Preliminary Environmental Information Report Volume 2

Appendix 24.1 Supporting Commercial Fisheries Information

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Contents

1 Introduction

1.1.1 This Appendix provides supporting information that has informed the preliminary environmental assessment presented in **Chapter 24 Commercial Fisheries** of this Preliminary Environmental Information Report (PEIR). It is to be read in conjunction with the aforementioned chapter.

1.1.2 The spatial scope of the impact assessment for commercial fisheries covers the area of the Proposed Offshore Scheme contained within the Draft Order Limits, together with the study area, described as follows.

1.1.3 The Proposed Offshore Scheme routes from Walberswick across the Southern North Sea to the boundary between the English and Dutch Exclusive Economic Zone (EEZ). The Draft Order Limits for the Proposed Offshore Scheme is illustrated in **Figure 24.1** of this PEIR**.**

1.1.4 Fisheries statistics are reported by International Council for the Exploration of the Sea (ICES) rectangles. Each rectangle is a square approximately 30 nautical miles (NM) on each side (30 min latitude and 1° longitude) in size (Ref 1).

1.1.5 The study area for commercial fisheries has been determined by the ICES rectangles which the Proposed Offshore Scheme overlaps. The Proposed Offshore Scheme lies within ICES Area IVc (Southern North Sea) and overlaps the following five ICES rectangles: 33F1, 33F2, 34F2, 35F2 and 35F3 as illustrated in **Figure 24.1** of this PEIR.

1.1.6 This Appendix gives an overview of the different types of local fishing methods and gear types which are used within the study area also identifying the nationalities that typically use these methods.

1.1.7 The Appendix also includes the landings data for each of the individual ICES Rectangles within the study area. This includes the top 10 species caught by value and by weight and the different gear types used to make these catches.

2 Local fishing methods

2.1 Overview

2.1.1 There are many different fishing methods used with the study area, including:

- Beam trawling
- Demersal trawling
- Demersal seine
- Pelagic trawl
- Drift of fixed nets
- Longlining
- Handlines
- Pots and traps
- Scallop dredging

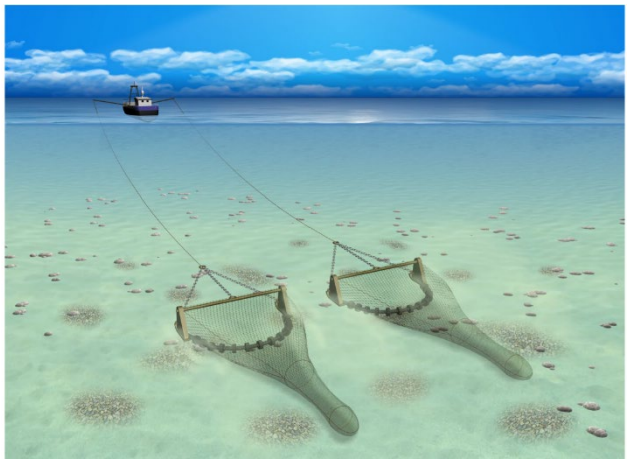
2.1.2 The following sections go into further details about each method.

2.2 Beam trawling

2.2.1 A traditional beam trawler comprises of a steel beam held above the seabed by shoes at each end which is attached to a net. The beam is towed using chain bridles which are attached to the shoes. The gear is towed from outrigger booms either side of the vessel. Tickler chains disturb the fish on the seabed which make them rise up to be caught in the net. **Inset 2-1** illustrates the trailing nets vary in configurating depending on the target catch.

2.2.2 This type of gear will penetrate into the seabed to between 25 to 50mm. This method of fishing is sensitive to areas of seabed with large obstructions such as infrastructure crossings. Beam trawling is used by UK, Belgian, German and Dutch Fishers, primarily beyond the 12 nautical mile (NM) limit.

Inset 2-1: Example of beam trawling gear



Source SeaFish (2022) (Ref 1)

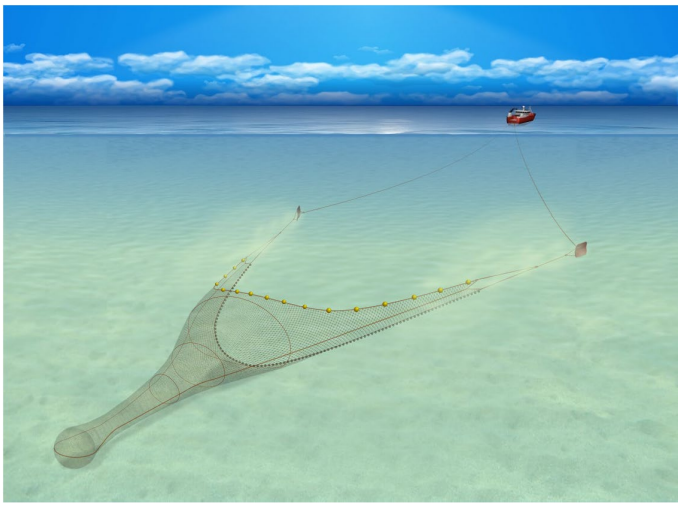
2.3 Demersal trawling

2.3.1 Demersal trawl consists of a funnel shaped net which is towed over the seabed. The horizontal opening of the net is produced by a mix of the hydrodynamic and

ground sheer forces acting on the trawl doors. The vertical opening of the net is sustained by a series of floats situated along the net headline. The base of the net is kept on the seabed by a weighted ground line. If fishing over rough ground, it can be fitted with rubber disks known as “rock hoppers”. The effective gear width of demersal otter trawls can range between 25m for smaller vessels and up to 65m for larger vessels. The towing speeds are dependent on the weather, tidal state and seabed conditions but can be between 2.5 and 3.5 knots. **Inset 2-2** illustrates this gear type.

2.3.2 As with the beam trawling gear the trailing nets vary in configuration depending on the target catch. Also, as with beam trawl gear, the demersal trawl gear has some penetration into the seabed of 25 to 50mm. It is sensitive to areas of seabed with large obstructions such as infrastructure crossings. Demersal trawling is used by the UK, French and Dutch fleets. For UK fishers this gear type is primarily used by the inshore fleet within 6NM limit. For Dutch and French fishers the activity is beyond the UK 12NM limit.

Inset 2-2: Example of demersal trawl gear



Source: Seafish (2022) (Ref 1)

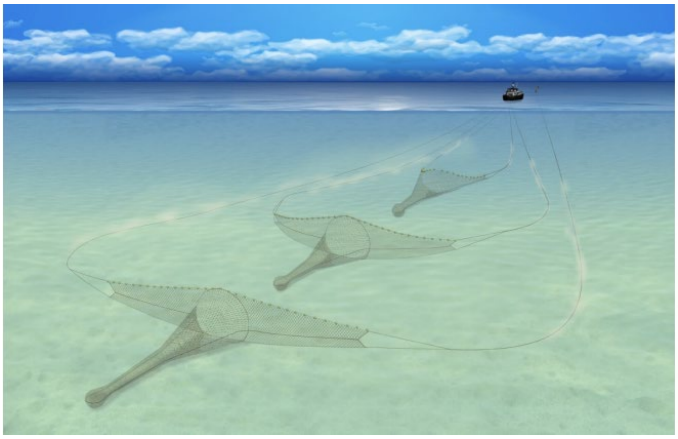
2.4 Seine nets

2.4.1 The main principle of a seine net is that long lengths of ropes are laid on the seabed in a circular shape with the net halfway round the circumference of the circle. The ropes are then slowly closed together, and as they move over the seabed they herd demersal fish into the net. There are three main types of seine nets; beach seine, anchor seine and Scottish seine, though there is no evidence of use of beach seine within the study area.

2.4.2 Scottish seine is a very skilful activity requiring extensive knowledge in locating fish within the grounds, accurate rigging of the gear, and consideration of tidal streams in relation to the gear throughout the shooting, towing and hauling operation. **Inset 2-3** is an example of Scottish Seine gear.

2.4.3 Seine gear is used by vessels from the UK, Netherlands and Germany primarily within the 12NM limit, but there is some evidence of this gear type usage further offshore.

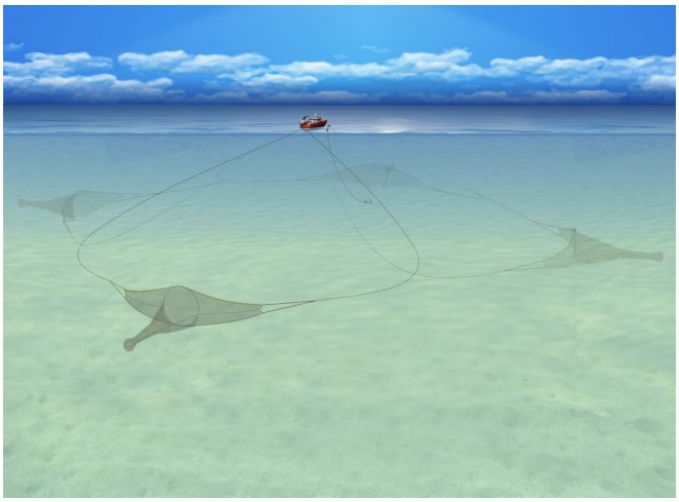
Inset 2-3: Example of Scottish Seine gear



Source: Seafish (2022) (Ref 2)

2.4.4 Anchored seine are handled in a similar way to Scottish seine. However an anchored seine net deploys and anchor at the same time as the net which is attached to a dhan (buoy) to ensure the nets do not drift too far. When the vessel returns to the dhan the crew pick up the other end of the seine net ropes and lead them to the winch, but they will can also moor the vessel to the anchor before lift it back out of the water. **Inset 2-4** is an example of anchor seine gear.

Inset 2-4: Example of anchor seine gear



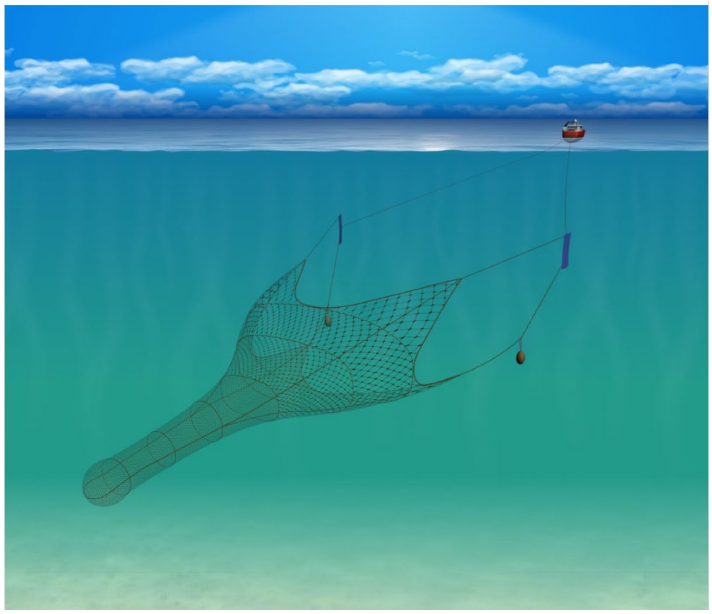
Source: Seafish (2022) (Ref 2)

2.5 Pelagic trawling

2.5.1 Pelagic trawl gear is used to catch pelagic species such as horse mackerel (*Trachurus trachurus*), herring (*Clupea harengus*), mackerel (*Scomber scombrus*) and sprat (*Sprattus sprattus*). It is similar to those used for demersal species, but the nets are placed higher in the water column and therefore there is no

penetration of the seabed with this method. This is illustrated in **Inset 2-5.** Pelagic trawling is used by the UK, French and Dutch fleet. Activity for this gear type is both in inshore and offshore waters.

Inset 2-5: Example of pelagic trawl gear



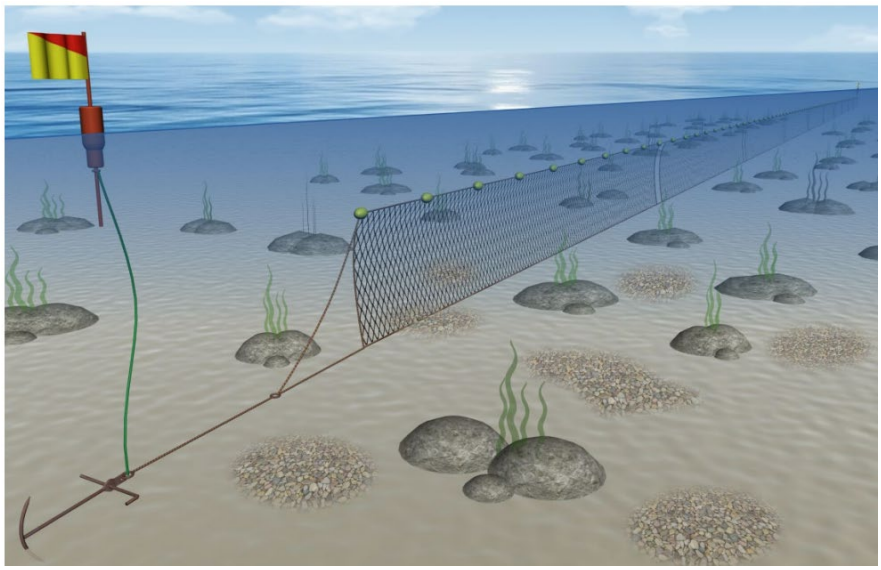
Source: Seafish (2022) (Ref 2)

2.6 Netting

2.6.1 There are three types of netting gear used within the study area: bottom drift netting, surface drift netting and static netting. The bottom drift net is suspended in the water with light contact with the seabed. The nets are approximately 100m in length, six of which comprise one fleet. Vessels tend to work between four or six fleets. The nets are not fixed and therefore are moved by the tide. Surface drift nets are a smaller net in length and do not interact with the seabed, fleets are between six and ten nets. The surface gear is driven by the tide and is used to target pelagic species. Examples of bottom and surface drift nets are illustrated in **Inset 2-6** and **Inset 2-7**.

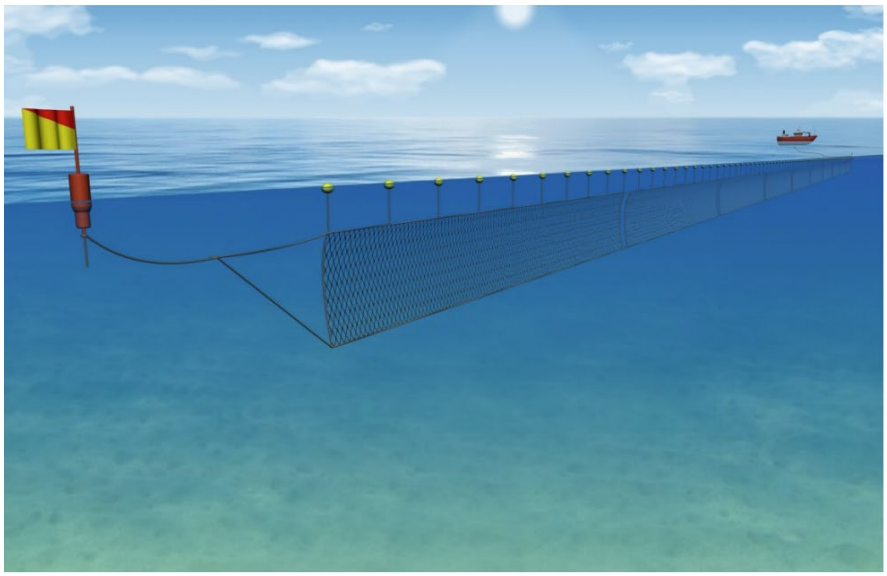
2.6.2 Static netting is similar to the bottom drift net but with the fleets anchored at the ends. The anchors penetrate the seabed by between 75 and 100 mm with the nets themselves penetrating up to 25mm depth. Netting gear is used by UK vessels, primarily in nearshore areas.

Inset 2-6: Example of bottom drift net gear



Source: Seafish (2022) (Ref 2)

Inset 2-7: Example of surface drift net gear



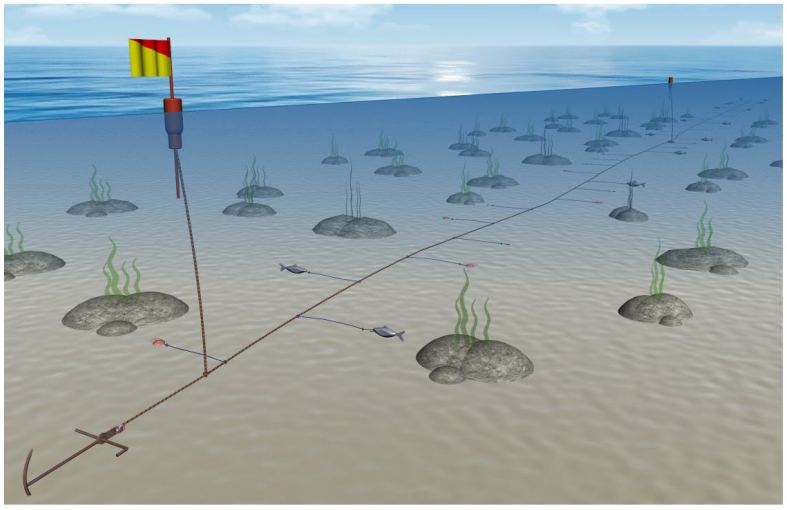
Source: Seafish (2022) (Ref 2)

2.7 Longlining

2.7.1 Longlining can be used to target both demersal and pelagic fish species with lines being rigged and set in position within the water column to suit a targeted species. A standard longline comprises of the long length of line with multiple branches of lines with hooks attached at regular intervals. If being used to target demersal species, the lines can be anchored at the ends which would cause some seabed penetration. **Inset 2-8** illustrates this type of gear.

2.7.2 Longlining gear is used by UK fishers, however there are not many vessels using this method and within the surveillance sightings only three vessels were identified using this gear type.

Inset 2-8: Example of longlining gear



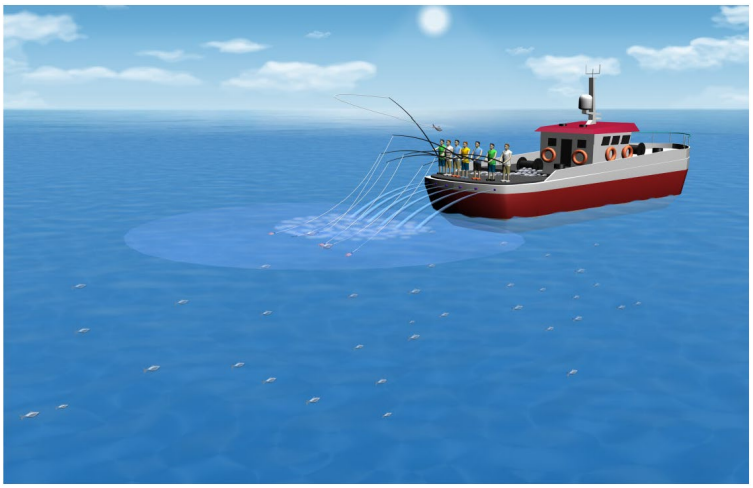
Source: Seafish (2022) (Ref 2)

2.8 Handlines

2.8.1 Handlining varies depending on where it is happening and what species is being targeted. In general, it uses a baited line from a stationary boat. The fisher pulls the line in by hand, rather than using rods or poles. However, poles and lines can be used. This method would involve a number of rods being set up on a boat. These might be operated by hand or mechanically. Bait is used to attract the target species. **Inset 2-9** illustrates this gear type.

2.8.2 Handline gear is used within the UK fleet mainly within the 6NM limit.

Inset 2-9: Example of handline gear



Source: Seafish (2022) (Ref 2)

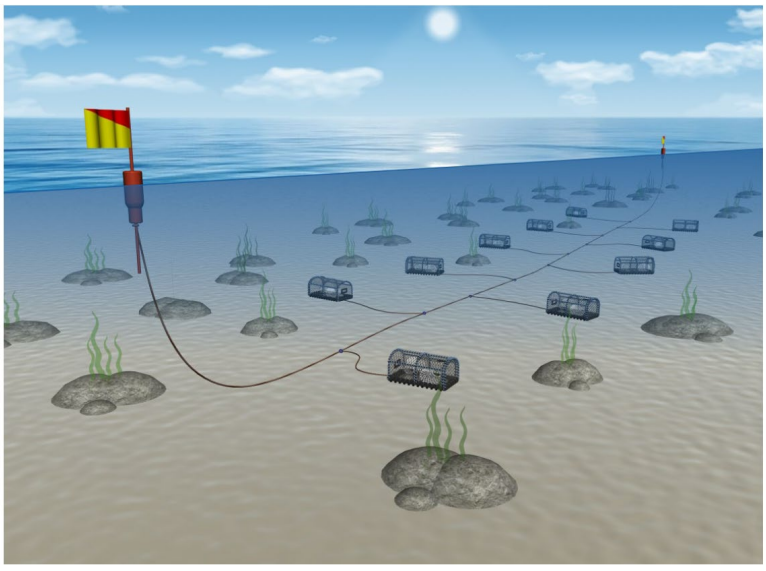
2.9 Pots and traps

2.9.1 Shellfish such as common whelk (*Buccinum undatum*), brown/edible crab (*Cancer pagurus*) and European lobster (*Homarus gammarus*) are targeted throughout the Southern North Sea, using static gear such as pots (also known as creels). The design of pot will vary depending on region and species being targeted. Generally, the pots have one or more "funnel" shaped openings for the shellfish to enter through. Crab and whelk are targeted on sandy seabed, whilst pots are deployed on hard, rocky ground for lobster.

2.9.2 Lobster and crab pots tend to be on strings of 15 to 20 pots with most vessels working an average of 100 to 150 pots. These static pots sit on the seabed, left to 'soak' for between a couple of days to a week, and therefore cause no seabed penetration. This is illustrated in **Inset 2-10**.

2.9.3 Whelk are generally caught using a purpose designed pot, which usually consists of modified, weighted plastic drums. The number of whelk pots on a string can be higher than those used for crab or lobster, with up to 80 pots per string. Most fleets' whelk vessels will work on average 600 to 800 pots. Sometime whelk pots are anchored which does cause some seabed penetration of between 75 and 100mm depth. Pots and traps are used by the UK fleet.

Inset 2-10: Example of a fleet of pots



Source: Seafish (2022) (Ref 2)

2.10 Scallop dredging

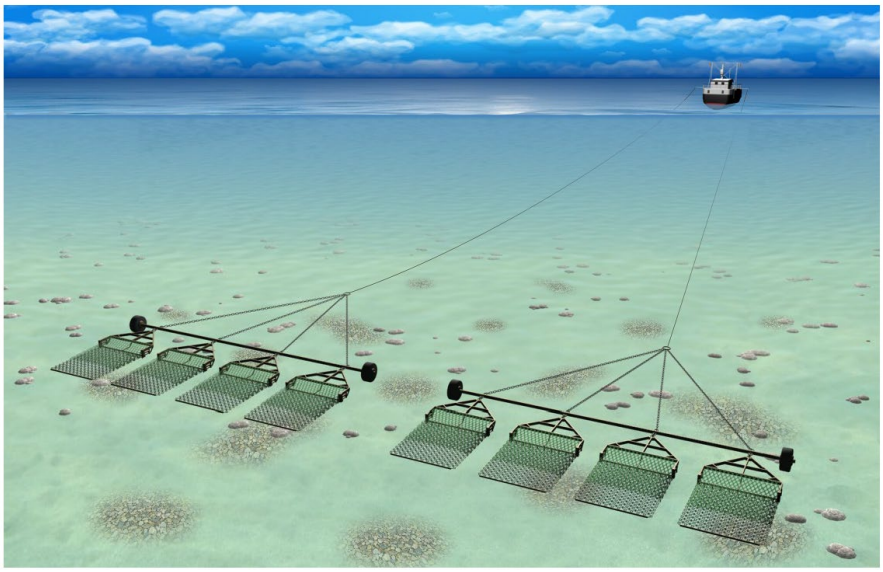
2.10.1 Scallop dredging gear are rigid structures which are towed behind a vessel along the seabed. Scallop dredges can penetrate the seabed by 3-10 cm depending on the seabed. They consist of triangular frame with a toother bar at the front which flip scallops out of the seabed in the collecting bag behind it which is a chain link bottom and either a netting or chain link on the top. The size of the bar towing

the dredges, and the number of dredges is based on the size and strength of the vessels towing. Smaller, under 10m vessels may use three or four, whereas larger boats around 30m in length can tow up to 20.

2.10.2 Scallop fishery is cyclical in nature with the production grounds rotating around the UK on a seven-to-eight-year cycle.

2.10.3 Vessels over 10m who wish to catch scallop require a permit issued from the MMO to allow them to use mechanical dredging gear (MMO, 2024) (Ref 3). None of the vessels registered at the local ports within the study area currently hold Scallop licenses.

Inset 2-11: Example of scallop dredging gears



Source: Seafish (2022) (Ref 2)

3 Landings data within the study area

3.1 Overview

3.1.1 The following sections looks at the landings data within each of the ICES rectangles that the Proposed Offshore Scheme intersect. This information is taken from the Marine Management Organisations (MMO) UK Sea fisheries annual statistics which are issued annually (Ref 3). These statistics show the catch data from the previous year and four further years previous to that, 2019 to 2023. This allows the data from previous years to be compared to identify trends or anomalies in the catch.

3.1.2 This data is annually released by the MMO in September for the previous year. It will therefore be updated for the ES with the 2024 data after its release in September 2025.

3.1.3 It is acknowledged that publicly available statistics will underrepresent the inshore fleet; fishing vessels <12m are not required to carry Automatic Identification Systems (AIS) and do not directly report landings data. Landings data derived from the MMO catch statistics can therefore only provide a general overview of fishing effort.

3.1.4 For each ICES rectangle an analysis has been undertaken of the different species caught by their catch value and their catch weight in tonnes which has been illustrated in graphs showing the top 10 species over a five-year period. Additionally, further analysis identified the different types of fishing methods used within each area and the catch values of these different gear types.

3.2 ICES Rectangle 33F1

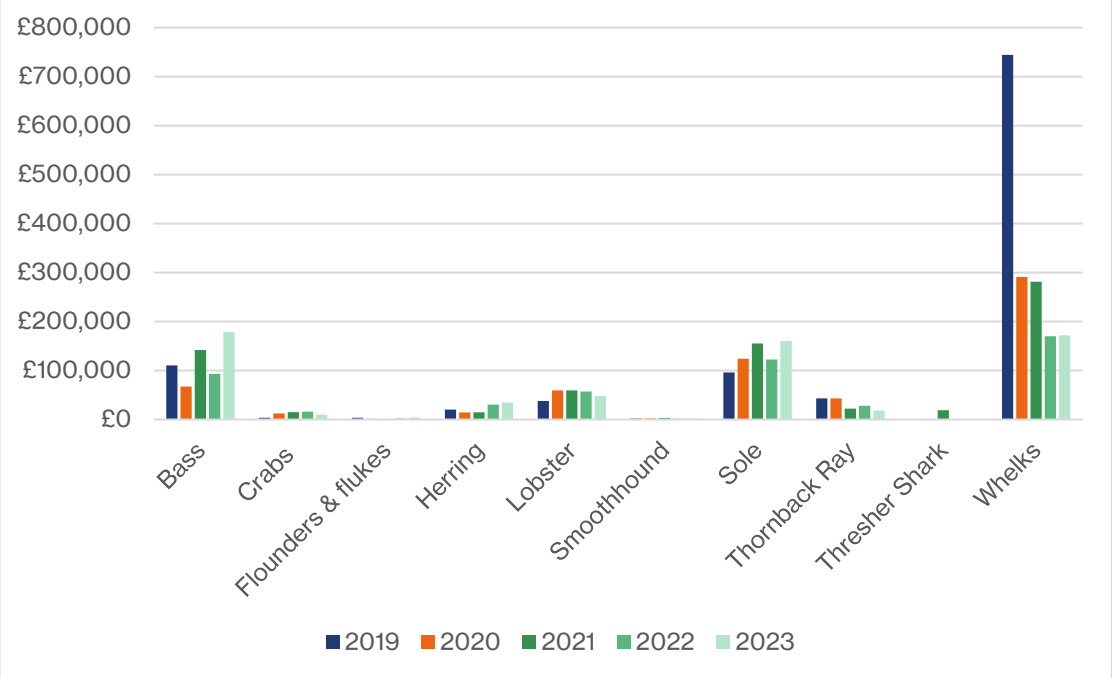
3.2.1 ICES rectangle 33F1 is the rectangle closest to the proposed Landfall Site. It has the highest overall catch weight and catch value for the under 10m vessels compared to the remaining four ICES rectangles which constitute the study area. The rectangle is primarily fished by the UK inshore fleet. The most caught species by weight and by value are whelks as illustrated in **Inset 3-1** and **Inset 3-2**. The peak months for whelk fishing are between February and June, although they are caught all year using whelk pots.

3.2.2 Bass and sole are targeted demersal species caught in this rectangle. The peak seasons are between July and December for sole and between April and May for bass. Bass and sole are caught using many different fishing gear including demersal seine, demersal trawl, longlines, handlines and drift and fixed nets. In 2023 the demersal catch value equated to approx. 59% of the total catch value within this rectangle.

3.2.3 Lobster and crabs are also targeted within this rectangle; primarily using pots but also beam trawl or drift and fixed nets. In 2023 the shellfish catch value equated to approx. 36% of the total catch value within this rectangle.

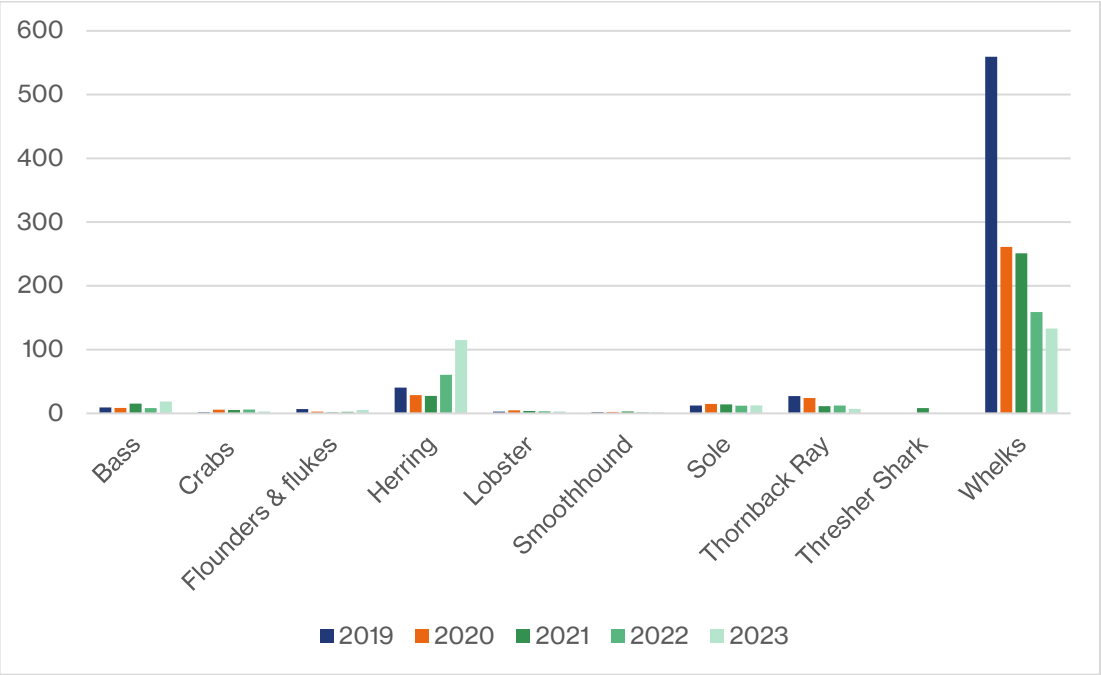
3.2.4 Multiple methods of fishing are used within this rectangle, but typically demersal trawl, pots and traps and drift and fixed nets have the highest value and are used all year round as shown in **Table 3-1**.

Inset 3-1: Top 10 species by annual landed value (GBP) in 33F1



Source MMO (2024) (Ref 4)

Inset 3-2: Top 10 species by annual landed weight (tonnes) in 33F1



Source MMO (2024) (Ref 4)

Table 3-1: Landed value (GBP) by fishing gear for 33F1

Year	demersal trawl	Pelagic trawl	Pots and Traps	Dredge	Drift and Fixed Nets	Handlines	longlines	Beam Trawl
2023	£107,862.00	£30,084.00	£221,026.00		£193,332.00	£10,630.00	£79,216.05	£501.89
2022	£434,064.00		£235,736.00	£616.00	£340,384.00		£74,630.00	
2021	£28,526.00		£269,071.00		£404,940.00		£29,184.00	£2,052.00
2020	£69,200.00		£348,833.00		£172,741.00	£2,174.00	£30,621.00	
2019	£61,208.00		£788,654.00	£2,748.00	£133,031.00	£18,986.00	£68,233.00	-

Source MMO (2024) (Ref 4)

3.3 ICES Rectangle 33F2

3.3.1 Of the ICES rectangles which make up the study area, rectangle 33F2 has the highest catch weight for the over 10m vessels with over 1000 tonnes being caught in the last five years. Similar to rectangle 33F1 the most caught species between 2019 and 2023 are whelk (as illustrated in **Inset 3-3** and **Inset 3-4)**. There was a significant catch of squid in 2023 which had a value of over £650,000. This was unusual as the average squid catch value over the previous four years was £14,000. This can be partially explained by the UK fisheries now starting to target squid, which would normally be targeted by the European fleet.

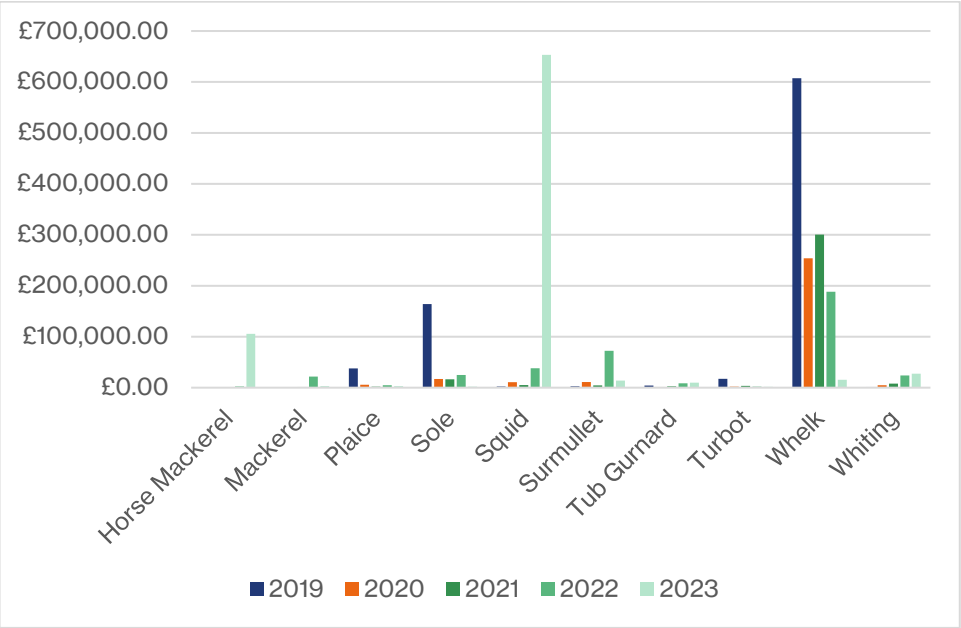
3.3.2 Lobster and crabs are also targeted within this rectangle; primarily using pots but also beam trawl or drift and fixed nets. In 2023 shellfish equated to approx. 80% of the total catch value within this rectangle.

3.3.3 Plaice and sole are targeted demersal species caught in this rectangle. The peak season is between July and December for sole and between October and December for plaice. Whiting is another highly targeted species with a peak season in February and March.

3.3.4 Pelagic trawl gear is used to target horse mackerel and mackerel. In 2023 the catch for these two species equated to approx. 10% of the overall catch value for the rectangle.

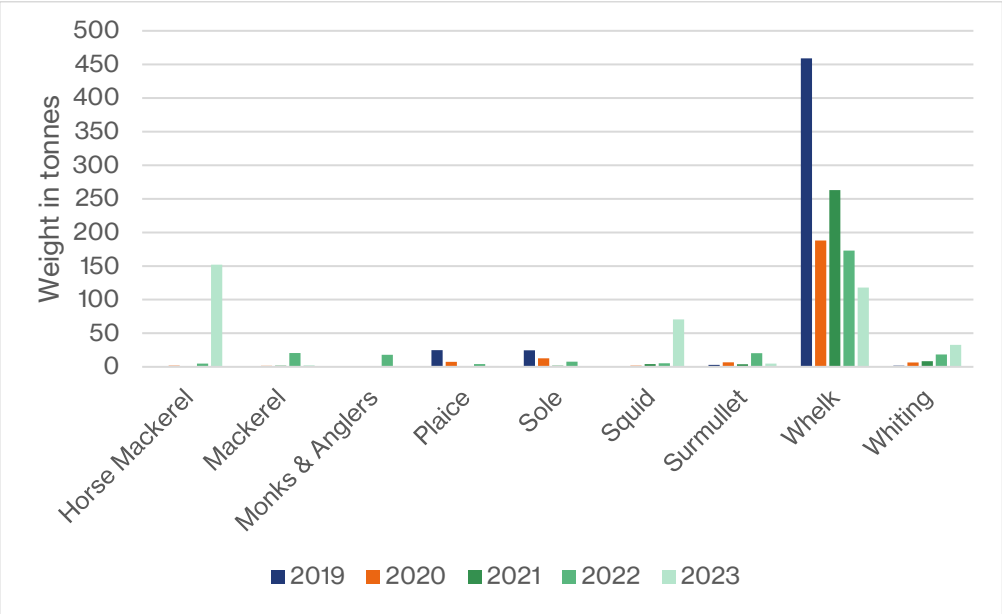
3.3.5 Multiple methods of fishing are used within this rectangle, but typically demersal trawl, demersal seine, pots and traps have the highest value and are used all year round (as shown in **Table 3-2)**.

Inset 3-3: Top 10 species by annual landed value (GBP) in 33F2



Source MMO (2024) (Ref 4)

Inset 3-4: Top 10 species by annual landed weight (tonnes) in 33F2



Source MMO (2024) (Ref 4)

Table 3-2: Landed value (GBP) by fishing gear for 33F2

Year	demersal trawl	Pelagic trawl	Pots and Traps	Drift and Fixed Nets	Demersal seine	Handlines	longlines	Beam Trawl
2023	£437,046.00	£106,962.00	£158,009.00	£2,822.00	£297,934.00	£4,761.00	£5,829.00	
2022	£91,885.00		£4,445.00	£60,410.00	£116,639.00		£104.00	
2021	£23,258.00		£300,004.00	£5,356.00	£24,499.00		£67.00	£91.16
2020			£252,575.00	£2,223.00	£29,900.00		£635.00	£33,362.00
2019			£602,213.00	£3,083.00	£4,422.00		£1,009.00	£256,630.00

Source MMO (2024) (Ref 4)

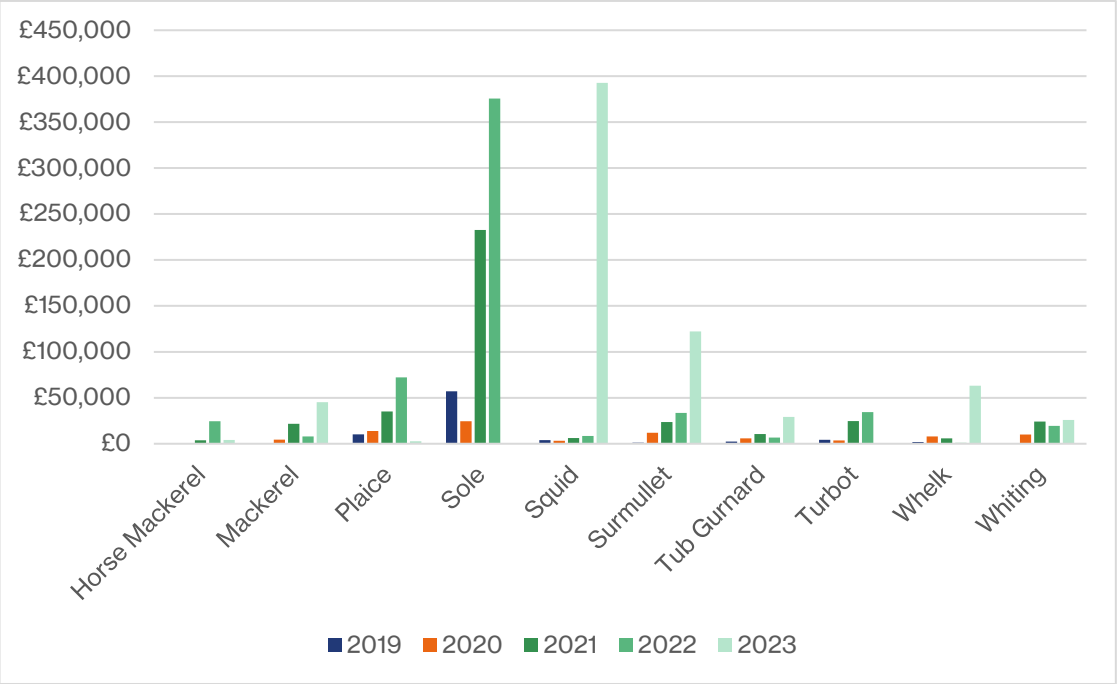
3.4 ICES Rectangle 34F2

3.4.1 ICES rectangle 34F2 is not fished by the under 10m vessels due to its distance offshore requiring larger vessels to access these fishing grounds. It is an area that is highly fished by European vessels, in particular the Dutch fleet. As with rectangle 33F2 there was a significant catch of squid in 2023 which had a value of over £390,000 as illustrated in **Inset 3-5**. This was unusual as the average squid catch value over the previous four years was £5400. This can be partially explained by the UK fisheries now starting to target squid, which would normally be targeted by the European fleet.

3.4.2 Sole are the most targeted demersal species, although there are other large catch values for surmullet and plaice. There is some evidence of shellfish such as whelk, crab and lobsters being caught within this rectangle but not to the same extent as the rectangles closer to shore as illustrated in **Inset 3-6**. However, due to abnormal squid catch the overall shellfish value for 2023 equates to over 63% of the rectangles overall annual total.

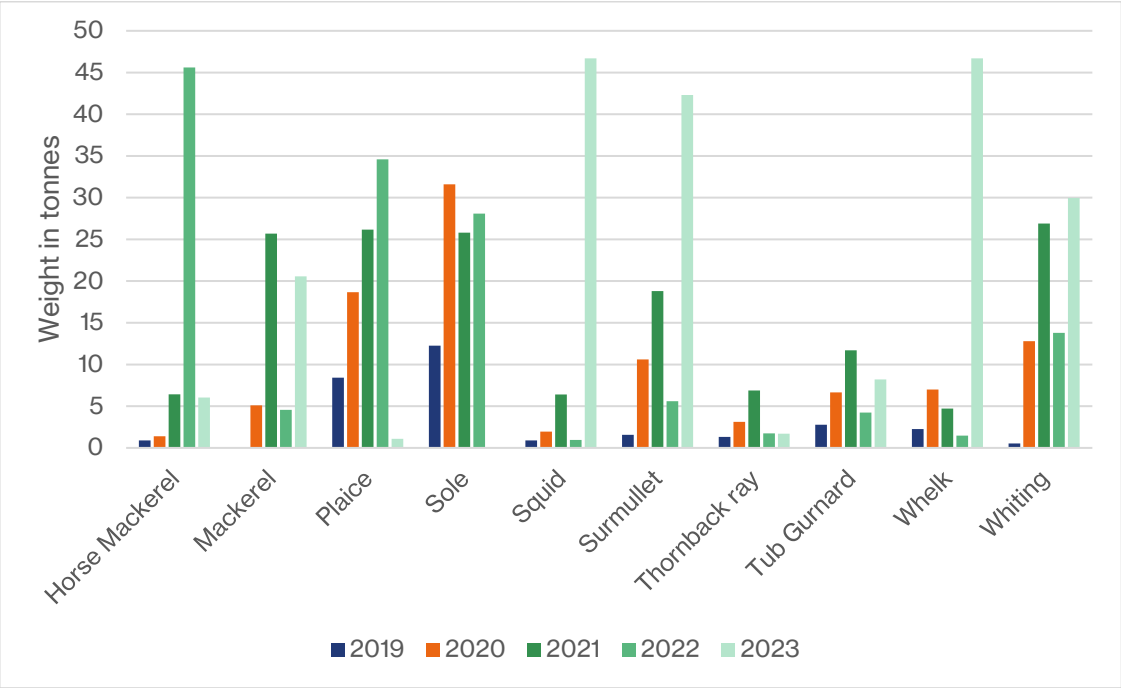
3.4.3 Multiple methods of fishing are used within this rectangle, but typically demersal trawl and demersal seine have the highest value and are used all year round as shown in **Table 3-3**.

Inset 3-5: Top 10 species by annual landed value (GBP) in 34F2



Source MMO (2024) (Ref 4)

Inset 3-6: Top 10 species by annual landed weight (tonnes) in 34F2



Source MMO (2024) (Ref 4)

Table 3-3: Landed value (GBP) by fishing gear for 34F2

Years	Demersal trawl	Pelagic trawl	Pots and Traps	Demersal seine	longlines	Beam Trawl
2023	£246,123.00		£63,599.00	£412,665.00		
2022	£192,420.00	£271.00		£74,987.00		
2021	£321,176.00		£3,682.00	£93,826.00		£2,045.00
2020			£6,119.00	£55,044.00	£94.00	£58,069.00
2019				£6,186.00	£87.00	£80,662.00

Source MMO (2024) (Ref 4)

3.5 ICES Rectangle 35F2

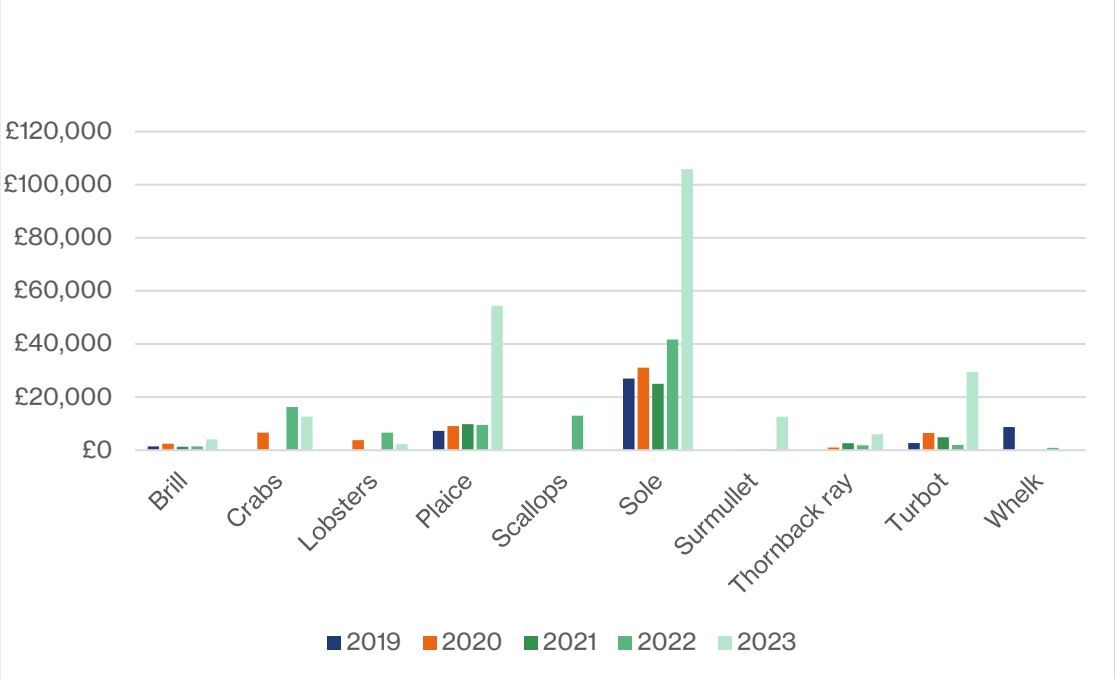
3.5.1 ICES rectangle 35F2, similar to rectangle 34F2, is not fished by the under 10m vessels due to its distance offshore. It is an area that is highly fished by European vessels, in particular the Dutch fleet.

3.5.2 Sole are the most targeted demersal species although there are other large catch values for plaice and turbot as illustrated in **Inset 3-8.**The demersal catch equates to over 92% of the overall catch value for rectangle 35F2.

3.5.3 There is some evidence of shellfish such as whelk, crab and lobsters being targeted within this rectangle but not to the same extent as the rectangles closer to shore as illustrated **Inset 3-7**. The overall shellfish value for 2023 equates to approx. 7% of the rectangles overall annual total.

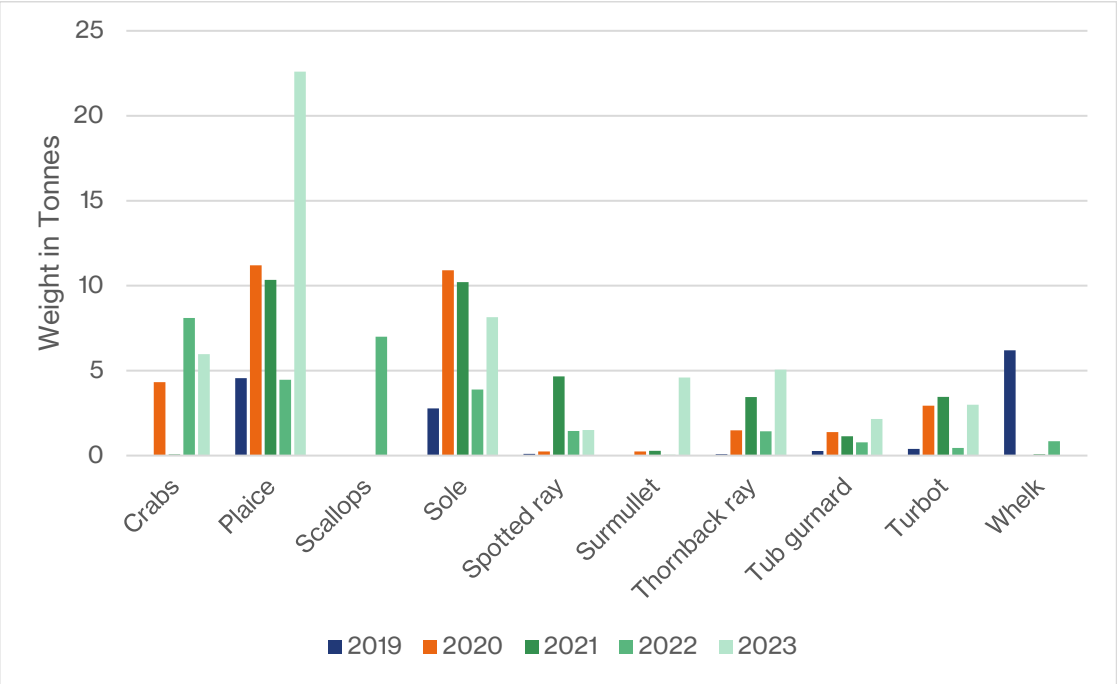
3.5.4 Multiple methods of fishing are used within this rectangle, but typically beam trawling, demersal trawl and demersal seine have the highest value and are used all year round. In 2023 the beam trawl catch value was over £180,000 which was considerably higher than the previous four years as shown in **Table 3-4**.

Inset 3-7: Top 10 species by annual landed value (GBP) in 35F2



Source MMO (2024) (Ref 4)

Inset 3-8: Top 10 species by annual landed weight (tonnes) in 35F2



Source MMO (2024) (Ref 4)

Table 3-4: Landed value (GBP) by fishing gear for 35F2

Years	Demersal trawl	Pots and Traps	Dredge	Demersal seine	Beam Trawl
2023	£23,820.00	£14,112.00		£17,166.00	£186,767.00
2022	£49,201.00	£24,610.00	£13,020.00	£1,997.00	£11,214.00
2021	£25,547.00			£974.00	£23,422.00
2020		£10,341.00		£1.60	£53,357.00
2019		£8,692.00			£39,470.00

Source MMO (2024) (Ref 4)

3.6 ICES Rectangle 35F3

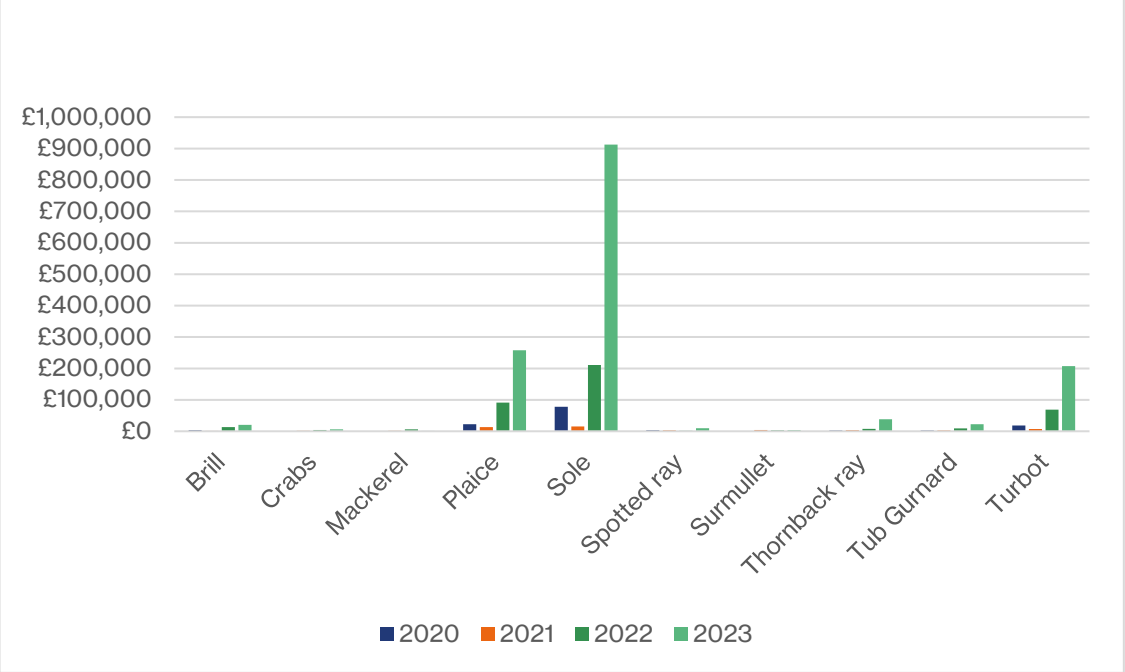
3.6.1 There is no MMO data for 2019 for this rectangle. ICES rectangle 35F3, similar to rectangle 34F2, is not fished by the under 10m vessels due to its distance offshore. It is also an area that is fished by European vessels in particular the Dutch fleet There is limited statistical evidence of the UK fleet in this area.

3.6.2 Sole are the most targeted demersal species, however there are other large catch values for plaice and turbot as illustrated in **Inset 3-9** and **Inset 3-10**. The demersal catch equates to over 99% of the overall catch value for rectangle 35F3.

3.6.3 Only a small amount of shellfish (crab and lobsters) are caught in this rectangle by either beam trawl or demersal trawl, but shellfish are not specifically targeted.

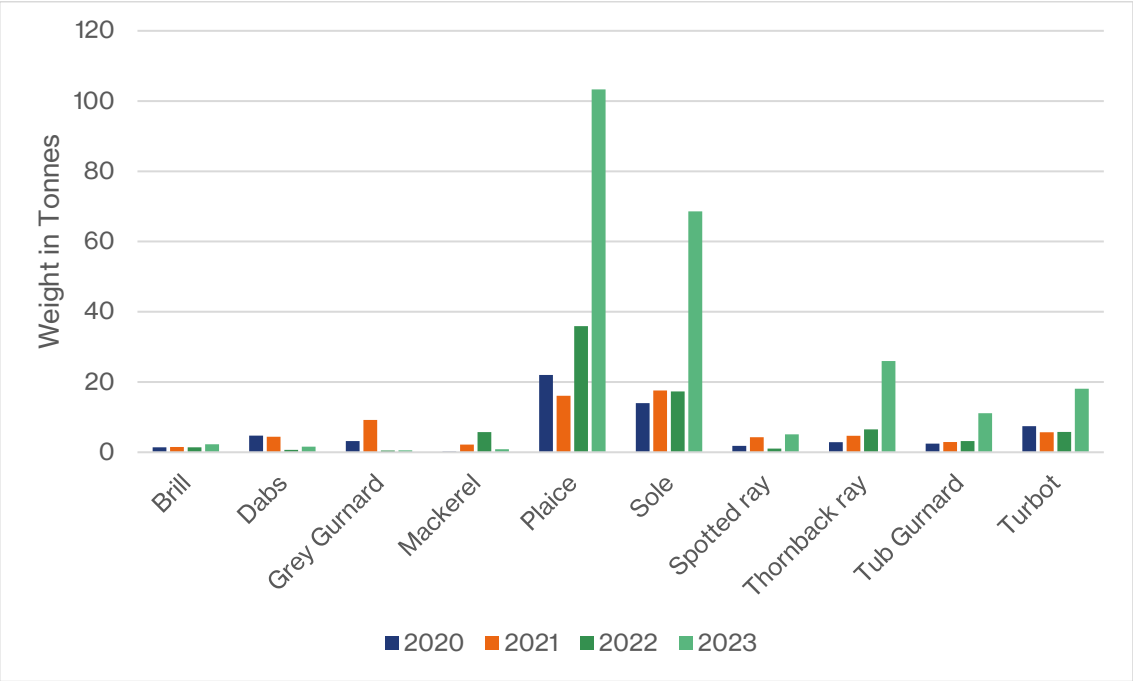
3.6.4 There is evidence of three different methods of fishing within this rectangle; the primary method being beam trawling with some catch by demersal seine and demersal trawl as shown in **Table 3-5.**

Inset 3-9: Top 10 species by annual landed value (GBP) in 35F3



Source MMO (2024) (Ref 4)

Inset 3-10: Top 10 species by annual landed weight (tonnes) in 35F3



Source MMO (2024) (Ref 4)

Table 3-5: Landed value (GBP) by fishing gear for 35F3

35F3	Demersal trawl	Demersal seine	Beam Trawl
2023	£1,045.00	£6,043.00	£1,489,039.00
2022	£9,090.00	£11,540.00	£400,242.00
2021		£21,532.00	£45,308.00
2020		£1,088.00	£138,709.00

Source MMO (2024) (Ref 4)

References

Ref 1 ICES (2022) ICES Statistical Rectangles. Available at: (Online) https://gis.ices.dk/geonetwork/geonetwork/api/records/81f68a99-9b91-4762-80d3-31c069731f44 (Accessed 7 August 2024)

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Ref 3 MMO (2024) Fishing vessel license types. (Online) Available at: https://www.gov.uk/guidance/fishing-vessel-licence-types#:~:text=A%20scallop%20permit%20allows%20the,vessels%20fishing%20for%20king%20scallops. (Accessed 9 August 2024)

Ref 4 MMO (2024) UK sea fisheries annual statistics report 2023. (Online) Available at: https://www.gov.uk/government/statistics/uk-sea-fisheries-annual-statistics-report-2023 (Accessed 24 January 2025)

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