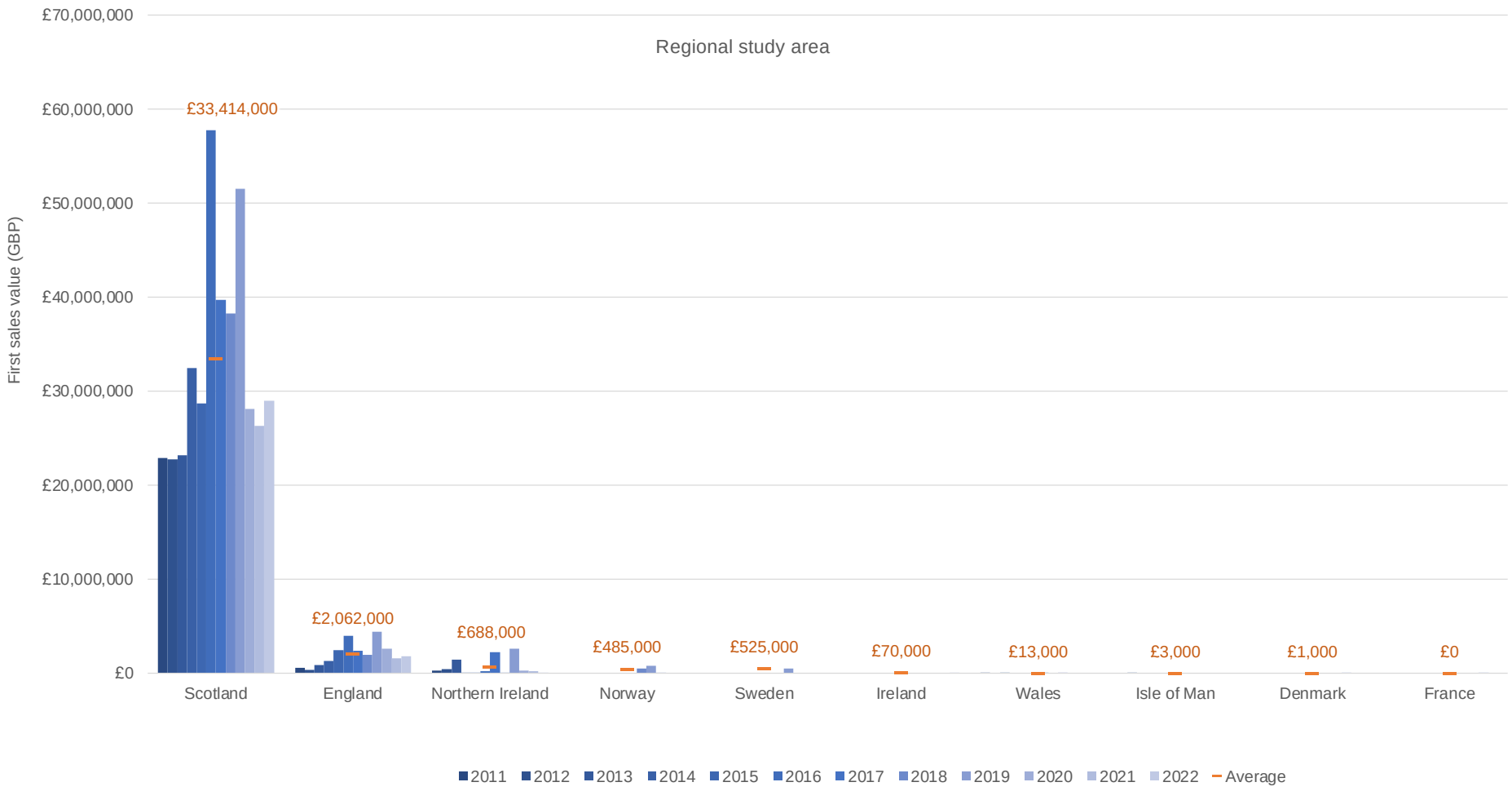



Figure 4-12: Annual Landed Value (GBP) (2011 to 2022) by Vessel Nationality from the Commercial Fisheries Regional Study Area (MMO, 2022a[2]; 2023a[3]).

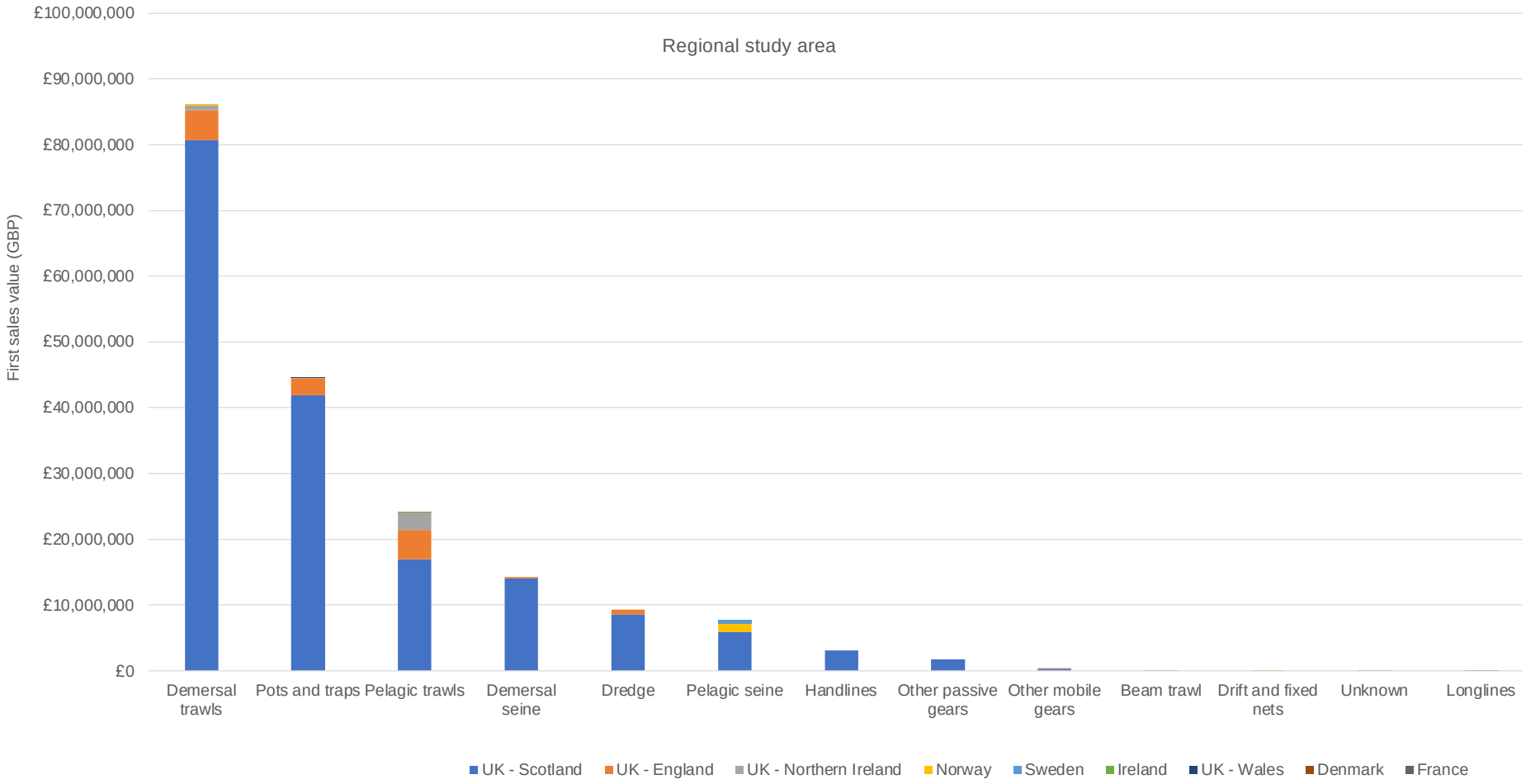



Figure 4-13: Average Annual Landed Value (GBP) (2018 to 2022) by Gear Type and Vessel Nationality from the Commercial Fisheries Regional Study Area (MMO, 2022a[2]; 2023a[3]).

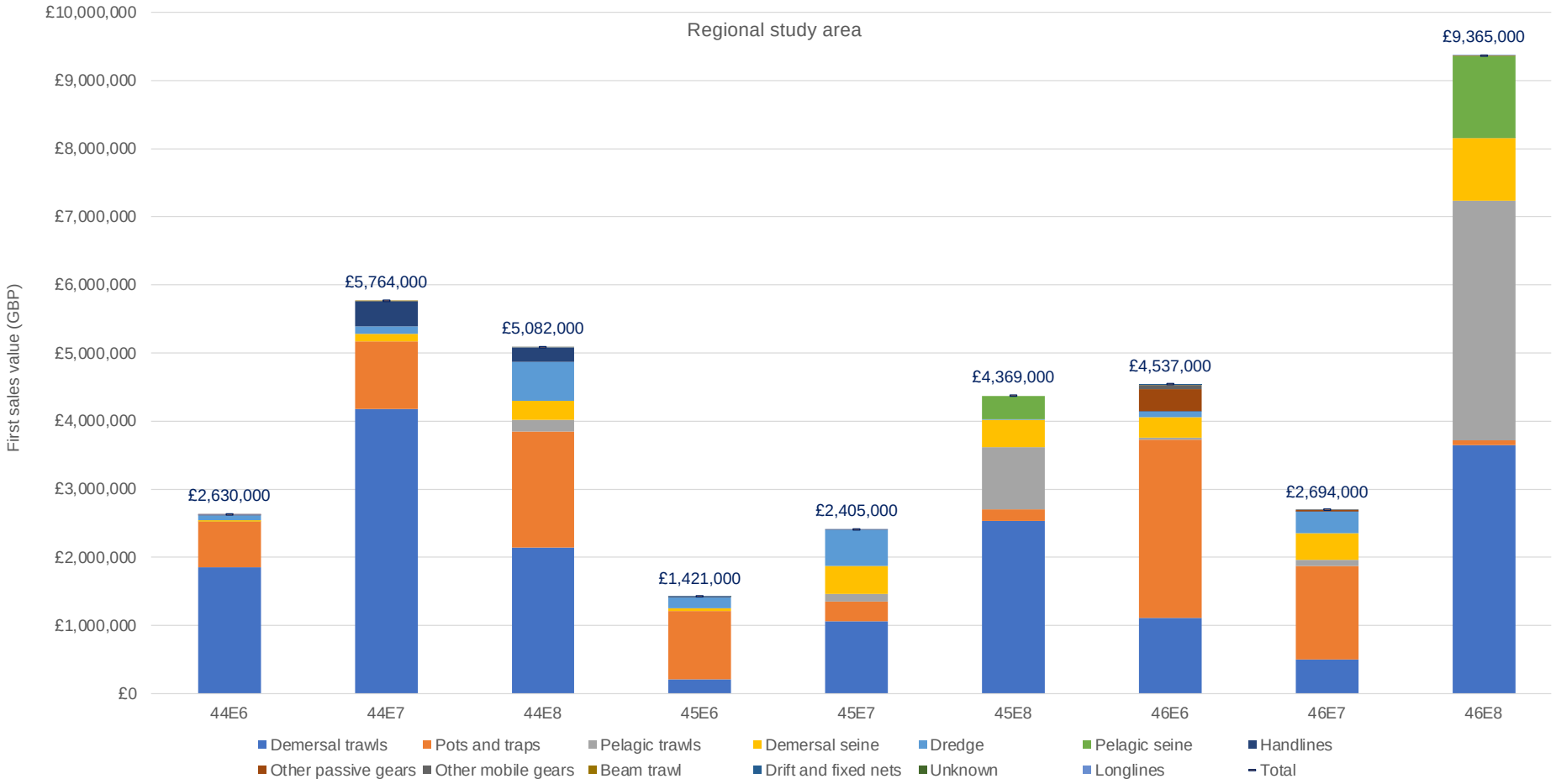



Figure 4-14: Average Annual Landed Value (GBP) (2018 to 2022) by ICES Rectangle from the Commercial Fisheries Regional Study Area indicating Gear Type (MMO, 2022a[2]; 2023a[3]).

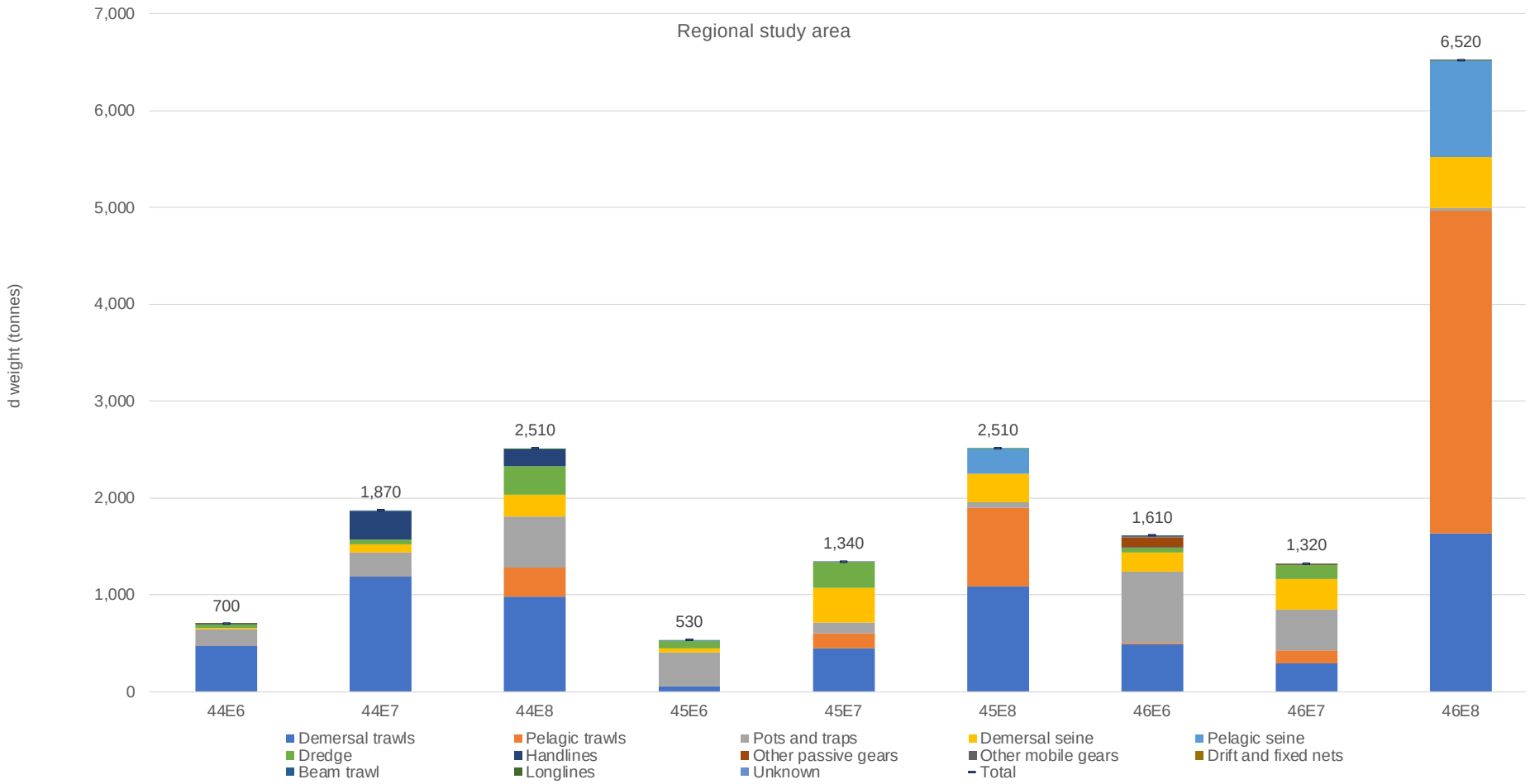



Figure 4-15: Average Annual Landed Weight (tonnes) (2018 to 2022) by ICES Rectangle from the Commercial Fisheries Regional Study Area indicating Gear Type (MMO, 2022a[2]; 2023a[3]).

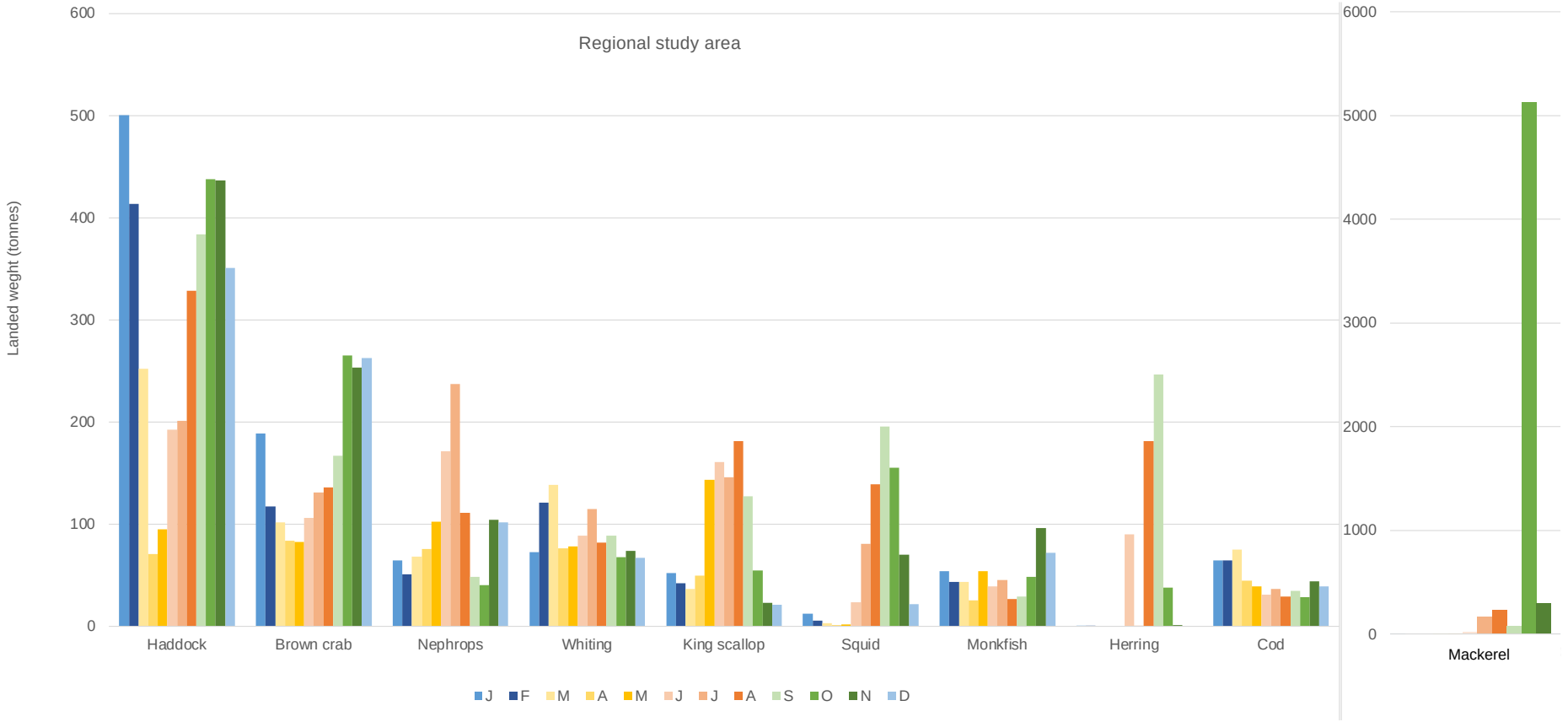



Figure 4-16: Average Monthly Landed Value (GBP) (2018 to 2022) by Species from the Commercial Fisheries Regional Study Area (MMO, 2022a[2]; 2023a[3]).

## 4.2 Landings by Other Countries

### 4.2.1 Landings by EU Countries

4.2.1.1 Landings by EU countries from the commercial fisheries regional study area are shown in Figure 4-17 by ICES rectangle and Figure 4-18 by species, indicating the average annual landed weight during the period 2012 to 2016. This data is considered historic, and pre-Brexit (i.e., before the exit of the UK from the EU); however, it is the most up-to-date publicly available data by ICES rectangle for all EU fleets and allows an indication of which countries may be active across the commercial fisheries regional study area.

4.2.1.2 Within the commercial fisheries regional study area, the highest quantity of catch is taken from 46E8 (outside and to the north-east of the Caledonia OWF). Vessels registered in Ireland, Denmark, the Netherlands, Germany and France are recorded to fish within the commercial fisheries regional study area. Negligible amounts are also recorded for vessels registered in Lithuania and Isle of Man. The key target species for these international fleets is mackerel.

4.2.1.3 As indicated in Figure 4-18, Irish, Danish and Dutch vessels predominately target pelagic species of mackerel and herring from the commercial fisheries regional study area.

4.2.1.4 Figure 4-19 provides further context relative to the commercial fisheries local study area. These data indicate herring caught by vessels registered in Germany. Statistics indicate this catch was taken in 2013 when 570 tonnes of herring were landed by German vessels from the local study area, equating to approximately £300,000 in first sales value.

4.2.1.5 EU vessels are included in the spatial activity assessment provided in Section 7. Activity by Norwegian vessels is also presented in Section 7 indicating activity within the commercial fisheries regional study area, primarily to the north-east of the Caledonia OWF, in ICES rectangle 46E8. This is understood to be pelagic trawl vessels targeting mackerel.

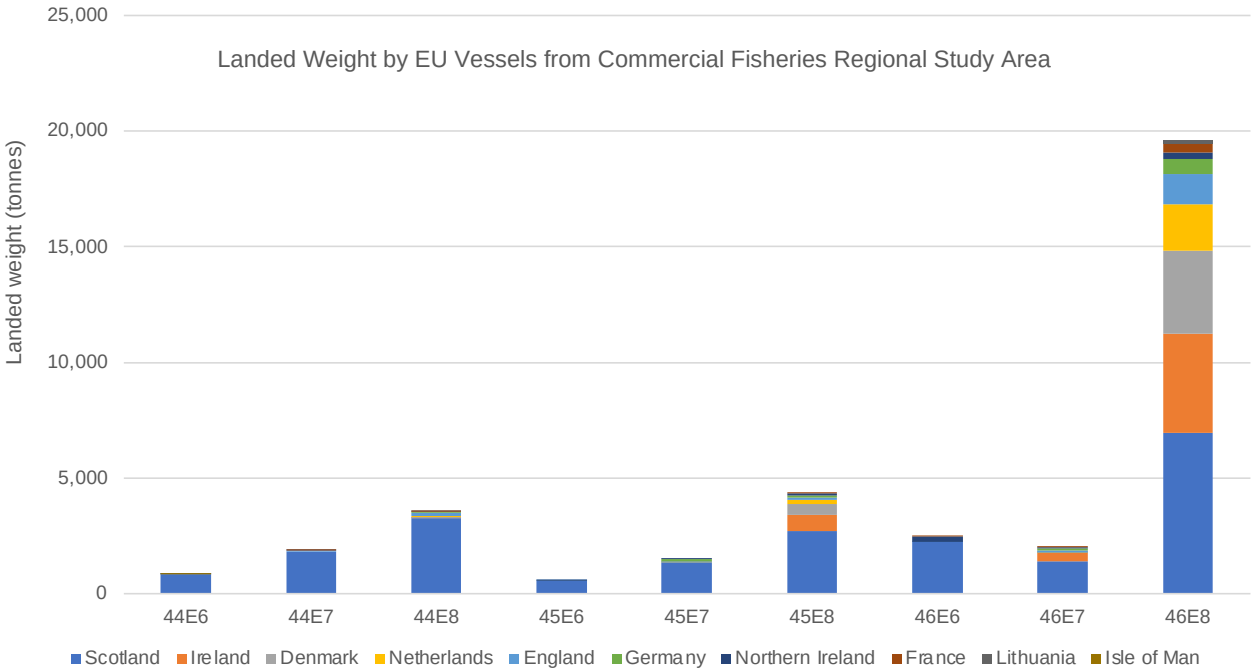



Figure 4-17: Average Annual Landed Weight from the Commercial Fisheries Regional Study Area by Vessel Nationality and ICES Rectangle (Based on Data from 2012-2016) (EU DCF, 2022[4]).

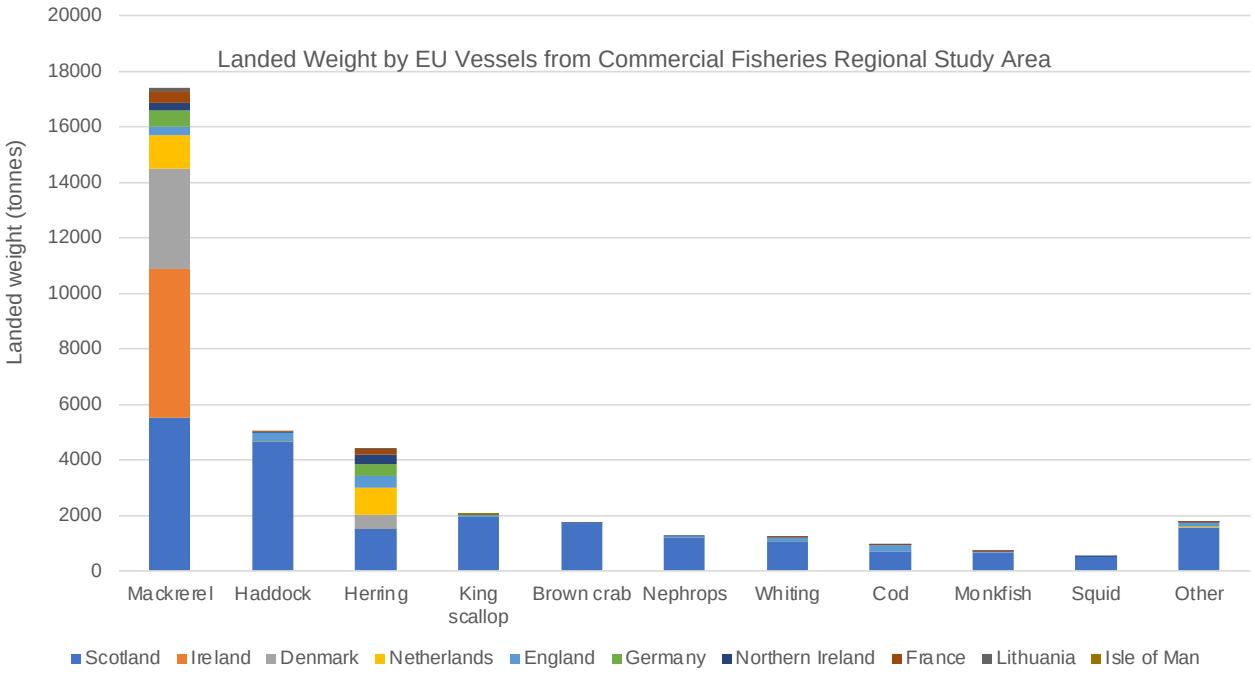



Figure 4-18: Average Annual Landed Weight from the Commercial Fisheries Regional Study Area by Vessel Nationality and Species (Based on Data from 2012-2016) (EU DCF, 2022[4]).

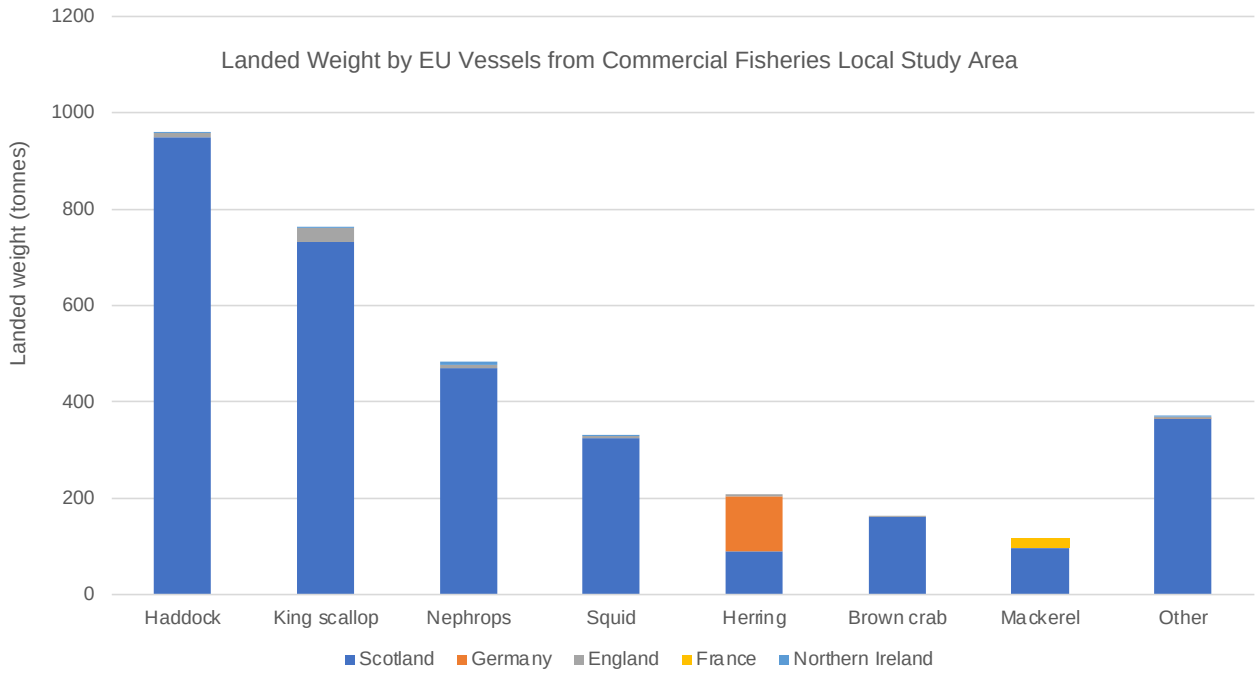



Figure 4-19: Average Annual Landed Weight from the Commercial Fisheries Local Study Area by Vessel Nationality and Species (Based on Data from 2012-2016) (EU DCF, 2022[4]).

# 5 Key Species

## 5.1 Overview

5.1.1.1 The key commercial species as profiled in Sections 4.1 and 4.2 are discussed in this section in terms of biological characteristics, seasonal trends and relevant fisheries management.

## 5.2 Shellfish

### 5.2.1 Nephrops

5.2.1.1 Nephrops is a small lobster, pale orange in colour. It grows to a maximum total length of 25cm (including the tail and clawed legs), although individuals are normally between 18cm to 20cm. Nephrops do not reach sexual maturity until two to three years. Life span in the North Sea is understood to be eight to nine years.

5.2.1.2 They are found in soft sediment, commonly at depths of between 200m and 800 m, although considerable populations exist at depths <200m. They live in shallow burrows and are common on grounds with fine cohesive mud which is stable enough to support their unlined burrows.

5.2.1.3 Nephrops stock assessments are conducted by ICES. Stock assessments are produced for 33 areas across the North-east Atlantic, called Functional Units (FUs). However, management is applied to 18 areas, called management units. The commercial fisheries local study area is not located within a Nephrops FU. Management is applied via a TAC set for the whole of the North Sea (ICES Division 4).

5.2.1.4 There is a Minimum Conservation Reference Size (MCRS) of 85mm total length (25mm carapace length and 46mm tail) for Nephrops in the North Sea. The landing obligation requires target species to be landed, and therefore prohibits the discarding of quota species. In UK waters the landing obligation is implemented via the Fisheries Act 2020 UK Statutory Instrument 2020 No.1542. For the Nephrops trawl fishery in the North Sea, there is a de minimis exemption from the landing obligation consisting of a 6% discard rate by weight.

5.2.1.5 Under the Fisheries Act 2020 (Scottish Parliament, 2020[9]), the Marine Directorate are currently developing a Nephrops Fisheries Management Plan for the North Sea. The Proposed Development (Offshore) overlaps with the Moray Firth FU. Stock assessments are undertaken annually by ICES using underwater TV surveys. The Moray Firth Nephrops stock is considered to be in good condition, with stock size above maximum sustainable yield (MSY) trigger reference point and fishing pressure below the corresponding MSY for harvest rate.

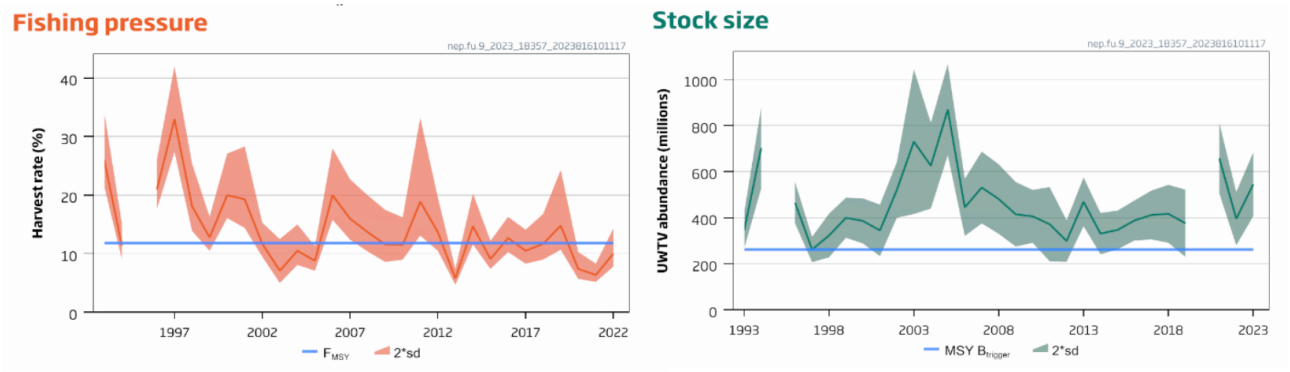



Figure 5-1: Nephrops Moray Firth Functional Unit Stock Assessment Indicating Fishing Pressure and Stock Size (ICES, 2023a).

### 5.2.2 King Scallop

5.2.2.1 King scallop are most common in water depths of 20m to 70m, in areas of clean firm sand and fine gravel exposed to water currents, which provide good feeding conditions for this bivalve mollusc. Adults are largely sedentary and usually found recessed in sediment. King scallop live to ten to 15 years and reach reproductive maturity between three to five years, at a size of 60mm; the average maximum size is 160mm. Recruitment is usually unpredictable as it depends not only on successful spawning and larval production but also on if larvae are retained or transported to areas suitable for larval settlement. Larvae are pelagic making settlement in a particular area somewhat unpredictable, which leads to an unstable age structure within stocks. As a consequence of this, scallop beds frequently show a regional separation of year classes and spatial variability in age structure.

5.2.2.2 Whilst annual assessments of king scallop stock status in English waters are undertaken by the Centre for Environment, Fisheries and Aquaculture Science, the latest analytical assessment of stock status in Scottish waters was undertaken in 2016.

5.2.2.3 There are no TACs (i.e., catch limits) or quotas in place for this species; instead, UK scallop fisheries are controlled predominantly through the use of minimum legal landing sizes, gear restrictions, seasonal closures and some effort controls on the largest boats. An EU MCRS exists of 100mm (Council Regulation 850/98).

### 5.2.3 Lobster

5.2.3.1 Lobster is a long-lived decapod crustacean. Lobster breed once per year in the summer and newly berried females begin to appear from September to December. Lobsters do not undertake any significant migrations and juveniles in the first three to four years of life may be particularly sedentary. From hatching it takes approximately five years for a lobster to recruit to the fishery. Lobsters typically inhabit rocky reef and rough ground, sheltering in

crevices between rocks and boulders. The availability of suitable habitat is considered to influence the carrying capacity and size structure of lobster populations (Seitz *et al*., 2014[10]).

5.2.3.2 There are no TACs or quotas in place for lobster. Primary management is by the technical measure of a MCRS of 87mm (Council Regulation 850/98).

5.2.3.3 Lobster is one of the highest value per kilogram, commercially exploited shellfish species found in UK waters. Fishing activity typically peaks across summer months, with a second peak in December associated with supplying the Christmas-time market.

### 5.2.4 Brown Crab

5.2.4.1 Brown crab is a long-lived, large decapod crustacean. Brown crabs are very productive animals and each female can hatch between one and four million eggs. Post larvae are known to settle inshore and juvenile crabs are more common in shallow waters. Adult crabs undertake extensive migrations, which may be associated with their reproductive cycle. Brown crab is found across a wide range of habitat types, ranging from rocky reefs to soft mud and sand.

5.2.4.2 As with lobster, brown crab are caught by pots and have no TACs or quotas in place. Primary management is by the technical measure of a MCRS of 140mm carapace width inside 6nm and 130mm outside 6nm (Council Regulation 850/98).

## 5.3 Demersal Finfish

### 5.3.1 Haddock

5.3.1.1 Haddock are a demersal bottom feeding round fish that occur mainly in waters from 40m to 200m deep. Haddock mature at around two to three years of age and feed mainly on small bottom-living organisms including crustaceans, molluscs, echinoderms, worms and fishes.

5.3.1.2 In the North Sea, haddock are caught as part of a mixed whitefish fishery and are also taken as bycatch in the Nephrops trawl fishery. The spawning stock biomass of haddock is currently well above biological limits and fishing pressure is low; indicating that the species is currently harvested sustainably (Figure 5-2).

5.3.1.3 Landings occur throughout the year and on average peak during autumn.

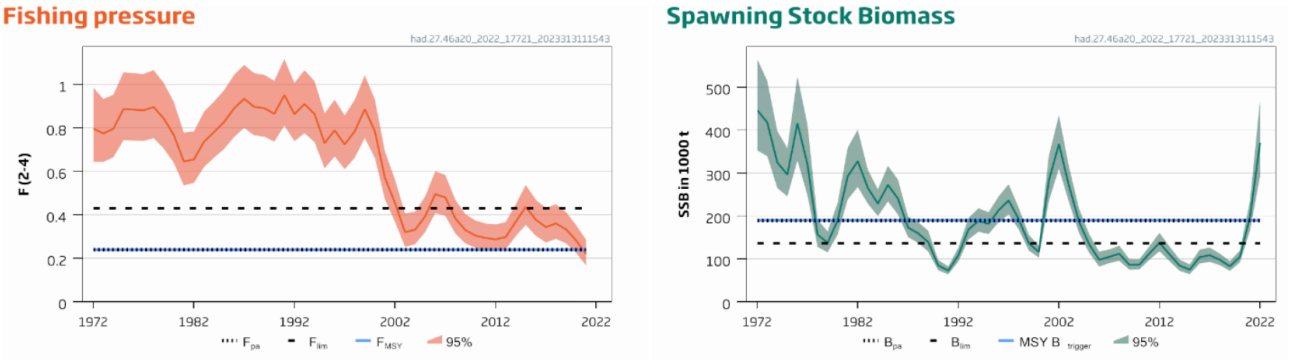



Figure 5-2: Haddock North Sea, West of Scotland, Skagerrak Stock Assessment Indicating Fishing Pressure and Stock Size (ICES, 2023b).

### 5.3.2 Monkfish

5.3.2.1 There are two closely related species of monkfish; white monkfish *Lophius piscatorius* and black monkfish *L. budegassa*. White monkfish occur throughout the North-east Atlantic and are more abundant than black monkfish in northern areas. It is a very distinctive fish, recognizable by having its head and body depressed, a wide mouth, broad head and a fleshy 'lure' at the end of its first dorsal spine, which is used to attract prey. They can live up to 24 years and reach 200cm in length, reaching maturity at four to five years at a length of 35cm.

5.3.2.2 Both species are most abundant from 200 – 500m, with white monkfish also occurring down to 800m. It is found mostly on sandy or muddy bottoms but is also present on shell, gravel and occasionally rocky areas.

5.3.2.3 A minimum marketing weight is in place (EC 2406/96) of 500g gutted or 200g tail per individual. A single TAC applies to both species of monkfish as they are often not separated in the landings.

5.3.2.4 Monkfish are a highly valuable demersal fish species, caught almost exclusively by demersal otter trawls.

## 5.4 Cephalopods

### 5.4.1 Squid

5.4.1.1 Squid *Loligo forbesi* is the most important fished cephalopod in Scottish waters and the only cephalopod for which there is a reliable market, although other squid species (e.g., *Todarodes sagittatus*) and octopus *Eledone cirrhos* are frequently caught and landed as 'mixed squid and octupi'.

5.4.1.2 The squid fishery occurs in coastal waters, peaking in September and October, corresponding to the occurrence of pre-breeding squid (Young *et al.*, 2006)[11]. In the UK squid is normally taken as a bycatch from the mixed demersal otter trawl fishery. However, in the Moray Firth there is a squid

directed fishery. Demersal otter trawl vessels may carry two sets of gear, fishing for Nephrops at night and changing to squid gear during the day. Other vessels exclusively target squid during the season.

5.4.1.3 It is postulated that squid move from the West Coast of Scotland to the North Sea to spawn and that there may be squid spawning grounds located in the Moray Firth (Young *et al*., 2006[11]).

5.4.1.4 The UK fishery for squid in the North Sea is not subject to management regulations for a TAC or quota or any other limits.

5.4.1.5 Squid are normally associated with the water column, above sandy or hard substrate. Squid require presence of substrata for the attachment of egg strings during the spawning period.

## 5.5 Pelagic Finfish

### 5.5.1 Mackerel

5.5.1.1 Mackerel are a pelagic species that live near the surface of the sea in large shoals. North Sea mackerel overwinter in the deep water, to the east and north of Shetland and on the edge of the Norwegian Deep. In the springtime, they migrate south to spawn in the central part of the North Sea from May until July.

5.5.1.2 In terms of fisheries management measures, a TAC is in place that covers all North-east Atlantic fisheries. A minimum conservation reference size of 30cm is in place.

### 5.5.2 Herring

5.5.2.1 The North Sea herring stock, which collapsed in the 1970s and was closed to fishing for several years, subsequently recovered, and although it fell back in the mid-1990s, it has again been rehabilitated. Since 1998 spawning stock biomass has been above MSY and fishing pressure has remained below the MSY benchmark (ICES, 2022[6]), though there are concerns that future low recruitment could alter this trend. Applicable to directed herring fisheries in the North Sea there is a MCRS of 20cm (3cm above the size of maturity). Catches below this size must be landed but cannot be sold for human consumption, and so are less valuable.

5.5.2.2 Herring shoals move between spawning and wintering grounds in coastal areas and feeding grounds in open water. Herring populations are known to use traditional spawning grounds, many of which are along shallow coastal areas (15m to 40m depth), or on offshore banks down to 200 m. Spawning usually occurs on gravel or rock bottoms.

# 6 Key Fishing Gears

## 6.1 Overview

6.1.1.1 There are three descriptive units used for defining fisheries (Marchal, 2008[12]):

- Fishery – a group of vessel voyages which target the same species or use the same gear;
- Fleet – a physical group of vessels sharing similar characteristics (e.g., nationality); and
- Métier – a homogenous subdivision, either of a fishery by vessel type or a fleet by voyage type.

6.1.1.2 A range of fleets target different fisheries across the commercial fisheries local and regional study areas which are described on a fleet basis within this section.

## 6.2 Demersal Otter Trawl

6.2.1.1 Figure 6-1 (Seafish, 2022[13]) shows a typical UK demersal trawler and associated gear and Table 6-1 describes the profile of demersal otter trawling vessels active across the commercial fisheries regional study area. Otter trawls typically catch gadoids (including haddock, cod, whiting), squid, plaice and Nephrops; however, the species composition of the catch depends on the area and depth fished, and the gear design.

6.2.1.2 Vessel numbers vary, and their presence is dependent upon the success of demersal and/or Nephrops catches elsewhere.

6.2.1.3 Seasonality for the demersal trawlers operating across the commercial fisheries local study area indicates highest landings across summer and autumn months (Figure 6-2).

Table 6-1: Profile of Typical Demersal Otter Trawling Vessels.

| Parameter | Indicative Details |
|---|---|
| Main target species | Nephrops, haddock, squid, monkfish |
| Nationality | Scottish, English |
| Vessel length | 16m to 35m |
| Horsepower | 300 hp to 850 hp |
| Typical towing speed | 2 knots to 6 knots |
| Typical gear | Possible twin or multi-rig bottom trawl. Two trawl doors ('otter boards') approximately 1 tonne each hold the net open.<br>Various forms of ground gear depending on target species. |

Figure 6-1: Profile of Typical Demersal Otter Trawler Vessel and Gear Diagram (Seafish, 2022[13]).

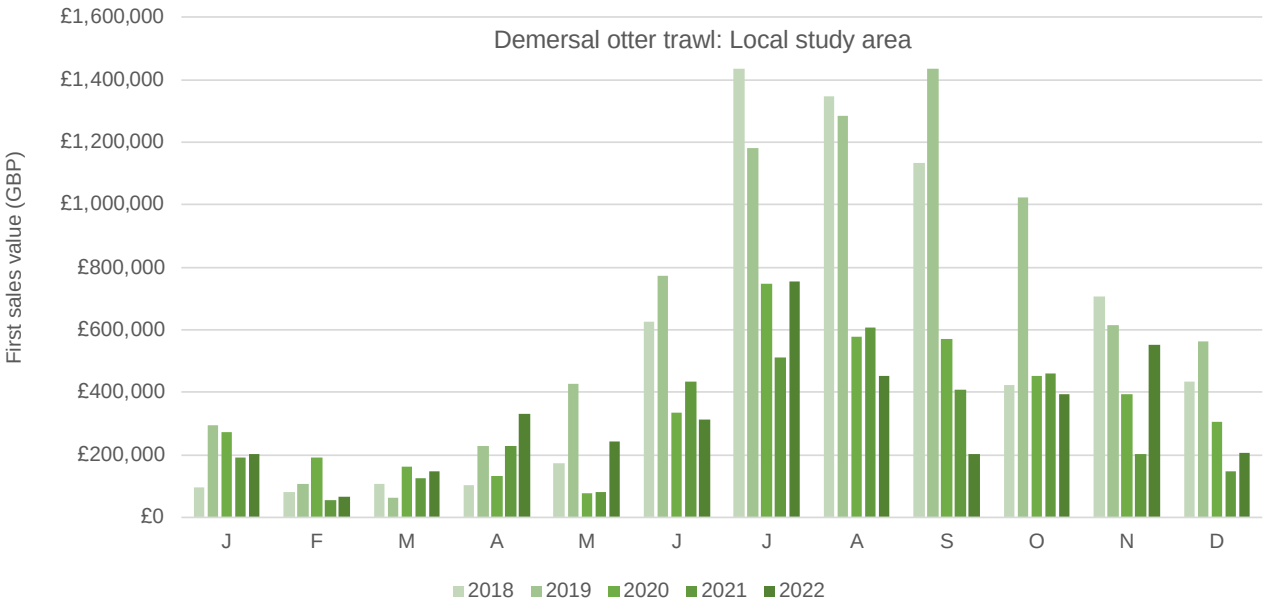



Figure 6-2: Seasonality of Landings by Demersal Otter Trawl from the Commercial Fisheries Local Study Area (Data source: MMO, 2023[1]).

## 6.3 Dredge

6.3.1.1 A typical scallop dredging vessel is shown in Figure 6-3 (Seafish, 2022[13];, Fishing News, 2020[14]) and Table 6-2 describes the profile of scallop dredging vessels active across the commercial fisheries regional study area.

6.3.1.2 Dredges are rigid structures that are towed along the seabed to target various species of shellfish. Scallop dredgers fish as the tooth bar of each dredge rakes through the sediment lifting out scallops and the spring-loaded tooth bar swings back, allowing the dredge to clear obstacles on the seabed. The dredges are held in a series on two beams, which are fished on each side of the vessel.

6.3.1.3 UK scallop dredgers operate around the entire coastline of the UK. Scallop dredging takes place year-round. The UK scallop fleet has two main components: a fleet of larger boats (>20m in length) which range in a nomadic fashion exploiting both inshore and offshore scallop stocks around the UK; and smaller inshore boats (<15m in length) that are restricted in range to inshore waters. Larger nomadic vessels tend to fish intensely in an area until harvesting scallops becomes unprofitable. They will then move on to new areas but will return a number of years later when the scallop stocks have returned to a level where dredging for them has once again become viable. Due to this fishing pattern a large scallop dredger may operate in four or five, or even more, areas and rotate around them over a period of several years. In this way, most of the suitable grounds around the UK are fished. At the other end of the spectrum are the smaller, inshore vessels, including some who will only fish for scallops on a part time basis, and others who rely on scallops for the majority of their income. These vessels are restricted,

primarily by their size, in the areas and weather that they can fish meaning that they are likely to dredge for scallops only in their local area. The catching capacity of these vessels is significantly lower than the large vessels due to the lower number of dredges they can tow.

6.3.1.4 Scallop dredging is an activity which is generally engaged by larger (>10m vessel length) vessels due to the engine capacity required to tow this heavy fishing gear.

6.3.1.5 Not all scallops in the path of the dredge are retained by the dredges and efficiency of the Newhaven dredge (commonly used in the UK commercial scallop fishery) can vary between <10% on soft ground to 51% on hard ground. Dredge efficiency is affected by ground type (e.g., soft sand, gravel or cobble), towing speed, warp length, tide strength and direction and the experience of the skipper.

6.3.1.6 Seasonality for the dredge vessels operating across the commercial fisheries local study area indicates highest landings across summer months (Figure 6-4).

Table 6-2: Profile of Typical Dredging Vessels.

| Parameter | Indicative Details |
|---|---|
| Main target species | King scallop |
| Nationality | Scottish, English |
| Vessel length | 10m to 25m |
| Horsepower | 200 hp to 400 hp |
| Typical towing speed | 2 knots to 6 knots |
| Typical gear | Up to 16 dredges per side of vessel.<br>Each dredge consists of a triangular frame leading to an opening, a tooth bar with spring-loaded teeth, and a bag of steel rings and netting back. |

Figure 6-3: Profile of Typical Scallop Dredging Gear and Vessel (Seafish, 2022[13]; Fishing News, 2020[14]).

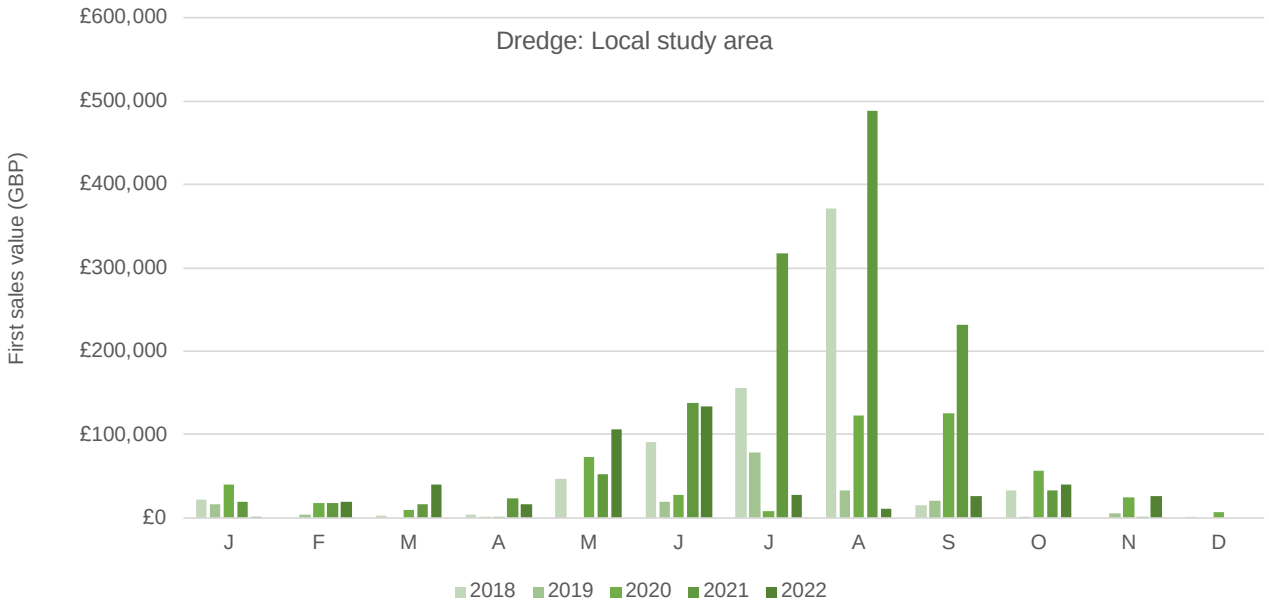



Figure 6-4: Seasonality of Landings by Dredge from the Commercial Fisheries Local Study Area (Data source: MMO, 2023[1]).

## 6.4 Potting

6.4.1.1 Figure 6-5 (Seafish, 2022[1315]) shows typical potting vessels, gear and the configuration of set pots and Table 6-3 describes the profile of potting vessels active across the commercial fisheries regional study area.

6.4.1.2 Creels or pots used for the capture of lobsters and crabs, including brown crab and velvet crab *Necora puber*. Pots are typically rigged in 'fleets' or 'strings' of between 15 to 60 pots, depending upon vessel size and area fished. Hundreds of pots can be deployed across a fishing location. Lengths of fleets may range from 100m to over 1nm, anchored at each end with anchors or chain clump weights. A variety of surface markers are used, including flagged dhans, buoys and cans. Soak times, the time between emptying and re-baiting the

pots, can vary between six and 168 hours, but would typically be 24 hours. All pots are worked on a rotational basis; after hauling and emptying, pots are baited and re-set. Creel design is typically D-shaped in section and made from steel rods covered in netting and protected or "bumpered" with rope or rubber strips. Pots are usually deployed on rocky substrate, though may less frequently be found on other softer substrates.

6.4.1.3 Larger potters working further offshore make fishing trips lasting around two days. Smaller potters under 10m in length operate as day boats, returning to port after hauling, emptying, baiting and re-setting fleets of pots. Potting vessels may target a single or multiple shellfish species.

6.4.1.4 Seasonality for the potters operating across the commercial fisheries local study area indicates landings throughout the year with peaks in summer and autumn months (Figure 6-6).

Table 6-3: Profile of Typical Potting Vessels.

| Parameter | Indicative Details |
|---|---|
| Main target species | Brown crab, lobster |
| Nationality | Scottish |
| Vessel length | Over 10m and under 10m |
| Horsepower | 60 hp to 350 hp |
| Typical towing speed | 0 knots to 9 knots |
| Typical gear | Fleets of baited pots placed on the seabed.<br>Pots typically hauled daily but may be left a number of days.<br>Generally, day boats that return to port daily. |

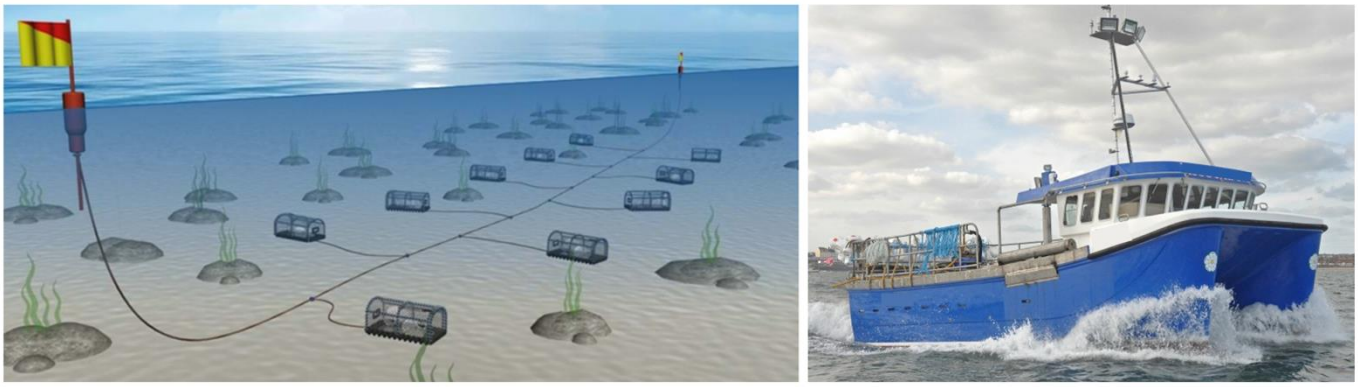


Figure 6-5: Profile of Typical Potting Gear and Vessel (Seafish, 2022[13]; Fishing News, 2016[15]).

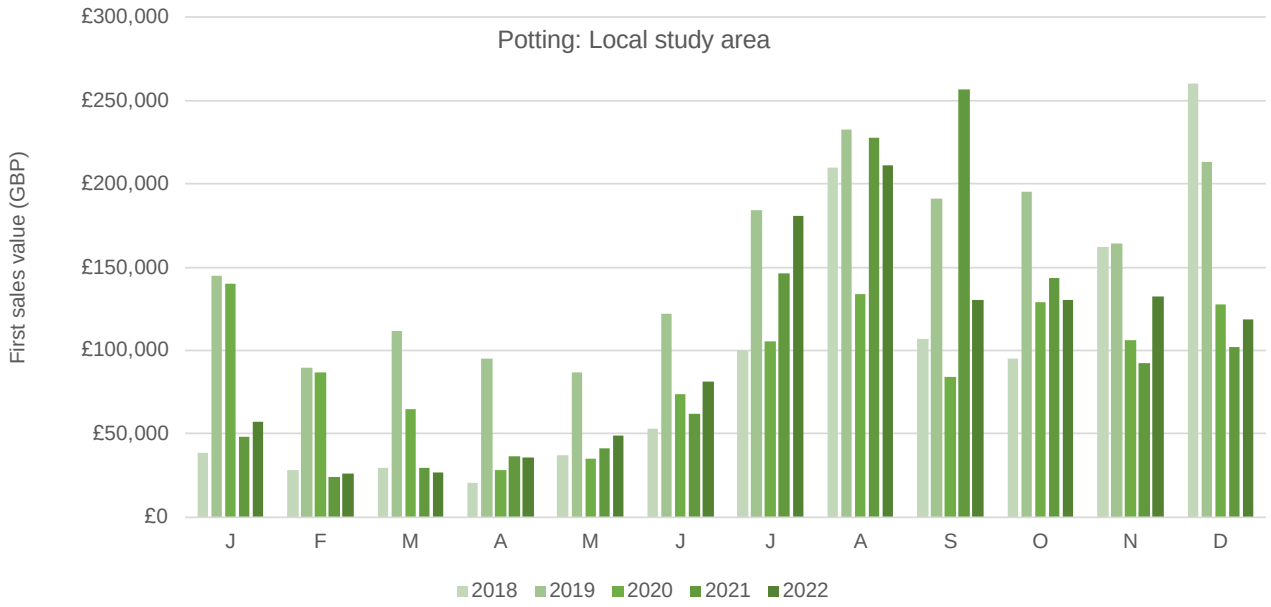



Figure 6-6: Seasonality of Landings by Demersal Otter Trawl from the Commercial Fisheries Local Study Area (Data source: MMO, 2023[1]).

## 6.5 Pelagic Trawl

6.5.1.1 Figure 6-7 (Seafish, 2022[13]) shows a typical pelagic trawl vessel and Table 6-4 describes the profile of pelagic trawl vessels active across the commercial fisheries local and regional study areas.

6.5.1.2 Pelagic or mid-water trawls are towed at the appropriate level in the water column to intercept shoaling fish such as herring and mackerel. The location of the shoals is determined by sonar or vertical sounder echoes. Pelagic vessels typically require up to 2nm to position their nets, undertake a tow and then haul nets.

6.5.1.3 Catches with pelagic trawl form a significant portion of the annual landings (21% by landed value) from the commercial fisheries regional study area. Landings are made by vessel greater than 15m in length, across a number of countries, including the UK and Norway.

6.5.1.4 Seasonality for the pelagic trawlers operating across the commercial fisheries local study area indicates that landings occur in October (Figure 6-8).

Table 6-4: Profile of Typical Pelagic Trawling Vessels.

| Parameter | Indicative Details |
|---|---|
| Main target species | Mackerel, herring |
| Nationality | Scottish |
| Vessel length | 30m to 50m |
| Horsepower (hp) | 500 hp to 1,200 hp |
| Typical towing speed | 2.5 knots to 5 knots |
| Typical gear | Pair or single trawls.<br>Net depth changed by altering either warp (rope) length or towing speed. |

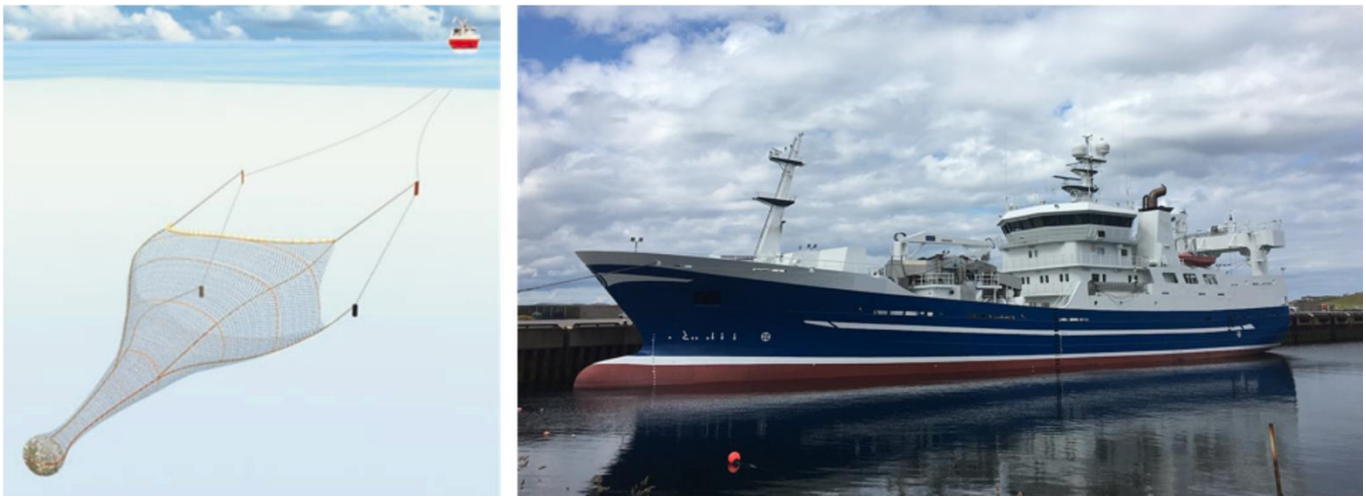


Figure 6-7: Profile of Typical Pelagic Trawling Gear and Vessel (Seafish, 2022[13]; NiMa).


Figure 6-8: Seasonality of Landings by Pelagic Otter Trawl from the Commercial Fisheries Local Study Area (Data source: MMO, 2023[1]).

## 6.6 Handline

6.6.1.1 Small inshore vessels of under 10m length (with a specification broadly aligned with that provided immediately above for inshore netting vessels) use hook and line methods to primarily target bass and flounder, though a variety of other species may be taken. Details of typical gear operational attributes are provided in Table 6-5, with gear configuration illustrated in Figure 6-9 (Seafish, 2022[13]).

6.6.1.2 A basic longline consists of a long length of line, with multiple branch lines with hooks on (snoods) attached at regular intervals. On smaller inshore vessels, where baiting and handling the gear is done by hand, they may use lines that are only a few hundred metres long with a few hundred hooks attached. Rod-and-line fisheries may encompass several different methods of fishing such as jigging and bait fishing, usually done by one or two people on board a small vessel. Fish are landed on a daily basis.

6.6.1.3 Seasonality for vessels operating handline across the commercial fisheries local study area indicates this fishery is targeted from June to October, with peaks in July and August (Figure 6-10).

Table 6-5: Profile of typical handline vessels active across the regional study area.

| Parameter | Indicative Details |
|---|---|
| Main target species | Bass |
| Nationality | English |
| Vessel length | Majority under 10 m |
| Seasonality of activity | Summer/autumn peak |
| Typical gear | Baited monofilament nylon lines<br>Set and left to fish or attached to rod |

Figure 6-9: Typical line-fishing gear depicting rod and line (left) and set long lines (right) (Source: Seafish, 2022[13]).

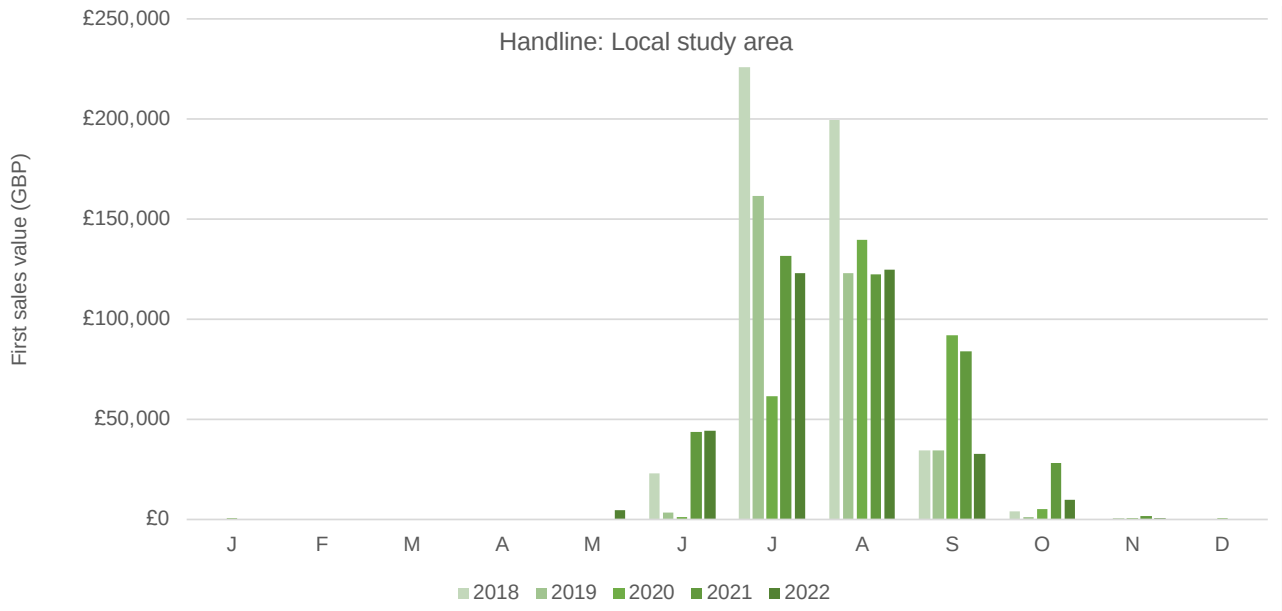



Figure 6-10: Seasonality of Landings by Handline from the Commercial Fisheries Local Study Area (Data source: MMO, 2023).

# 7 Spatial fishing activity

## 7.1 Fishing Activity Assessment

### 7.1.1 Fishing Intensity Based on VMS Data

7.1.1.1 This section presents the spatial mapping data and information available to inform the location and intensity of fishing across the commercial fisheries regional study area, and at a wider spatial scale as available. For context, active fishing restrictions are provided in Figure 7-1 (Kingfisher, 2024[16]) indicating no current fishery related restrictions across the Proposed Development (Offshore).

7.1.1.2 VMS data has been obtained from five different sources, with varying details as follows:

- ICES VMS data displays the surface SAR of catches by different gear types and covers EU (including UK) registered vessels 12m and over in length. Surface SAR indicates the number of times in an annual period that a demersal fishing gear makes contact with (or sweeps) the seabed surface. Surface SAR provides a proxy for fishing intensity and has been analysed to determine an average annual SAR based on data from 2016 to 2020.
- Marine Directorate Scottish vessel VMS data sourced from the NMPi data catalogue indicating fishery effort data by gear type.
- MMO VMS data displaying the first sales value (£) of catches and covers UK registered vessels 15m and over in length from 2016 to 2020.
- MMO VMS data displays the total quantity (tonnes) of landings by all gears deployed by UK registered vessels 15m and over in length from 2011 to 2015.
- Scottish Pelagic Fishermen's Association (2024[17]) VMS data for their Scottish pelagic trawl member vessels for 2013 to 2021.

7.1.1.3 Pelagic trawl activity is depicted in Figure 7-2 for UK vessels based on VMS data sourced from the MMO for 2016 to 2019 and in Figure 7-3 for 2020. The nature of pelagic trawling activity means that vessels track shoals of fish and deploy fishing gear to harvest a portion of that migrating shoal. This means activity is not associated with specific seabed grounds, but to the migration route of the shoaling fish. Fishing locations are therefore generally across a wider area and vary spatially on an annual basis depending on the route taken by the fish. The VMS data clearly indicates activity by pelagic trawlers from 2016 to 2020, which corroborates the data assessed for the commercial fisheries local and regional study areas. The key areas targeted are east of the Caledonia OWF (within the local study area, but outside of the Caledonia OWF boundary), and north-east of the Caledonia OWF (within the regional study area).

7.1.1.4 Pelagic trawl VMS data sourced and provided by the Scottish Pelagic Fishermen's Association for their Scottish pelagic trawl member vessels is depicted in Figure 7-4 for active fishing operations and in Figure 7-5 for active fishing and transiting activities, presented cumulatively for the period 2013 to 2021. The data indicates a line of activity running through the Caledonia OWF from north-west to south-east. A clear and intense transit route is noted running in the same direction directly through the Caledonia OWF.

7.1.1.5 VMS data from the period 2011 to 2015 has been analysed to explore the feedback from stakeholders that higher levels of fishing activity occurred within the local study area prior to Brexit (i.e., before 2016). VMS data available for the 2011 to 2015 period is mapped for all fishing gears to indicate the quantity of landings in tonnes for 2011 (Figure 7-6) and for 2012 to 2015 (Figure 7-7, MMO, 2018[18]). Activity is noted throughout the Proposed Development (Offshore), but levels are not specifically higher than data analysed for 2016 onwards.

7.1.1.6 Demersal otter trawl activity is depicted in Figure 7-8, Figure 7-9 and Figure 7-10. Both the ICES and MMO VMS data sources corroborate that there is very high levels of activity across the Caledonia OECC running in a west to east direction parallel to the coast and out to and beyond 12nm boundary. Activity is also noted to the west and east of the Caledonia OWF, with lower levels of activity within the Caledonia OWF.

7.1.1.7 Demersal seine activity is depicted in Figure 7-11, indicating low to medium levels of activity throughout the local study area. An area of activity is noted to the north-east of the Caledonia OWF within 46E8.

7.1.1.8 Beam trawl activity is depicted in Figure 7-12, Figure 7-13 and Figure 7-14, indicating negligible activity across the Caledonia OWF, Caledonia OECC, and commercial fisheries local and regional study areas.

7.1.1.9 Dredge activity is depicted in Figure 7-15, Figure 7-16 and Figure 7-17, indicating medium to high levels of activity across the Caledonia OWF. The activity varies year on year, with specific peaks within the Caledonia OWF noted in 2016 and 2018.

7.1.1.10 Potting activity is depicted in Figure 7-18 and Figure 7-19, indicating negligible activity across the Caledonia OWF. Potting vessels are typically smaller than 15m in length and therefore not likely to be represented within the VMS dataset analysed.

7.1.1.11 Activity of Scottish vessels under 12m in length is depicted in Figure 7-20, indicating that all of the activity is located inshore from the Caledonia OWF and overlapping the inshore areas of the Caledonia OECC, predominately within 6nm.

7.1.1.12 VMS data for Norwegian registered vessels is presented in Figure 7-21 (Barents Watch, 2024)[19] by gear type, indicating that there is no Norwegian activity across the Caledonia OWF and Caledonia OECC.

### 7.1.2 Fishing Intensity Based on AIS Data

7.1.2.1 Fishing vessel route density, based on vessel AIS positional data is shown in Figure 7-22 for 2023, Figure 7-23 for 2019 to 2022 and presented seasonally for 2022 in Figure 7-24 depicting activity in spring, summer, autumn and winter. AIS is required to be fitted on fishing vessels ≥15m length. The data is specific to fishing vessels and indicated the route density per square kilometre ($km^2$) per year. This data does not distinguish between transiting vessels and active fishing, but does provide a useful source to corroborate fishing grounds.

7.1.2.2 AIS data corroborates the transit route noted for pelagic vessels running north-west to south-east through the Caledonia OWF. In addition, fishing grounds are evident to the west of the Caledonia OWF (expected to be scallop dredge activity) and the demersal trawl activity in the inshore Nephrops grounds I also evident, predominately within 6 to 12nm.

### 7.1.3 Fishing Intensity Based on Marine Traffic Survey Data

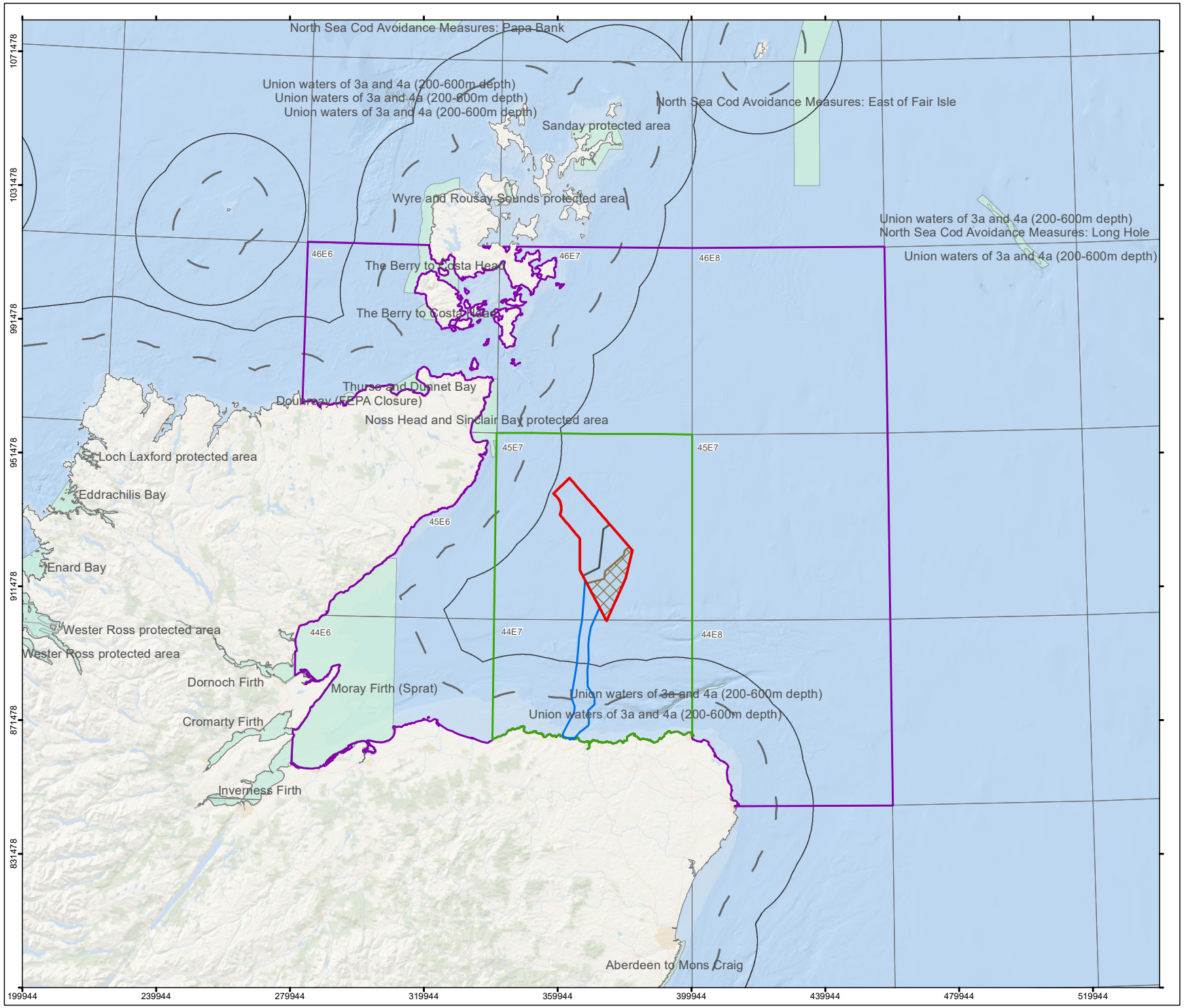
7.1.3.1 Project-specific marine traffic surveys were undertaken in January/February 2023 (winter) and July/August 2023 (Summer), using AIS and radar tracking and visual observations to record vessel activity across the Caledonia OWF. In addition, AIS data for 2022 and VMS ping data for 2023 has been interrogated to inform the Caledonia OWF Navigational Risk Assessment (Volume 7B, Appendix 9-1).

7.1.3.2 Fishing vessels were recorded during the winter and summer surveys, with an average of four to five unique fishing vessels per day during winter and six to seven unique fishing vessels per day during summer. Both active fishing and transiting behaviour were identified based on speed (noting that the Navigational Risk Assessment defines that fishing vessels transiting below 6kts have the potential to be actively fishing).

7.1.3.3 Specifically fishing vessels were noted to be transiting on a northwest/southeast course through Caledonia OWF. Notable gear types included demersal otter trawlers and pelagic trawlers. The AIS data indicated active fishing to the west of Caledonia OWF and in the very south. VMS data pings for 2023 were analysed in the Navigational Risk Assessment, with activity noted in the central portion of Caledonia OWF (see Volume 7B, Appendix 9-1).

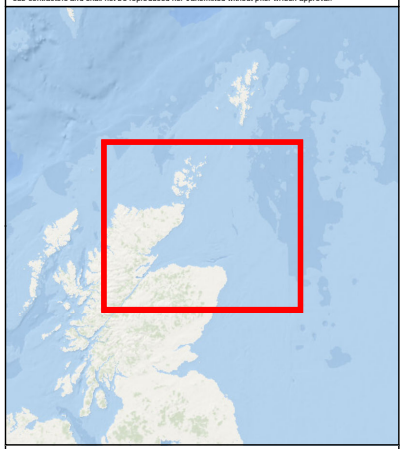
### 7.1.4 Fishing Intensity Based on Surveillance Data

Fisheries surveillance data from 2017 to 2022 has been sourced from the Marine Directorate and is presented in Figure 7-25 for the commercial fisheries local study area and Figure 7-26 for the commercial fisheries regional study area. Fisheries surveillance data indicates activity within the Caledonia OWF and across portions of the Caledonia OECC.




- Caledonia OWF
- Overall Boundary North South Site Division
- Proposed Floating Area
- Offshore Export Cable Corridor
- Commercial Fisheries Local Study Area
- Commercial Fisheries Regional Study Area
- ICES Statistical Rectangles
- 12 nm Boundary
- 6 nm Boundary
- Fishing Restrictions





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.1 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-1
# Commercial Fisheries
# Fishing Restrictions

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| DRAWING NUMBER | SHEET NO | REV |
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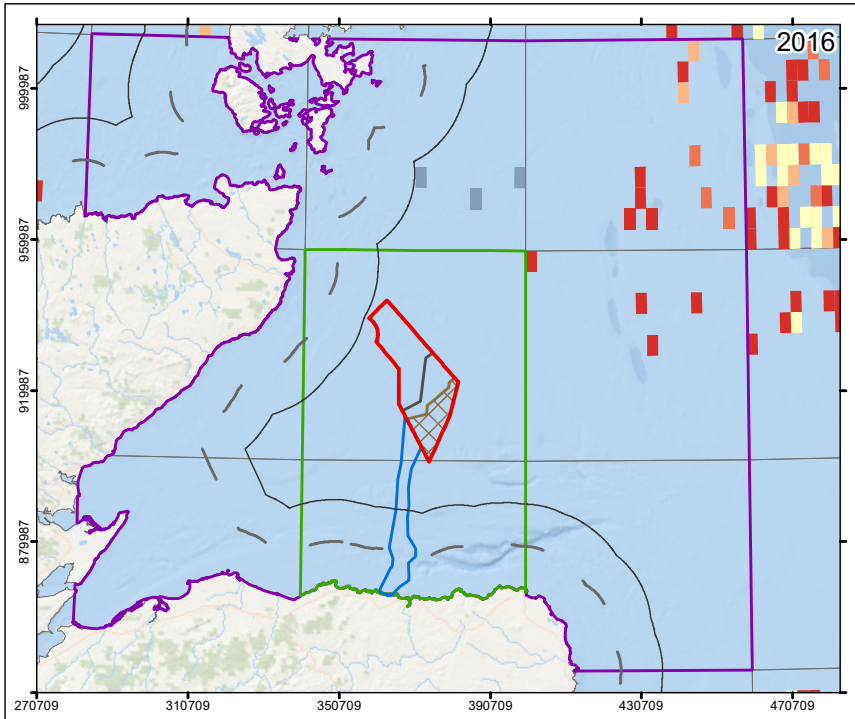
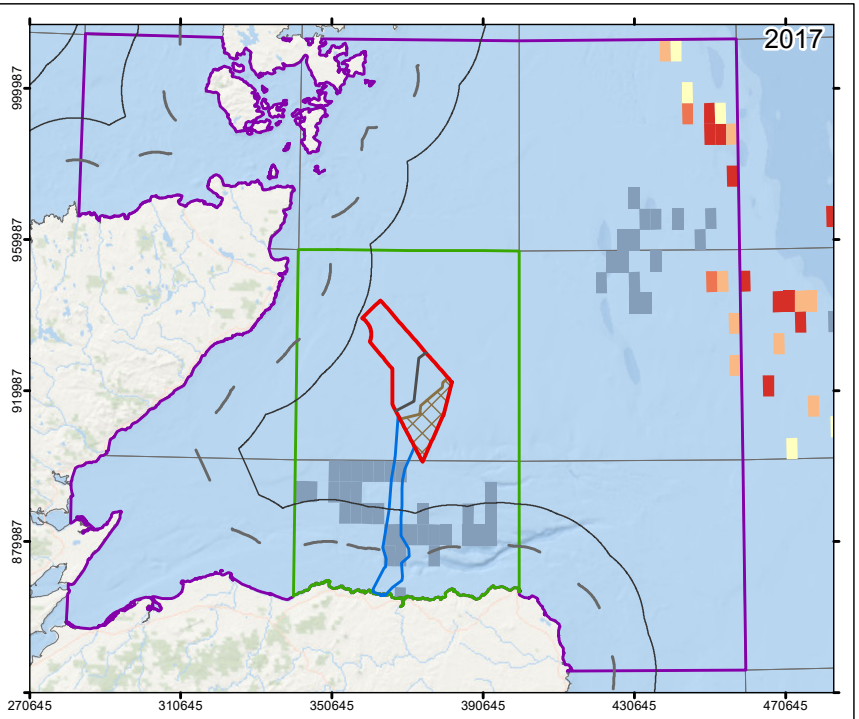
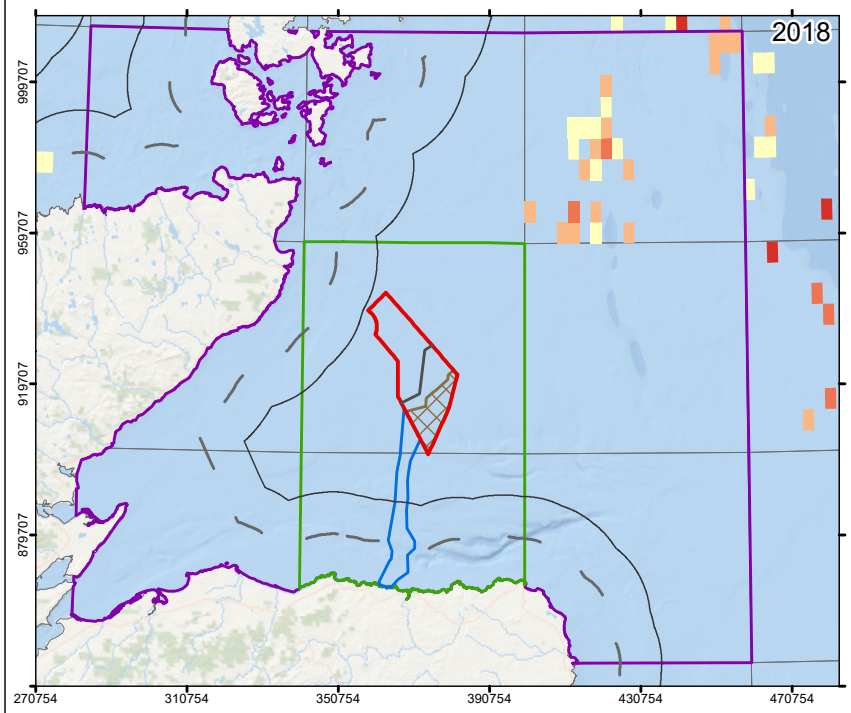
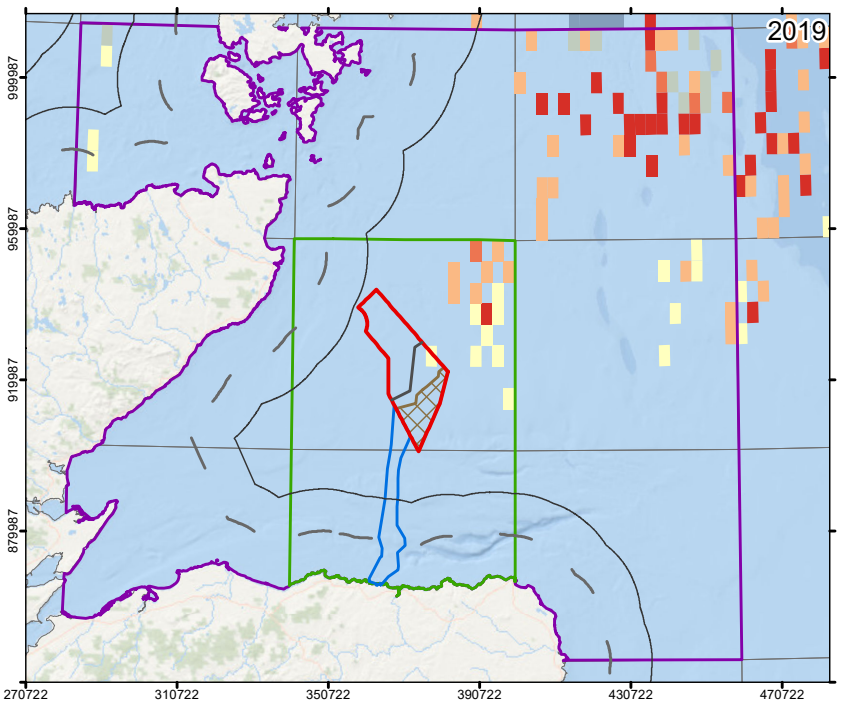



Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

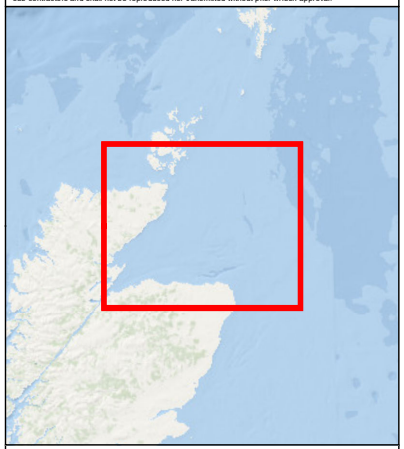
Offshore Export Cable Corridor

Pelagic Trawl (UK vessels ≥15m)

Total value, £

- £0.02 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £242,000.00





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

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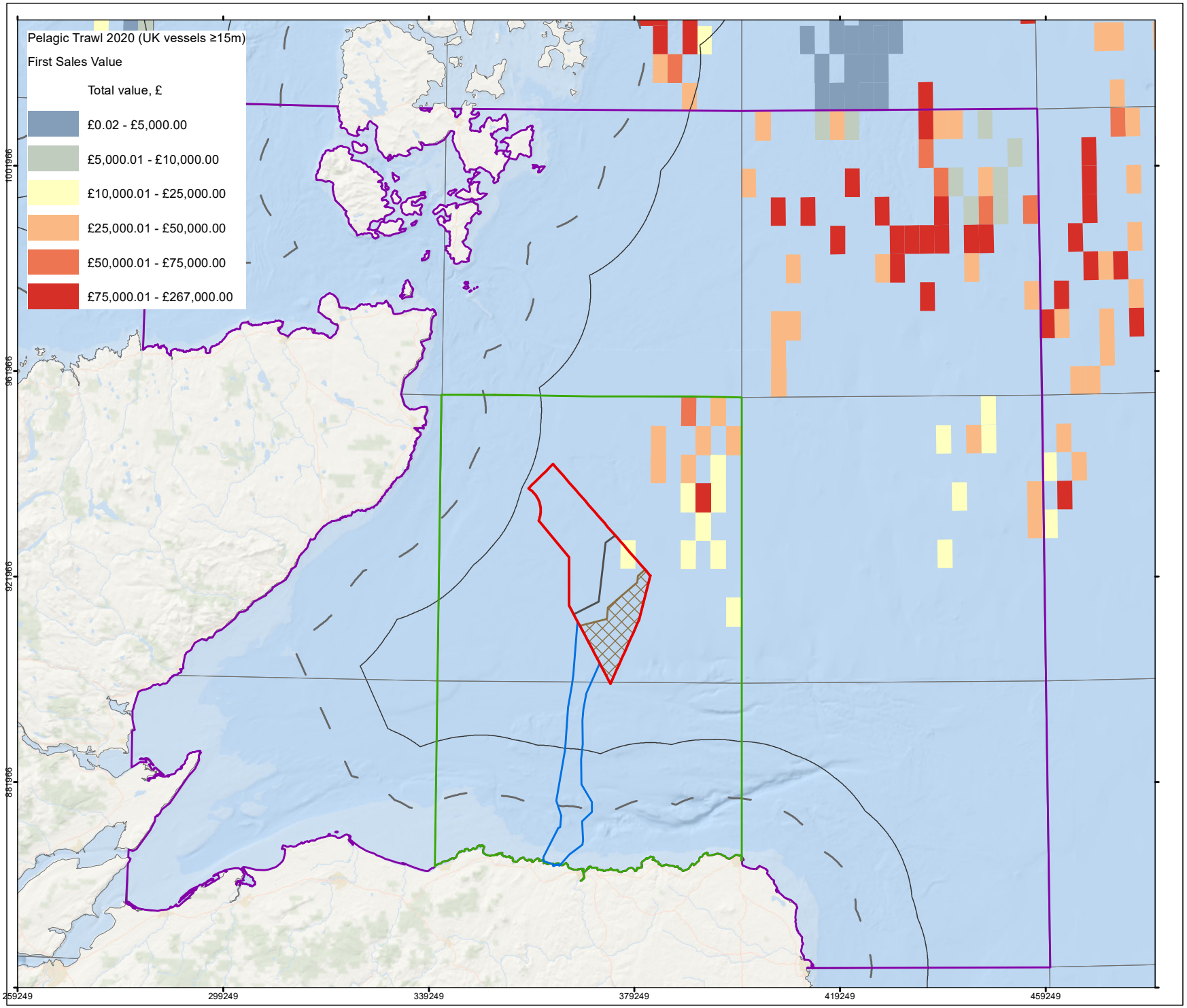
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.2 | 01 |

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-2
Pelagic Trawl Vessel Monitoring System Data, 2016 to 2019
Value of catch by UK vessels ≥15m

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:2,000,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

Commercial Fisheries Local Study Area

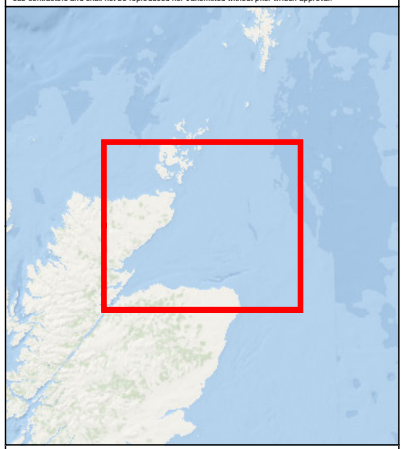
Commercial Fisheries Regional Study Area

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

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| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

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| 7.3 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-3
## Pelagic Trawl Vessel Monitoring System Data Value of catch by UK vessels ≥15m, 2020

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| Approved | 1:1,000,000 |

| DRAWING NUMBER | SHEET NO | REV |
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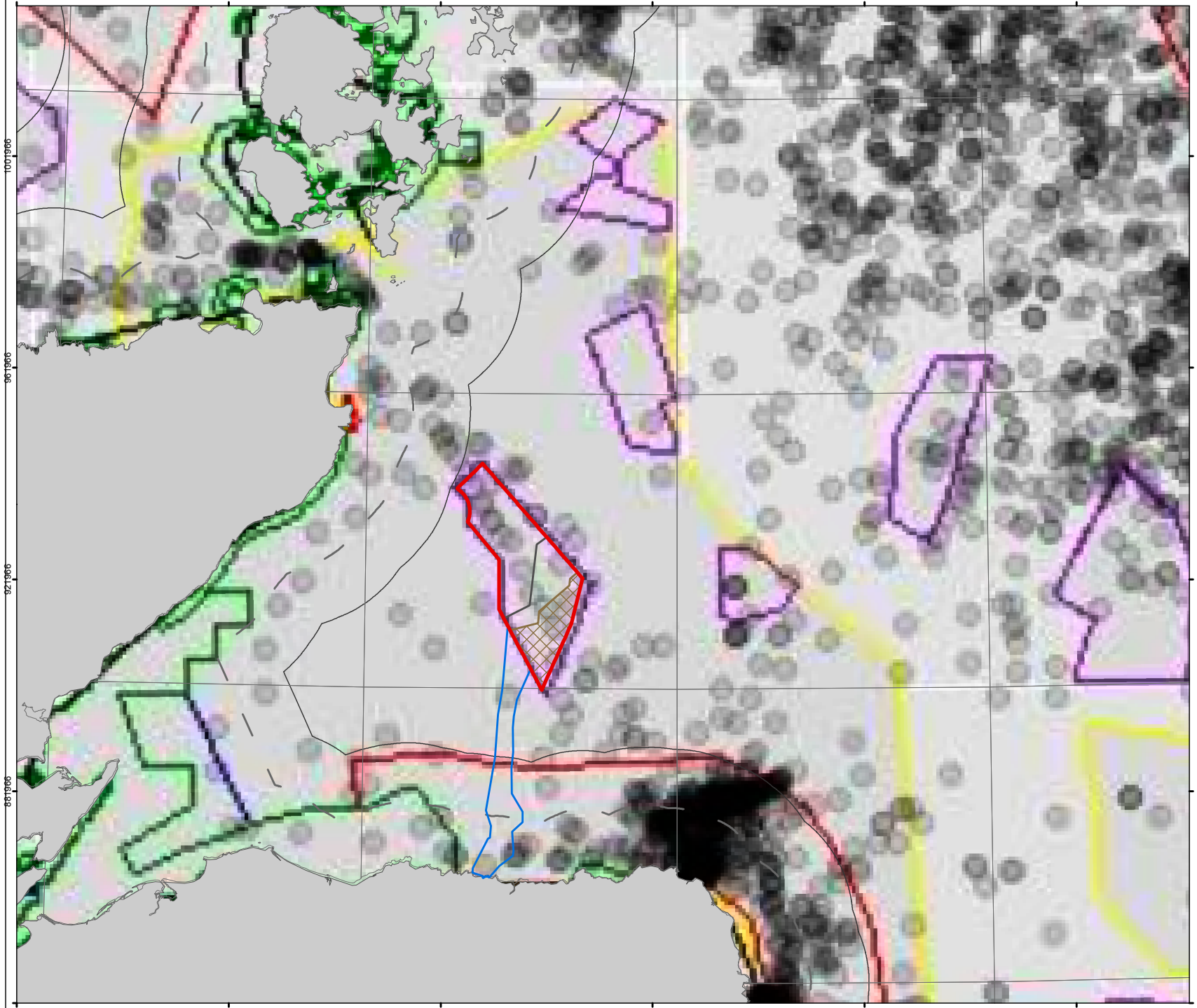
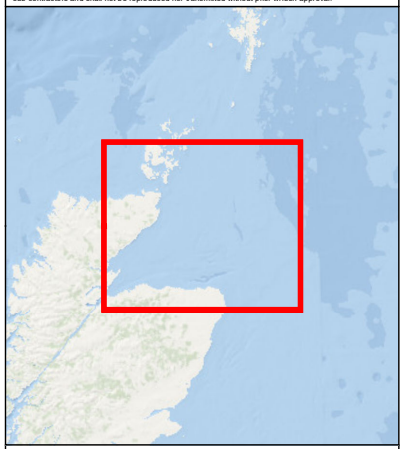



- Caledonia OWF
- Overall Boundary North South Site Division
- Proposed Floating Area
- Offshore Export Cable Corridor
- ICES Statistical Rectangles
- 12 nm Boundary
- 6 nm Boundary
- Scottish pelagic active fishing 2013-2021
- Other Scotwind
- INTOG
- Marine Protected Area
- Special Protected Area





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
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| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

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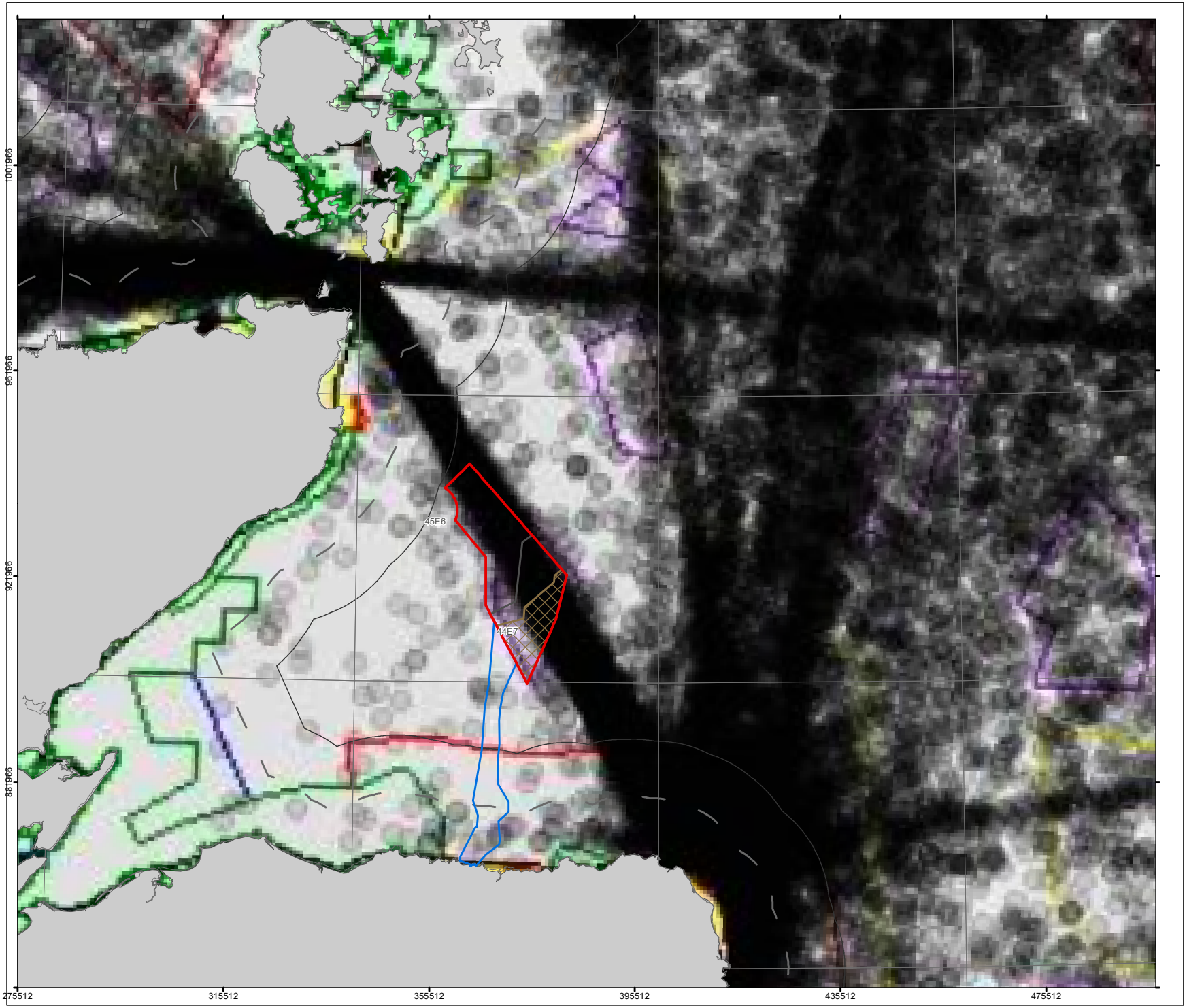
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.4 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-4
## Scottish Pelagic Active Fishing VMS data 2013-2021 (SPFA, 2024)

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:1,000,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating

Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary

Scottish pelagic active fishing and transiting vessels 2013-2021

Other Scotwind

INTOG

Marine Protected Area

Special Protected Area




0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CONTRACTOR DRAWING NO: 7.5

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-5
Scottish Pelagic Active Fishing and Transiting VMS data 2013-2021 (SPFA, 2024)

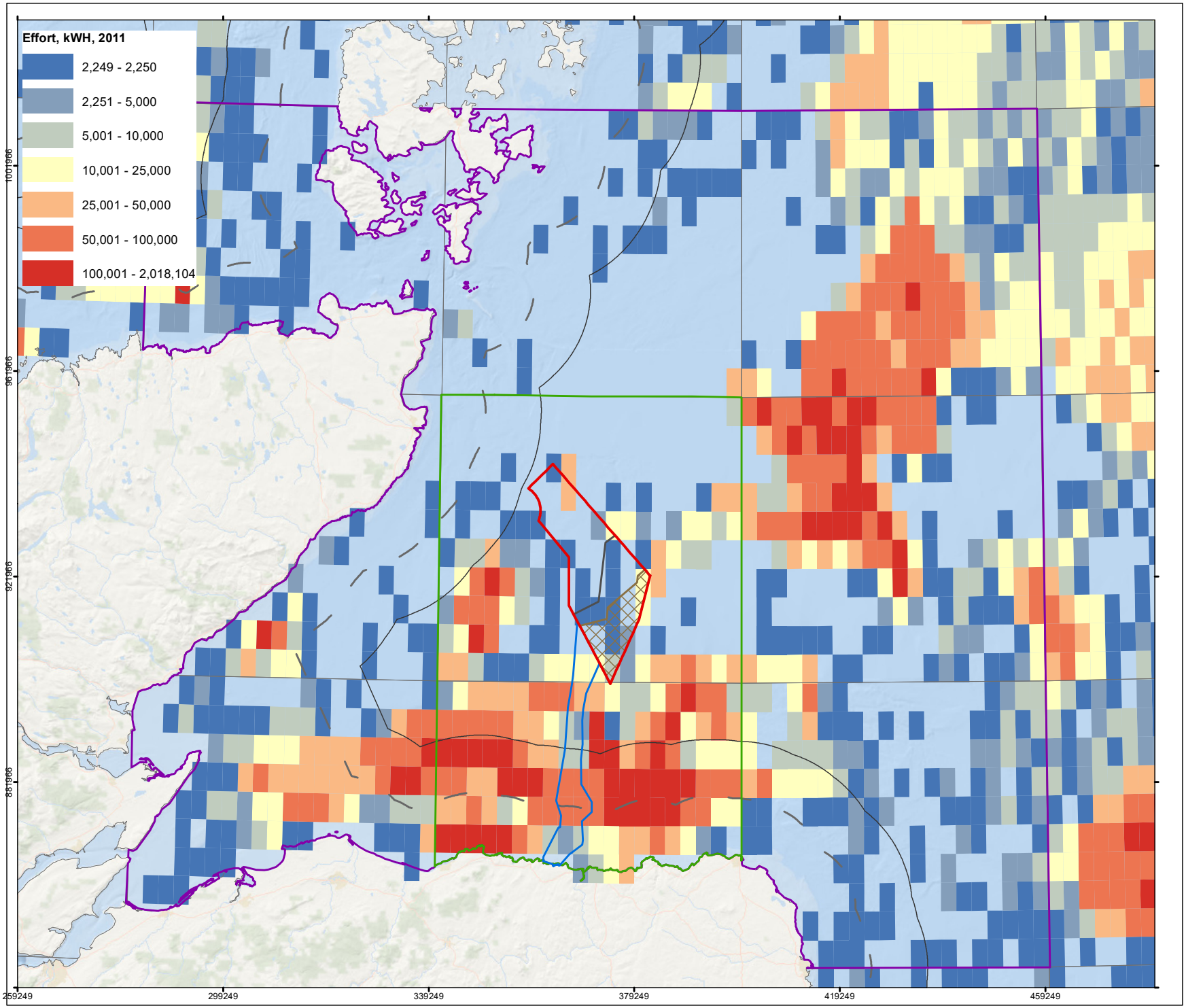
STATUS: Approved

SCALE: 1:1,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

Commercial Fisheries Local Study Area

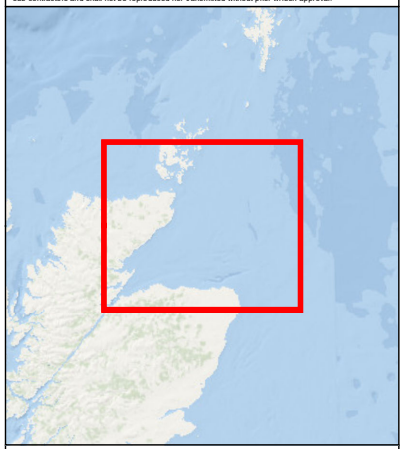
Commercial Fisheries Regional Study Area

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.6 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-6
# Demersal Otter Trawl Effort, kWH, 2011 (EU and UK vessels ≥12m)

| STATUS | SCALE |
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| Approved | 1:1,000,000 |

| DRAWING NUMBER | SHEET NO | REV |
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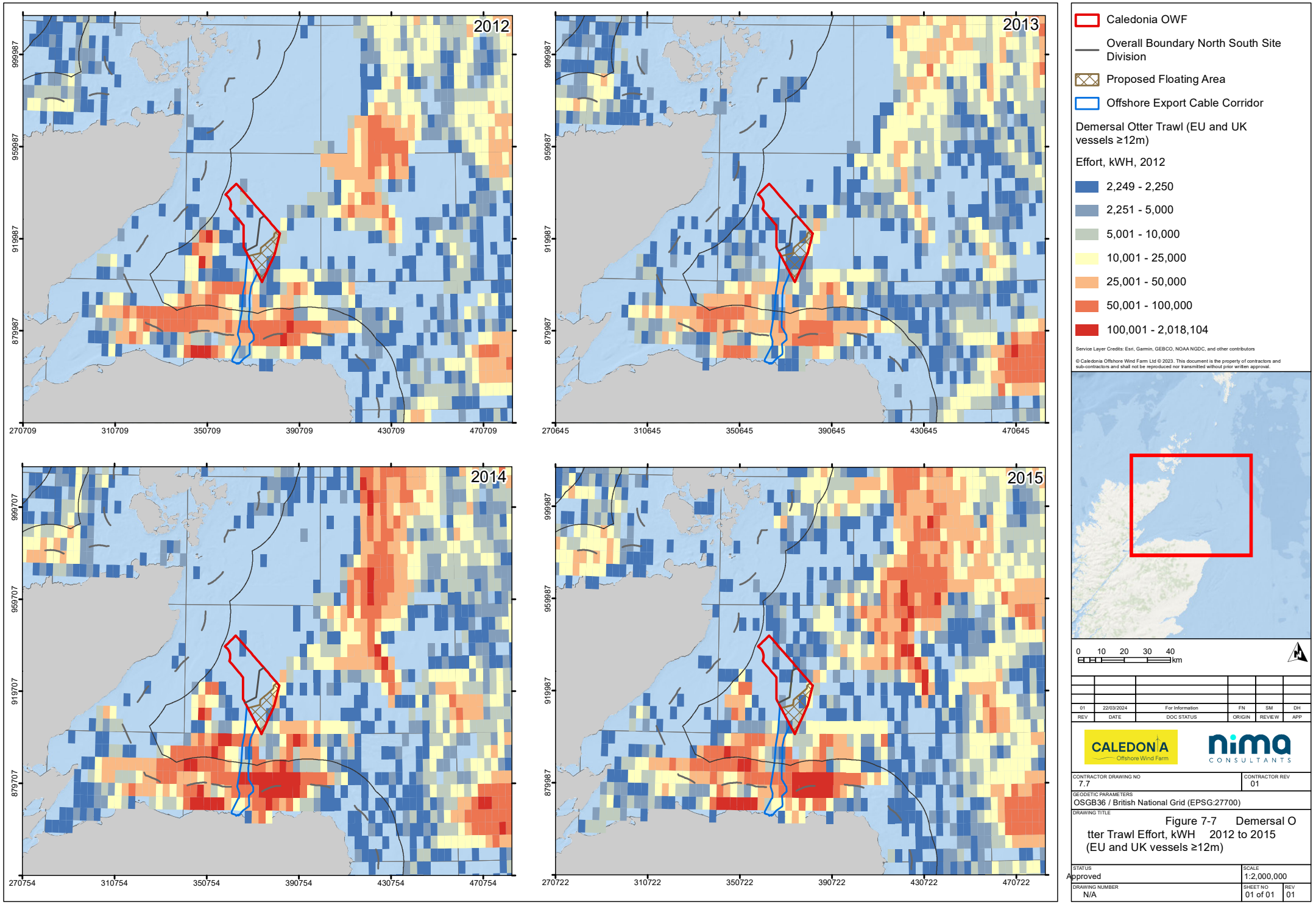


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|---|---|---|---|---|---|
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CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.7 | 01 |

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-7 Demersal Otter Trawl Effort, kWH 2012 to 2015 (EU and UK vessels ≥12m)

| STATUS | SCALE |
|---|---|
| Approved | 1:2,000,000 |

| DRAWING NUMBER | SHEET NO | REV |
|---|---|---|
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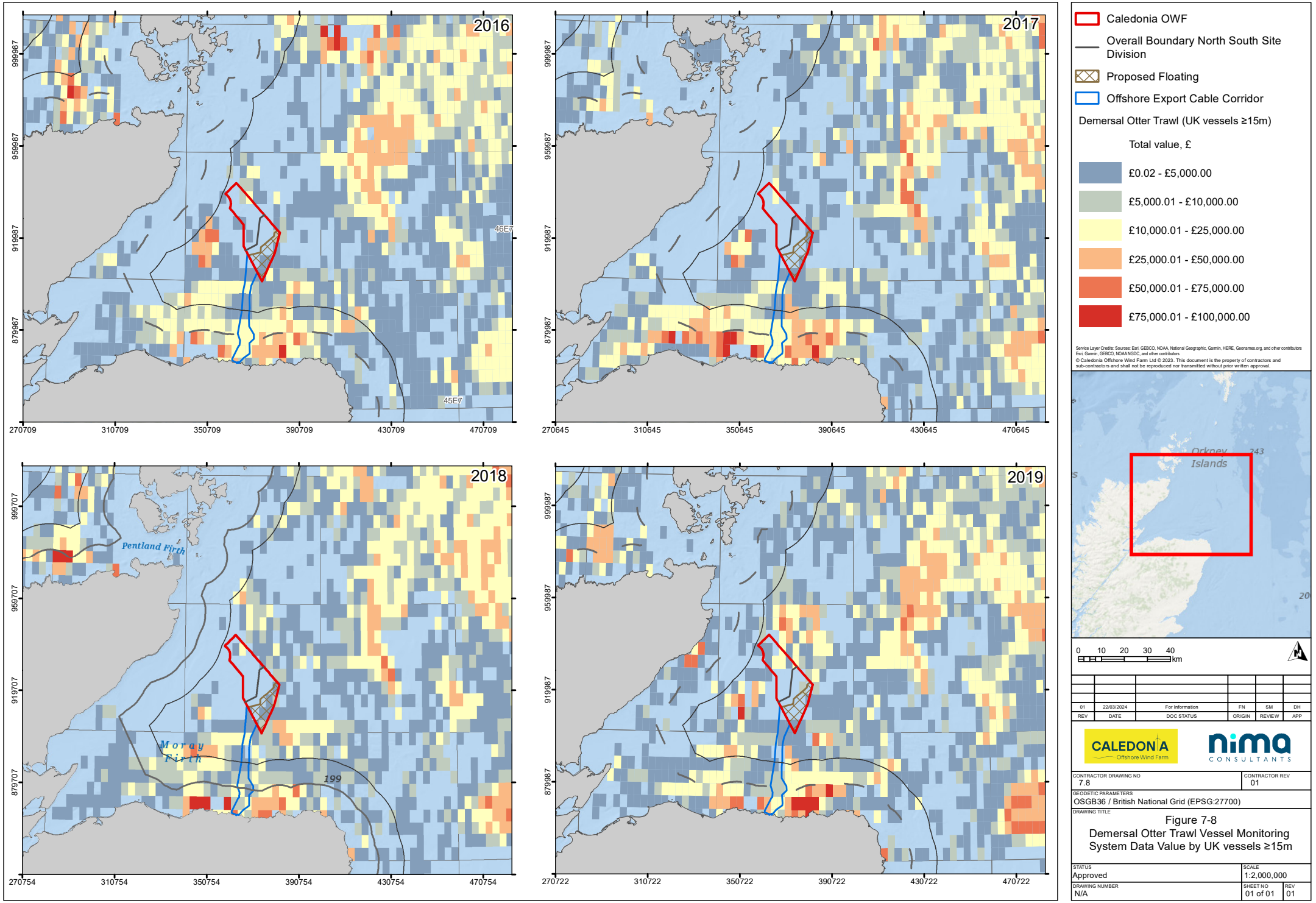


| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.8 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-8
Demersal Otter Trawl Vessel Monitoring System Data Value by UK vessels ≥15m

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:2,000,000 | |
| DRAWING NUMBER | SHEET NO | REV |
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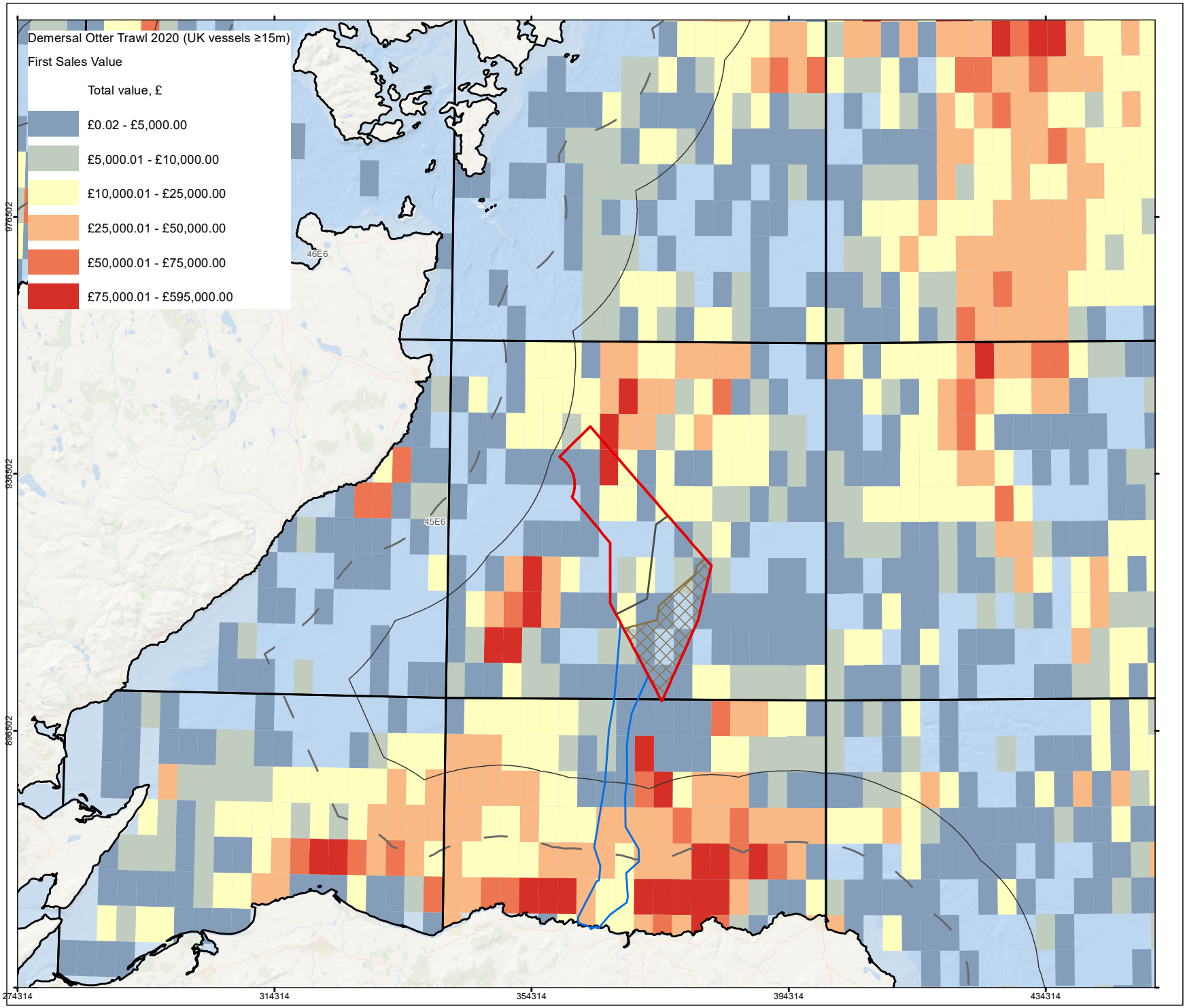



Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

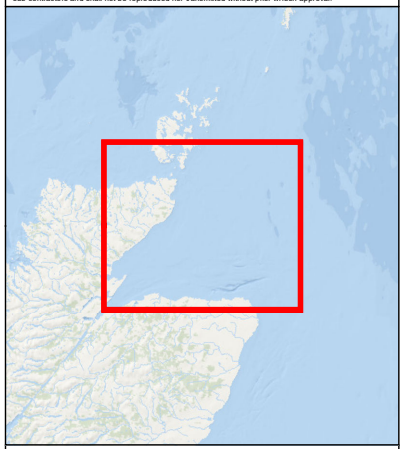
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.9 | 01 |

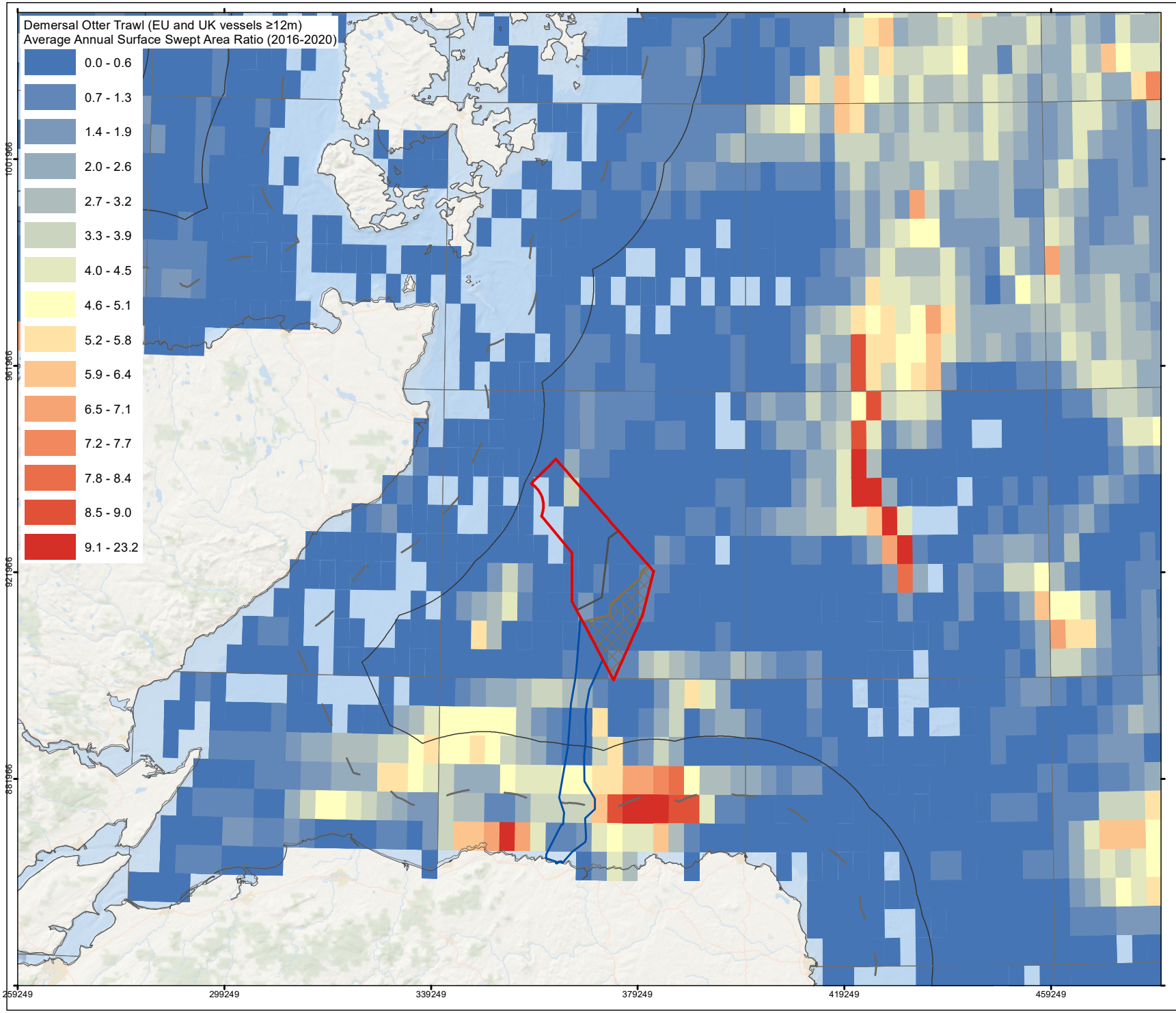
GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-9
Demersal Otter Trawl Vessel Monitoring System Data Value by UK vessels ≥15m, 2020

| STATUS | SCALE |
|---|---|
| Approved | 1:800,000 |

| DRAWING NUMBER | SHEET NO | REV |
|---|---|---|
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

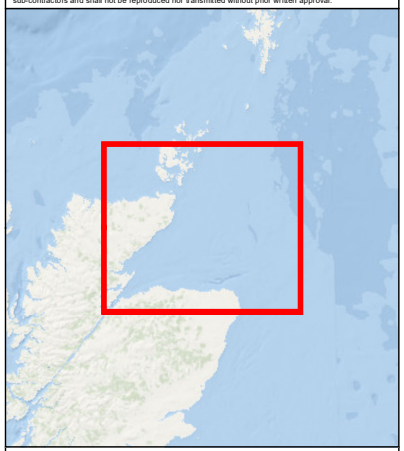
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.10 | 01 |

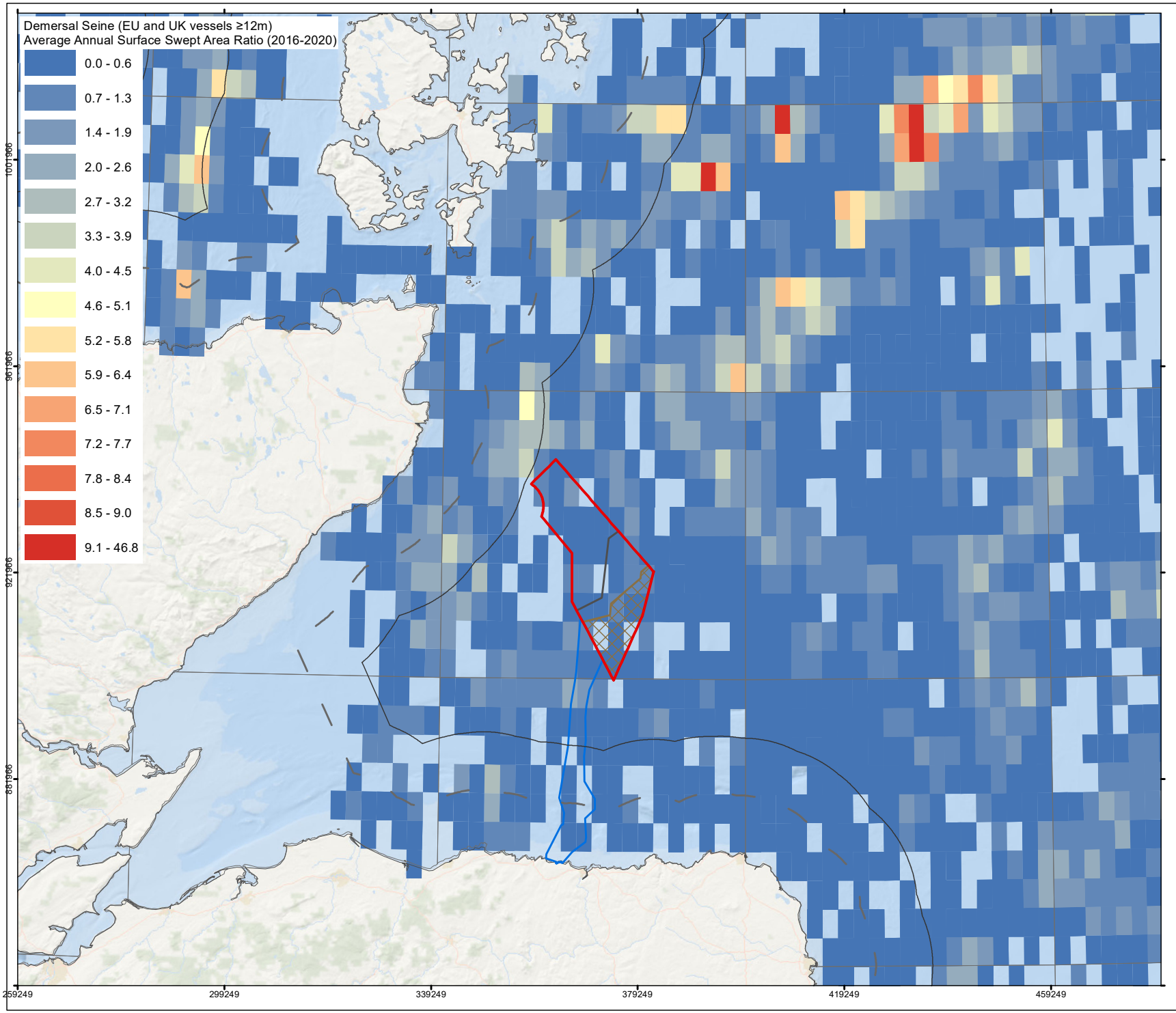
GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-10 Demersal Otter Trawl Surface Swept Area Ratio 5-year average (2016-2020)

| STATUS | SCALE |
|---|---|
| Approved | 1:1,000,000 |

| DRAWING NUMBER | SHEET NO | REV |
|---|---|---|
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

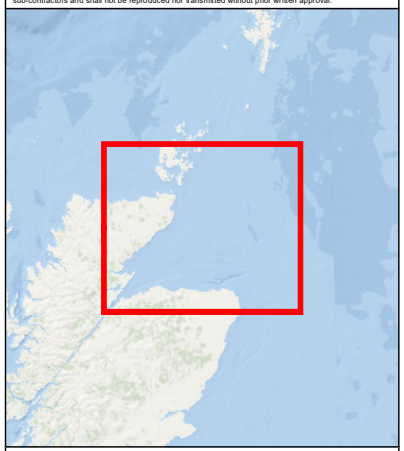
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.11

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-11 Demersal SeineSurface Swept Area Ratio 5-year average (2016-2020)

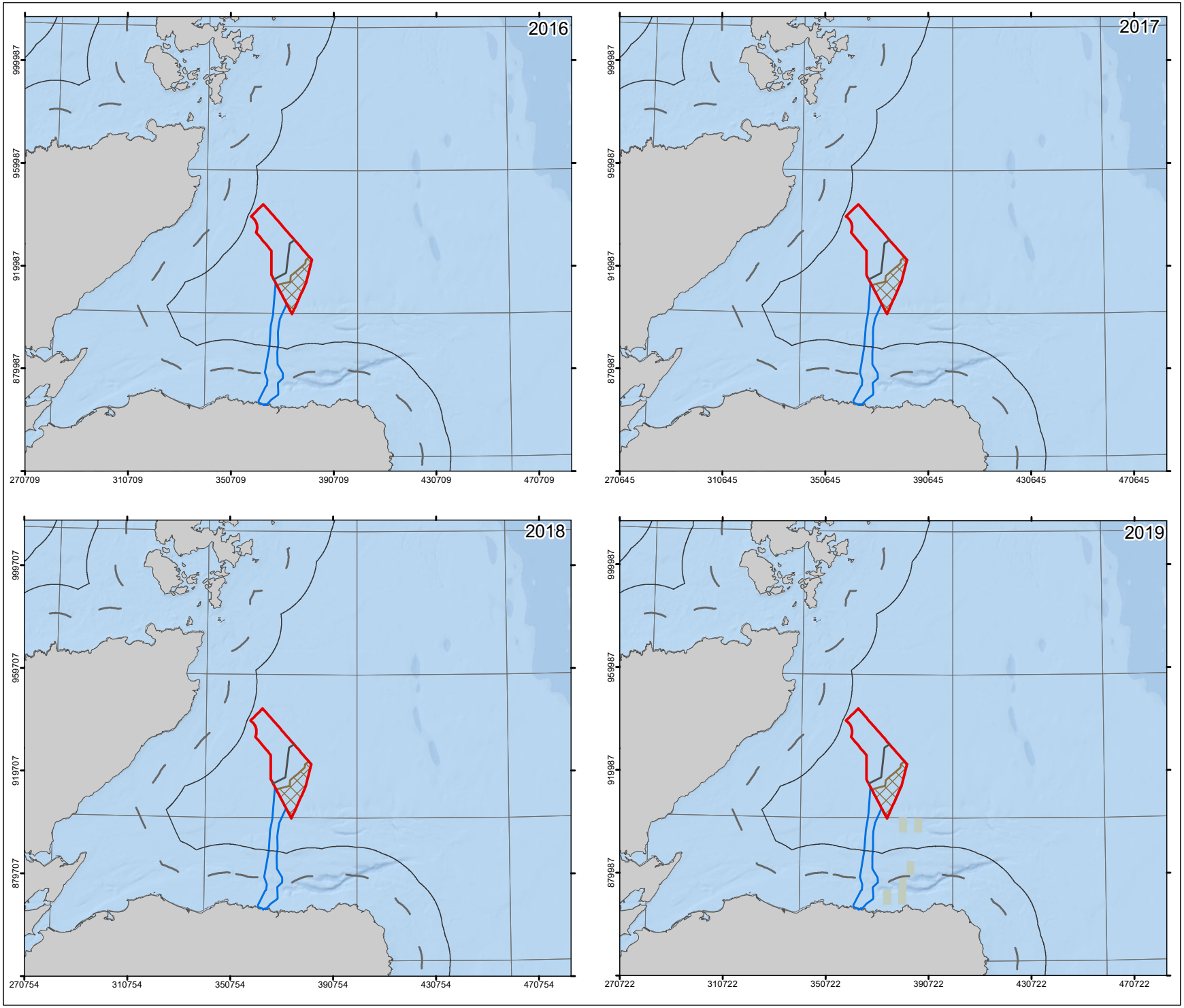
STATUS: Approved

SCALE: 1:1,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

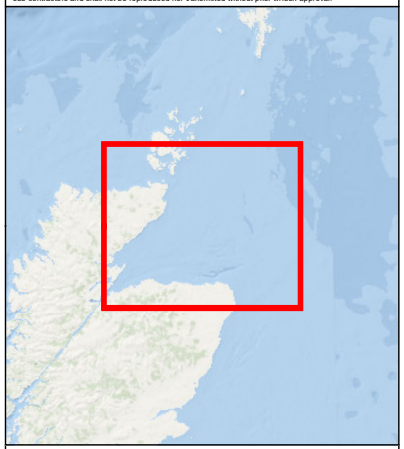
Offshore Export Cable Corridor

Beam Trawl (UK vessels ≥15m)

Total value, £

- £0.02 - £1,000.00
- £1,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £86,138.54





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.12

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-12
# Beam Trawl Vessel Monitoring System Data Value of catch by UK vessels ≥15m

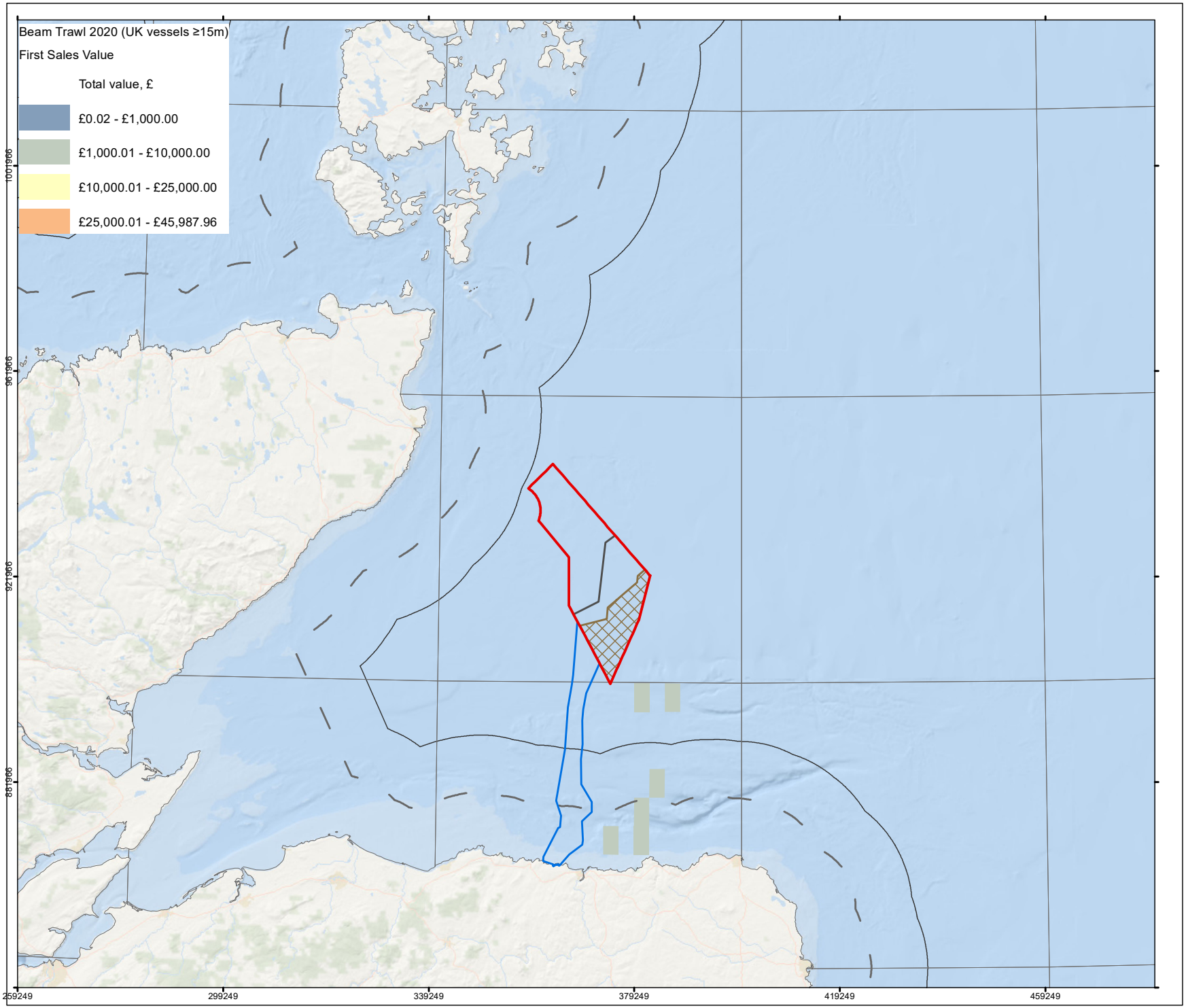
STATUS: Approved

SCALE: 1:2,000,000

DRAWING NUMBER: N/A

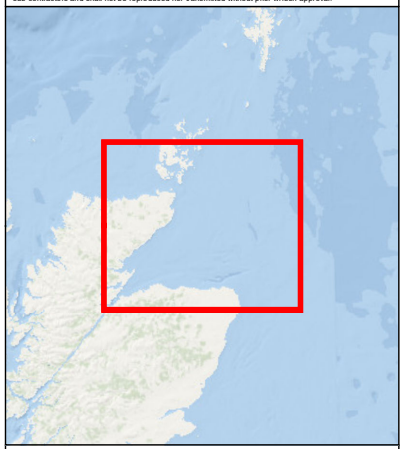
SHEET NO: 01 of 01

REV: 01




- Caledonia OWF
- Overall Boundary North South Site Division
- Proposed Floating Area
- Offshore Export Cable Corridor
- ICES Statistical Rectangles
- 12 nm Boundary
- 6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

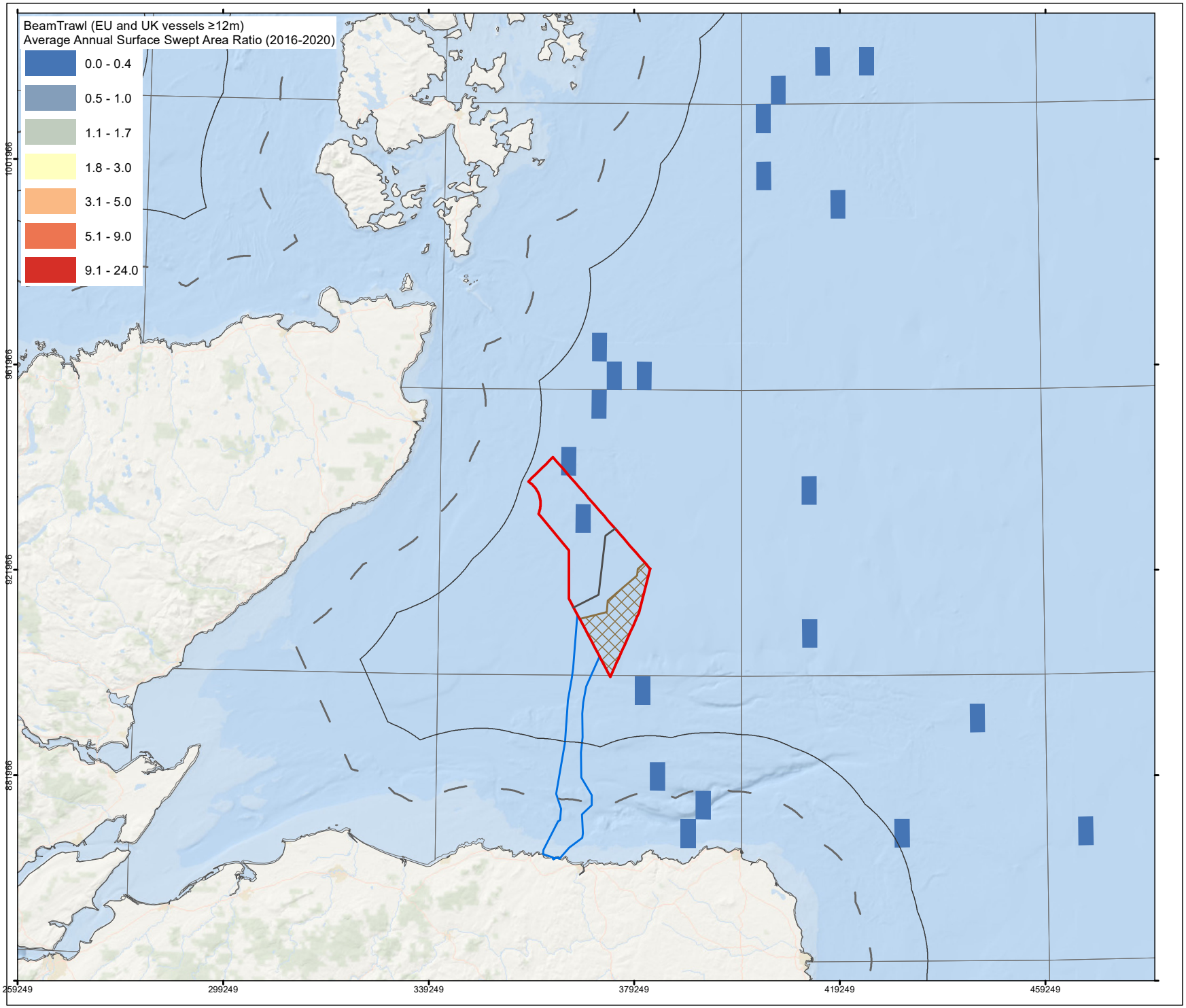
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.13 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE
Figure 7-13
Beam Trawl Vessel Monitoring System Data, 2020
Value of catch by UK vessels ≥15m

| STATUS | SCALE |
|---|---|
| Approved | 1:1,000,000 |

| DRAWING NUMBER | SHEET NO | REV |
|---|---|---|
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

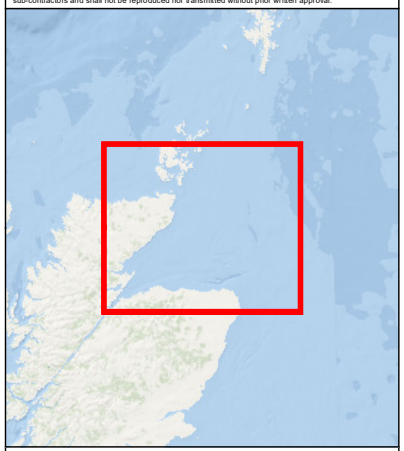
Offshore Export Cable Corridor

ICES Statistical Rectangles

6 nm Boundary

12 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.14

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-14 Beam Trawl Surface Swept Area Ratio 5-year average (2016-2020)

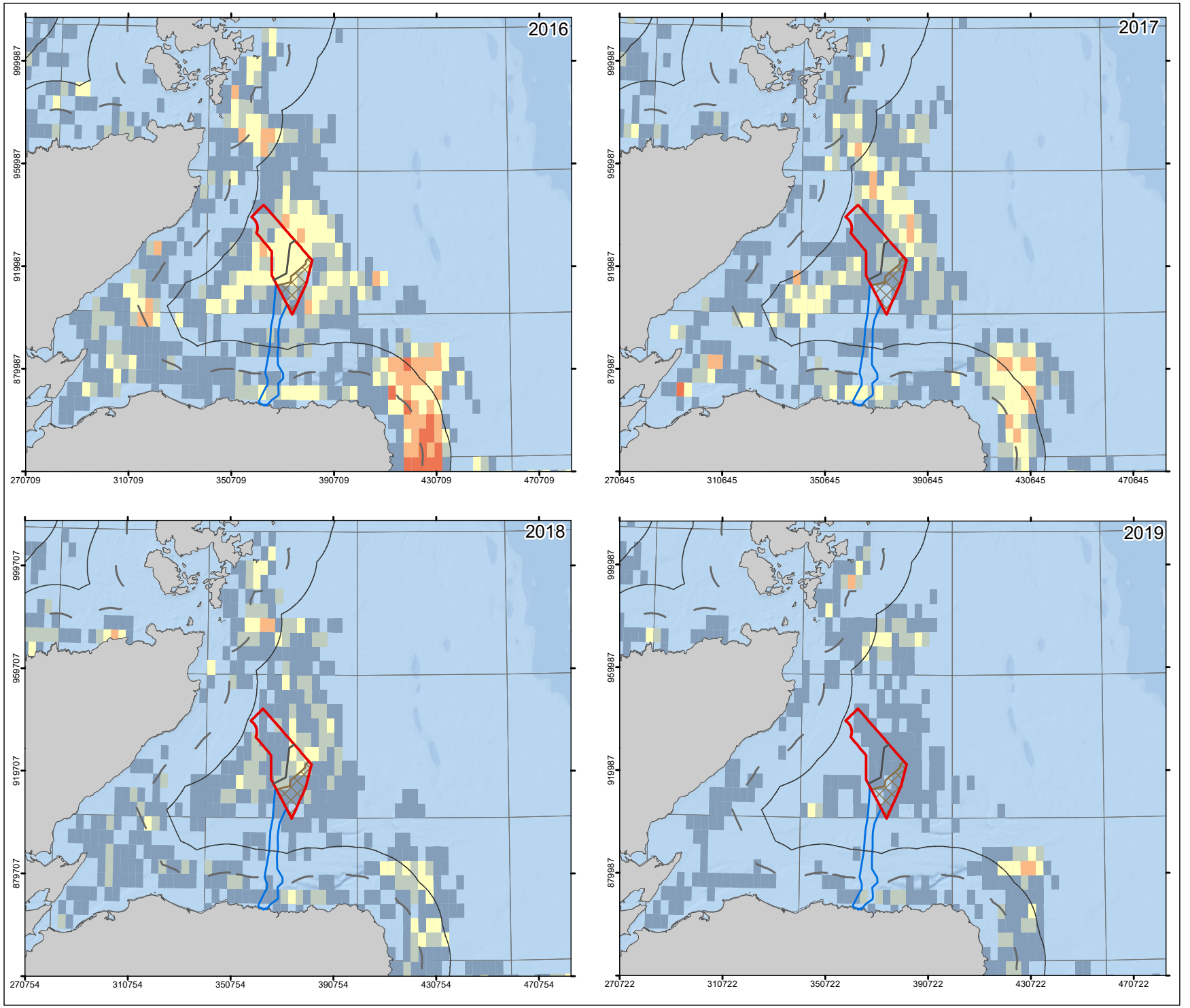
STATUS: Approved

SCALE: 1:1,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating

Offshore Export Cable Corridor

Dredge (UK vessels ≥15m)

Total value, £

£0.91 - £5,000.00

£5,000.01 - £10,000.00

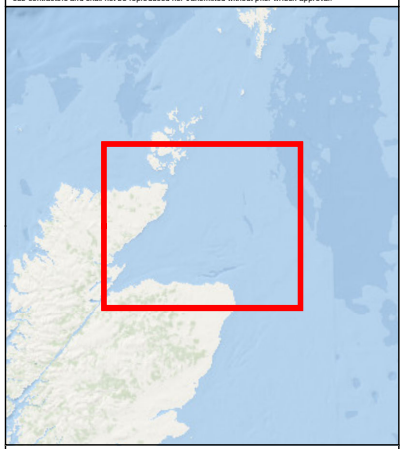
£10,000.01 - £25,000.00

£25,000.01 - £50,000.00

£50,000.01 - £75,000.00

£75,000.01 - £280,000.00





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.15

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-15
Dredge Vessel Monitoring System
Data Value of catch by UK vessels ≥15m

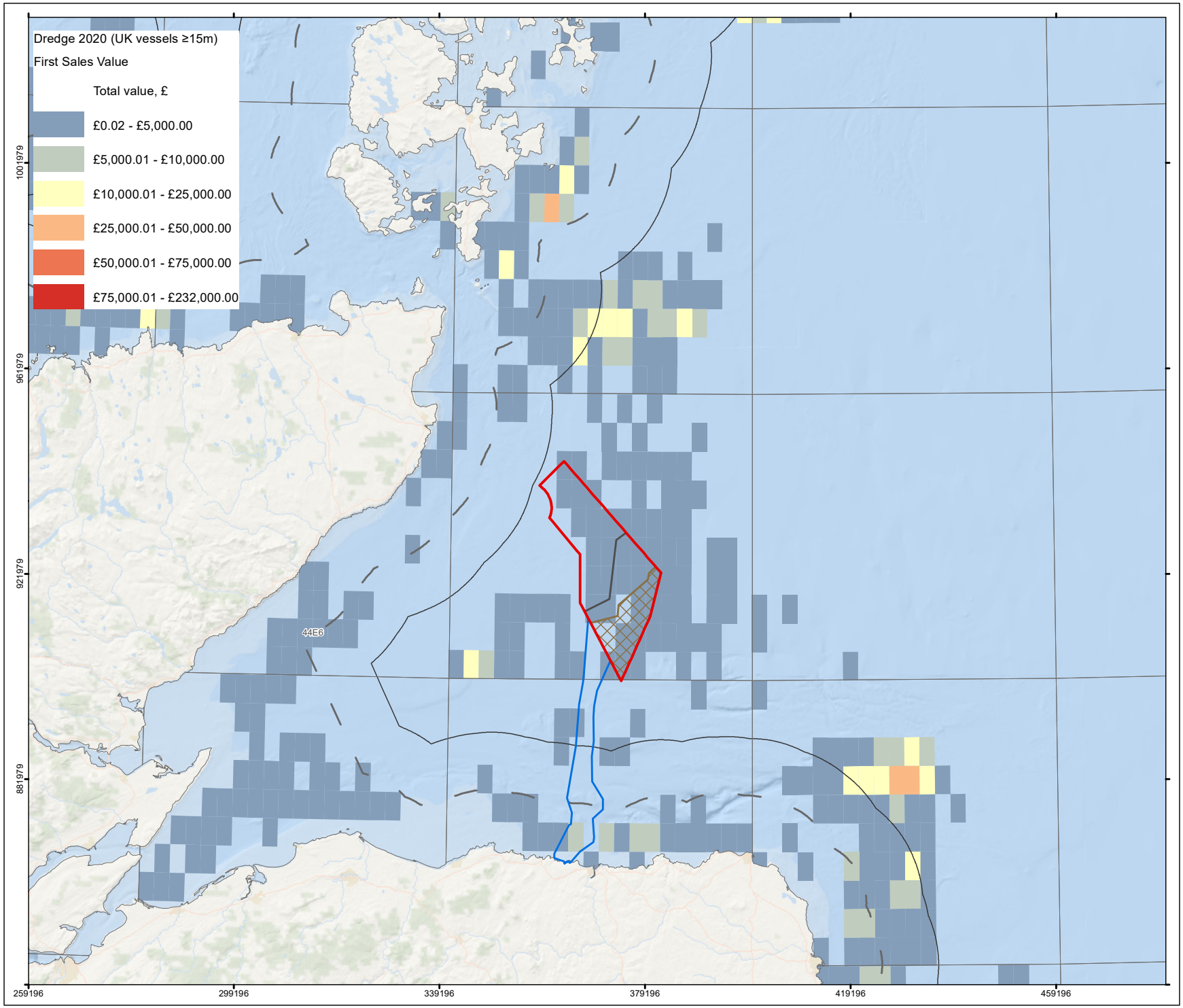
STATUS: Approved

SCALE: 1:2,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

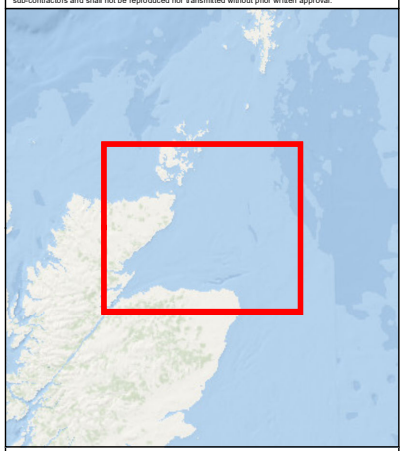
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.16

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-16
Dredge Vessel Monitoring System Data
Value of catch by UK vessels ≥15m, 2020

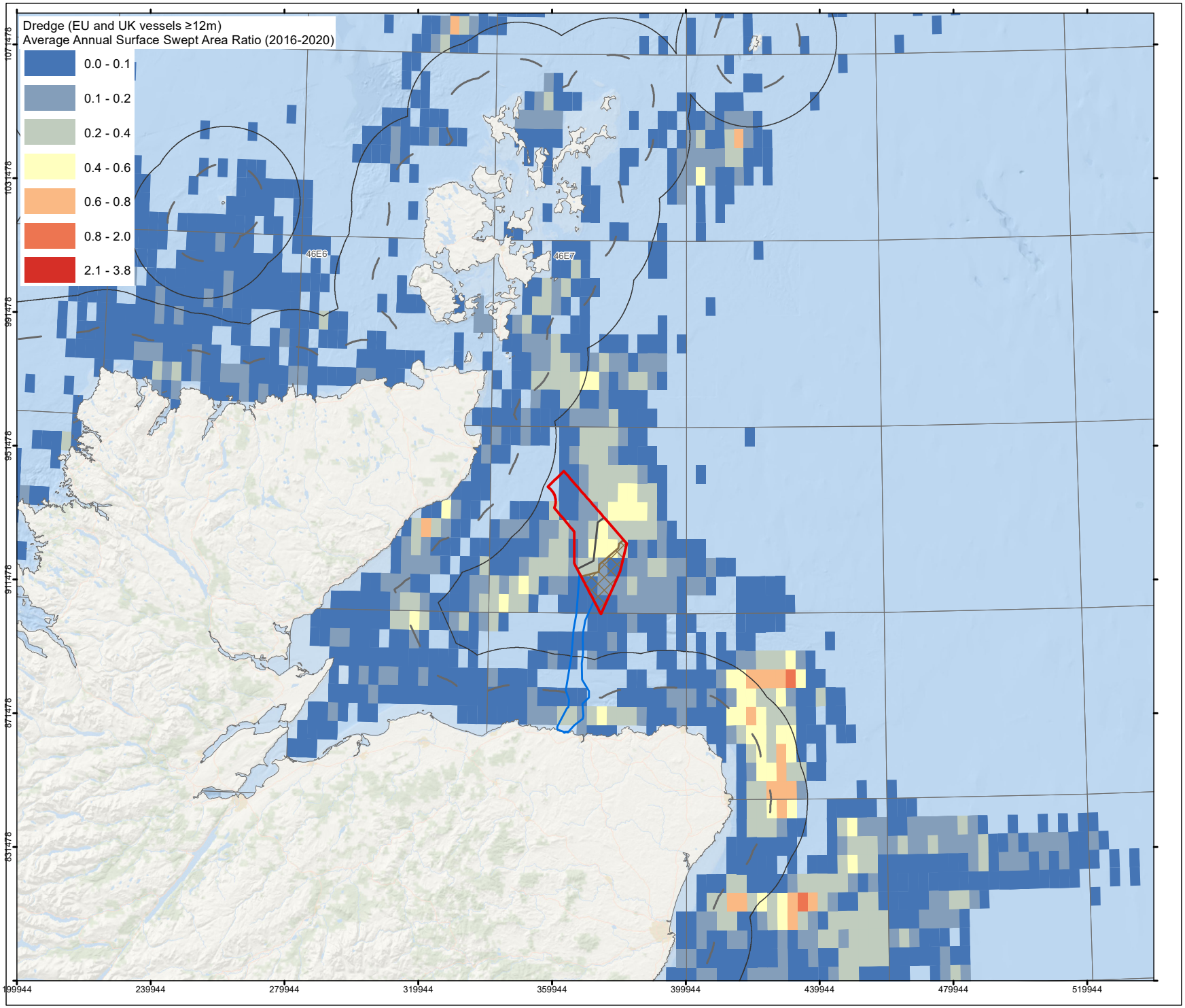
STATUS: Approved

SCALE: 1:1,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

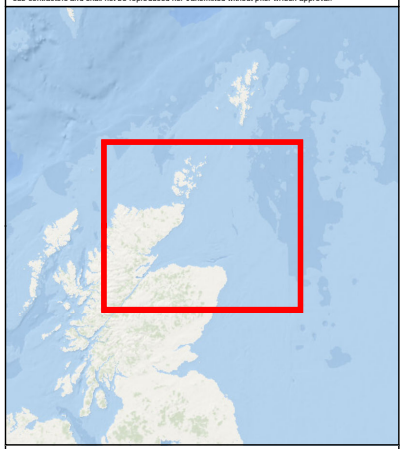
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.17

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-17
# Dredge Surface Swept Area Ratio 5-year average (2016-2020)

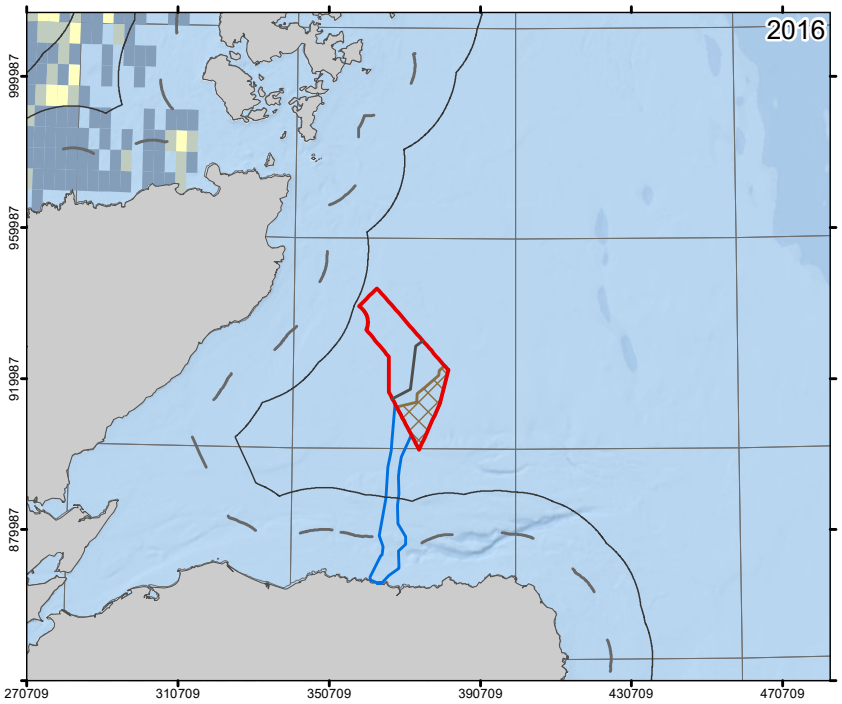
STATUS: Approved

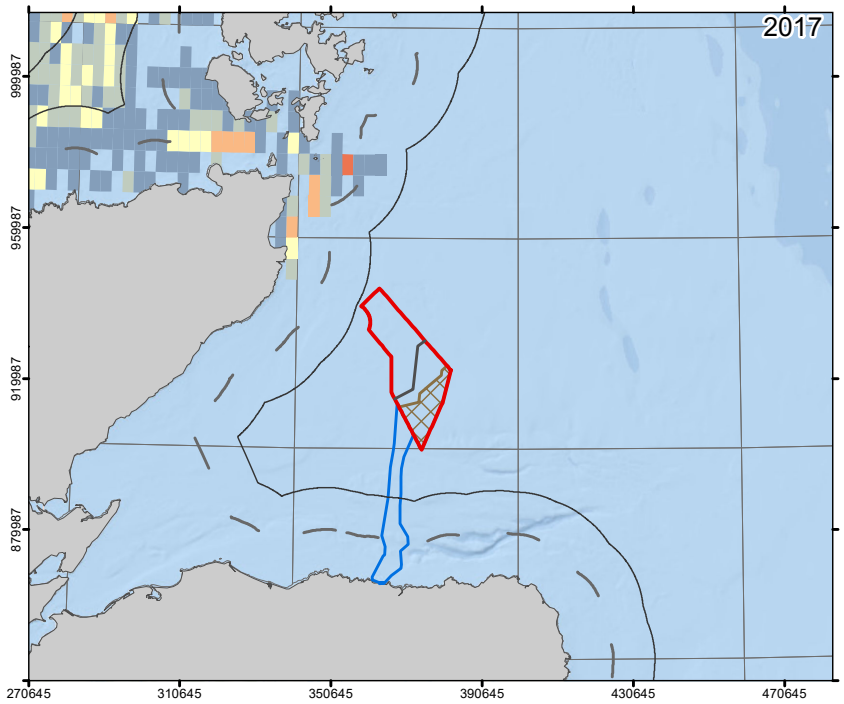
SCALE: 1:1,536,027

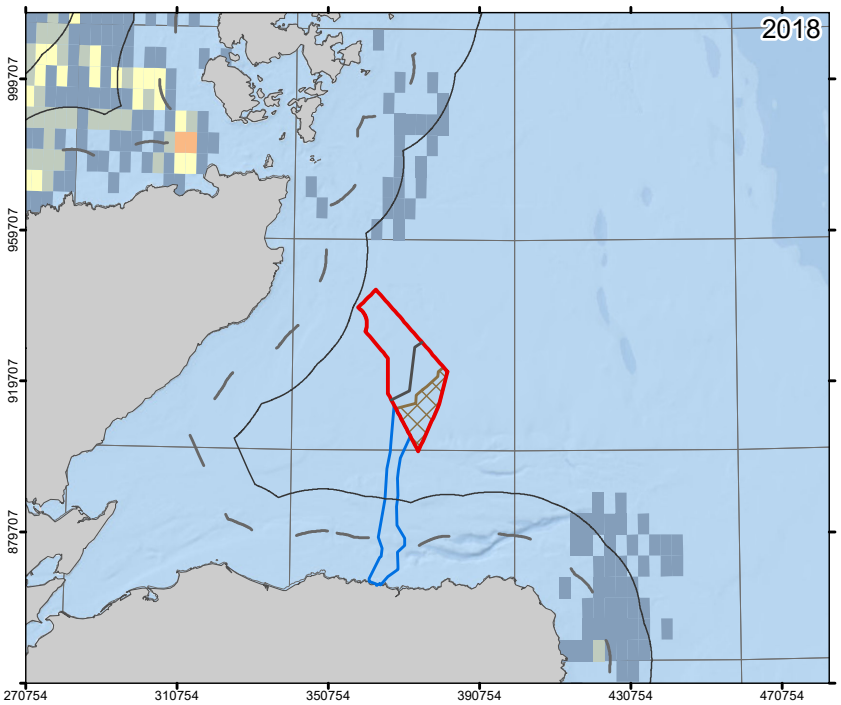
DRAWING NUMBER: N/A

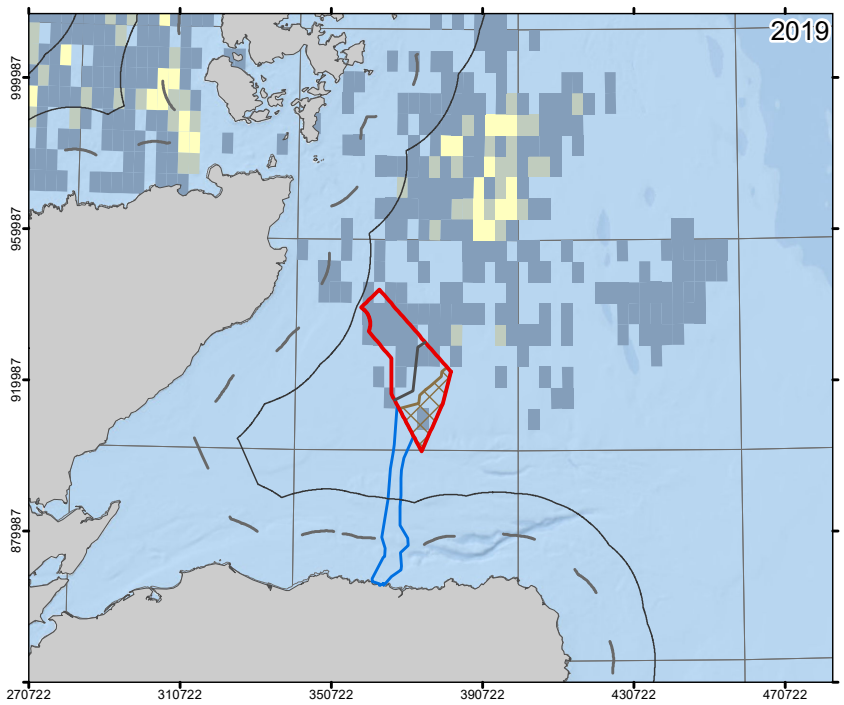
SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating

Offshore Export Cable Corridor

Potting (UK vessels ≥15m)

Total value, £

£0.01 - £5,000.00

£5,000.01 - £10,000.00

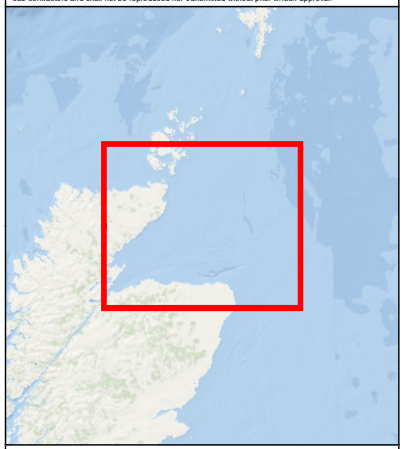
£10,000.01 - £25,000.00

£25,000.01 - £50,000.00

£50,000.01 - £75,000.00

£75,000.01 - £101,000.00





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.18

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-18
Potting Vessel Monitoring System Data, 2016 to 2019
Value of catch by UK vessels ≥15m

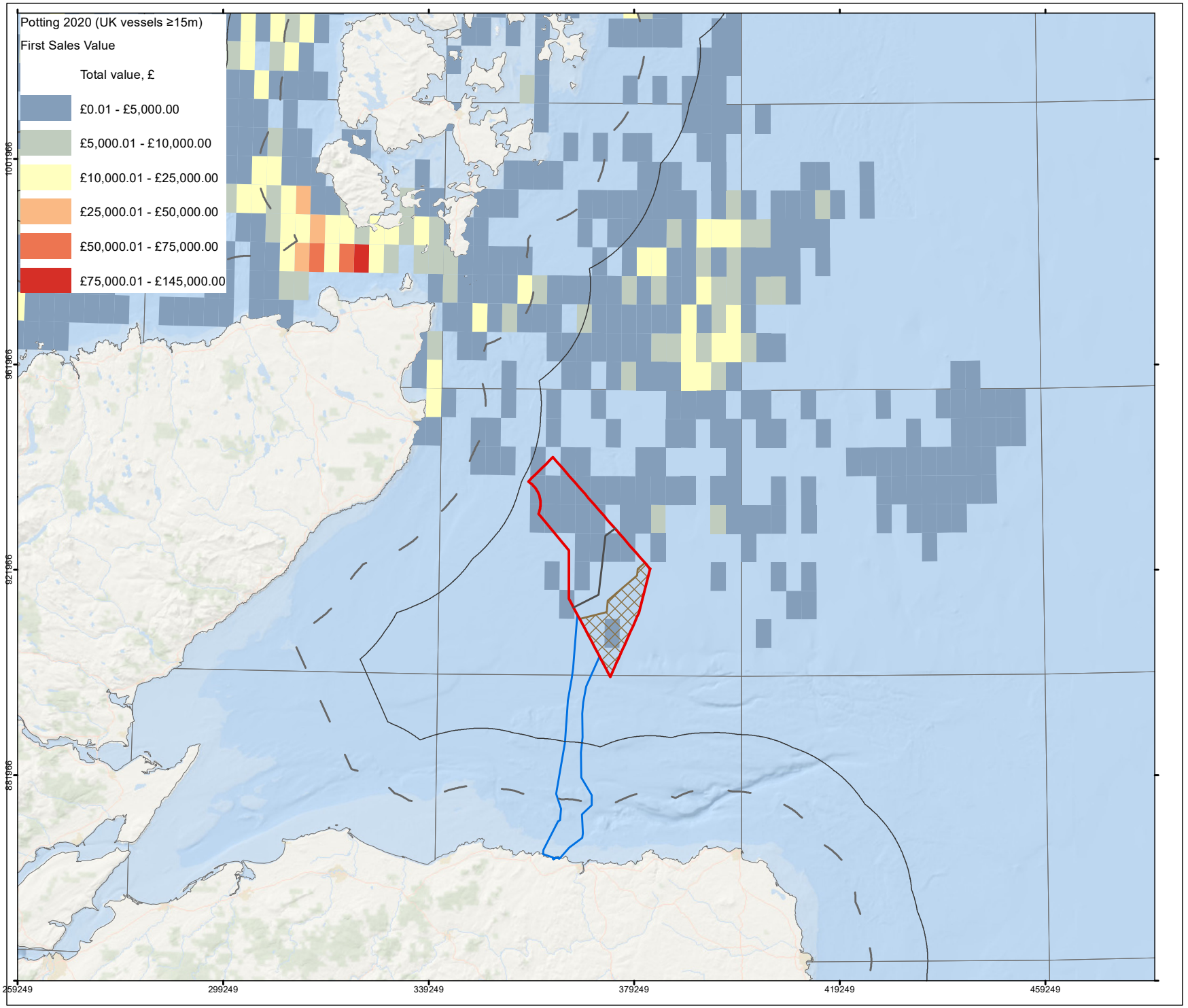
STATUS: Approved

SCALE: 1:2,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

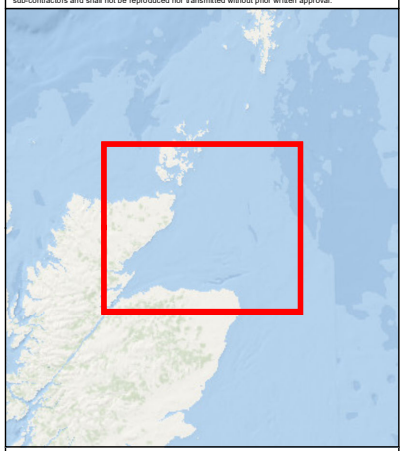
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

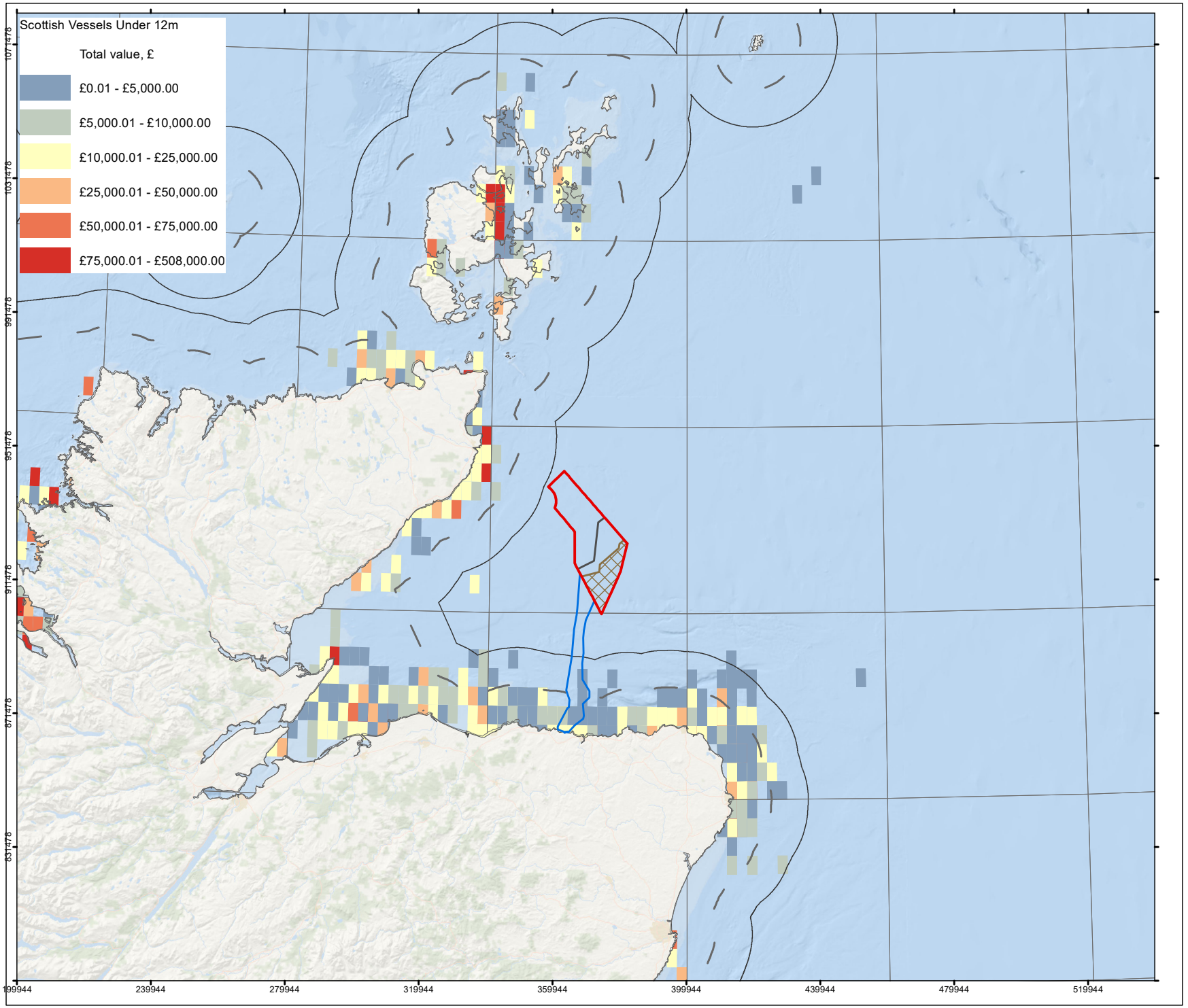
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.19 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-19
# Potting Vessel Monitoring System Data, 2020
# Value of catch by UK vessels ≥15m

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:1,000,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

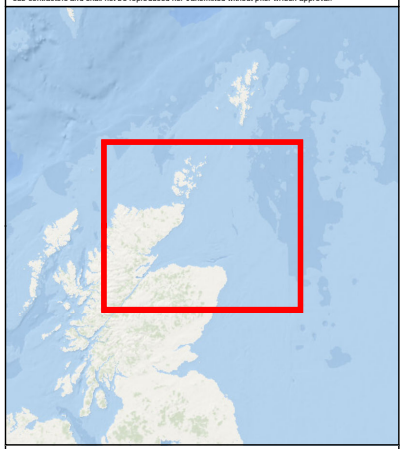
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.20

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-20
# Value of Catches by Scottish Vessels Under 12m

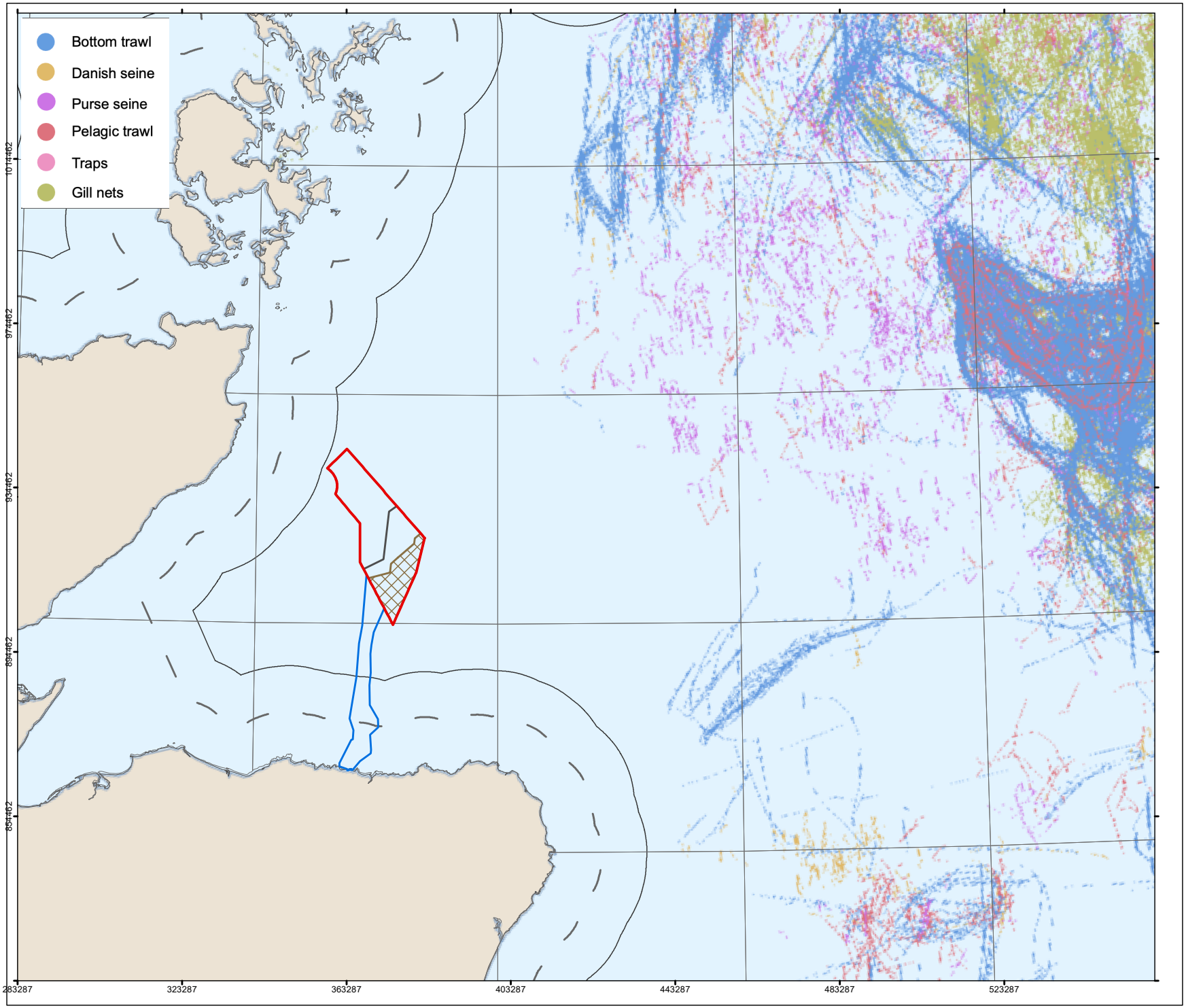
STATUS: Approved

SCALE: 1:1,536,027

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

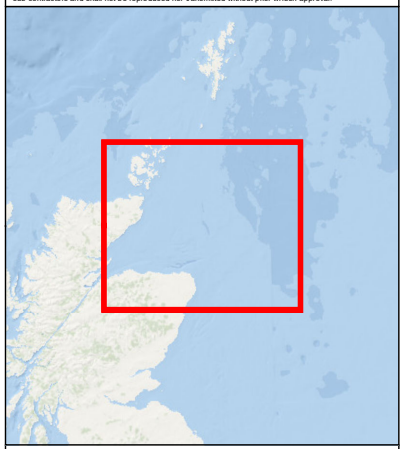
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

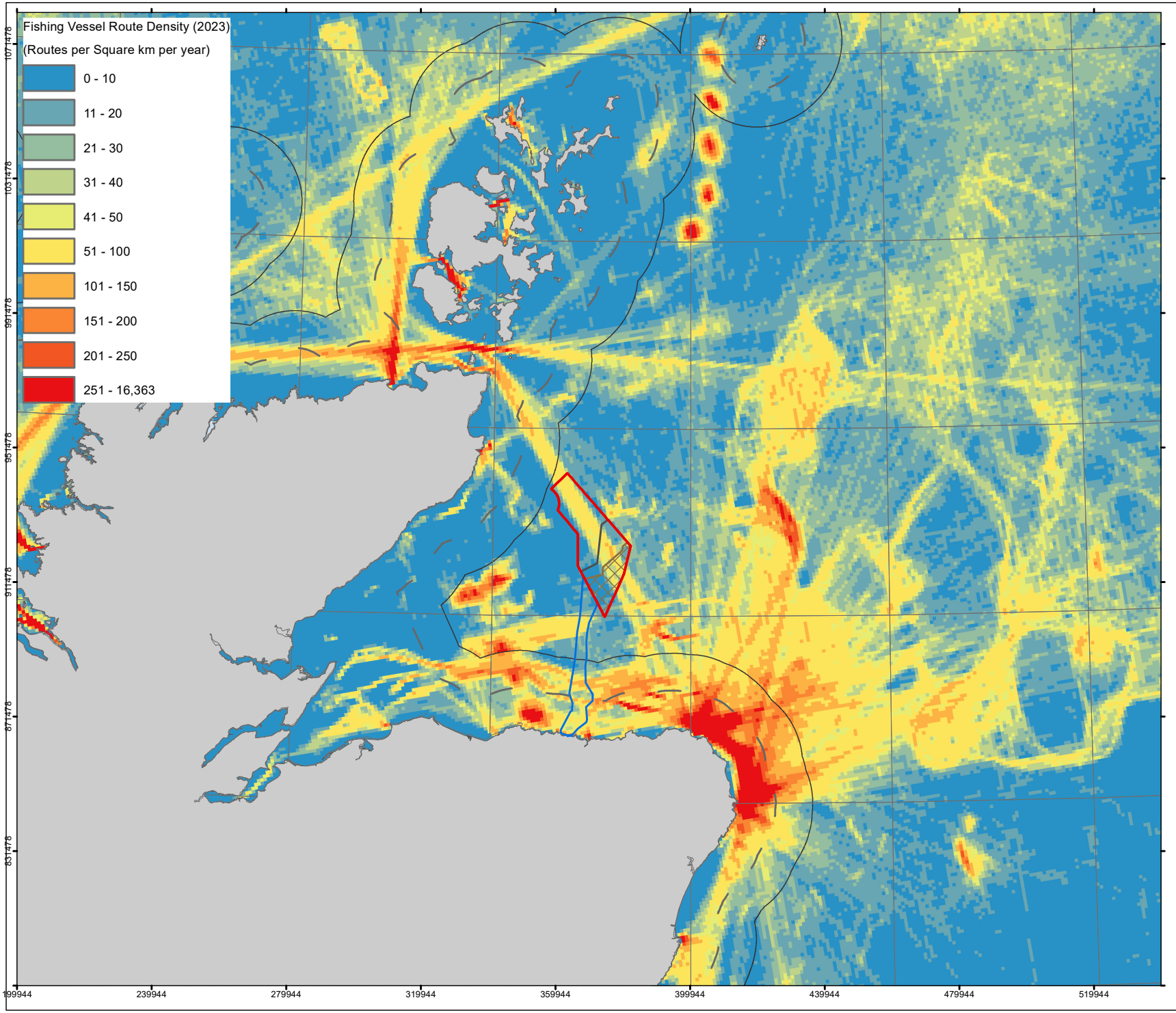
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.21 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-21
# Norwegian VMS data by gear type for period 2011 to 2023

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:1,250,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating

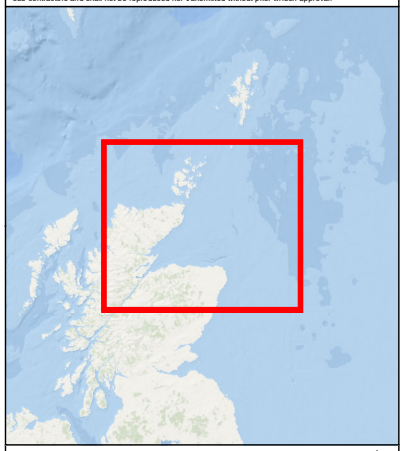
Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

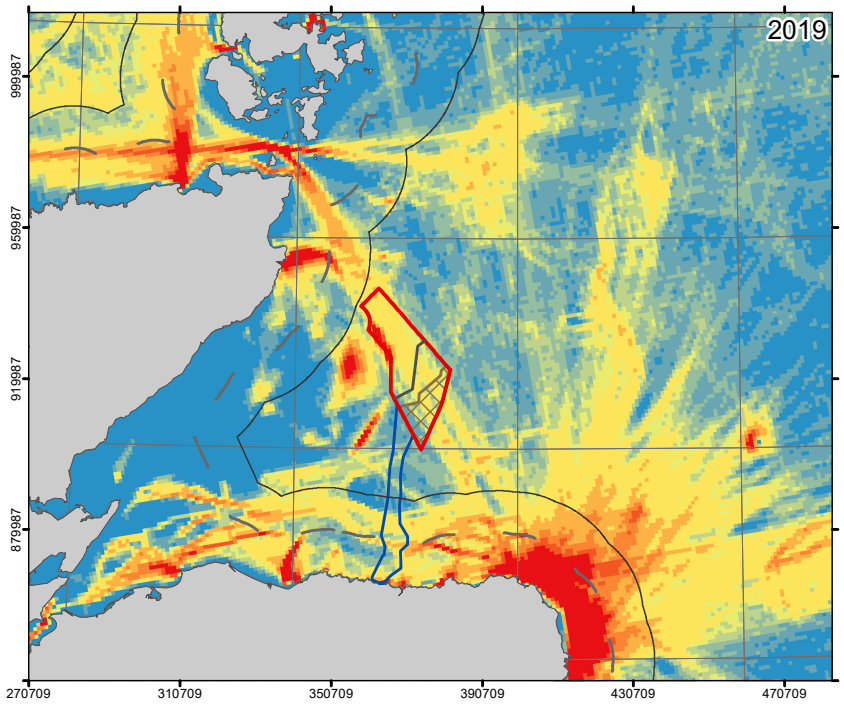
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.22 | 01 |

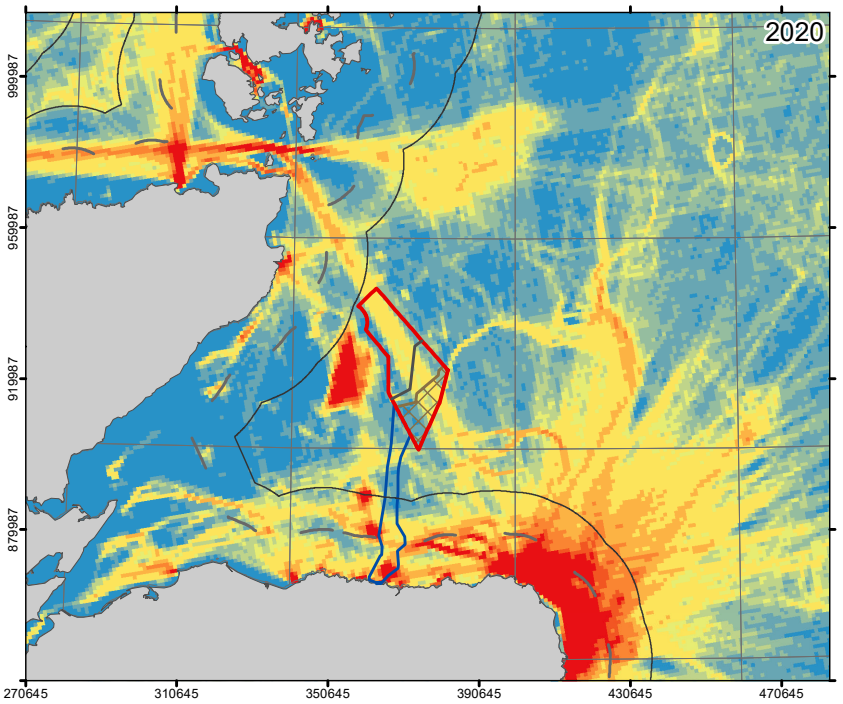
GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

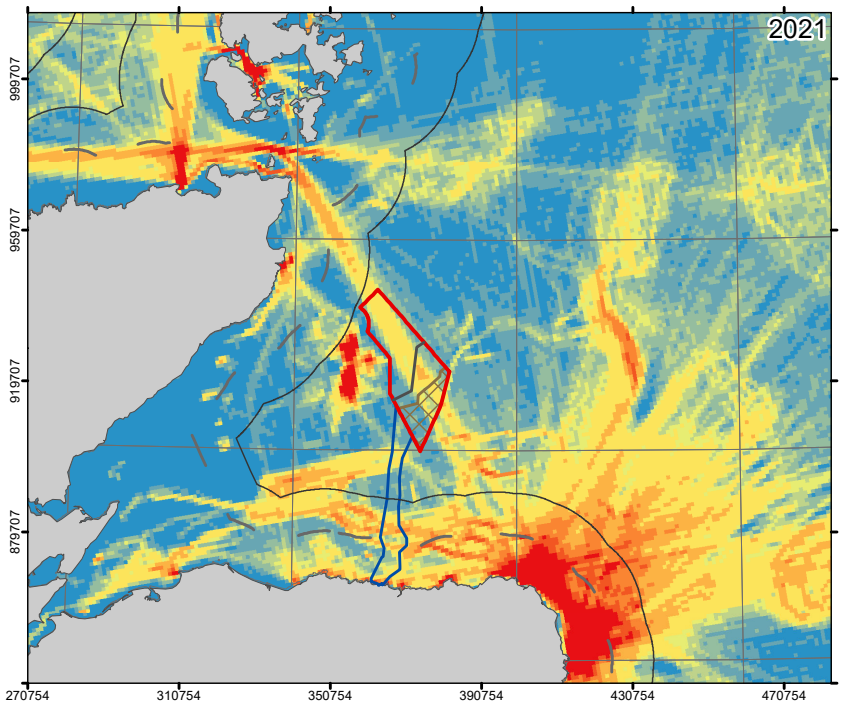
DRAWING TITLE
Figure 7-22
Fishing Vessel Route Density
(Routes per km2) 2019 to 2022
All EU and UK vessels ≥15m

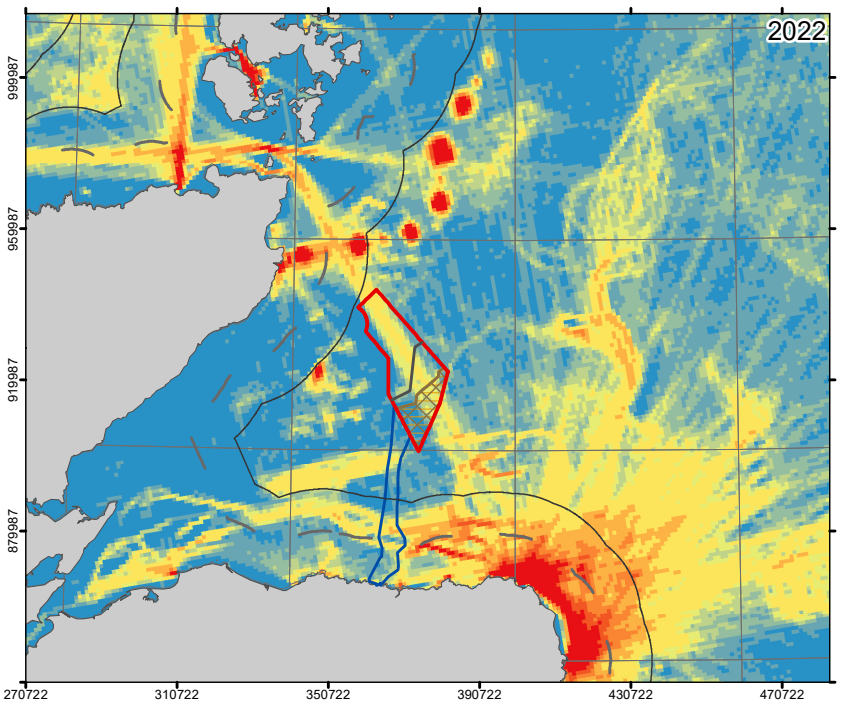
| STATUS | SCALE |
|---|---|
| Approved | 1:1,536,027 |

| DRAWING NUMBER | SHEET NO | REV |
|---|---|---|
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES Statistical Rectangles

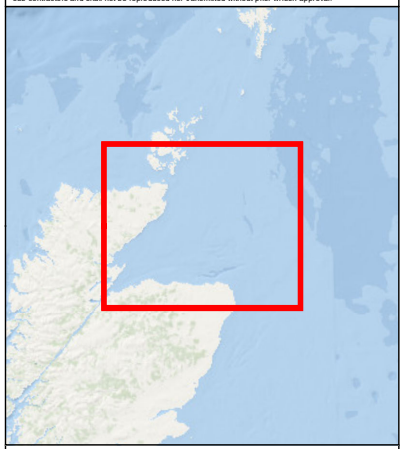
12 nm Boundary

6 nm Boundary

Fishing Vessel Route Density
Routes per square km

| | |
|---|---|
| 0 - 10 | 51 - 100 |
| 11 - 20 | 101 - 150 |
| 21 - 30 | 151 - 200 |
| 31 - 40 | 201 - 250 |
| 41 - 50 | 251 - 15,661 |





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

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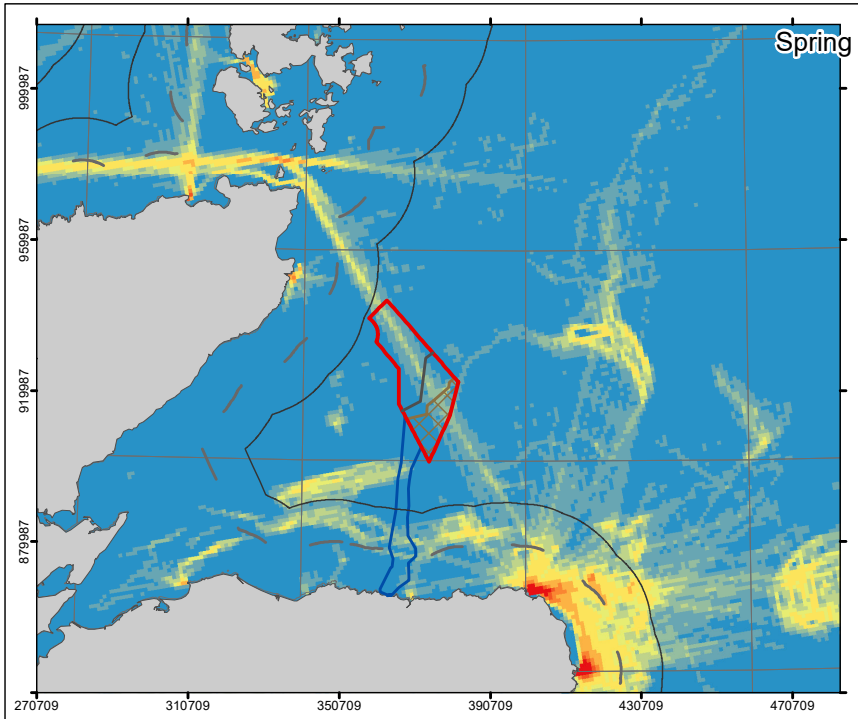
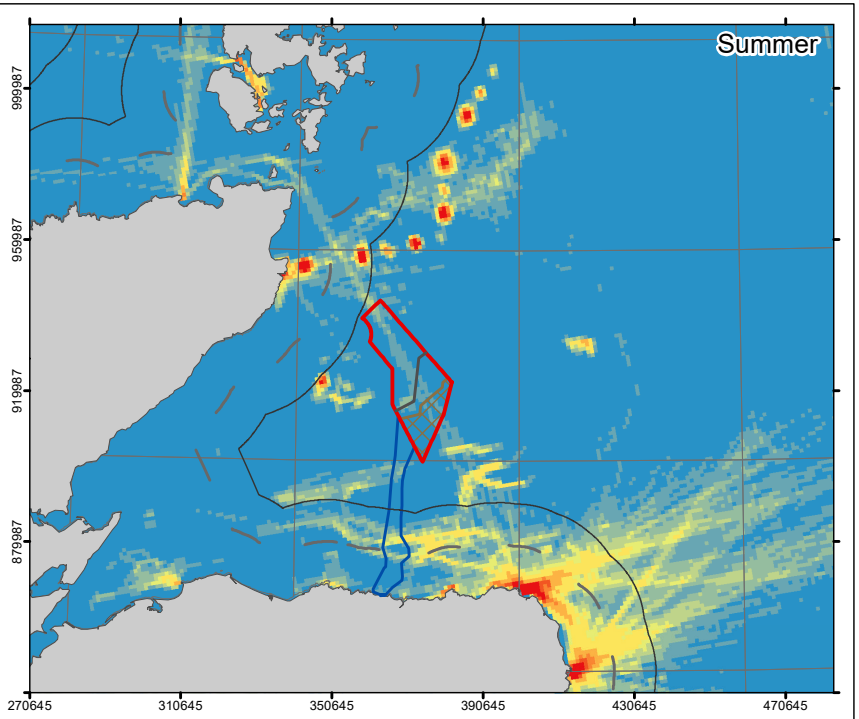
| | |
|---|---|
| CONTRACTOR DRAWING NO: 7.23 | CONTRACTOR REV: 01 |
| GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700) | |

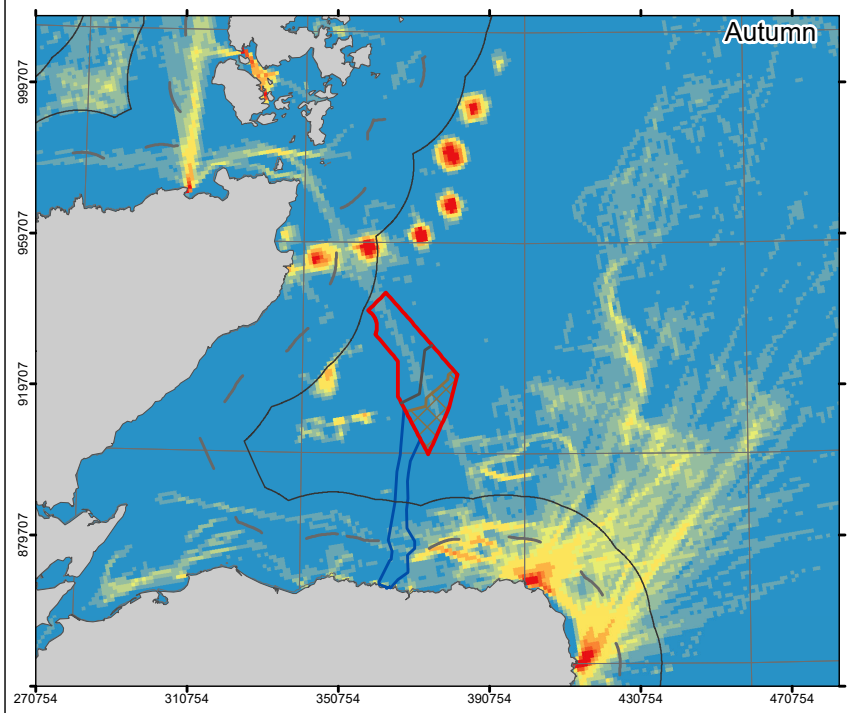
DRAWING TITLE

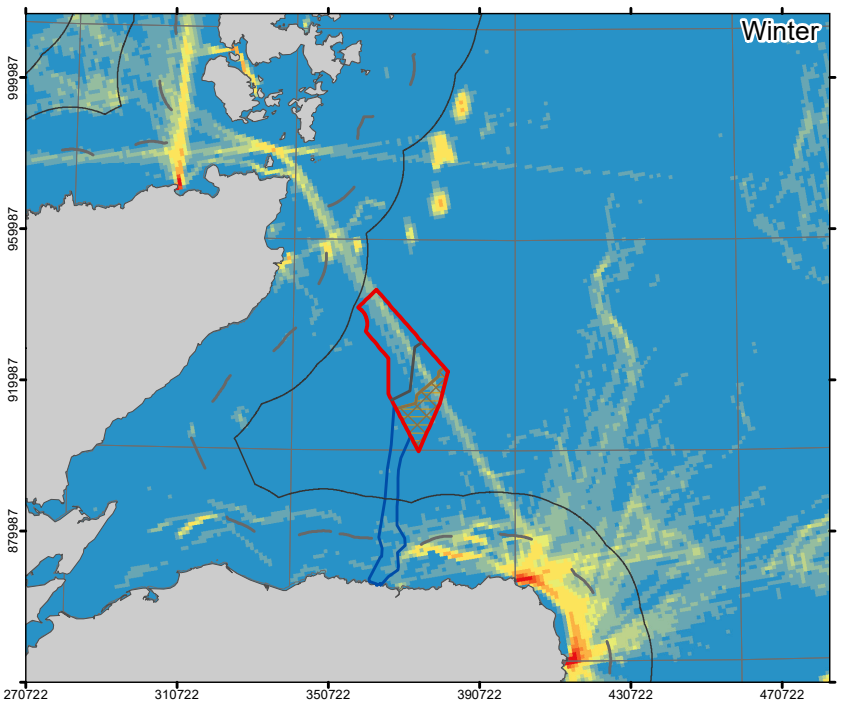
Figure 7-23
Fishing Vessel Route Density
(Routes per km2) 2019 to 2022
All EU and UK vessels ≥15m

| | | |
|---|---|---|
| STATUS: Approved | SCALE: 1:2,000,000 | |
| DRAWING NUMBER: N/A | SHEET NO: 01 of 01 | REV: 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES Statistical Rectangles

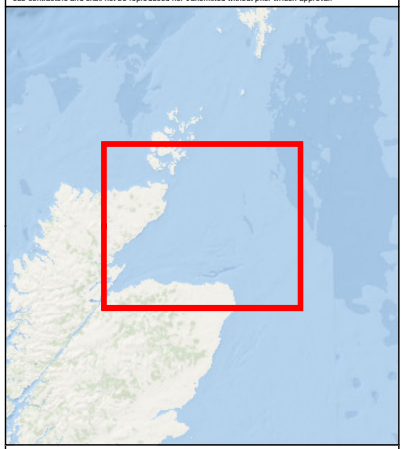
12 nm Boundary

6 nm Boundary

Fishing Vessel Route Density
Routes per square km

| | |
|---|---|
| 0 - 10 | 51 - 100 |
| 11 - 20 | 101 - 150 |
| 21 - 30 | 151 - 200 |
| 31 - 40 | 201 - 250 |
| 41 - 50 | 251 - 16,363 |





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

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CONTRACTOR DRAWING NO: 7.23

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-24
Fishing Vessel Route Density
(Routes per km2) 2022 by Season
All EU and UK vessels ≥15m

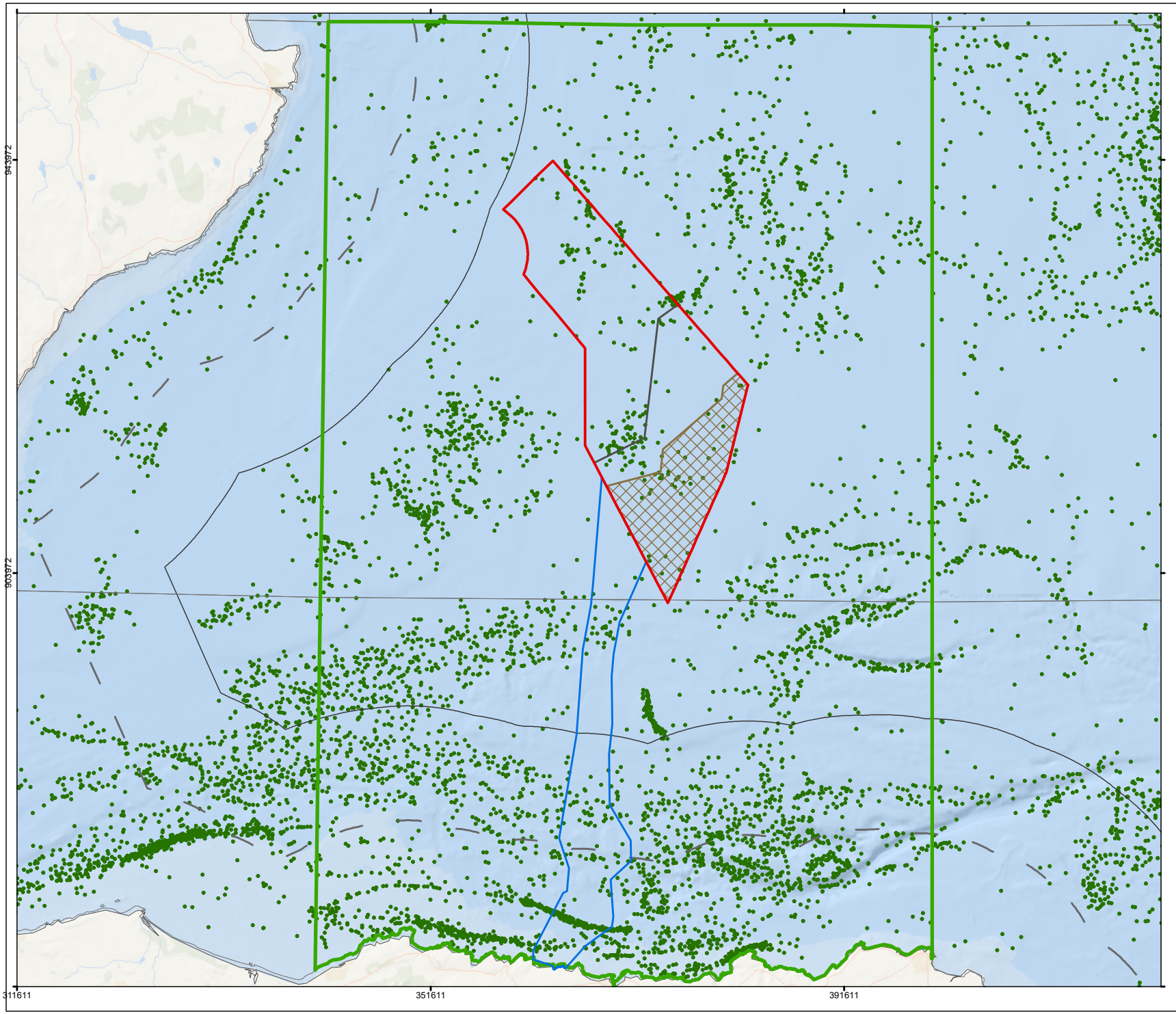
STATUS: Approved

SCALE: 1:2,000,000

DRAWING NUMBER: N/A

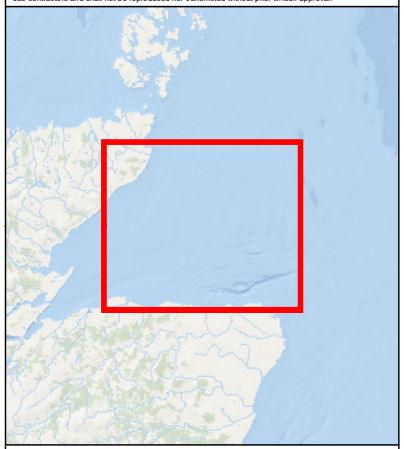
SHEET NO: 01 of 01

REV: 01




- Caledonia OWF
- Overall Boundary North South Site Division
- Proposed Floating
- Offshore Export Cable Corridor
- Commercial Fisheries Local Study
- ICES Statistical Rectangles
- 12 nm Boundary
- 6 nm Boundary
- Active Fishing Surveillance Records





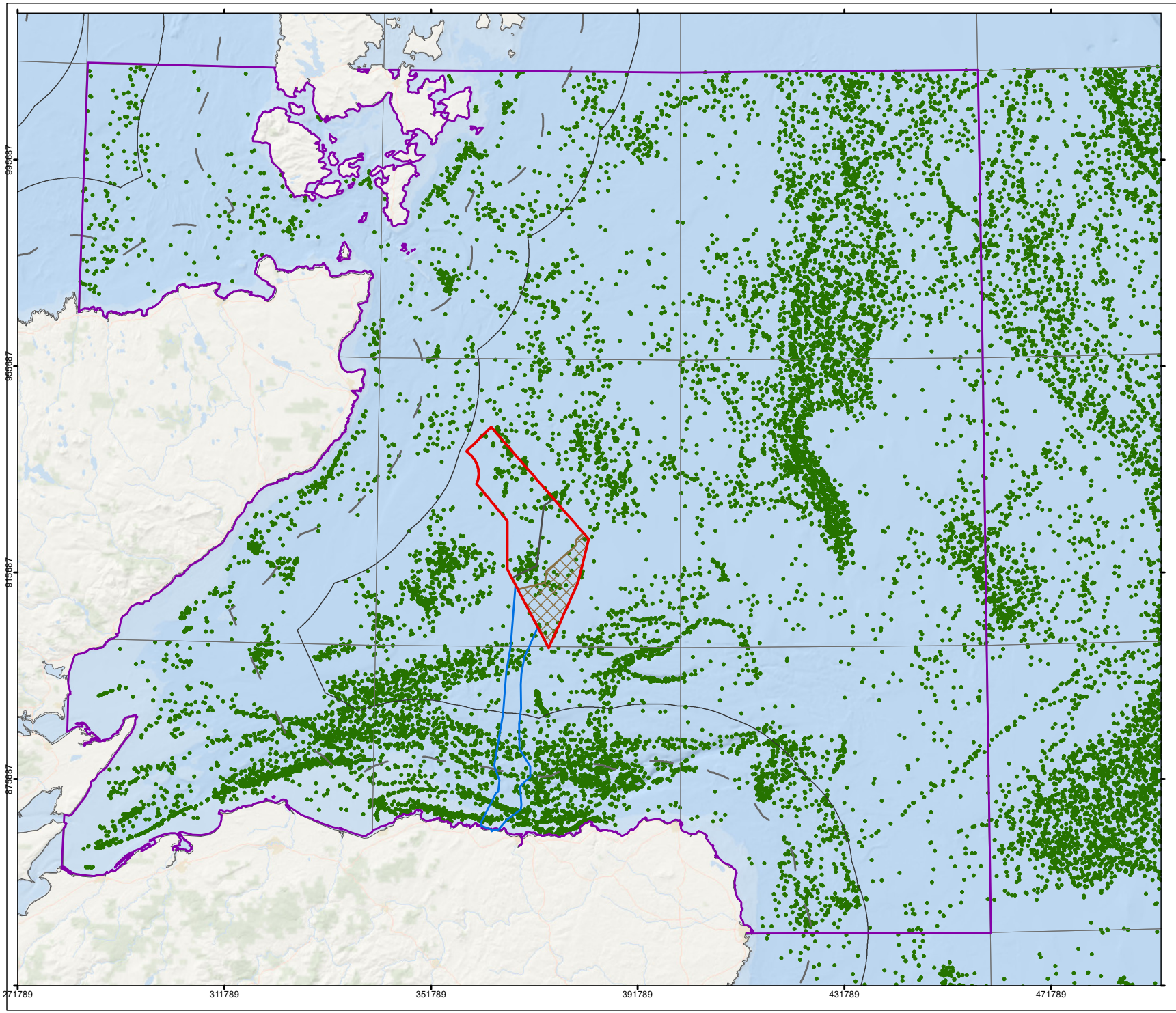
0 10 20

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

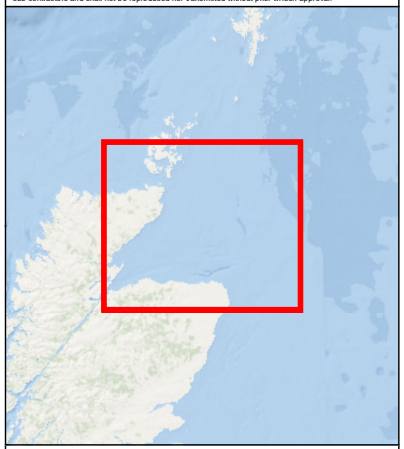
nima CONSULTANTS

| | |
|---|---|
| CONTRACTOR DRAWING NO: 7.25 | CONTRACTOR REV: 01 |
| GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700) | |
| DRAWING TITLE: Figure 7-25 Active Fishing Vessels Surveillance Data from 2017 to 2022 At Local Study Area | |
| STATUS: Approved | SCALE: 1:500,000 |
| DRAWING NUMBER: N/A | SHEET NO: 01 of 01 / REV: 01 |




- Caledonia OWF
- Overall Boundary North South Site Division
- Proposed Floating
- Offshore Export Cable Corridor
- Commercial Fisheries Regional Study Area
- ICES Statistical Rectangles
- 12 nm Boundary
- 6 nm Boundary
- Active Fishing Surveillance Records





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.26 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE
Figure 7-26
Active Fishing Vessels
Surveillance Data from 2017 to 2022
At Regional Study Area

| STATUS | SCALE |
|---|---|
| Approved | 1:1,000,000 |

| DRAWING NUMBER | SHEET NO | REV |
|---|---|---|
| N/A | 01 of 01 | 01 |

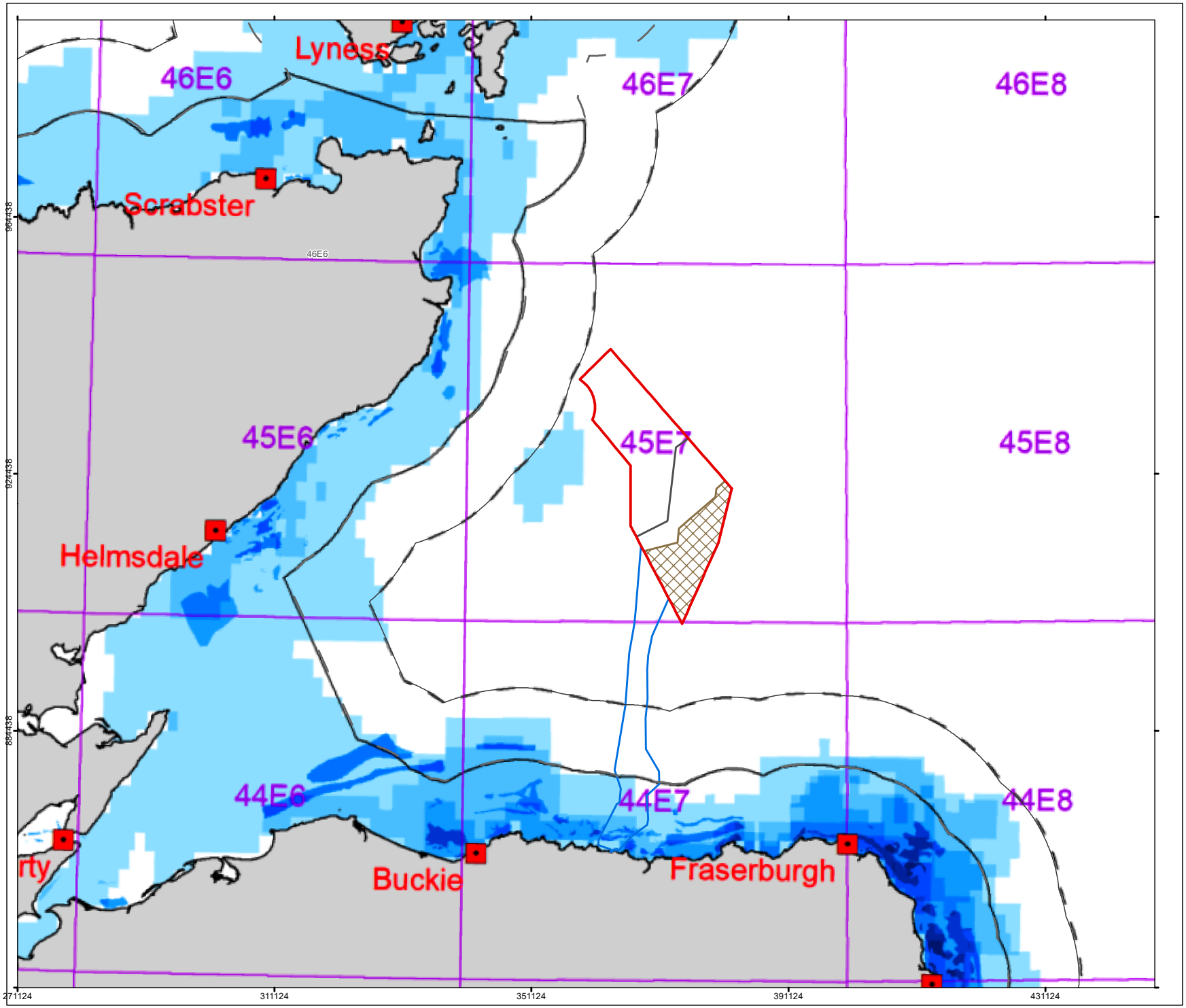
## 7.2 Regional Inshore Fishery Group Mapping

7.2.1.1 The North and East Coast Regional Inshore Fishery Group commissioned the North Atlantic Fisheries College Marine Centre to undertake a mapping exercise for all fisheries activity (Shelmerdine and Mouat, 2021[22]).

7.2.1.2 The mapping produced as part of the North and East Coast Regional Inshore Fishery Group assessment is presented in this section and georeferenced to include the location of the Proposed Development (Offshore).

7.2.1.3 Mapping is provided for the following fishery assessments indicating fishery likelihood/occurrence on a scale of high to low as undertaken by Shelmerdine and Mouat (2021[22]):

- Creel for crab and lobster (Figure 7-27);
- Lines (Figure 7-28);
- Scallop dredging (Figure 7-29);
- Demersal otter trawl targeting nephrops (Figure 7-30); and
- Demersal otter trawl targeting haddock, cod and mixed demersal species (Figure 7-31).




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES statistical rectangles

12 nm Boundary

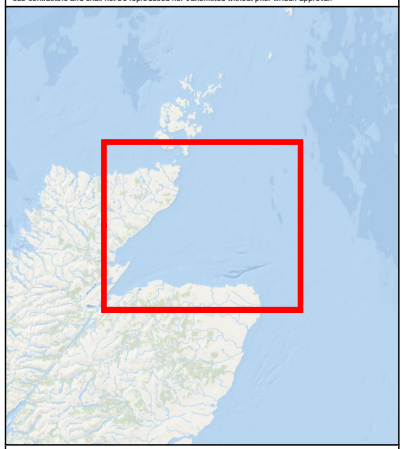
6 nm Boundary

Likelihood/Occurrence

High

Low





0 10 20 30 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

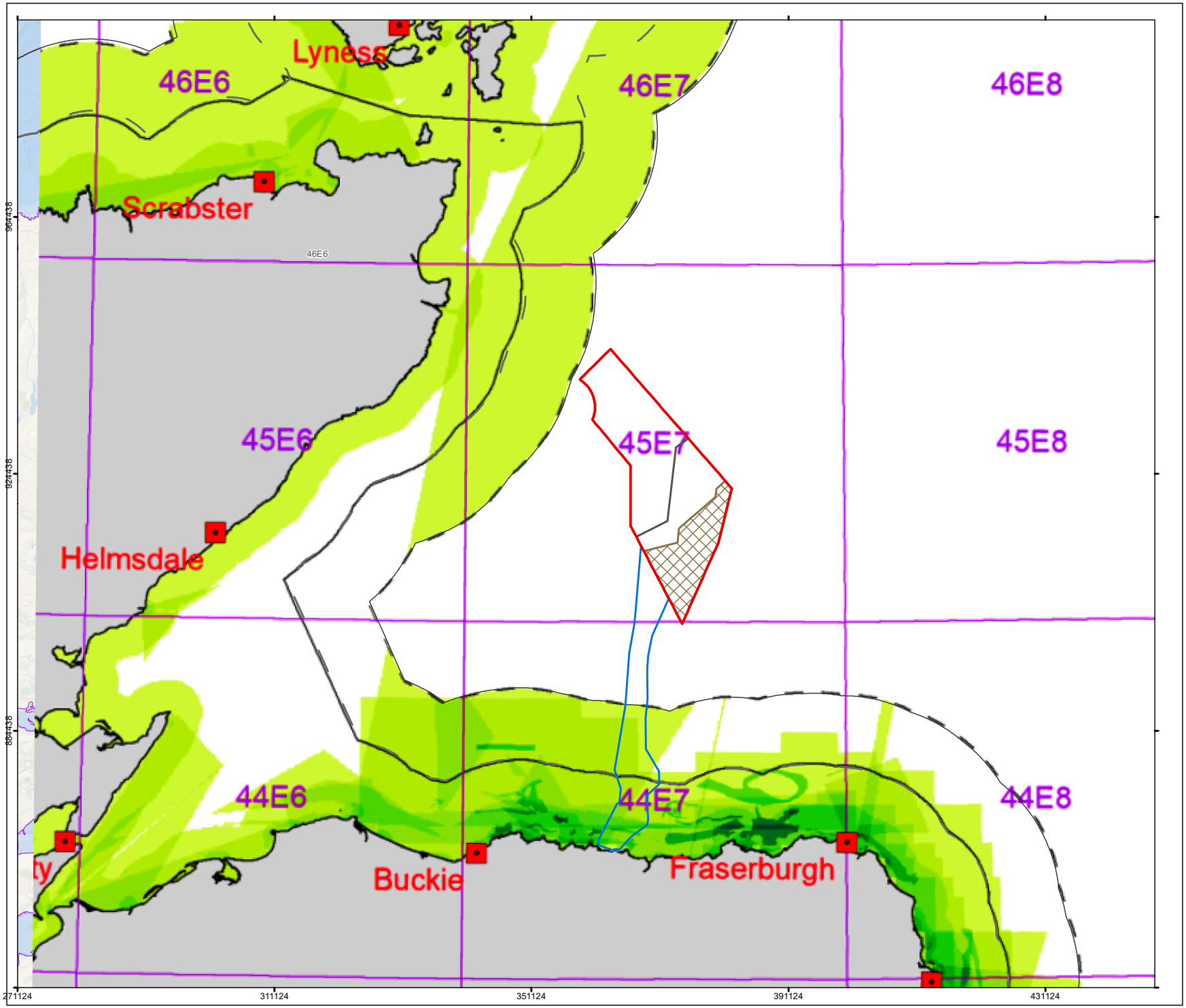
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.27 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-27
Creel Fishery Occurrence
North East Regional
Inshore Fisheries Group Mapping

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:800,000 | |
| DRAWING NUMBER: N/A | SHEET NO: 01 of 01 | REV: 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES statistical rectangles

12 nm Boundary

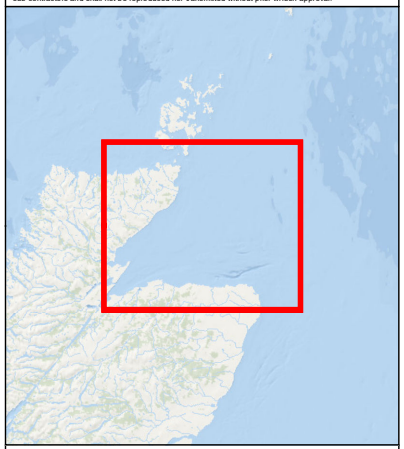
6 nm Boundary

Likelihood/Occurrence

High

Low





0 10 20 30 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

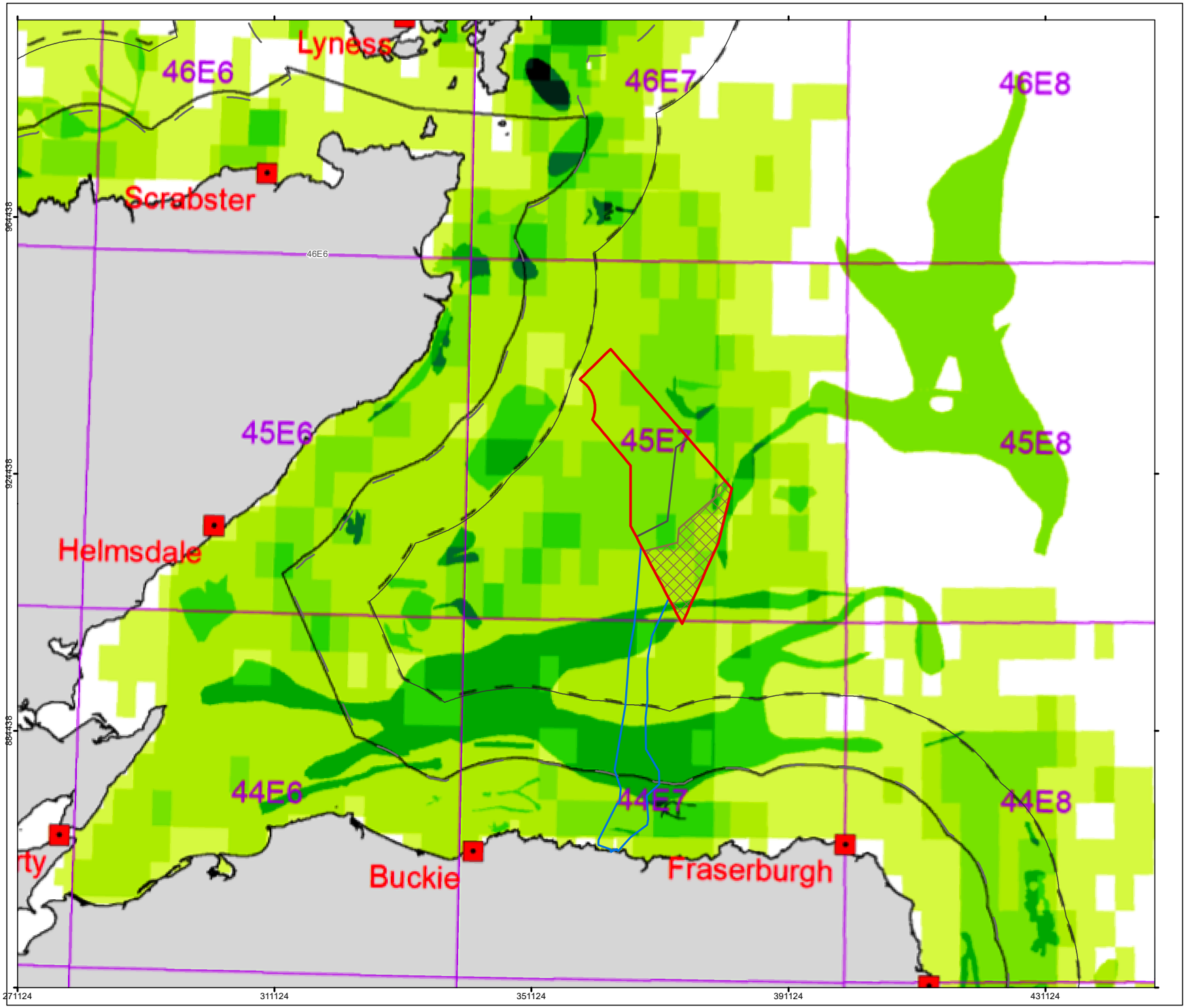
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.28 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-28
Lines Fishery Occurrence
North East Regional
Inshore Fisheries Group Mapping

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:800,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES statistical rectangles

12 nm boundary

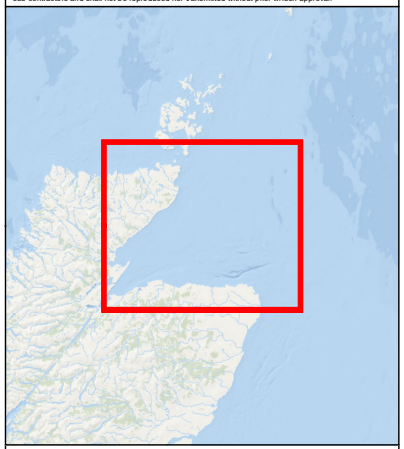
6 nm Boundary

Likelihood/Occurrence

High

Low





0 10 20 30 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.29 | 01 |

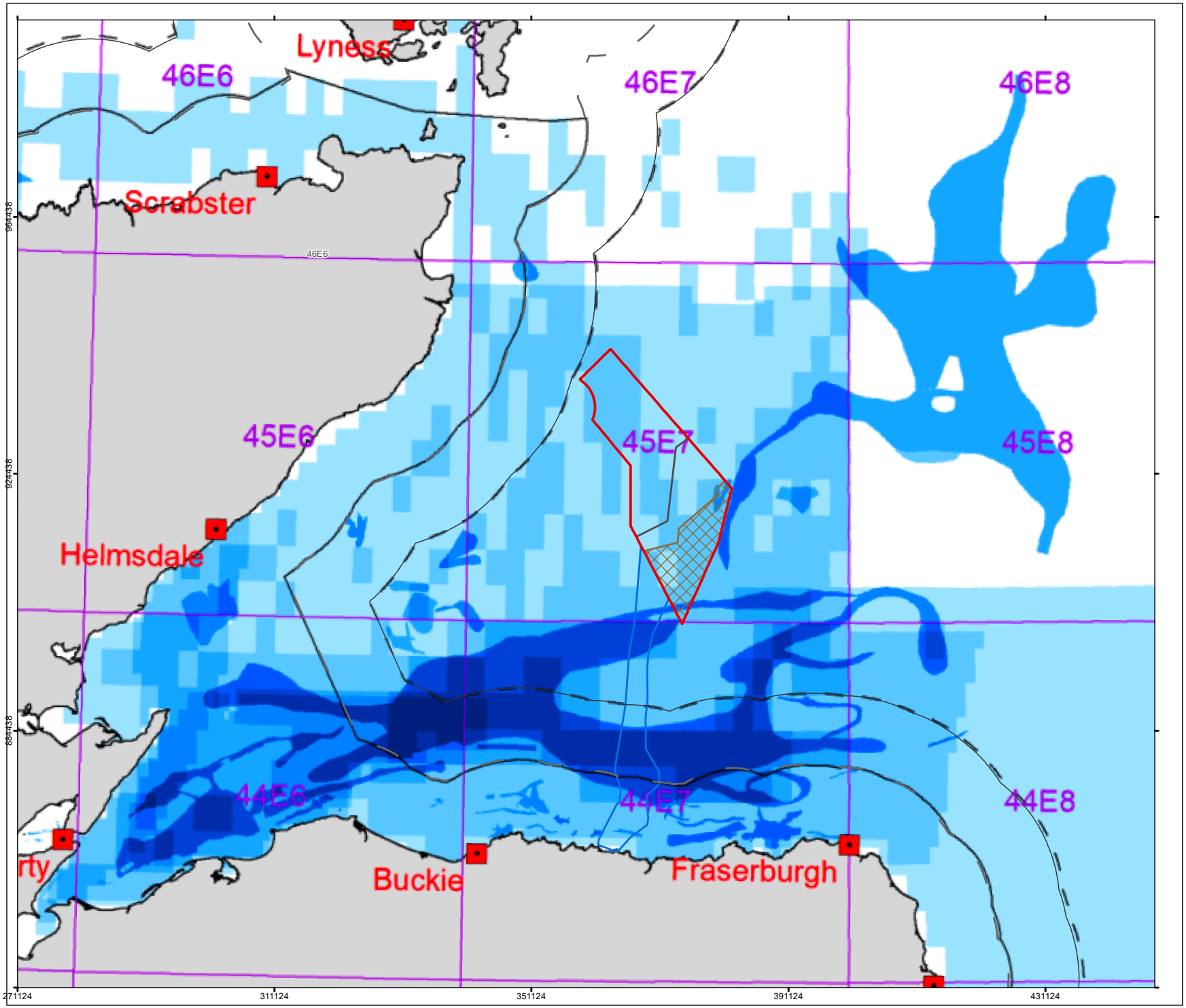
GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-29
Scallop Fishery Occurrence
North East Regional
Inshore Fisheries Group Mapping

| STATUS | SCALE |
|---|---|
| Approved | 1:800,000 |

| DRAWING NUMBER | SHEET NO | REV |
|---|---|---|
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES statistical rectangles

12 nm Boundary

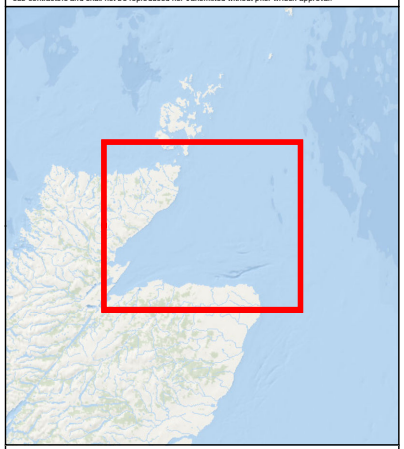
6 nm Boundary

Likelihood/Occurrence

High

Low





0 10 20 30 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.30

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 7-30
Nephrops Fishery OccurrenceNorth East Regional Inshore Fisheries Group Mapping

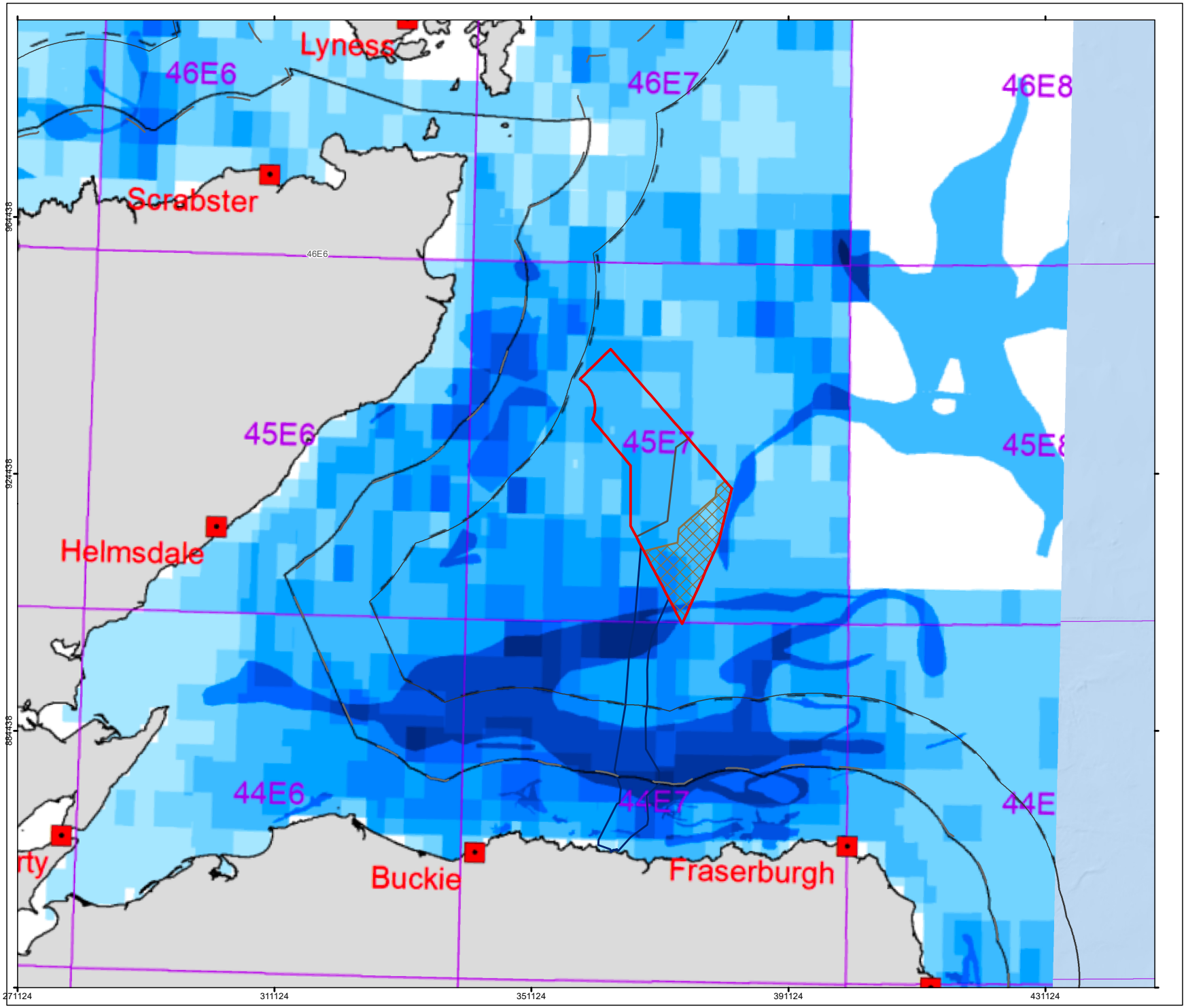
STATUS: Approved

SCALE: 1:800,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

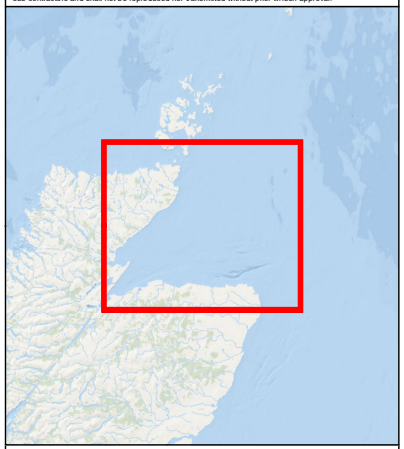
REV: 01




- Caledonia OWF
- Overall Boundary North South Site Division
- Proposed Floating
- Offshore Export Cable Corridor
- ICES statistical rectangles
- 12 nm Boundary
- 6 nm Boundary

Likelihood/Occurrence
High
Low





0 10 20 30 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.31 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE
Figure 7-31
Haddock, Cod and Mixed Demersal Fishery OccurrenceNorth East Regional Inshore Fisheries Group Mapping

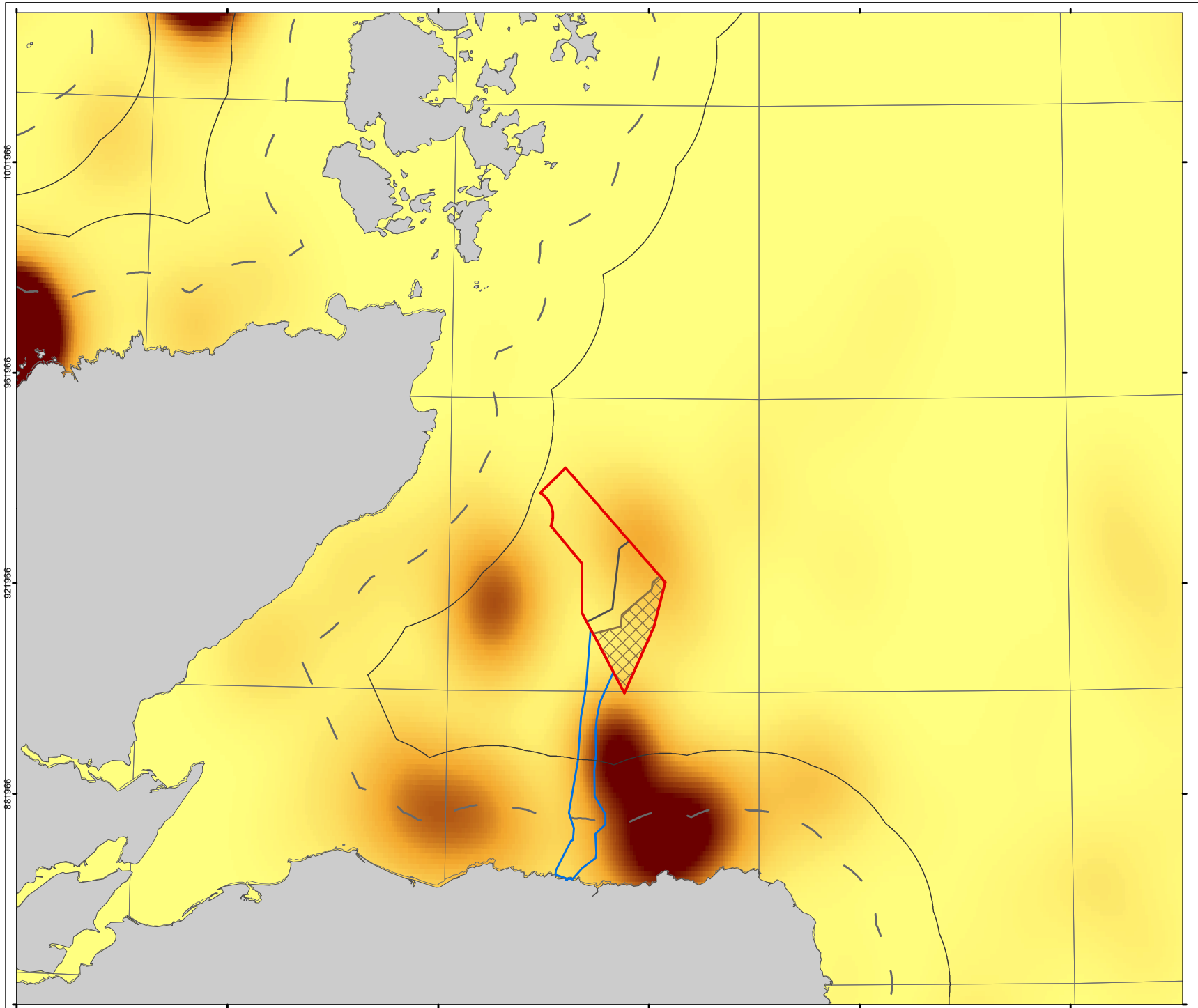
| STATUS | SCALE | |
|---|---|---|
| Approved | 1:800,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |

## 7.3 Fishing Intensity Amalgamated VMS Mapping

7.3.1.1 The Marine Directorate analysed VMS data from 2009 – 2013, combined with landings information to develop GIS layers describing the spatial patterns of the Scottish commercial fishing fleets from within the Scottish zone of the UK EEZ. The data is represented for the following fishing fleets, based on activity by UK registered vessels of length 15m and over (Kafas *et al*., 2013[23]):

- Squid fishery (Figure 7-32);
- Scallop dredging (Figure 7-33);
- Demersal otter trawl targeting finfish species (Figure 7-34); and
- Demersal otter trawl targeting nephrops (Figure 7-35).

7.3.1.2 While this activity mapping is based on a relatively old dataset, from 2009 – 2013, it does provide useful mapping to inform fishing activity in the region.




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary

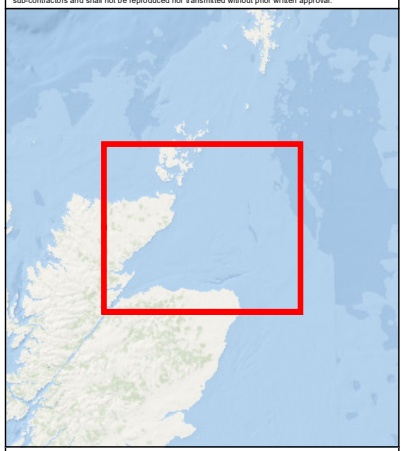
Squid 2009-2013 amalgamated VMS intensity layer.tif

Value

High : 5.328

Low : 0





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

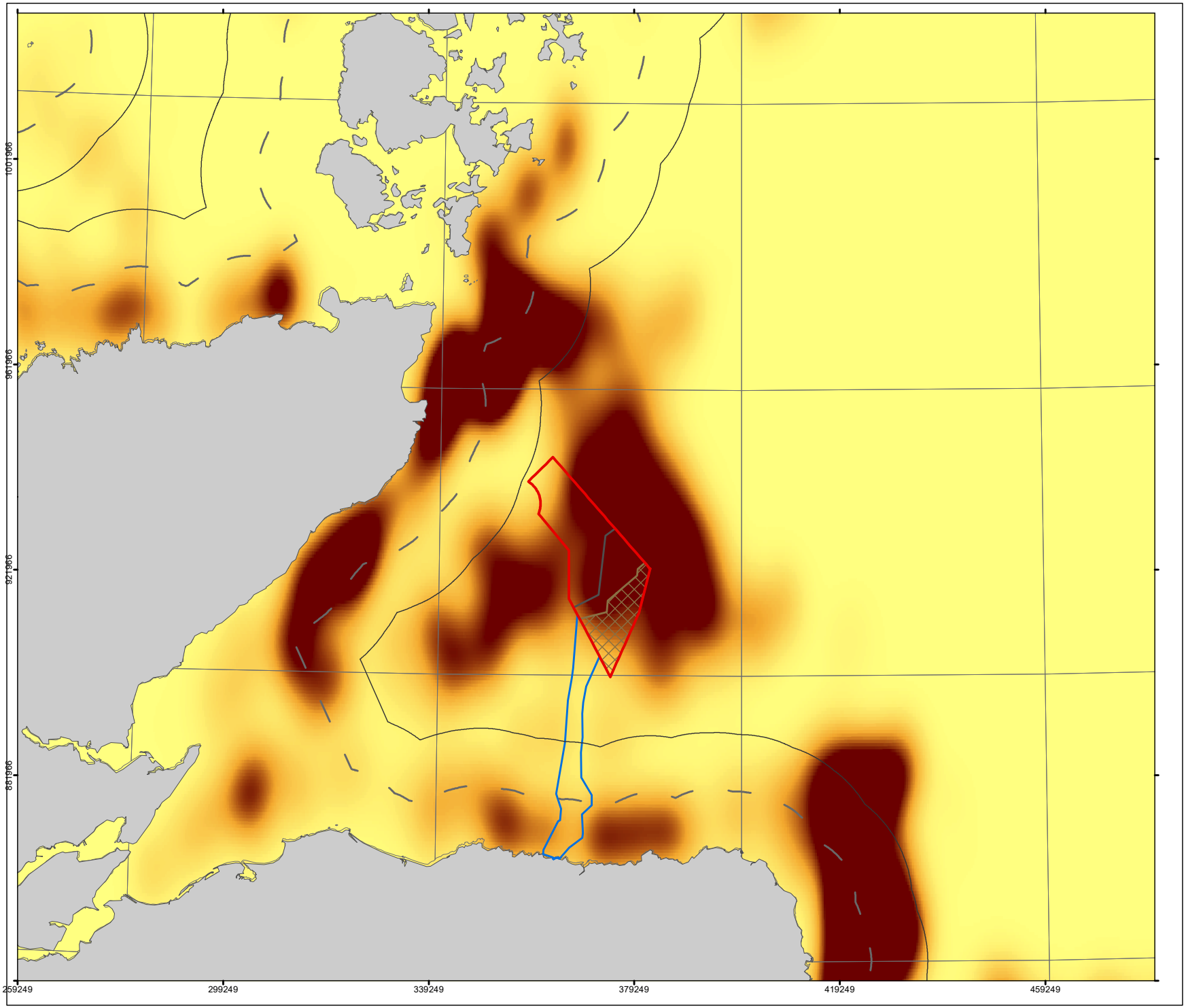
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.32 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-32
# Squid VMS Intensity (2009-2013)

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:1,000,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary

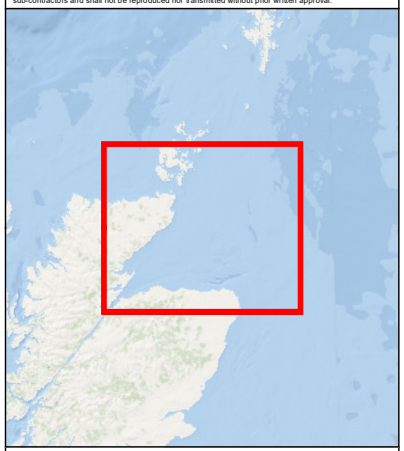
Scallop 2009-2013 amalgamated VMS intensity layer.tif

Value

High : 0.805605

Low : 0





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

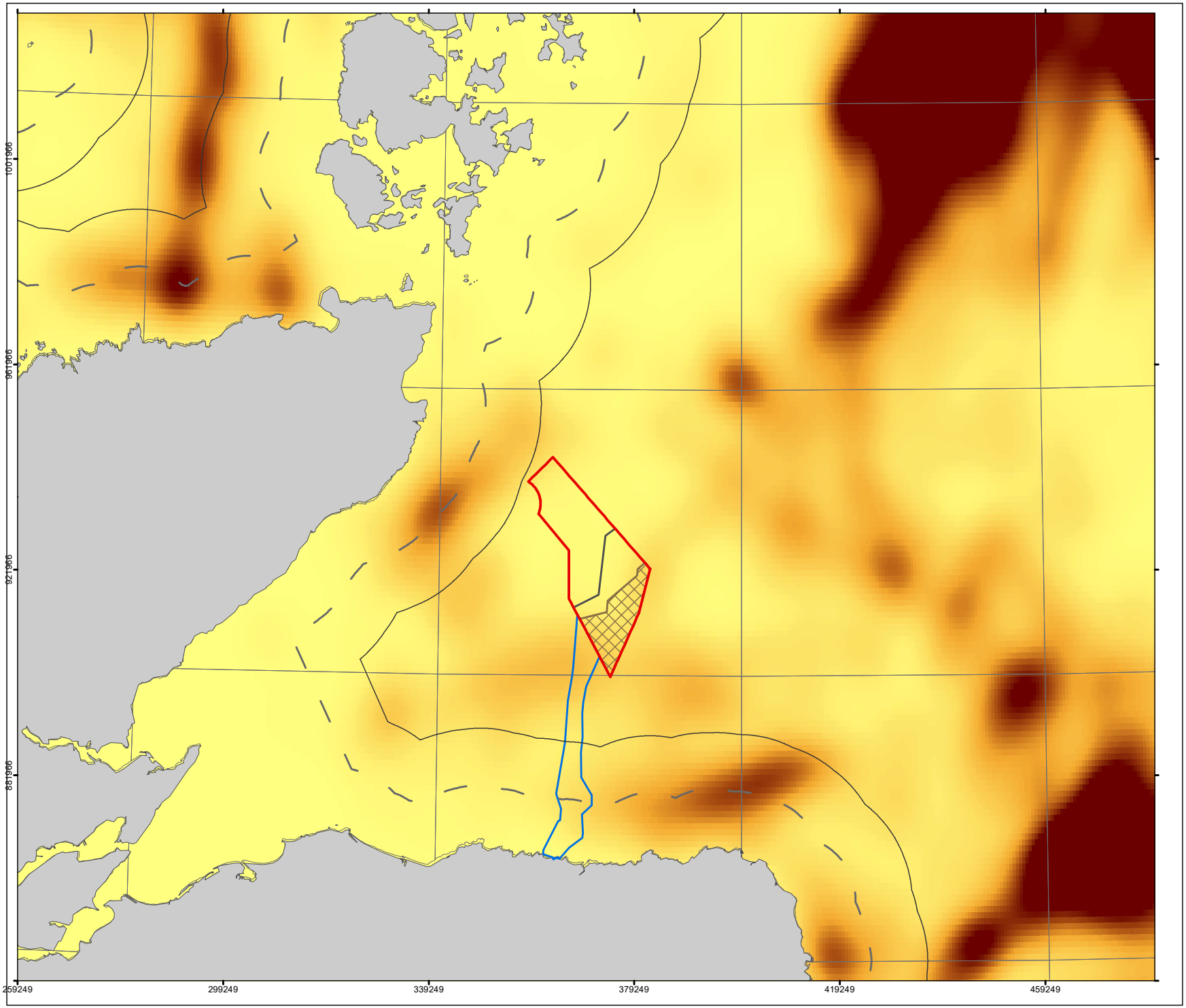
| CONTRACTOR DRAWING NO | CONTRACTOR REV |
|---|---|
| 7.33 | 01 |

GEODETIC PARAMETERS
OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-33
# Scallop VMS Intensity (2009-2013)

| STATUS | SCALE | |
|---|---|---|
| Approved | 1:1,000,000 | |
| DRAWING NUMBER | SHEET NO | REV |
| N/A | 01 of 01 | 01 |




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary

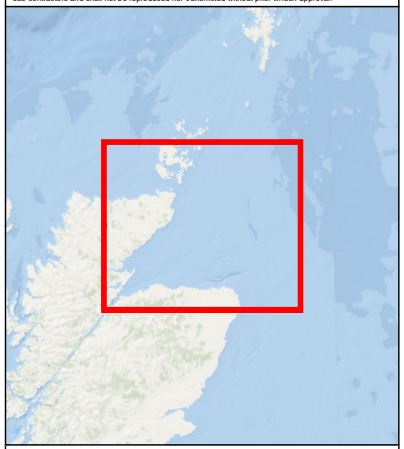
Demersal mobile 2009-2013 amalgamated VMS intensity layer.tif

Value

High : 0.468461

Low : 0





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.34

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-34 Demersal mobile VMS Intensity (2009-2013)

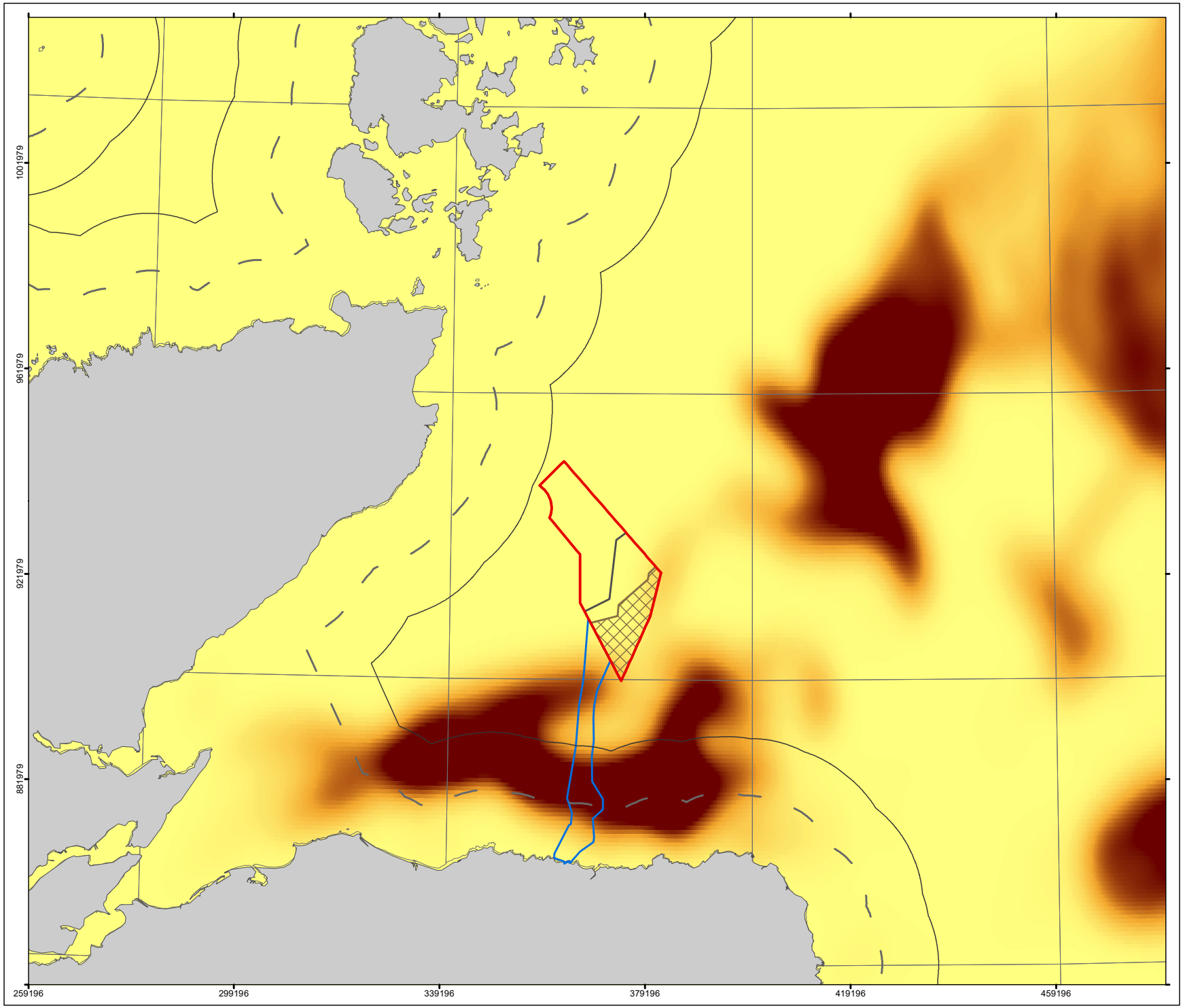
STATUS: Approved

SCALE: 1:1,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01




Caledonia OWF

Overall Boundary North South Site Division

Proposed Floating Area

Offshore Export Cable Corridor

ICES Statistical Rectangles

12 nm Boundary

6 nm Boundary

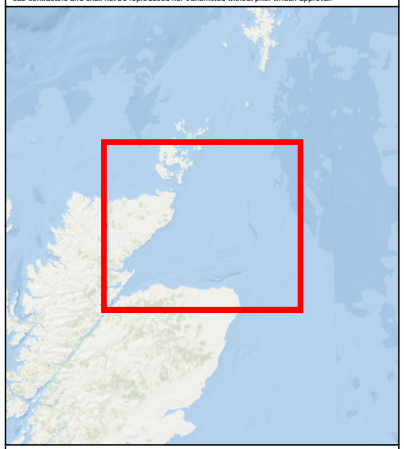
Nephrops mobile 2009-2013 amalgamated VMS intensity layer.tif

Value

High : 0.617172

Low : 0





0 10 20 30 40 km

| REV | DATE | DOC STATUS | ORIGIN | REVIEW | APP |
|---|---|---|---|---|---|
| 01 | 22/03/2024 | For Information | FN | SM | DH |

CALEDONIA Offshore Wind Farm

nima CONSULTANTS

CONTRACTOR DRAWING NO: 7.35

CONTRACTOR REV: 01

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

# Figure 7-35 Demersal nephrops mobile VMS Intensity (2009-2013)

STATUS: Approved

SCALE: 1:1,000,000

DRAWING NUMBER: N/A

SHEET NO: 01 of 01

REV: 01

# 8 Future Baseline

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

- Market demand: commercial fishing fleets respond to market demand, which is impacted by a range of factors, including the 2020 to 2021 COVID-19 pandemic.
- Market prices: commercial fishing fleets respond to market prices by focusing effort on higher value target species when prices are high, and markets are in demand.
- Stock abundance: fluctuation in the biomass of individual species stocks in response to the status of the stock, recruitment, natural disturbances (e.g., due to storms, sea temperature etc.), changes in fishing pressure etc.
- Fisheries management: including new management for specific species where overexploitation has been identified, or changes in TACs leading to the relocation of effort, and/or an overall increase/decrease of effort and catches from specific areas.
- Environmental management: including the potential restriction of certain fisheries within protected areas.
- Improved efficiency and gear technology: with fishing fleets constantly evolving to reduce operational costs (e.g., by moving from beam trawl to demersal seine).
- Sustainability: with seafood buyers more frequently requesting certification of the sustainably of fish and shellfish products, such as the Marine Stewardship Council certification, industry is adapting to improve fisheries management and wider environmental impacts.

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

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

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

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

8.1.1.6 Twenty five percent of the EU's fisheries quota in UK waters will be transferred to the UK over the five-year transition period; most of this quota has already been transferred and distributed across the four nations of the UK. After the five-year transition there will be annual discussions on fisheries opportunities. Across the commercial fisheries regional study area, where UK fisheries primarily target non-quota shellfish species, it is expected that fleets are unlikely to be impacted by quota transfers. It is possible that UK vessels will seek to exploit additional quota-species opportunities, but vessels would need to access quota holdings. There has been limited change in the overall UK share for plaice and sole, the key fisheries targeted by non-UK vessels, notably Dutch and Belgian beam trawlers.

8.1.1.7 Market changes have the potential to impact fishing activity in the commercial fisheries regional study area; some of the catch landed by UK vessels is exported to EU markets (e.g., brown crab) and potential tariff/non-tariff barriers could affect which species are targeted and to what extent.

# 9 Summary

9.1.1.1 This Technical Report has presented commercial fisheries activity data for the following countries in relation to the Proposed Development (Offshore): UK, Norway, Denmark, the Netherlands and France. Based on quota allocations and landing statistics it is understood that vessels registered to other countries do not operate across the commercial fisheries local and regional study areas.

9.1.1.2 The key fleet métiers operating across the commercial fisheries local and regional study areas include (in no particular order):

- UK scallop dredgers targeting king scallop;
- UK demersal otter trawlers targeting squid;
- UK demersal otter trawlers targeting Nephrops;
- UK demersal otter trawlers targeting haddock and mixed demersal species;
- UK demersal seine targeting haddock and mixed demersal species;
- UK potting vessels targeting brown crab and lobster;
- UK vessels deploying lines targeting mackerel;
- UK pelagic trawl and purse seine targeting mackerel;
- Norwegian, Irish, Danish, Dutch and German pelagic trawl and purse seine targeting mackerel.

9.1.1.3 This Technical Report reviewed all datasets available to characterise the commercial fisheries activity across the commercial fisheries local and regional study areas and wider North Sea.

9.1.1.4 Given the range of datasets assessed and the comprehensive analysis undertaken, it is considered that this Technical Report is adequate for the purposes of an EIA.

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