Rampion 2 Wind Farm

Category 6: Environmental Statement

Volume 4, Appendix 10.1: Commercial fisheries technical baseline report

Date: August 2023

Revision A

Document Reference: 6.4.10.1
Pursuant to: APFP Regulation 5 (2) (a)
Ecodoc number: 004866476-01

Document revisions

Revision	Date	Status/reason for issue	Author	Checked by	Approved by
A	04/08/2023	Final for DCO Application	Poseidon Aquatic Resource Management Ltd	RED	RED

Executive summary

Poseidon Aquatic Resource Management Ltd (Poseidon) was commissioned by Rampion Extension Development Limited ('RED') to prepare a Commercial Fisheries Baseline Technical Report that provides a detailed review of the commercial fisheries fleets that operate within and adjacent to the Rampion 2 wind farm array area and offshore export cable corridor. The majority of the array area is located between the 6 to 12 nautical mile (nm) limits and the majority of the offshore export cable corridor is located inside of 6nm.

The information on commercial fisheries activity presented in this document is intended to inform the Environmental Impact Assessment (EIA) for Rampion 2 by providing a detailed understanding of the commercial fisheries baseline, against which the potential impacts of Rampion 2 can be assessed. This report presents an extended description of the baseline; a summary of this is included in the Preliminary Environmental Information Report (PEIR) and in the Environmental Statement (ES) for Rampion 2 Offshore Wind Farm. This document forms a technical annex to both the PEIR and ES.

This report is based upon desk-based analysis of data sourced from a number of fisheries bodies, including Government agencies, research bodies and fisheries management authorities. Key datasets include landings statistics and spatial mapping of fishing activity.

The report is divided into two main sections. The first describes the key species of commercial importance landed from the commercial fisheries study area, and the gear types used to target these species. The second presents an assessment of fisheries activity by fleets from the following countries, which data indicates are active in the commercial fisheries study area: UK, Belgium, France, the Netherlands, Germany, Ireland and Denmark.

The report concludes that the key fleets operating across the Rampion 2 commercial fisheries study area include (in no particular order):

- UK potters targeting whelk, brown crab, lobster and cuttlefish;
- UK vessels using fixed nets to target bass, rays, sole and plaice;
- UK vessels using gears with hooks to target bass;
- UK, French and Irish scallop dredgers targeting king scallop;
- UK beam trawlers targeting sole and plaice;
- UK bottom otter trawlers targeting mixed demersal species including whiting and bream;
- Belgian beam trawlers targeting plaice and sole;
- French bottom trawlers targeting whiting, horse mackerel and mackerel; and
- Dutch and German pelagic trawlers targeting highly mobile horse mackerel and herring, which move/shoal throughout the wider Greater North Sea ecoregion.

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1. Introduction

1.1.1 Rampion Extension Development Limited ('RED') is proposing to develop Rampion 2 Offshore Wind Farm ('Rampion 2'). Rampion 2 will be located adjacent to the existing Rampion Offshore Wind Farm located in the English Channel off the south coast of England. For the purposes of clarity, in this document, the existing Rampion Offshore Wind Farm is referred to as 'Rampion 1' hereon in to enable clear differentiation with Rampion 2.

1.1.2 Rampion 2 will include both offshore and onshore infrastructure including an offshore generating station (wind farm), export cables to landfall, and connection to the electricity transmission network (further details of the project description are presented in **Chapter 4: The Proposed Development, Volume 2** of the Environmental Statement (ES) (Document Reference: 6.2.4). The location of the offshore elements of Rampion 2 is shown in Figure 10..

1.1.3 Poseidon Aquatic Resource Management Ltd (Poseidon) was commissioned by RED to prepare a Commercial Fisheries Baseline Technical Report that provides a detailed review of the commercial fisheries fleets that operate within and adjacent to the Rampion 2 array area and offshore export cable corridor.

1.1.4 The information on commercial fisheries activity presented in this document is intended to inform the Environmental Impact Assessment (EIA) for Rampion 2 by providing a detailed understanding of the commercial fisheries baseline, against which the potential impacts of Rampion 2 can be assessed. An overview of the information presented in this Technical Report is provided in **Chapter 10: Commercial fisheries, Volume 2** of the ES (Document Reference: 6.2.10).

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2. Methodology

2.1 Study Area

2.1.1 The Rampion 2 offshore Development Consent Order (DCO) Limits are located within the northern portion of the International Council for the Exploration of the Sea (ICES) Division 7d (eastern English Channel) statistical area; within the UK Exclusive Economic Zone (EEZ) waters, with the proposed array area located outside the 6nm limit. The majority of the array area is located between the 6 to 12nm limits, with a small portion located outside the 12nm limit.

10.1.1 For the purpose of recording fisheries landings, ICES Division 7d is divided into statistical rectangles which are consistent across all Member States operating in the English Channel. The study area is defined as ICES rectangle 30E9 as shown in Figure 10. noting that the offshore DCO Order Limits occupy only a portion of this ICES rectangle, equating to 13 percent of the surface area. Where relevant, commercial fisheries activity in adjacent ICES rectangles is also described.

2.1.2 **Figure** shows the refinement of the Rampion 2 project boundary through the development process, from Scoping through to point of Application. This refinement has been in response to stakeholder concerns.

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Figure 10.2.1 Commercial fisheries study area

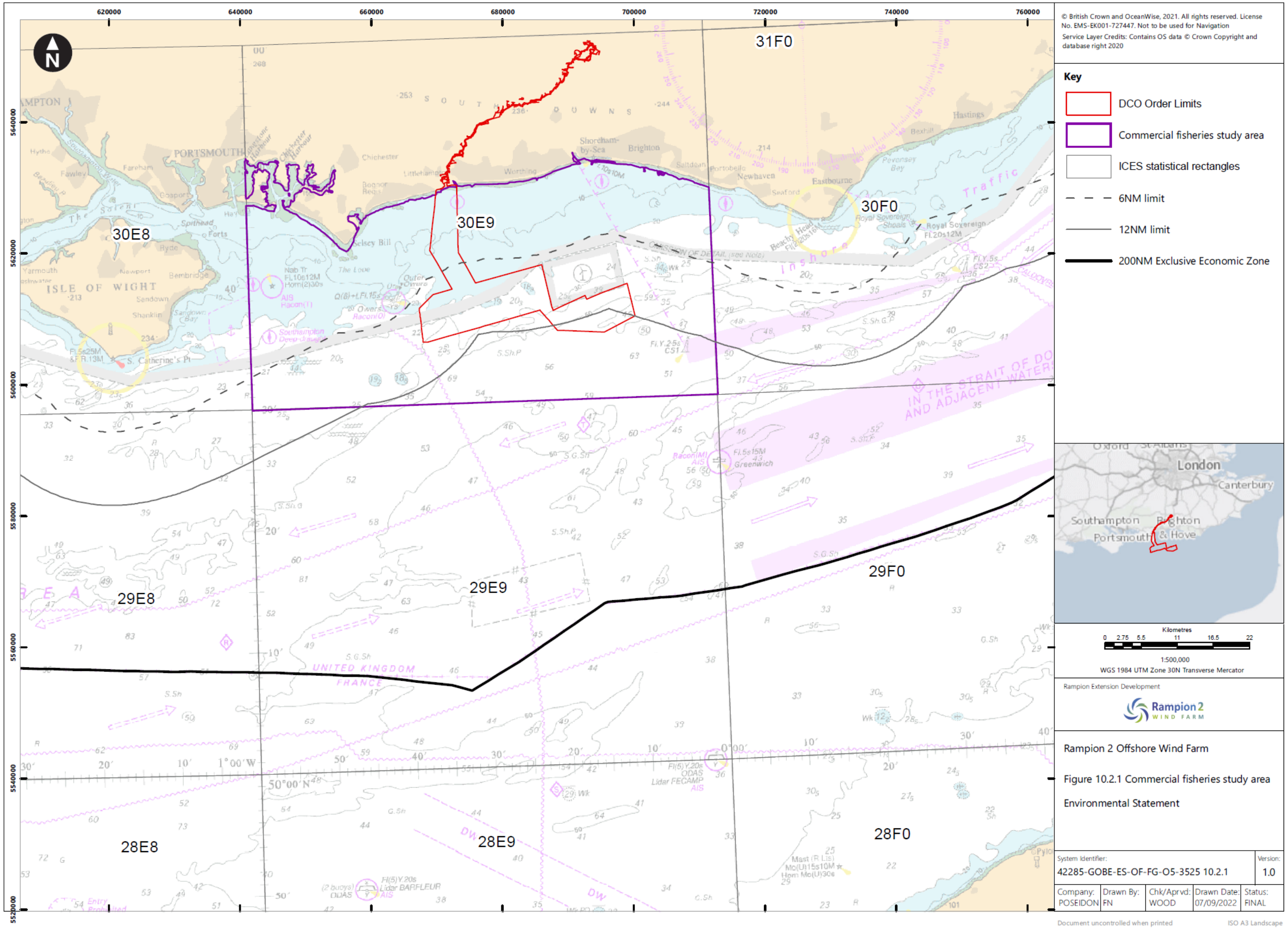
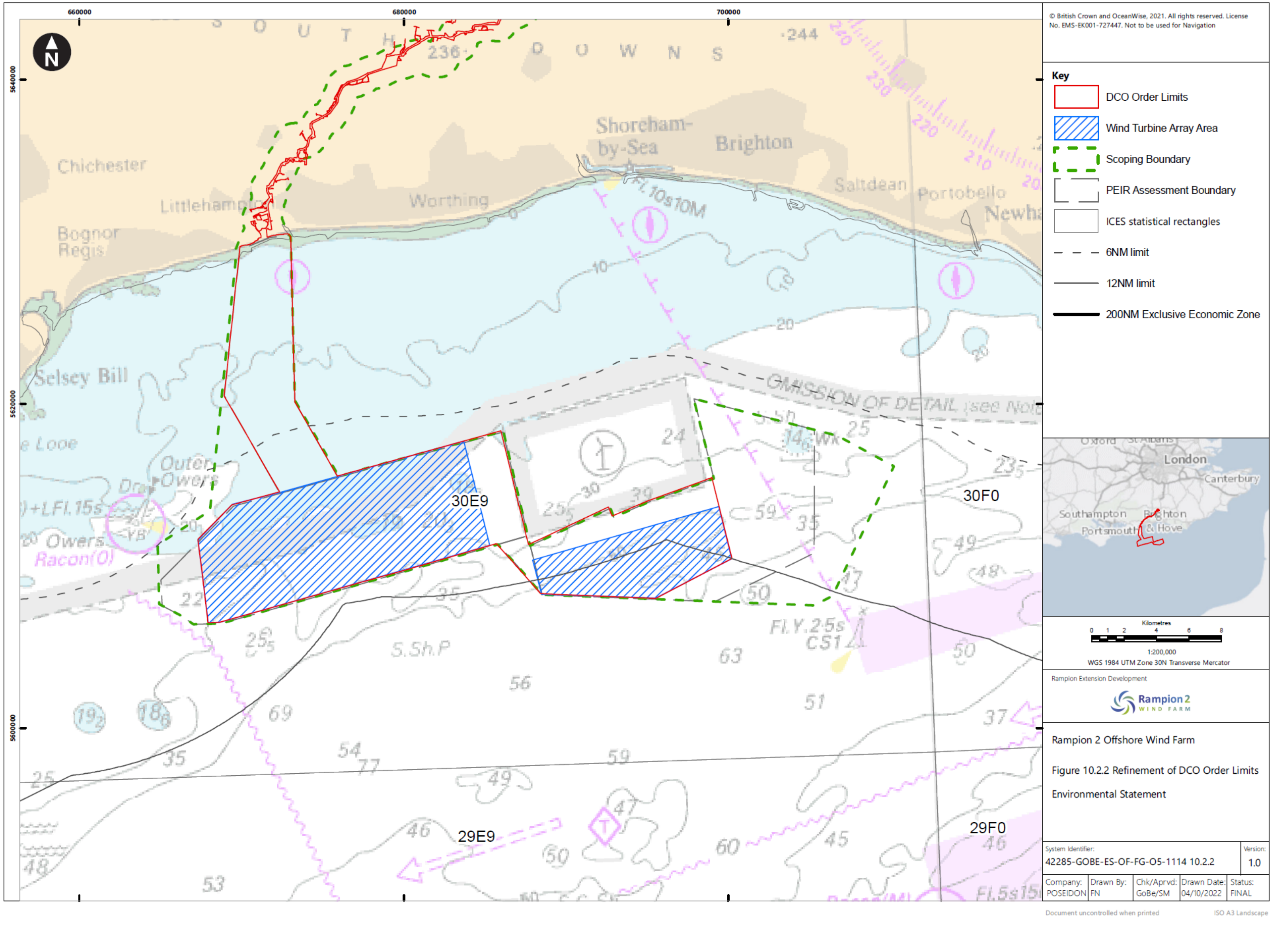


Figure 10.2.2 Refinement of Rampion 2 boundaries to offshore DCO Limits



2.2 Data sources

Desktop Review

2.2.1 Data sources used to inform this Technical Report are provided in **Table 2-1**. As well as UK data sources, data has been sourced from a number of European fisheries bodies, including Government agencies, research bodies and directly from the fishing industry and its representative organisations.

2.2.2 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 document and are cited within the text where appropriate.

2.2.3 Where data sources allow, a five-year trend analysis has been undertaken, using the most recent annual datasets available at the time of writing. The temporal extent of this five-year period is dependent on each data source analysed, for example, 2012 to 2016 or 2016 to 2020, as annotated below.

Table 2-1 Data sources used to inform this Technical Report

Country	Data	Time period	Source
UK	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 (Great British Pounds (£/GBP))	2016 to 2020	Marine Management Organisation (MMO)
UK	Vessel Monitoring System (VMS) data for UK-registered vessels of 15m and over length Note that UK vessels ≥12 m in length have VMS on board, however, to date, the MMO provide amalgamated VMS datasets for ≥15 m vessels only. VMS data sourced from MMO displays the first sales value (£) of catches.	2016 to 2019	MMO
UK	Maps of fishing effort within Sussex Inshore Fisheries Conservation Authority (IFCA) boundaries based on observed fishing activity during sea patrols	2015 to 2019	Sussex IFCA

Country	Data	Time period	Source
All Europe	Landings statistics for Belgian, Danish, Dutch, French, German and UK registered vessels with data query attributes for: landing year; landing quarter; ICES rectangle; vessel length; gear type; species; and, landed weight (tonnes)	2012 to 2016	European Union (EU) Data Collection Framework (DCF) database
All Europe	Price data for species landed by Belgian, Dutch, French and German registered vessels with data query attributes for: landing year; species; and price (Euros (€) per kilogram (kg))	2019	European Market Observatory for Fisheries and Aquaculture Products (EUMOFA)
All Europe	VMS data for EU registered vessels ≥12m length VMS data sourced from ICES also 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.	2017 to 2020	ICES
All Europe	Fishing vessel route density, based on vessel Automatic Information System (AIS) positional data. AIS is required to be fitted on fishing vessels ≥15m length.	2019 to 2022	European Maritime Safety Agency (EMSA)

Data Limitations and Uncertainties

2.2.4 A range of different 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 2-2** based on judgement of the assessment team.

2.2.5 Limitations of landings data include the spatial size of ICES rectangles which can misrepresent actual activity across Rampion 2 and care is therefore required when interpreting these data.

2.2.6 It is noted that all commercial landings by UK registered vessels are subject to the Register of Buyers and Sellers 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, 2021). The RBS legislation is applicable to licenced fishing vessels of all lengths and requires name and port letter and number of the vessel which landed the fish to be recorded in relation to each purchase. For the 10m and under sector, landing statistics are recorded on sales notes provided by the registered buyers (MMO, 2021). Information that may not be formally recorded on the sales note, such as gear and fishing area, is added by coastal staff based on local knowledge of the vessels they administer - for example, from observations of the vessel during inspections at ports or from air and sea surveillance activities as well as discussions with the owner and/or operator of the vessel (MMO, 2021).

2.2.7 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 (2017-2019) is no longer available by ICES rectangle. Data at a scale of ICES division (i.e. the whole of the eastern English Channel) is less useful to understand fishing activity specific to the area overlapping Rampion 2.

2.2.8 Limitations of VMS data are primarily focused on the coverage being limited to larger vessels 12m (sourced from ICES) and 15m (sourced from MMO) and over. 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 of vessels <15 m in length). To assist in mitigating the risk of under-representing smaller inshore vessels, site-specific marine traffic survey data gathered by Anatec in 2020 and 2022 and comprising information on vessel movements gathered by Automatic Identification System (AIS), radar and visual observation has been analysed alongside VMS data (see ES **Chapter 13: Shipping and navigation, Volume 2** (Document Reference: 6.2.13)).Limitations of IFCA patrol data are primarily focused on the frequency and spatial coverage of patrols. The data cannot be considered to give a complete picture of the actual level of activity and have a number of limitations, including the following:

- patrol efforts by IFCA vessels are localised 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;
- patrol data are only indicative of areas where fishing activities occur, as there is no continuous monitoring of activities;
- patrol 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 2-2 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)

Data source	Type of data	Limitations and uncertainty
Landings statistics		
MMO	Landings statistics data for UK-registered vessels (2016-2020).	The data is recorded from sales notes and landing declarations for all vessel lengths. Due to the UK legislation of Registration of Buyers and Sellers data is considered accurate and verifiable. • Data assessed with: low uncertainty and high confidence.
EU DCF	Landings statistics data for EU-registered vessels (2012-2016).	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. • For UK vessels under 10m length data is assessed with: high uncertainty and low confidence. • For all other EU vessels data is assessed with: low uncertainty and high confidence.
VMS and other spatial data		
MMO	UK-registered vessel VMS data for vessels ≥15m length (2016 to 2019).	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	EU-registered vessel VMS data for vessels ≥12m length (2017 to 2020).	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.
Sussex IFCA	Patrol vessel observations of fishing vessels within Sussex IFCA boundaries (2015-2019).	Patrol data are gathered for enforcement purposes and may not be reflective of fishing activity. • Data is assessed with: high uncertainty and low confidence.

Data source	Type of data	Limitations and uncertainty
EMSA	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 (2020, 2022); see ES **Chapter 13: Shipping and Navigation, Volume 2** (Document Reference: 6.2.13).	An assessment undertaken into fishing vessel activity within the Navigational Risk Assessment (NRA) undertaken for Rampion 2. Based on a 14 day AIS, radar and visual survey in summer and winter 2020 and summer 2022 and longer-term AIS data for 2019. • Data assessed with: low uncertainty and high confidence.

Consultation

2.2.9 Consultation with commercial fisheries stakeholders undertaken to inform the Rampion 2 ES is detailed in **Chapter 10: Commercial fisheries, Volume 2** (Document Reference: 6.2.10). Consultation has involved both formal (prescribed by the planning process) and informal (not prescribed by the planning process; undertaken by/on behalf of the Applicant) stakeholder engagement.

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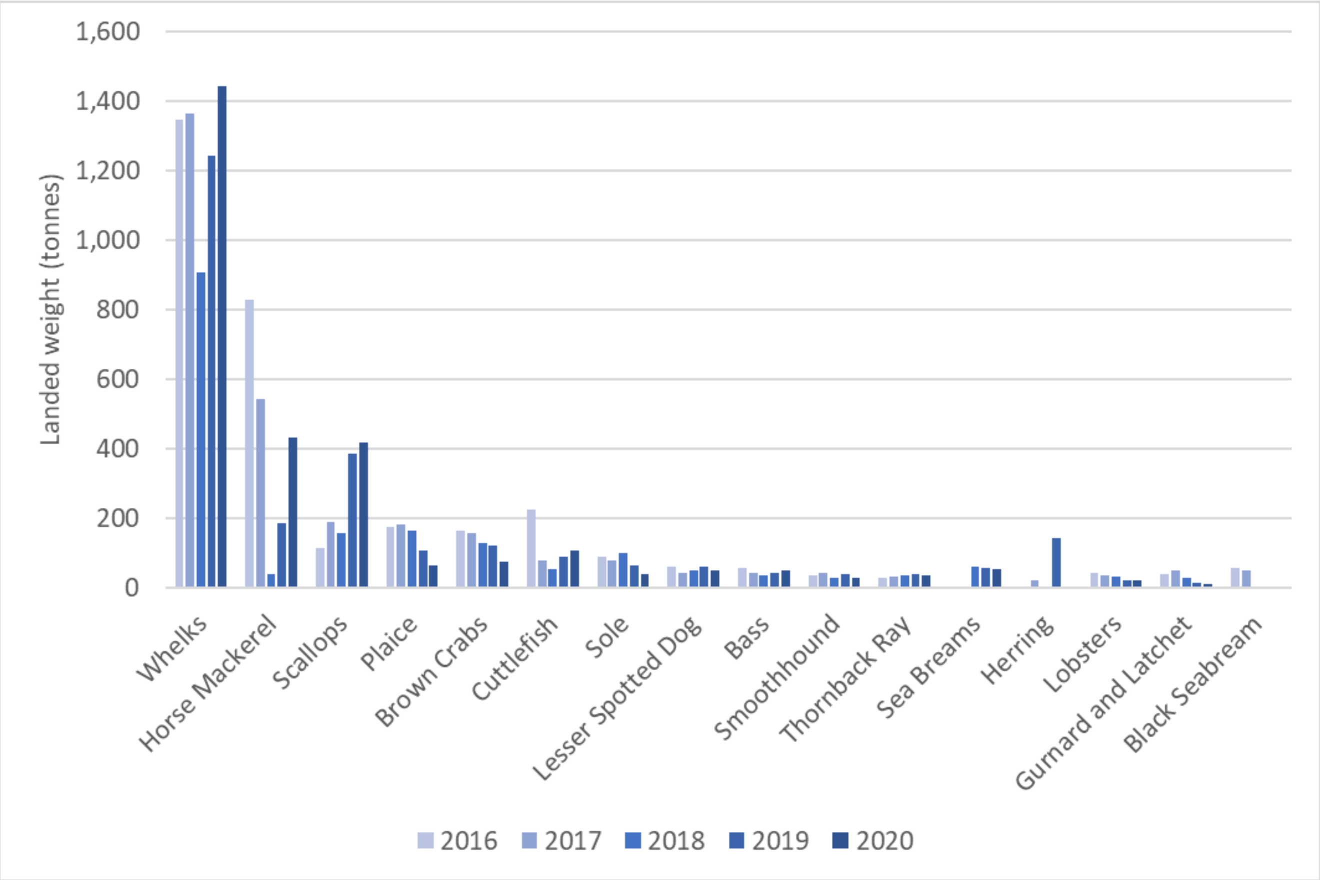
3. Key species and fishing gears

3.1 Key species

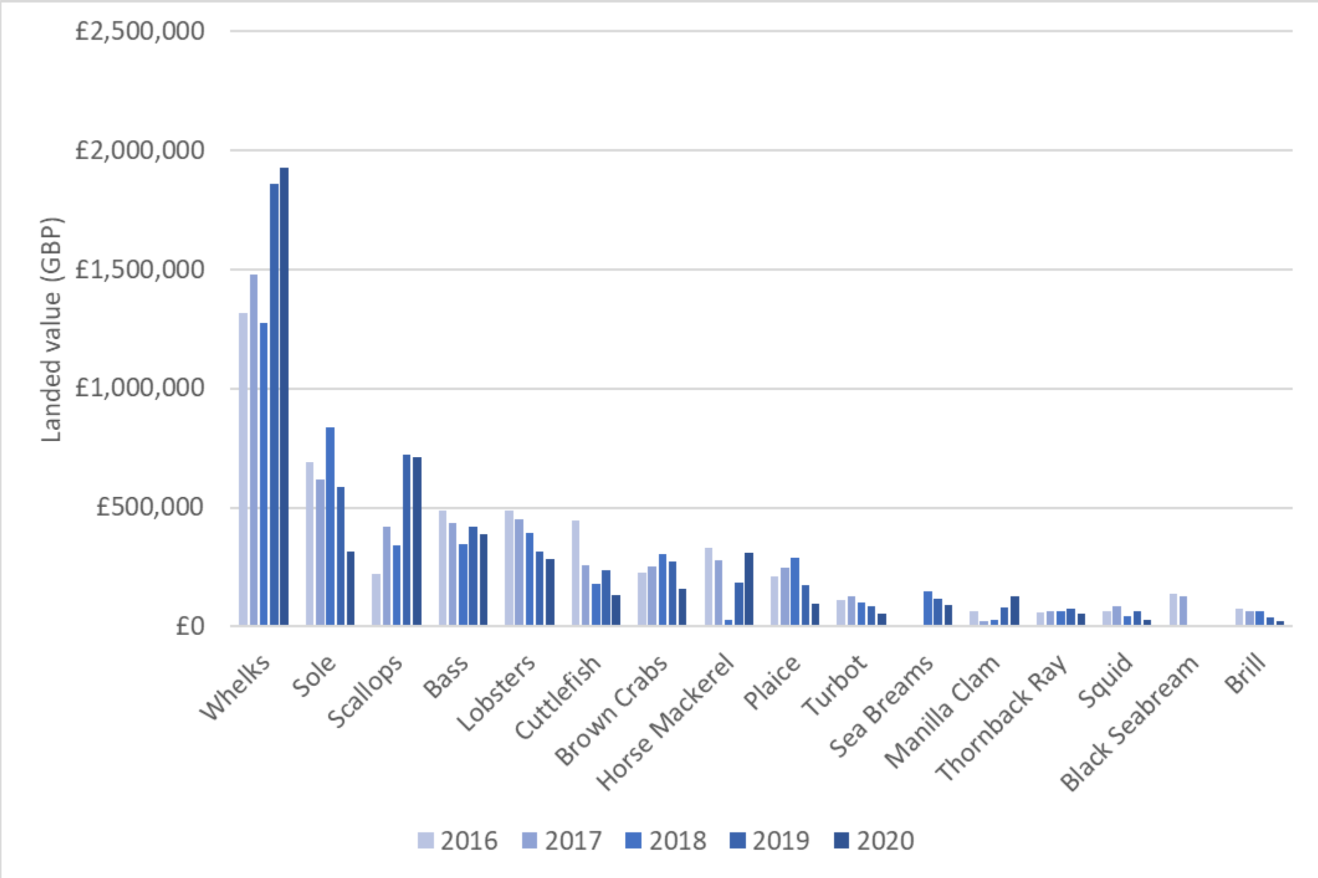
Overview of landings

3.1.1 An annual average value of £5.2 million is landed by all UK vessels for the years 2016 to 2020 from the study area ICES rectangle (based on data from MMO, 2021). Data are presented for the annual (2016 to 2020) landed weight and value by UK vessels in **Graphic 3-1** and **Graphic 3-2** respectively, indicating that whelk *Buccinum undatum,* King scallop *Pecten maximus,* sole *Solea solea* and plaice *Pleuronectes platessa*, bass *Dicentrarchus labrax*, brown crab *Cancer pagurus* and European lobster *Homarus gammarus*, horse mackerel *Trachurus trachurus* and cuttlefish *Sepia officinalis*, which represent key fisheries in the study area.

Graphic 3-1 Key species by annual landed weight (tonnes) (2016 to 2020) from the study area (MMO, 2021)



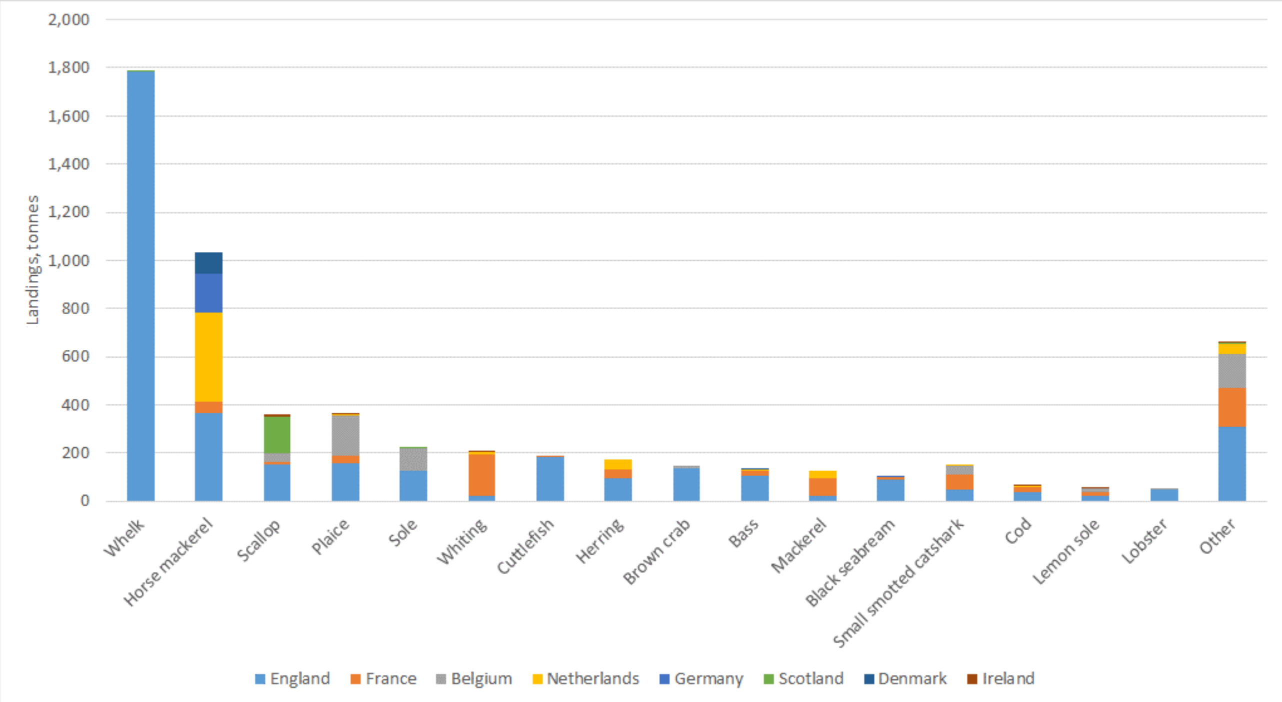
Graphic 3-2 Key species by annual landed value (GBP) (2015 to 2019) from the study area (MMO, 2020) [1]



3.1.2 The average annual landings for the UK and all EU countries are presented in **Graphic 3-3**, based on data from 2012 to 2016. From 2017 onwards landings data in the EU DCF database by country are not available by ICES rectangle, hence the presentation of data from 2012 to 2016 to ensure focus on the commercial fisheries study area. English vessels were responsible for the most significant portion (approximately 65 percent) of landings over this period. For non-UK vessels, the commercial fisheries study area is dominated by landings of horse mackerel, whiting, and plaice, with average annual landings values by non-UK vessels of €650,000, €390,000 and €480,000 respectively. Vessels from the Netherlands, France and Belgium are responsible for the majority of landings from the study area by non-UK vessels, though data also indicates fishing activity by German, Danish and Irish vessels.

[1] Clam fisheries are concentrated in discrete areas, notably at Poole Harbour and Southampton water, and are not considered further in this report.

Graphic 3-3 Average annual landed weight (tonnes) of species landed by all UK and EU countries from the study area (2012 to 2016) (EU DCF, 2020)



Total Allowable Catch and Quotas

3.1.3 As per EU Council Regulations, Total Allowable Catches (TACs) and quotas are in place for many commercial fish species based on their stock distribution across ICES Divisions. TACs are intended to allocate fish resources to different countries and to control the amount of fish removed each year. When setting TACs the European Commission is informed by scientific stock assessments and advice provided by ICES on an annual basis. Different quotas are applied to different areas for different species. TACs and quotas per country for 2021 are presented in **Table 3-1** for key species landed from the study area.

3.1.4 Within the UK EEZ, fishing activity from the shore to 6nm is only permissible for UK-registered vessels. A number of restrictions are in place based on byelaws set by English IFCA that control fisheries out to 6nm. From 6nm to 12nm, non-UK vessels may fish if they have acquired historical rights to do so. Outside 12nm, international vessels are permitted to fish subject to quota allocation and other EU level restrictions including technical gear measures and effort restrictions such as days at sea.

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Table 3-1 Total Allowable Catch and quotas in tonnes per country for key species landed from the study area for 2021 (EU, 2021)

Species	ICES Division	TAC (tonnes)	UK	Belgium	Denmark	France	Germany	Ireland	Netherlands
Horse mackerel	4b, 4c and 7d	14014	4000	12	5249	435	464	330	3160
		Proportion	*28.5 percent*	*0.1* percent	*37.5 percent*	*3.1 percent*	*3.3 percent*	*2.4 percent*	*22.5 percent*
Plaice	7d and 7e	11920	3533	1537	-	6850	-	-	-
		Proportion	*29.6 percent*	*12.9 percent*	-	*57.5 percent*	-	-	-
Sole	7d	3248	640	830	-	1659	-	-	-
		Proportion	*19.7 percent*	*25.6 percent*		*51.1 percent*	-	-	-
Mackerel	6, 7, 8a, 8b and 8e	852284	Not relevant	-	-	12171	18254	60847	26620
		Proportion	*N/A*	-	-	*1.4 percent*	*2.1 percent*	*7.1 percent*	*3.1 percent*
Whiting	7b, 7c, 7d, 7e, 7f, 7g, 7h, 7j and 7k	10259	1134	74	-	4663	-	3916	39

Species	**ICES Division**	**TAC (tonnes)**	**UK**	**Belgium**	**Denmark**	**France**	**Germany**	**Ireland**	**Netherlands**
		Proportion	*11.1 percent*	*0.7 percent*	-	*45.5 percent*	-	*38.2 percent*	*0.4 percent*
Herring	4c, 7d	356357	Not relevant	8257	668	9274	452	-	16142
		Proportion	*N/A*	*2.3 percent*	*0.2 percent*	*2.6 percent*	*0.1 percent*	-	*4.5 percent*

Shellfish

European lobster

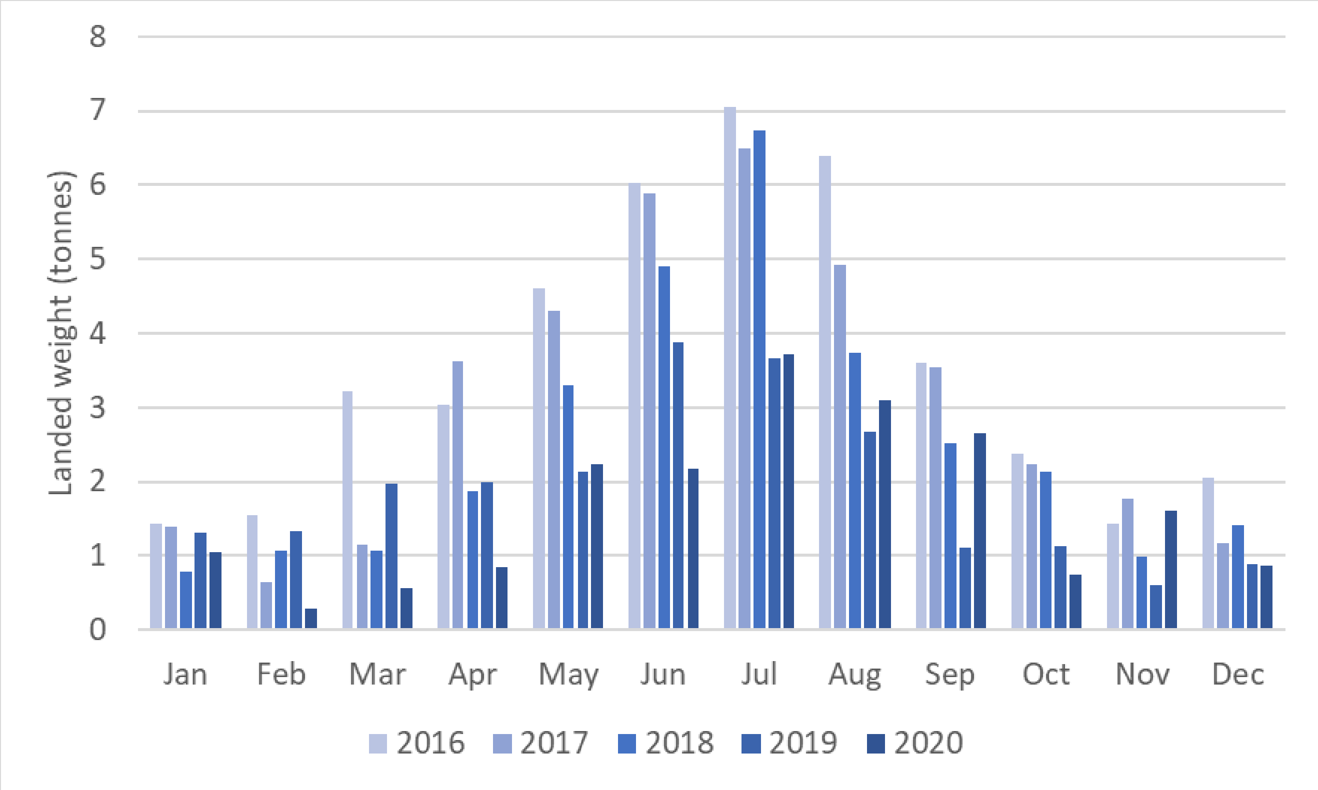
3.1.5 European lobster is a long-lived decapod crustacean. Lobster breed once per year in the summer and newly berried females begin to appear from September to December. Lobsters do not undertake any significant migrations and juveniles in the first three to four years of life may be particularly sedentary. 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).

3.1.6 Lobsters are caught by pots and there are no TACs or quotas in place. Primary management is by the technical measure of a Minimum Landing Size (MLS) of 87mm (Council Regulation 850/98). Due to the inshore location of lobster, they are predominantly targeted by the UK potting fleet along the Sussex coast, under the jurisdiction of the Sussex IFCA from 0 to 6nm and the MMO and Defra from 6 to 12nm. The Sussex IFCA Shellfish Permit Byelaw builds on existing management measures such as MLS, and has also introduced effort limitation, better selectivity for juvenile stock and protection of berried lobsters.

3.1.7 Lobster is one of the highest value per kilogram, commercially exploited shellfish species found in UK waters. Fishing activity typically peaks between May and August as indicated in **Graphic 3-4**.

3.1.8 A recent Centre for Environment, Fisheries and Aquaculture Science (Cefas) stock assessment reports that exploitation of the lobster stock off the south coast is moderate, with fishing pressure high around the MLS. The status of the stock in relation to the fishing rate reference points has improved from the previous stock assessment in 2017 (Cefas, 2020a). Local anecdotal reports suggest a recent decline in stock (2019), particularly inshore near Brighton and Selsey. Sussex IFCA Shellfish Permit Byelaw catch return data suggests a decline in lobster landings from 2017 through to 2021 (Sussex IFCA, 2022).

Graphic 3-4 Seasonality of total landings (tonnes) of lobster from 2016 to 2020 by UK vessels for the commercial fisheries study area (Data source: MMO, 2021)



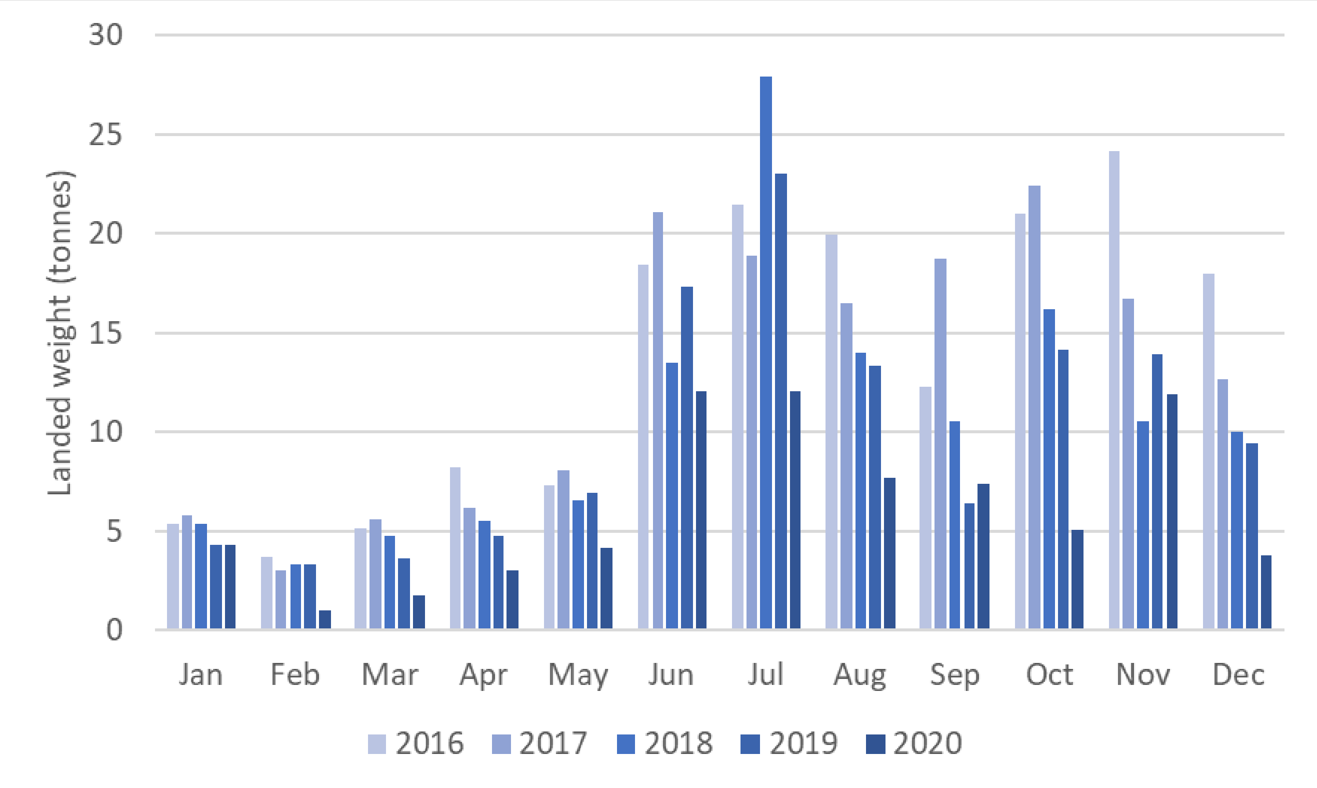
Brown crab

3.1.9 Brown crab is a long-lived, large decapod crustacean. Brown crabs are very productive animals and each female can hatch between 1 and 4 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.

3.1.10 As with lobster, brown crab are predominately targeted by the UK potting fleet located along the south coast, under jurisdiction of the Sussex IFCA from 0 to 6nm and the MMO and Defra from 6 to 12nm. 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 an MLS of 140 millimetre (mm) carapace width inside 6nm and 130mm outside 6nm (Council Regulation 850/98). Inside of 6nm the Sussex IFCA Shellfish Permit Byelaw also applies. This stipulates that no vessels larger than 14m in length can fish in the district and limits potting effort by restricting the number of pots (specifically crab or lobster pots) at 300 within 3nm from the coast and 600 pots from 3 to 6nm.

3.1.11 A recent assessment undertaken by Cefas reports on the status of the brown crab stock in the Eastern English Channel to be unknown (Cefas, 2020b). The assessment notes that a large fishery occurs during late summer to autumn, when fishers target mature female crabs as they carry out their ontogenetic migration westward through the channel towards spawning grounds. This appears to be validated by landings data presented in **Graphic 3-5** below. Sussex IFCA Shellfish Permit Byelaw catch return data suggests a decline in crab landings across 2017 to 2021 (Sussex IFCA, 2022).

Graphic 3-5 Seasonality of total landings (tonnes) of brown crab from 2016 to 2020 by UK vessels for the commercial fisheries study area (Data source: MMO, 2021)



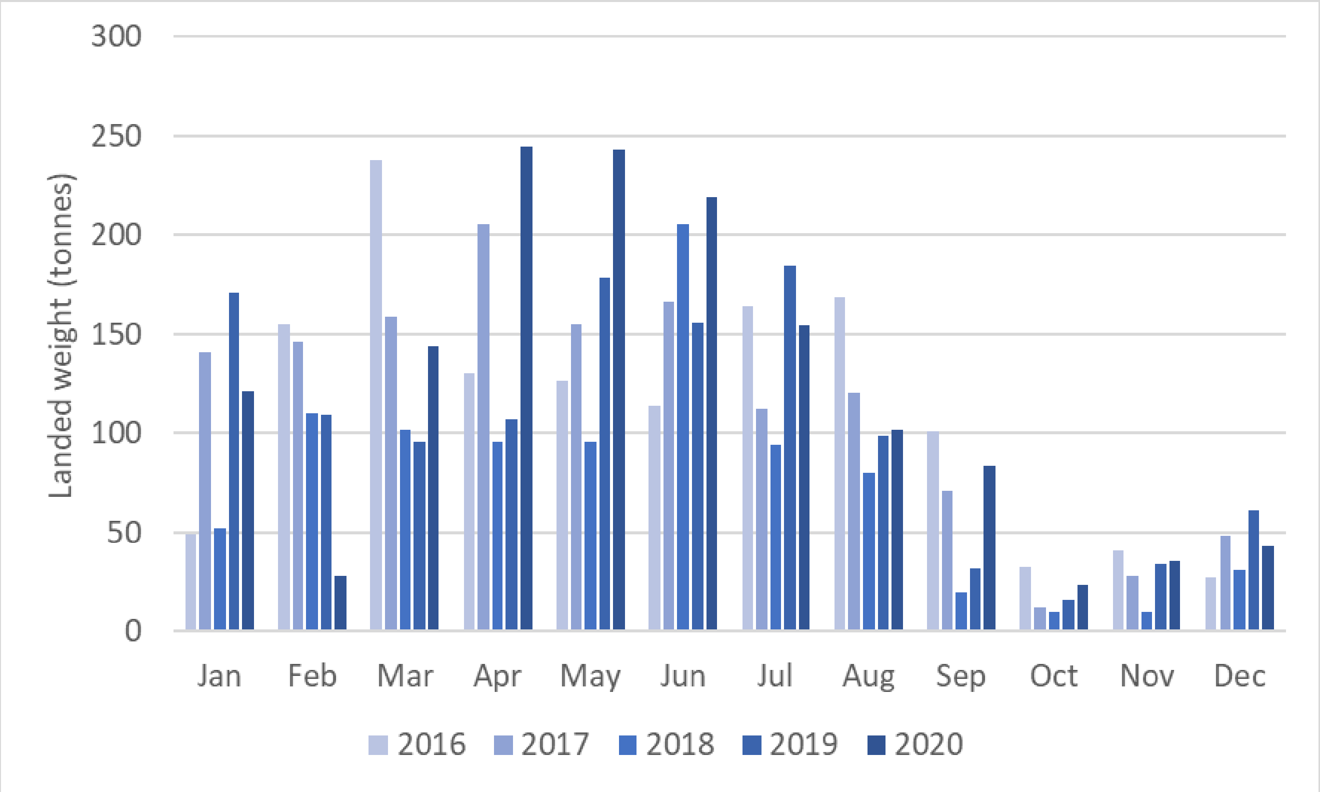
Common whelk

3.1.12 The common whelk *Buccinum undatum* is a gastropod mollusc. Their preferred habitat is mixed sediment from the low water mark down to 1,200m. Whelk reach reproductive maturity at different sizes depending on their geographical location and environmental conditions; in the Sussex area, this is at an average shell height of 58mm (Sussex IFCA, 2020).

3.1.13 Whelk are caught using plastic pots, which may be deployed by the same potting vessels that target crab and lobster. Landings data illustrate peaks in catches in the first half of the year. Whelk are cleaned and frozen raw in-shell to be exported to the far east. The fishery is very dependent on market conditions and prices. Information gathered by the Sussex IFCA suggests that whelks are currently under a great deal of fishing pressure and that the current minimum landing size is not sufficient to fully protect local whelk stocks (Sussex IFCA, 2020). Fishing activity is concentrated between January and August (**Graphic 3-6**).

3.1.14 No TAC or quotas are in place for whelk. An MLS of 45mm is in place outside 6nm (Council Regulation 850/98), while a minimum legal size of 55mm is defined for 0 to 6nm. The Sussex IFCA Shellfish Permit Byelaw includes technical measures, such as requirements around escape holes in pots and riddle bars, and a 300 pot limit within 3nm and a 600 pot limit within 6nm. Sussex IFCA Shellfish Permit Byelaw catch return data suggests a peak in whelk landings in 2019 relative to 2018, 2020 and 2021 (Sussex IFCA, 2022).

Graphic 3-6 Seasonality of total landings (tonnes) of whelk from 2016 to 2020 by UK vessels for the commercial fisheries study area (Data source: MMO, 2021)



King scallop

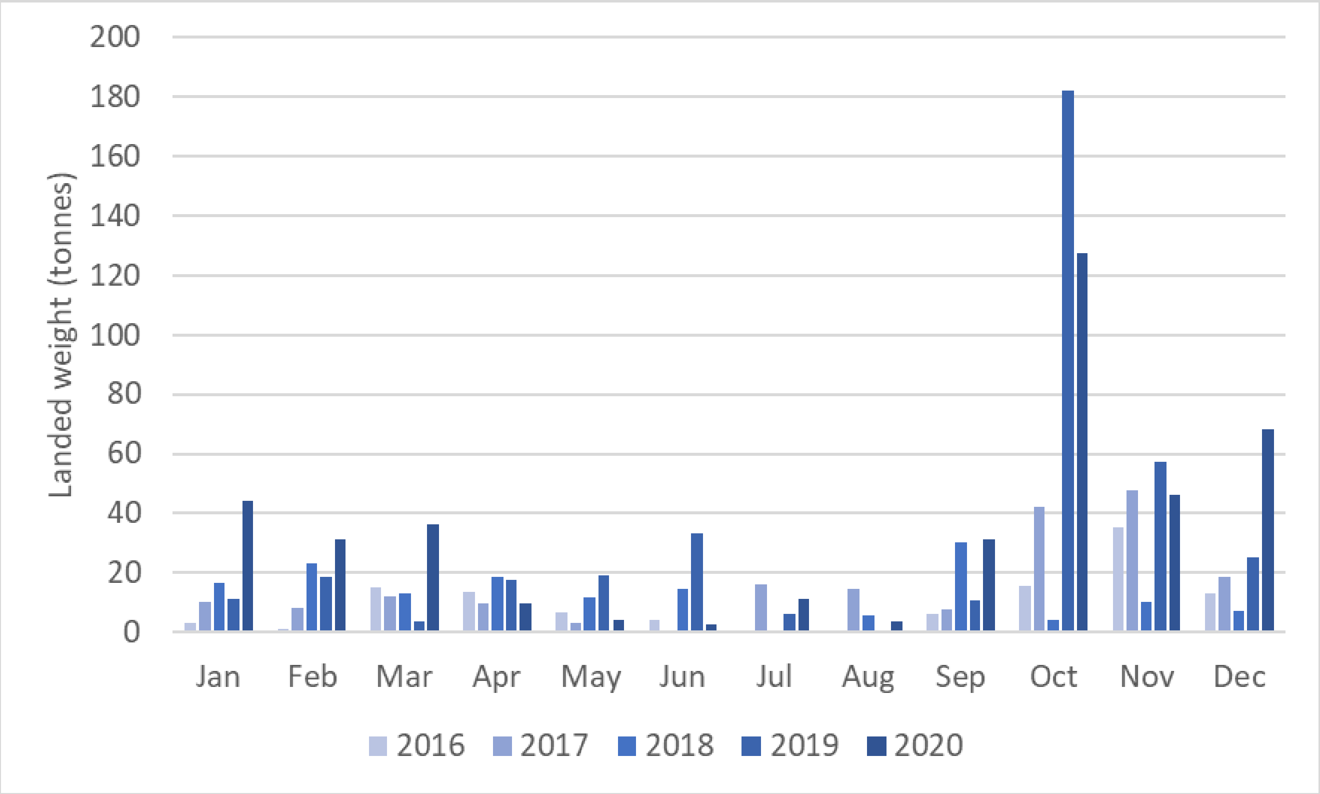
3.1.15 King scallop (hereon referred to as scallop) are most common in water depths of 20 to 70m, in areas of clean firm sand and fine gravel exposed to water currents, which provide good feeding conditions for this bivalve mollusc. Scallops reach reproductive maturity at a minimum size of 60mm and will be fully mature between 3 to 5 years. Their lifespan can be up to 20 years. Recruitment is usually unpredictable as it depends not only on successful spawning and larval production but also on retention of larvae or transport of larvae into areas suitable for settlement. Settlement in a particular area may be unpredictable leading to an unstable age structure. As a consequence of this, scallop beds frequently show a regional separation of year classes and spatial variability in age structure.

3.1.16 Scallop are targeted almost exclusively in this area by UK-registered dredgers and there are no TACs or quotas in place with this species, therefore this species is primarily managed by an MLS of 100mm (Council Regulation 850/98) and a cap on the level of effort that vessels ≥15 metres (m) can utilise in ICES area 7. National legislation limits the number of licenses for scallop vessels >10m. The English Scallop Order applies in England to British vessels and places spatial restrictions on the number of dredges that can be employed at any one time and specifies technical measures defining the type of dredge that can be used.

3.1.17 Some scallops are sold locally within the UK market, but most are exported to Europe. Landings typically peak from late autumn through to late spring. Locally, Rye Bay Scallop Week is scheduled annually for February to March; during this time Rye Bay scallops are served in many restaurants in the area as they are in high demand.

3.1.18 In a 2019 stock assessment, the third in this region since 2017, Cefas reported that presently the provisional harvest rate for this area is nearly twice as high as the harvest rate consistent with Maximum Sustainable Yield (MSY). The assessment also noted that a large variation in reported landings between 2017 and 2018, combined with a potential pulse in incoming recruitment, suggests that the population in this area is not at equilibrium (Lawler and Nawri, 2019). The fourth stock assessment observes that the estimated harvest rate has gone down considerably since 2018 and that the provisional harvest rate is just above MSY (Lawler and Nawri, 2021).

Graphic 3-7 Seasonality of total landings (tonnes) of scallop from 2016 to 2020 by UK vessels for the commercial fisheries study area (Data source: MMO, 2021)



Cuttlefish

3.1.19 The common cuttlefish is a marine mollusc. They have a relatively short life cycle of between 18 and 24 months. During this time they grow rapidly and can reach a maximum mantle length of 49cm and weigh up to 4kg. They generally prefer softer substrates such as sand or mud, although they can also be found over rocky substrates.

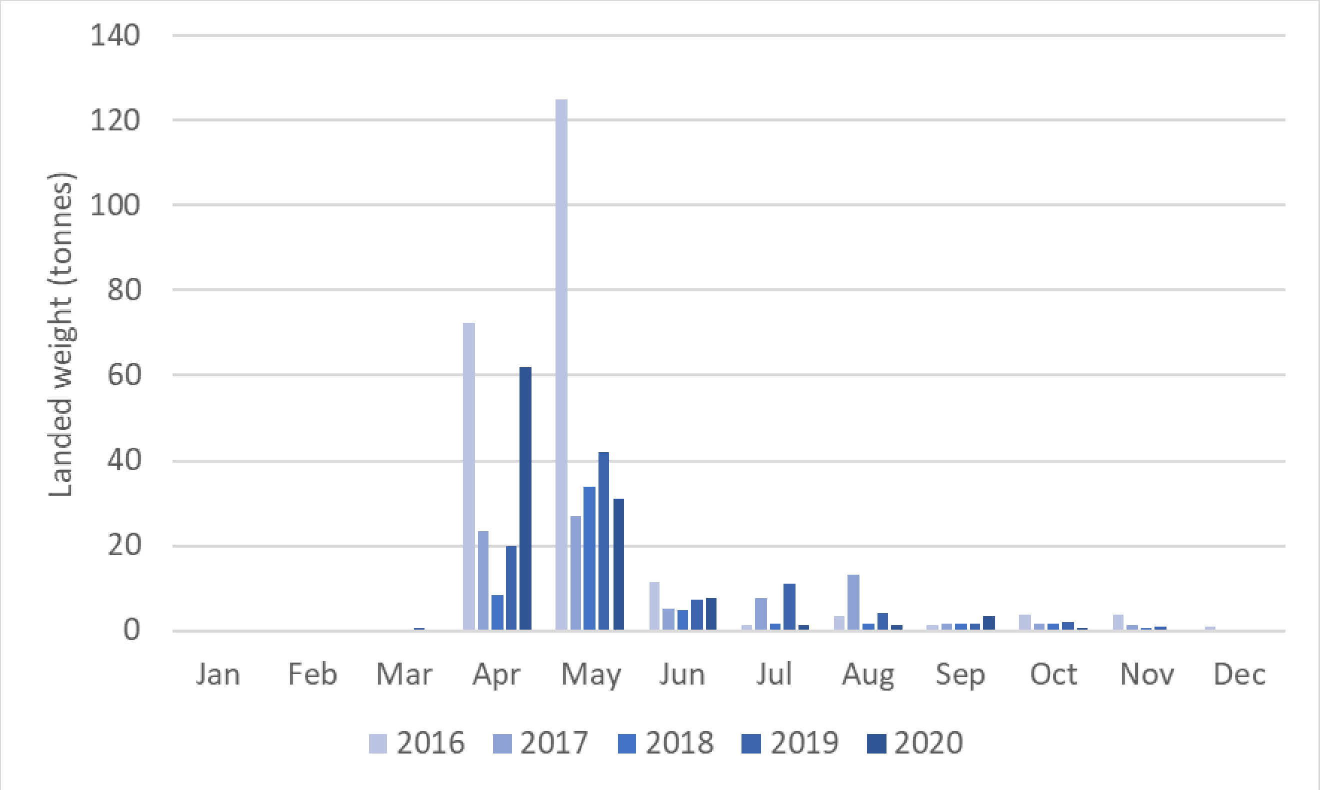
3.1.20 The English Channel population of cuttlefish performs a seasonal migration every year. During the winter they move into the deeper waters and aggregate in the western approaches of the English Channel. From early spring, cuttlefish begin to move inshore towards their breeding grounds.

3.1.21 The fishery for cuttlefish uses three methods; cuttlefish traps, static nets and otter trawls. Traps are the most common method and a female cuttlefish is used as bait to attract male cuttlefishes into the trap. The exploitation rate and market value of cuttlefish within the English Channel is growing rapidly and has nearly doubled in the last ten years. The inshore fishery cuttlefish season is primarily between April and June, coinciding with seasonal migrations into the shallower coastal waters to breed (**Graphic 3-8**). An offshore fishery targets cuttlefish during the winter months using towed fishing gear such as otter and beam trawls. The majority of British cuttlefish catches are exported to continental Europe.

3.1.22 No TAC or quotas are in place for cuttlefish and there is no EU regulation currently in place for MLS. The Sussex IFCA Shellfish Permit Byelaw is applicable inside of 6nm.

3.1.23 Recruitment within the English Channel cuttlefish population is highly dependent on the proportion of cohorts that escape offshore exploitation and migrate inshore to their breeding grounds. The short life span of a cuttlefish combined with the single period of reproduction that occurs at the end of their lives means that cuttlefish are vulnerable to population collapse if they experience several years of reduced spawning (Sussex IFCA, 2020). Sussex IFCA Shellfish Permit Byelaw catch return data suggests a peak in cuttlefish landings in 2020 relative to 2018, 2019 and 2021 (Sussex IFCA, 2022).

Graphic 3-8 Seasonality of total landings (tonnes) of cuttlefish from 2016 to 2020 by UK vessels for the commercial fisheries study area (Data source: MMO, 2021)



3.2 Pelagic finfish

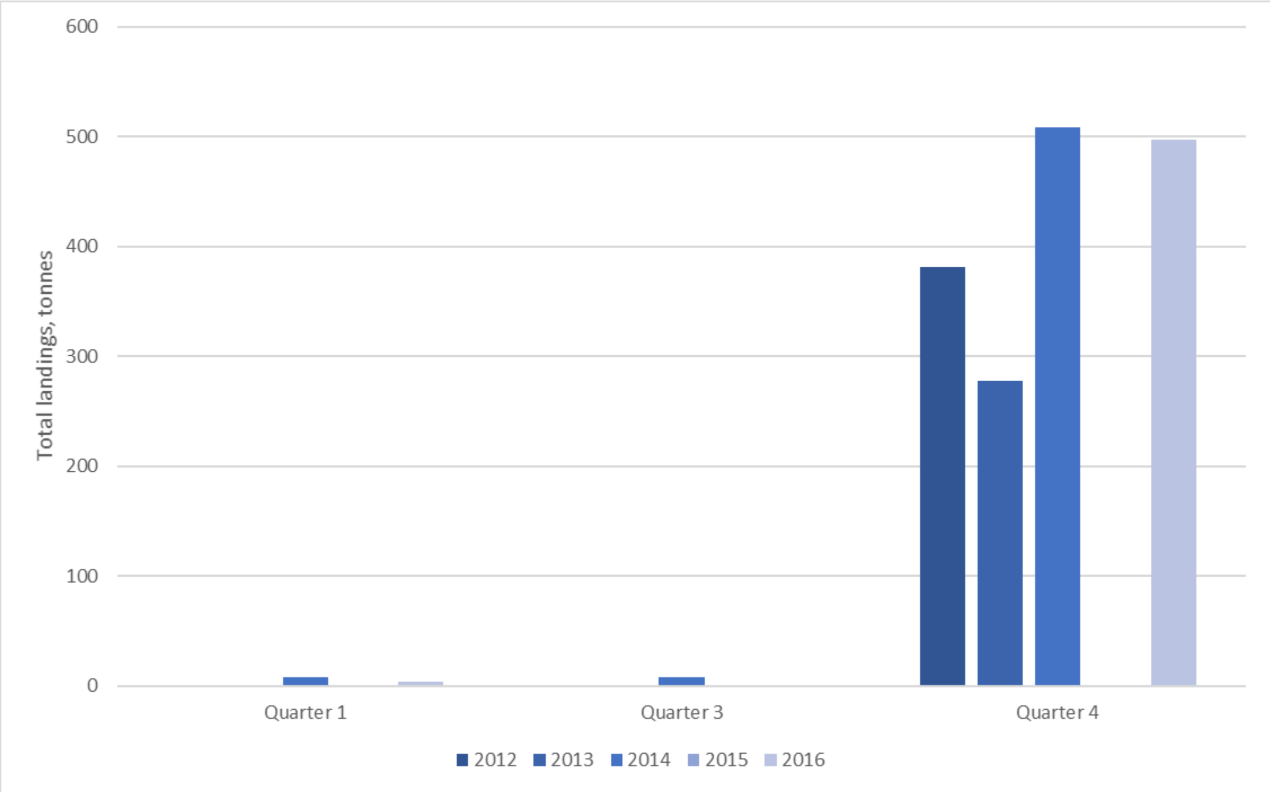
Horse mackerel

3.2.1 Horse mackerel is a broad vernacular term for a range of species of fish throughout the English-speaking world. It is commonly applied to pelagic fishes, especially of the Carangidae (jack mackerels and scads) family. Reported landings of Atlantic horse mackerel, European horse mackerel or common scad are, for the purposes of this report, considered to refer to the same species. In the English Channel, the species is targeted by non-UK pelagic trawlers, and in recent years more exclusively by Dutch vessels.

3.2.2 In common with mackerel, horse mackerel overwinter in dense shoals along the edge of the continental shelf and also in localised waters, when it is targeted by fisheries (**Graphic 3-9**). It is understood that horse mackerel overwinter in areas of the English Channel, and in spring when spawning commences, the shoals disperse.

3.2.3 ICES assesses that fishing pressure on the horse mackerel stock is above maximum sustainable yield and its advice on catch allowance reflects this (ICES, 2021a). Whilst there is no management plan for horse mackerel in the region, it is noted that in 2018 a voluntary move-away scheme to avoid the catch of small horse mackerel in ICES Division 7d was commenced by the Pelagic Freezer-trawler Association. The trigger in the move-away scheme was a catch of more than 25 percent in a haul consisting of small fish (more than 250 fish in a carton of 23kg, equating to a mean length around 18cm). The move-away scheme was triggered 17 times during the period October to December 2018.

Graphic 3-9 Seasonality of total landings (tonnes) of horse mackerel from 2012 to 2016 by EU vessels for the commercial fisheries study area (no landings are recorded in Quarter 2) (Data source: EU DCF, 2020)



Mackerel

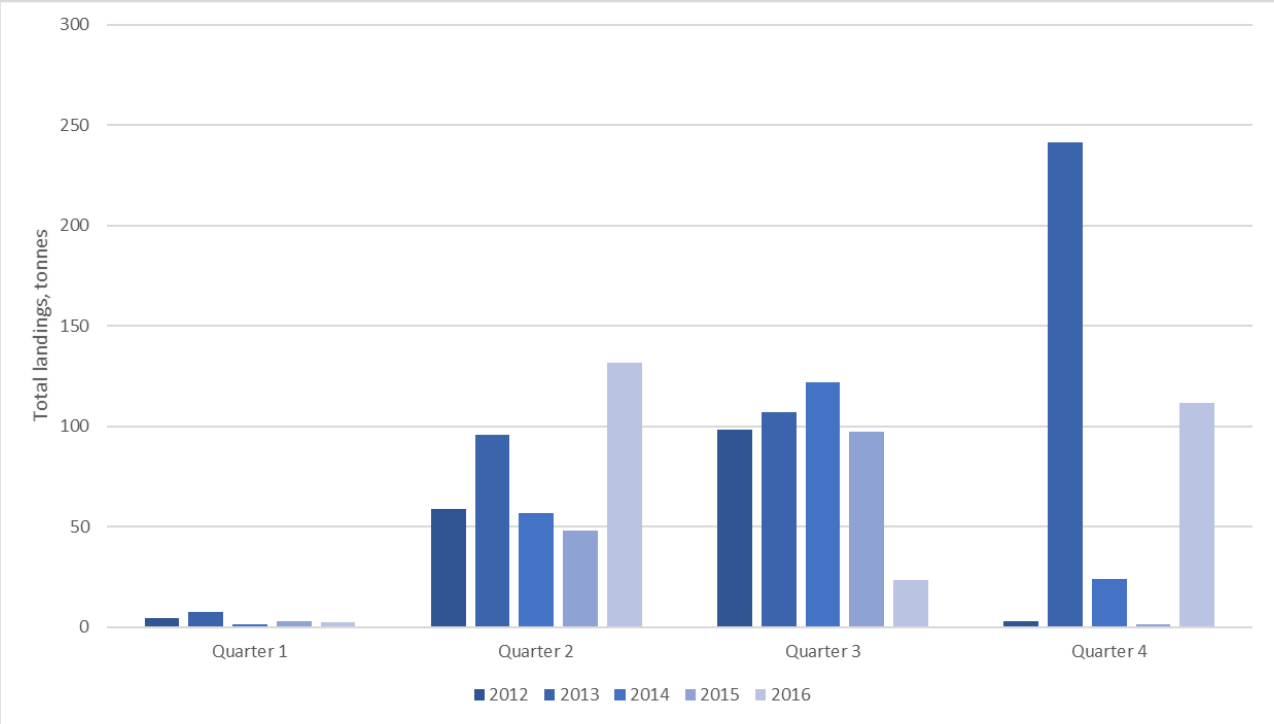
3.2.4 Mackerel *Scomber scombrus* are a pelagic species that live near the surface of the sea in large shoals. During the summer months, they are found closer inshore, moving offshore into deeper water in the winter. Juveniles can be found closer to the coast than adults. Mackerel spawning takes place in open water from spring to early summer. Two key breeding aggregates of mackerel occur; one in the central North Sea and the other to the west of the British Isles (Sussex IFCA, 2020).

3.2.5 Mackerel are targeted with pelagic and otter trawls, and nets. French vessels account for a substantial proportion of landings, though the species is also targeted by English and Dutch vessels. Landings data indicates that fishing for mackerel takes place year-round in the study area, but peaks through late summer and autumn months (**Graphic 3-10**).

3.2.6 Each year, the number of mackerel in the sea depends on the number of young fish which survive from spawning to enter the adult fishery as recruits. Stronger recruitment in recent years has led to an increase in stock size, supporting the increase in catches seen since the mid-2000s. Current fishing pressure is considered to be below the maximum sustainable yield (ICES, 2021b). In terms of fisheries management measures, a TAC is in place that covers all northeast

Atlantic fisheries and in North Sea waters a minimum conservation reference size of 30cm is in place. At a local level, there are no mackerel-specific management measures in place, but netting and trawling byelaws are applicable.

Graphic 3-10 Seasonality of total landings (tonnes) of mackerel from 2012 to 2016 by EU vessels for the commercial fisheries study area (Data source: EU DCF, 2020)



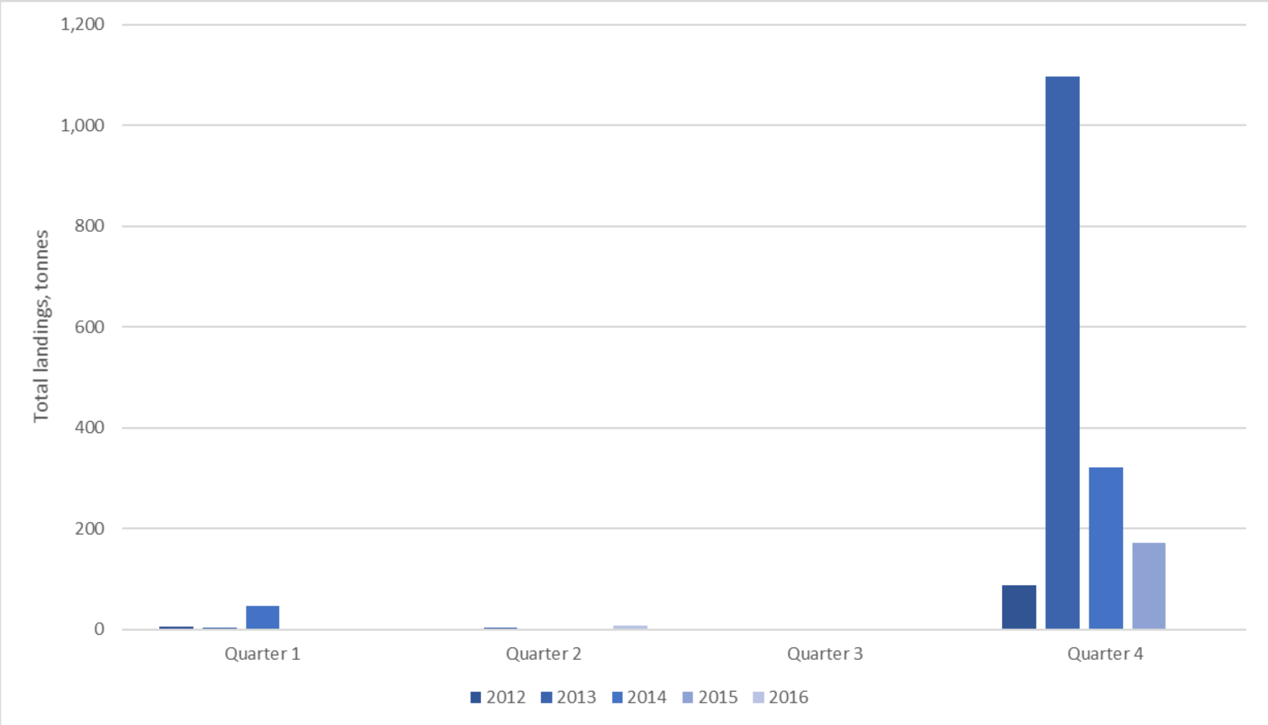
Herring

3.2.7 Herring *Clupea harengus* are managed as a number of different stocks. The stock in waters off Sussex is the autumn spawning North Sea, Skagerrak and eastern English Channel stock. This 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 maximum sustainable yield and fishing pressure has remained below the maximum sustainable yield benchmark (ICES, 2021c), though there are concerns that future low recruitment could alter this trend.

3.2.8 Herring form distinct breeding stocks, known as races, categorised by their separate spawning grounds and some distinguishing features. The race found off Sussex (mainly between Beachy Head and Hastings) is referred to as the Downs group and spawns from November to February. Herring schools move between spawning and wintering grounds in coastal areas and feeding grounds in open water.

3.2.9 Herring are caught in trawls further offshore, operated from English, French and Dutch vessels, with landings data indicating peaks in autumn/winter months (**Graphic 3-11**).

Graphic 3-11 Seasonality of total landings (tonnes) of herring from 2012 to 2016 by EU vessels for the commercial fisheries study area (Data source: EU DCF, 2020)



3.3 Demersal finfish

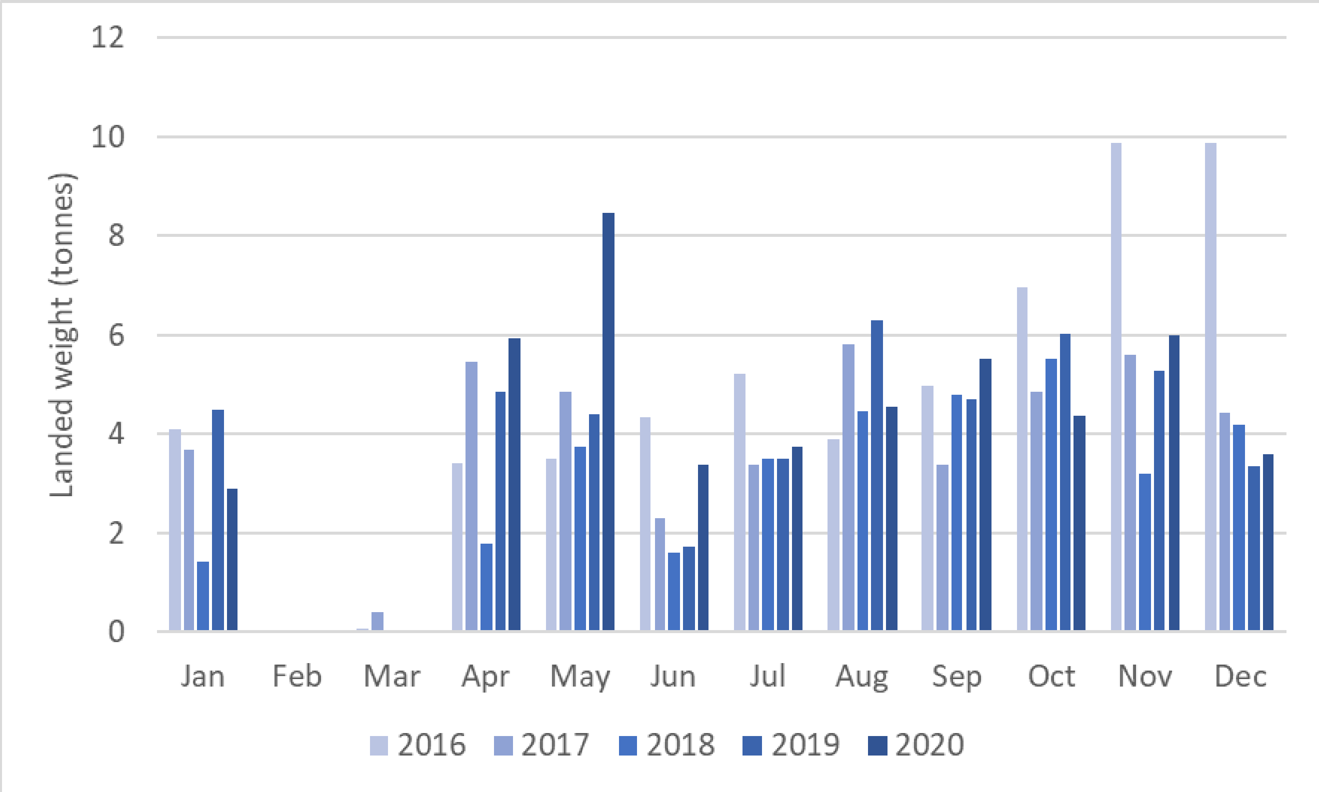
Bass

3.3.1 Bass breed from February to May in the English Channel and eastern Celtic Sea. It is a long-lived and slow growing species. Juveniles use inshore sheltered areas as nursery grounds, particularly for their first few years. Once mature, bass may migrate within UK coastal waters and occasionally further offshore.

3.3.2 Bass in the study area are primarily targeted by English vessels, and to a lesser extent by French vessels. In inshore waters, bass are typically caught with gears using hooks (rod and line, longline), though they are also targeted using gill nets and caught as trawling bycatch.

3.3.3 Bass spawning stock biomass has been generally declining since 2005 (ICES, 2020b), though fishing pressure has been reduced by a series of management measures; the EU multiannual plan for stocks in the Western Waters and adjacent waters applies to bass and management measures include prohibiting targeting bass except using longlines and rod-and-line to a limit of 10 tonnes/year. Bass are not subject to EU TACs or quotas. As a local level, Sussex IFCA have restrictions on bass fishing in place, including limits on fishing in areas identified as nursery areas, and seasonal restrictions on the use of nets in particular locations.

Graphic 3-12 Seasonality of total landings (tonnes) of bass from 2016 to 2020 by UK vessels for the commercial fisheries study area (Data source: MMO, 2021)



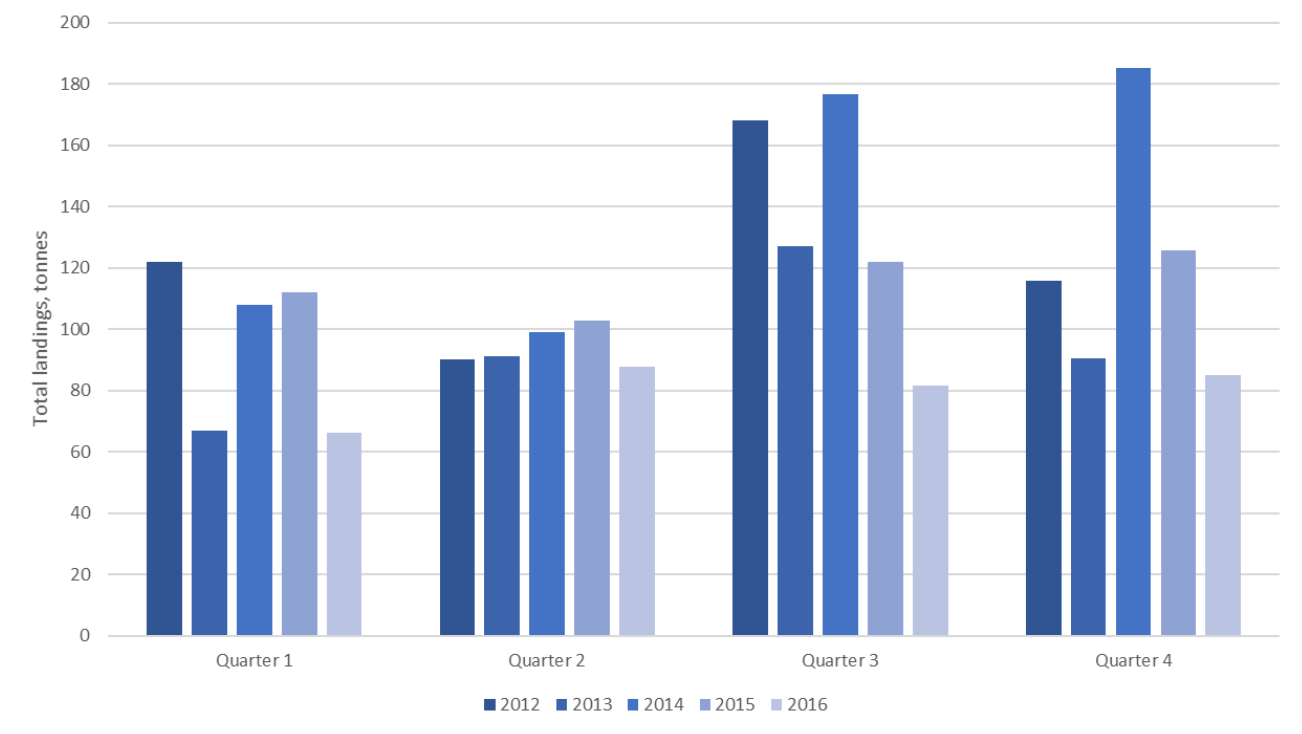
Sole

3.3.4 Sole is a demersal flatfish occurring on sandy and mud bottoms. Spawning occurs between April and June. In Sussex, the area west of Beachy Head to the Isle of Wight has been identified as a Dover sole spawning ground. The larvae remain in shallow inshore nursery areas such as estuaries, tidal inlets and shallow sandy bays, moving to join the spawning adult population at 2 to 3 years old. The juveniles can undertake extensive migrations, although once they reach maturity, will only carry out seasonal migrations from deeper water to shallower spawning habitat.

3.3.5 Inshore, sole are targeted by English vessels using gill and entangling nets, and by beam trawlers. The Belgian beam trawl fleet are active further offshore, targeting sole as part of a mixed fishery. Landings peak slightly in autumn and winter months (**Graphic 3-13**).

3.3.6 Catches of sole have declined since the mid-1990s. The latest ICES advice observes that spawning stock biomass is below the maximum sustainable yield trigger point (ICES, 2021d). Sole are subject to a TAC and technical measures are applicable to the mixed demersal beam-trawl fishery (relevant to both sole and plaice), namely a minimum mesh size of 80mm. Applicable to waters inside 6nm, Sussex IFCA have a byelaw in place that restricts the use of nets at specific times and locations within the district, with the aim of protecting spawning and juvenile fish stocks.

Graphic 3-13 Seasonality of total landings (tonnes) of sole from 2012 to 2016 by EU vessels for the commercial fisheries study area (Data source: EU DCF, 2020)



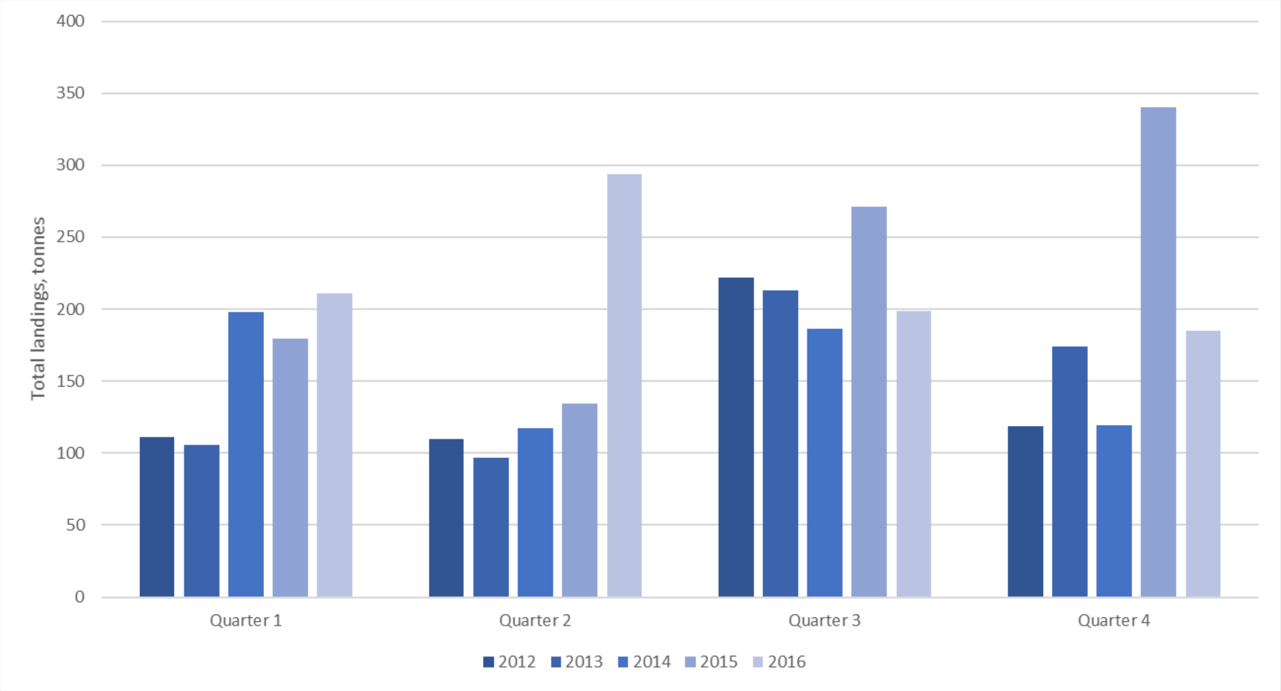
Plaice

3.3.7 Plaice is a bottom-dwelling flatfish. It spawns in the early months of the year (January to March) and sometimes makes long spawning migrations.

3.3.8 Plaice is a valuable bycatch from sole fisheries described above, and thus the seasonality of landings is similar to that for sole (**Graphic 3-14**).

3.3.9 Catches of plaice peaked in the late 1980s and have been relatively stable since the 1990s. The plaice stock in the Eastern English Channel has been considered to be in a good state, though the latest ICES assessment notes that in 2019 fishing pressure was just above sustainable levels (ICES, 2020c). As per sole, plaice are subject to a TAC and technical measures are applicable to the mixed demersal beam-trawl fishery (relevant to both sole and plaice), namely a minimum mesh size of 80mm. Applicable to waters inside 6nm, Sussex IFCA have a byelaw in place that restricts the use of nets at specific times and locations within the district, with the aim of protecting spawning and juvenile fish stocks.

Graphic 3-14 Seasonality of total landings (tonnes) of plaice from 2012 to 2016 by EU vessels for the commercial fisheries study area (Data source: EU DCF, 2020)



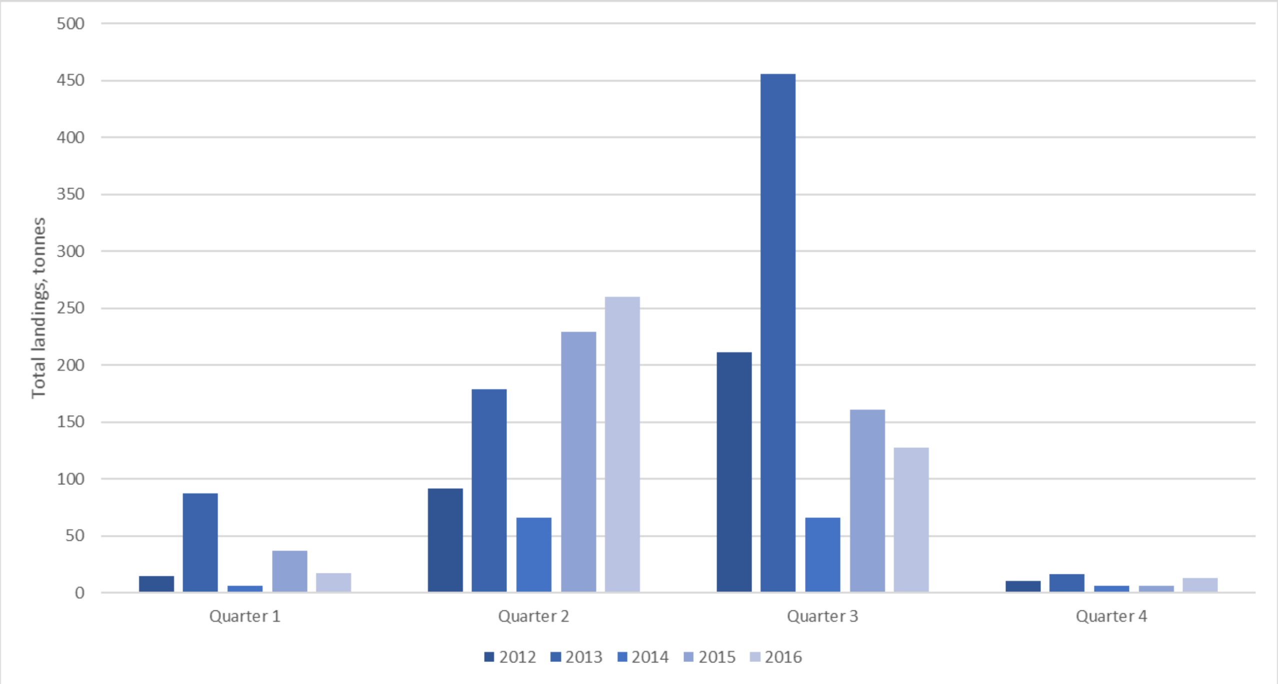
Whiting

3.3.10 Whiting *Merlangius merlangus* are widely distributed both inshore and offshore throughout the North Sea. Whiting are commonly found on mud and gravel bottoms, but also on sand and rock. Whiting spawn between January and July with spikes in their breeding activity during the spring. Juveniles inhabit inshore nursery areas for their first year and then they migrate to deeper waters offshore.

3.3.11 Whiting are typically targeted by French demersal otter trawlers during spring and summer months (**Graphic 3-15**) as part of both targeted and mixed demersal fisheries. ICES stock assessments indicate that catches of whiting have decreased since the late 1970s, but fishing mortality has been above the maximum sustainable yield trigger point since 2005. The spawning stock has fluctuated significantly and is presently considered by ICES to be above maximum sustainable yield (ICES, 2019).

3.3.12 Whiting stocks are subject to a TAC, which is set for stock across both the North Sea and Norwegian Sea. Whiting is also subject to technical management measures, including an EU minimum conservation reference size of 27cm and a minimum mesh size of 80mm is applied to gears specifically targeting whiting.

Graphic 3-15 Seasonality of total landings (tonnes) of whiting from 2012 to 2016 by EU vessels for the commercial fisheries study area (Data source: EU DCF, 2020)



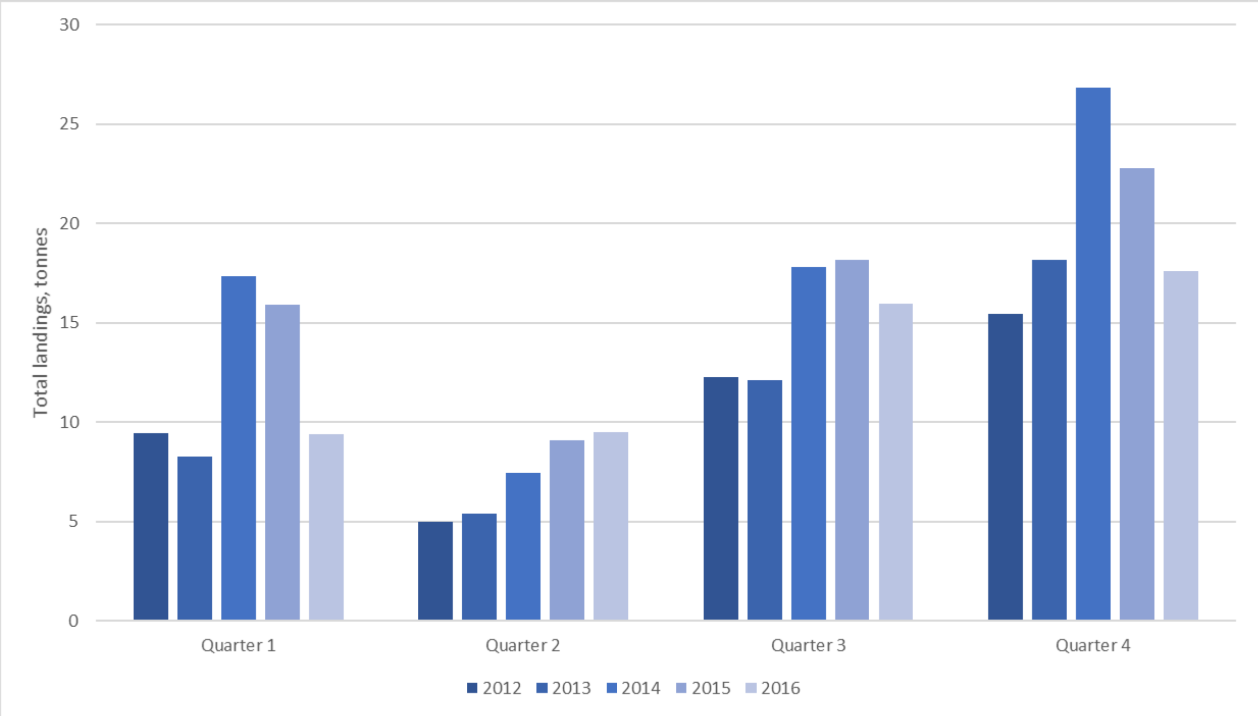
Turbot

3.3.13 Turbot *Scophthalmus maximus* is a large flatfish typically found at a depth range of 10 to 70m, on sandy, rocky or mixed bottoms. Juveniles are commonly found in shallow coastal waters with the adults in deeper offshore waters. This is variable throughout the year with sexually mature turbot migrating into shallower inshore areas between April and August to reproduce.

3.3.14 In inshore waters, English vessels use trawling and netting methods to target turbot, which are caught as part of a joint targeted fishery for large bottom-dwelling species (Sussex IFCA, 2020). Further offshore turbot are caught by the Belgian beam trawl fleet, again as part of a mixed demersal fishery and thus the seasonality of landings is similar to that for sole and plaice (**Graphic 3-16**).

3.3.15 There is very limited information regarding status of local turbot stock (Sussex IFCA, 2020) and no TAC is currently set for ICES division 7d (noting that in adjacent divisions in the North Sea, a TAC and minimum landing size in place).

Graphic 3-16 Seasonality of total landings (tonnes) of turbot from 2012 to 2016 by EU vessels for the commercial fisheries study area (Data source: EU DCF, 2020)



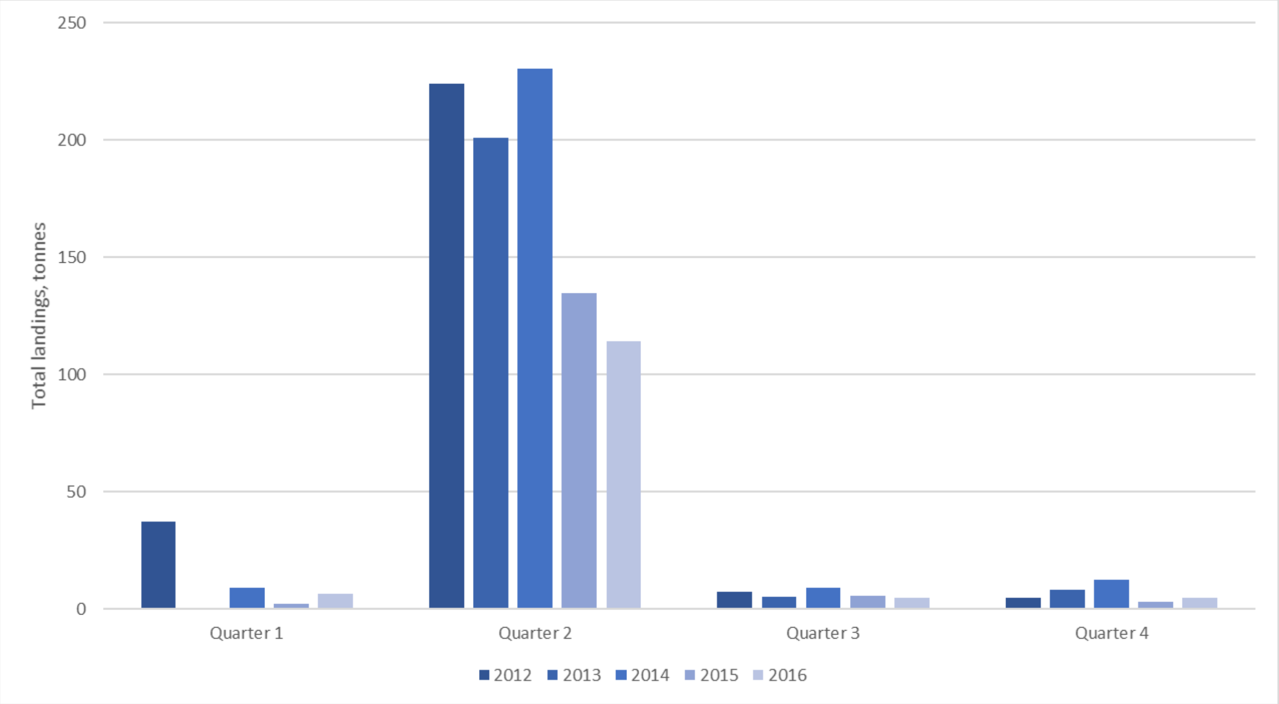
Black seabream

3.3.16 A number of bream species are encountered in UK waters. Found off south-west Britain and east Ireland in the English Channel and the Irish Sea, adult black seabream *Spondyliosoma cantharus* overwinter in deep water in the western English Channel. They arrive in Sussex with the warmer waters around March and inhabit shallow waters to feed prior to spawning. After breeding, some may remain and others continue moving eastwards, feeding inshore until autumn when they return to the western Channel (Sussex IFCA, 2020).

3.3.17 Black seabream were once rare in British waters, but their population in the English Channel has increased over the past century; in the late 1970s and early 1980s black seabream were heavily exploited. The majority of the black seabream catch occurs in the eastern side of the English Channel, peaking between April and June. Outside of 6nm bream are harvested by French vessels using bottom trawls whilst inshore, English vessels also take bream using demersal trawls and to a lesser extent nets.

3.3.18 Black seabream are a data-limited species and the stock status is unknown. Black seabream are not managed under a Total Allowable Catch or minimum landing size. The EU mandates that any towed gear used to catch seabream must have a mesh size >80mm and seabream must form a minimum of 70 percent of the catch. For static/fixed gear used to catch black seabream, the minimum mesh size is 120mm. These measures are designed to protect juvenile seabream. At a local level, the Sussex IFCA restricts fishing in the Kingmere Marine Conservation Zone (MCZ), located to the east of the offshore cable corridor, that protects important nesting areas for black seabream. MMO landings data indicates negligible landings of black bream by UK-registered vessels since 2018.

Graphic 3-17 Seasonality of total landings (tonnes) of bream from 2012 to 2016 by EU vessels for the commercial fisheries study area (Data source: EU DCF, 2020)



Dogfish

3.3.19 Lesser spotted dogfish *Scyliorhinus canicular* (also known as small spotted catshark) live near the seabed and are found in shallow coastal waters down to 400m, but they are less common after 100m deep. Females lay their eggs during spring and early summer.

3.3.20 Fisheries typically don't target dogfish but they are taken as bycatch in mixed fisheries and discarded or used as bait within trap and pot fisheries.

3.3.21 There is limited information on stocks, and currently no concern around biomass levels or fishing pressure. Dogfish are not subject to any management measures.

3.4 Key Gears

3.4.1 There are three descriptive units used for defining fisheries (Marchal, 2008):

- 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 (for example, nationality); and
- métier – a homogenous subdivision, either of a fishery by vessel type or a fleet by voyage type.

3.4.2 A range of fleets target different fisheries across the Rampion 2 commercial fisheries study area, as indicated by landings statistics for registered vessel nationality and gear type (**Graphic 3-18**).

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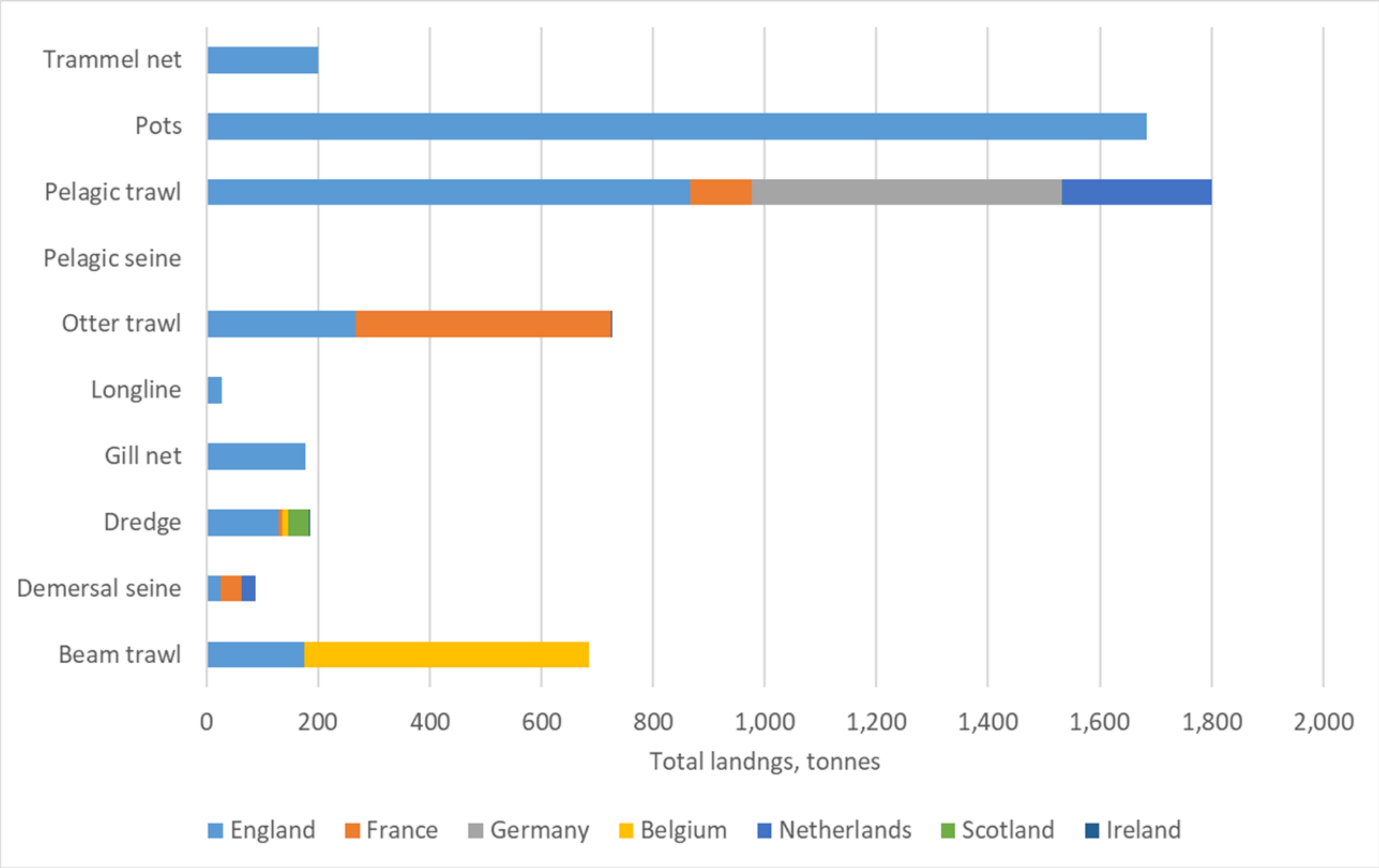
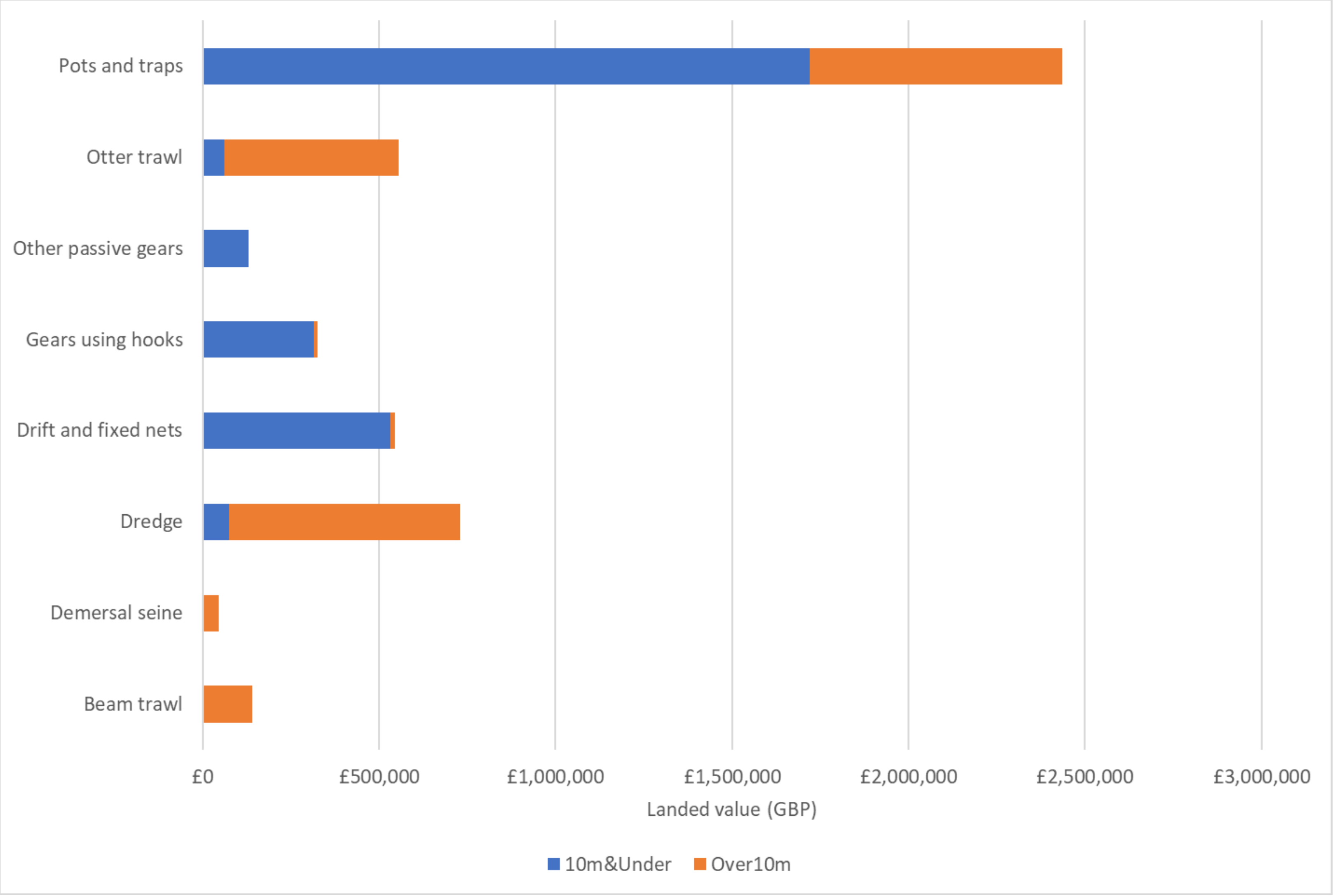
Graphic 3-18 Total landings (tonnes) in 2016, by gear type and vessel nationality for the commercial fisheries study area (Data source: EU DCF database, 2019)



Graphic 3-19 Total landings (value GBP) in 2020 by UK vessels, by gear type for the commercial fisheries study area (Data source: MMO, 2021)



3.4.3 Vessel and gear types within the key fleets and fisheries that operate across the study area are described within this section.

Pots and traps

3.4.4 **Graphic 3-20** shows typical potting vessels and configuration of set pots and **Table 3-2** describes the profile of potting vessels active across the study area.

3.4.5 Parlour pots and to a lesser extent inkwell pots, are used for the capture of lobsters and crabs. Pots are typically rigged in 'fleets' of between 10 to 50 pots, depending upon vessel size and area fished. Lengths of fleets may range from 100 to 500m, 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, varies from approximately 12 hours to two days, but can be longer during periods of adverse weather.

3.4.6 For the capture of whelk, modified, weighted 25 litre plastic drum purpose designed pots are used. The number of whelk pots per fleet tends to be higher than for crab and lobster potting, being up to 80 per fleet. Fleets are generally of similar lengths to those used for crab and lobster potting but can occasionally be longer.

3.4.7 Cuttlefish traps are essentially cylindrical steel frames of approximately 0.8 to 1.0m in diameter, enclosed in netting. As with potting, traps are shot in fleets of 500 to 600m in length, rigged 20 to 25 traps per fleet. Traps are baited with either live female cuttlefish or lures to attract breeding males. The cuttlefish fisheries in the English Channel can be separated in to the inshore and offshore fisheries. The inshore fishery operates during the summer months and predominately uses pots and traps. The offshore fishery targets cuttlefish during the winter months using towed fishing gear such as otter and beam trawls.

3.4.8 The majority of potters are under 10m, with some 10 to 15m in length and operate as day boats, returning to port after hauling and re-setting fleets of pots.

Table 3-2 Profile of typical potting vessels active across the study area

Parameter	Indicative details
Main target species	Whelk, cuttlefish, brown crab, lobster
Nationality	UK
Vessel length	Majority under 10m, some up to 15m
Horsepower	60hp to 200hp
Typical speed when shooting and hauling gear	0 to 9 knots
Typical gear	Fleets of baited pots placed on the seabed

Parameter	Indicative details
	Pots typically hauled every week, but may be left number of weeks Generally, day boats

Graphic 3-20 Typical potting vessel (Source: Seafish, 2015 and MarineTraffic.com, 2020)

Scallop dredge

3.4.9 Dredges are rigid structures that are towed along the seabed to target various species of shellfish. The scallop fishery off Sussex uses a specific dredge called the ‘spring-loaded Newhaven dredge’. A typical scallop dredging vessel is shown in **Graphic 3-21** and **Table 3-3** describes the profile of scallop dredging vessels active across the study area. 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.

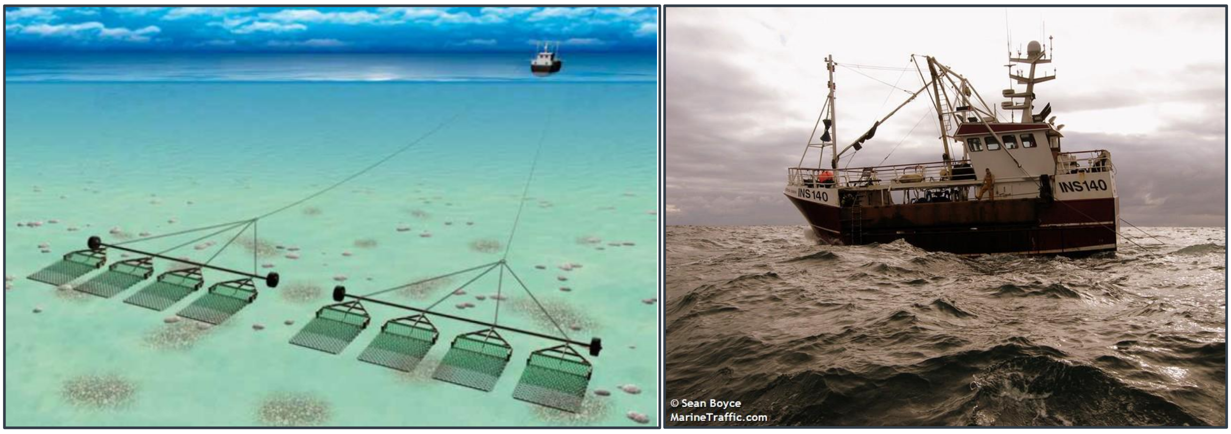
3.4.10 Scallop dredging is an activity which is generally engaged by larger (>10m vessel length) vessels due to the engine capacity required to tow this heavy fishing gear. Due to a vessel length restriction by a Sussex IFCA byelaw, vessels >14m in length are prohibited from fishing within 6nm and a further byelaw prohibits scallop dredging by any vessel within 3nm of the shoreline. Local vessels may tow up to 8 dredges a side.

3.4.11 In addition to local vessels, the study area also supports scallop dredging by larger vessels from other ports such as Portsmouth, Plymouth and the nomadic Scottish scalloping fleet. These vessels are either purpose built or are converted beam trawlers. Up to 20 dredges are towed each side of the vessels. Under the Scallop Fishing (England) Order 2012, vessels with more than 8 dredges per side can only operate beyond the 12nm limit.

Table 3-3 Profile of typical scallop dredger active across the study area

Parameter	Indicative details
Main target species	Scallop
Nationality	UK
Vessel length	10m to 25m
Horsepower	200hp to 400hp
Typical towing speed	2 to 6 knots
Typical gear	Up to 8 dredged per side of vessel 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

Graphic 3-21 Typical scallop dredging vessel (Source: Seafish, 2015 and MarineTraffic.com, 2020)



Otter trawl

3.4.12 A demersal trawl is a cone shaped net that is towed on the seabed to target demersal fish species. The mouth of the trawl is held open by a pair of trawl doors (otter boards). **Graphic 3-22** shows a typical UK demersal trawler and associated gear and **Table 3-4** describes the profile of demersal otter trawling vessels active across the study area.

3.4.13 The species composition of the catch depends on the area and depth fished and the gear design. Various types of gear are used off the Sussex coast. For example, the rock hopper otter trawl is normally used in conjunction with steel otter boards and wire bridles to target whiting, sole, squid, cuttlefish, and bass. This gear can be worked on grounds with harder substrates such as the fisheries off Dungeness, Beachy Head, Worthing and Selsey. Alternatively, a small footrope otter trawl uses wooden otter boards and the main species targeted with this method are plaice, sole, cuttlefish and other demersal species. This trawl cuts through the top layer of the soft sea bottom and the tickler chain digs the fish out.

This rig is used predominantly to the east of the Sussex IFCA District on softer seabeds.

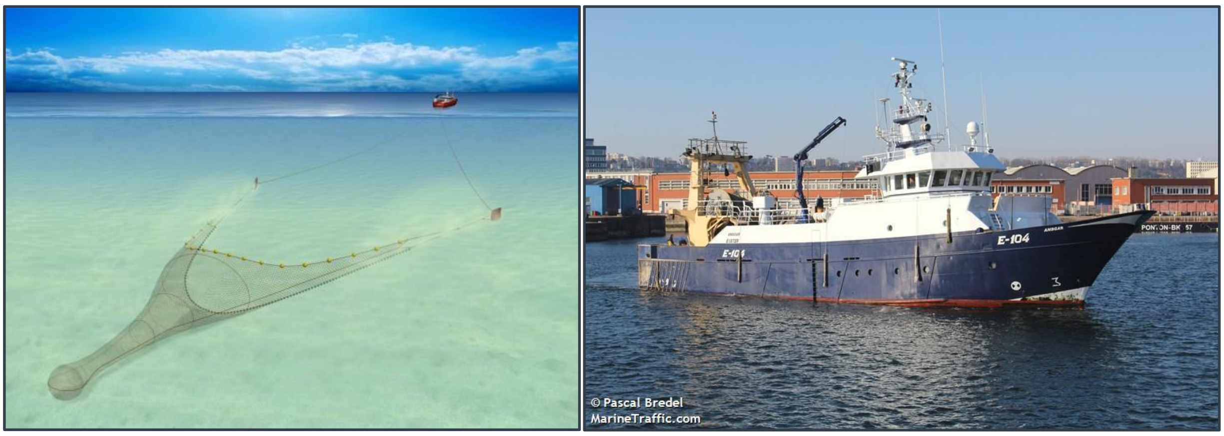
3.4.14 The pair trawl is made from similar gear, but instead of the otter boards it is the two vessels that open the trawl. This method allows the net to be towed at a greater speed than if operated by a single boat and means that faster moving fish can be caught. In Sussex this method is used primarily for bass and black sea bream.

3.4.15 Landings data also indicates that French vessels operating bottom trawls are active in the study area.

Table 3-4 Profile of typical demersal trawler active across the study area

Parameter	Indicative details
Main target species	Variety of species including horse mackerel, squid, whiting, seabream, plaice, dogfish, cuttlefish
Nationality	France, UK
Vessel length	Up to 35m
Horsepower	300hp to 850hp
Typical towing speed	2 to 6 knots
Typical gear	Demersal otter trawl Possible twin or multi-rig bottom trawl Two trawl doors approximately one tonne each hold the net open horizontally Various forms of ground gear depending on target species

Graphic 3-22 Typical demersal trawl vessel (Seafish, 2015 and MarineTraffic.com, 2020)



Beam trawl

3.4.16 **Graphic 3-23** shows a typical beam trawler and associated gear and **Table 3-5** describes the profile of beam trawling vessels active across the study area.

3.4.17 Beam trawl gear is used to target flatfish such as sole and plaice, which are often somewhat buried in the seabed. Beam trawls are towed either astern of the vessel on the smaller boats, or, more commonly, from derricks (one from the port side and one from the starboard side) forward of amidships on the larger boats. Traditional beam trawls use tickler chains to scare the flatfish into the net.

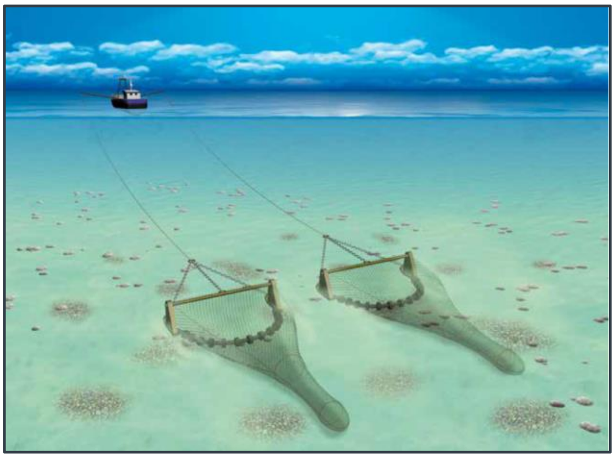
3.4.18 Beam trawling is an activity which is generally engaged by larger (>10m vessel length) vessels due to the engine capacity required to tow this heavy fishing gear. The largest class of beam trawlers are around 25 to 40m long, generally having in the region of 1,000hp, towing two beam trawls 12m wide. This size of beam trawl can weigh up to nine tonnes each, enabling the trawler to tow at speeds up to seven knots. The medium class of beamers, from 12 to 18m, usually have between 300 to 500hp to tow 4 to 7m beams.

3.4.19 Due to vessel length restriction by a Sussex IFCA byelaw, vessels >14m in length are prohibited from fishing within 6nm, thus this practice mostly occurs further offshore, however, there is some activity within 6nm by 10 to 14m vessels most commonly within the vicinity of Shoreham, Newhaven and Hastings. Larger UK and Belgian-registered vessels, >15m in length, operate further offshore.

Table 3-5 Profile of typical beam trawler active across the study area

Parameter	Indicative details
Main target species	Plaice and sole
Nationality	Belgium, UK
Vessel length	25m to 40m for larger offshore fleets 10m to 14m for inshore fleet
Horsepower	200hp to 2,000hp for larger vessels 50hp to 300hp for smaller vessels
Typical towing speed	3.5 to 8 knots
Typical gear	Twin beam, maximum length 12m each beam Each beam weighing <10 tonnes Chain matting or individual chains attached to underside

Graphic 3-23 Typical beam trawl vessel (Source: Seafish, 2015 and MarineTraffic.com, 2020)



Pelagic trawl

3.4.20 **Graphic 3-24** shows a typical pelagic trawler and associated gear and **Table 3-6** describes the profile of pelagic trawling vessels active across the study area.

3.4.21 Pelagic trawling is a method of towing a trawl in mid-water for instance, at any point in the water column between the surface and seabed. In general, this gear is used to target shoaling species such as mackerel and herring.

3.4.22 All classes of trawler can use pelagic trawls. From 10m inshore vessels targeting shoals of pelagic fish in shallow water, up to the specialist pelagic vessels, over 40m long.

Table 3-6 Profile of typical pelagic trawler active across the study area

Parameter	Indicative details
Main target species	Horse mackerel, mackerel, herring
Nationality	Germany, Netherlands, France, UK
Vessel length	Up to 50 m
Horsepower	500hp to 1,200hp
Typical towing speed	2.5 to 5.0 knots
Typical gear	Pair or single trawls Net depth changed by altering either warp (rope) length or towing speed

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Graphic 3-24 Typical pelagic trawl vessel (Source: Seafish, 2015 and MarineTraffic.com, 2020)

Fixed nets

3.4.23 **Graphic 3-25** shows a typical netting vessel and associated gear and **Table 3-7** describes the profile of such vessels active across the study area.

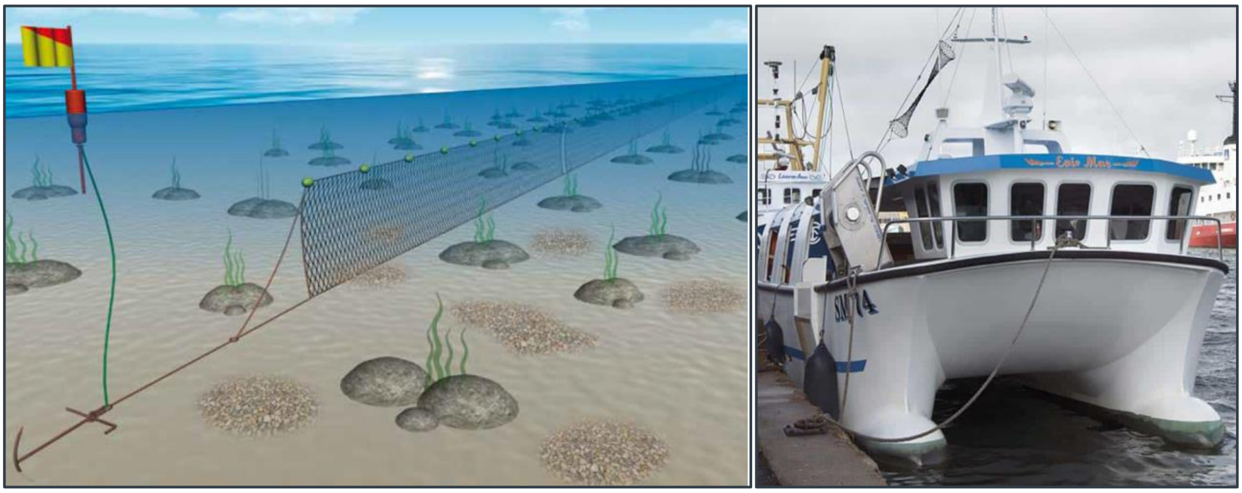
3.4.24 Netting is, for the most part undertaken by vessels under 10m length, deploying gill nets (also known as tangle nets) and trammel nets, primarily to target sole, plaice, cuttlefish and bass. Gill nets consist of a single layer of fine netting that is weighted at the bottom and supported at the top by floats attached to a rope headline so that the net hangs vertically in the water column. Trammel nets are similar to a gill net but are made up of three layers of netting. Two outer layers of large mesh with a sheet of fine small mesh sandwiched between them.

3.4.25 The nets are usually fished in groups (or fleets) with the end of each fleet attached by bridles to a heavy weight, or anchor, on the seabed. Each weight, or anchor, is attached to a marker buoy or dhan flag, on the surface, by a length of rope equal to about twice the depth of water. Net lengths can vary significantly; individual nets can vary from 50 to 200m. The soak times, the time that a fleet is left fishing for, can range from a six-hour tidal soak up to 72 hours. The nets are shot over the stern of the vessel whilst steaming with the tide and are fished along the direction of the tidal stream, rather than across it (there are some exceptions to this).

Table 3-7 Profile of typical netting vessel active across the study area

Parameter	Indicative details
Main target species	Sole, plaice, bass, cuttlefish, turbot, cod
Nationality	UK
Vessel length	Under 10m
Typical gear	Monofilament nylon net Set on seabed with each end anchored and left to fish

Graphic 3-25 Typical netting vessel (Source: Seafish, 2015 and Brighton and Newhaven fish sales, 2020)



Gears using hooks

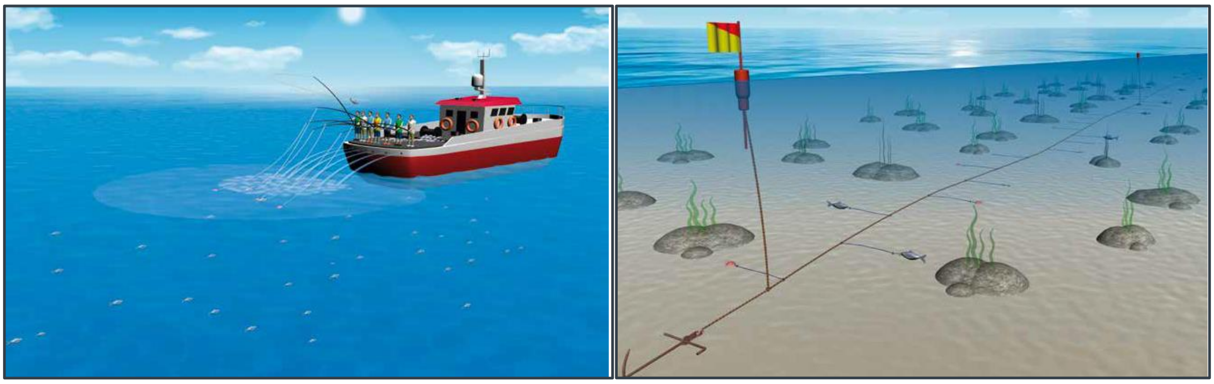
3.4.26 Small inshore vessels of under 10m length (with a specification broadly aligned with that provided immediately above for inshore netting vessels) use rod-and-line and longlines to target bass off the Sussex coastline.

3.4.27 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 (see **Graphic 3-26**). Fish are landed on a daily basis.

Table 3-8 Profile of typical line-fishing vessel active across the study area

Parameter	Indicative details
Main target species	Bass
Nationality	UK
Vessel length	Under 10m
Typical gear	Baited monofilament nylon lines Set and left to fish or attached to rod

Graphic 3-26 Typical line-fishing gear depicting rod & line (left) and set long lines (right) (Source: Seafish, 2015)



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4. Fisheries activity assessment

4.1 Fishing intensity based on VMS and patrol data analysis

4.1.1 Locations of fishing grounds in the study area and surrounding region are depicted in **Figure 10.4.1** to **Figure 10.4.7**.

4.1.2 VMS data sourced from MMO displays the value of catches by UK registered vessels that are 15m in length and above. While VMS devices are required to be on board all UK vessels 12m and above, the VMS dataset for 12 to 14.99m vessels is not publicly available. MMO VMS data are shown below as follows:

- vessels ≥15m length actively fishing using pots and traps in 2016 to 2019 (**Figure 10.4.1**);
- vessels ≥15m length actively fishing using dredges in 2017 (**Figure 10.4.2**);
- vessels ≥15m length actively fishing using beam trawls in 2017 (**Figure 10.4.3**); and
- vessels ≥15m length actively fishing using demersal trawls in 2017 (**Figure 10.4.4**).

4.1.3 VMS data sourced from ICES displays the value of catches by different gear types and covers all countries operating in the OSPAR regions II (Greater North Sea) and III (Celtic Seas). The countries that submitted data and are represented within these figures include UK, Belgium, France, Germany, Ireland and the Netherlands. All vessels 12m in length and above are included within this ICES dataset. ICES VMS data are shown below as follows:

- vessels ≥12m length actively fishing using dredges in 2017 (**Figure 10.4.2**);
- vessels ≥12m length actively fishing using beam trawls in 2017 (**Figure 10.4.3**); and
- vessels ≥12m length actively fishing using demersal trawls in 2017 (**Figure 10.4.4**).

4.1.4 By comparing the MMO and ICES VMS datasets it is possible to infer the extent and location of non-UK activity.

4.1.5 Data indicates that some potting by vessels ≥ 15m length takes place within the southernmost extent of the offshore cable corridor and across the central portion of the array area at levels similar to those along the wider stretch of coastline (**Figure 10.4.1**). It is also apparent that dredging also takes place within the array area, though greater dredge effort occurs further offshore to the south of Rampion 2 (**Figure 10.4.2**) in the middle of the English Channel. Beam trawling takes place across both the offshore cable corridor and array area, with non-UK vessels particularly active across the eastern half of the array area (**Figure 10.4.3**). Demersal trawling occurs within the Rampion 2 array area, but more significant levels of trawling activity are observed inshore, inside of the 6nm limit, and offshore, beyond the 12nm limit (**Figure 10.4.4**).

4.1.6 Mapping of inshore fishing effort (inside of 6nm) between 2015 and 2019 by the Sussex IFCA (Nelson, 2020) based on fisheries patrol vessel sightings has also been analysed:

- vessels actively fishing using pots and traps to target whelk, crab and lobster and cuttlefish inside of 6nm from 2015 to 2019 (**Figure 10.4.5**);
- vessels actively fishing using pair and single trawls inside of 6nm from 2015 to 2019 (**Figure 10.4.6**);
- vessels actively fishing using nets and gears with hooks inside of 6nm from 2015 to 2019 (**Figure 10.4.7**);and
- vessels engaged in commercial angling inside of 6nm from 2015 to 2019 (**Figure 10.4.7**).

4.1.7 Data indicates that within the nearshore cable corridor, vessels are potting, predominantly for whelks, but also for crab, lobster and cuttlefish (the latter caught with traps), and pair trawling for seabream and bass. Fixed netting activity targeting mixed species including plaice, sole and bass is also recorded, though effort is greater to the east of the cable corridor. Commercial angling is limited in the cable corridor.

4.1.8 Additional 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. ICES SAR data are shown in the following:

- Surface Swept Area Ratio 2016 – 2020 for EU (including UK) dredgers ≥ 12m length (**Figure 10.4.8);**
- Surface Swept Area Ratio 2016 – 2020 for EU (including UK) beam trawlers ≥ 12m (**Figure 10.4.9**); and
- Surface Swept Area Ratio 2016 – 2020 for EU (including UK) demersal otter trawlers ≥ 12m length (**Figure 10.4.10**).

4.1.9 The SAR data aligns with the other spatial datasets presented in the report, indicating that dredging takes place within the array area, but with greater dredge activity to the south of Rampion 2, that beam trawling takes place across the study area, with greatest levels of activity across the eastern portion of the array area, and that demersal trawling occurs across the study area with levels of activity greatest outside of the Rampion 2 boundaries.

4.1.10 Fishing vessel route density, based on vessel Automatic Information System positional data is shown in **Figure 10.4.11**. 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 km per year. This data does not distinguish between transiting vessels and active fishing, but does provide a useful source to corroborate fishing grounds. Fishing vessel activity is greatest across the eastern portion of the study area, including within the eastern portion of the array area.

4.1.11 Marine traffic survey data gathered by Anatec to inform the Navigational Risk Assessment for Rampion 2 indicates the presence of potting vessels, beam and demersal trawlers, dredgers and gill netters in the study area, with potting vessels dominating observations of fishing vessels. In terms of fishing activity in Rampion 1, data indicates some fishing activity by potters and netters in Rampion 1, and fishing vessels transiting through Rampion 1. Further detail is presented in **Chapter 13: Shipping and navigation, Volume 2** of the ES (Document Reference: 6.2.13).

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Figure 10.4.1 Vessels ≥15m length actively fishing using pots and traps 2016 to 2019 (MMO, 2022)

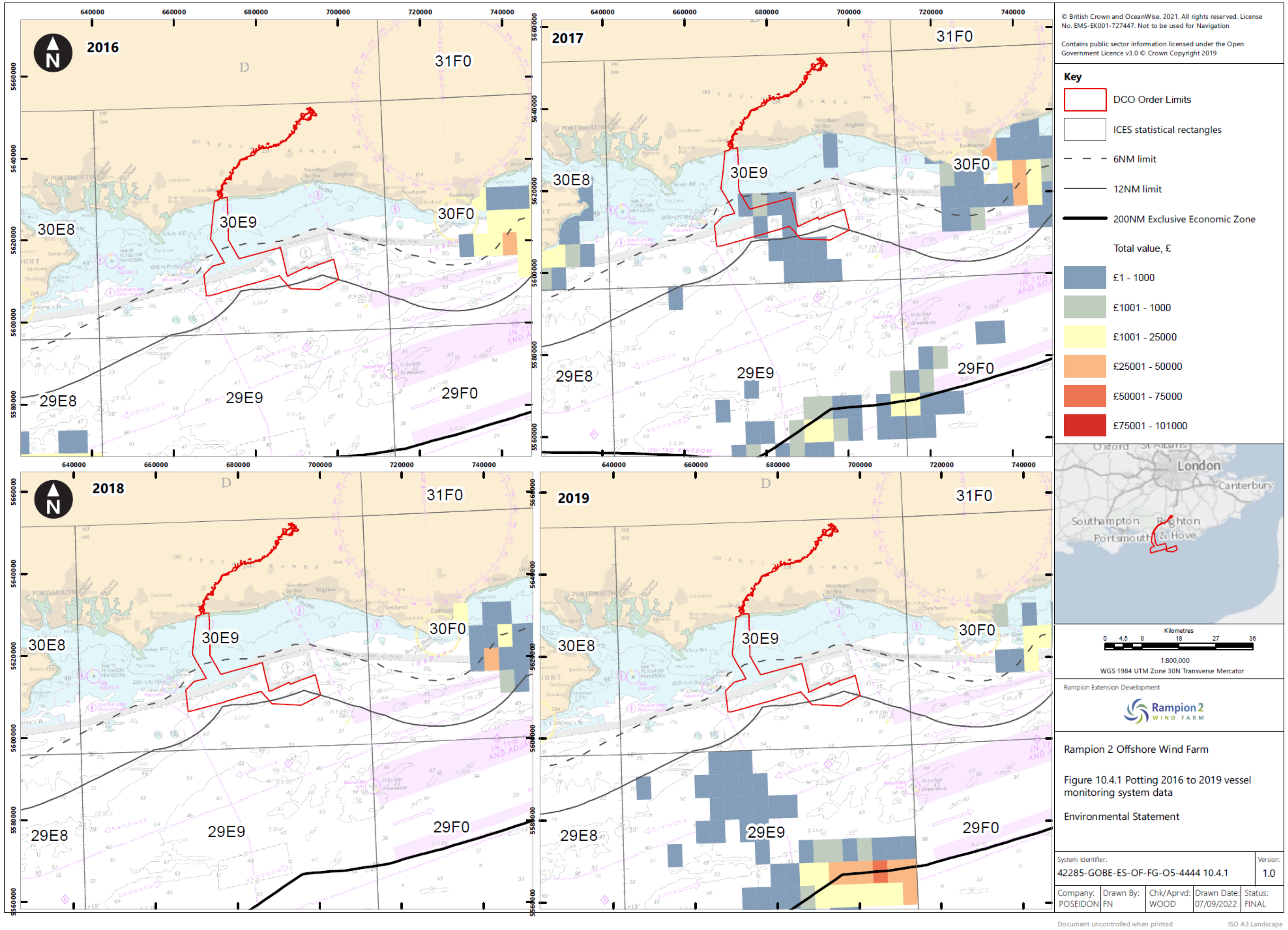


Figure 10.4.2 Vessels actively fishing using dredges in 2017, depicting activity by UK registered vessels ≥15m length (top) and non-UK vessels ≥12m length (bottom) (MMO, 2020 and ICES, 2020)

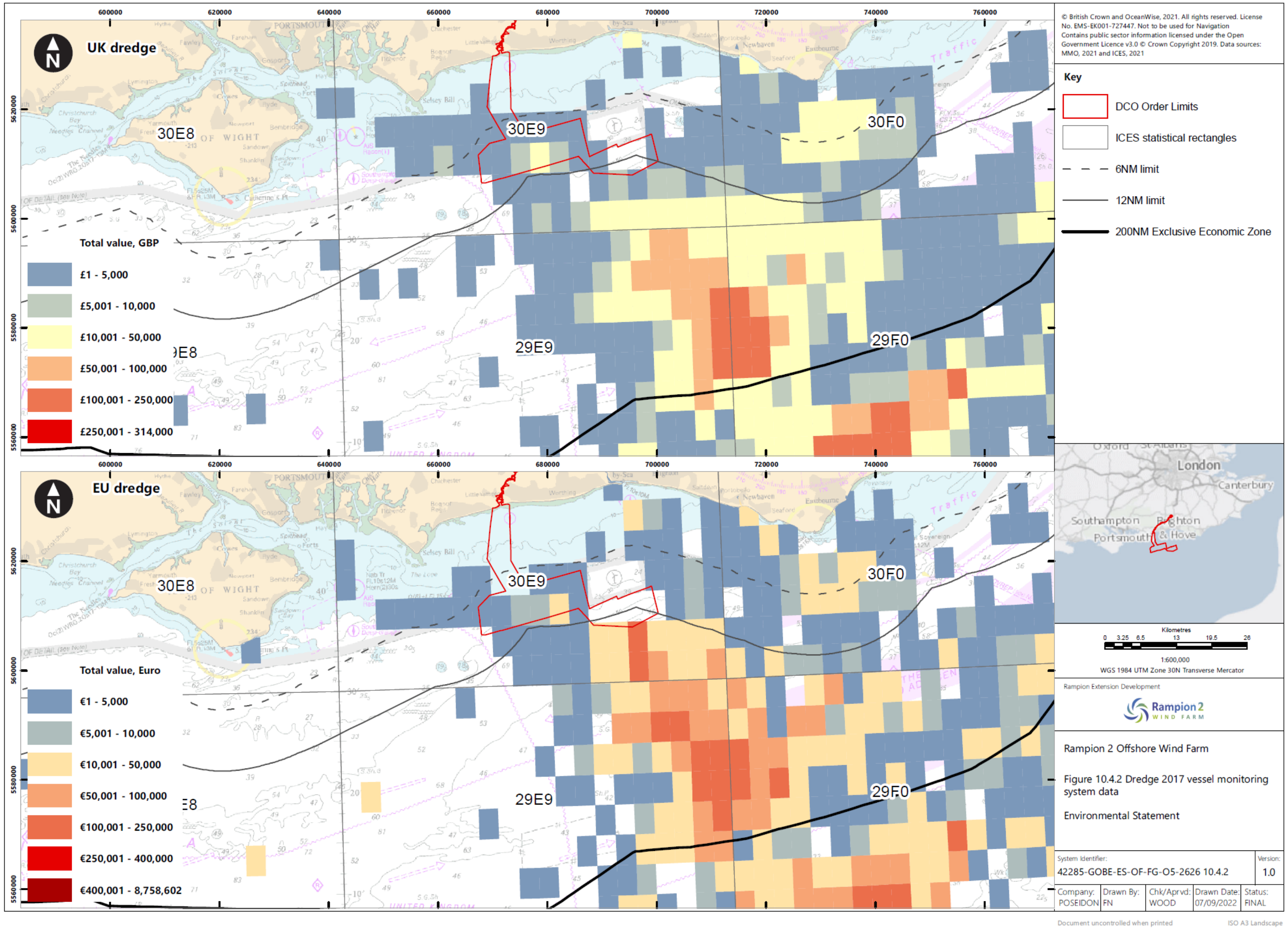


Figure 10.4.3 Vessels actively fishing using beam trawls in 2017, depicting activity by UK registered vessels ≥15m length (top) and non-UK vessels ≥12m length (bottom) (MMO, 2020 and ICES, 2020)

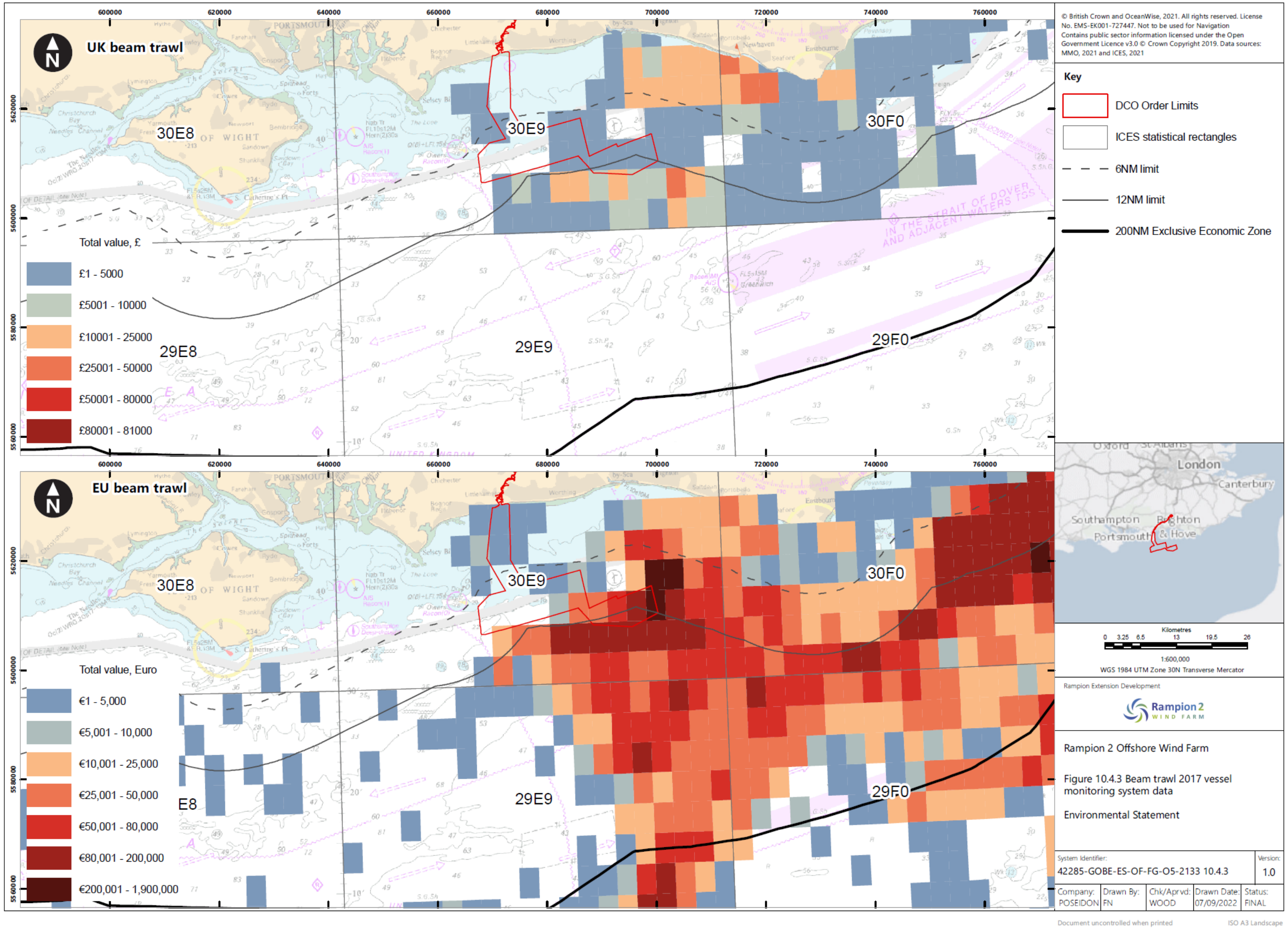


Figure 10.4.4 Vessels actively fishing using demersal trawls in 2017, depicting activity by UK registered vessels ≥15m length (top) and non-UK vessels ≥12m length (bottom) (MMO, 2020 and ICES, 2020)

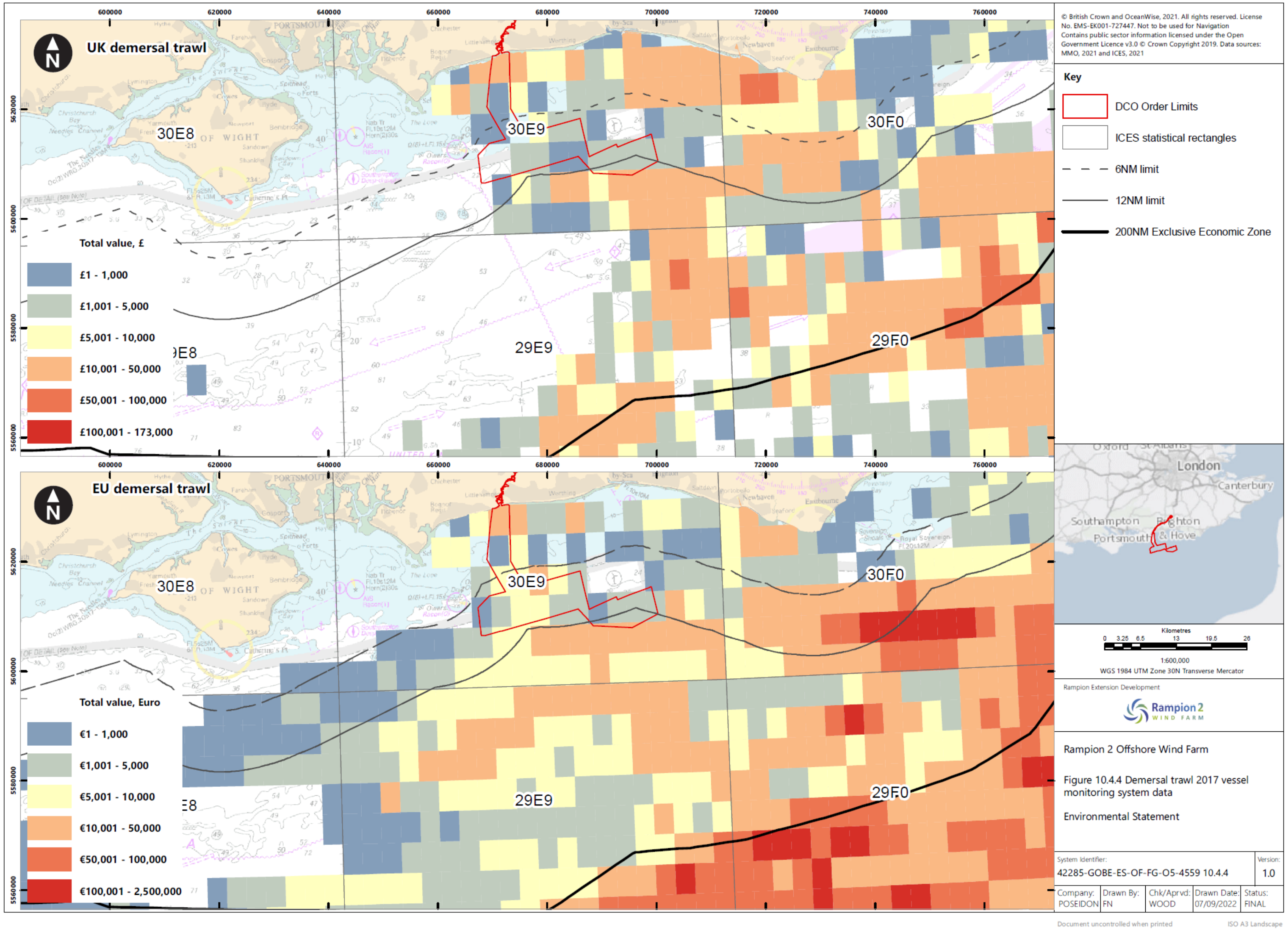


Figure 10.4.5 Vessels actively fishing using pots and traps inside of 6nm from 2015 to 2019 (Nelson, 2020)

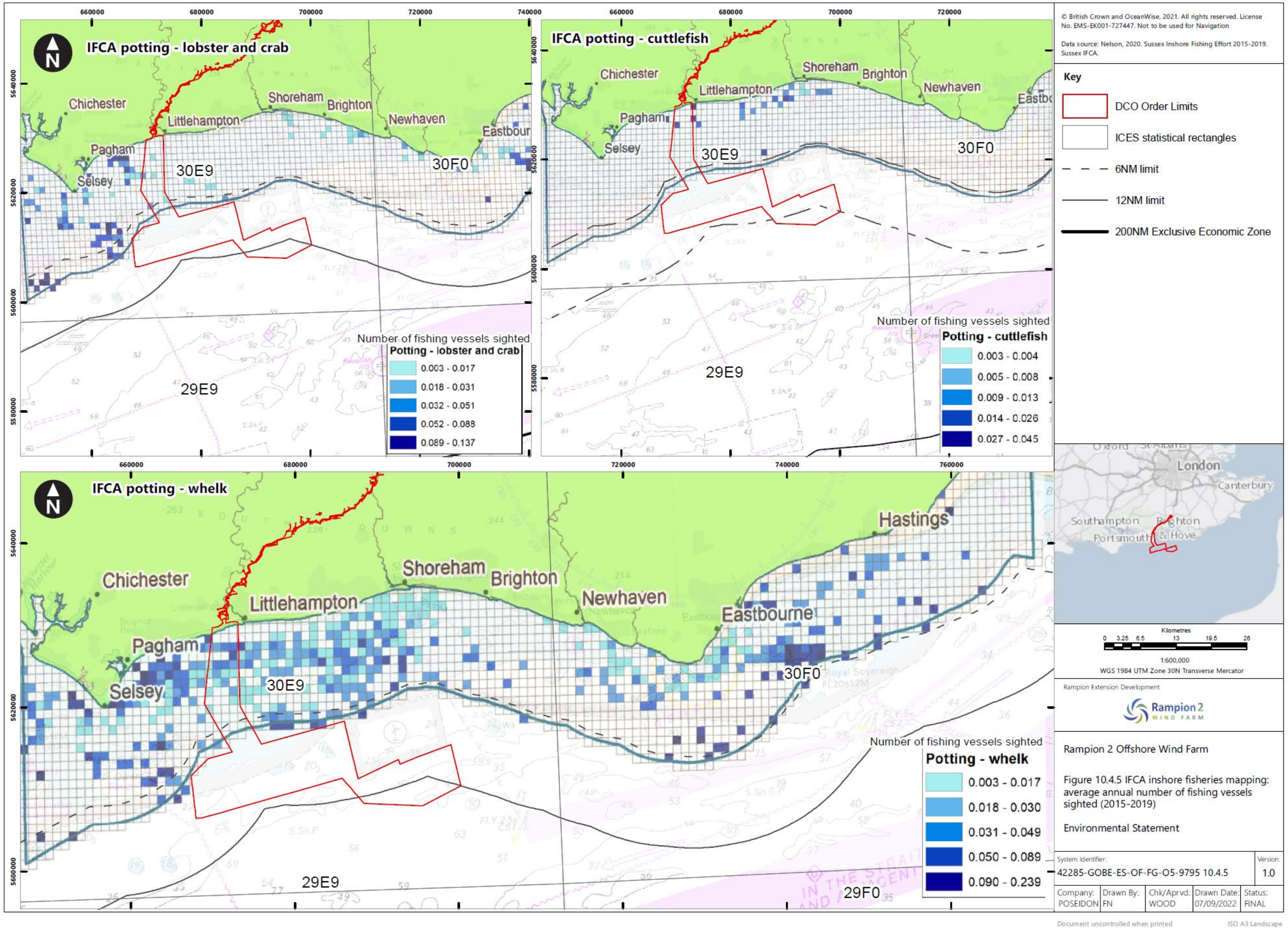


Figure 10.4.6 Vessels actively fishing using trawls inside of 6nm from 2015 to 2019 (Nelson, 2020)

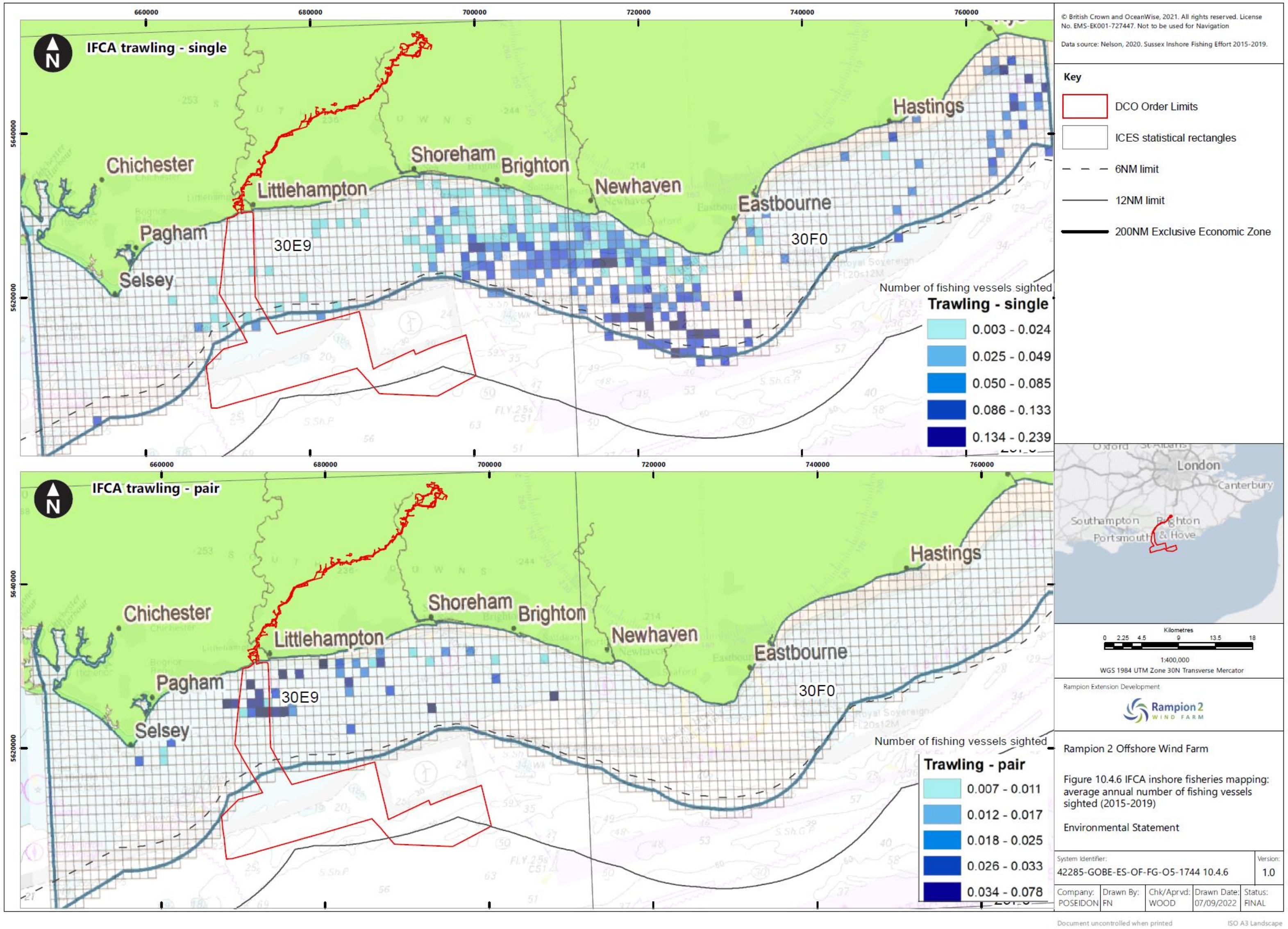


Figure 10.4.7 Vessels actively fishing using other static gear inside of 6nm from 2015 to 2019 (Nelson, 2020) – note that commercial angling is in this instance defined as angling from a vessel with a licence to sell its catch

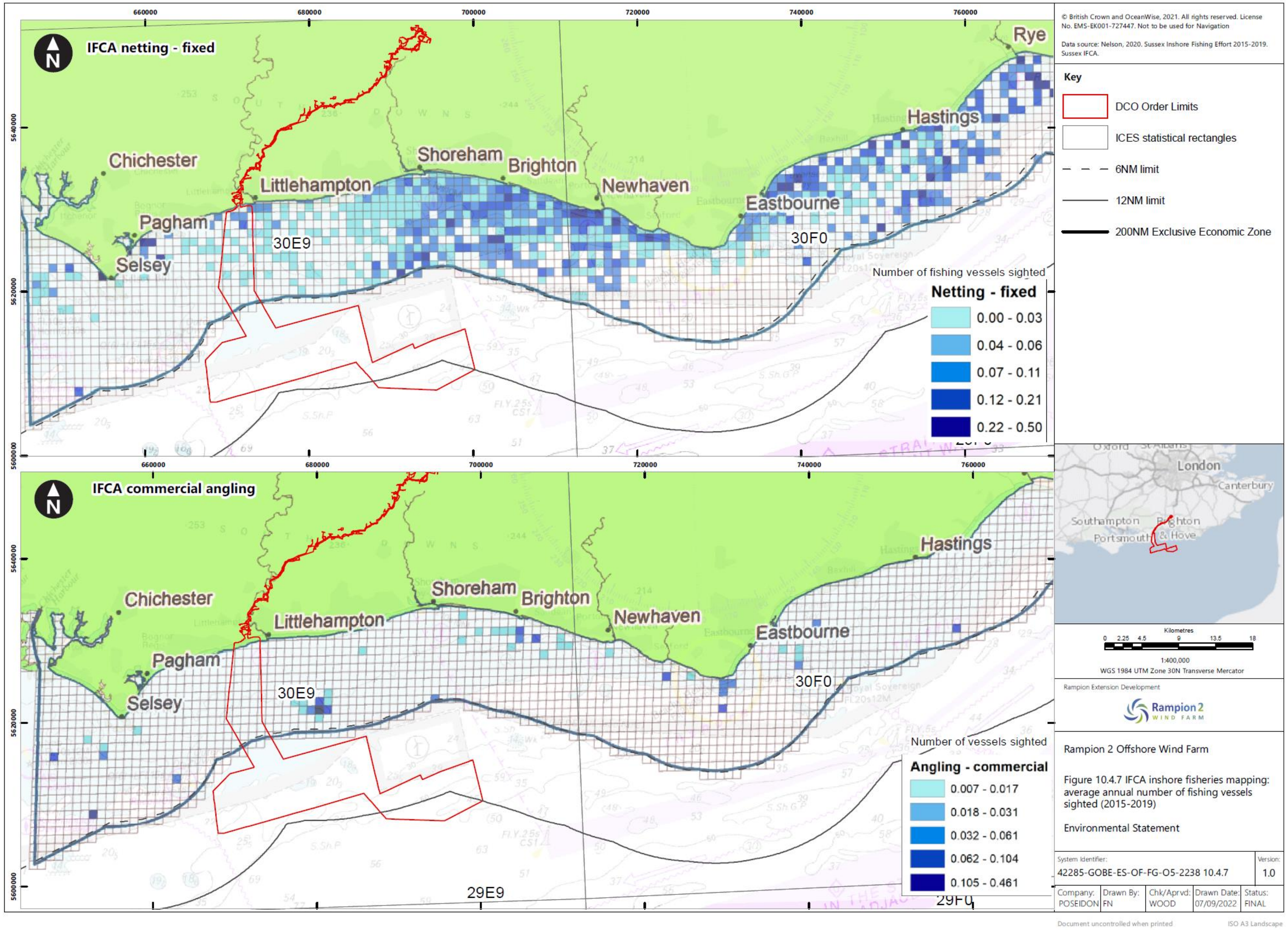


Figure 10.4.8 Surface Swept Area Ratio 2016 – 2020 for EU (including UK) vessels ≥ 12m length using dredge gear (Source: ICES, 2021)

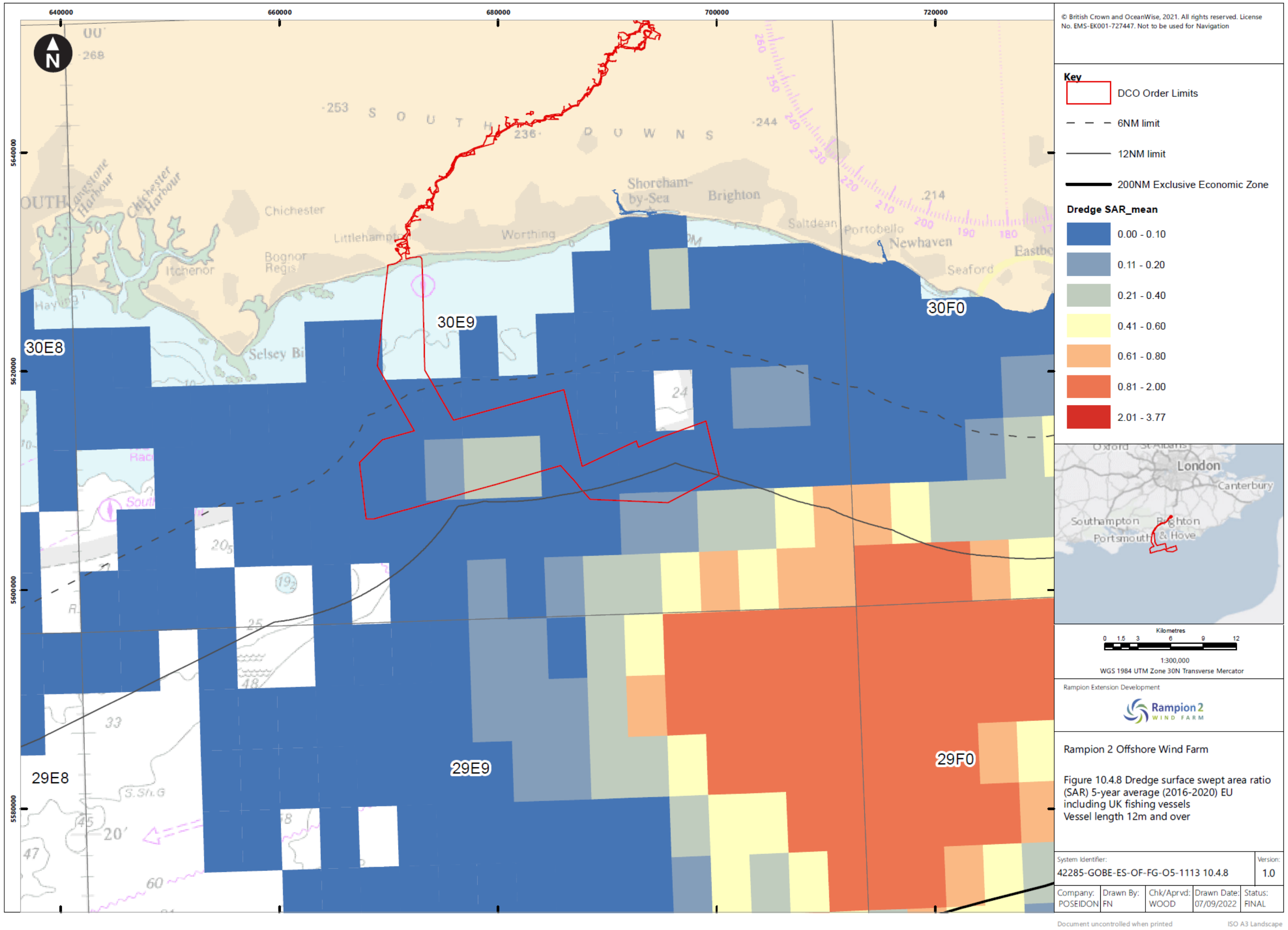


Figure 10.4.9 Surface Swept Area Ratio 2016 – 2020 for EU (including UK) vessels ≥ 12m length using beam trawl gear (Source: ICES, 2021)

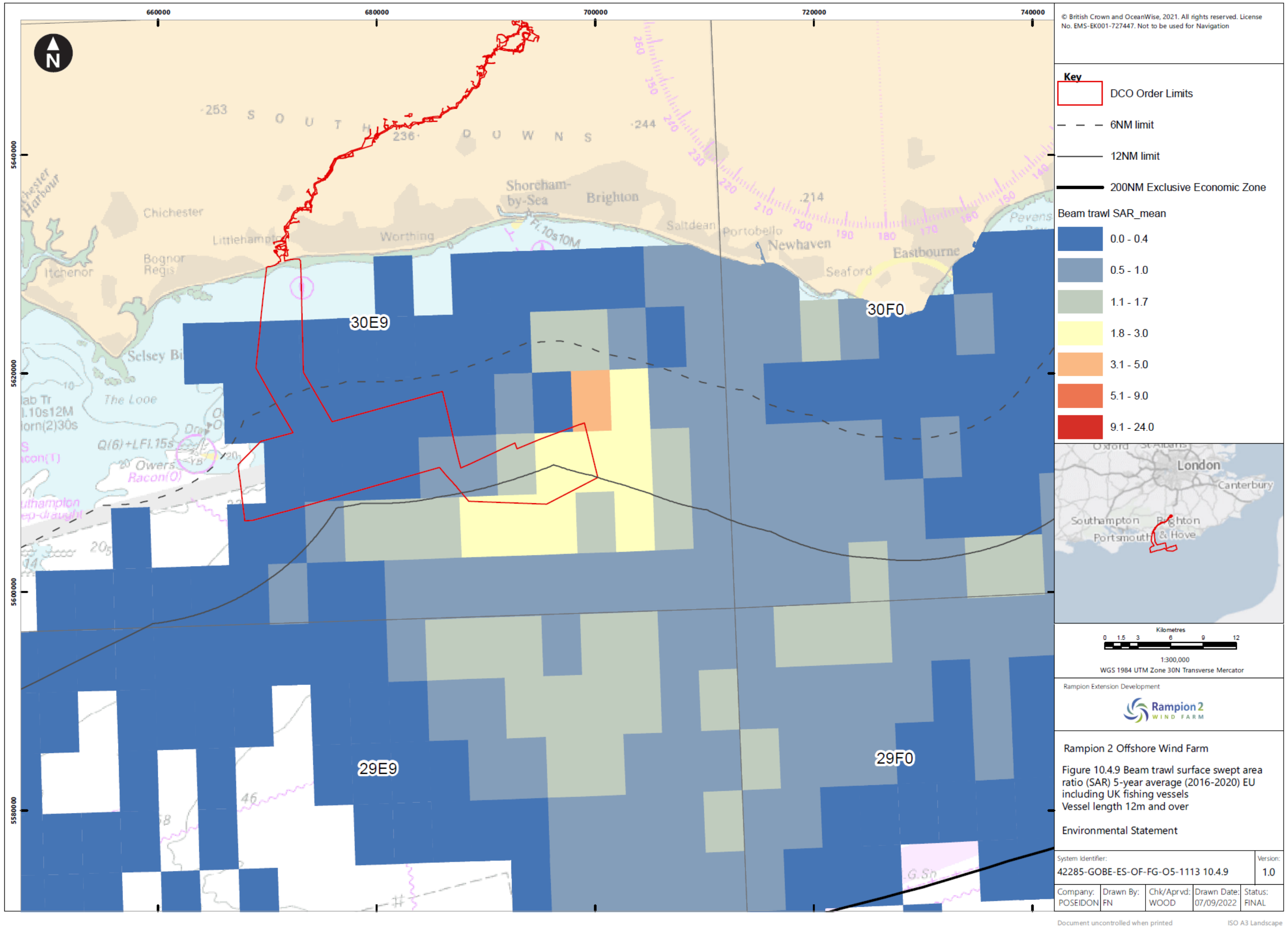


Figure 10.4.10 Surface Swept Area Ratio 2016 – 2020 for EU (including UK) vessels ≥ 12m length using otter trawl gear (Source: ICES, 2021)

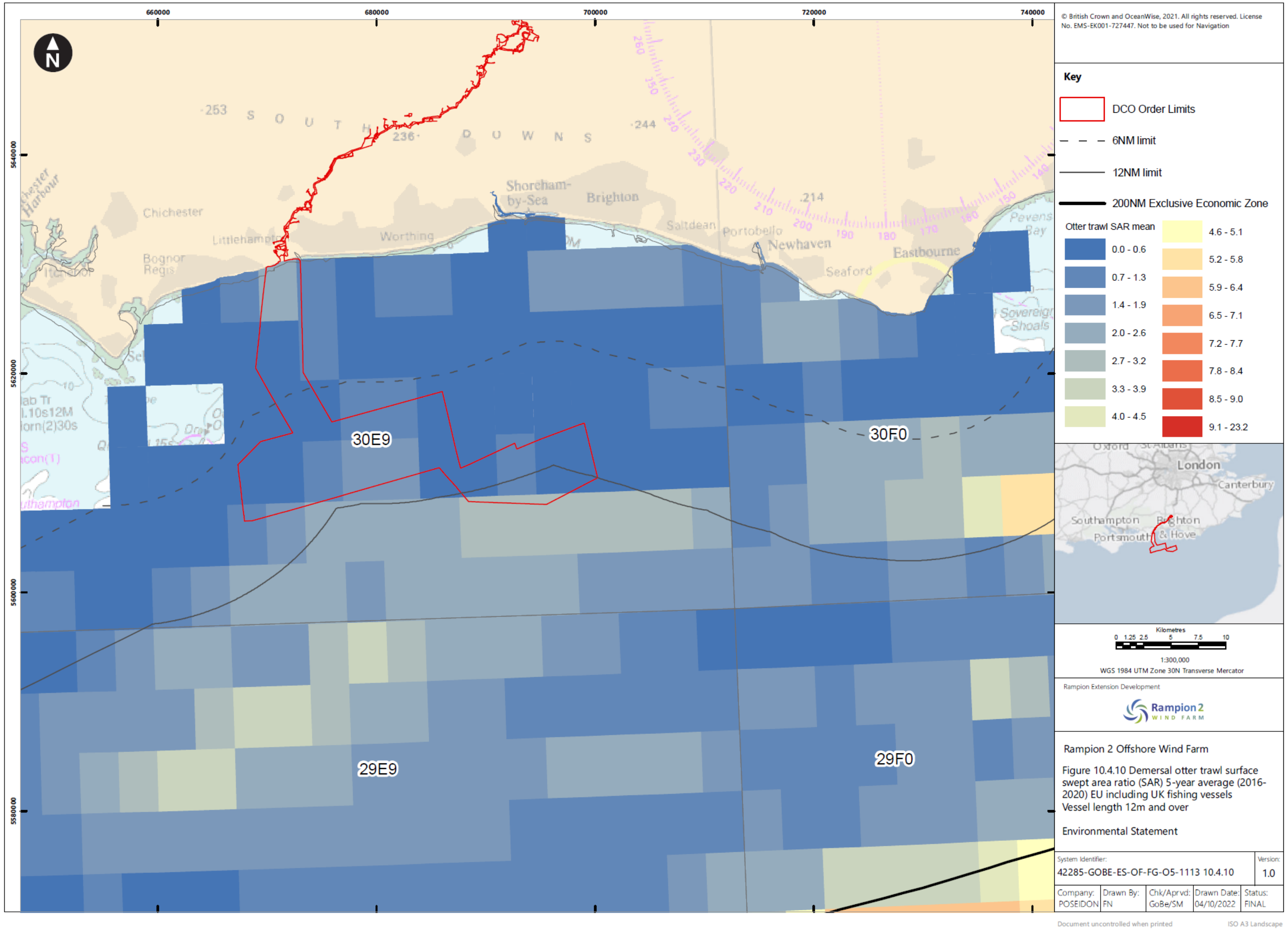
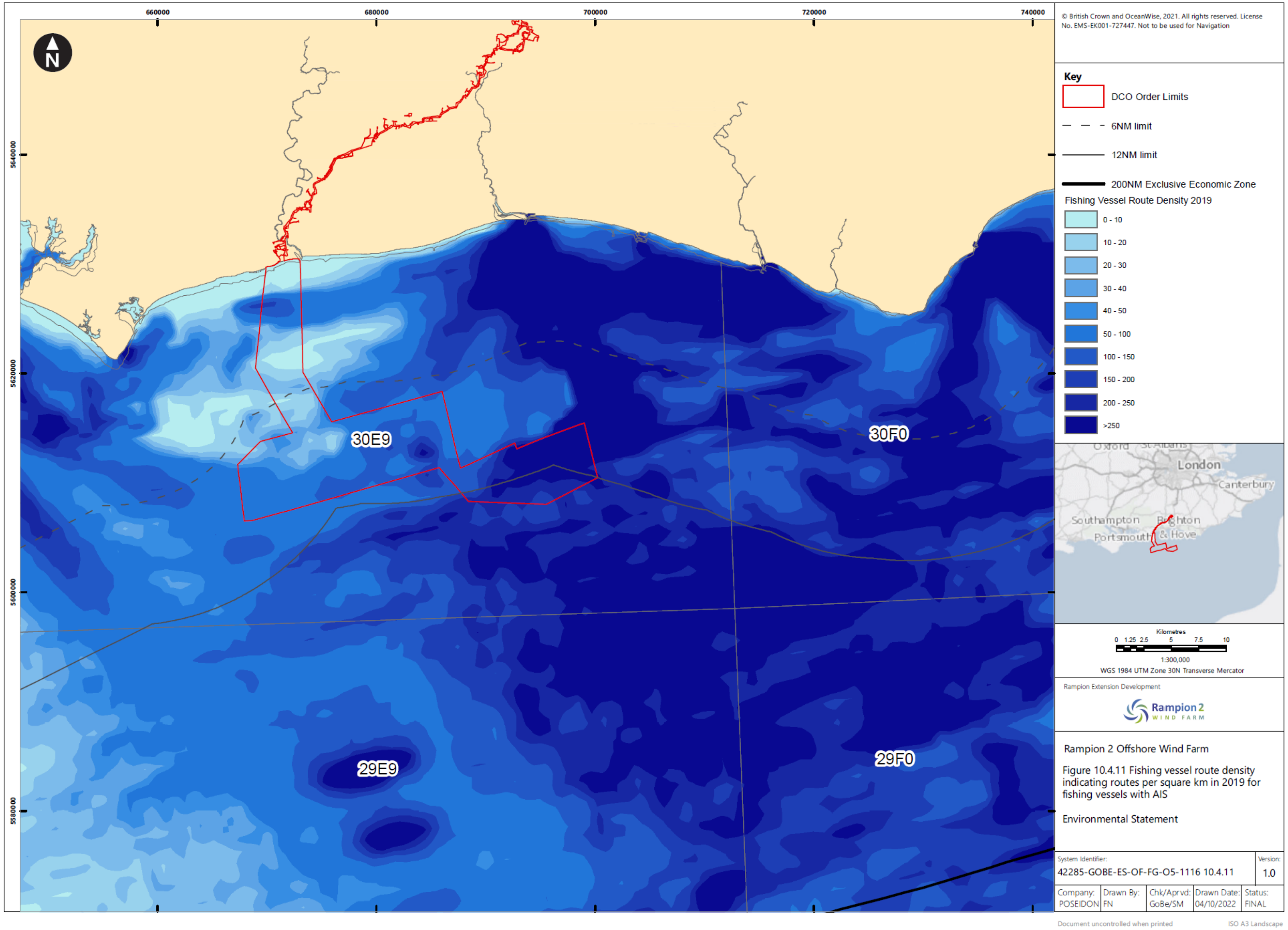


Figure 10.4.11 AIS fishing vessel route density 2019 – 2022 (EMSA, 2022)



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5. UK Fisheries Activity Assessment

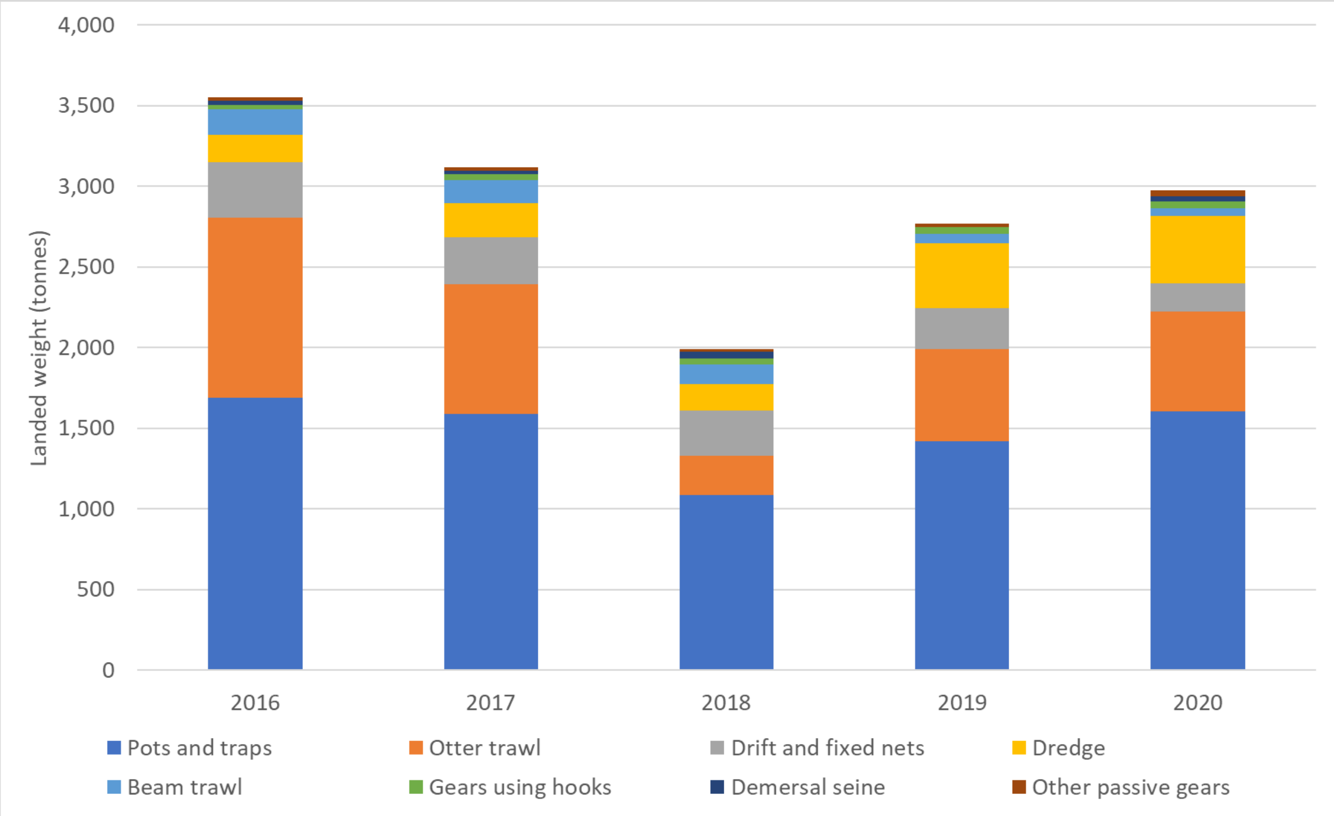
5.1 Landings trends, fishing grounds and key species

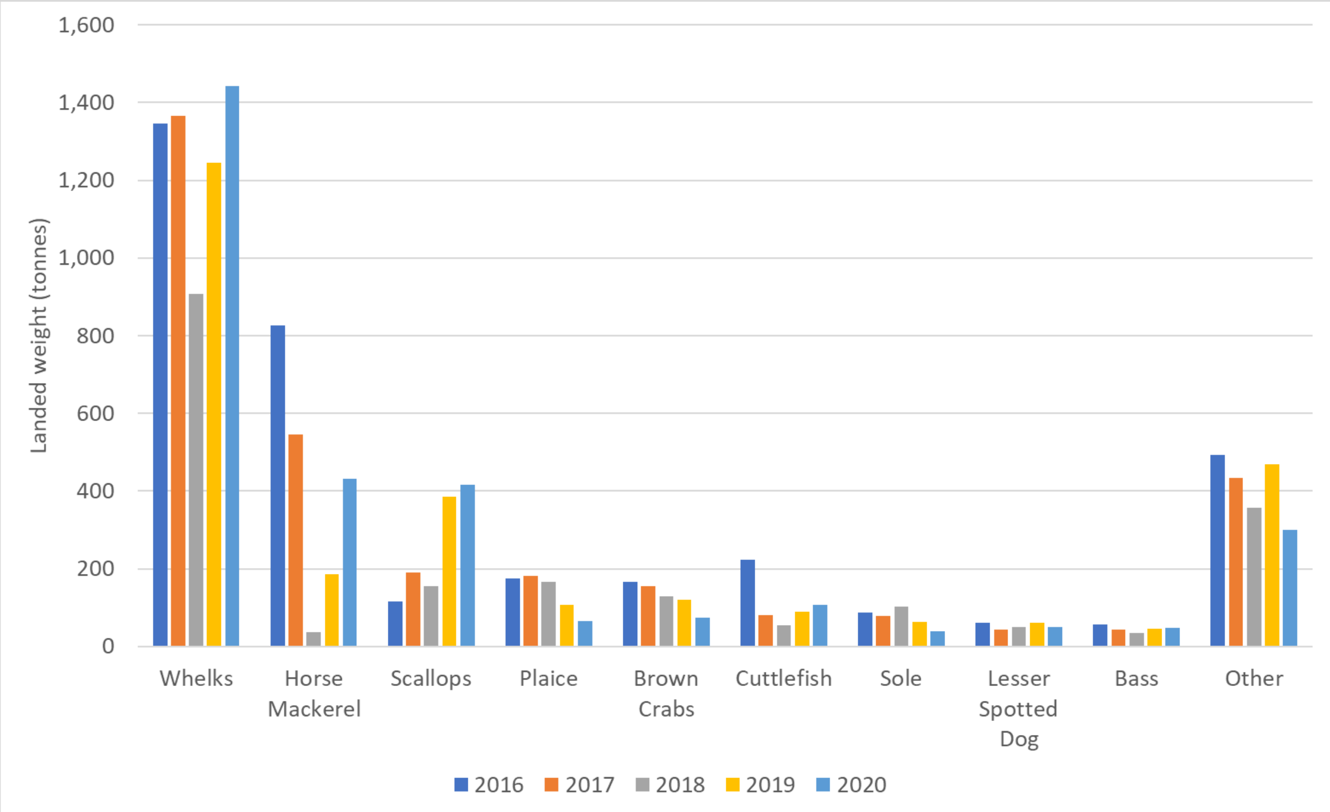
5.1.1 The trends in weight landed by UK vessels from the study area are presented in **Graphic 5-1** for gear type and species.

5.1.2 UK landings from the study area (30E9) are dominated by vessels targeting whelk, brown crab, lobster and cuttlefish with pots and traps, demersal trawlers targeting a mixed fishery (including plaice and sole, and also capturing horse mackerel), scallop dredging and netting for a variety of demersal species.

5.1.3 Landings of whelk peaked in 2015 and have declined slightly since then. Landings of scallop have fluctuated, peaking in 2019. Landings of horse mackerel have fluctuated and peaked in 2016. Landings of other species from the study area have been relatively consistent across 2015 to 2019.

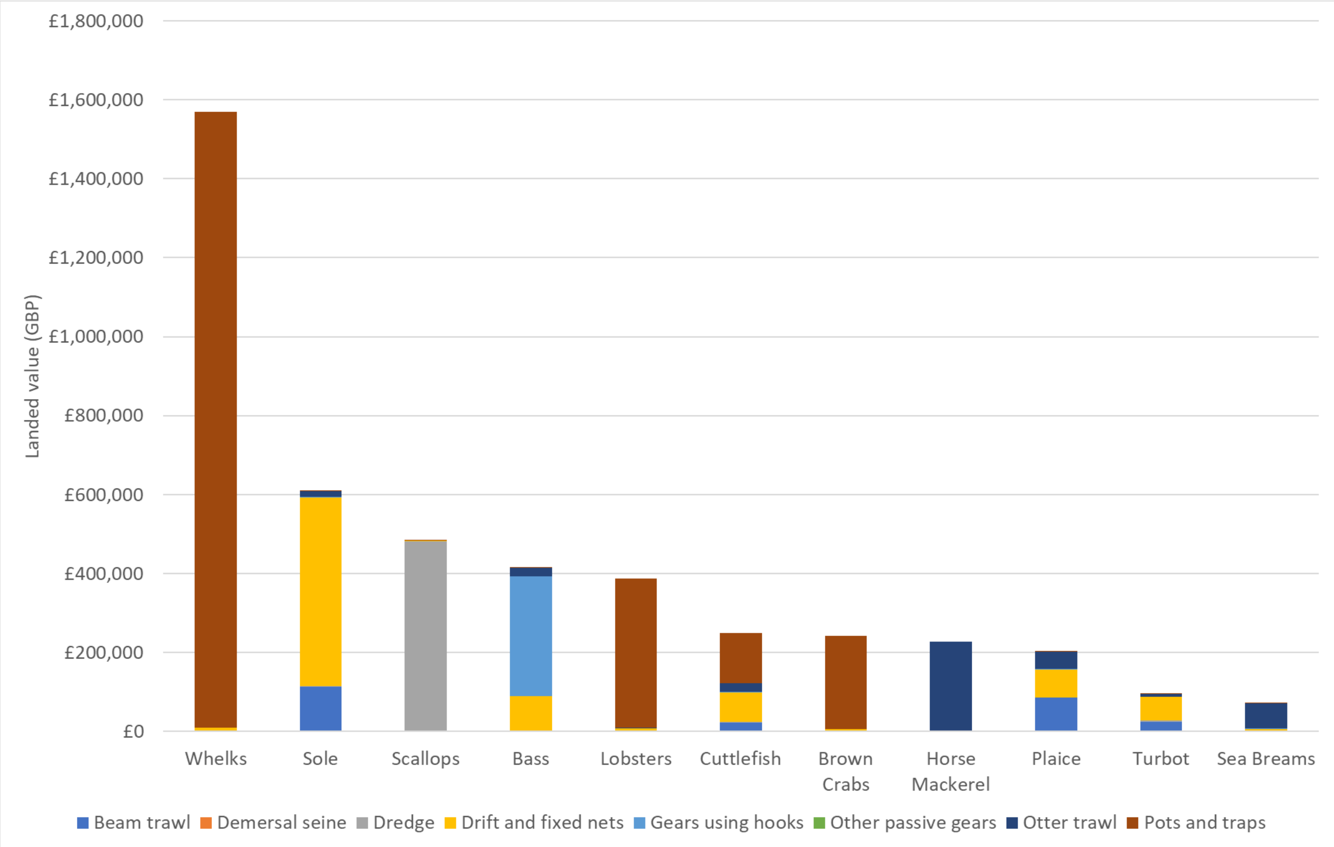
Graphic 5-1 Landed weight of all landings by UK registered vessels from ICES rectangle 30E9 (study area) indicating gear type (top) and species (bottom) (MMO, 2021)





5.1.4 The average annual first sales value of UK landings from the study area across the period 2016 to 2020 is approximately £5.2 million, including whelk at £1.6 million, sole at £610,000, scallops at £480,000 and bass at around £415,000.

Graphic 5-2 Average annual value of landings by UK registered vessels from ICES rectangle 30E9 (Study Area) indicating gear type and key species (based on five-year average from 2016 to 2020 (MMO, 2021)



5.1.5 Analysis by the Sussex IFCA of Shellfish Permit 2019, 2020 and 2021 catch return data further confirms that whelk, cuttlefish and crab, and to a lesser extent lobster, are targeted in and around the offshore cable corridor (**Graphic 5-3**). Whelk represent the dominant shellfish species landed from the offshore cable corridor.

5.1.6 Scallop stock assessment 2018/2019 and 2019/2020 research carried out by Cefas indicates the location of the main scallop fishery relevant to the study area (Lawler and Nawri, 2020 and 2021). The large bed is shown in

5.1.7

5.1.8 **Figure** 10.5.1 and it stretches across the mid-eastern part of the English Channel, straddling the border between the UK and France. The bed was defined by Cefas using VMS data. The Cefas assessment notes the recent expansion of scallop dredging to the south of this bed. In undertaking EIA for Rampion 1, a key scallop area referred to as '9 Miler' was identified during stakeholder engagement; the location of this area to the east of Rampion 2 is shown in **Figure 10.5.2.**

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Graphic 5-3 Shellfish landings within Sussex IFCA limits in 2019 (left) and 2020 (right), based upon Shellfish Permit catch returns (the offshore cable corridor is located in area 30E9West in the figure) (Sussex IFCA, 2020b and 2021)

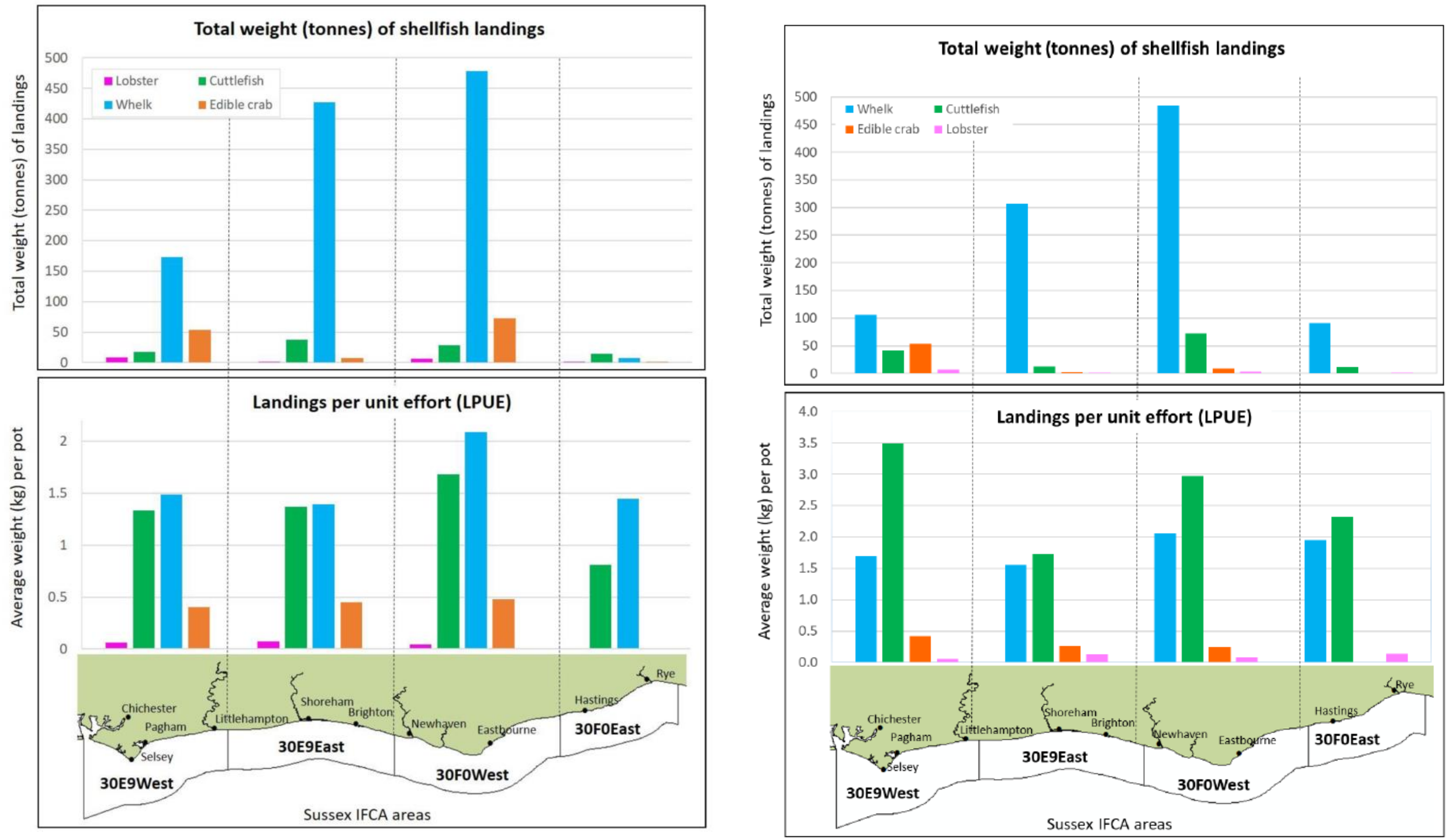


Figure 10.5.1 Scallop bed 7.d.1, as defined in the Cefas 2018/19 stock assessment (Lawler and Nawri, 2020)

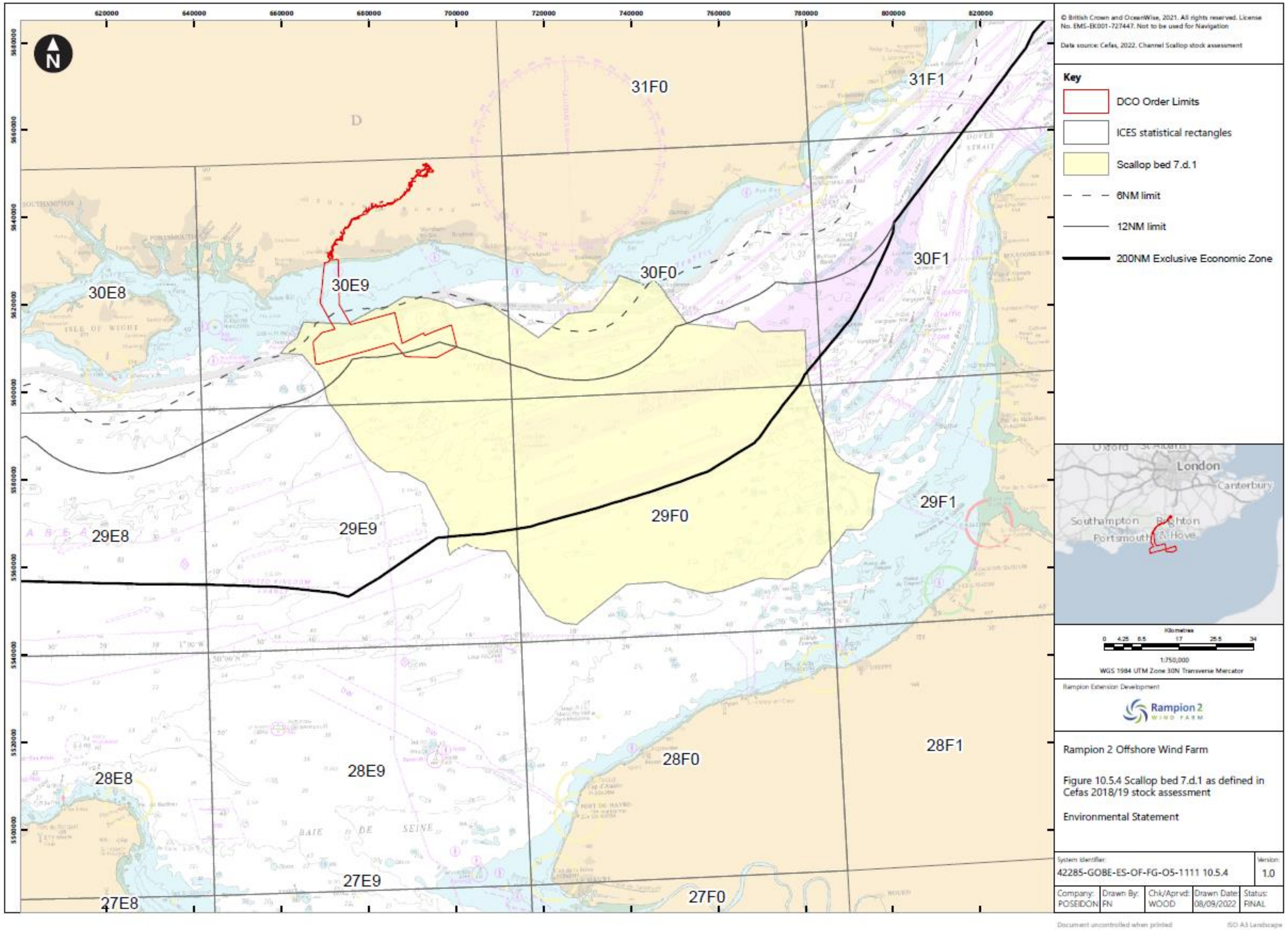
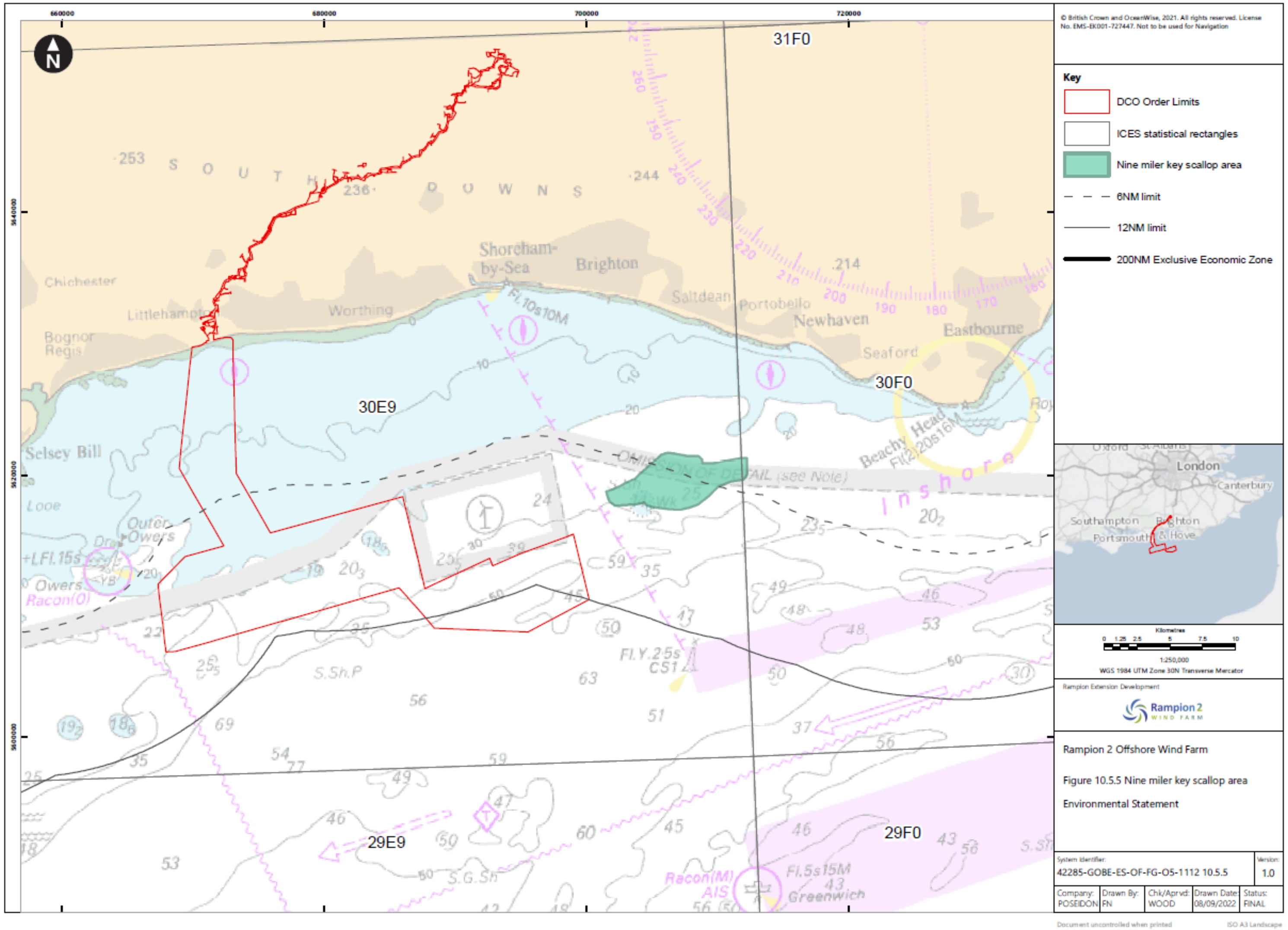


Figure 10.5.2 ‘9 Miler’ scallop bed, identified in the Rampion 1 Environmental Statement (E.ON, 2012)



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5.2 Ports and vessel fleets

Overview

5.2.1 A number of organisations represent UK vessels operating across the commercial fisheries study area including: The National Federation of Fishermen's Organisation (NFFO), the UK Scallop Industry Consultation Group (SICG) and several local associations and societies representing industry along the coastline.

5.2.2 Smaller vessels of 10m length or less account for approximately 60 percent of landings by UK vessels from the study area. These vessels typically operate inshore, usually within 6nm of the coast. These boats land their catch daily and a large portion of the fleet is multi-purpose, operating throughout the year in pursuit of whichever stock (and/or quota) is available during the relevant season. For example, sole are fished in the spring and autumn, with bass targeted in the summer. Larger UK vessels are engaged in beam trawling beyond the 6nm limit, and scallop dredging.

5.2.3 The MMO provides landings statistics by port of landing. The landings in this dataset are not linked to ICES rectangle, so it is not possible to attribute location of fishing to the landed catch, but the dataset does provide useful trend analysis for landings by the UK fleet into specific ports, including those below, which are within or proximate to the study area.

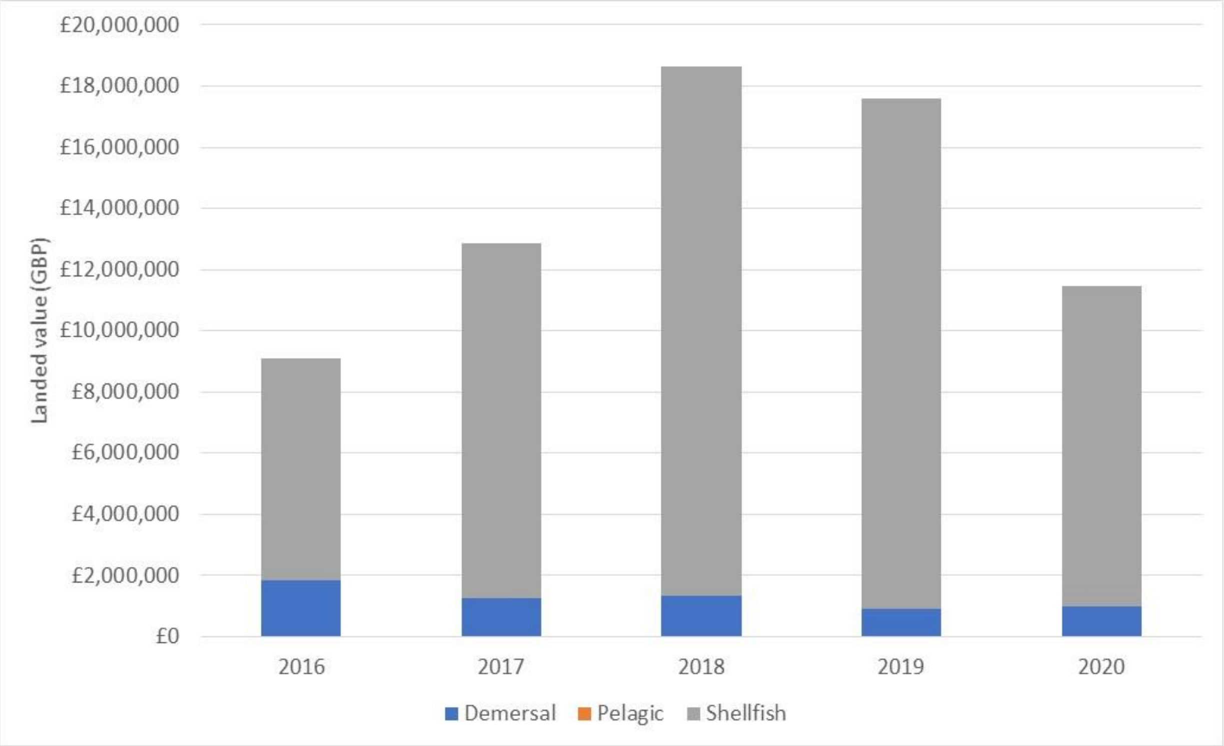
Shoreham

5.2.4 Shoreham-by-Sea is considered to be one of the UK's key fishing ports based on annual landings and is located within the study area. In 2020, landings into Shoreham were dominated by scallop and whelk; 4,500 tonnes of scallop were landed with a first sales value of £7.7 million, and 1,800 tonnes of whelk were landed with a first sale value of £2.5 million.

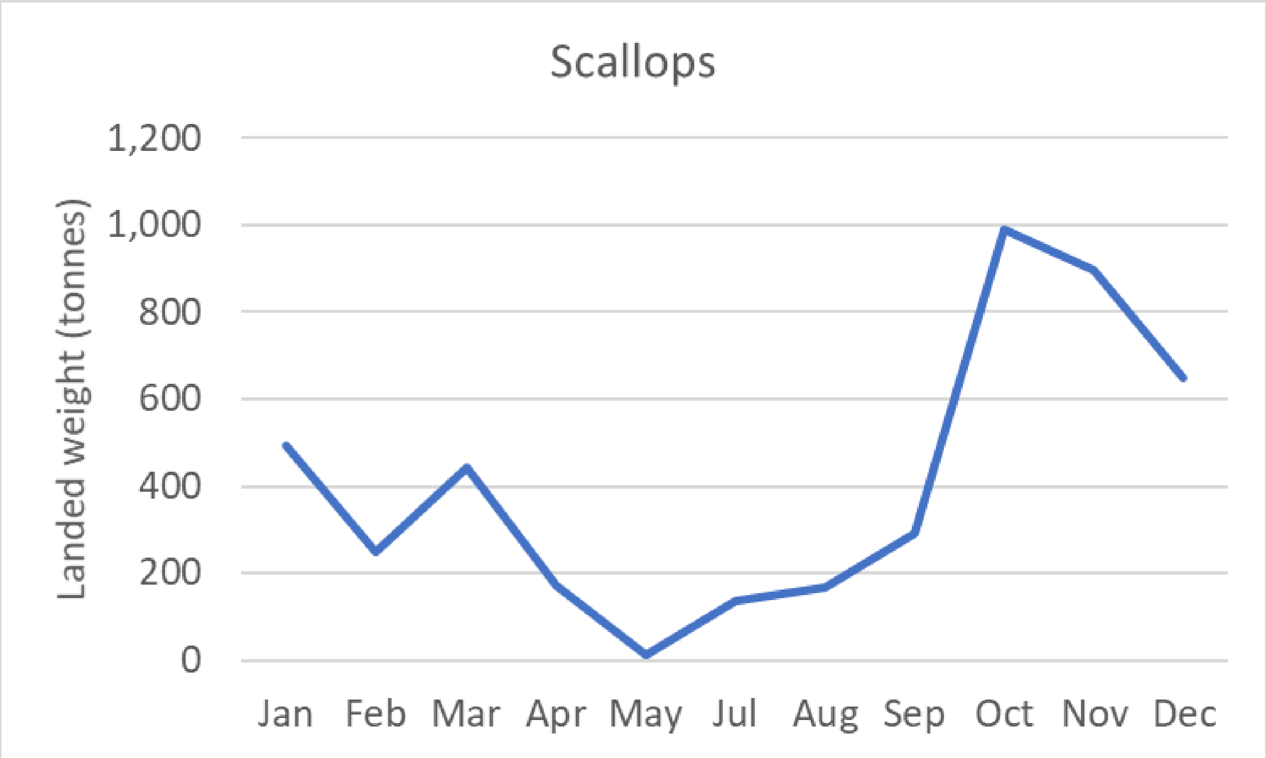
5.2.5 In 2020, scallop landings into Shoreham peaked in October and November, while whelk landings peaked in summer months (**Graphic 5-5**), indicating the seasonal nature of these fisheries.

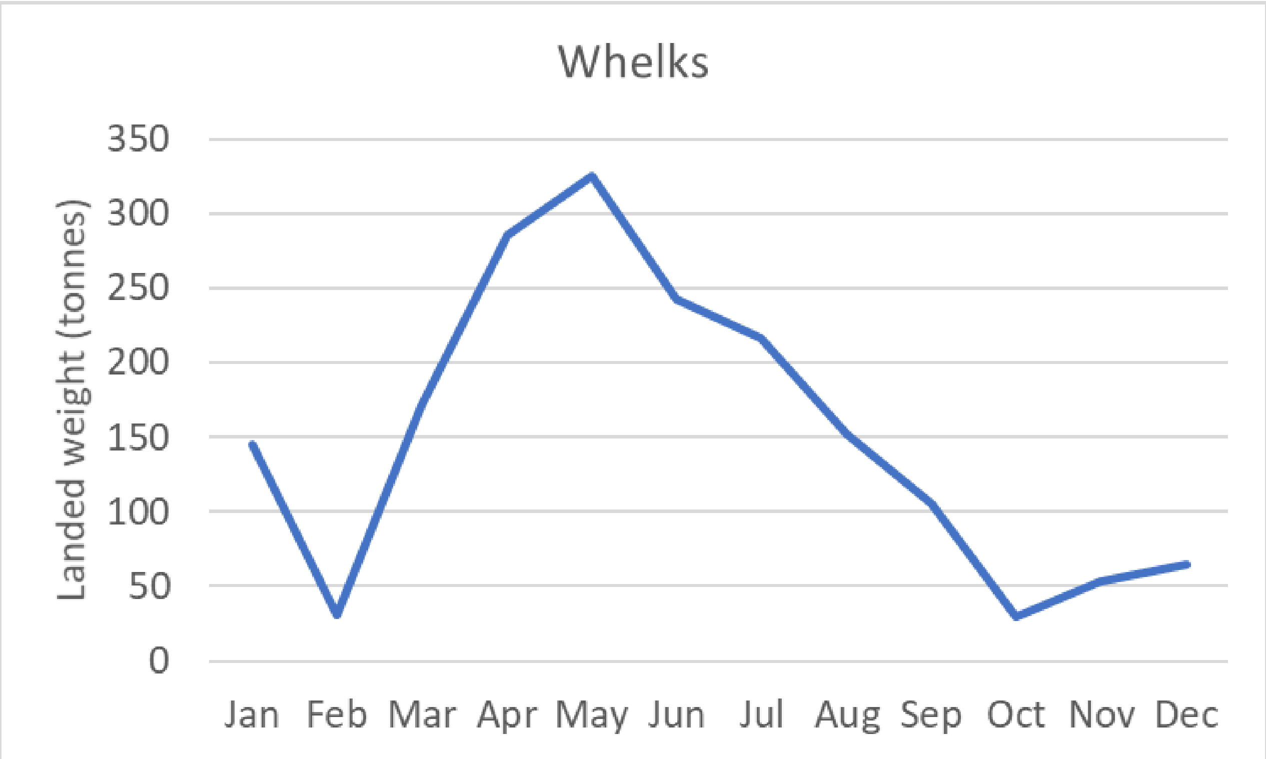
5.2.6 Landings were made predominantly by UK-registered vessels, the majority of which were over 10m in length. A very small proportion of landings were made by Belgian-registered vessels.

Graphic 5-4 Value of landings 2016 to 2020 by species group into Shoreham (MMO, 2021)



Graphic 5-5 Landed weight of scallop and whelk landings by month in 2020 by vessels into Shoreham (MMO, 2021)





Brighton

5.2.7 Landings into Brighton in 2020 were dominated by demersal species, but landings of shellfish species were also recorded (**Graphic 5-6**). Total landings into Brighton in 2020 had a first sales value of approximately £389,000. Landings were made entirely by UK-registered vessels of 10m length or less.

Littlehampton

5.2.8 Landings into Littlehampton in 2020 were dominated by shellfish species, but landings of a variety of demersal species were also recorded (**Graphic 5-6**). Total landings into Littlehampton in 2020 had a first sales value of approximately £118,000. Landings were made entirely by UK-registered vessels of 10m length or less.

Worthing

5.2.9 Landings into Worthing in 2020 were dominated by demersal species, but landings of pelagic and shellfish species were also recorded (**Graphic 5-6**). Total landings into Worthing in 2020 had a first sales value of approximately £7,400. Landings were made entirely by UK-registered vessels of 10m length or less.

Selsey

5.2.10 Landings into Selsey in 2020 were dominated by shellfish species, but landings of demersal species were also recorded (**Graphic 5-6**). Total landings into Selsey in 2020 had a first sales value of approximately £515,000. Landings were made entirely by UK-registered vessels; the majority of which were 10m or less in length, but a portion of which were over 10m in length.

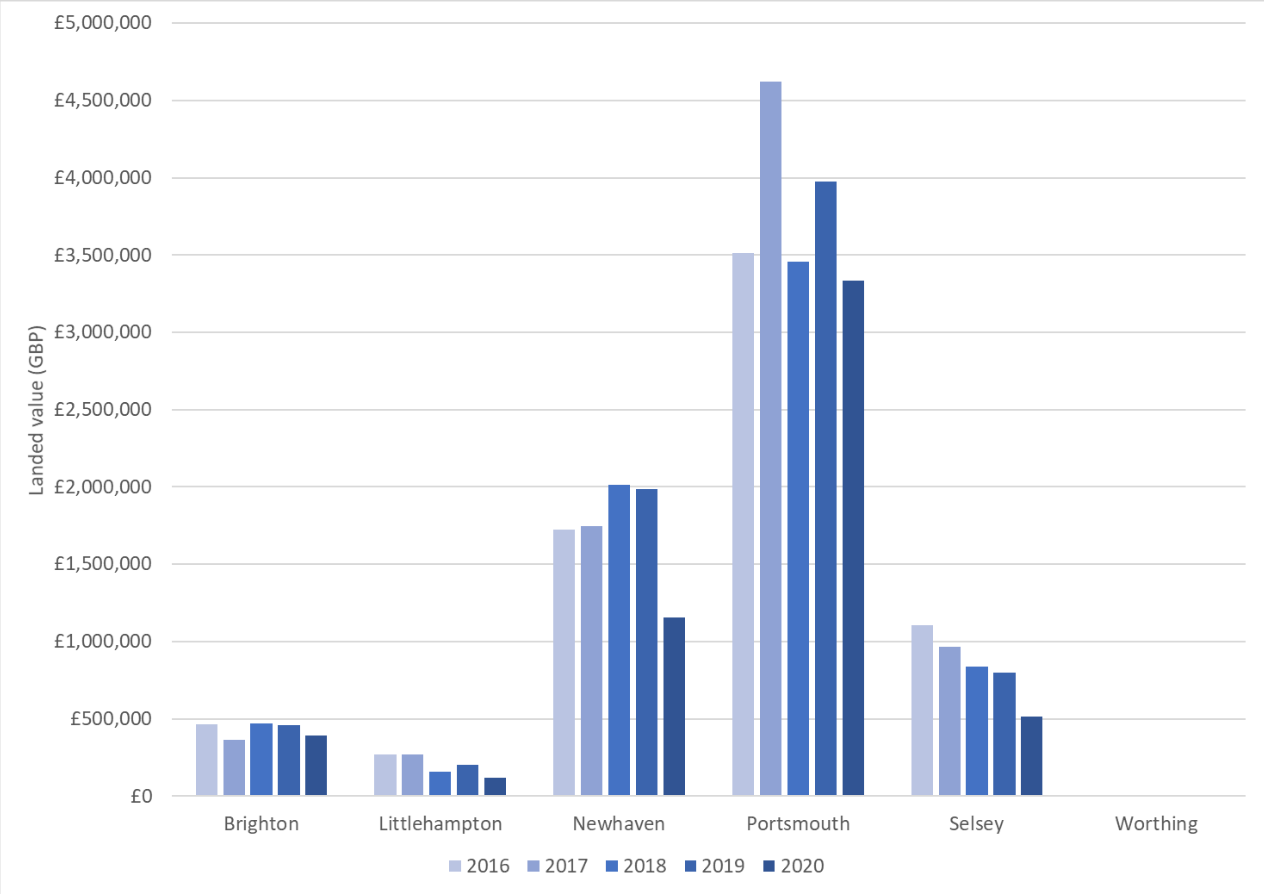
Portsmouth

5.2.11 Landings into Portsmouth in 2020 were dominated by shellfish species, but landings of demersal species were also recorded (**Graphic 5-6**). Total landings into Portsmouth in 2020 had a first sales value of approximately £3.3 million. Landings were made predominantly by UK-registered vessels, though Irish vessels also made landings; the majority of which were over 10m in length.

Newhaven

5.2.12 Landings into Newhaven in 2020 were dominated by shellfish and demersal species (**Graphic 5-6**). Total landings into Newhaven in 2020 had a first sales value of approximately £1.2 million. Landings were made by UK-registered vessels of both under and over 10m in length.

Graphic 5-6 Value of landings 2016 to 2020 by vessels into ports local to the study area (MMO, 2020)



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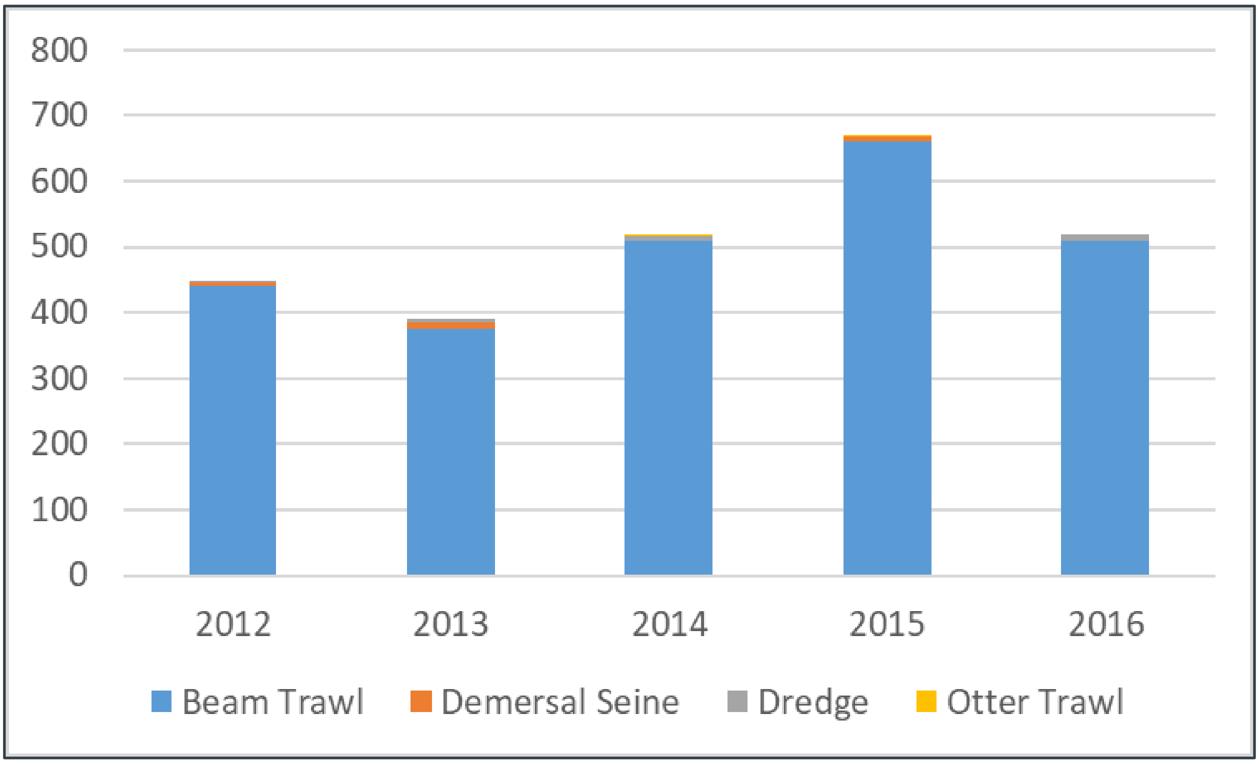
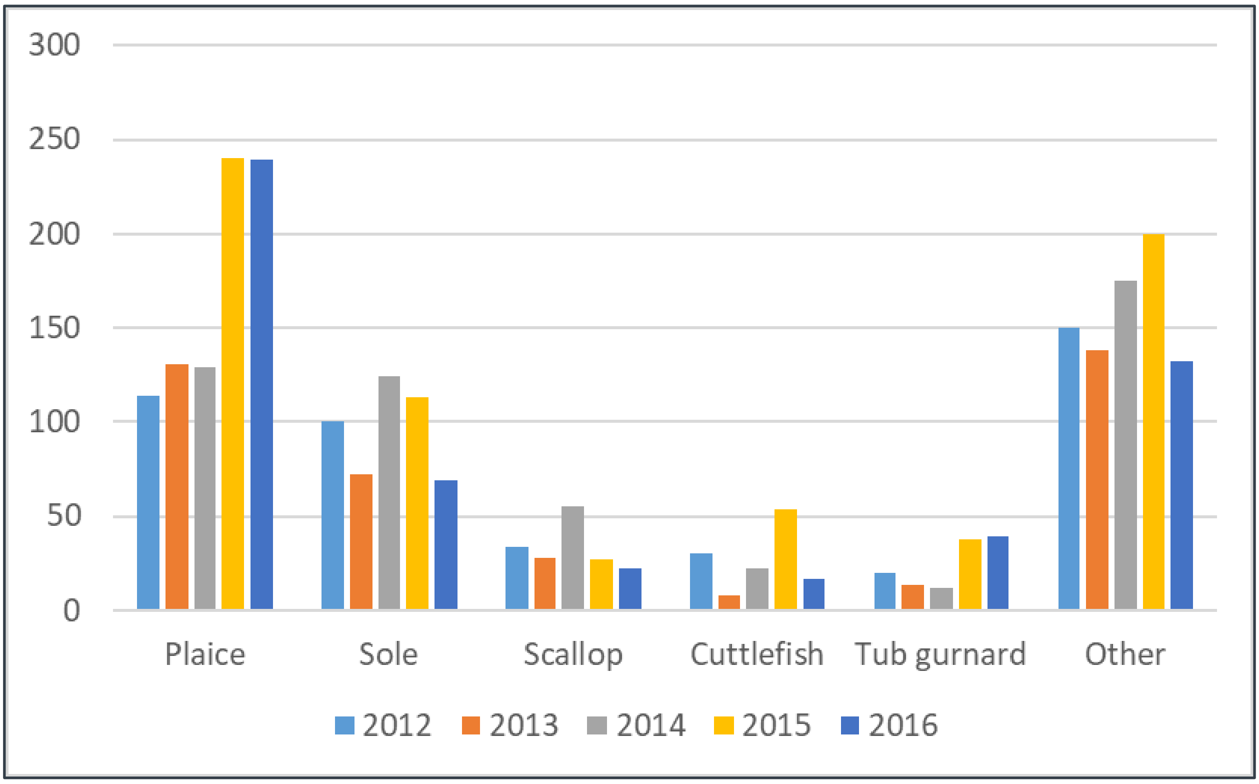
6. Belgian fisheries activity assessment

6.1 Landings trends, fishing grounds and key species

6.1.1 Belgian registered vessels operate within the study area. Landings are predominately by beam trawls targeting plaice and sole (**Graphic 6-1**), as well as mixed demersal species including cuttlefish and gurnard. Landings data also indicates some scallop dredging activity. The average annual value of plaice and sole taken by the Belgian fleet across the study area is €400,000 and €1.2 million respectively.

Graphic 6-1 Landed weight of all landings by Belgian registered vessels from the study area by gear type (top) and landed weight of key species by Belgian registered vessels from the study area (bottom) (EU DCF database, 2020)





6.1.2 There are approximately 70 vessels within the Belgian fleet, the majority of which are trawlers, represented by the only Belgian Producer Organisation, Rederscentrale (EUMOFA, 2020b). Up to 30 of these vessels may expected to be active in the study area (Scientific, Technical and Economic Committee for Fisheries (STECF), 2019).

6.1.3 Belgium has historic fishing rights between the UK's 6nm and 12nm territorial fishing limits but under EU regulations, only beam trawlers with main engines of less than 300hp are permitted to fish within the 12nm limit. Within the Belgian fleet there are a number of smaller beam trawlers with main engines of between 250 to 300hp, specifically designed to fish within 12nm limits. These vessels will typically make fishing trips of approximately five days and may fish in campaigns whereby in between two fishing trips the vessels do not return home, but land fish in UK ports.

6.1.4 VMS data suggests that beam trawl activity takes place throughout the eastern English Channel, mainly between 6nm and 12nm and in some areas beyond 12nm. Data indicates that the Belgian fleet is not active in the offshore cable corridor, but is active across the eastern half of the array area with a prominent fishing ground located in its far eastern portion.

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7. French Fisheries Activity Assessment

7.1 Landings trends, fishing grounds and key species

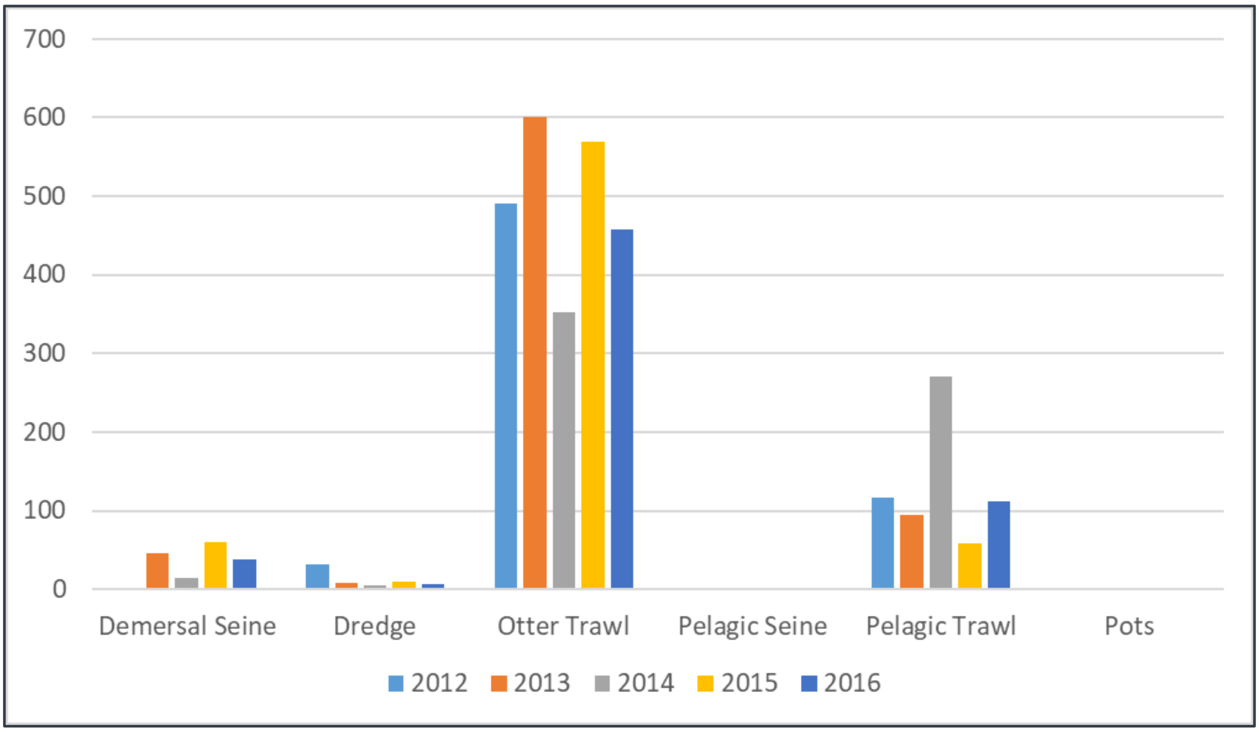
7.1.1 French registered vessels operate within the study area. Landings are predominately by bottom trawls capturing whiting, mackerel and horse mackerel (**Graphic 7-1**). The average annual value of whiting and mackerel taken by the French fleet across the study area is €350,000 and €130,000 respectively.

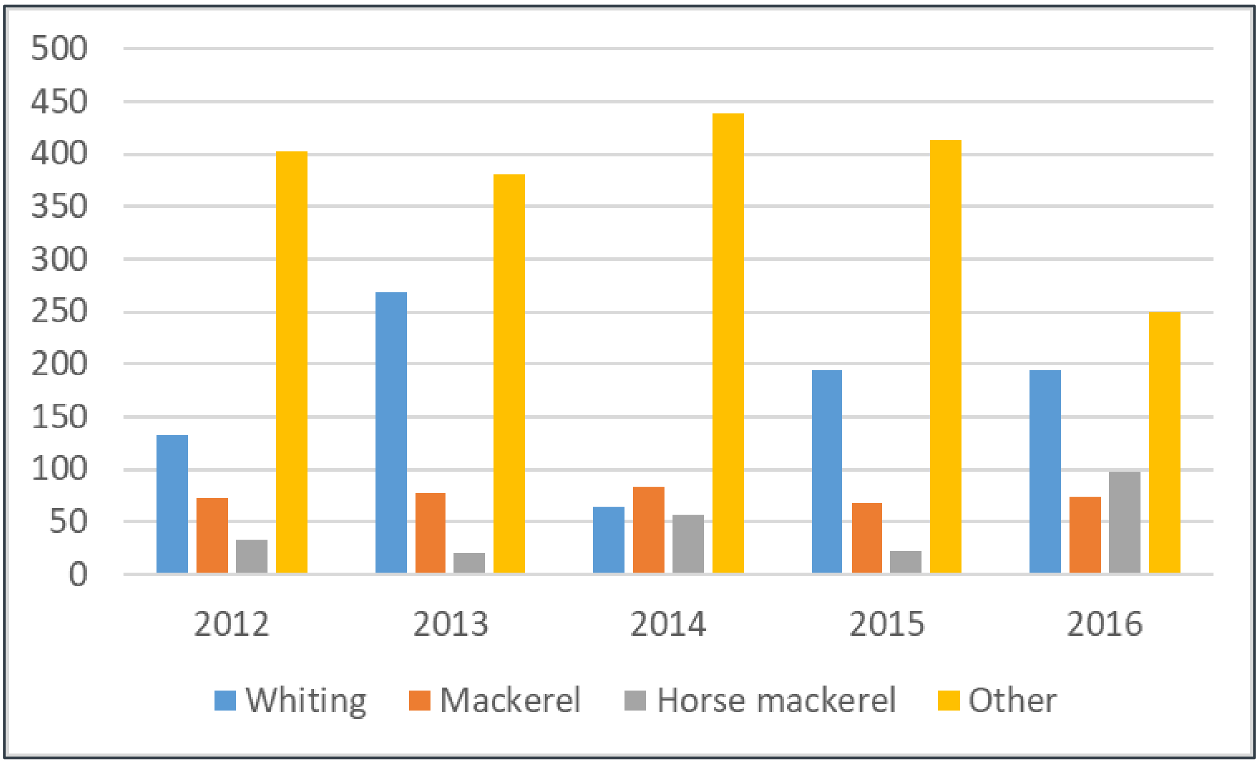
7.1.2 Two French Producer Organisations represent French vessel owners that operate throughout the North Sea: From Nord and Cooperative Maritime Etaploise. A now dated study indicated that in 2009, up to 30 French vessels may fish within and in waters adjacent to the study area (CNPMEM, 2009).

7.1.3 As for Belgium, France has historic fishing rights between the UK's 6nm and 12nm territorial fishing limits. The majority of French trawlers fishing are between 18 and 24m in length with main engines of between 300hp and 800hp operating either single or twin rigged trawls. Fishing trips are expected to be of 3 to 5 days duration and fishing activity peaks in summer months.

7.1.4 VMS data indicates that trawling by European fleets takes place throughout the eastern English Channel, mainly outside of 6nm. Data suggests that the French fleet is not active in the offshore cable corridor, but may fish within the array area.

Graphic 7-1 Landed weight of all landings by French registered vessels from the study area by gear type (top) and landed weight of key species by French registered vessels from the study area (bottom) (EU DCF database, 2020)





8. Dutch Fisheries Activity Assessment

8.1 Landings trends, fishing grounds and key species

8.1.1 Dutch registered vessels operate within the study area. Landings are predominately by pelagic trawls targeting horse mackerel and herring (**Graphic 8-1**). The average annual value of horse mackerel and herring taken by the Dutch fleet across the study area is €360,00 and €42,000 respectively.

8.1.2 VisNed is an umbrella organization for several Dutch Producer Organisations and represents two-thirds of the Dutch fishing fleet, in numbers and supply value. The pelagic trawler fleet, made up of large vessels over 40m in length, fish with midwater trawls on pelagic fish species. The number of vessels in this fleet has decreased in recent years from 14 vessels in 2012 down to eight vessels in 2018. At the beginning of 2019, the number of vessels in the trawler fleet decreased to 7 (STECF, 2020).

8.1.3 VMS data indicates that trawling by European fleets takes place throughout the eastern English Channel, mainly outside of 6nm. Data suggests that the Dutch fleet is not active in the offshore cable corridor, but may fish within the array area.

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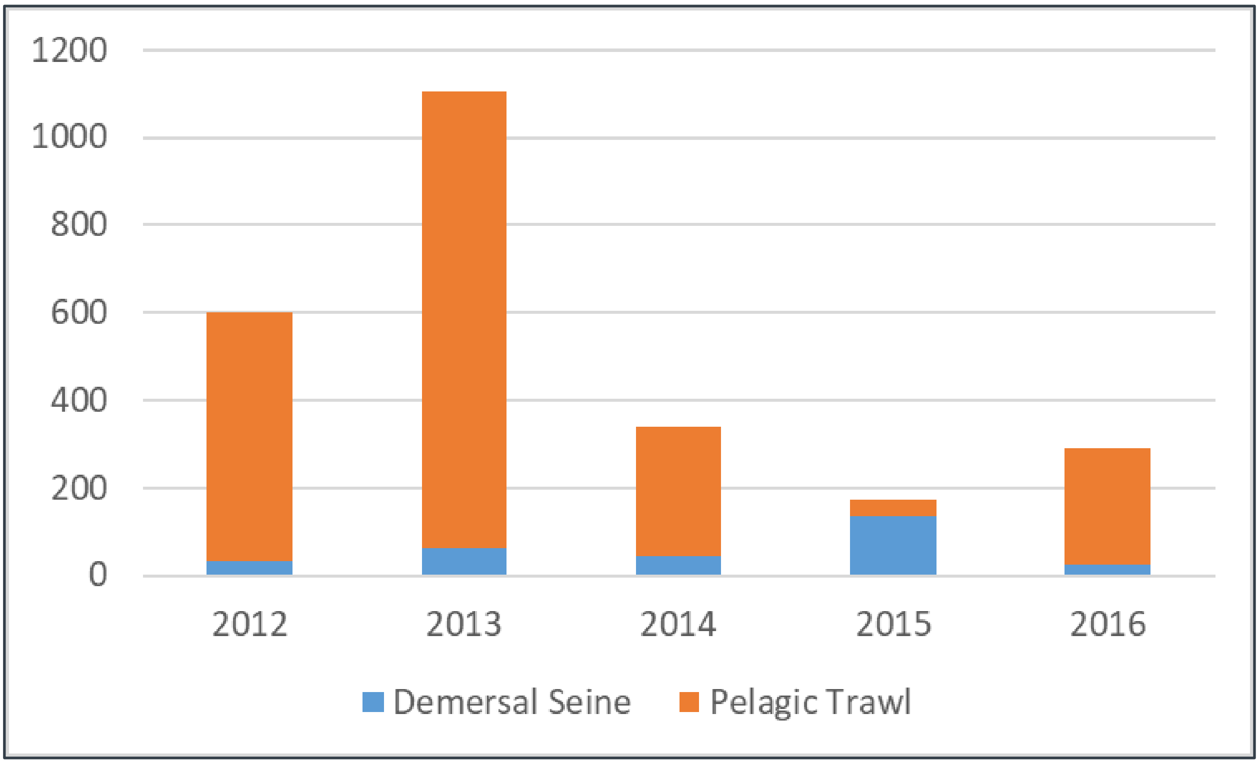
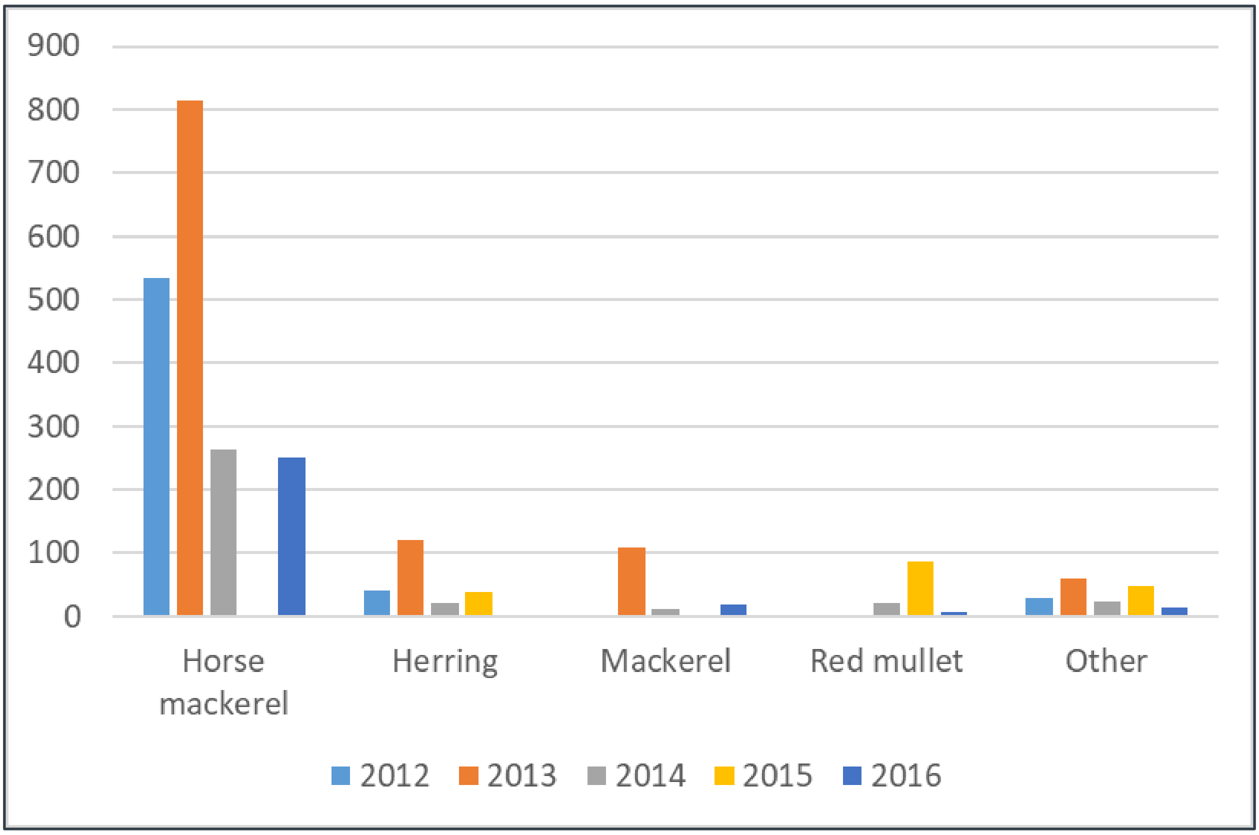
Graphic 8-1 Landed weight of all landings by Dutch registered vessels from the study area by gear type (top) and landed weight of key species by Dutch registered vessels from the study area (bottom) (EU DCF database, 2020)





9. German Fisheries Activity Assessment

9.1 Landings trends, fishing grounds and key species

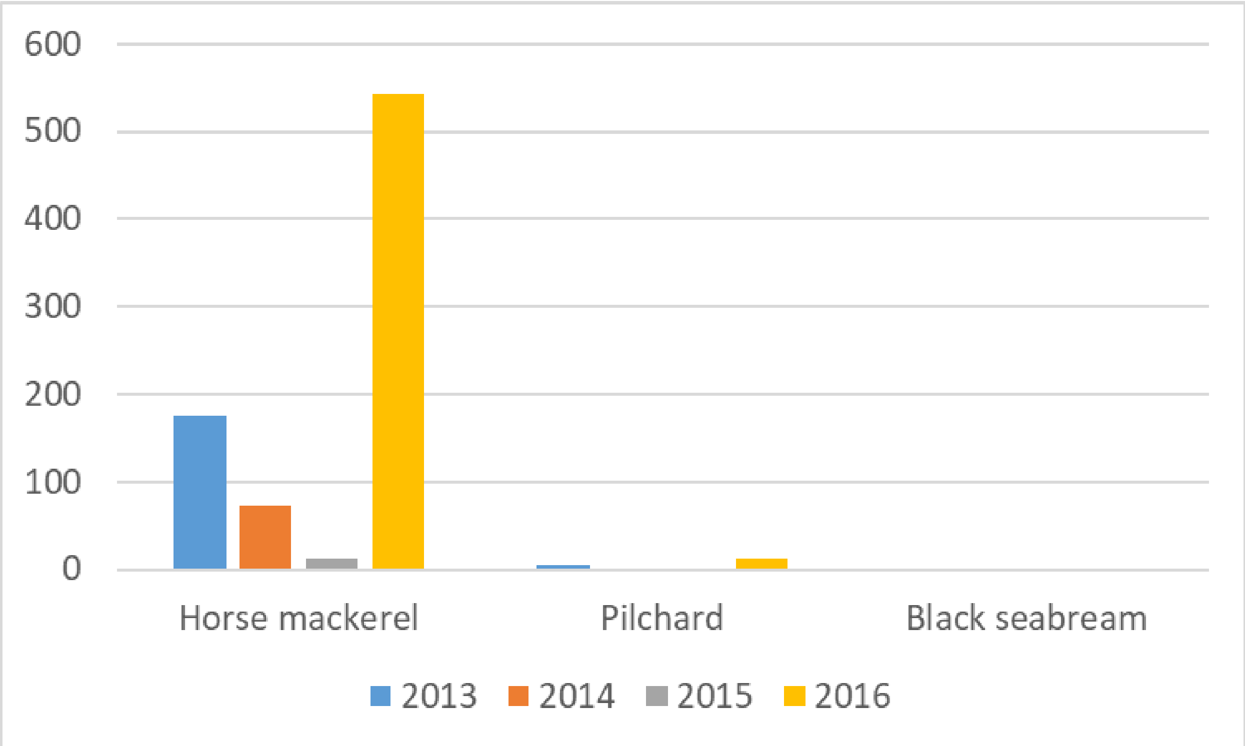
9.1.1 German registered vessels operate within the study area. Landings are almost exclusively by large pelagic trawlers targeting horse mackerel. Landings are sporadic, reflecting the nature of pelagic fisheries, which are not associated with specific habitat types, and therefore are targeted across a wide area. The average annual value of horse mackerel taken by the German fleet across the study area is €155,000.

9.1.2 Erzeugergemeinschaft der Nord- und Osteefischer GmbH is a German Fish Producers Organisation with approximately 120 members who are located in the ports of Cuxhaven, Sassnitz, Fehmarn, Travemünde and Kiel.

9.1.3 Landings data indicates that catches peak between October and December. Typical vessel length is in the range of 24m, and it understood that trawlers that typically target demersal species may temporarily shift to pelagic trawling (STECF, 2020).

9.1.4 VMS data indicates that trawling by European fleets takes place throughout the eastern English Channel, mainly outside of 6nm. Data suggests that the German fleet is not active in the offshore cable corridor, but may fish within the array area.

Graphic 9-1 Landed weight of key species by German registered vessels from the study area (right) (EU DCF database, 2020)



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10. Other EU Member States activity assessment

10.1.1 Irish-registered scallop dredgers, over 15m in length, fish within the study area. Levels of activity are relatively low, and scallop landings highly variable with a peak of 166 tonnes recorded in 2014.

10.1.2 Danish pelagic trawlers, over 15m in length, may fish within the study area targeting horse mackerel. Levels of activity are relatively low, peaking at 570 tonnes in 2012. EU DCF landings data indicates that no landings by Danish vessels from the study area were recorded after 2014 (noting that the EU DCF dataset runs to 2016).

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11. Summary

11.1.1 This technical report presents baseline activity data for the following countries: UK, Belgium, France, the Netherlands, Germany, Ireland and Denmark. Based on quota allocations and landing statistics it is understood that vessels registered to other countries do not operate across the Rampion 2 study area.

11.1.2 The key fleet metiers operating across the Rampion 2 study area include (in no particular order):

- UK potters targeting whelk, cuttlefish, brown crab and lobster;
- UK vessels using nets to target bass, rays, sole and plaice;
- UK vessels using gears with hooks to target bass;
- UK, French and Irish scallop dredgers targeting scallop;
- UK beam trawlers targeting sole and plaice;
- UK bottom otter trawlers targeting mixed demersal species including whiting and bream;
- Belgian beam trawlers targeting plaice and sole;
- French bottom trawlers targeting whiting, horse mackerel and mackerel; and
- Dutch and German pelagic trawlers targeting highly mobile horse mackerel and herring, which move/shoal throughout the wider southern North Sea.

11.1.3 It is noted that a portion of vessels in the first three metiers listed above will form part of a local UK multi-purpose fleet comprised of vessels under 10m in length which switch between gears (for example, pots, nets and gears using hooks) to adapt to seasonal variations in fisheries and quotas. These vessels primarily operate within the 6nm limit.

11.1.4 Key species landed by these fleets based on landed volume and value include the shellfish species of whelk, scallop, brown crab, lobster and cuttlefish, pelagic horse mackerel and demersal sole and plaice. English-registered fishing vessels account for approximately 65 percent of landings from the study area; these vessels operate out of a number of regional ports.

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12. Glossary of terms and abbreviations

Table 12-1 Glossary of terms and abbreviations

Term	Definition
Beam trawl	A method of bottom trawling with a net that is held open by a beam, which is generally a heavy steel tube supported by steel trawl heads at each end. Tickler chains or chain mats, attached between the beam and the ground rope of the net, are used to disturb fish and crustaceans that rise up and fall back into the attached net.
Bycatch	Catch which is retained and sold but is not the target species for the fishery.
Cefas	Centre for Environment, Fisheries and Aquaculture Science
DCF	Data Collection Framework
Demersal	Living on or near the sea bed.
Demersal trawl	A fishing net used by towing the trawl along or close to the seabed.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
EEZ	Exclusive Economic Zone
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Impact Assessment (EIA) Report.
Environmental Statement (ES)	The written output presenting the full findings of the Environmental Impact Assessment.
EU	European Union
EUMOFA	European Market Observatory for Fisheries and Aquaculture Products
€	Euros
Fish stock	Any natural population of fish which an isolated and self-perpetuating group of the same species.

Term	Definition
Fishery	A group of vessel voyages which target the same species or use the same gear.
Fishing ground	An area of water or sea bed targeted by fishing activity.
Fishing mortality	Mortality due to fishing; death or removal of fish from a population due to fishing.
Fleet	A physical group of vessels sharing similar characteristics (e.g. nationality).
Gear type	The method / equipment used for fishing.
GBP	Great British Pounds
£	Great British Pounds
hp	Horsepower
ICES	International Council for the Exploration of the Sea
ICES statistical rectangles	ICES standardise the division of sea areas to enable statistical analysis of data. Each ICES statistical rectangle is '30 min latitude by 1 degree longitude' in size (approximately 30 x 30 nautical miles). A number of rectangles are amalgamated to create ICES statistical areas.
IFCA	Inshore Fisheries and Conservation Authority
Industrial fishery	Highly mechanised commercial fishing operations whose ultimate products are principally fish meal and fish oil.
kg	Kilograms
Landings	Quantitative description of amount of fish returned to port for sale, in terms of value or weight.
m	Metre
Marine Management Organisation (MMO)	MMO is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs. MMO license, regulate and plan marine activities in the seas around England so that they’re carried out in a sustainable way.
Maximum Sustainable Yield	Maximum sustainable yield (MSY) is the largest yield (catch, in tonnes) that can be taken from a specific fish stock over an indefinite period under constant environmental conditions. Fishing at MSY levels should ensure the capacity of the stock to continue to produce this level in the long term.

Term	Definition
Metier	A homogenous subdivision, either of a fishery by vessel type or a fleet by voyage type.
Minimum Landing Size (MLS)	Is a technical measure that limits the size of fish or shellfish species that can be legally landed and sold. The MLS varies per species. With the implementation of the Landings Obligation, the existing MLS are changed into minimum conservation reference sizes (MCRS), but they will remain largely the same.
mm	Millimetre
NFFO	National Federation of Fishermen's Organisations
nm	Nautical Mile
Offshore part of the DCO Order Limits	An area that encompasses all planned offshore infrastructure and relevant buffer areas.
Otter trawl	A net with large rectangular boards (otter boards) which are used to keep the mouth of the trawl net open. Otter boards are made of timber or steel and are positioned in such a way that the hydrodynamic forces, acting on them when the net is towed along the seabed, pushes them outwards and prevents the mouth of the net from closing.
Preliminary Environmental Information Report (PEIR)	The written output of the Environmental Impact Assessment undertaken to date for the Proposed Development. It is developed to support public consultation and presents the preliminary findings of the assessment to allow an informed view to be developed of the Proposed Development, the assessment approach that has been undertaken, draw preliminary conclusions on the likely significant effects of the Proposed Development and environmental measures proposed.
Pelagic	Of or relating to the open sea.
Pelagic trawl	A net used to target fish species in the mid water column.
Quota	A proportion of the Total Allowable Catch for a fish stock.
Recruitment	Recruitment can be defined as the number of fish surviving to enter the fishery or to some life history stage such as settlement or maturity.
RED	Rampion Extension Development Limited
Scallop dredge	A method to catch scallop using steel dredges with a leading bar fitted with a set of spring loaded, downward pointing teeth. Behind this toothed bar (sword), a mat of steel rings is fitted. A

Term	Definition
	heavy net cover (back) is laced to the frame, sides and after end of the mat to form a bag.
SICG	Scallop Industry Consultation Group
Spawning	The act of releasing or depositing eggs (fish).
Spawning stock biomass	The combined weight (in tonnes) of all the fish of one specific stock that are old enough to spawn. It provides an indication of the status of the stock and the reproductive capacity of the stock.
STECF	Scientific, Technical and Economic Committee for Fisheries
Stock assessment	An assessment of the biological stock of a species and its status in relation to defined references points for biomass and fishing mortality.
String	A series of static fishing gear (pots) joined together to form a single deployable linear line of pots.
Total Allowable Catch (TAC)	TACs are catch limits, expressed in tonnes or numbers, that are set for some commercial fish stocks.
UK	United Kingdom
Vessel Monitoring System (VMS)	A system used in commercial fishing to allow environmental and fisheries regulatory organizations to monitor, minimally, the position, time at a position, and course and speed of fishing vessels.

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Rampion 2
WIND FARM