

CHAPTER 22: COMMERCIAL FISHING

22. COMMERCIAL FISHERIES

22.1 Introduction

This chapter assesses the potential effects on commercial fisheries from the construction and operation of the proposed Aberdeen Harbour Expansion Project at Nigg Bay. This chapter should be read in conjunction with ES Appendix 22-A: Commercial Fisheries Technical Report.

For the purposes of this chapter commercial fisheries is defined as the activity of catching fish and other seafood for commercial profit from wild fisheries.

Effects on habitats and fish and shellfish populations are assessed in Chapter 13: Fish and Shellfish Ecology, and effects on the navigational safety of fishing vessels are assessed in Chapter 21: Shipping and Navigation. Where relevant, information has been taken from the assessments presented in these chapters.

22.2 Policy, Legislation and Guidance

There is no specific legislation concerning the assessment of effects on commercial fisheries from port development projects. However, the following legislation, guidance, consultation and government agency literature will be taken into account in relation to the proposed Aberdeen Harbour Expansion Project. Policy, legislation and guidance applicable to the wider project can be found in Chapter 4: Planning and Legislation.

- British Standards Institution (BSI): PD 6900:2015 Environmental impact assessment for offshore renewable energy projects. Guide (2015);
- Part 4 of the Marine (Scotland) Act 2010, relating to marine licensing;
- The Department for Energy and Climate Change (DECC), UK Offshore Energy – Strategic Environmental Assessment (SEA);
- Seafish – Best practice guidance for fishing industry financial and economic impact assessments (2012);
- The Crown Estate FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison (Jan 2014);
- Regulatory advice received throughout the EIA process; and
- Cefas/Marine Consents and Environment Unit (MCEU) Guidelines for assessing the impact of offshore wind farm (Cefas/MCEU, 2004).

22.3 Consultation

A summary of relevant responses to the EIA Scoping Opinion (ES Appendix 1-D) and responses from key stakeholders regarding commercial fisheries is presented in Table 22.1. Information on where these comments are addressed (where directly relevant) is also provided.

Table 22.1: Summary of consultation

Consultee	Date	Summary of Consultation	Where addressed in ES
Marine Scotland Science	19 September 2013	The ES must show evidence of direct fisheries consultation in relation to creel (a type of basket pot used to catch crab and lobster) fishing for crab and lobster.	A full account of consultation with the local fishing community is given in the Technical Report supporting this chapter.
		The ES must include consideration of restrictions on vessel traffic during construction.	The ES has assumed that the site is completely restricted to commercial fishing activity from the start of construction and that the impact is permanent. This is assessed in Section 22.7.2.
		The ES must demonstrate consideration of impacts by the development on diadromous fish, salmon and sea trout net fisheries in the vicinity of the works during construction, operation and if relevant decommissioning.	Further consultation has found no commercial fishing for diadromous fish within the development area. Effects on fish ecology are addressed in Chapter 13: Fish and Shellfish Ecology.
Marine Scotland Compliance	19 September 2013	The ES must demonstrate consideration of impacts on the active lobster fishery around Nigg Bay.	Addressed in Section 22.7.2
		The ES must demonstrate consideration of the effects of construction traffic or increased marine traffic following construction on the brown crab fishery operating outside Nigg Bay.	It has been assumed that commercial fishing will be displaced from new traffic route created by shipping leaving the new harbour. This impact is included within Section 22.7.2.
Scottish Fishermen's Federation	6 August 2013	With regard to cumulative and combined effects, the ES must assess the possible addition of the Hywind project in the Buchan Deeps.	Section 22.9 assesses the projects to be considered for cumulative impacts.
Scottish Fishermen's Federation	Consultation undertaken as part of Shipping and Navigation study	We have no concerns that the planned development at Nigg Bay will affect our members during the construction phase.	Noted
		Many of our members would be transiting in the vicinity. We would recommend regular updates to the Kingfisher Fortnightly Bulletin on planned in-field vessels which would keep the local fishermen updated.	Addressed in Chapter 21: Shipping and Navigation
		We have no concerns with additional construction vessels expected on site as an increased risk to navigation, given the current levels of vessel activity around Aberdeen Harbour entrance	Noted
Scottish White Fish Producers Association, The Scallop Association and The Scottish Fishermen's Federation.	12 January 2015	No comments.	

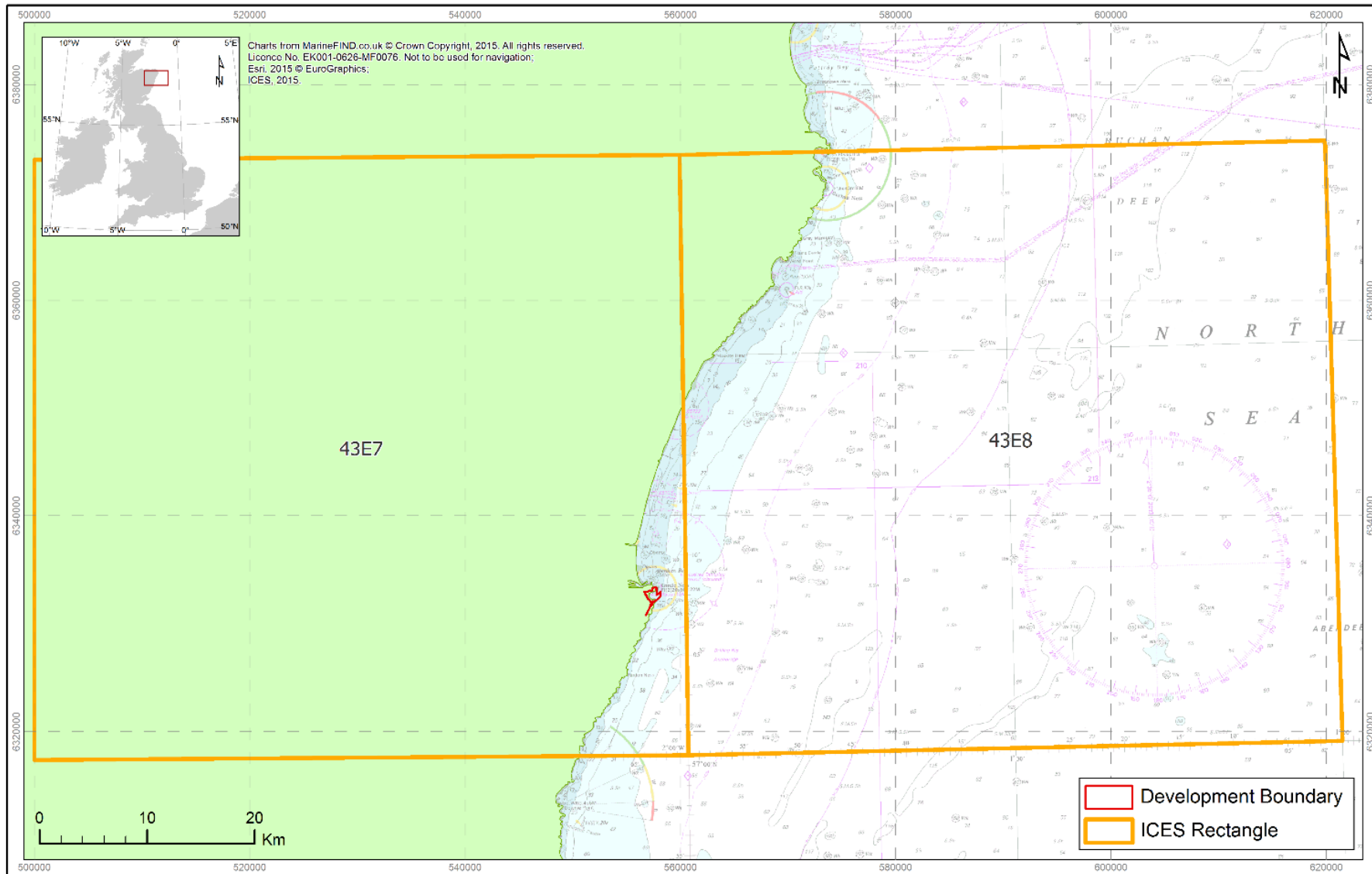
Table 22.1: Summary of consultation continued

Consultee	Date	Summary of Consultation	Where addressed in ES
Aberdeen Fish Producers Organisation (AFPO)	Consultation undertaken as part of Shipping and Navigation study	We currently have 14 member vessels from Aberdeen to Buckie and focus predominantly on whitefish species with some Nephrops landings as well as smaller vessels prosecuting shellfish species.	Noted
		The main grounds our vessels fish are in the North Sea with some activity on the seas to the West of Scotland.	Noted
		The Nigg Bay area is a well-known shellfish area and one where some of our members operate in and around.	Noted, conclusions drawn from site specific consultation are given in Section 0.
		I would firstly like to note that their vessels are not fitted with VMS and as such their movements will not be recorded in any official way and their data is included in your analysis of movements within Nigg Bay.	This is acknowledged in Section 22.6.4 and as a result consultation advice and ScotMap data have also been taken in to consideration for the description of the baseline and assessment of effects.
		They do, however, move from the Portlethen area up to the Nigg bay area where they have gear set. The Bay is well known for being a relatively shallow area being in the order of 2 /3 fathoms in parts.	Noted
Greenhowe Marine Services	Consultation undertaken as part of Shipping and Navigation study	The fishing for Lobsters is seasonal and I have fished here for 20 years. The coast from Aberdeen to Stonehaven is heavily fished with creels with boats from various ports i.e. Cove, Portlethen, Newtonhill and Stonehaven. Due to the high volume of creels worked in the summer months all down the coast - chosen to work Nigg Bay (full time basis for 8 Years/200 creels).	Noted and included in to baseline Section 0.
		The fishing grounds also run parallel north and south off the lighthouse and out to 1.5 miles running SE off the lighthouse. The navigation channel will also run ENE on the heading into the new port and there will be no way the fishing grounds between the existing port and the new harbour will be fishable any more due to traffic and safety for all users.	Noted and included in to baseline Section 0.
F/V Gordon	15 January 2015	At least two local vessels target crab and lobster with creel pots along the coast. Specific areas targeted include the risk to north and south of Nigg Bay.	Impacts are assessed in Section 0.
F/V Gordon	Consultation undertaken as part of Shipping and Navigation study	Both the Boy Gordon and Jonny II fish (potting) within Nigg Bay. Neither carry AIS. Buoys laid in Nigg Bay and surrounding waters may be a snagging hazard if unseen.	The lack of AIS/VMS on smaller vessels is acknowledged as a data limitation in Section 22.6.4 and site specific consultation conclusions are detailed in Section 0.

22.4 Methodology

22.4.1 Study Area

The study area has been defined as International Council for the Exploration of the Sea (ICES) rectangles 43E7 and 43E8 as shown in Figure 22.1.



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Figure 22.1: ICES rectangles used to define minimum area of study (ICES rectangles 43E7 and 43E8)

22.4.2 Data Sources

A desk-based review of existing data has been carried out to collect sufficient data to allow impacts on commercial fishing to be assessed in a robust and defensible manner.

The following data sets have been collected, analysed interpreted and then described in the environmental baseline for commercial fishing;

- Marine fisheries statistical data from Marine Scotland, which are recorded according to activity/catches from relevant ICES rectangles according to fishery type, species, values and other variables;
- ScotMap (<15 m fishing vessel activity);
- VMS data maps produced by Marine Scotland Science;
- Freshwater fisheries statistical data, specifically salmon and trout catch statistics (Marine Scotland, 2013);
- Scotland's Marine Atlas: Information for the National Marine Plan (Baxter et al., 2011); and
- Other published information and technical reports associated with nearby developments, such as Beatrice Offshore Wind Farm.

Other principal data sources include:

- Chapter 12: Benthic Ecology (information on benthic communities and their support of commercial fishing stocks);
- Chapter 13: Fish and Shellfish Ecology (information on the likely presence of ecological impacts on commercial fish species which could affect stocks);
- International Council for the Exploration of the Sea (ICES);
- EU Fisheries Committee publications and datasets (Europa and Eurolex);
- Marine Scotland (MS);
- Seafish;
- Scottish Fishermen's Federation (SFF);
- Dee District Salmon Fishery Board (DDSF);
- Association of Salmon Fisheries Board (ASFB);
- Salmon Net Fishing Association of Scotland (SNFAS);
- Atlantic Salmon Trust (AST);
- East of Scotland Inshore Fisheries Group;
- Other regional affiliated fishermen's associations and producers organisations, such as the Aberdeen Fish Producers Organisation;
- Local port merchants and agents;
- Aberdeen Harbour Board Harbour Master; and
- Non UK National Fisheries Datasets (if available).

22.5 General Impact Assessment Methodology

This chapter follows the impact assessment methodology described in Chapter 5: Environmental Impact Assessment Process, however, two changes will be made as described below:

- Impacts will cover both construction and operational phases of the project as the impact source is displacement, which will continue throughout the life of the development;
- An environmental risk assessment will not be carried out. The displacement of fishing vessels is certain to occur, with no mitigation available that could reduce the likelihood of fishing vessels being displaced. As such it is not appropriate to carry out a risk assessment in the same way as it would be, for example, for the spillage of pollutants; where mitigation can be put in place to reduce the likelihood of the spillage occurring and thus reduce environmental risk.

22.6 Baseline

22.6.1 Key Species

This section provides an overview of key species by value and weight to characterise the commercial fishing undertaken in the project area.

ICES Rectangle 43E7 Key Species by Value

ICES landings data for the period 2009 to 2013 (Table 22.2) showed that the most valuable species in 43E7 are crabs followed by lobsters, with squid and scallops ranked the third and fourth most valuable species. Below these species, the value drops off dramatically suggesting these four species are the predominant target species in 43E7. This is consistent with consultation responses which identify the Nigg Bay area (which is contained in 43E7) as important for creel potting for lobster and crab.

Figure 22.2 shows the trends for catch value of the top five species over the previous 5 years for which statistics were available. Crab and lobsters are consistently the two most valuable catches with scallop and squid more variable year to year. Mackerel is the fifth most value catch but is consistently the least valuable of the top five. Squid and scallop have a significant peak for catch value in 2011.

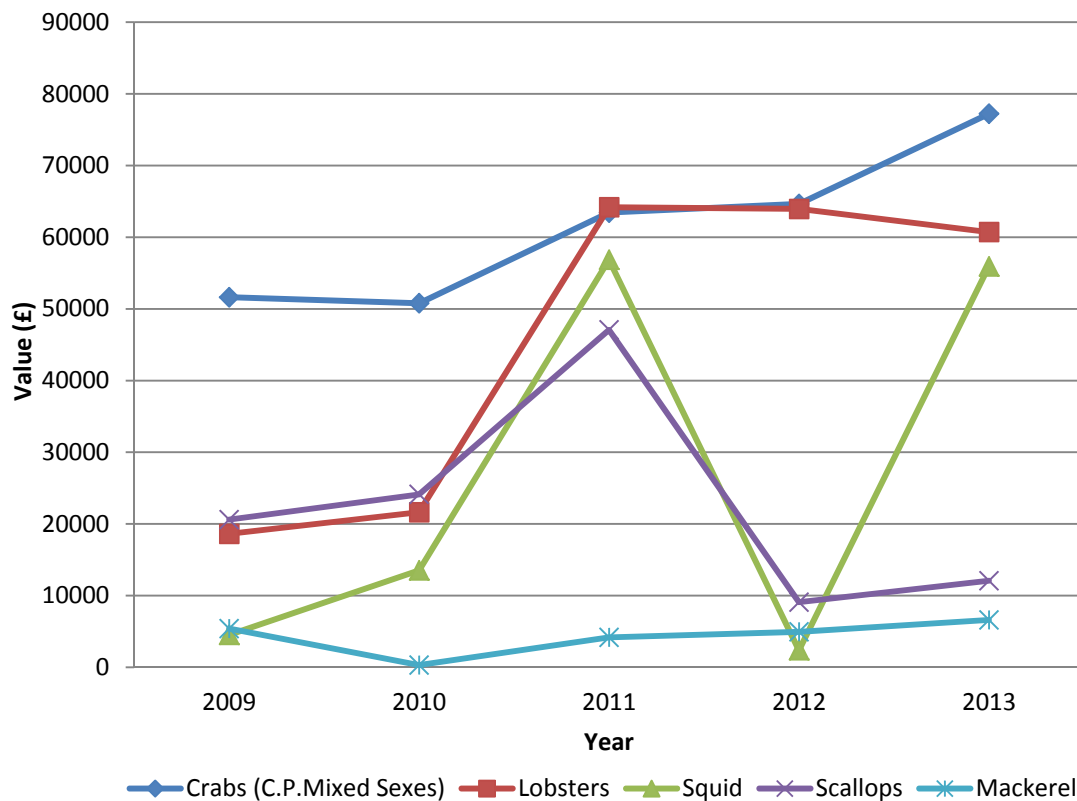


Figure 22.2: ICES rectangle 43E7 five highest value species yearly landings 2009 to 2013

Table 22.2: Ten highest value species for ICES rectangle 43E7 (2009 to 2013)

Species	2009 - 2013 Value [£]
Crabs (C.P.Mixed Sexes)	307,679
Lobsters	229,086
Squid	133,188
Scallops	112,947
Mackerel	21,416
Haddock	16,344
Nephrops (Norway Lobster)	11,686
Crabs - Velvet (Swim)	11,499
Plaice	6,545
Lemon Sole	5,084

ICES Rectangle 43E7 Key Species by Weight

Crabs are by far the largest catch landed by weight (Table 22.3) with almost five times the tonnage over the 5 year period as scallops, the second most landed catch by weight. Squid and lobsters have a similar caught weight over the five years (Figure 22.3) of around 25 tonnes, however, their difference in market price is evident in the landed value.

The yearly trends for landed weight (Figure 22.3) show that, although mackerel is consistently the lowest value of the top five species, in terms of landed weight it is often similar to lobster, squid and, in 2012 and 2013, scallops.

Table 22.3: Ten highest landed weight species for ICES rectangle 43E7 (2009 to 2013)

Species	2009 - 2013 Landed Weight [Tonnes]
Crabs (C.P.Mixed Sexes)	259.55
Scallops	64.71
Squid	26.20
Lobsters	24.21
Mackerel	19.66
Haddock	14.36
Crabs - Velvet (Swim)	5.66
Plaice	5.48
Nephrops (Norway Lobster)	3.65
Cod	2.00

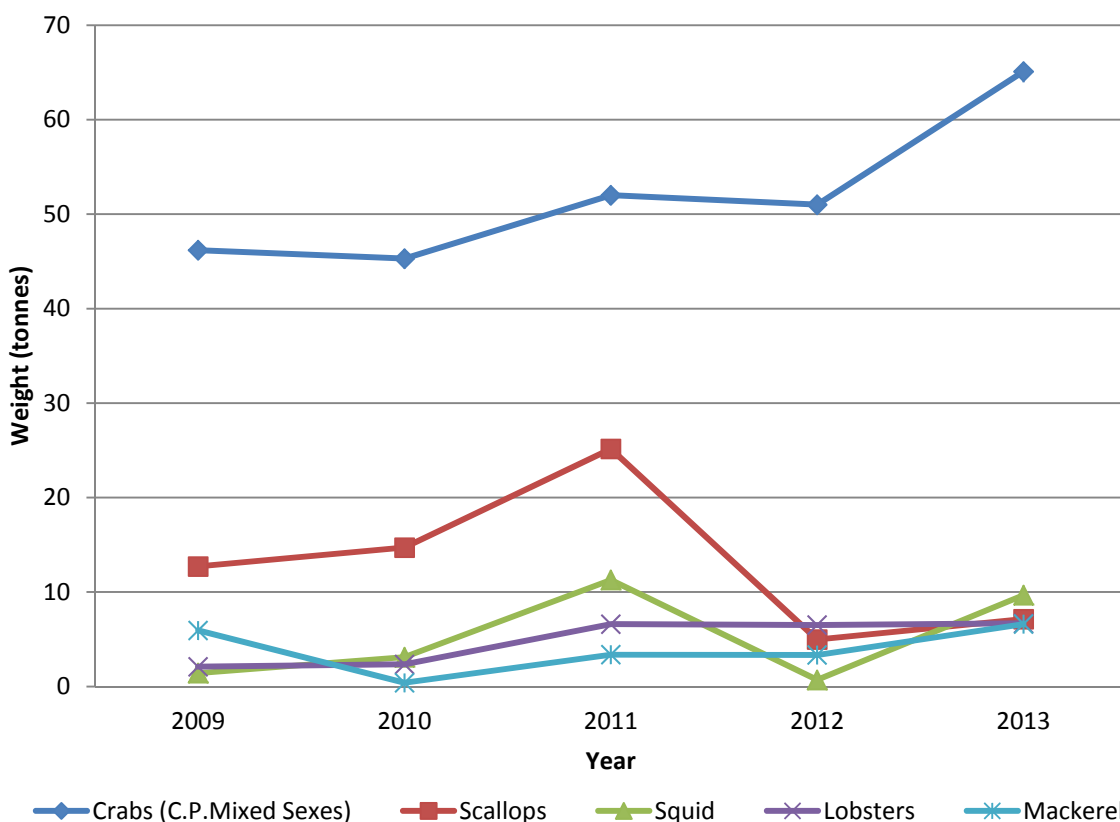


Figure 22.3: ICES rectangle 43E7 five highest landed weight species from yearly landings 2009 to 2013

ICES Rectangle 43E8 Key Species by Value

Rectangle 43E8 covers an area further offshore than 43E7 within which the development sits; however, it gives a good indication of the species that are important surrounding the shipping routes.

In this area scallops (£4,777,100 between 2009 and 2013) are the most valuable species; twice as valuable as the second most species, herring (£1,839,361 between 2009 and 2013) (see Table 22.4). The other species landed were each valued at less than £1 m during the 5 year period 2009 to 2013.

Figure 22.4 shows the yearly trends for the top five species by value. Scallops are consistently the most valuable catch; however, they do show a particularly large value in 2013 of over£1.3 million.

Table 22.4: Ten highest landed value species for ICES rectangle 43E8 (2009 to 2013)

Species	2009 - 2013 Value [£]
Scallops	4,777,100
Herring	1,839,361
Crabs (C.P.Mixed Sexes)	974,123
Haddock	967,469
Mackerel	645,381
Lobsters	552,717
Nephrops (Norway Lobster)	193,346
Crabs - Velvet (Swim)	189,765
Squid	182,236
Horse Mackerel	136,998

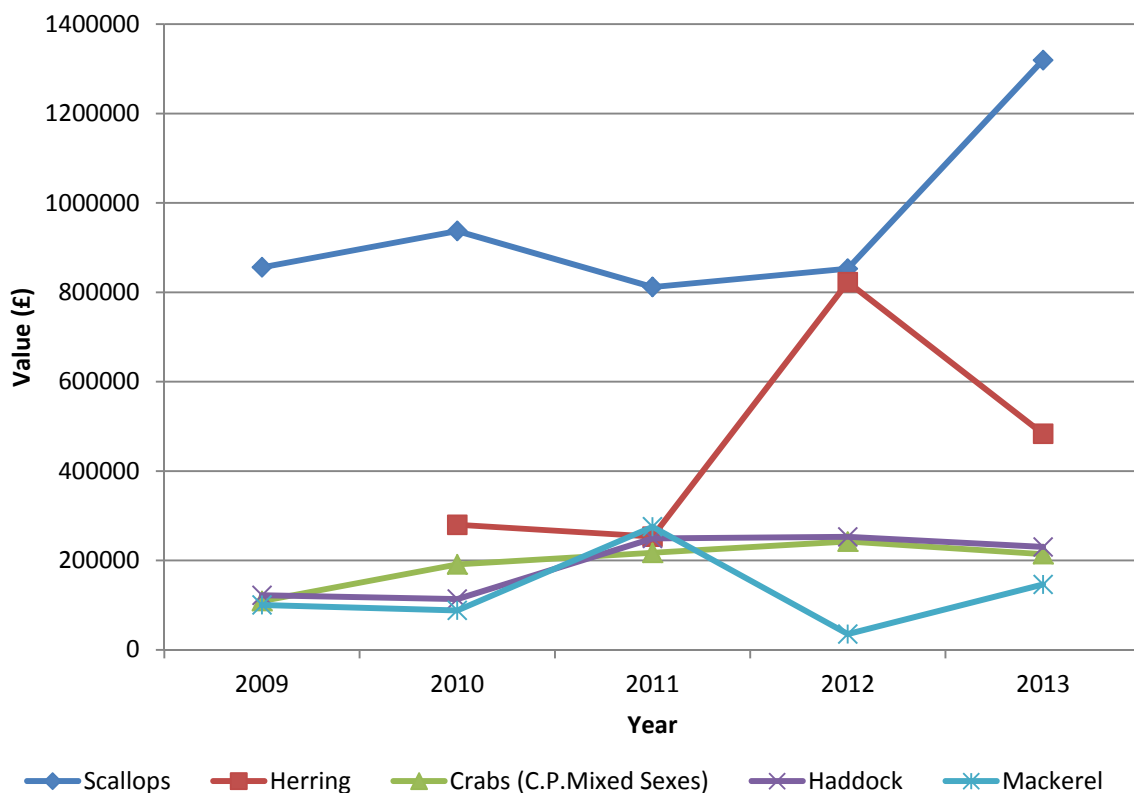


Figure 22.4: ICES rectangle 43E8 five highest value species yearly landings 2009 to 2013

ICES Rectangle 43E8 Key Species by Weight

Despite being the most valuable species in ICES rectangle 43E8, scallops were only landed in just over half (2,607 tonnes between 2009 and 2013) the weight of herring (4,760 tonnes between 2009 and 2013). Figure 22.5 shows the yearly trends of landings by weight where scallops are consistently the second largest catch by weight. It is notable that, whilst the weight of herring landed in 2012 and 2013 remained relatively similar, there was significant drop in its value in 2013 as can be seen in Figure 22.4.

Table 22.5: Ten Highest landed weight species for ICES rectangle 43E8 (2009 to 2013)

Species	2009 - 2013 Landed Weight [Tonnes]
Herring	4760.49
Scallops	2607.03
Haddock	1025.42
Crabs (C.P.Mixed Sexes)	849.72
Mackerel	609.03
Horse Mackerel	169.13
Crabs - Velvet (Swim)	95.61
Whiting	62.54
Nephrops (Norway Lobster)	56.74
Lobsters	52.59

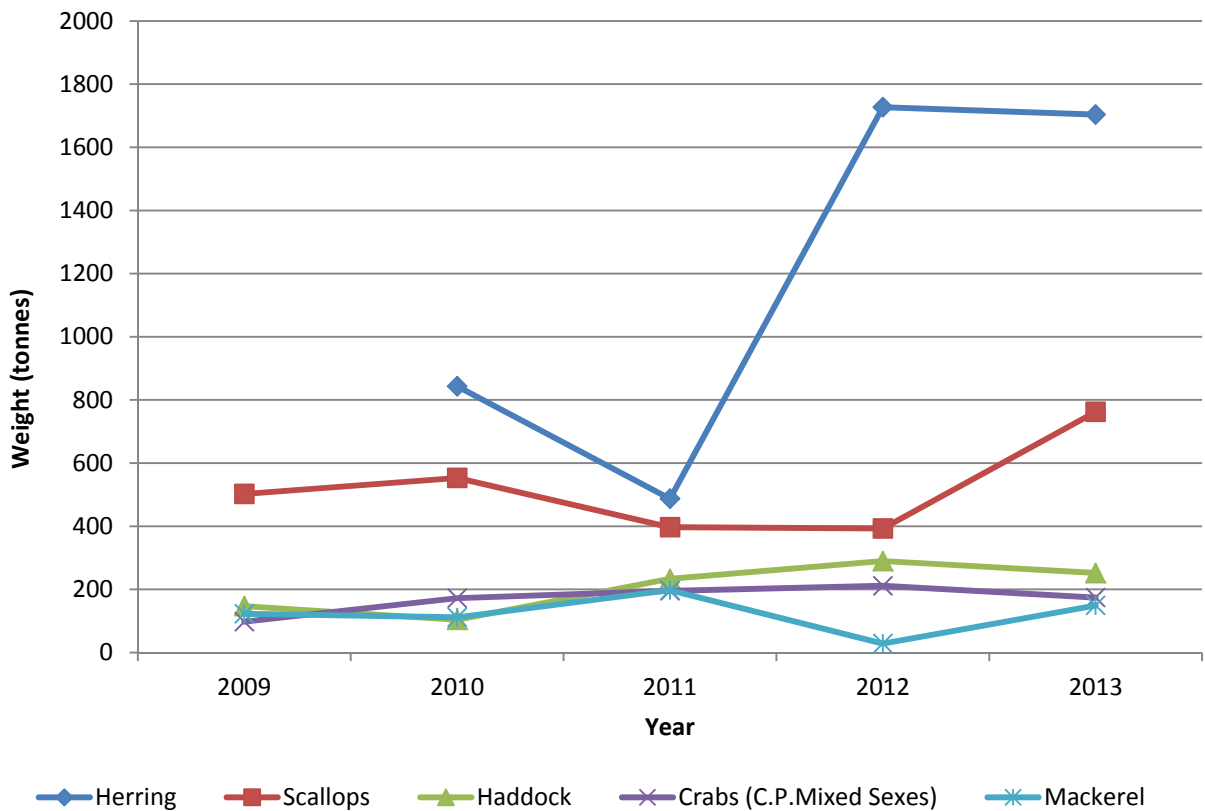


Figure 22.5: ICES rectangle 43E8 five highest landed weight species from yearly landings 2009 to 2013

22.6.2 Temporal Trends in Landed Catch

Five Year Temporal Trends for ICES Rectangle 43E7

Figure 22.6 shows the landed value of catch from ICES rectangle 43E7 for 5 years from 2009 to 2013 for all species. Overall there is a general trend of increasing values but within the variance of years this is not significant. The value of catch for 2011 stands out as being particularly high and a doubling of the value of the previous year. This increase can be attributed to comparatively increased landed catches of squid, lobster and scallop (Figure 22.2).

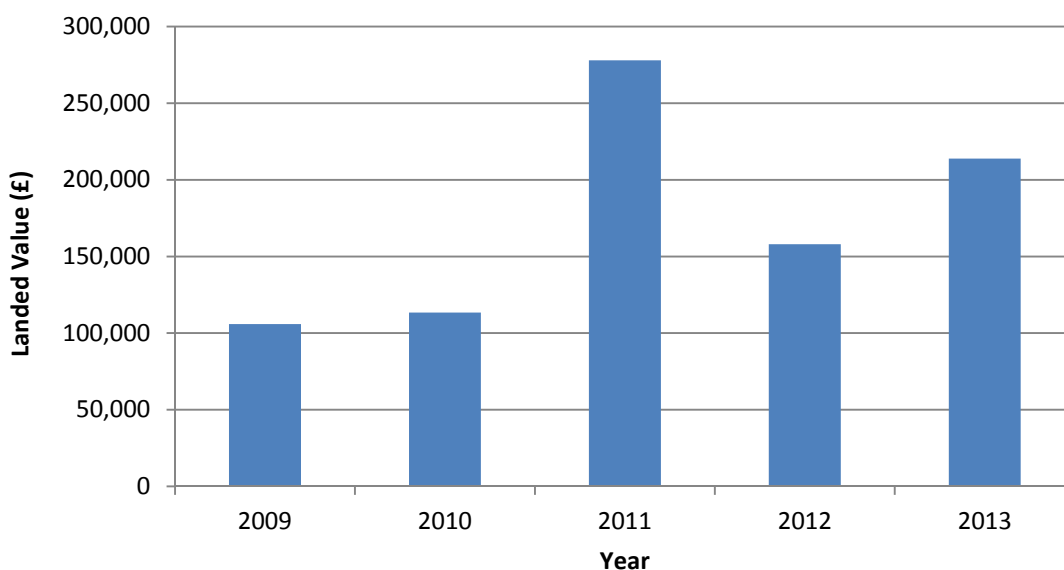


Figure 22.6: Yearly landed value of ICES rectangle 43E7 (2009 to 2013)

Seasonality of ICES Rectangle 43E7

To enable a detailed assessment of seasonality, monthly data is assessed; however, it is acknowledged there are limitations in the datasets, as where less than five vessels contribute to the statistics these are undisclosed.

Due to the suppression of this data much of the monthly data for total value of catch is unavailable. Values are shown for months where more than five vessels contribute and the remaining yearly value distributed evenly across the remaining months in Figure 22.7. These show that the key months for fishing activity are June to September with the peak in August. However, without species specific data it is impossible to tell which fishery this is attributable to and whether all species follow a similar trend.

The consultation data indicated that within the development area, fishing activity targeting lobster and crab with creel pots is undertaken all year round.

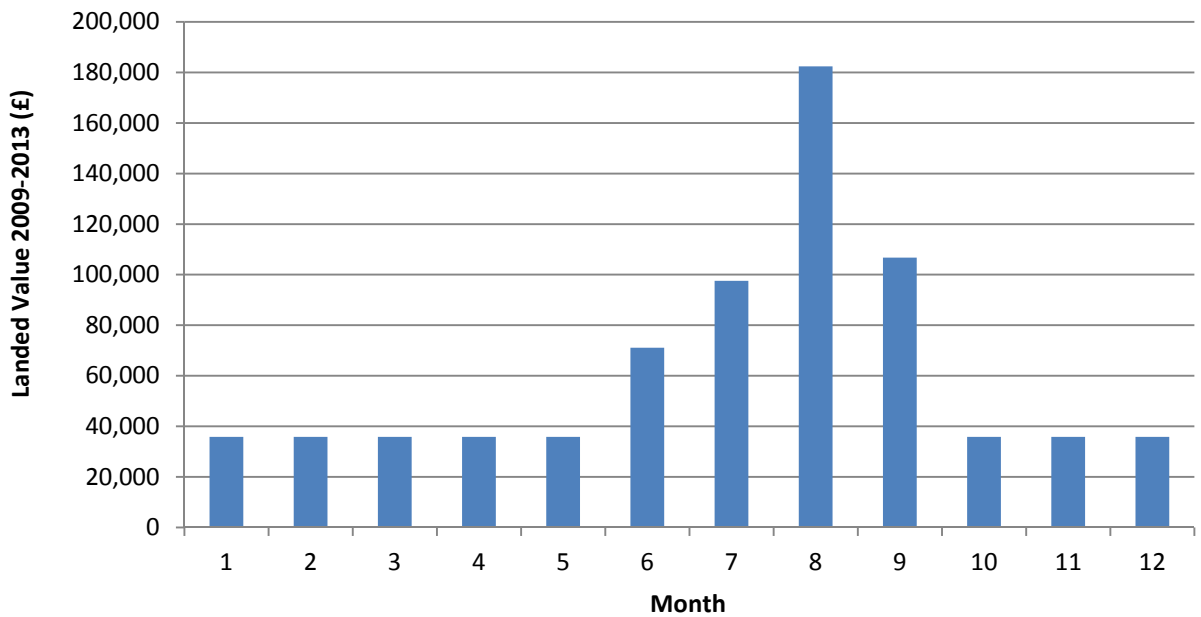


Figure 22.7: Seasonality of catch in ICES rectangle 43E7 (2009 to 2013 total monthly value). The value for undisclosed months (total yearly value minus value for disclosed months) is spread evenly across those months

Five Year Temporal Trends for ICES Rectangle 43E8

ICES rectangle 43E8 has shown a steady rise in yearly landed value from £1,284,653 in 2009 to £2,721,739 in 2013, as can be seen in Figure 22.8. Cross referencing to Figure 22.4, this increase can be attributed to increases in value of landed catch of scallops and herring, the two most valuable species in ICES rectangle 43E8.

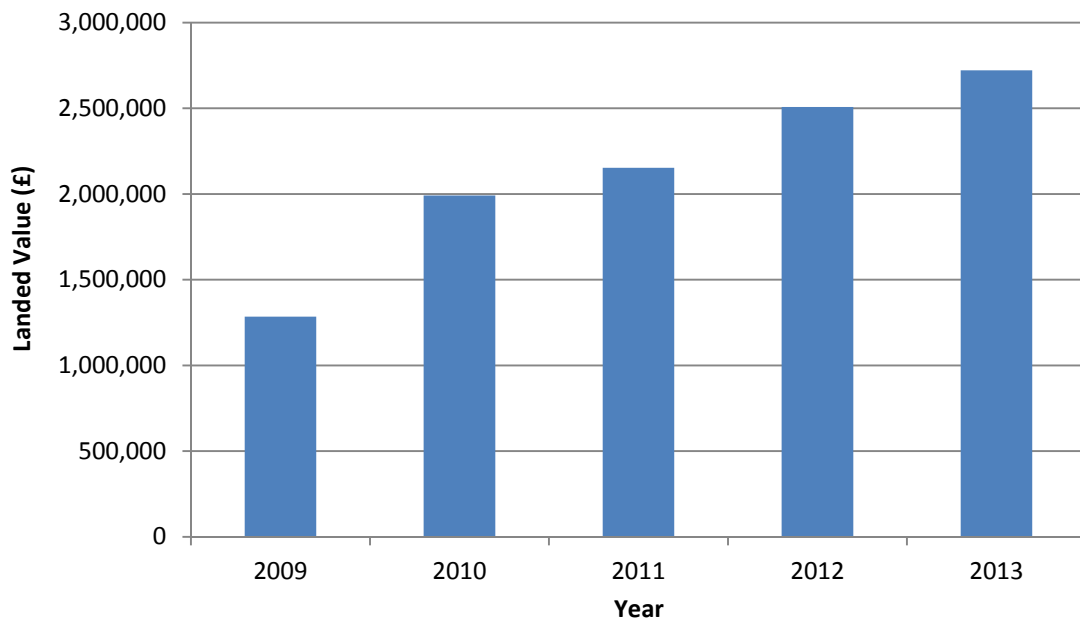


Figure 22.8: Yearly landed value of ICES rectangle 43E8 (2009 to 2013)

Seasonality of ICES Rectangle 43E8

Within ICES rectangle 43E8 a greater number of vessels contribute to the statistics and therefore there are less months undisclosed, presenting a more accurate overview of activity throughout the year. Largely it is the summer months that see the highest value of catch with peaks in May and August. However, without data for individual species it is not possible to conclude whether this is a trend across all species or whether the values are being dominated by the higher value catches.

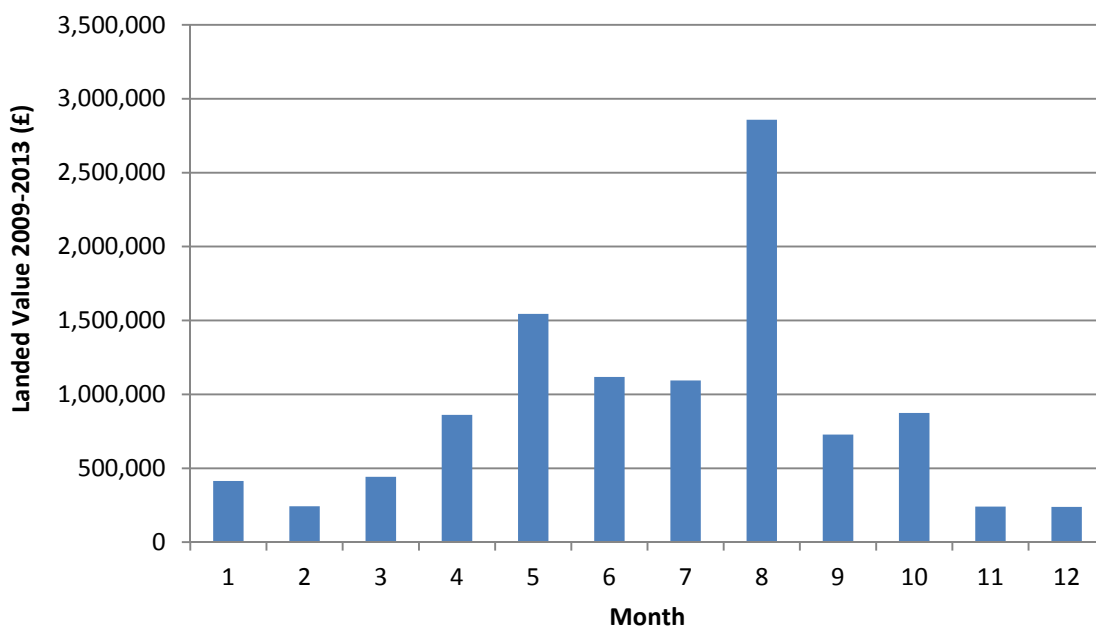


Figure 22.9: Seasonality of catch in ICES rectangle 43E8 (2009 to 2013 total monthly value). The value for undisclosed months (total yearly value minus value for disclosed months) is spread evenly across those months

22.6.3 Gear Types and Ports

Table 22.6 presents the numbers and size classes of commercial fishing vessels utilising home ports within the study area, according to the Marine Scotland (2014) data.

According to consultation responses the dominant gear type used within and around Nigg Bay is creel fishing. These are typically deployed from smaller vessels (<10 m in length) using home ports along the Scottish East Coast.

The larger vessels utilising the Scottish East Coast ports (> 10 m in length) are typically either Nephrops trawlers or demersal trawlers.

Table 22.6: Vessel number, type and size for Scottish east coast ports (Scottish Government, 2014)

District	10 m and Under				Pelagic (> 10m)				Demersal (>10 m)					Shellfish (>10 m)				Over	
	<i>Nephrops</i>	Creel	Other	Total	Purse	Pelagic	Other	Total	Trawl	Seine	Lines	Other	Total	<i>Nephrops</i>	Creel	Other	Total	10 m	Total
	Trawls	Fishing			Seine	Trawl								Trawls	Fishing			Total	
Aberdeen	2	75	1	78	-	-	-	-	-	-	-	-	-	4	3	1	8	8	86
Anstruther	8	83	-	91	-	-	-	-	-	-	-	-	-	11	1	-	12	12	103
Buckie	9	37	4	50	-	-	-	-	12	3	1	-	16	3	2	5	10	26	76
Eyemouth	10	75	4	89	-	-	-	-	5	1	-	-	6	11	3	-	14	20	109
Fraserburgh	1	75	20	96	1	9	-	10	48	5	-	1	54	33	1	2	36	100	196
Peterhead	1	48	2	51	2	2	-	4	32	4	-	-	36	5	-	1	6	46	97
Scrabster	1	81	-	82	-	-	-	-	1	2	-	-	3	-	6	1	7	10	92
Total – East Coast	32	474	31	537	3	11	-	14	98	15	1	1	115	67	16	10	93	222	759

22.6.4 Spatial Trends in Activity

Vessel monitoring system (VMS) data can be used to inform an analysis of spatial activity. Boats over 15 m in length are required to carry a VMS tracker to record their position, but boats smaller than this are not. As a result, there are limitations to interpreting the data set as it cannot be assumed that small boat activity mirrors that of larger vessels. The VMS data used in this report has been supplied by MS based upon work done by Marine Scotland Science staff (Kafas, A., Jones, G., Watret, R., Davies, I., Scott, B., 2012). In the treatment of the data, a gaussian kernel density estimation with a data-driven bandwidth selection approach (smoothed cross-validation) had been used to produce high quality contour maps with the aim to give a better estimate of the spatial extent of fishing activity and intensity. However, in this process of smoothing the data some of the finer resolution is lost.

The VMS data show that Nigg Bay is about average for the study area in terms of fishing intensity for *Nephrops*, scallops and squid as shown in Figure 22.10. The Marine Licence Area (shown on Figure 3.2 in Chapter 3: Description of the Development) has below average VMS intensity for demersal mobile gear and there are no recordings for herring and mackerel (Figure 22.11). However, for both *Nephrops* and Demersal the intensity is too low across the study area to determine whether Nigg Bay is of relative importance.

ScotMap is a MS project which provides spatial information on the fishing activity of Scottish registered commercial fishing vessels under 15 m in overall length. The data was collected during face-to-face interviews with individual vessel owners and operators and relates to fishing activity for the period 2007 to 2011. The data is aggregated and analysed to provide information on the monetary value, relative importance (relative value) and the usage (number of fishing vessels and crew) of seas around Scotland. However, the data has limitations in that not all of the targeted fishermen were able to contribute and not all chose to disclose earnings.

The monetary value attributable to the ScotMap cells within which Nigg Bay sits is above average for 'other species trawls' (Figure 22.12), lobster and crab pots (Figure 22.13) and mackerel lines (Figure 22.14). However, of these three, the highest values are lobster and crab pots which are recorded as up to £5,000 per annum per cell, whereas other species and mackerel are recorded in the region of hundreds of pounds rather than thousands. This correlates with consultation responses where at least two local vessels are reported to fish with creel type pots for lobster and crab.

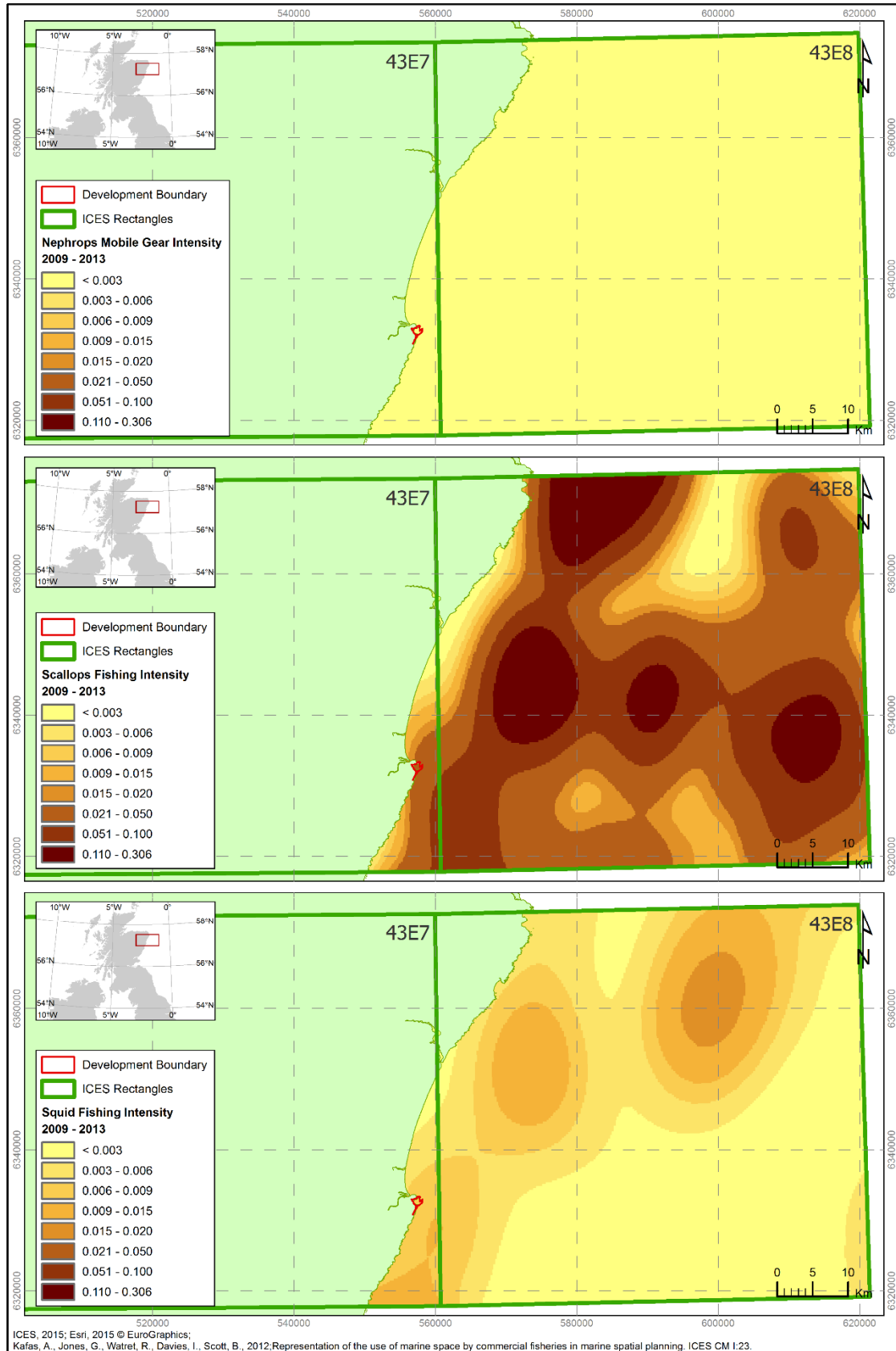


Figure 22.10: VMS fishing intensity (vessel/day/km²) for Nephrops mobile gear, scallops fishing, and squid fishing based upon amalgamated layer for 2009 to 2013 (provided by Marine Scotland based upon Kafas et al, 2012)

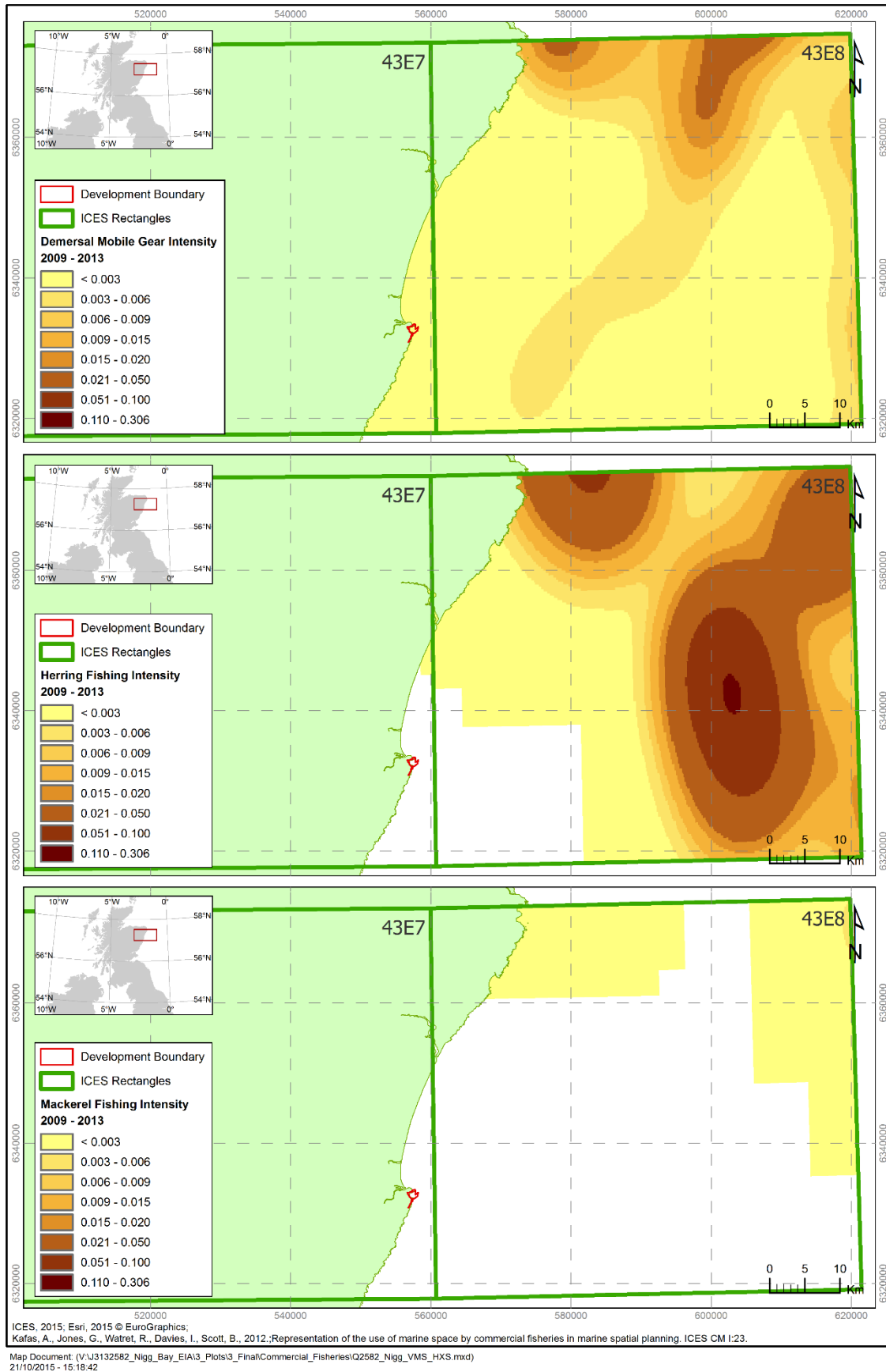


Figure 22.11: VMS fishing intensity (vessel/day/km²) for demersal mobile gear, herring fishing, and mackerel; fishing based upon amalgamated layer for 2009 to 2013 (provided by Marine Scotland based upon Kafas et al, 2012)

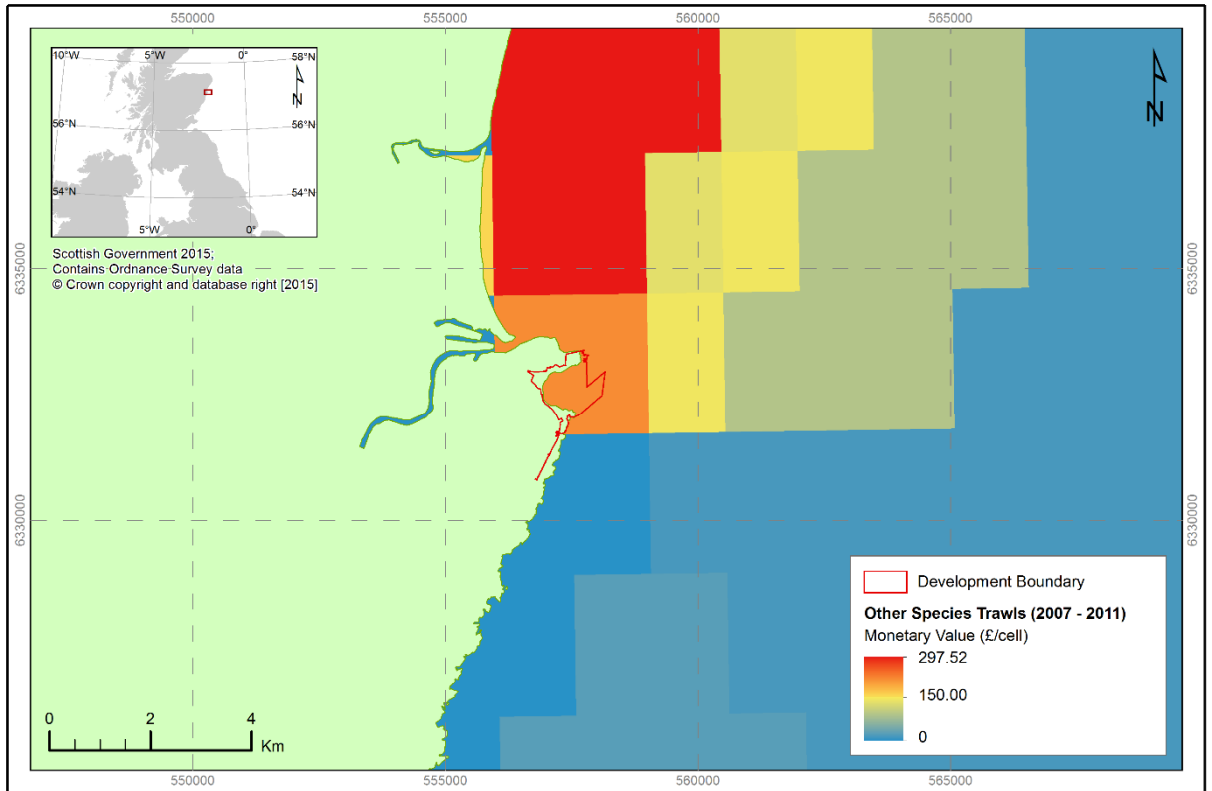


Figure 22.12: ScotMap fishing value of catch for other species trawls from small vessels (2007 to 2011)

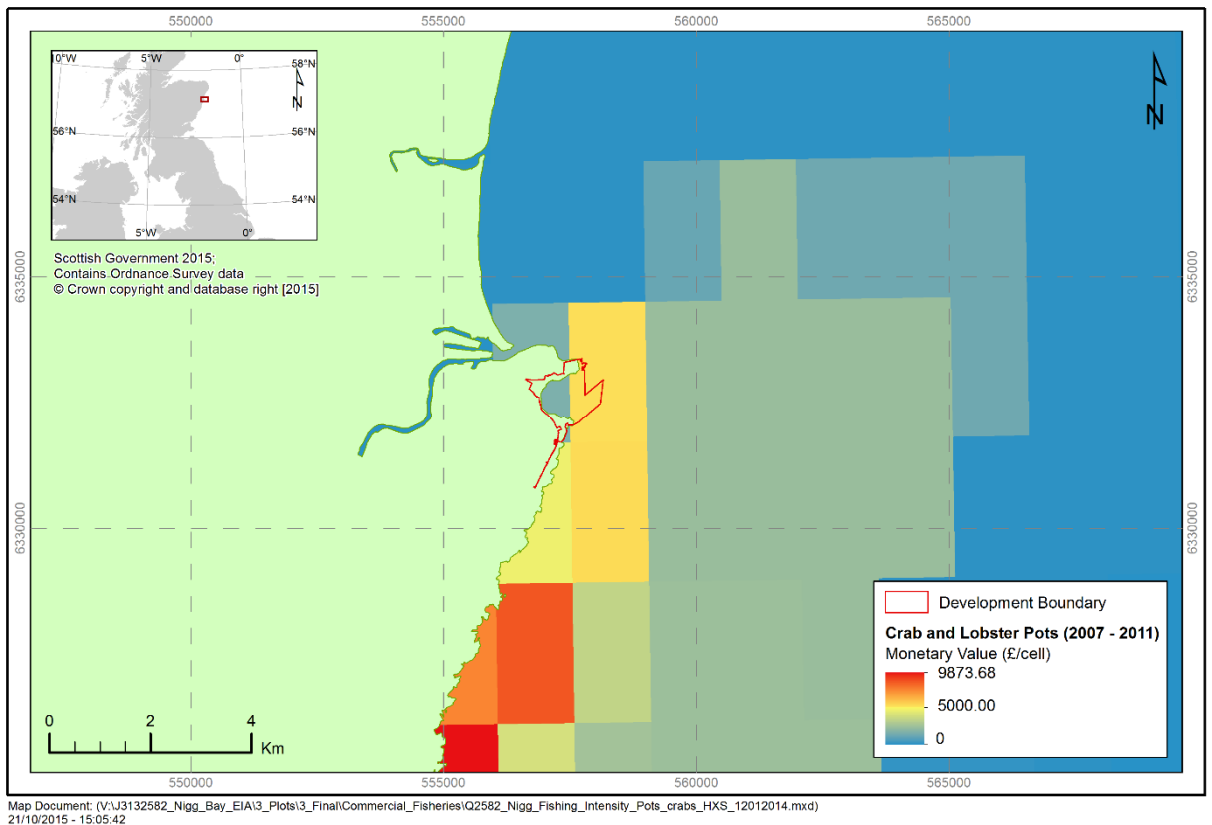


Figure 22.13: ScotMap fishing value of catch for lobster pots from small vessels (2007 to 2011)

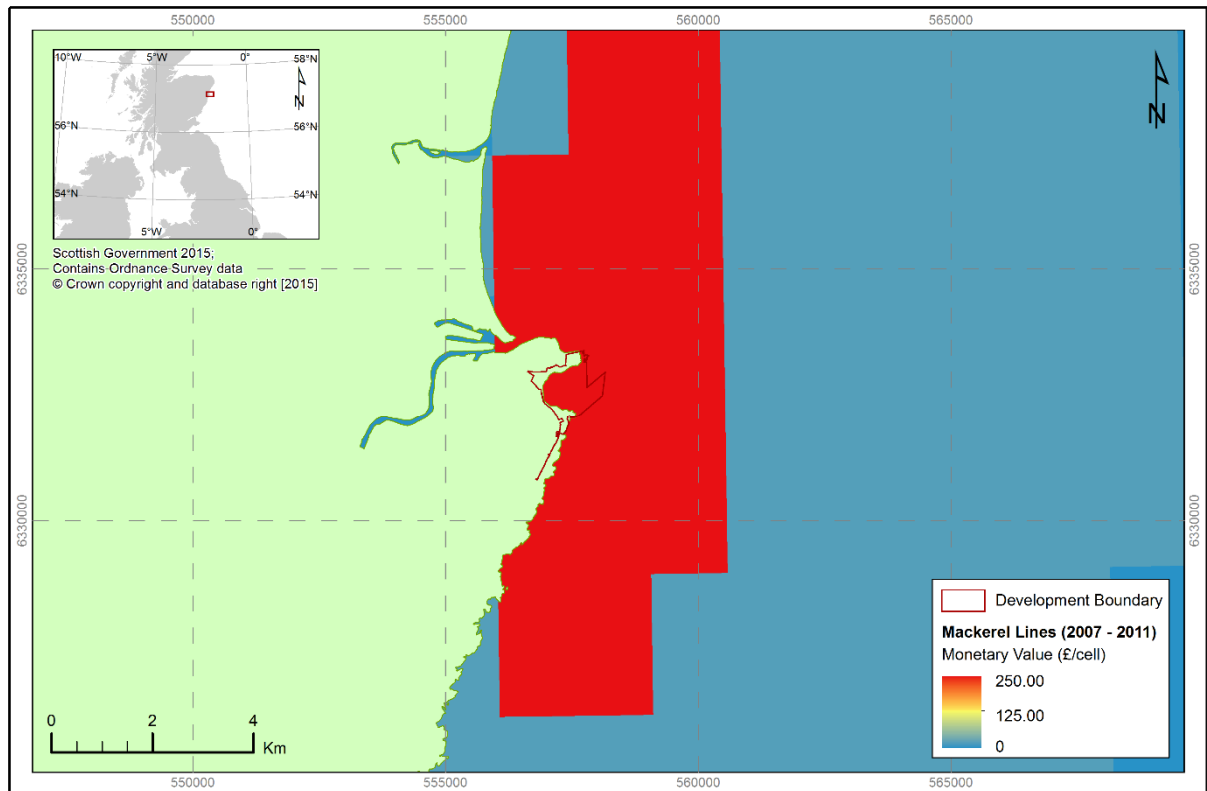


Figure 22.14: ScotMap fishing value of catch for other mackerel lines from small vessels (2007 to 2011)

22.6.5 Salmon and Sea Trout

Atlantic salmon and sea trout are both anadromous migratory species which live in both freshwater and marine habitats during their life cycle. Salmon and sea trout fisheries target these species principally in river environments and also in some coastal areas.

The main methods for catching salmon and sea trout in Scotland are (Marine Scotland, 2012):

- Rod and line catch (retained) – generally not used at sea and only within rivers;
- Rod and line catch (released) – generally not used at sea and only within rivers;
- Fixed engine (bag and stake nets) – restricted to coastal areas, not permitted in estuary limits; and
- Net and coble – generally used in lower estuaries but sometimes in coastal areas.

The most recent catch records are those for 2013 and recorded by MS; the data for the north-east region is presented in Table 22.7 to Table 22.9.

In the north-east region the majority of salmon caught and retained is from fixed engine in the May to December season, with 4,942 caught from all methods in 2013. A further 6,423 grilse (salmon that have returned to freshwater after a single winter at sea) are caught taking the total to 11,365. Comparatively few sea trout are caught and retained at only 1,719 with the majority of these being targeted with net and cobble (749) followed by rod and line (596).

Nigg Bay is located within the Dee (Aberdeenshire) district. Table 22.8 shows that the Dee is relatively unimportant for caught and retained salmon and sea trout making up just 0.74% and 3.6% respectively of the region's total. In contrast, the Dee is extremely important for the salmon and sea trout caught and returned making up 63% and 56.6% respectively of the region's total in 2013. As catch and release is not a commercial fishing activity it will not be assessed in this chapter. There is no record of recent net or fixed engine fishing within Nigg bay, and the records for caught and retained within the Dee District that it does not constitute a commercial fishery.

Table 22.7: Number of wild salmon, grilse and sea trout caught and retained for the north-east salmon fishery region during 2013 by method

Method	Jan-Apr	May-Dec	Annual	Grilse	Salmon and Grilse	Sea Trout
Rod and Line	53	471	524	391	915	596
Net and Coble		992	992	1,635	2,627	749
Fixed Engine	81	3,345	3,426	4,397	7,823	374
All Methods	134	4,808	4,942	6,423	11,365	1,719

Note:
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Table 22.8: number of wild salmon, grilse and sea trout caught and retained for the north-east salmon fishery region during 2013 by district

District	Jan-Apr	May-Dec	Annual	Grilse	Salmon and Grilse	Sea Trout
South Esk	6	3,143	3,149	4,136	7,285	198
North Esk and Bervie	100	1,331	1,431	2,021	3,452	1,009
Dee (Aberdeenshire)	10	44	54	31	85	62
Don	16	85	101	71	172	20
Ythan	1	165	166	128	294	350
Ugie	1	40	41	36	77	80
Totals	134	4,808	4,942	6,423	11,365	1,719

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Table 22.9: Number of wild salmon, grilse and sea trout caught and released for the north-east salmon fishery region from rod and line fisheries during 2013 by district

District	Jan-Apr	May-Dec	Annual	Grilse	Salmon and Grilse	Sea Trout
South Esk	77	243	320	104	424	194
North Esk and Bervie	205	747	952	307	1259	157
Dee (Aberdeenshire)	945	2924	3869	993	4862	845
Don	172	525	697	336	1033	107
Ythan	1	88	89	39	128	168
Ugie				3	3	20
Totals	1400	4527	5927	1782	7709	1491

Note:

The data used in this table are Crown copyright, used with the permission of Marine Scotland Science. Marine Scotland is not responsible for interpretation of these data by third parties

22.6.6 Conclusions from Site Specific Consultation

Site specific consultation broadly correlated with the wider study area data gathered. Consultation suggests that Nigg Bay is of importance to local creelers catching crab and particularly lobster. Four vessels have been directly identified as targeting Nigg Bay, however consultation also identified a local fleet which operates from Cove, Portlethen, Newtonhill and Stonehaven along the coast from Stonehaven to Aberdeen.

Particular to the Nigg Bay, the rocky outcrops at the north and south of the bay are targeted most and are also thought to be a good breeding ground locally for lobster and crab. The grounds run parallel north and south off the lighthouse and out to 1.5 miles running south-east off the lighthouse.

22.7 Assessment of Effects

22.7.1 Design Parameters Used in the Assessment

As commercial fishing will not be permitted within the Aberdeen Harbour Expansion Project area either during construction or after operation (in the interests of navigational safety), the sole parameter of relevance to this assessment is the extent of the Marine Licence Area. The spatial extent of the navigation channel is based on the predicted shipping routes described in Chapter 21: Shipping and Navigation.

22.7.2 Displacement of Commercial Fishing Activities

22.7.2.1 Source – Receptor Pathway

From the start of construction activities, fishing vessels will be prohibited from the project area, with the resultant impact that they will be displaced. There will also be secondary impacts on fishing in the navigation channel approaching the new harbour, where further displacement may occur as a result of fisherman not wanting to risk the safety of their gear, or to ensure the navigational safety of vessels using the new shipping routes.

There is a clear source – receptor pathway, as commercial fishing activities (the receptor) will be displaced as a direct result of both the prohibition of fishing vessels from the project area and the

creation of a new navigation channel (the sources of the impact). Therefore, this impact is scoped in to the assessment.

22.7.2.2 Characterisation and Assessment of Magnitude

The magnitude of the impact (displacement of commercial fishing activities from the project area and approaching shipping routes) can be characterised as permanent, direct and irreversible for the duration of time the exclusion on fishing applies.

However, the total area of 3.17 km² from which fishing vessels will be displaced is small in comparison to the available fishing grounds, both locally to creelers and regionally to the larger fishing vessels. Figure 22.15 shows the footprint of harbour and associated new shipping routes (Chapter 21: Shipping and Navigation). The total area comprises 0.77 km² for the Marine Licence area and 2.4 km² for the area of new shipping routes.

The magnitude of this impact can be considered moderate as, whilst the change is permanent, it affects only a small proportion of the available fishing grounds.

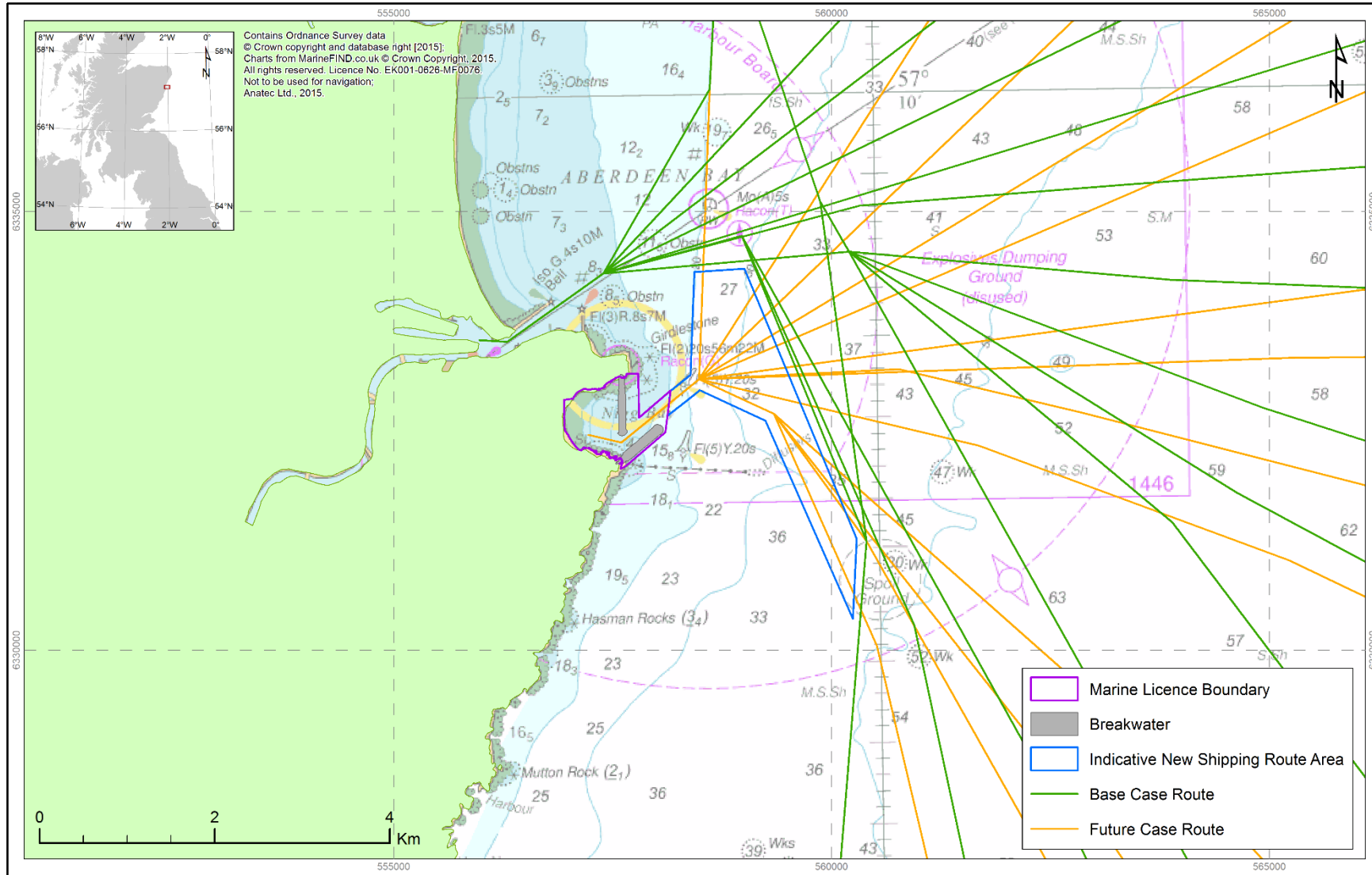


Figure 22.15: Marine Licence area and new shipping routes

The commercial fishing industry is sensitive to displacement, and displacement from these areas would be a direct negative effect. However, as fishing fleets are mobile, they have access to other grounds further down the coast or out to sea. This is particularly true of the larger vessels for which Nigg Bay and the potential new shipping routes make up only a tiny proportion of their available area. The magnitude of effect will be higher for smaller vessels which cannot travel as far; however, Nigg Bay was not identified as being of principal importance to any local fleet, although it did form part of the wider area for creel fishermen.

Overall the magnitude is **moderate**.

22.7.2.3 Valuation of Receptor

Two estimates of the annual financial value of the commercial fishing activities which would be displaced were calculated, one using ICES and VMS data, and one using ScotMap data. The data sources are described in Section 22.6.4. The estimates have valued commercial fishing activities within both the footprint of the harbour using the Marine Licence area, and the area of new shipping routes (Figure 22.16 and Figure 22.17). The calculated values are presented in Table 22.10.

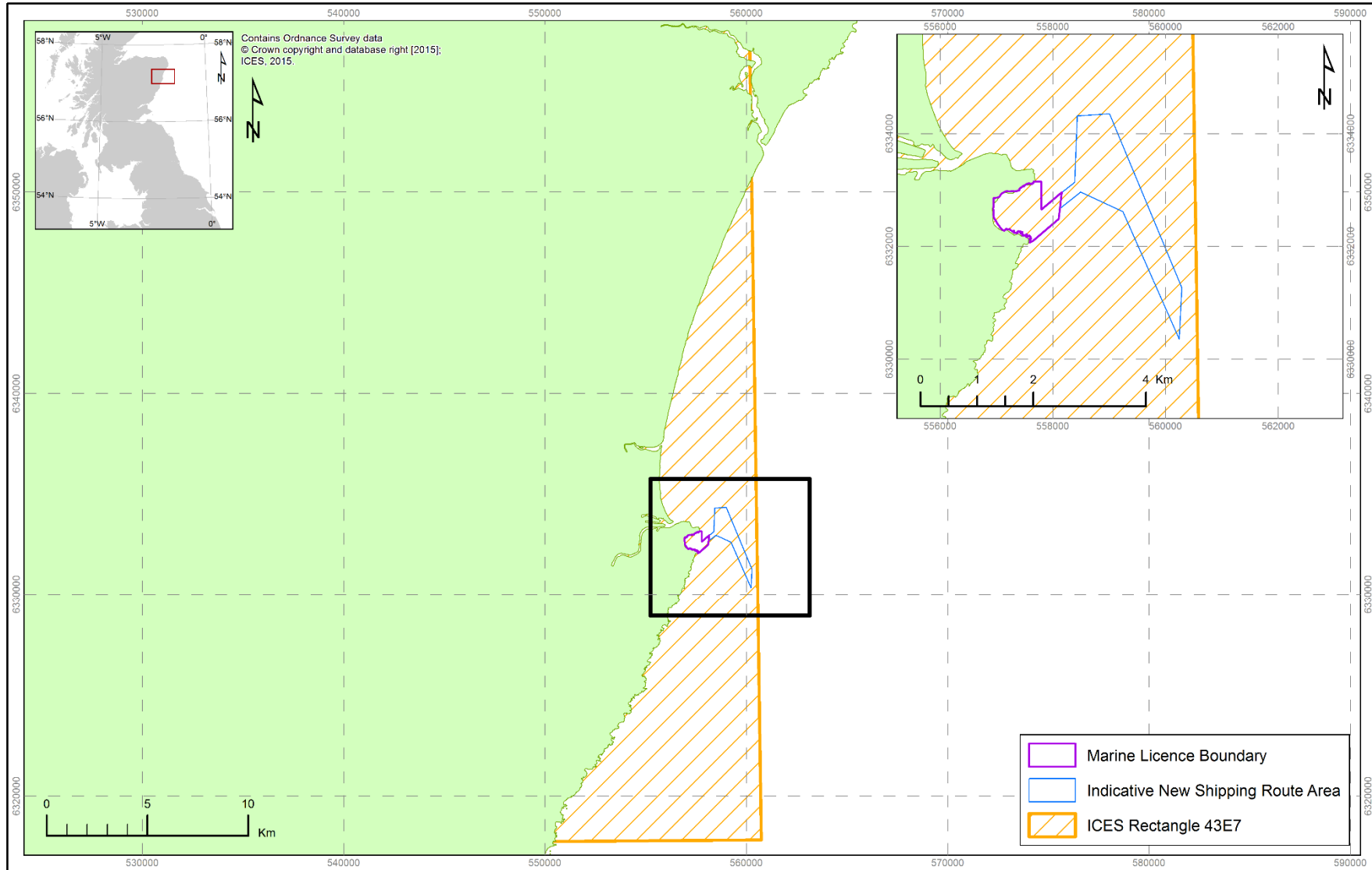
The detailed calculations of the value of the commercial fishing within the development area and the new shipping routes are provided in Appendix 22-A: Commercial Fisheries Technical Report.

Table 22.10: Estimates of the annual financial value of the fishing grounds affected

Supporting Fisheries Data	Value of ML Area [£]	Value of Area of New Shipping Routes [£]	Total [£]
ICES Rectangle	693	2863	3556
ScotMap Cells	1098	2627	3725

In the context of the wider available fishing grounds, the area from which fishing vessels would be displaced does not solely support local communities although it does contribute in part toward the local creeling fishing industry, focusing on crab and lobster. Therefore, using the assessment criteria set out in Table 5.4 in Chapter 5: Environmental Impact Assessment Process, commercial fishing activities in the impacted areas can be considered as ‘areas of low commercial shipping intensity or low-moderate recreational vessel use.’ Nigg Bay does not qualify as having regional importance.

Hence, the value of the receptor is considered as **low**.



Map Document: (V:\J3132582_Nigg_Bay_EIA\3_Plots\3_Final\Commercial_Fisheries\Q2582_Nigg_Fishing_Loc_SXC_20150814.mxd)
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Figure 22.16: Areas used in the calculation of fishing value based upon ICES landings and VMS tracking data

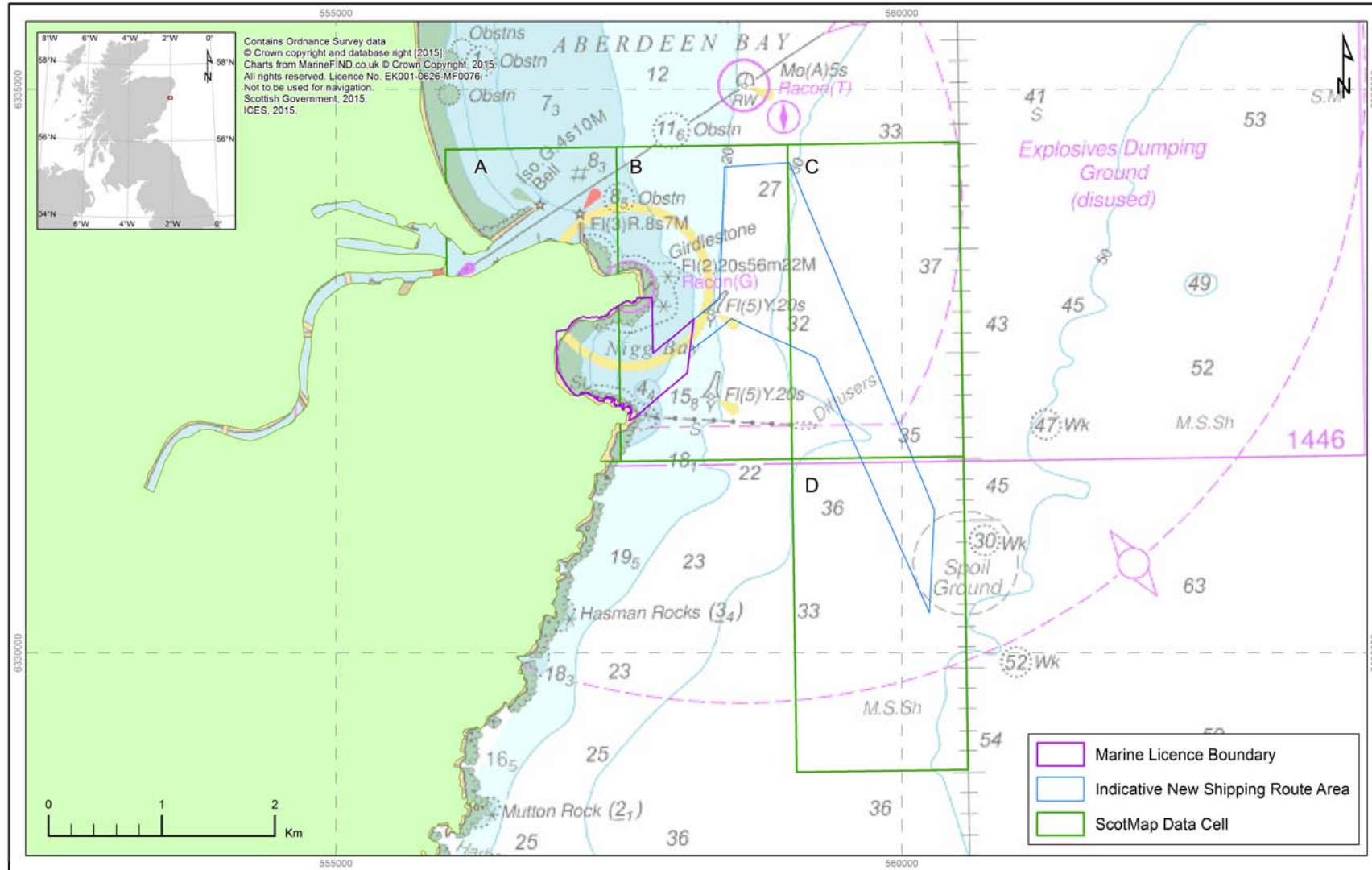


Figure 22.17: Areas used in the calculation of fishing value based upon ScotMap data

22.7.2.4 Significance of Effect

The main effect will be a particular loss of fishing ground for local crab and lobster creelers who target the rocky areas at the north and south of the Aberdeen Harbour Expansion Project area. The magnitude of the effect is considered to be **moderate** as the displacement area is medium and the development will be permanent. The value of receptor is considered to be low.

With a **moderate** magnitude of effect and a **low** value of receptor, the displacement of commercial fishing from the development area and approaching shipping routes is considered to be of **minor adverse** significance, which is not significant in EIA terms.

22.7.3 **Increased Pressure on Fishing Areas Adjacent to the Development Area**

22.7.3.1 Source – Receptor pathway

Displacement of fishing activity from the development area and new shipping routes may lead fishermen currently targeting these areas to move in to, or focus more effort on, adjacent fishing grounds in order to maintain landing the same value of catch.

The source of this impact would be the displacement, and the receptors of the impact would be commercial fishing activity in the adjacent areas.

22.7.3.2 Characterisation and Assessment of Magnitude of Impact

The area of displacement is small, and receiving fishing areas are large, so the comparative magnitude of the impact is **negligible**, which is not significant in EIA terms. The impact would be permanent, and indirect.

22.7.3.3 Magnitude of Effect

There is a degree of tolerance within surrounding fishing areas, where variation in landed catch can be between £105,000 per year and £278,000 per year for ICES Rectangle 43E7, and a variation between just under £1.2 million per year to over £2.5 million per year for ICES Rectangle 43E8. Within this context, the increased pressure on adjacent fishing areas resulting from displacement from the project area and new shipping routes is predicted to be of **negligible** magnitude.

22.7.3.4 Valuation of Receptor

The value of increased pressure on commercial fishing activity in adjacent areas is likely to be equal to that displaced (as described in Section 22.7.2). Estimates of the annual financial value of the fishing grounds are presented in Table 22.10. These values are judged to **negligible** in context of the wider region into which they will be displaced.

22.7.3.5 Significance of Effect

With a **negligible** magnitude of effect and a **negligible** value of receptor, the increased pressure on adjacent fishing areas is considered to be of **negligible** significance, which is not significant in EIA terms.

22.8 Mitigation and Residual Impacts

No mitigation is recommended for effects on commercial fisheries as their significance has been determined as minor adverse or negligible.

22.9 Cumulative Impacts

A number of projects were considered for inclusion in the assessment of cumulative impacts. It was agreed during the EIA scoping stage that the European Offshore Wind Deployment Centre and the Kincardine Offshore Wind Farm should be assessed (Table 22.11). Two additional projects were identified through consultation as being of potential cumulative interest: the Beatrice Offshore Wind Farm at 134 km and the Hywind Floating Turbine demonstrator at 51 km from the Aberdeen Harbour Expansion Project. Both are a considerable distance from the project and therefore can be scoped out.

The European Offshore Wind Deployment Centre Environmental Statement notes only very low levels of fishing, with four small vessels targeting demersal trawling. These local vessels are different to the creelers targeting Nigg Bay and the rocky potting areas to the south of Aberdeen, as identified during consultation. It is therefore unlikely that the same vessels will be displaced from both areas, and any vessels that are displaced are likely to be targeting different species, and therefore increased competition will be negligible.

The Kincardine Offshore Wind Farm is located offshore to the southeast of Nigg Bay. As described in the baseline this area is targeted by larger vessels with the most valuable catch being scallops and herring. This differentiates the fleets from the potters and trawlers that target Nigg Bay for lobster and crab. As a result, it is unlikely that the same vessels will be displaced from both areas. Vessels that are displaced are likely to be targeting different species, and therefore increased competition will be negligible.

Table 22.11: Table of potential projects with potential displacement impacts

Development	Description	Location	Distance [km]	Planning Status
European Offshore Wind Deployment Centre	Offshore wind demonstrator	Aberdeen	10	Consent approved. Under legal challenge
Kincardine Offshore Wind Farm	Floating offshore wind farm	Aberdeen	12	Application

22.10 Summary and Conclusions

The marine area that the Aberdeen Harbour Expansion Project covers is of importance to local creel fishing which targets rocky outcrops along the coast to the south of Aberdeen; however, the value for other fishing activity is very low. In terms of regional and national importance the development area can be considered of negligible importance and the displaced effort low enough to be absorbed within that of the wider area where significant year to year variation is seen. The effects have been assessed as significantly low that mitigation is not considered necessary.

22.11 References

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