Neart na Gaoithe

Commercial Fisheries Monitoring Report 3c – Construction

Revision 2

August 2024

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1 Introduction

1.1 Background

1. Conditions attached to the Offshore Consents granted to Neart na Gaoithe Offshore Wind Limited (NnGOWL) for the Neart na Gaoithe (NnG) wind farm require that the Project Environmental Monitoring Programme (PEMP) considers commercial fisheries. In line with this requirement, and as set out in the approved PEMP (NnGOWL, 2022), NnGOWL will undertake pre, during and post-construction commercial fisheries monitoring to better understand the effect of construction activities associated with the Project, and the presence of the operational Project, on commercial fisheries in its vicinity.

2. The Environmental Impact Assessment (EIA) for the Project did not identify any potential significant effects upon commercial fisheries, assuming proposed mitigation measures were enacted. The Fisheries Management and Mitigation Strategy (FMMS) confirms the NnGOWL commitment to mitigation. NnGOWL intend that the reporting outputs of the commercial fisheries PEMP are used to monitor any changes in the commercial fisheries activity and inform any future updates to the FMMS. Given the range of factors that affect fishing patterns, together with the granularity /resolution of the data being monitored, it may not be possible to define any attribution of change in fishing activity specifically to the Project or other factors in isolation. Notwithstanding this caveat, the monitoring seeks to better understand the fishing activity, comparing the regional and local study areas to assess trends at different geographic scales, informed by key project timelines to ensure the mitigation that is committed to within the FMMS remains valid.

1.2 Consent Conditions

3. Consent conditions relevant to commercial fisheries monitoring are summarised in Table 1.1.

Table 1.1. NnGOWL Consent Conditions relevant to commercial fisheries

RELEVANT CONDITIONS	CONDITION SUMMARY	DISCHARGE STATUS
S36 Consent Condition 23.a.3 OfTW Marine Licence Condition 3.2.2.14 a.3	The PEMP must cover, but not be limited to the following matters: a. Pre-construction, construction (if considered appropriate by the Scottish Ministers) and post-construction monitoring or data collection as relevant in terms of the Application, and any subsequent monitoring or data collection for: 3. Commercial Fisheries;	Pre-construction: NnGOWL will seek confirmation from MS-LOT on discharge of the pre-construction element of Condition 23.a.3 at the appropriate time.
		Construction: NnGOWL will seek confirmation from MS-LOT on discharge of the construction element of Condition 23.a.3 at the appropriate time.
		Post-construction: NnGOWL will seek confirmation from MS-LOT on discharge of the post-construction element of Condition 23.a.3 at the appropriate time.
S36 Consent Condition 23.b OfTW Marine Licence Condition 3.2.2.14 b	b. The participation by the Company to contribute to data collection or monitoring of wider strategic relevance, identified and agreed by the Scottish Ministers.	Monitoring strategy developed in collaboration with FTRAG to take into account regional considerations. NnGOWL will seek confirmation from MS-LOT on discharge of the post-construction element of Condition 23.b at the appropriate time.
S36 Consent Condition 24 Regional Monitoring	The Company must participate in any Forth and Tay Regional Advisory Group ("FTRAG") or any successor group, established by the Scottish Ministers for the purpose of advising the Scottish Ministers on research,	Monitoring strategy developed in collaboration with FTRAG to take into account regional considerations. Annual monitoring reports will be presented to the Forth and Tay Commercial Fisheries Working Group.

	monitoring and mitigation programmes for, but not limited to, commercial fish.	NnGOWL will seek confirmation from MS-LOT on discharge of Condition 24 at the appropriate time.

1.3 Aim and Objectives of Data Collection and Monitoring

4. The aim of the NnGOWL commercial fisheries monitoring, as outlined in the PEMP, is to better understand variations in commercial fisheries activity throughout pre-, during and post-construction works at NnG, and use this understanding to inform updates to the FMMS.

5. The objectives are to:

- Collate data on commercial fisheries landings by port on a monthly basis;
- Collate all other sources of evidence of commercial fisheries activity on a regular basis; and
- Monitor data and evidence to better understand any variations and patterns in commercial fisheries activity.

1.4 Time period of this report

6. The commercial fisheries monitoring will be delivered through a number of reports for various stages of the Project, as follows:

- Post-consent: covering period 01 January 2017 to 30 April 2019 [Report 1 - complete];
- Pre-construction: covering period 01 May 2019 up to the start of construction in August 2020, including annual data to end of December 2020 [Report 2 - complete];
- Construction: start of construction to end of construction, a mid-year (6- monthly) interim report will be prepared in addition to a full annual report. The interim report will not include datasets which are only issued on an annual basis. [Report 3a – complete] and [Report 3b – this report]; and
- Post-construction phase: end of construction to three years after the completion of construction, or as agreed with Marine Scotland.

7. Construction commenced in early August 2020. The construction reporting is every 6-months, with the intention to monitor pre- and post-construction fishing activity from available data sources. Time periods of reporting during the construction phase are aligned as follows:

- Report 3a: 01 July to 31 December 2020 [complete];
- Report 3b: 01 January to 30 June 2021 [complete];
- Report 3c: 01 July to 31 December 2021 [this report];
- Report 3d: 01 January to 30 June 2022, and so on continuing on a 6-monthly basis to end of construction.

8. Report 3a focused on inter-annual variations of landings at a monthly level for key species, to understand fluctuations in landings across the periods of construction compared to relative levels in previous years. It is noted that construction of NnG commenced in August 2020, when landings were already heavily impacted by the Covid-19 pandemic and that, in general, a decrease in landings have been seen throughout the UK compared to previous years which is considered to be associated with the pandemic (MMO, 2021; Marine Scotland, 2021).

9. Report 3b analysed landings across the period January to June 2021 to allow comparison with previous years. The method in which data is provided in the MMO iFish database changed from 2021 onwards, with data available by ICES rectangle and port of landing within one dataset (previously these attributes were recorded in separate datasets that could not be correlated).

10. Report 3c (this report) covers the period up to December 2021 and updates the annual analysis that has been provided in both Report 2 and Report 3a for the 2021 annual period.

11. The next reporting output (Report 3d) will cover the period of 01 January to June 2022.

12. As defined within the PEMP (NnGOWL, 2022), with exception to the interim (6-monthly) reports during construction, a dedicated meeting with the Forth and Tay Commercial Working Group will be held following the issue of a draft version of the report, to discuss and resolve any comments.

1.5 Fisheries overview

13. A detailed characterisation of commercial fisheries in the area is available within the Commercial Fisheries Technical Report and ES Chapter (NnG, 2018), and is further supported by the Commercial Fisheries Monitoring Reports 1, 2, 3a and 3b.
14. The fisheries in operation across the NnG offshore wind farm and export cable, and surrounding area include:
    - Lobster and crab creel fishery;
    - Nephrops demersal trawl fishery;
    - Squid demersal trawl fishery; and
    - Occasional activity from other mixed demersal trawlers and scallop dredgers.
15. Vessels land to a range of ports on the north and south side of the Firth of Forth, including but not limited to (and in no particular order): Pittenweem, Dunbar, North Berwick, Cove, Eyemouth, Port Seton, Anstruther and St Monans (sometimes also referred to as St Monance).

1.6 Project related activities

16. Commencement of NnG offshore construction began in August/September 2020, with the following detailed construction activities undertaken during 2021:
    - Aug 20 through to Jun 21 - casing installation;
    - May 21 through to Aug 21 - export cable installation;
    - Jun 21 through to Mar 22 - pile installation;
    - Aug 21 through to Oct 21 - inter-array cable pre-trenching; and
    - Nov 21 through to Jan 22 - export cable rock protection.
17. During construction activities, the Project has provided for disruption and cooperation agreements related to the export cable installation and NnG Wind Farm Area.

2 Methodology

18. The overall approach throughout this report is to analyse and present data for comparison with previous years of data, to build on the information provided in the previous reports, including the Environment Statement baseline and PEMP Reports 1, 2, 3a and 3b.
19. This Report 3c focuses on annual analysis for the 2021 period. Other forms of available spatial data are also presented including Vessel Monitoring System (VMS) data and Automatic Identification System (AIS) data.
20. The Marine Management Organisation (MMO) iFish landing statistics database has been analysed to explore any changes in trends of landings across the 2021 period, noting that construction commenced in August 2020. Landed weight is analysed to ensure that fluctuations in price trends do not skew the analysis, albeit noting that commercial fisheries often focus on specific target species in response to changing market prices i.e., that increased prices may drive increased landings and targeting of specific species.

2.1 Study area

21. Landing statistics from the period January 2017 to December 2021 are presented in this report.
22. Data across two spatial study areas are assessed as shown in Figure 2.1 and described as:
    - Commercial fisheries local study area: ICES rectangles 40E7 and 41E7
    - Commercial fisheries regional study area: 42E7-E8, 41E6-E8 and 40E6-E8.

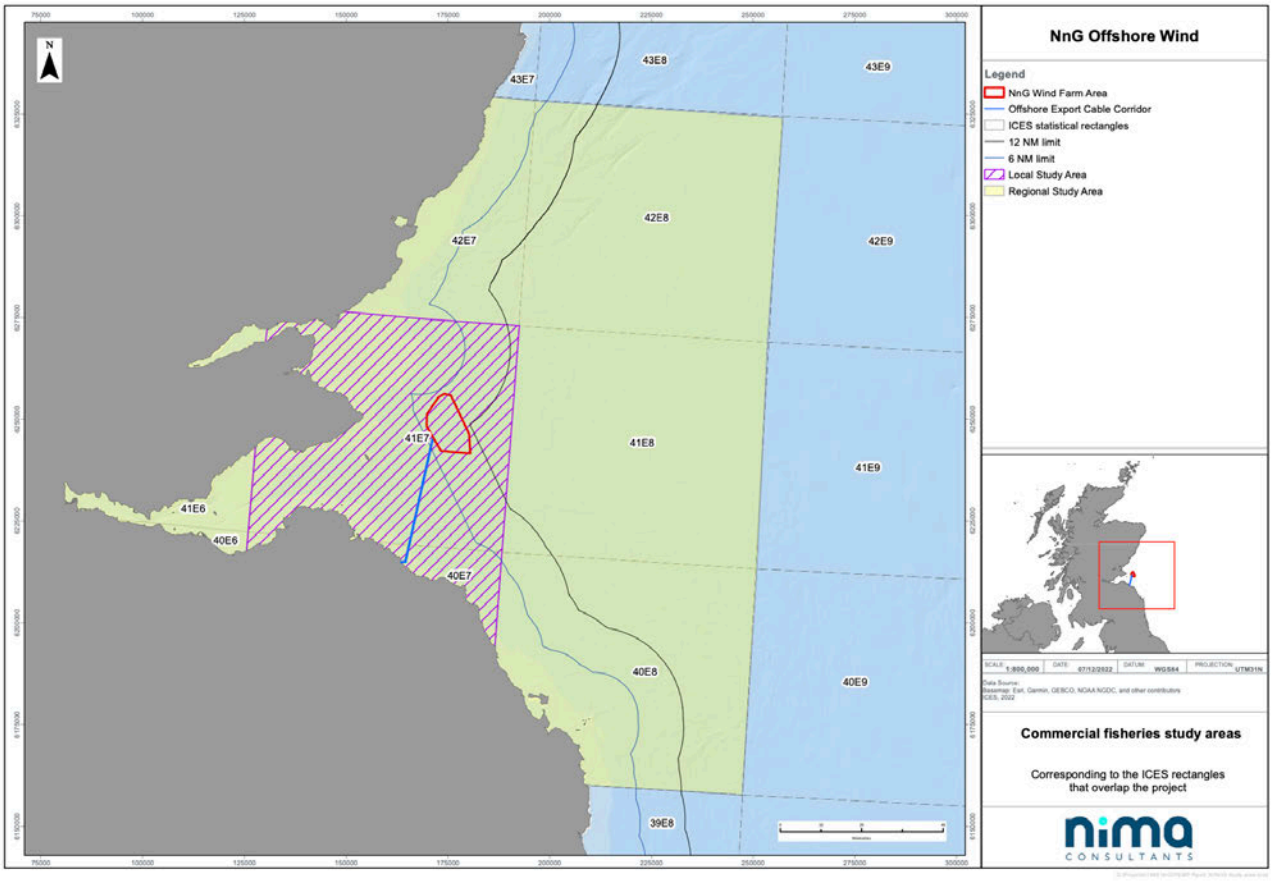


Figure 2.1. Commercial fisheries local and regional study areas.

3 Inter-annual variations for key species

3.1 Nephrops

3.1.1 Nephrops: local study area

23. The monthly landings of nephrops from the local study area (ICES rectangles 40E7 and 41E7, which overlap with NnG Wind Farm Area and Offshore Export Cable Corridor) is shown in Figure 3.1 for the time series Jan 2017 to Dec 2021.

24. Most landings are from ICES rectangle 41E7, as expected and corroborated by previous data presented in Reports 1, 2 and 3a. Notable fluctuations in monthly landings are seen throughout the time series for nephrops, with consistent peaks in landings by weight seen during summer (June to August) and late autumn (November).

25. Landings throughout 2021 remain at a similar level as 2020 landings which were significantly lower than previous years (2017-2019). The substantial drop in landings in April and May 2020, were thought to be caused by the Covid pandemic and associated restrictions and changes to the market demand. In 2021, Scotland entered lockdown on 5th January, which was partially lifted on 2nd April. Landings in January, April and May 2021 are specifically lower than previous years, although it is not possible to attribute this to Covid restrictions as landings are generally at their lowest during April to May each year.

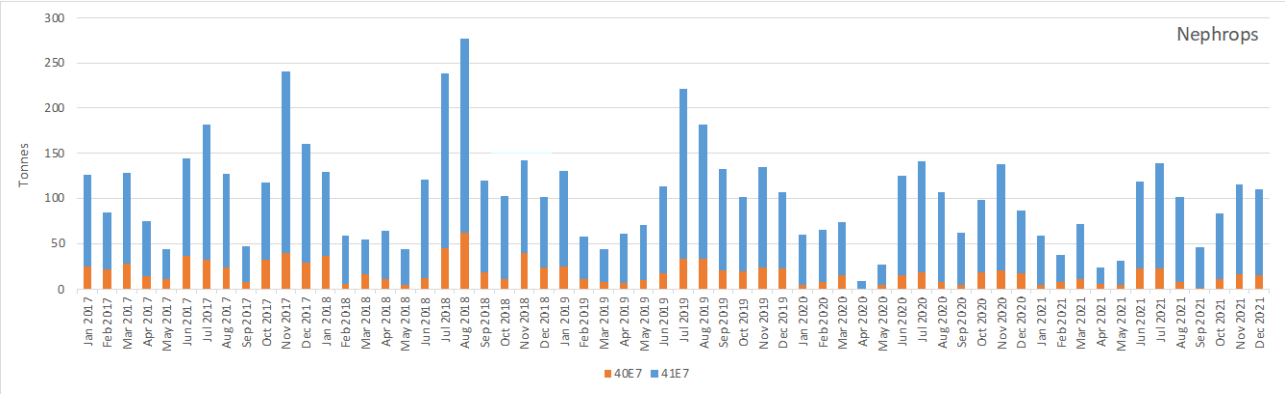


Figure 3.1. Time series of landed weight (tonnes) of nephrops by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

26. To further examine monthly landings of nephrops from the local study area (40E7 and 41E7) a deeper dive of analysis has been undertaken and presented in Figure 3.2, including:

    - A timeseries of monthly landings from January 2017 to December 2021;
    - A comparison of the average monthly landings in the period 2017 to 2019 (shown in green), compared with monthly landings in 2020 (shown in orange) and 2021 (shown in grey), and including linear trendlines.
    - Inter-annual variation in monthly landings compared across 2017 to 2021 to present the positive or negative proportion of change in monthly landings from:
        - 2018 compared with the previous year (2017);
        - 2019 compared with 2018;
        - 2020 compared with 2019; and
        - 2021 compared with 2020.

27. The timeseries graph shows that landings in 2021 have remained at levels seen in 2020, with both years lower than the 2017-2019 average. In addition, the marked peaks in landings noted during summers in 2017-2019 are less pronounced in 2020 and 2021.

28. The linear trends show landings in 2021 have remained similar to those in 2020, with a slight overall decrease from 2020 to 2021 and clear decrease compared to previous three-year period (2017-2019).

29. The proportion of change in inter-annual variations shows a dramatic increase in 2018 landings (compared to 2017) in the August-September months, and reduced catches in March-April and November to December for this same period. Lower catches are noted throughout most of 2020, notably in April-May and August-September. There is less variation between 2020 to 2021 due to the 2021 landings remaining low compared to 2017-2019.

30. In general, the summer peaks of landings are relatively lower in 2021 compared to 2019, 2018 and 2017, and this coincides with the period of construction of the export cable installation (from May to August 2021). During this period of construction, it is fair to deduce that the Project construction activities effected normal fishing practices targeting Nephrops, as predicted in the EIA and as mitigated through cooperation agreements.

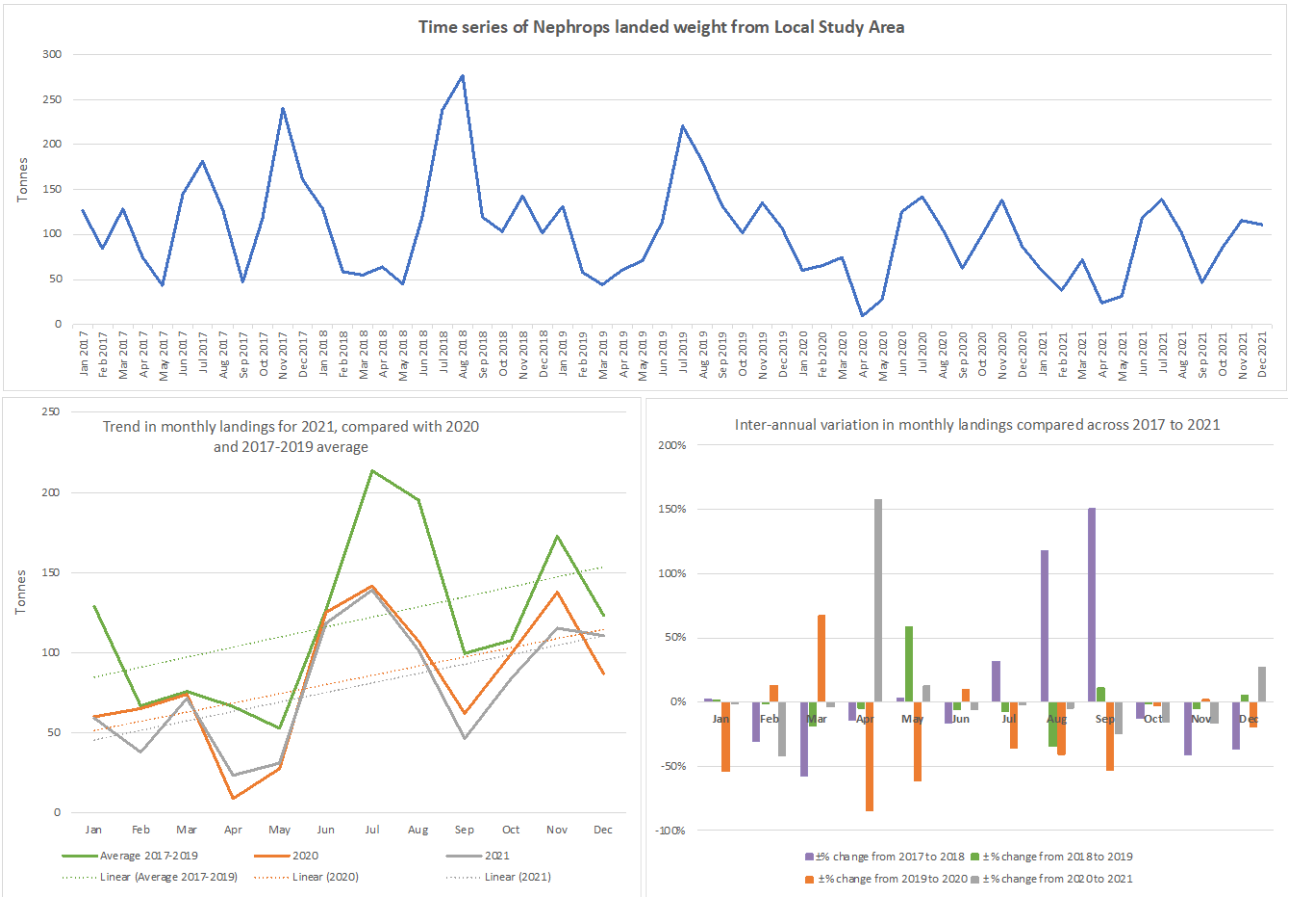


Figure 3.2. Time series, trendlines and inter-annual variation of landed weight (tonnes) of nephrops from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

3.1.2 Nephrops: regional study area

31. The monthly landings of nephrops from the regional study area are shown in Figure 3.3 and Figure 3.4 for the time series January 2017 to December 2021.

32. As corroborated by previous Reports 1, 2 and 3a, ICES rectangle 41E7 has the highest proportion of nephrops landings in the region.

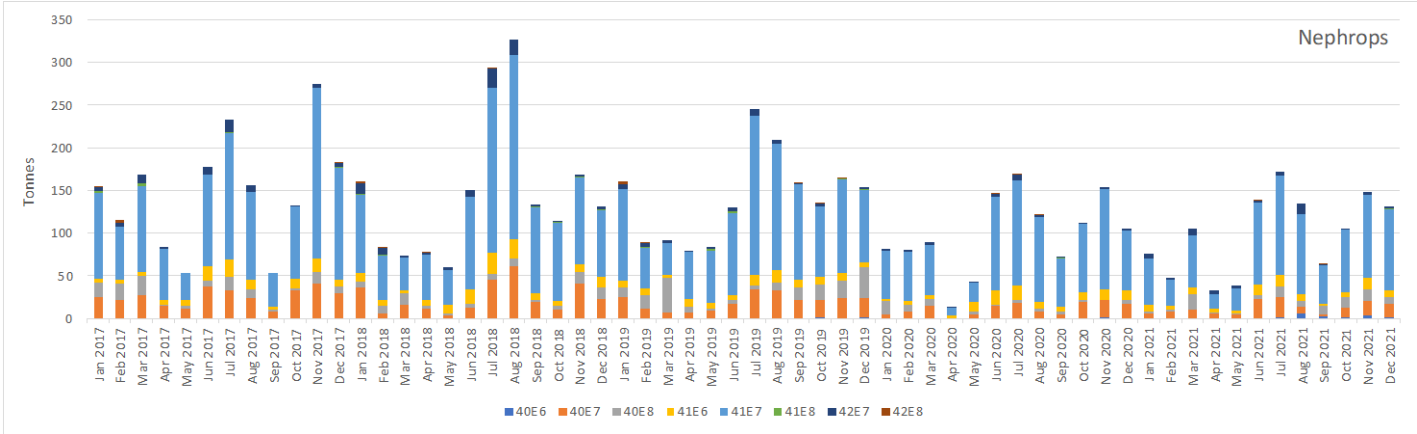


Figure 3.3. Time series of landed weight (tonnes) of nephrops by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

33. The trends in 2021 monthly landings compared to 2017-2020 and the inter-annual variation of monthly landings largely mirrors the trends and findings for the local study area. Looking at the linear trends, it is noted that overall, the landings in 2021 are closer to 2020 levels, indicating that the local study area had a higher decrease over Autumn months (September to November) compared to the regional data.

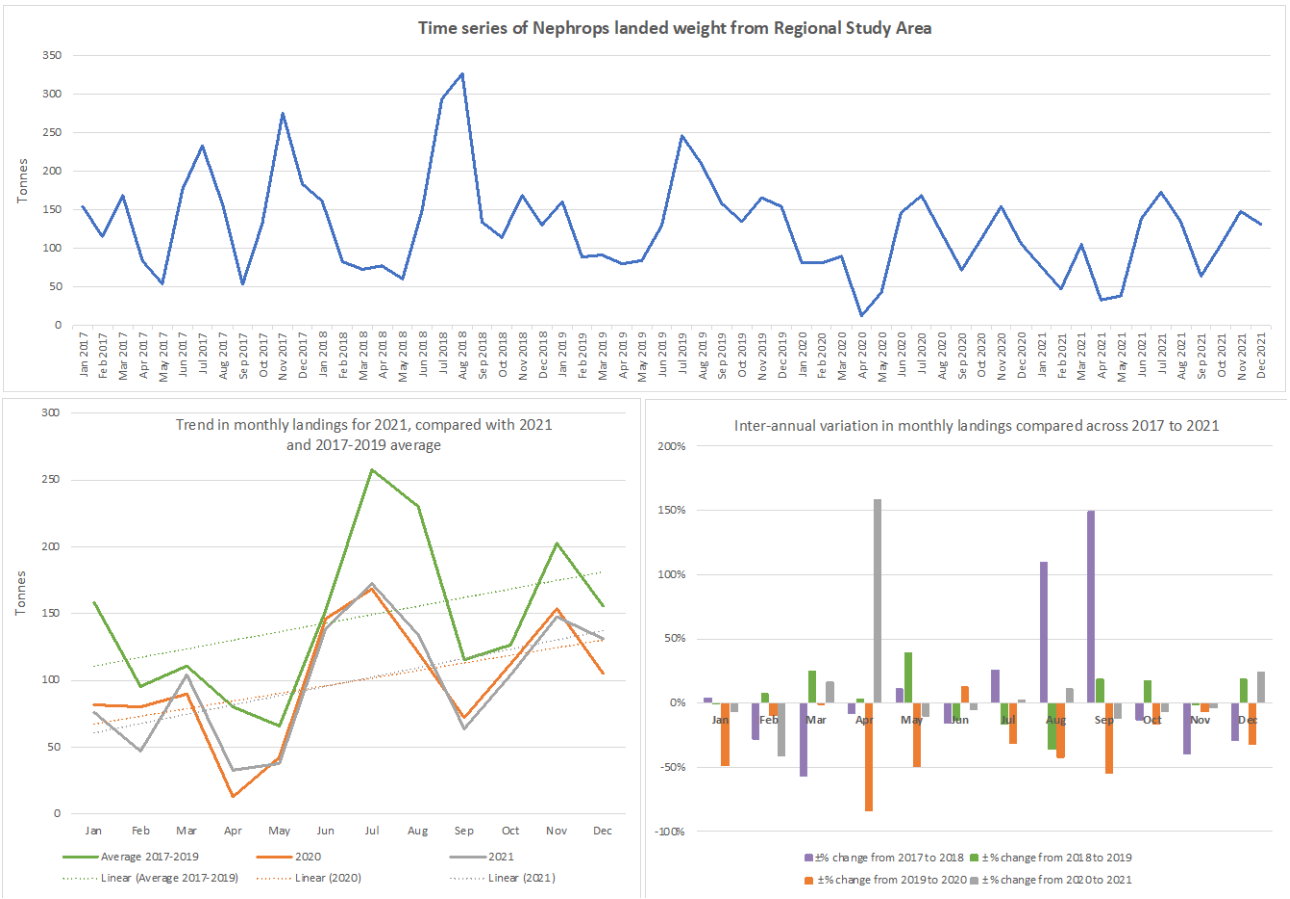


Figure 3.4. Time series, trendlines and inter-annual variation of landed weight (tonnes) of nephrops from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

3.2 Lobster

3.2.1 Lobster: local study area

34. The monthly landings of lobster from the local study area are shown in Figure 3.5 and Figure 3.6 for the time series January 2017 to December 2021.

35. The known seasonal trend in lobster landings is clearly visible, with peaks in summer landings from July to September in the years 2017 to 2019. Landings in 2020 were noticeable lower, and specifically the high peak in August landings was not evident in 2020. This lack of spike in lobster landings is clearly visible in both Figure 3.5 and Figure 3.6 for the 2020 data. Landings in 2021 demonstrate that the summer peak in August has returned.

36. The linear trendlines in 2021 landings show that landings have returned to levels very similar to those seen during 2017 to 2019 with the return of the peak in August clearly evident.

37. Inter-annual variations show significant increases from March to Jul 2019. The proportion of change from 2020 compared to 2019 is not out with the proportions seen for other years and months, but those variations are generally over months with lower catches (i.e., March to May). In August 2020 landings of lobster dropped by 44% compared to 2019 catches; when the fishery would be expected to be at its seasonal peak, this level of drop is significant. In August 2021, the landings of lobster increased by 60% compared to August 2020.

38. The peak in summer lobster landings in 2021 remains lower than in previous years of 2019, 2018 and 2017, especially for ICES rectangle 40E7 (which overlaps the export cable). Furthermore, this coincides with the period of construction of the export cable installation (from May to August 2021). It is fair to deduce that the lobster fishing is returning, but the construction activities continue to effect fishing, as predicted in the EIA and as mitigated through disruption agreements.

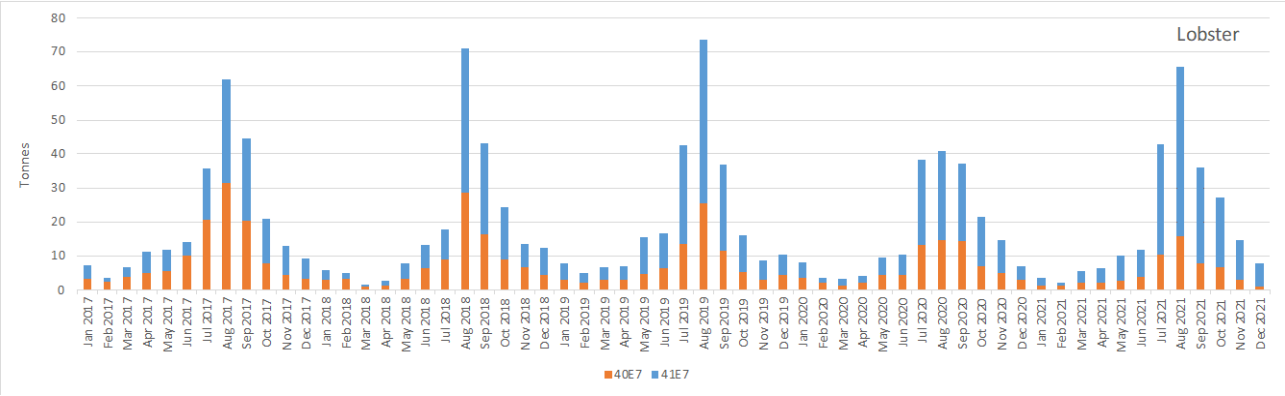


Figure 3.5. Time series of landed weight (tonnes) of lobster by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

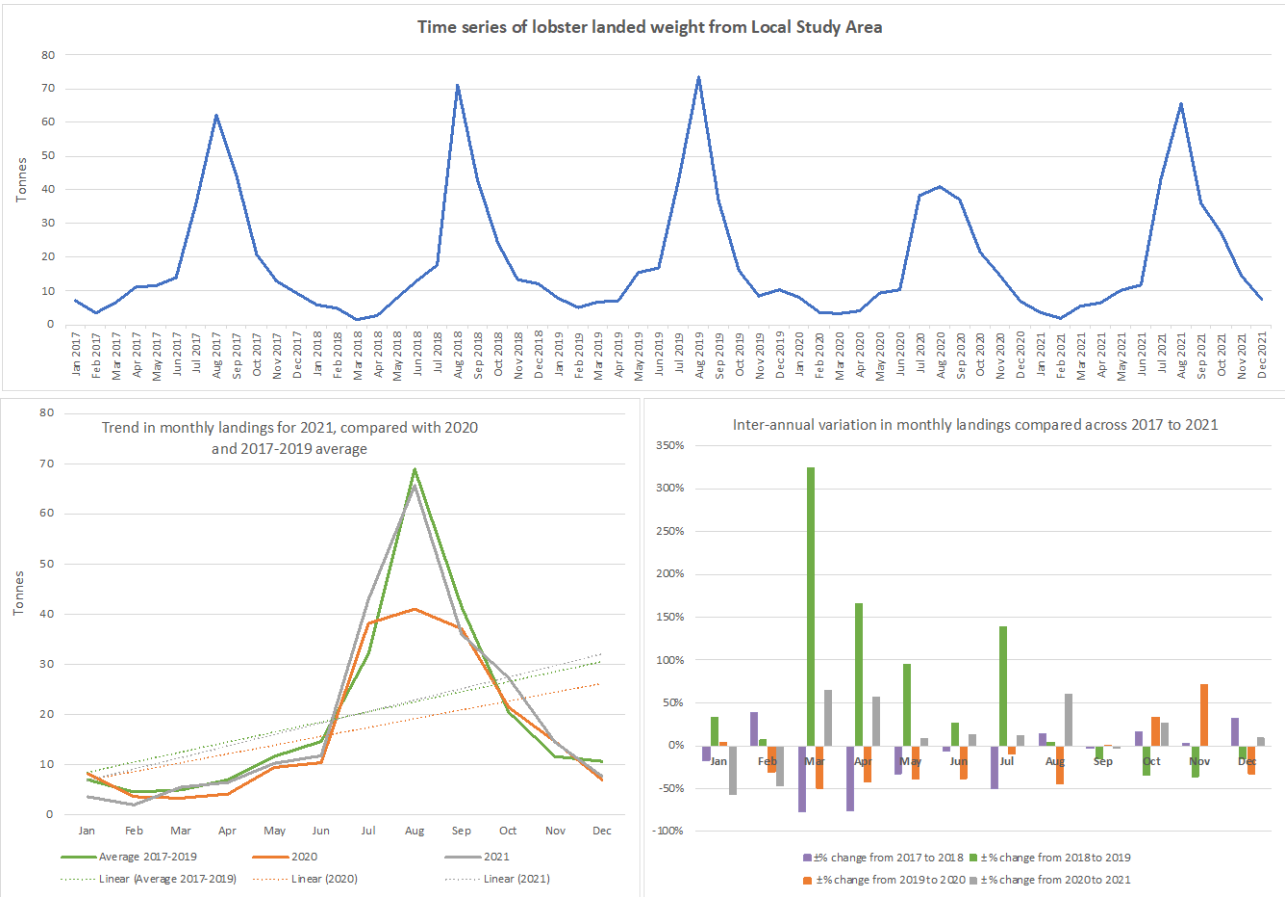


Figure 3.6. Time series, trendlines and inter-annual variation of landed weight (tonnes) of lobster from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

3.2.2 Lobster: regional study area

39. The monthly landings of lobster from the regional study area are shown in Figure 3.7 and Figure 3.8 for the time series January 2017 to December 2021.

40. From the regional study area, a high proportion of landings are from ICES rectangles that do not overlap the project, including 42E7 and 40E8 (shown in navy and grey in the figure below).

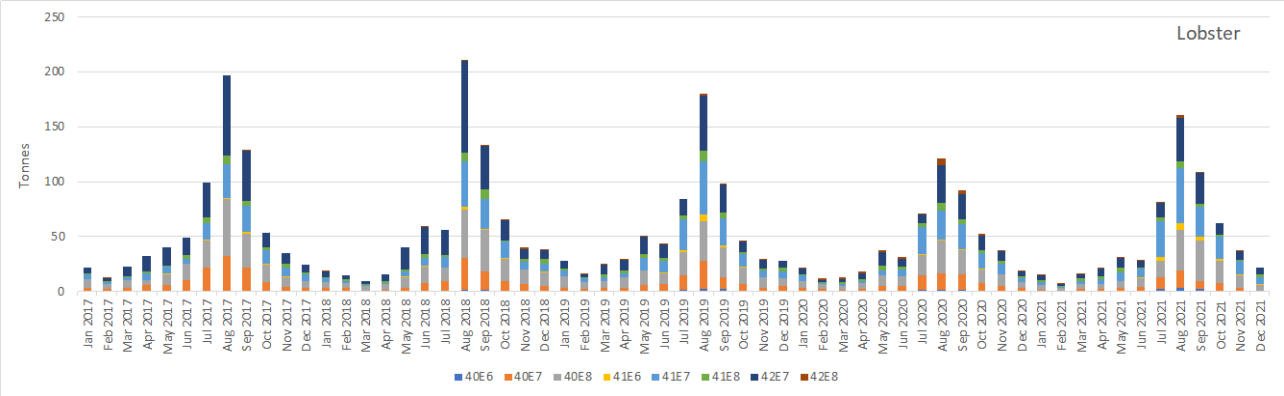


Figure 3.7. Time series of landed weight (tonnes) of lobster by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

41. The timeseries of landings shows an overall drop in landings in 2020, as might be expected from the covid-pandemic and associated restrictions and effects. However, it is evident that the regional landings of lobster maintained the summer peak in landings, which was not seen for the local study area. This is a significant finding for the year 2020 and expected to be associated with the construction of the NnG Offshore Wind Farm and associated agreements made with commercial fishing businesses.

42. Figure 3.8 demonstrates that, while overall activity was reduced in 2020, the lobster landings within the regional study area maintained their summer peak. This peak in landings is from ICES rectangles outside the local study area, including 42E8 and 40E8; showing a variation in trend from the regional versus local study areas.

43. In 2021, the trend in landings more closely follows the 2017-2019 trendline, although remains below the peak levels seen in these years. This indicates that the level of catch is returning, compared to 2020 levels, but not yet at the 2017-2019 average rates.

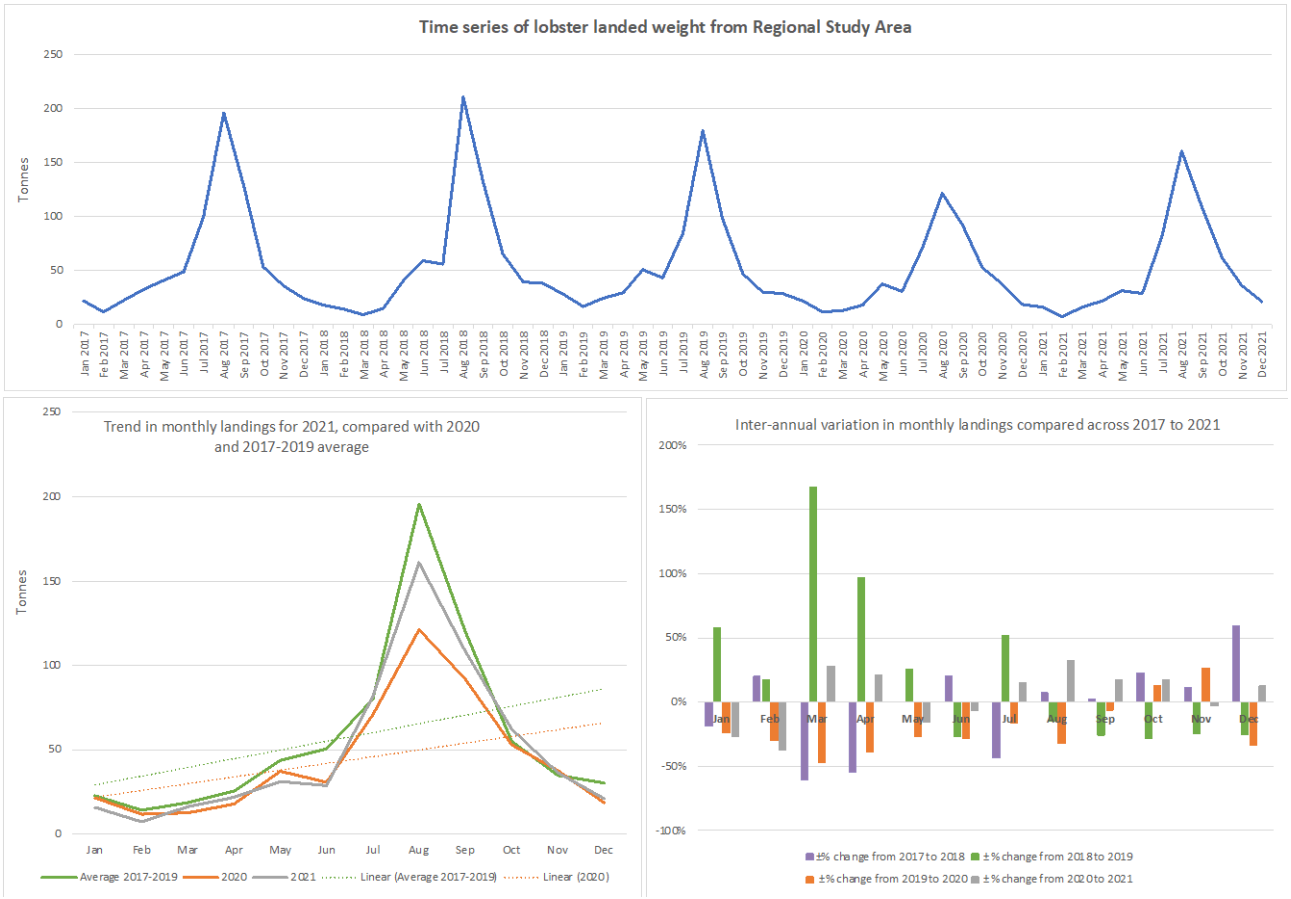


Figure 3.8. Time series, trendlines and inter-annual variation of landed weight (tonnes) of lobster from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

3.3 Brown crab

3.3.1 Brown crab: local study area

44. The monthly landings of brown crab from the local study area are shown in Figure 3.9 and Figure 3.10 for the time series January 2017 to December 2021.

45. Landings of brown crab from both ICES rectangles 40E7 and 41E7 showed marked decline in 2020 compared to other years. Landings in 2021 show a slight increase but remain below the 2017-2019 levels.

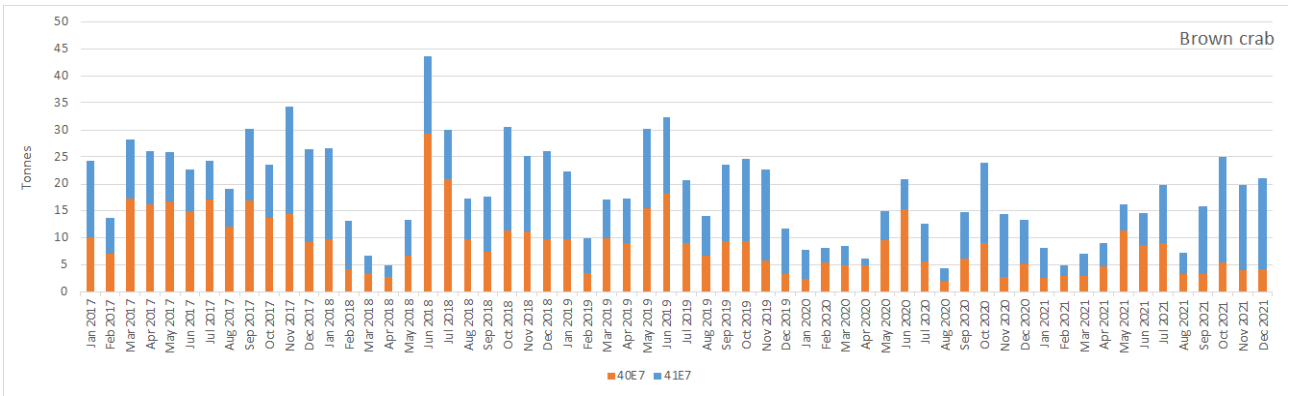
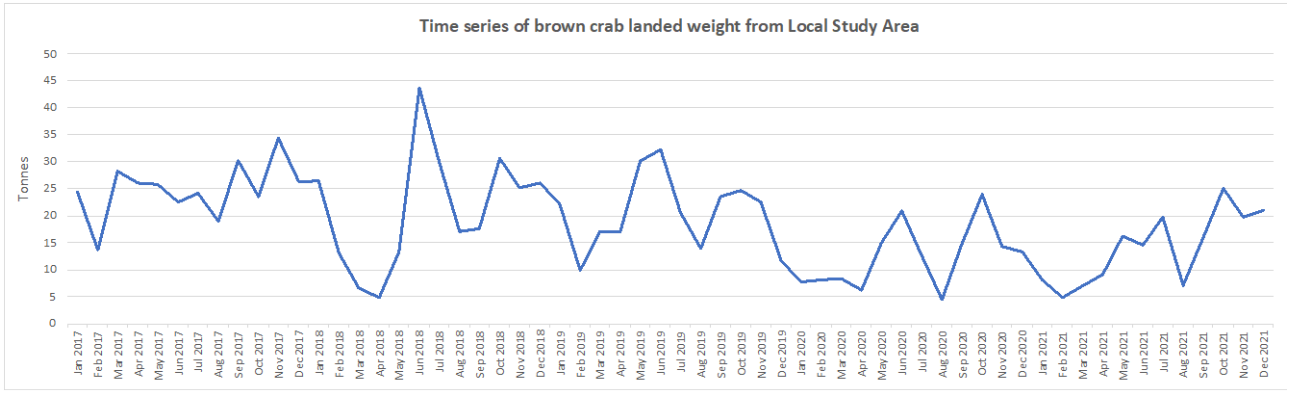


Figure 3.9. Time series of landed weight (tonnes) of brown crab by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)



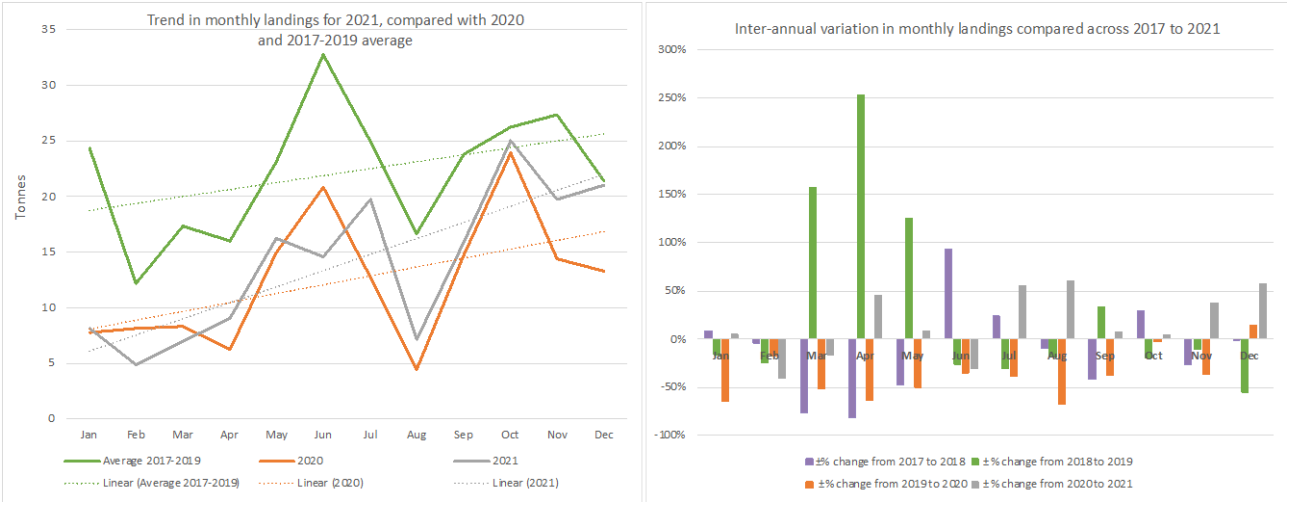


Figure 3.10. Time series, trendlines and inter-annual variation of landed weight (tonnes) of brown crab from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

46. The trendline for brown crab landings in 2021 from the local study area is slightly above 2020 levels but remains substantially lower than the 2017 to 2019 period, although it largely follows the general seasonality trends.

3.3.2 Brown crab: regional study area

47. The monthly landings of brown crab from the regional study area are shown in Figure 3.11 and Figure 3.12 for the time series January 2017 to December 2021.

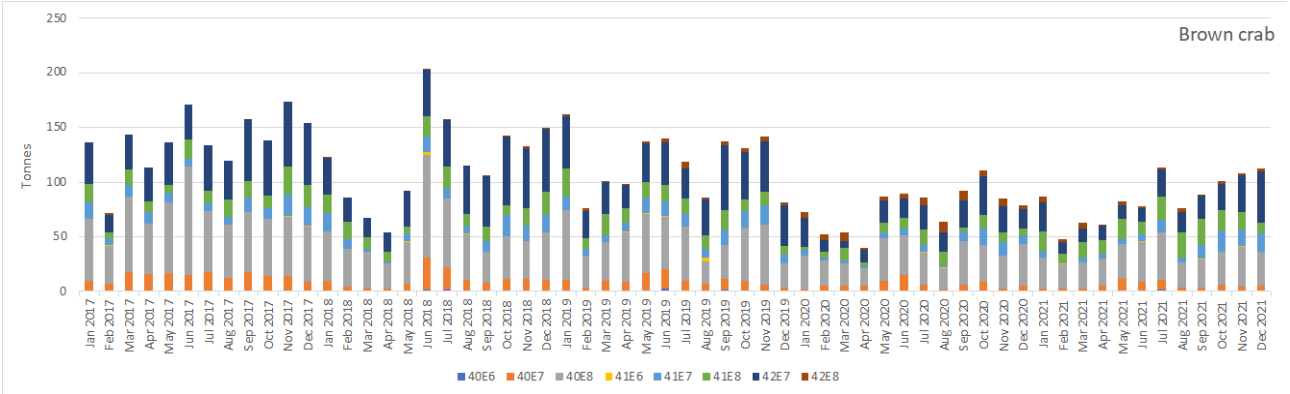
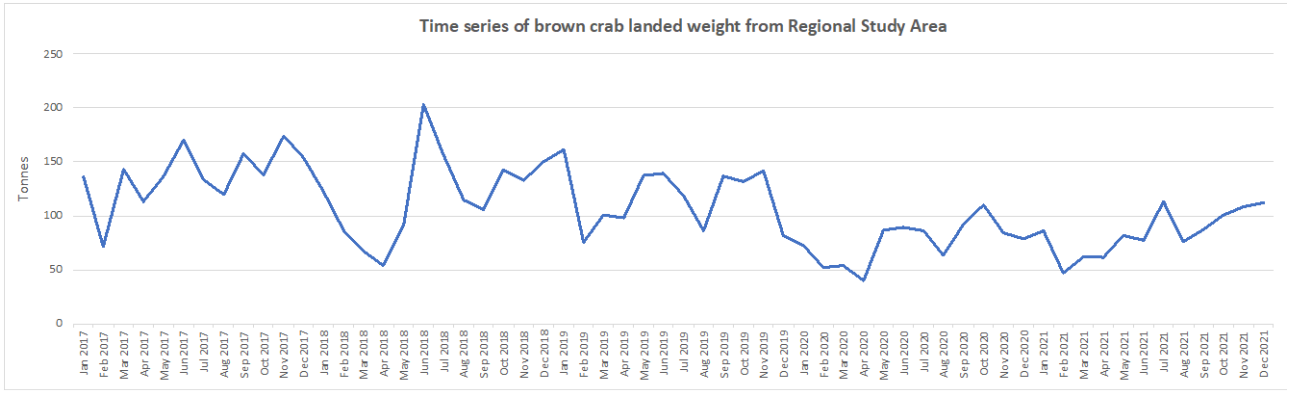


Figure 3.11. Time series of landed weight (tonnes) of brown crab by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)



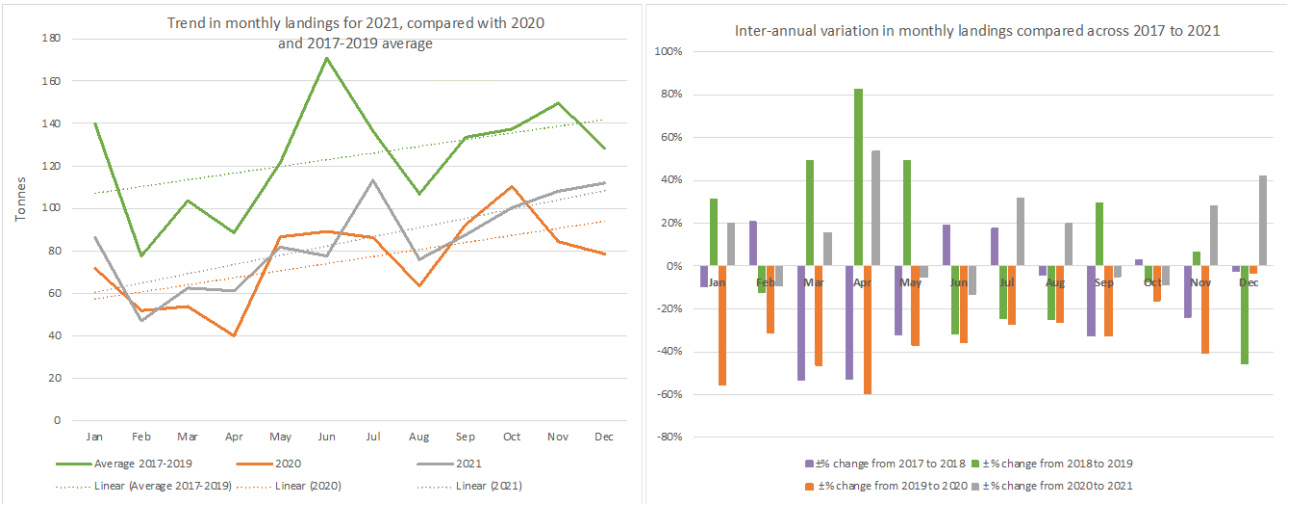


Figure 3.12. Time series, trendlines and inter-annual variation of landed weight (tonnes) of brown crab from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

48. The trendline in regional landings illustrates that catches of brown crab where overall lower in 2020 and 2021 compared to 2017 to 2019. Generally, the crab landings followed the seasonality trends expected, but without the noticeable spring and early summer peak in 2020. Notably, in 2021 landings have increase slightly from 2020 levels, although remain below the 2017-2019 average, and the summer peak has returned in landings.

49. Inter-annual variations show a decline in landings from every month in the 2020 period, but increases for 7 months during 2021.

3.4 Squid

3.4.1 Squid: local study area

50. The monthly landings of squid from the local study area are shown in Figure 3.13 and Figure 3.14 for the time series January 2017 to December 2021.

51. Squid landings are highly seasonal in the local study area, occurring during the summer and autumn months (July to October). The trendline indicates a lower overall catch of squid in 2021 and a slight shift to a later fishery (in October).

52. Interannual trends show the high variability in this fishery, which is not unique to 2021.

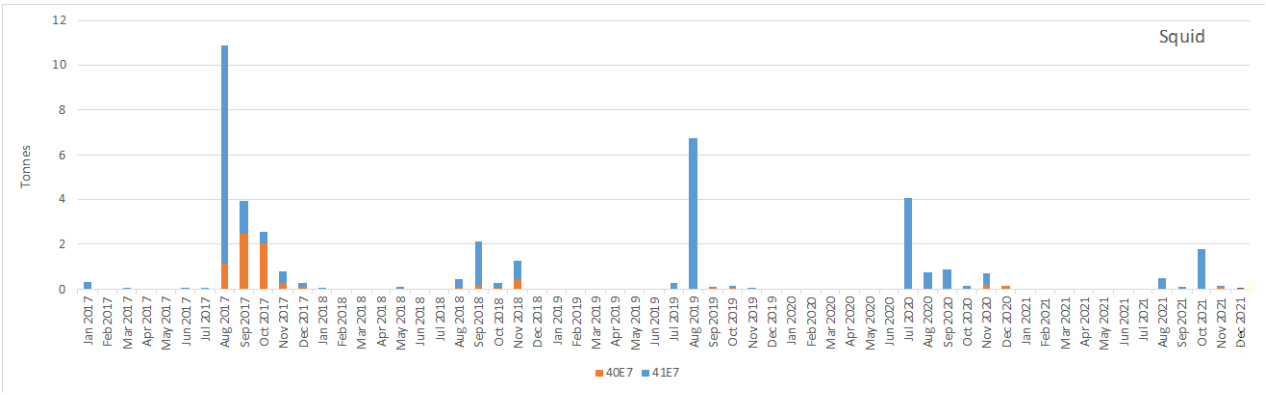


Figure 3.13. Time series of landed weight (tonnes) of squid by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

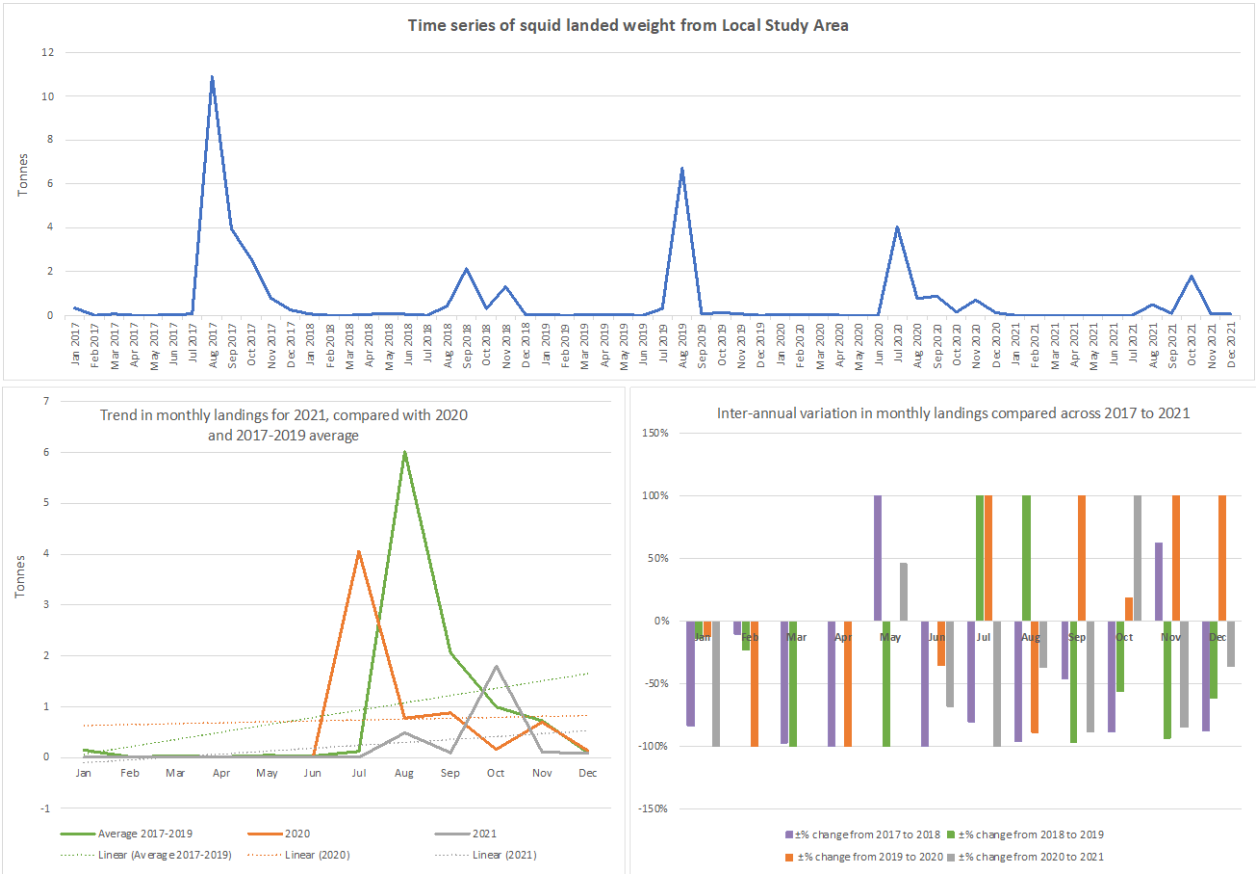


Figure 3.14. Time series, trendlines and inter-annual variation of landed weight (tonnes) of squid from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

3.4.2 Squid: regional study area

53. The monthly landings of squid from the regional study area are shown in Figure 3.15 and Figure 3.16 for the time series January 2017 to December 2021. The regional landings corroborate the main season for squid across summer and early autumn; and illustrate the sporadic nature of catches.

54. The 2020 regional landings saw a substantial increase in landing compared to 2018 and 2019, on account of substantial catches from ICES rectangle 42E7 in July 2020. The 2021 regional landings of squid dropped significantly compared to 2020 landings, although were closer to quantities recorded in 2018 and 2019, so is not unforeseen.

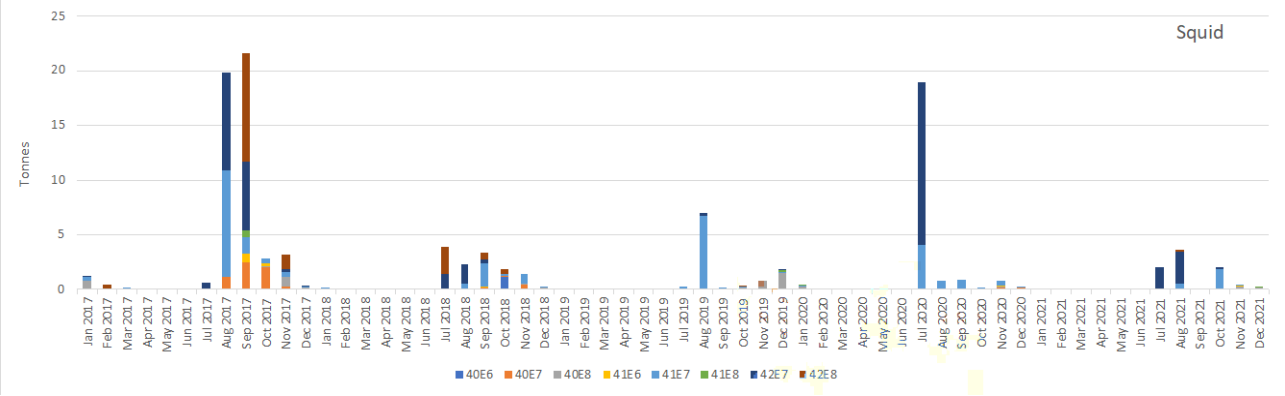


Figure 3.15. Time series of landed weight (tonnes) of squid by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

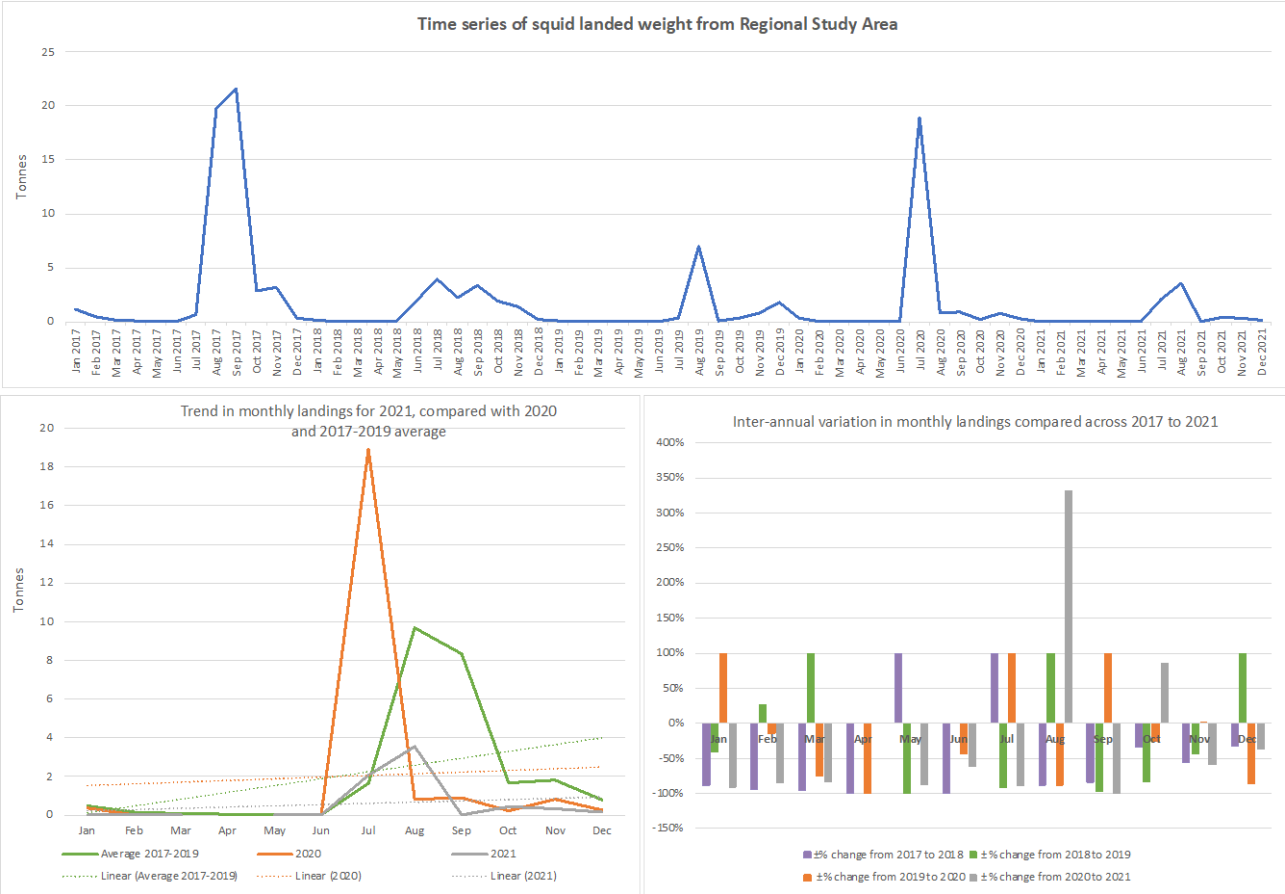


Figure 3.16. Time series, trendlines and inter-annual variation of landed weight (tonnes) of squid from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

4 Landings by port from January to December 2021

55. This section of the report provides analysis of the 2021 MMO landings dataset which allows concurrent analysis across both ICES rectangles and port of landing. The 2021 MMO dataset has been analysed to understand which ports of landings are important across the local and regional study area.

56. Report 3c adds analysis of data from July to December 2021 to add to the six-month period January to June 2021 presented in Report 3b.

57. An overview of landings by port is provided below for the local and regional study areas, followed by individual port profiles.

4.1 Overview

58. In 2021 a total of 1,718 tonnes were landed from the local study area, with a first sales value of £9.2 million. This compares to 3,926 tonnes and £19.2 million landed from the regional study area (8 ICES rectangles) (Table 4.1).

59. Approximately 48% of the landed value from the regional study area was caught from within the local study area, highlighting the importance of these grounds.

60. In both the local and regional study area a higher quantity of catch is landed from July to December, which is expected given the seasonal variations discussed in Section 3.

Table 4.1. Total landings from local and regional study areas during period January to June 2021; July to December 2021 and the total annual period1 (data source: MMO, 2023)

STUDY AREA	ICES RECTANGLES	LANDED WEIGHT (TONNES)			FIRST SALES VALUE (£)		
		Jan-Jun	Jul-Dec	2021 Total	Jan-Jun	Jul-Dec	2021 Total
Local study area	40E7, 41E7	575.81	1,142.62	1,718.43	£2,652,818	£6,581,694	£9,234,481
Regional study area	42E7, 42E8, 41E6, 41E7, 41E8, 40E6, 40E7, 40E8.	1,522.70	2,403.41	3,926.11	£5,992,258	£13,169,515	£19,161,743
Proportion of regional landings from the local study area		37.82%	47.54%	43.77%	44.27%	49.98%	48.19%

61. Landed weight and value from January to December 2021 (Figure 4.1) indicates a peak in landings during summer, notably August, and lower activity during January to May, notably low in February.

Figure 4.1. Landed weight and first sales value landed from January to December 2021 from the total regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8), indicating the portion landed form the local study area (40E7 and 41E7) (data source: MMO, 2023)

62. Landed weight and value from January to December 2021 is presented by port of landing and ICES rectangle in Figure 4.2 for the regional study area, which includes ICES rectangles 40E7 and 41E7 (which make up the local study area).

63. The highest quantity and value are landed into Pittenweem, from ICES rectangle 41E7. Landings into Dunbar are almost exclusively from ICES rectangles 40E7 and 41E7, while Eyemouth also lands from these areas, as well as other ICES rectangles in the regional study area. Notable landings into Peterhead, Arbroath and Burnmouth are predominately from outside the local study area.

Figure 4.2. Landed weight and first sales value by port of landing in 2021 from the total regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2023)

64. Landed weight and value for 2021 is presented by port of landing and month in Figure 4.3 for the local study area. As per previous figures, the highest quantity is landed into Pittenweem, followed by Eyemouth, Dunbar, Port Seton and Arbroath. Profiles of landings into these ports (and others) for commercial catches from the local study area is provided in Section 4.2.

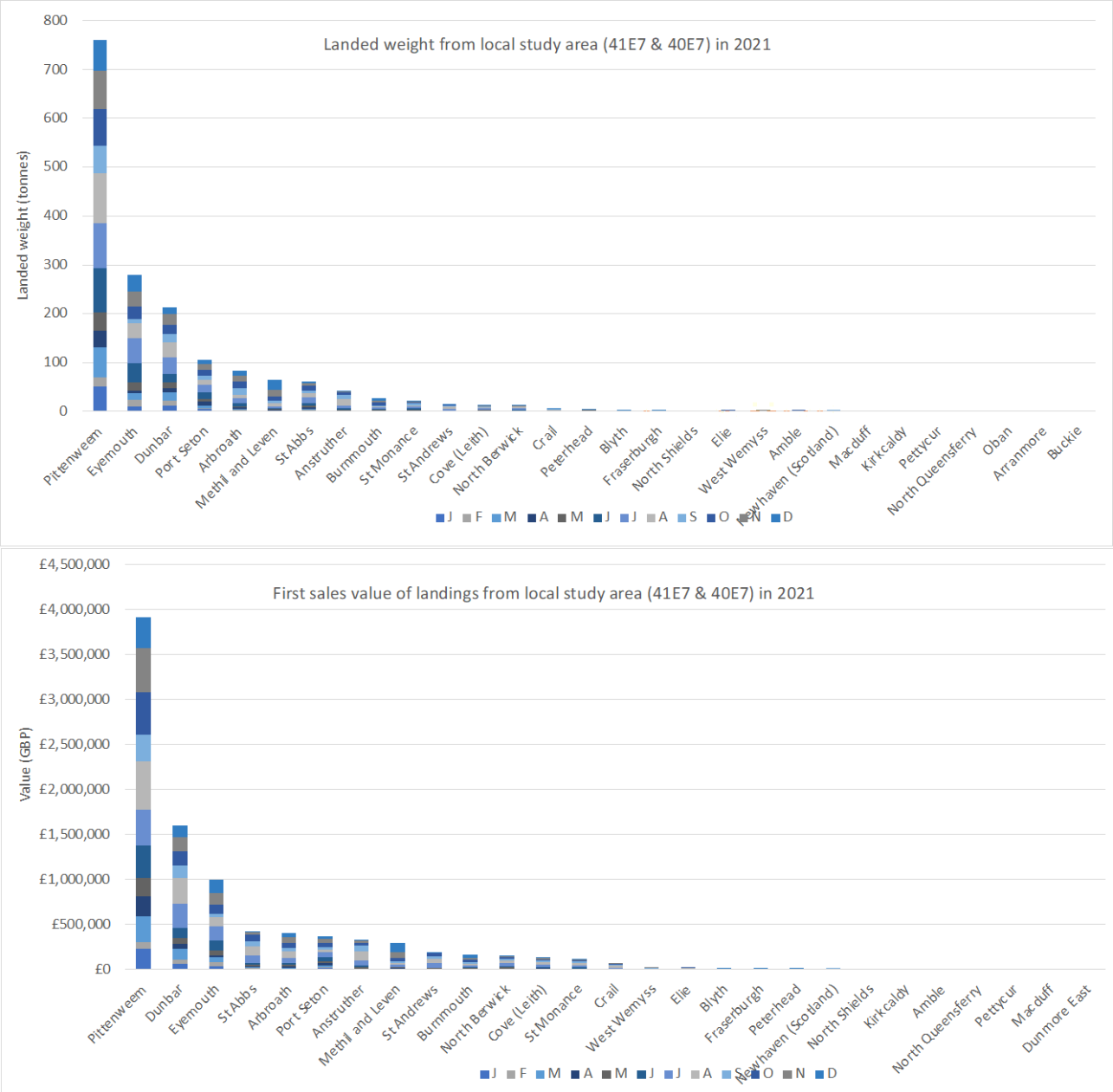


Figure 4.3. Landed weight and first sales value by port of landing in 2021 from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2023)

4.2 Port profiles

65. This section provides a profile of landings for each of the key ports detailing commercial catches from the local study area in 2021.

4.2.1 Pittenweem

66. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Pittenweem in 2021 are presented in Figure 4.4 by species and Figure 4.5 by gear type and vessel length category.

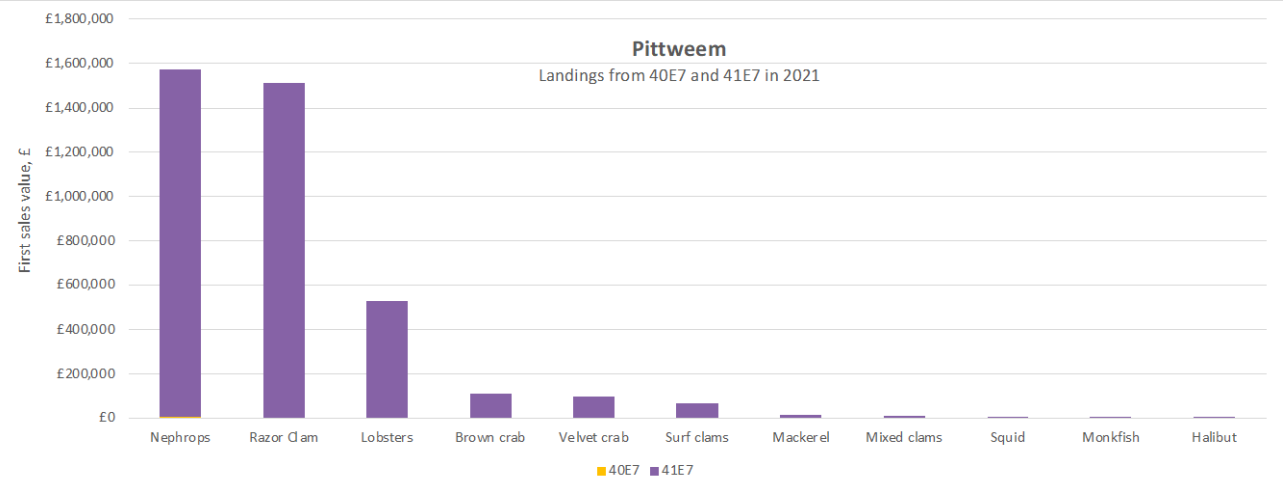


Figure 4.4. First sales value of species landed into Pittenweem from in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

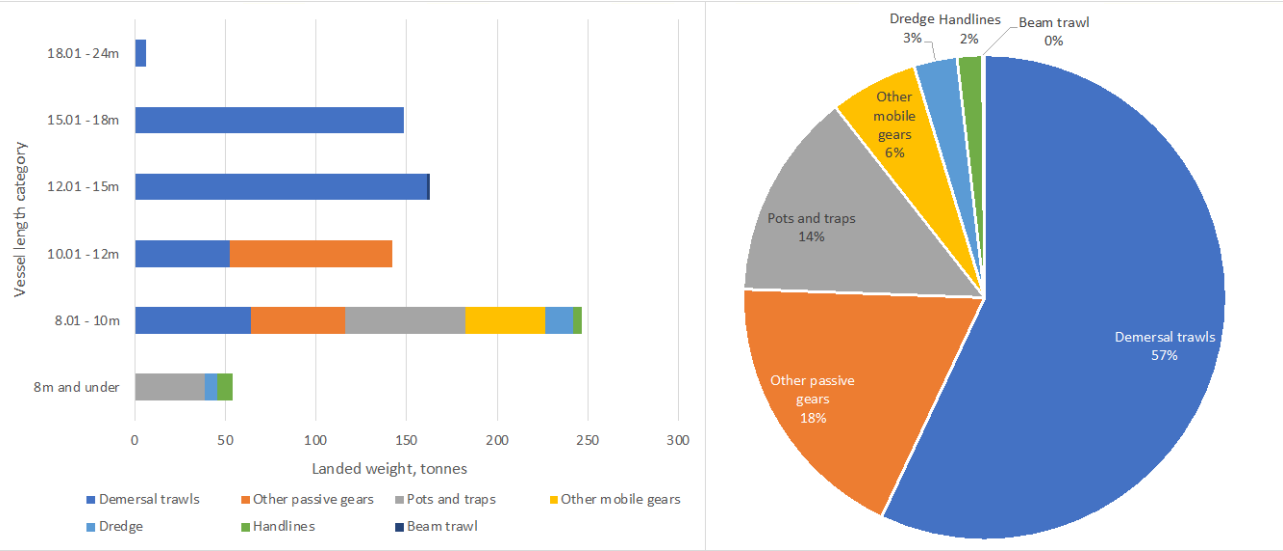


Figure 4.5. Landed weight (tonnes) of landings into Pittenweem in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

67. The first sales value of landings from the local study area into Pittenweem in 2021 was £4 million, with almost all the catches taken from ICES rectangle 41E7, which overlaps the NnG Wind Farm Area. The highest value species over this period was nephrops (£1.6 million) followed by razor clam (£1.5 million), and lobster, brown crab and velvet crab (£730,000 combined).

68. Demersal otter trawls landed the highest proportion by weight (57%), with most vessels being above 12m in length, but also some landings from vessels under 12m. Razor clams are caught by 'other passive gears', which is likely to include electrofishing for this species. By weight 'other passive gears' accounted for 18% of the landings and were taken by vessels between 8 to 12m in length.

69. Other gears include pots and traps targeting lobster, brown crab and velvet crab and hydraulic/suction dredge targeting surf clams and mixed clams. A small quantity of mackerel was caught using handlines in June.

4.2.2 Dunbar

70. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Dunbar in 2021 are presented in Figure 4.6 by species and Figure 4.7 by gear type and vessel length category.

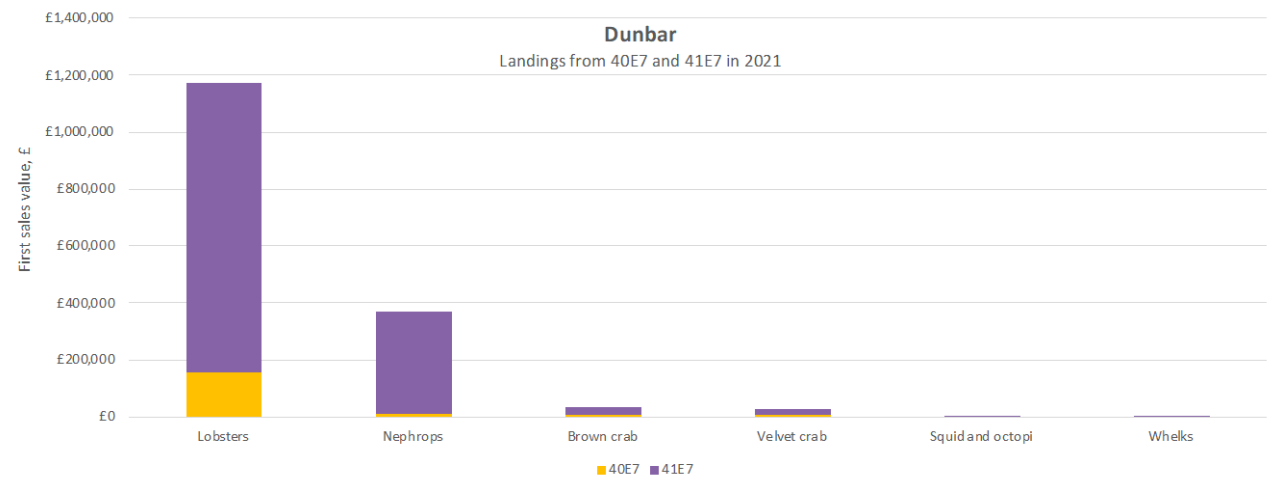


Figure 4.6. First sales value of species landed into Dunbar in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

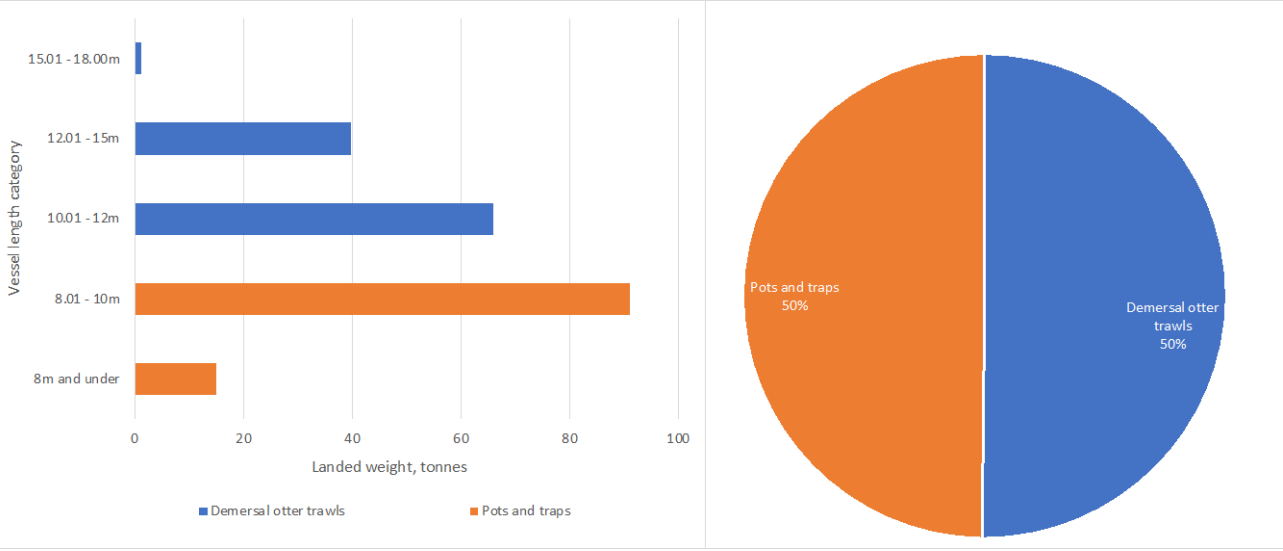


Figure 4.7. Landed weight (tonnes) of landings into Dunbar in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

71. The first sales value of landings from the local study area into Dunbar in 2021 was £1.6 million, with the catches taken from both ICES rectangles, but primarily 41E7. The highest value species over this period was lobster (£1.2 million), followed by nephrops (£370,000) and brown crab and velvet crab (£60,000 combined).

72. Demersal otter trawls landed half of the catches by weight (50%), with the majority of vessels between 10 to 12m in length, with additional landings from vessels between 12 to 15m. Lobster and crab species are caught by pots and traps which make up the other half of the catches landed into Dunbar by vessels which are all 10m and under.

73. Lobster is caught across both 40E7 and 41E7, while the nephrops fishery is focused across ICES rectangle 41E7.

4.2.3 Eyemouth

74. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Eyemouth from January to June 2021 are presented in Figure 4.8 by species and Figure 4.9 by gear type and vessel length category.

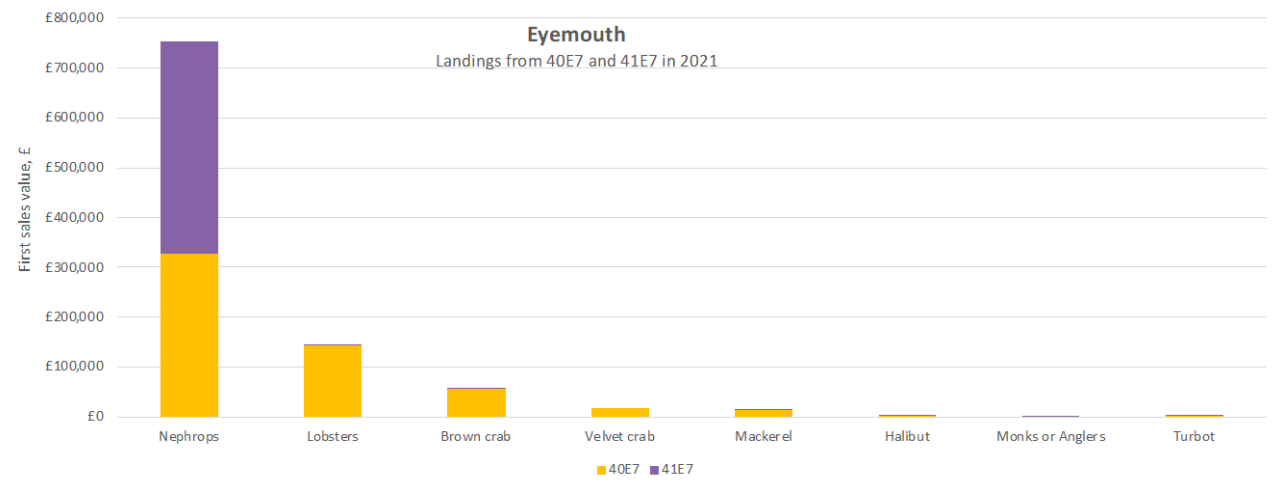


Figure 4.8. First sales value of species landed into Eyemouth in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

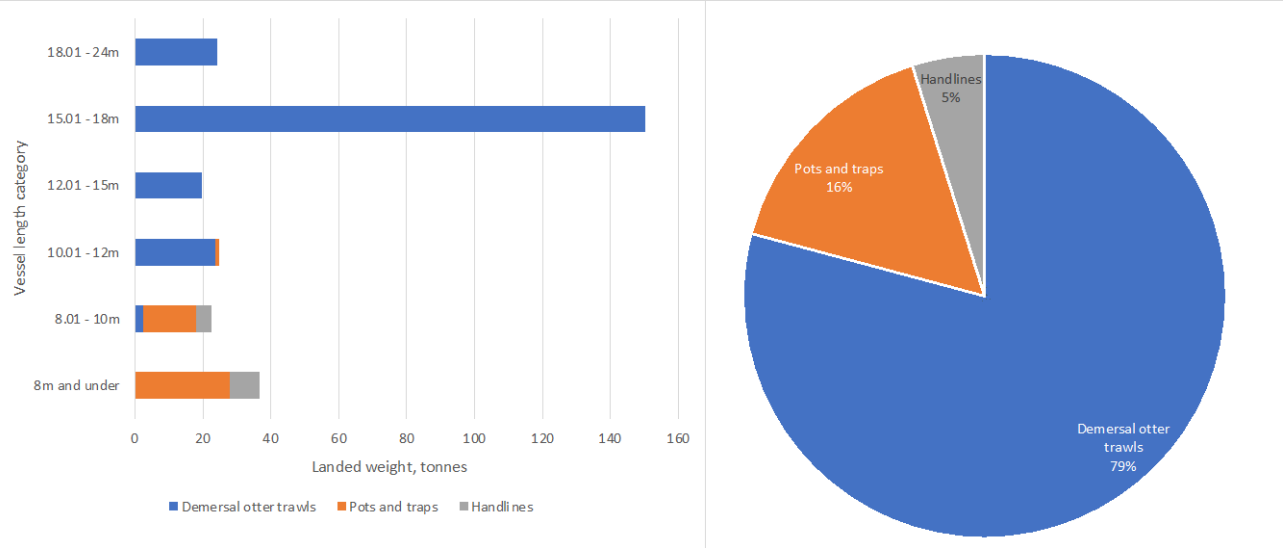


Figure 4.9. Landed weight (tonnes) of landings into Eyemouth in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

75. The first sales value of landings from the local study area into Eyemouth in 2021 was £991,000, with the catches taken from both ICES rectangles. The highest value species over this period was nephrops (£752,000), followed by lobster (£146,000) and brown crab and velvet crab (£74,000 combined).

76. Demersal otter trawls landed the highest proportion by weight (79%), with the majority of vessels between 15 to 18m in length, with additional landings from vessels between 10 to 15m and 18 to 24m. Lobster and crab species are caught by pots and traps which make up 16% of the catches landed into Eyemouth by vessels which are mainly 10m and under, with very small quantity also landed by 10-12m vessels. Handlines make up the remainder of the catch by weight (5%) which is a mackerel targeted fishery from June to October.

77. Nephrops are caught across both 40E7 and 41E7, while the potting fishery for lobster and crab and handline for mackerel are focused across ICES rectangle 40E7, which overlaps the Offshore Export Cable Corridor. The handline for mackerel is typically operated by vessels that also deploy pots.

4.2.4 Port Seton

78. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Port Seton in 2021 are presented in Figure 4.10 by species and Figure 4.11 by gear type and vessel length category.

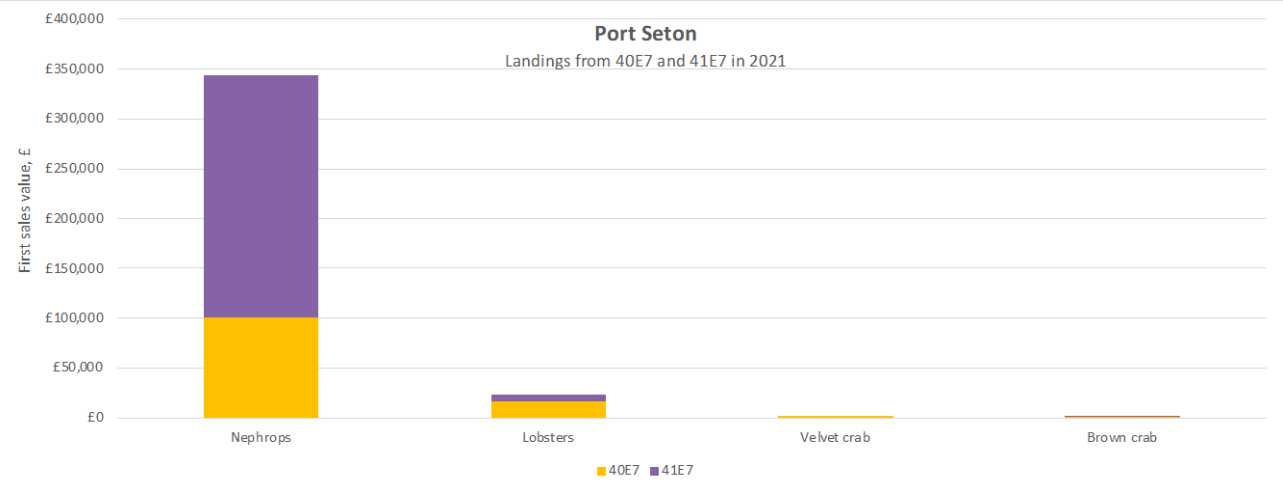


Figure 4.10. First sales value of species landed into Port Seton in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

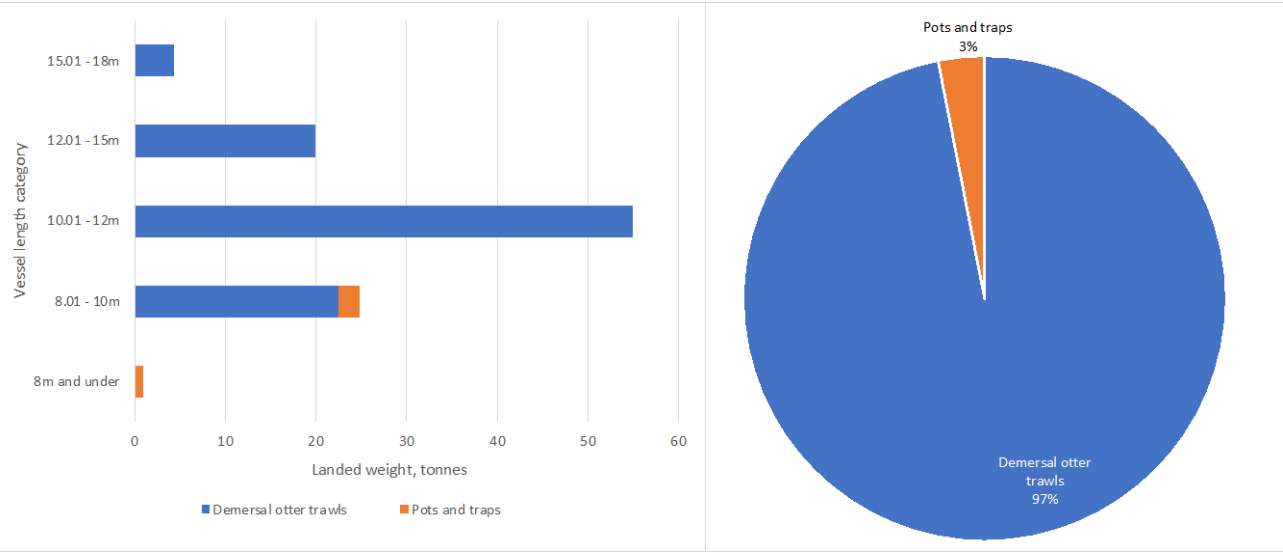


Figure 4.11. Landed weight (tonnes) of landings into Port Seton in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

79. The first sales value of landings from the local study area into Port Seton in 2021 was £370,000, with the catches taken from both ICES rectangles. The highest value species over this period was nephrops (£344,000), with low levels of catches of other species.

80. Demersal otter trawls landed the highest proportion by weight (97%), with most vessels between 10 to 12m in length, with additional landings from vessels between 10 to 18m and 8 to 10m. The remaining 2% of landings by weight are landed by potting vessels under 10m in length.

81. Nephrops landed into Port Seton are caught across both 40E7 and 41E7.

4.2.5 Arbroath

82. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Arbroath in 2021 are presented in Figure 4.12 by species and Figure 4.13 by gear type and vessel length category.

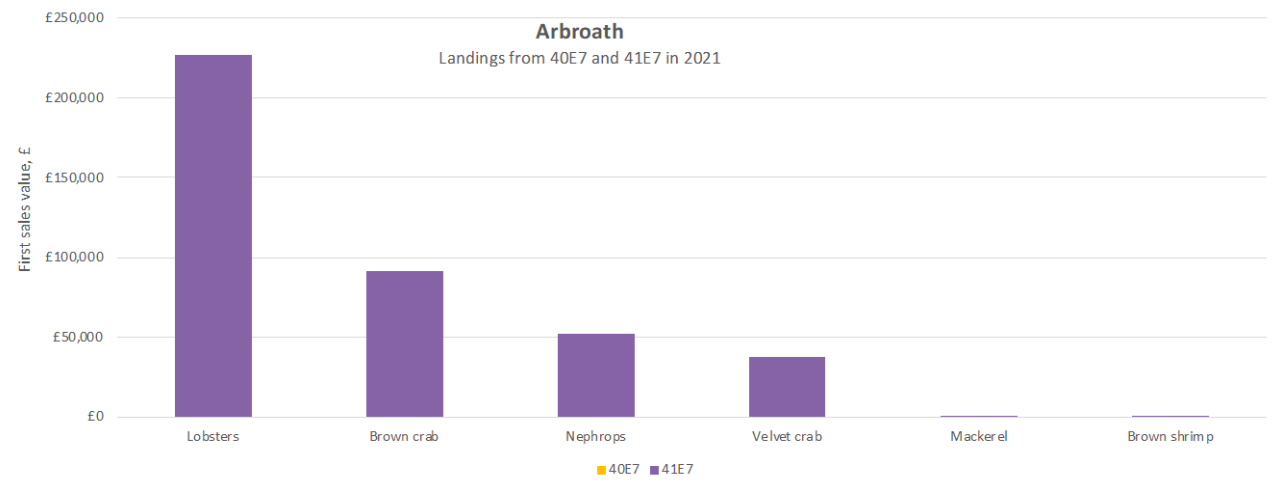


Figure 4.12. First sales value of species landed into Arbroath in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

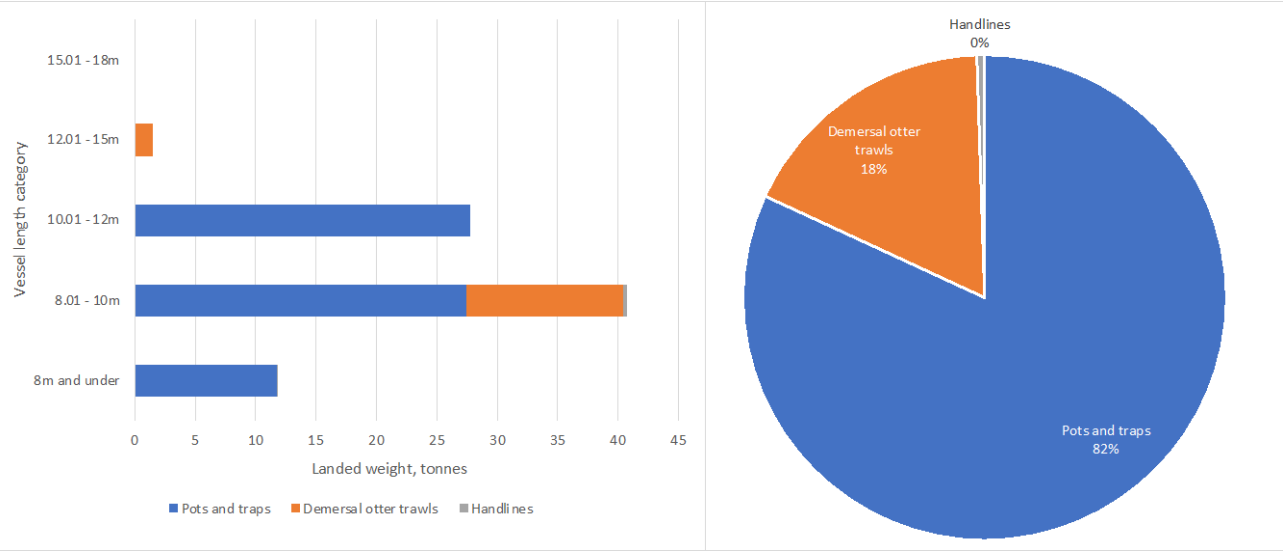


Figure 4.13. Landed weight (tonnes) of landings into Arbroath in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

83. The first sales value of landings from the local study area into Arbroath in 2021 was £408,000, with all the catches taken from ICES rectangle 41E7. The highest value species over this period was lobster (£227,000), followed by brown crab (£91,000), nephrops (£52,000) and velvet crab (£37,000).

84. The highest proportion by weight was landed by pots and traps (82%), with most vessels between 8 to 12m in length, with additional landings from vessels between 8m and under. Demersal otter trawls targeting nephrops account for the 18% of landings by weight, with the majority taken by vessels 8 to 10 in length, and vessels 12 to 15m. A small quantity of mackerel is landed by 8 to 10m vessels deploying handline.

85. Stakeholder consultation indicated that the first sales values reported in Report 3b for January to June in landing statistics for Arbroath appeared low. The value of landings into Arbroath from January to June 2021 totalled £74,000, while landings from July to December reached £335,000, with an annual total value for 2021 of £408,000. This is due to lobster landings that occurred from July to December, peaking in August at £58,000.

4.2.6 St Abbs

86. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into St Abbs in 2021 are presented in Figure 4.14 by species and Figure 4.15 by gear type and vessel length category.

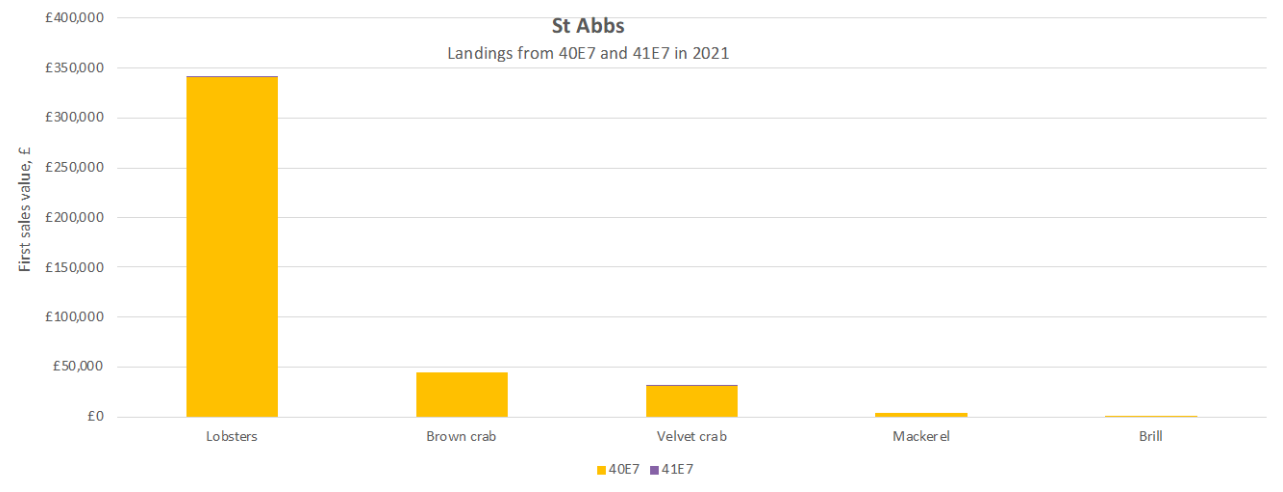


Figure 4.14. First sales value of species landed into St Abbs in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

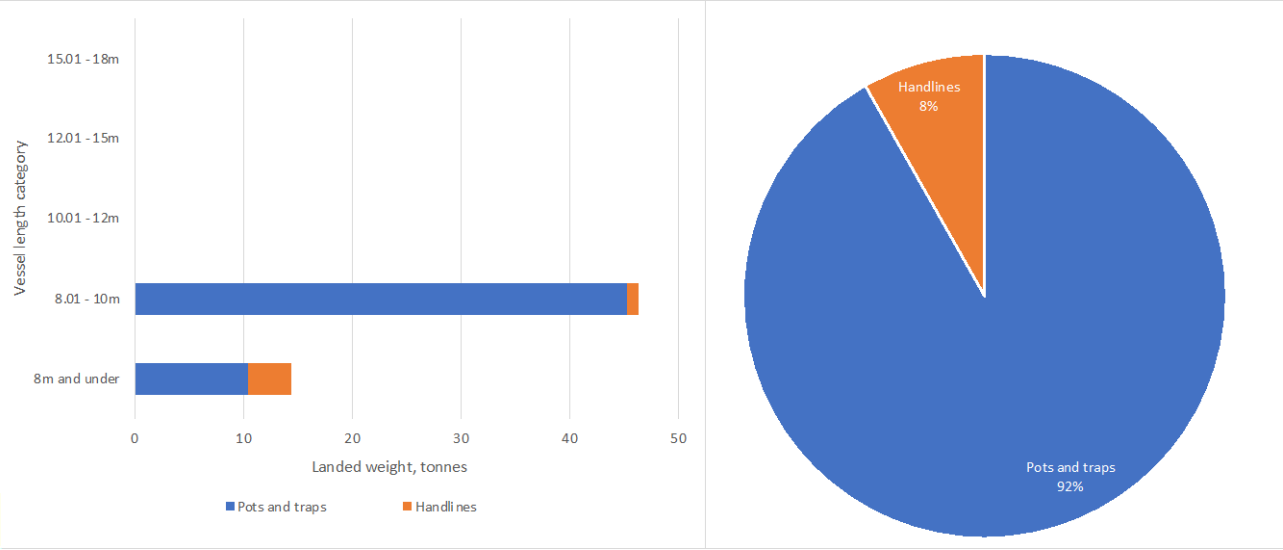


Figure 4.15. Landed weight (tonnes) of landings into St Abbs in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

87. The first sales value of landings from the local study area into St Abbs in 2021 was £424,000, with the majority (99.7%) of catches taken from ICES rectangle 40E7, which overlaps the Offshore Export Cable Corridor. The highest value species over this period was lobster (£342,000), followed by brown crab and velvet crab (£77,000 combined). Landings from July to December were significantly higher than that catches taken from January to June, due to the seasonality of the lobster fishery.

88. Almost all landings are taken by pots and traps (92%), with most vessels between 8 to 10m in length, with additional landings from vessels 8m and under. Handlines account for the remaining 8% of landings by weight, by vessels 10m and under targeting mackerel.

4.2.7 Anstruther

89. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Anstruther in 2021 are presented in Figure 4.16 by species and Figure 4.17 by gear type and vessel length category.

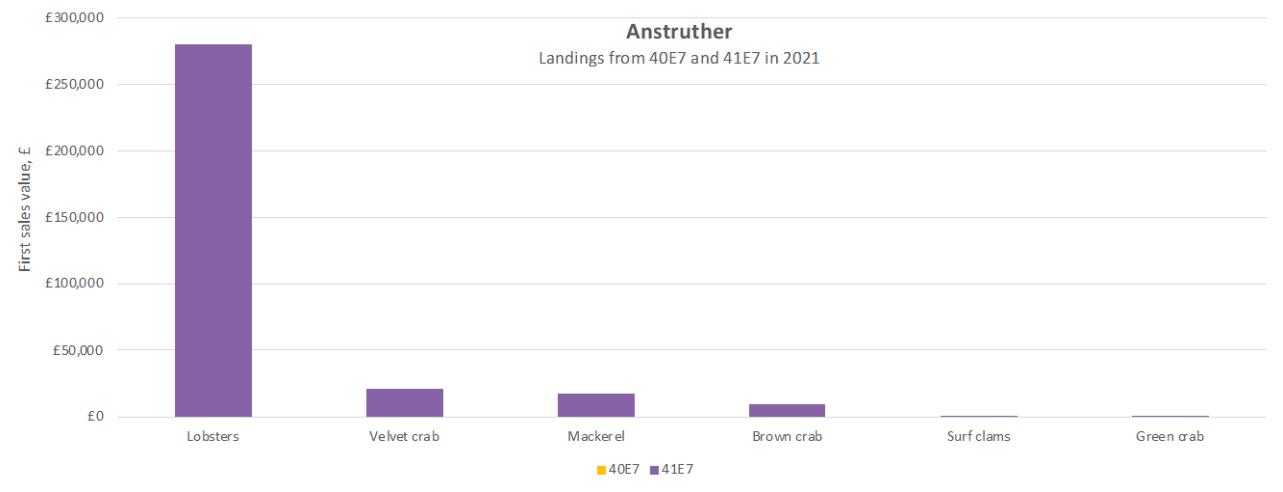


Figure 4.16. First sales value of species landed into Anstruther in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

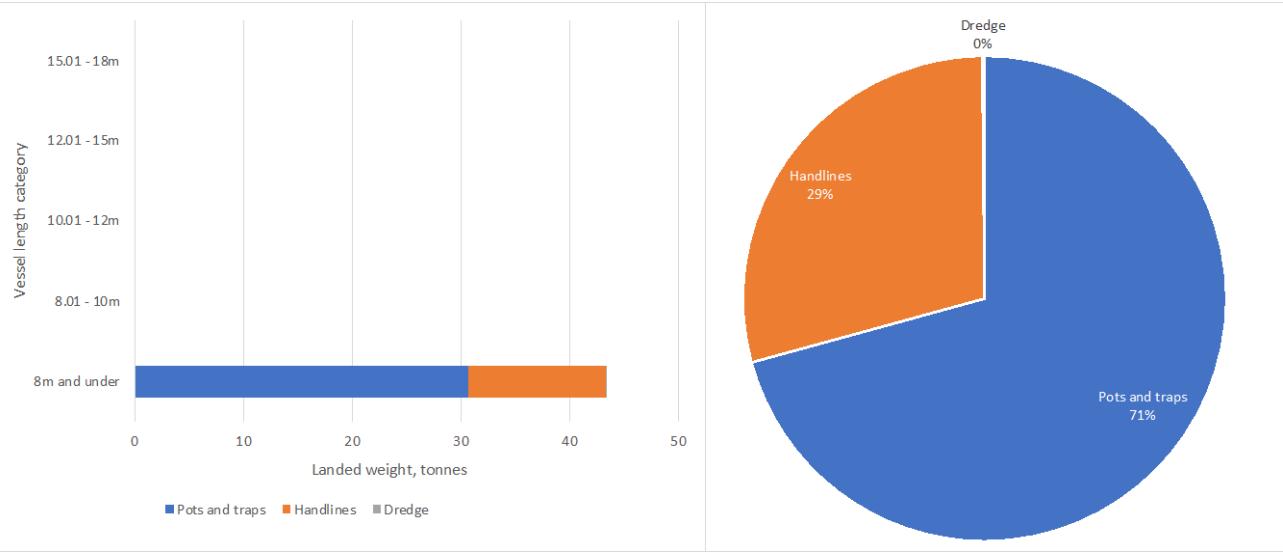


Figure 4.17. Landed weight (tonnes) of landings into Anstruther in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

90. The first sales value of landings from the local study area into Anstruther in 2021 was £329,000, with all the catches taken from ICES rectangle 41E7, which overlaps the NnG Wind Farm Area. The highest value species over this period was lobster (£280,000), followed by velvet crab (£21,000), mackerel (£18,000) and brown crab (£10,000). Landings were significantly higher from July to December, compared to January to June, due to the seasonality of the lobster targeted fishery.

91. Most landings by weight are taken by pots and traps (71%), with all vessels 8m and under in length. Handlines account for 29% of landings by weight, by vessels 8m and under targeting mackerel, with the remainder (<1%) taken by dredge targeting surf clams.

4.2.8 North Berwick

92. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into North Berwick in 2021 are presented in Figure 4.18 by species and Figure 4.19 by gear type and vessel length category.

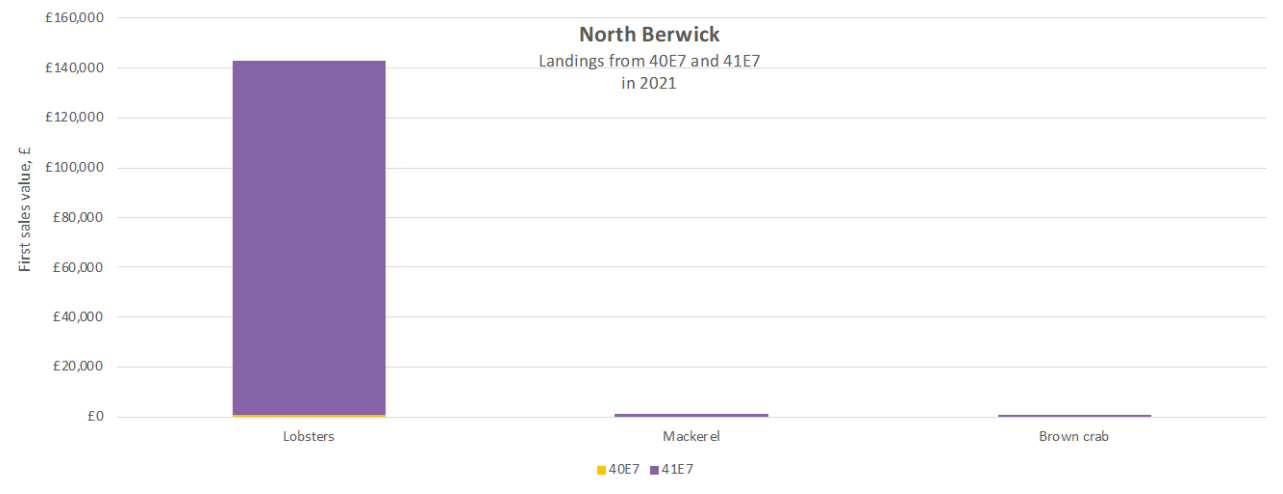


Figure 4.18. First sales value of species landed into North Berwick in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

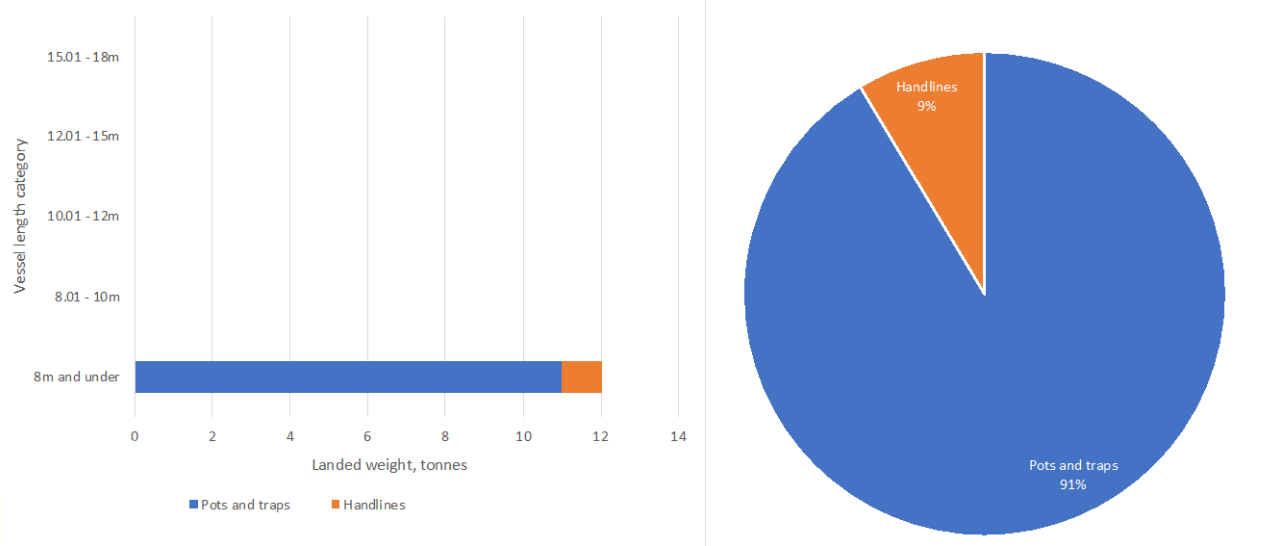


Figure 4.19. Landed weight (tonnes) of landings into North Berwick in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

93. The first sales value of landings from the local study area into North Berwick in 2021 was £145,000, with almost all the catches taken from ICES rectangle 41E7, which overlaps the NnG Wind Farm Area. The highest value species over this period was lobster (£143,000), with small value of mackerel also taken (£1,100).

94. Lobster is caught using pots (91%), with all vessels 8m and under in length. Handlines account for the remaining 9% of landings by weight, by vessels 8m and under targeting mackerel.

4.2.9 Other ports

95. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into five other ports: Methil & Leven, Cove (Leith), Burnmouth, St Monance and St Andrews in 2021 are presented in Figure 4.20 by ICES rectangle, Figure 4.21 by species and Figure 4.22 by gear type and vessel length category.

96. The first sales value of landings from the local study area into these five ports in 2021 ranged from £294,000 (Methil and Leven) to £113,000 (St Monance). Landings into Cove (Leith) and Burnmouth were predominately caught from ICES rectangle 40E7, which overlaps the Offshore Export Cable Corridor; while landings into Methil and Leven, St Monance and St Andrews were caught from ICES rectangle 41E7, which overlaps the NnG Wind Farm Area.

97. The key target species includes lobster, nephrops, velvet crab and brown crab. Lobster are landed into all five ports, while nephrops are predominately landed into St Monance and Methil and Leven.

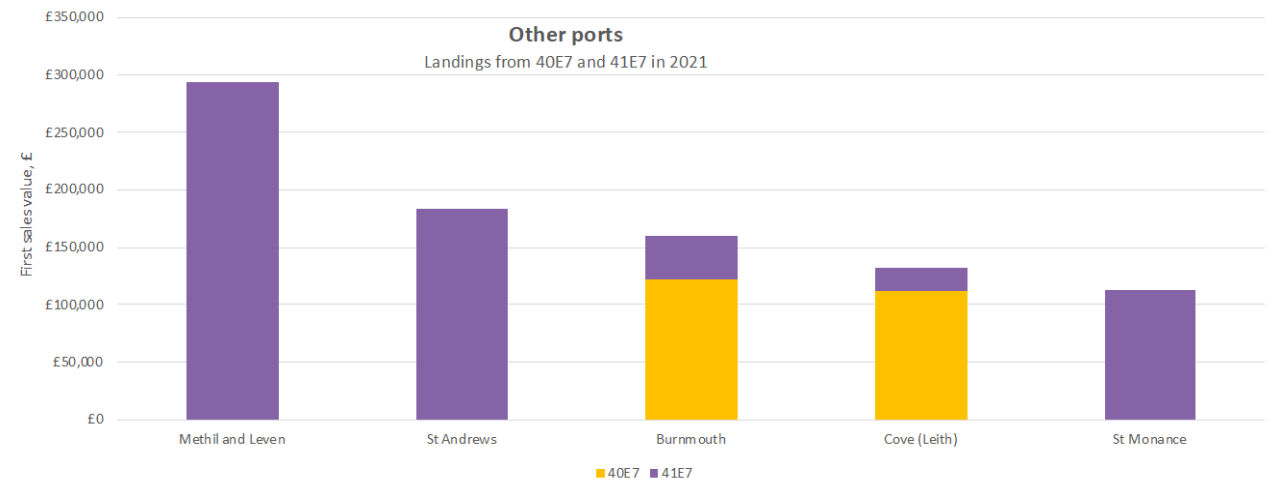


Figure 4.20. First sales value of species landed into Methil & Leven, Cove (Leith), Burnmouth, St Monance and St Andrews in 2021 from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2023)

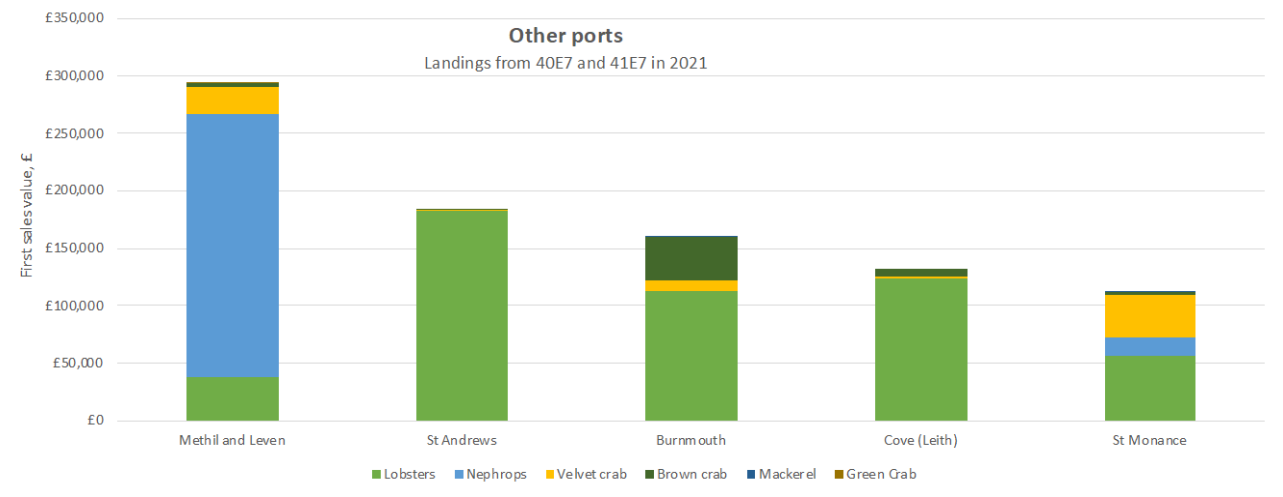


Figure 4.21. First sales value of species landed into Methil & Leven, Cove (Leith), Burnmouth, St Monance and St Andrews in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

98. Most landings by weight are taken by pots and traps (57%), with all vessels 12m and under in length. Demersal otter trawls account for 35% of landings by weight, by vessels ranging from 8 to 24m in length, with the remaining 7% taken by purse seine and 1% taken by handline targeting mackerel.

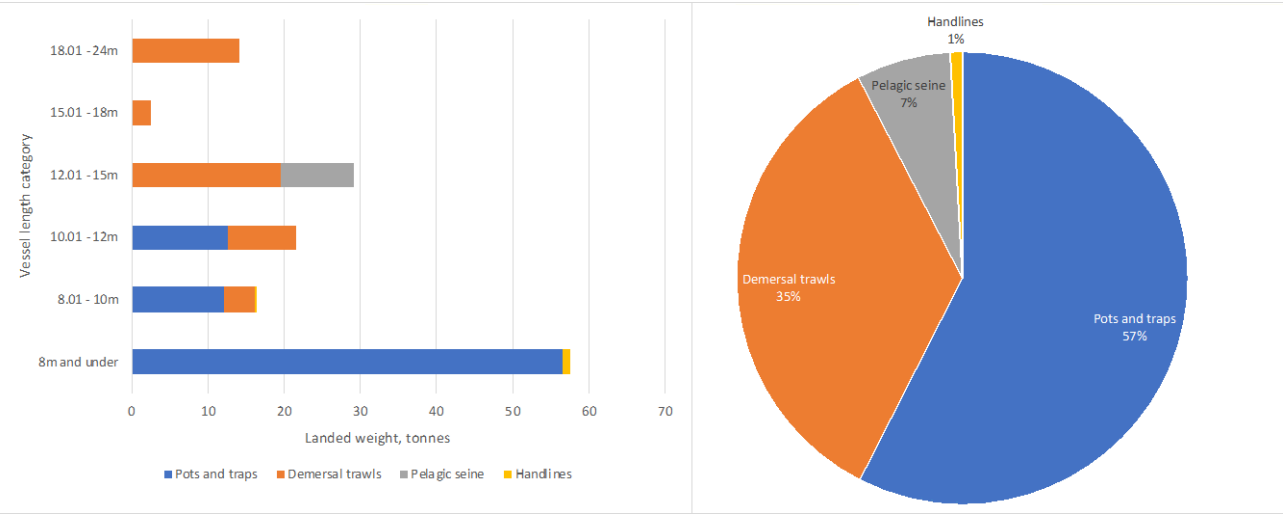


Figure 4.22. Landed weight (tonnes) of landings into Methil & Leven, Cove (Leith), Burnmouth, St Monance and St Andrews in 2021 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2023)

5 Spatial fishing activity data

99. Vessel monitoring system (VMS) data is presented in this section for UK vessels 15m and over in length operating demersal otter trawl from 2017 to 2020 (Figure 5.1, Figure 5.2, Figure 5.3, and Figure 5.4). Data for 2021 is not yet available from the MMO. The VMS data does not include vessels under 15m, so is not representative of the entire effort by the trawl fleet.

100. The VMS data indicates the area of fishing grounds targeted for nephrops which is located from inshore waters, out beyond the 6 NM boundary, running parallel to the coast and overlapping with the Offshore Export Cable Corridor (ECC).

101. The VMS data for demersal otter trawl indicates the same areas being targeted year on year. This is expected because nephrops are associated with very specific habitats of muddy ground, into which they create a network of interlinking burrows.

102. The VMS data is provided by the MMO at a C-square resolution which is 200th of an ICES rectangle and approximately 15 km^2 in area. The C-square resolution does not allow determination of where within the 15 km^2 fishing has taken place.

103. Automatic Identification System (AIS) data is presented for UK and EU fishing vessels that carry AIS (typically 15m and over vessels). This dataset provides the route density of fishing vessels that are both transiting and actively fishing, without distinguishing between these activities. Vessels without AIS (typically 15m and under) are not represented within the dataset.

104. The AIS data is presented annually for 2019 to 2021 (Figure 5.5, Figure 5.6, and Figure 5.7) and seasonally for the same period (Figure 5.8, Figure 5.9, and Figure 5.10). In 2019, AIS data indicates fishing vessel activity across the inshore to beyond 6NM boundary, which is expected to be the nephrops trawling fleet. Activity is also indicated close to shore, which is expected to be crab and lobster potting (where vessels carry AIS), or to represent fishing vessels transiting to and from ports. The 2019 AIS data shows fishing vessel activity across the Offshore ECC, with fishing channels crossing the ECC with high intensity. In 2020 the AIS data shows a similar picture, although not as many or as highly intense fishing channels across the ECC. The 2021 AIS data appears to indicate hot spots of activity, with three circular areas of high intensity; this is likely to represent activity by fishing vessels operating as guard vessels.

105. The seasonal AIS data shows higher activity of fishing vessels in summer and autumn, and notable activity in winter and spring.

106. Figure 5.11 compares annual fishing during the month of August for 2019 to 2022. Notably August 2021 shows less fishing vessel activity across the muddy nephrops grounds, compared to 2019 and 2020. In addition, in 2021, the potential guard vessel activity is apparent in the data. In August 2022, the fishing activity returns to a similar pattern as seen in 2019 and 2020.

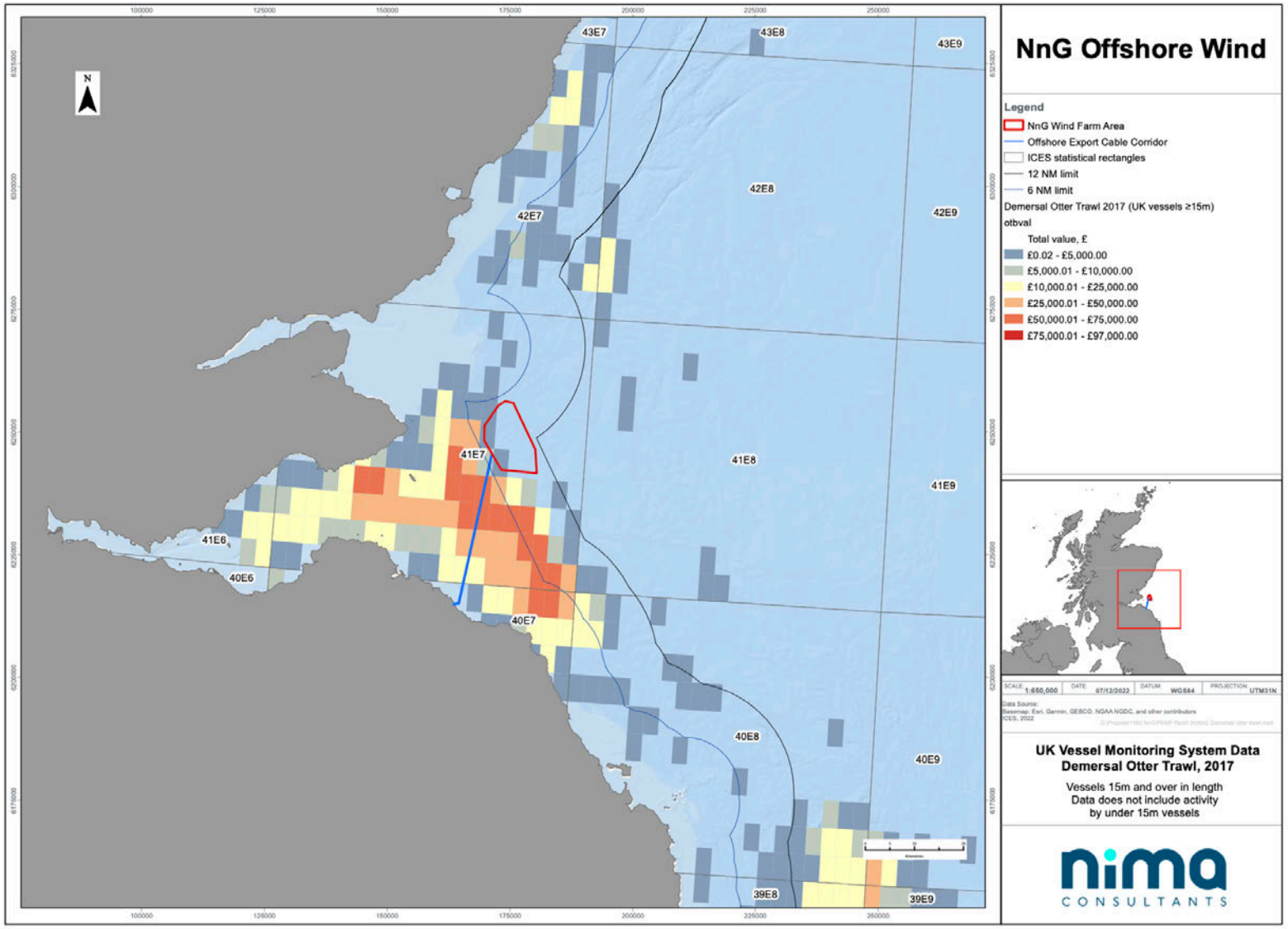


Figure 5.1. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2017 (data source: MMO, 2023)

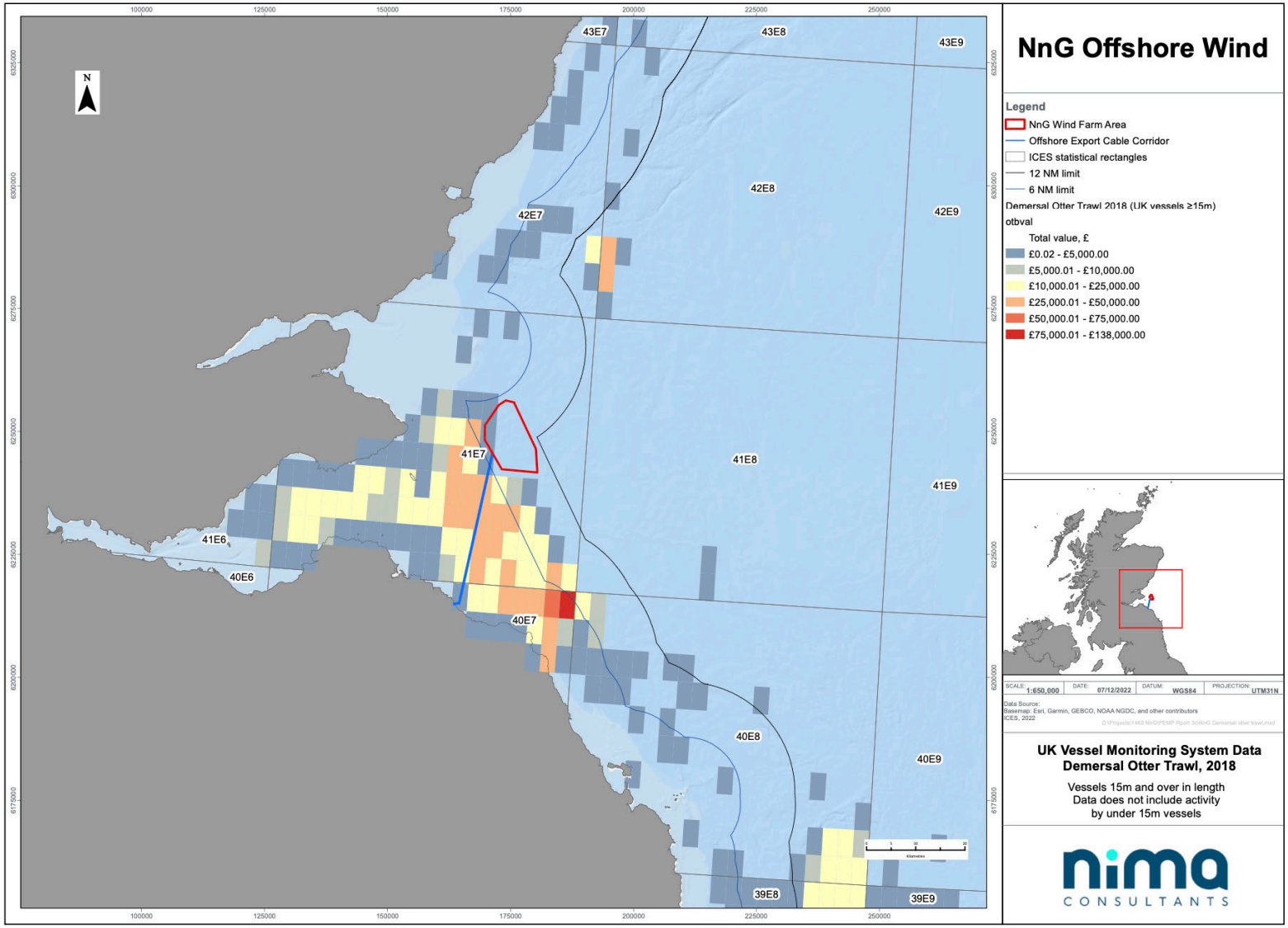


Figure 5.2. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2018 (data source: MMO, 2023)

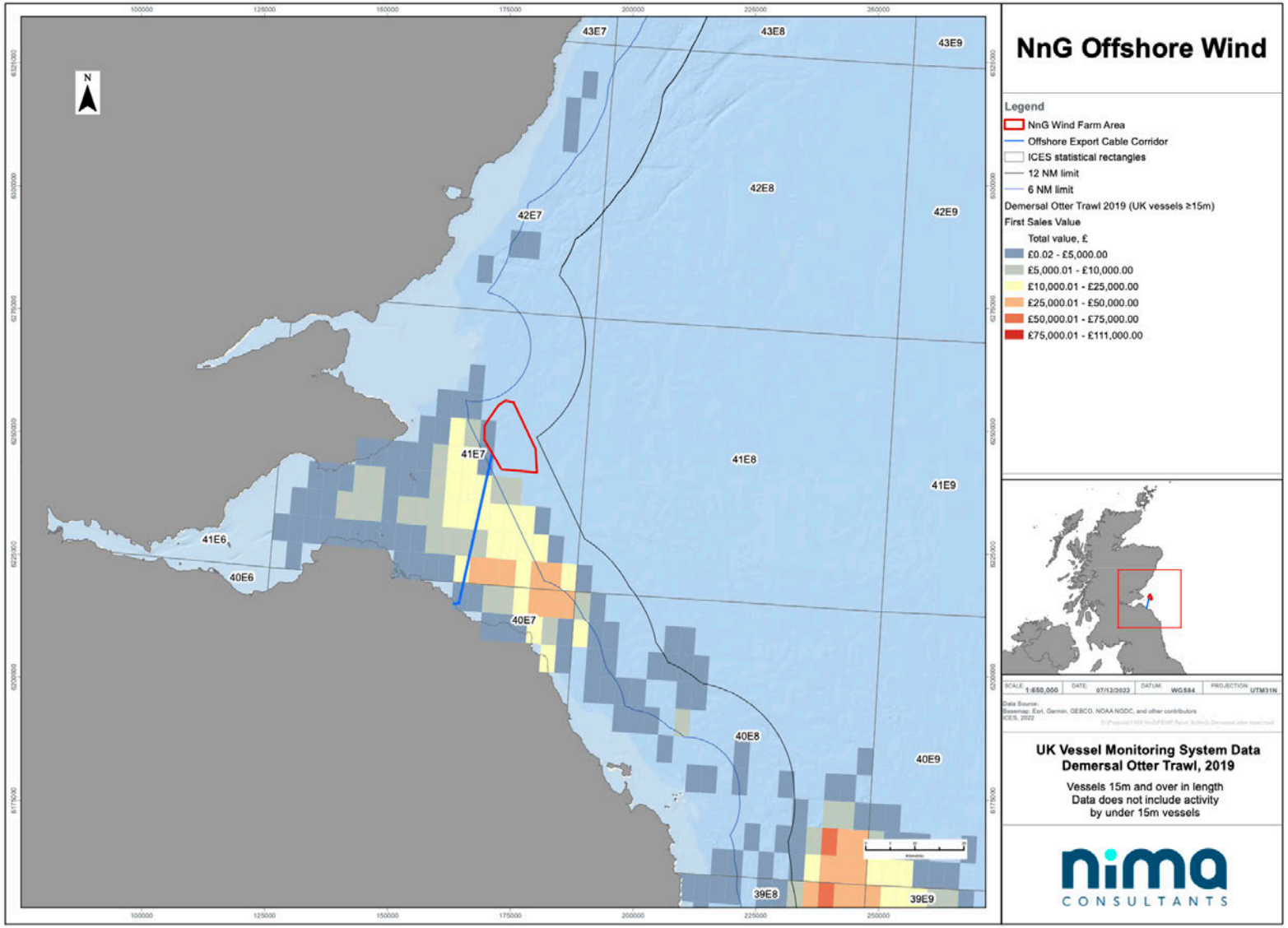


Figure 5.3. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2019 (data source: MMO, 2023)

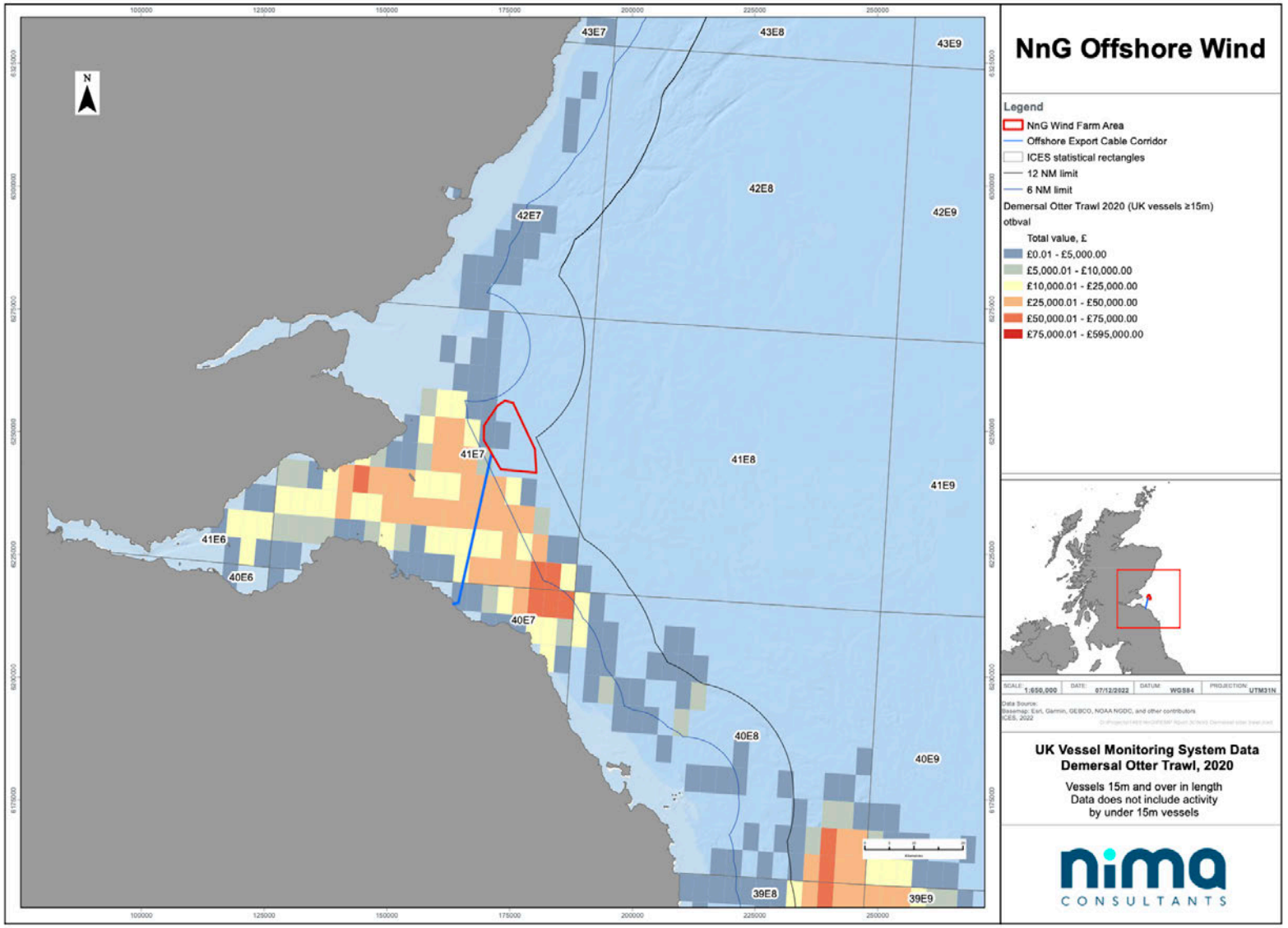


Figure 5.4. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2020 (data source: MMO, 2023)

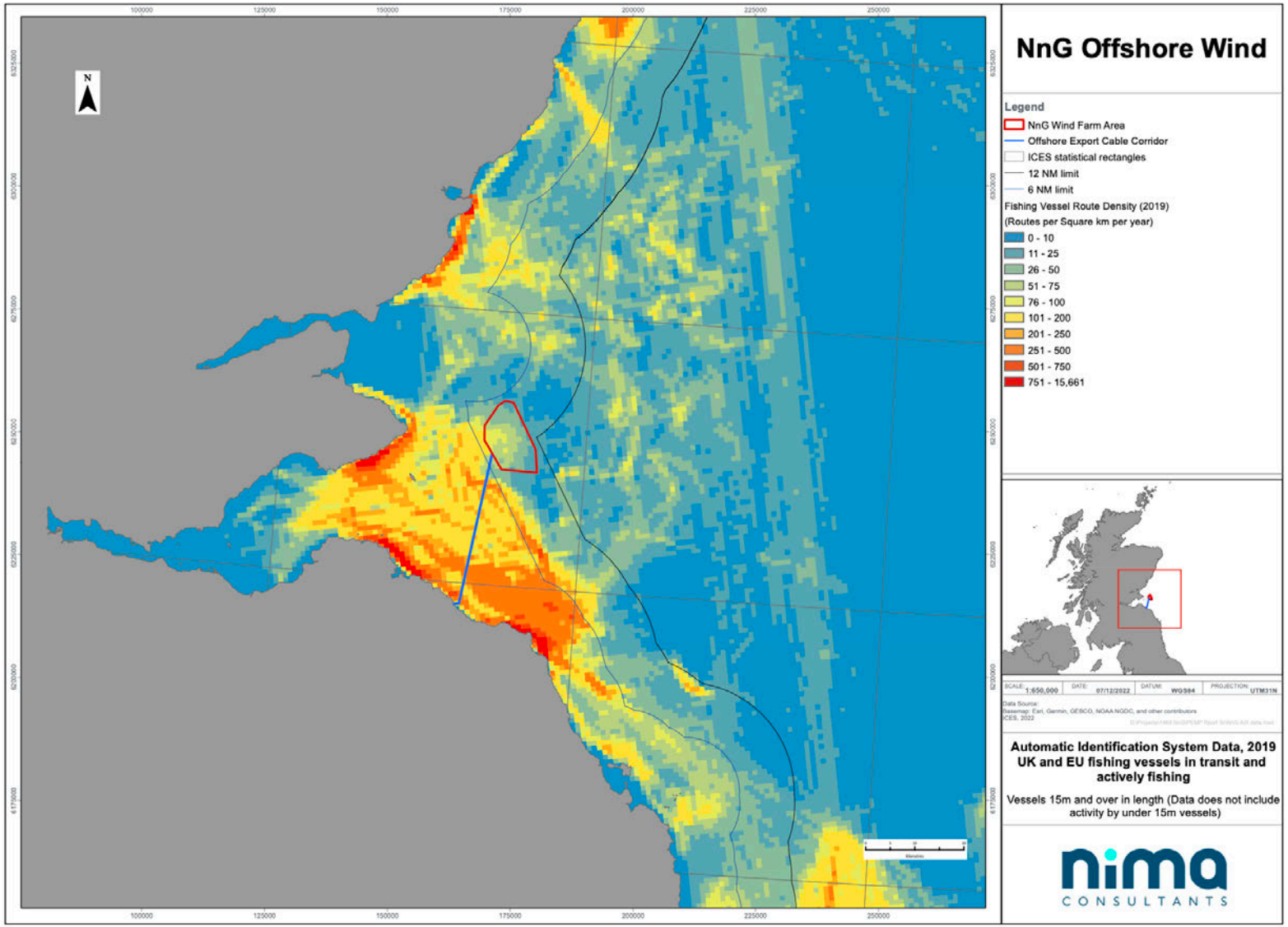


Figure 5.5. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² in 2019 (data source: EMSA, 2023)

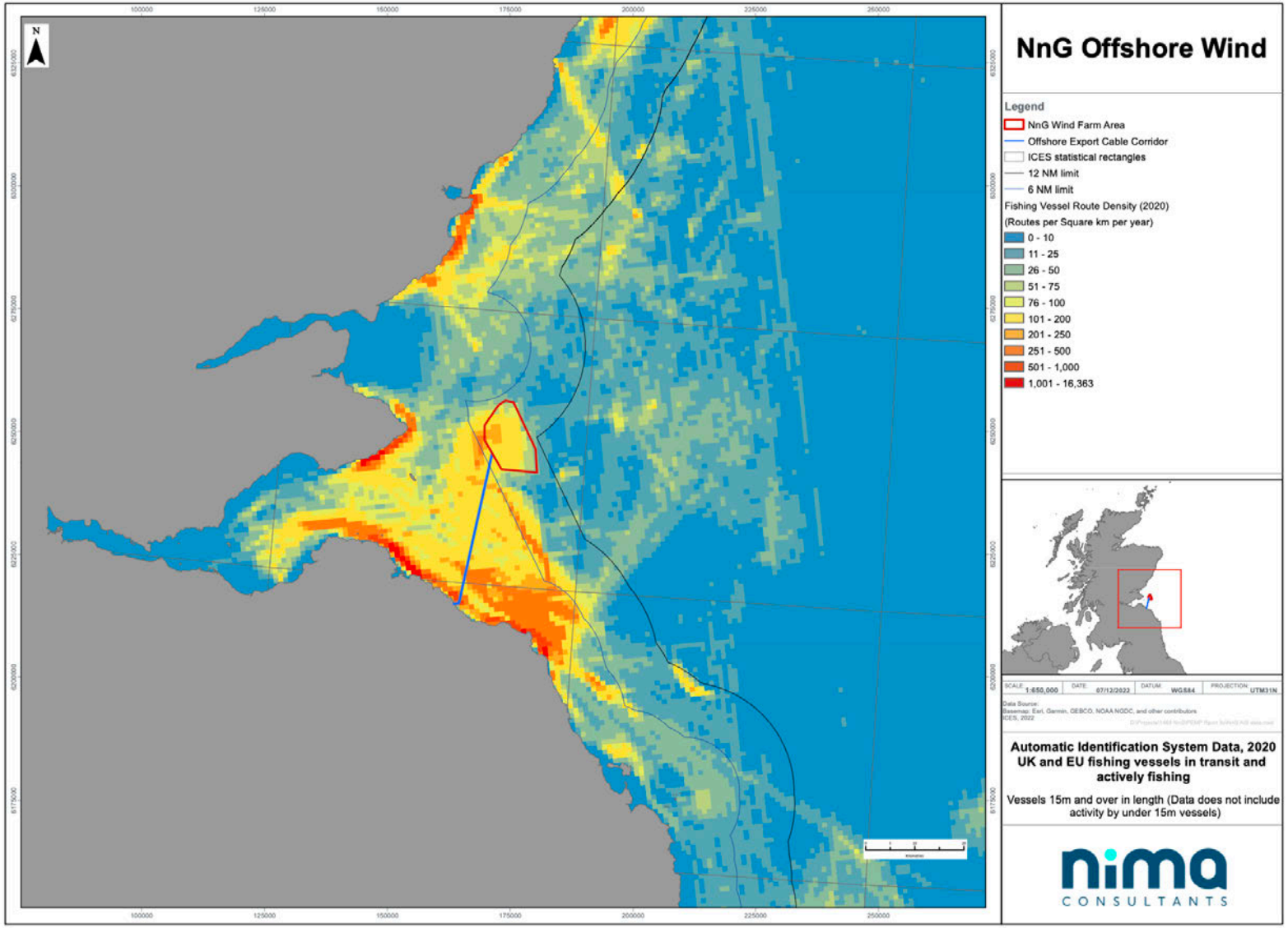


Figure 5.6. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² in 2020 (data source: EMSA, 2023)

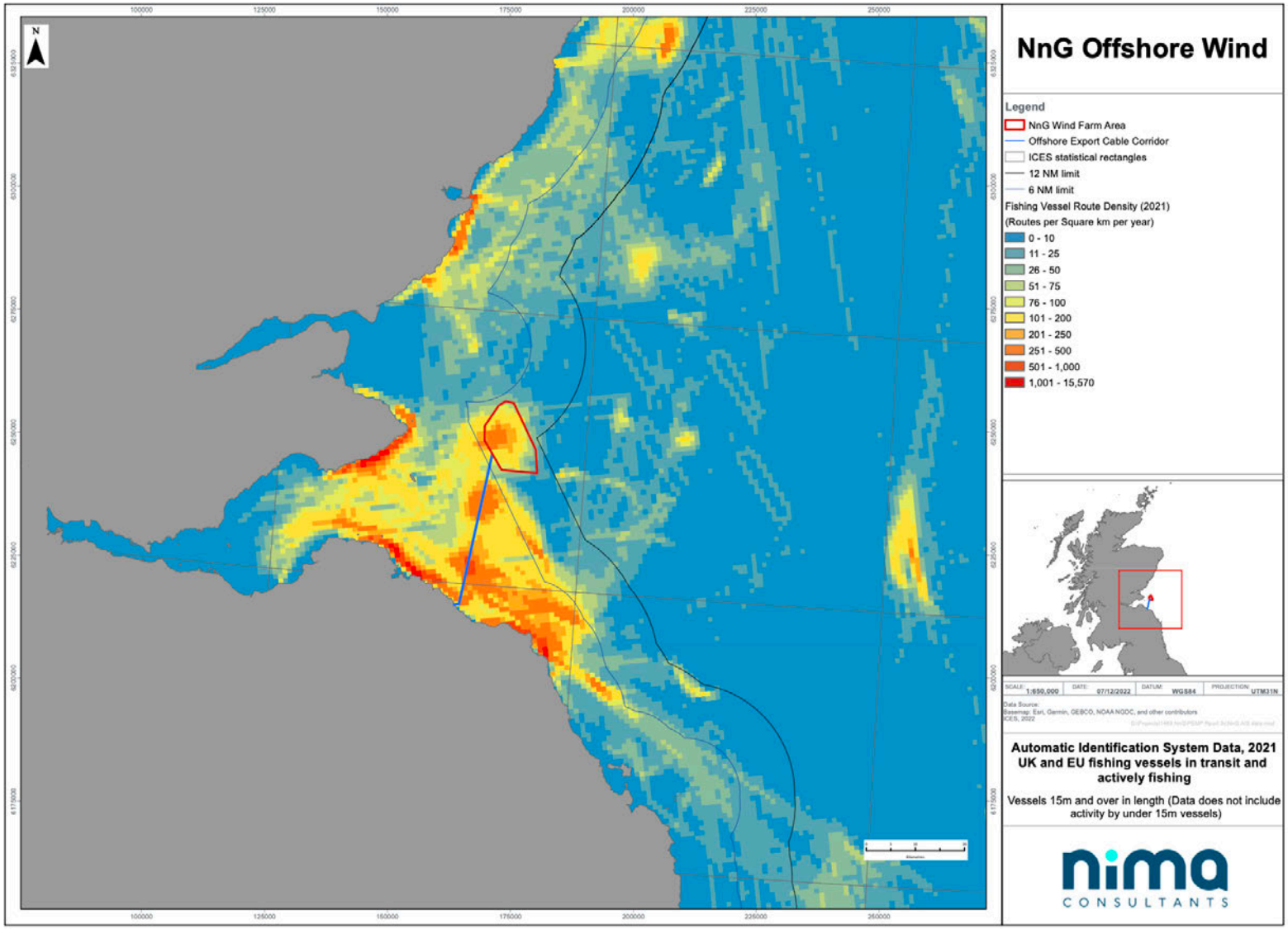


Figure 5.7. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² in 2021 (data source: EMSA, 2023)

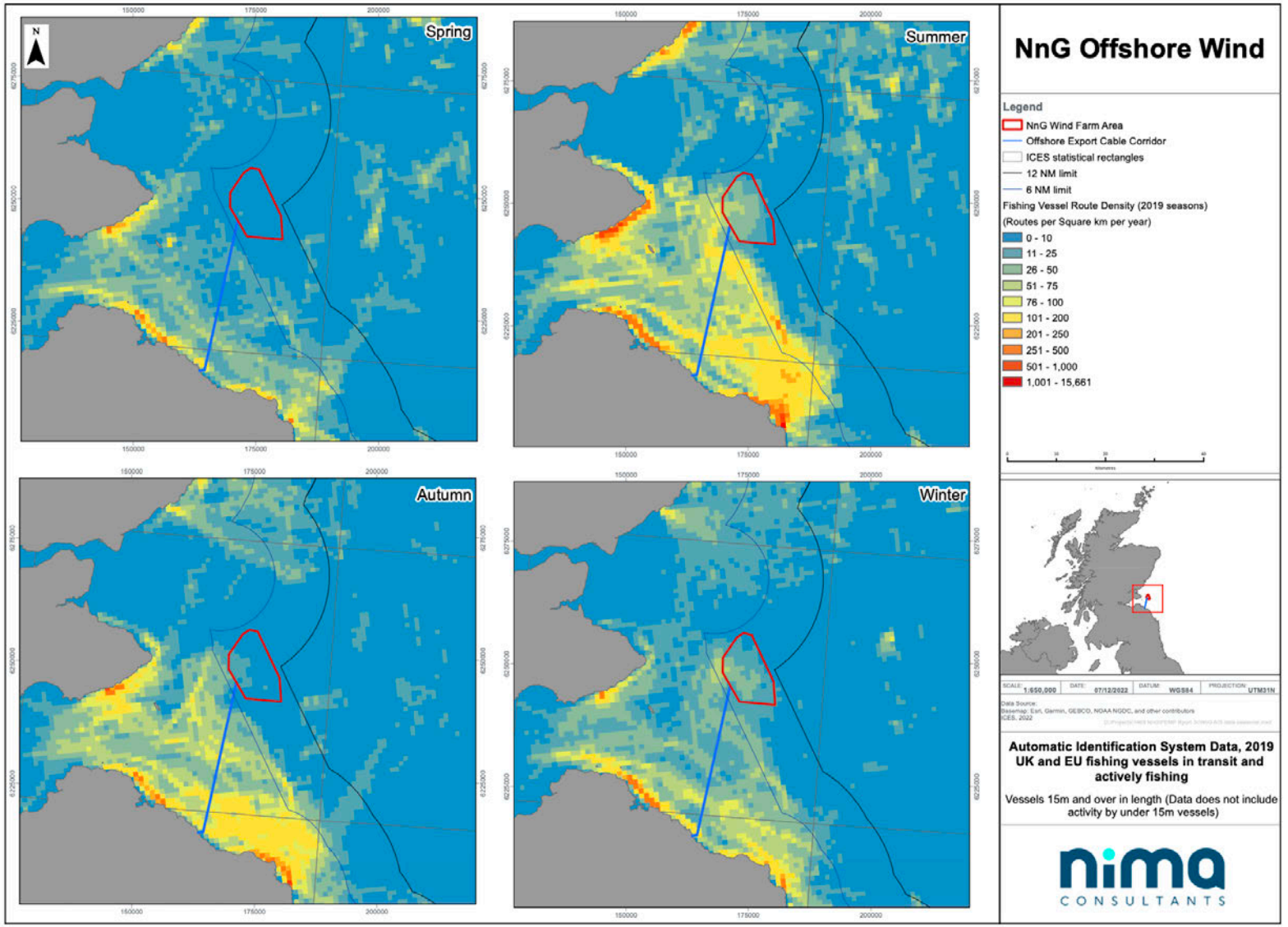


Figure 5.8. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² seasonally in spring, summer, autumn and winter of 2019 (data source: EMSA, 2023)

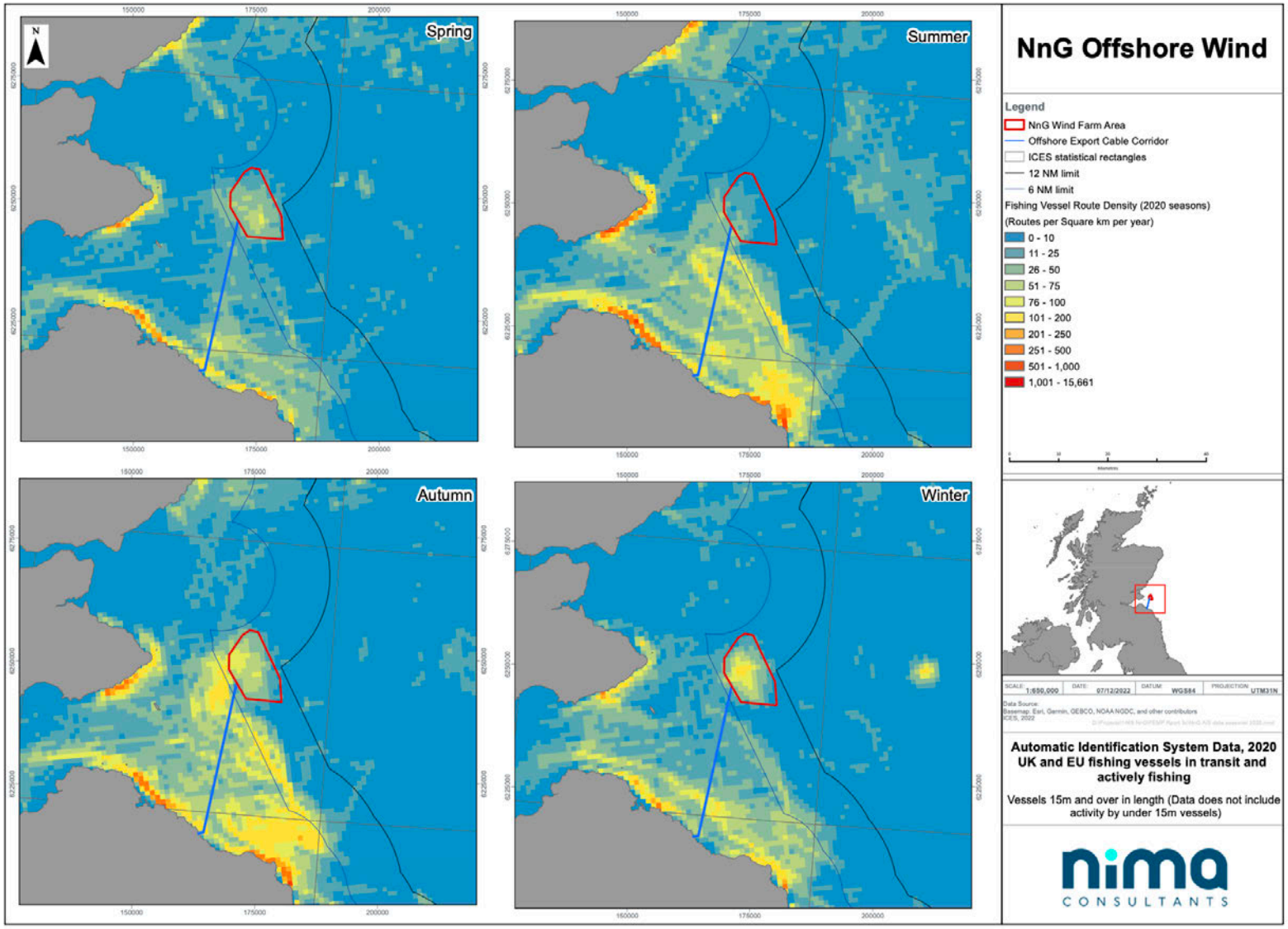


Figure 5.9. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 seasonally in spring, summer, autumn and winter of 2020 (data source: EMSA, 2023)

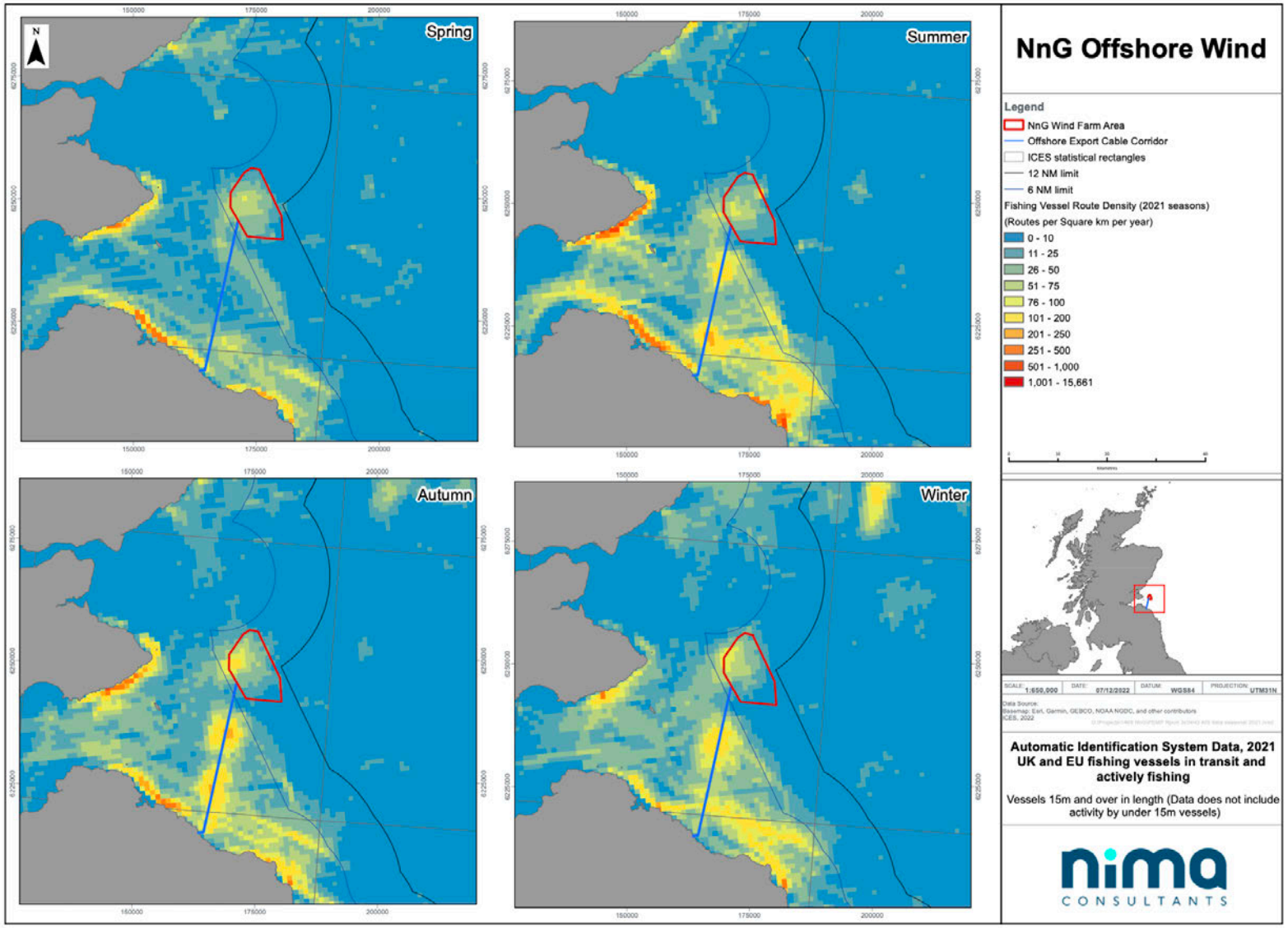


Figure 5.10. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 seasonally in spring, summer, autumn and winter of 2021 (data source: EMSA, 2023)

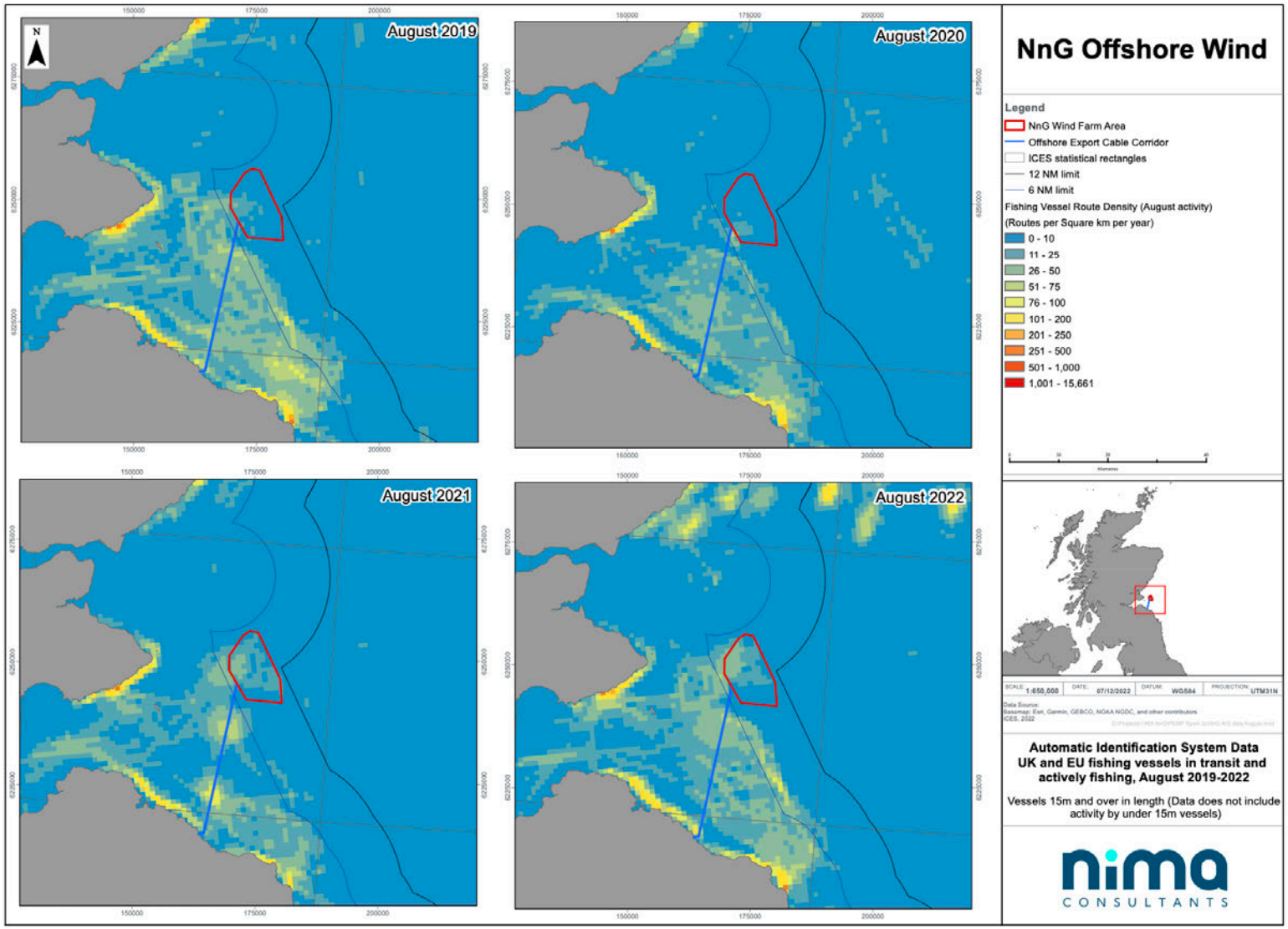


Figure 5.11. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 during the month of August from 2019-2022 (data source: EMSA, 2023)

6 Conclusion

107. This commercial fisheries monitoring report for the third construction period constitutes the following reporting output Report 3c providing:

- monthly trend analysis for key target species across the period 2017 to 2021.
- analysis of 2021 data from January to December by port of landing.

108. The key fisheries in the region that operate across the NnG Project include demersal otter trawlers targeting nephrops and potting targeting lobster and crab. Detailed analysis of seasonality of monthly landings by species for the local and regional study areas has been presented to allow comparison with future commercial fisheries monitoring reports.

109. In general, nephrops landings have remained low in 2021 and at similar levels as recorded in 2020, compared to previous years (2017 to 2019).

110. Landing trends for lobster in 2021 showed an increase back to levels consistent with the 2017-2019 period; and furthermore, that the summer peak in August has returned for the local study area, mirroring the 2017-2019 seasonal peak.

111. Landings of brown crab have increased slightly in 2021, compared to 2020 statistics, but remain below the average levels in 2017-2019. A slight shift in peak landings is noted to have moved from June to July.

112. Landings of squid are generally low in the local study area in 2021, but similar to levels recorded in 2018 and 2019. Within the dataset, 2017 and 2020 are noted as peaks years for squid landings.

113. The 2021 landings data allows concurrent analysis across both ICES rectangles and port of landing, so that fishing vessels operating within the commercial fisheries local and regional study areas can be attributed to specific landing ports. This has improved the understanding of the activity in the region, including key ports and commercial landing attributes for species, gear and vessel length categories. The highest value from the local study area is landed into Pittenweem, followed by Dunbar, Eyemouth and Port Seton. Port profiles have been created to describe the target species, gear and vessel categories.

7 References

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