Neart na Gaoithe

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Commercial Fisheries Monitoring Report 3e – Construction

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Executive Summary

Overview

As part of its regulatory obligations, Neart na Gaoithe Offshore Wind Limited (NnGOWL) has been delivering a comprehensive monitoring programme to assess commercial fisheries activity in the Firth of Forth before, during, and after the construction of the Neart na Gaoithe Offshore Wind Farm (NnG). This report (Report 3e) presents findings for the 2023 calendar year, the fourth full year of construction-phase monitoring, and places these in context with pre-construction baselines (2017–2019) and earlier construction-phase results (2020–2022).

Purpose and approach

The monitoring programme aims to understand variations in commercial fishing activity over time, ensuring the continued relevance of the Fisheries Management and Mitigation Strategy (FMMS). While it is not possible to attribute changes in fisheries activity to single factors in isolation, the monitoring provides valuable evidence to inform ongoing mitigation and engagement.

Datasets analysed include government landings statistics (MMO iFISH), vessel monitoring systems (VMS), and automatic identification system (AIS) tracking. Data are presented for two geographic scales: the local study area (ICES rectangles 40E7 and 41E7, overlapping the wind farm and export cable) and the wider regional study area (ICES rectangles 42E7–E8, 41E6–E8, 40E6–E8).

Key Findings

Nephrops *Nephrops norvegicus* (also known as langoustine, Norway lobster or prawn): Landings continue to underpin both local and regional fisheries, though weights remain lower than peak levels recorded in 2017–2019. Since 2020, seasonal peaks have been more subdued, with 2023 showing early-year increases but weaker summer and autumn peaks compared with the historic baseline. These patterns are consistent across both scales, suggesting they reflect broader fishery dynamics rather than localised effects.

Lobster *Homarus gammarus*: Landings have shown resilience and recovery across the construction period. After a modest reduction in 2020, landings increased through 2021 and 2022, with strong seasonal peaks maintained. In 2023, lobster landings remained stable, broadly consistent with or above pre-construction averages, underlining the continued strength of this fishery.

Brown crab *Cancer pagurus*: Landings have been more variable, with reductions compared to the 2017–2019 baseline. Local landings, however, have demonstrated a stronger rebound since 2020 than the regional picture, with 2022 and 2023 recording higher totals than the immediate post-2020 period.

Squid *Loligo species*: Landings remain low overall but highly episodic, characterised by sharp seasonal peaks. In 2023, landings in the local study area increased to the highest levels since 2017, highlighting occasional but important contributions to annual totals. Regionally, squid landings also remain sporadic, with larger peaks in some years (2020, 2022) not mirrored locally.

Other commercial species: Analysis of total landings across all species (2017–2023) shows the dominance of Nephrops, lobster, and crab continues, but with notable trends among other species. At the local scale, razor clams have grown in importance in recent years, alongside contributions from velvet crab. At the regional scale, scallops show a decreasing trend, whelks have declined, razor clams have increased, and surf clams show a slight increase, reflecting shifting patterns in secondary fisheries.

Ports of landing: Pittenweem continues to dominate landings from the local study area, with Nephrops and razor clams forming the largest share of value. In 2023, the port maintained its position as the most significant landing site for fisheries within the local study area, reflecting its proximity to ICES rectangle 41E7, which overlaps with the NnG Wind Farm Area. Lobsters, brown crab, and other shellfish also contributed, further reinforcing the port's central role in the fisheries economy of the region.

Dunbar and Eyemouth remain important, albeit with different fisheries profiles. Dunbar is strongly reliant on lobster potting, with consistent contributions from the small inshore fleet, while Eyemouth is characterised by its medium-to-large trawler fleet targeting Nephrops. Both ports recorded increases in value across 2021–2023, showing resilience and sustained fishing effort despite construction activity.

Port Seton has also shown growth, particularly between 2021 and 2022, with higher landings of Nephrops and lobster supporting its recovery. Arbroath, St Abbs, Anstruther, and North Berwick each maintain active but smaller-scale fisheries, dominated by shellfish landings from vessels under 12 m. While individually modest, these ports collectively highlight the breadth of fishing activity and the reliance of many small communities on shellfish resources.

Spatial activity: VMS and AIS datasets continue to show strong fishing activity across the known Nephrops grounds overlapping the Offshore Export Cable Corridor. Temporary reductions in activity during peak construction periods were observed, but by 2022–2023

AIS data show a return to more typical fishing corridors and seasonal patterns. Seasonal increases in potting effort in summer and autumn remain evident, consistent with the biology of lobster and crab.

Overtrawlability trials: Trials conducted in 2021 and 2022 confirmed that fishing grounds across the Offshore Export Cable Corridor remain safe for normal fishing operations, including areas with rock protection. This provides assurance that trawling can safely continue post-construction.

Conclusion

Overall, commercial fishing activity in the vicinity of the NnG Offshore Wind Farm has remained resilient. Nephrops landings have not returned to pre-2020 peak levels, but lobster fisheries remain stable and in some years stronger than pre-construction. Brown crab landings show partial recovery, and squid continues to contribute intermittently through episodic peaks.

Port-level analysis highlights the enduring significance of Pittenweem and the continued contributions of Dunbar, Eyemouth, and other small ports, demonstrating the diversity of fleet structures across the region. Spatial data confirm that fishing activity has continued across the area, with any disruption during construction being temporary and localised.

Additional datasets to enhance socio-economic and spatial analysis are under review and will be incorporated in the next reporting output (Report 3f). These data were not available in time to inform Report 3e but will provide valuable context for understanding wider fleet performance and distribution in the operational phase.

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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. 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 [complete];
- Report 3d: 01 January to 31 December 2022 [complete];
- Report 3e: 01 January to 31 December 2023 [this Report];
- Report 3f: 01 January to 31 December 2024 and so on continuing with reporting outputs 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 covered the period up to December 2021 and Report 3d covered the period up to December 2022. Report 3e (this Report) covers the period up to December 2023 and updates the annual analysis that has been provided in Reports 2, 3a-d for the 2023 annual period.

11. 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 Fisheries Working Group will be held following the issue of a draft version of the report, to discuss and resolve any comments. The comments received in relation to this Report 3e are provided in Appendix A, together with details of how these have been resolved.

1.5 Fisheries overview

12. A detailed characterisation of commercial fisheries in the area is available within the Commercial Fisheries Technical Report and Environmental Statement (ES) Chapter (NnG, 2018) and is further supported by the Commercial Fisheries Monitoring Reports 1, 2, 3a, 3b, 3c and 3d.

13. 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.

14. 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

15. Commencement of NnG offshore construction began in August/September 2020, with the following detailed construction activities undertaken from 2021 to 2023:

- Aug 20 through to Jun 21, and May 22 through until May 23 - casing installation;
- May 21 through to Aug 21 - export cable installation;
- Jun 21 through to Nov 21 and June 22 through to Sept 23 - pile installation;
- Aug 21 through to Oct 21 - inter-array cable pre-trenching;
- Nov 21 through to Jan 22 - export cable rock protection;
- Sep 22 through to Nov 23 – WTG jacket installation;
- May 22 through until June 22 OSS jacket installation and OSS South topside installation;
- Dec 22 OSS North topside installation;
- April 2023 – interconnector installation;
- April 2023 to July 2024 - inter-array cable installation and burial; and
- July 2023 to April 2025 – installation of wind turbines

16. 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

17. 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 ES baseline and PEMP Reports 1, 2, 3a, 3b, 3c and 3d.

18. This Report 3e focuses on annual analysis for the 2023 period. Other forms of available spatial data are also presented including Vessel Monitoring System (VMS) data and Automatic Identification System (AIS) data.

19. The Marine Management Organisation (MMO) iFISH landing statistics database has been analysed to explore any changes in trends of landings across the 2023 period, noting that construction commenced in August 2020 and that the export cable installation occurred from May to August 2021. 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

20. Landing statistics from the period January 2017 to December 2023 are presented in this report.

21. 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.

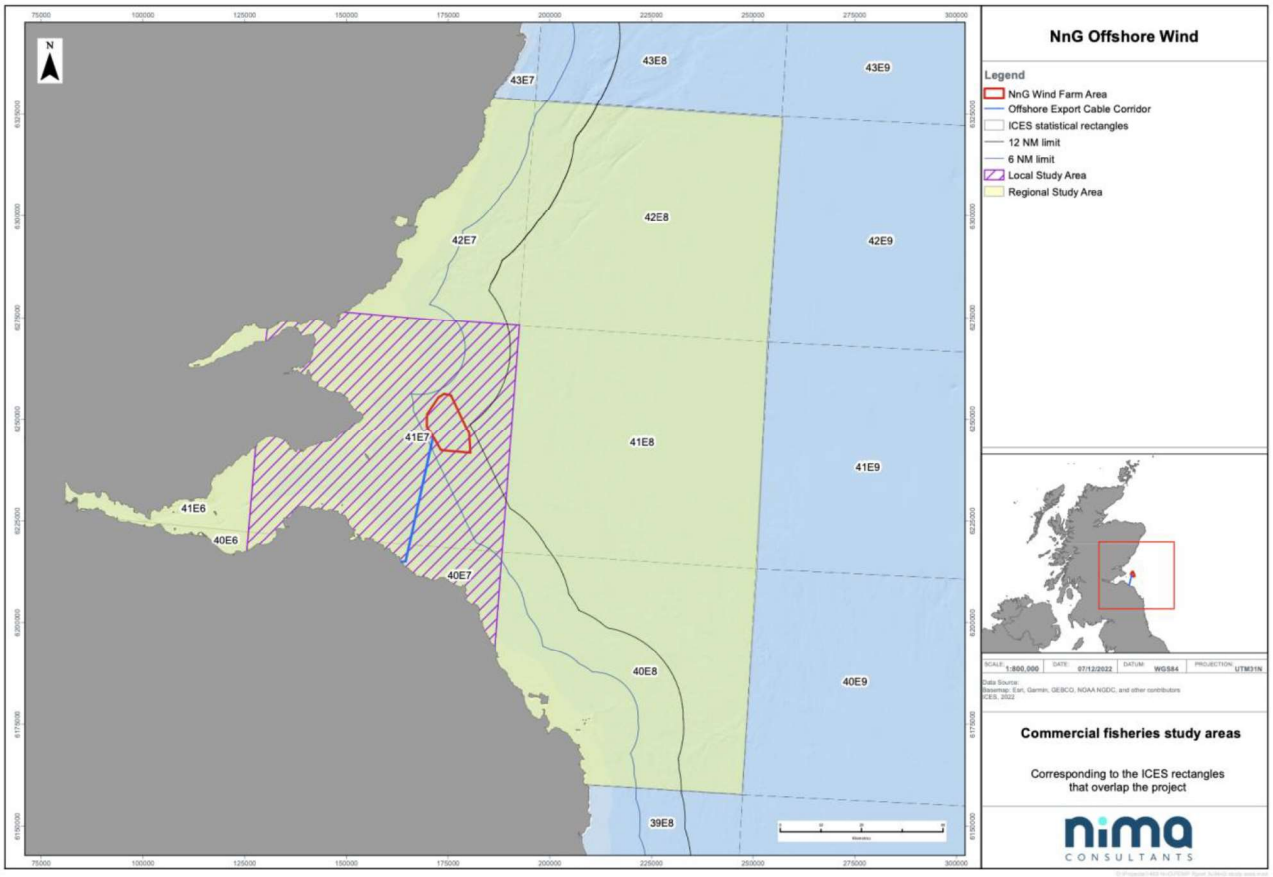

Figure 2.1. Commercial fisheries local and regional study areas.

2.2 Monitoring guidance

22. Since the last NnG monitoring report (Report 3d), the Scottish Government's *Monitoring Offshore Windfarm Impacts on the Commercial Fishing Industry - Good Practice Guidance* (Xodus, 2025) has been published and reviewed to assess compliance and identify areas for improvement in PEMP monitoring approach.

23. This Report 3e (as well as previous NnG Reports) aligns with Scottish Government good practice guidance around the following core principles:

- Clear purpose and objectives: with the explicit aim of tracking variations in fishing activity before, during, and after construction, aligned with the FMMS.
- Baseline and comparative analysis: pre-construction (2017–2019), early construction (2020–2021), and ongoing construction (2022-2023 onwards) datasets for temporal comparisons.
- Linked to EIA: with monitoring focused on fleets identified within the EIA as key receptors where additional mitigation was required to lower residual effects i.e., potting targeting lobster and crab and demersal otter trawl targeting Nephrops.
- Use of core fisheries datasets: including government fish landings statistics, VMS, and AIS data, which are key sources recommended in the guidance.
- Geographic coverage: a defined local study area (overlapping OWF and cable) and a wider regional study area, consistent with guidance.
- Species-specific analysis: presentation of trends for Nephrops, lobster, and brown crab, aligning with the recommendation for detailed, species-level assessment.
- Link to mitigation: interpretation of findings in context of FMMS to inform ongoing measures.
- Stakeholder engagement: dissemination of monitoring reports and annual meetings with Forth and Tay Commercial Fisheries Working Group to present annual monitoring findings. Continuous engagement via Fisheries Liaison Officer.
- Frequency of reporting: biannual reporting (twice a year) and annual meeting to present findings.
- Adaptive: open to adapt to incorporate new datasets where relevant and available.

24. Future iterations of PEMP reporting could strengthen compliance with the monitoring guidance by incorporating socio-economic data, including small-vessel / iVMS data and expanding monitoring to consider wider cumulative impacts. In relation to these aspects, it is highlighted that:

- Socio-economic data: indicators such as employment and Gross Value Added (GVA) are often reported at broader regional or national scales, making it difficult to attribute changes specifically to offshore wind farm activity. However, NnG is actively seeking fleet performance and port-level vessel data to strengthen future monitoring reports and better align socio-economic analysis with observed fisheries trends.
- Small vessel /iVMS data: information from small vessel plotter data informs the disruption agreement process as facilitated through the FLO, but is not publicised due to confidentiality. Currently iVMS datasets are not yet available.
- Cumulative: the Commercial Fisheries Working Group provides an opportunity to discuss cumulative impacts and share monitoring approaches, of which NnG remain very supportive.

3 Overview of landings

25. This section of Report 3e provides a broader overview of total landings across all commercial species within the local and regional study areas. Although the remit of the PEMP remains focused on the key target species, Nephrops, lobster, brown crab, and squid, this expanded analysis offers valuable context by setting these species within the wider fisheries picture. It enables assessment of their relative importance alongside other commercial species and allows consideration of any emerging or secondary fisheries, as well as trends in landings over time. By examining total landings in this way, the analysis strengthens the interpretation of changes in the key species and helps to place observed patterns within the broader dynamics of the fisheries sector.

3.1 Local study area

26. Figure 3.1 and Figure 3.2 present landed weight (tonnes) and first sales value (£) for all commercial species from the local study area between 2017 and 2023. Nephrops dominate both in terms of weight and value, consistently accounting for the largest share of activity throughout the time series, although a gradual decline is evident in recent years compared with earlier peaks.

27. Lobsters have remained relatively stable in landed weight but show stronger consistency in value, reflecting their high market price. Brown crab landings show more variability, with declines after 2019 but some recovery in more recent years. Razor clam landings and value increased steadily from 2017, peaking around 2021–2022, and remain an important emerging component of the fishery.

28. Among secondary species, velvet crab shows moderate and fairly stable landings, while scallops have decreased in importance in certain years, particularly 2022 and 2023, highlighting their potential as developing fisheries. Whelks also show occasional peaks in landings and value in the earlier years, suggesting reduced activity. In contrast, finfish species such as cod, haddock, and whiting remain consistently minor, contributing little to overall landings.

29. These results indicate that while Nephrops continue to underpin local fisheries, diversification into species such as razor clams and velvet crab is becoming more evident, with these species showing notable increases in recent years.

3.2 Regional study area

30. Figure 3.3 and Figure 3.4 present landed weight (tonnes) and first sales value (£) for all commercial species from the regional study area between 2017 and 2023. Nephrops remain the dominant species in terms of landings, with consistently high volumes across the time series, although a slight downward trend is apparent compared with earlier peaks. Brown crab also represents a substantial share of the regional fishery, with landings fluctuating but remaining higher than in the local study area.

31. Scallops feature prominently in the regional dataset, showing steady landings across the period and a notable rise in value in 2023, suggesting an increasingly important role in the fishery. Lobsters maintain moderate but stable landings, with their high unit value ensuring they remain one of the most valuable species overall. Razor clams, while smaller in volume compared to Nephrops or crab, show growth in recent years and provide a developing contribution to both landings and value.

32. Among secondary species, velvet crab and surf clams have shown increased activity in some years. By contrast, squid and finfish species such as cod, haddock, and whiting continue to be low in overall regional landings and value.

33. Overall, the regional dataset highlights the continued dominance of Nephrops, lobster and crab fisheries, with scallops showing a decrease in recent years. Razor clams have increased steadily, while whelks have declined and surf clams show a slight increase, together illustrating shifts in the relative contribution of these fisheries within the region.

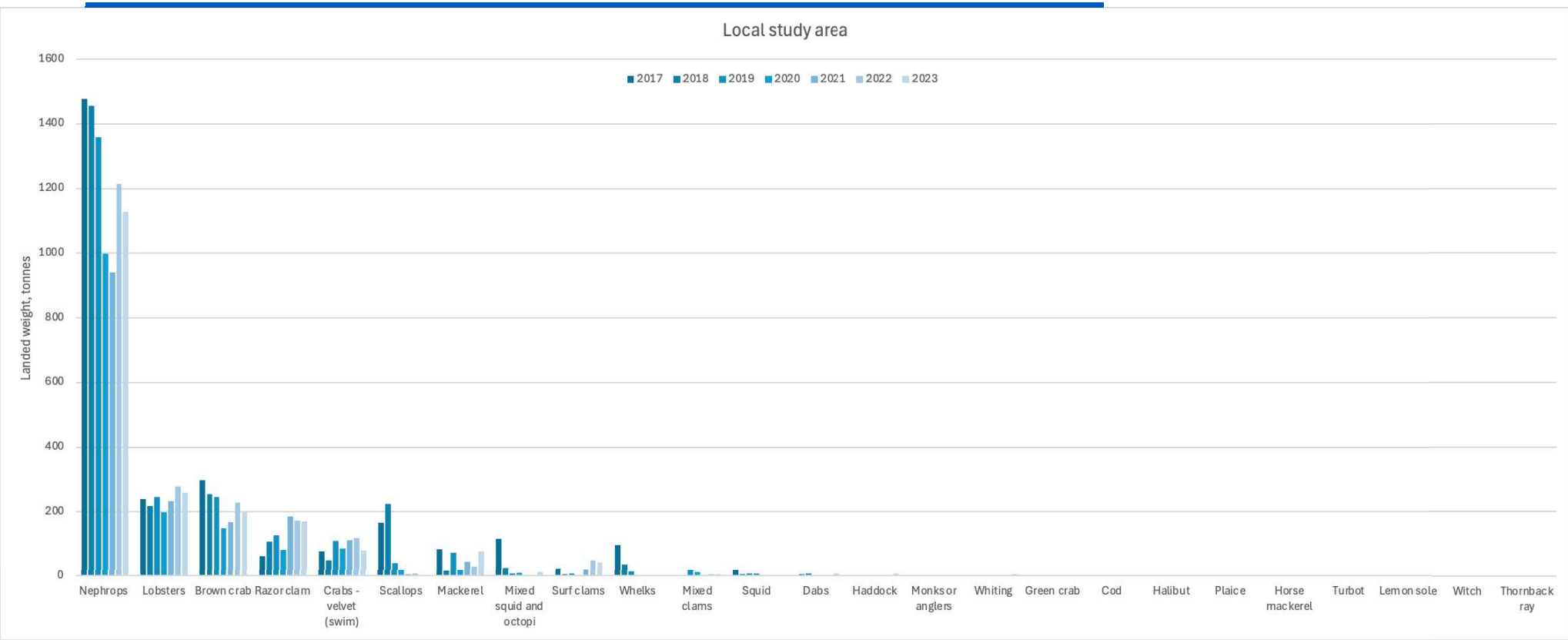

Figure 3.1. Landed weight from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

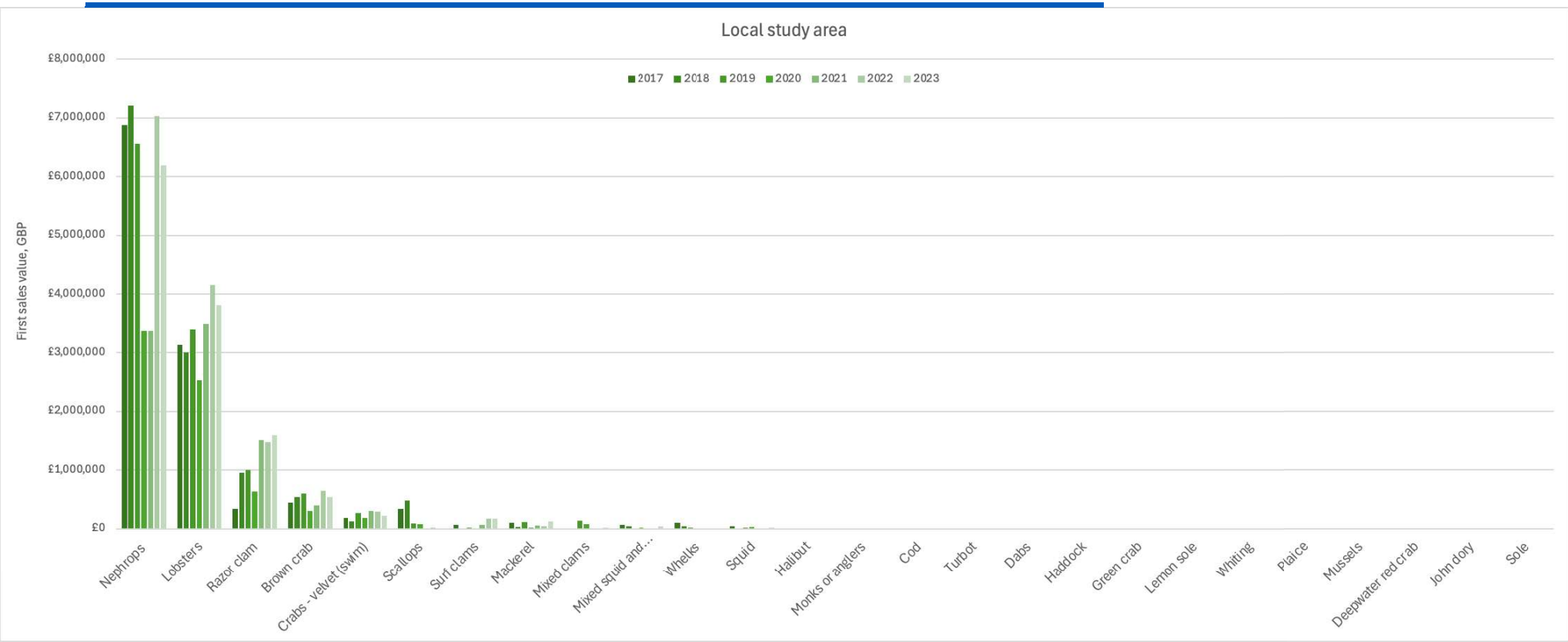

Figure 3.2. First sales value landed from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

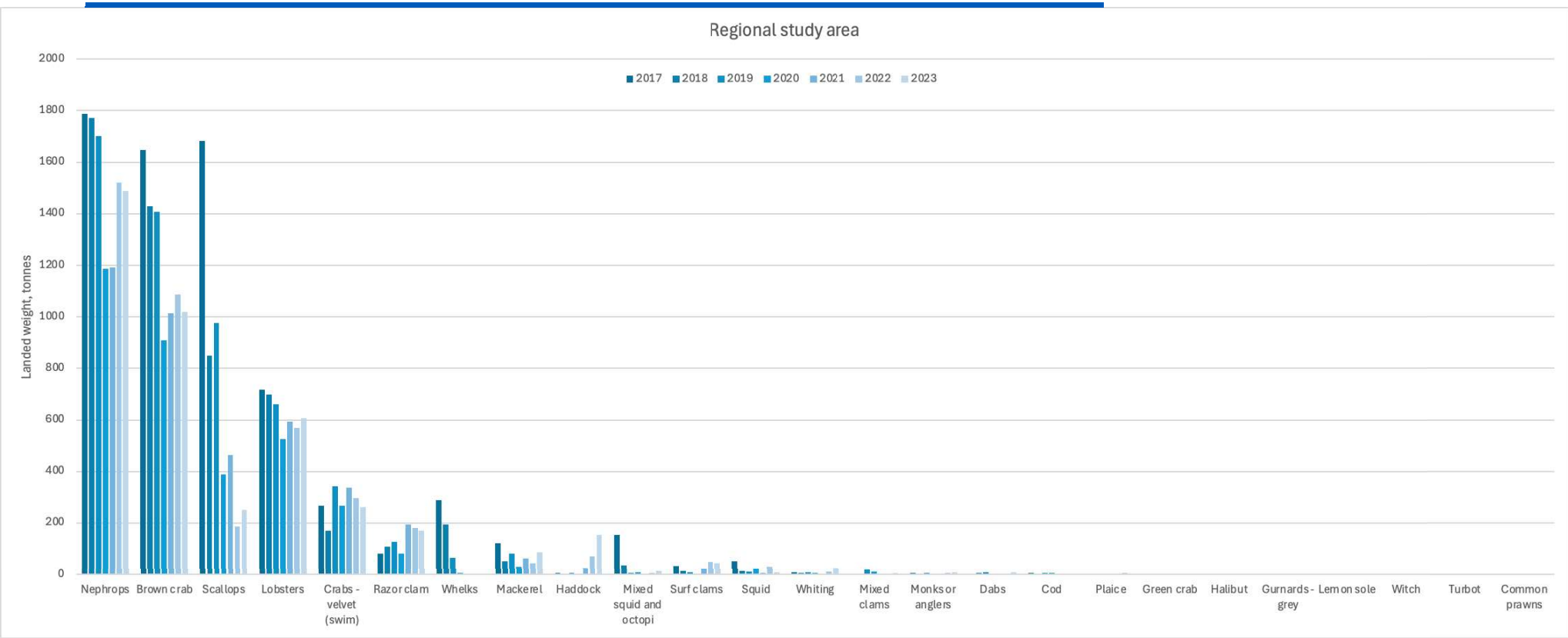

Figure 3.3. Landed weight from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

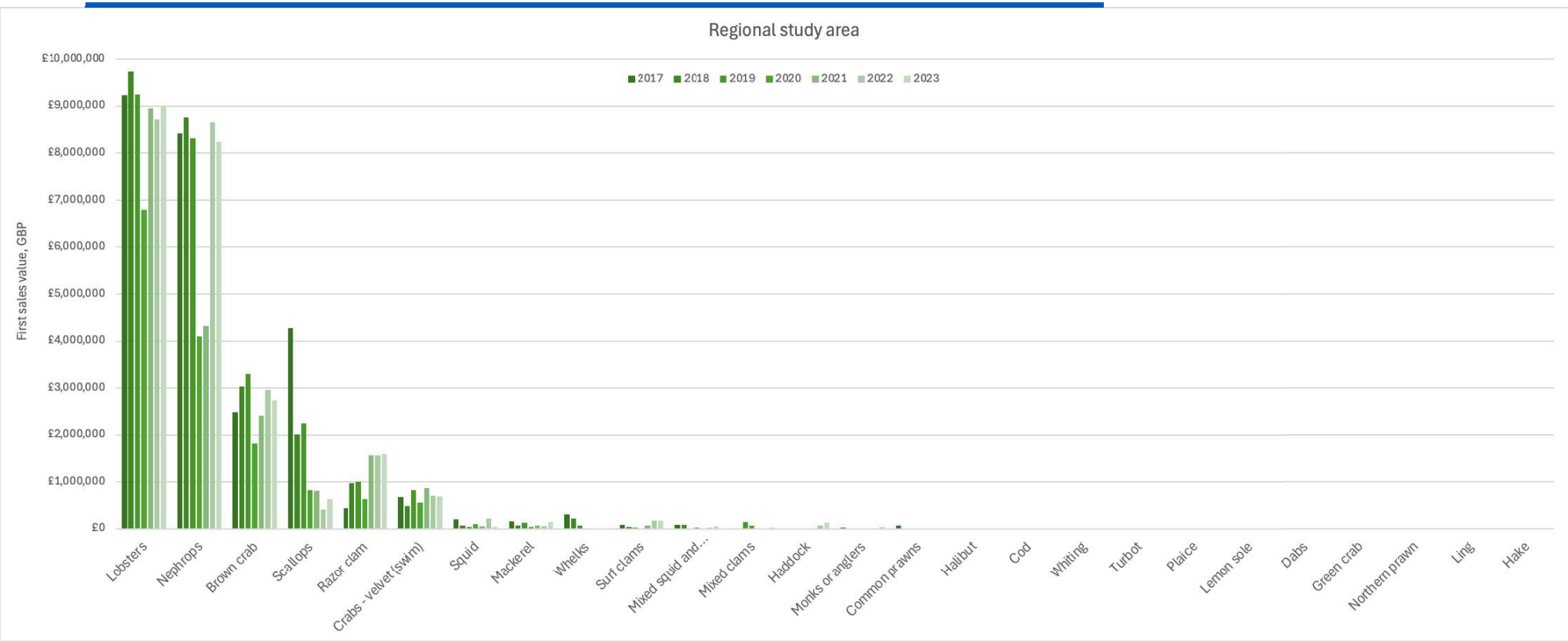

Figure 3.4. First sales value landed from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

4 Inter-annual variations for key species

4.1 Nephrops

4.1.1 Nephrops: local study area

34. 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 (ECC)) is shown in Figure 4.1 for the time series Jan 2017 to Dec 2023. The data are presented separately for two ICES statistical rectangles: 40E7 (orange) and 41E7 (blue), with the following key observations

- Overall dominance of 41E7 landings: Across the entire time series, landings from 41E7 substantially exceed those from 40E7. Peaks in 41E7 frequently surpass 200 tonnes, whereas 40E7 rarely exceeds 60 tonnes.
- Seasonal fluctuations: Both rectangles exhibit seasonal variation, with notable increases during summer months (e.g., July 2018, June 2019, July 2022). Winter months generally show lower landings.
- Interannual variability:
    - Landings from 41E7 were particularly high during 2017–2019, with multiple months exceeding 200 tonnes.
- From 2020 onward, peaks from 41E7 are less pronounced, generally below 200 tonnes, suggesting reduced fishing activity or stock availability.
    - Landings from 40E7 remain relatively consistent over time, with occasional peaks (e.g., late 2018 and summer 2022).
- Recent trends (2022–2023):
    - Landings remain lower than the early years of the dataset.
    - The last two years show smaller peaks (typically under 150 tonnes for 41E7) and sustained moderate contributions from 40E7.

35. Overall, this highlights the importance of 41E7 as the main source of Nephrops landings within the study area. The strong seasonal and interannual variability may reflect biological cycles of Nephrops, fishing effort distribution, and potential management or environmental influences. In addition, the period May 2021 to August 2021 coincides with the installation of the wind farm export cable, and November 2021 to January 2022 corresponds with rock protection works. During these periods, there is a noticeable reduction in landings from both 41E7 and 40E7, which may suggest some displacement of fishing effort or disruption linked to construction activities. However, subsequent recovery in landings indicates that effects were temporary and localised.

36. The reduction in peak landings observed in the later years (post-2020) could therefore reflect a combination of stock dynamics, market demand, and spatial displacement associated with offshore construction.

37. 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 4.2, including:

- A monthly timeseries of landings from January 2017 to December 2023.
- A comparison of the average monthly landings in the period 2017 to 2019 (shown in green), compared with the period 2020 to 2022 (shown in orange), and 2023 (shown in blue), and including linear trendlines.
- Inter-annual variation in monthly landings compared across 2017 to 2023 to present the positive or negative proportion of change in average monthly landings from 2017 to 2019 compared with 2020 to 2022; and 2020 to 2022 compared with 2023.

38. **Monthly time series (2017–2023):** The time series of monthly Nephrops landings (top panel) shows strong seasonal and interannual variability, with notable peaks between 2017 and 2019, where monthly landings often exceeded 200 tonnes. In contrast, the period from 2020 onwards is characterised by more subdued landings, with peaks rarely exceeding 150 tonnes. The fitted linear trendline indicates a gradual long-term decline in landed weight across the study period, although seasonal fluctuations remain a consistent feature.

39. **Comparison of 2023 with previous periods:** The lower left panel compares monthly landings for 2023 against the averages for 2017–2019 and 2020–2022. The 2017–2019 average displays consistently high landings, with strong summer and autumn peaks (July ~210 tonnes; November ~170 tonnes). The 2020–2022 average shows more moderate peaks, generally around 120–150 tonnes. In 2023, landings were relatively low in the first half of the year (notably April, ~45 tonnes), followed by some recovery during the summer (June–August ~125 tonnes). However, the seasonal peaks of 2023 remained below those of the pre-2020 period, with the linear trendline showing a slight decline across the year. This pattern highlights a progressive reduction in seasonal highs, with 2023 not fully re-establishing the stronger peak periods observed in earlier years.

40. **Inter-annual variation (2017–2023):** The lower right panel presents percentage changes in monthly landings between time periods. Comparing 2017–2019 to 2020–2022, reductions are evident in most months, particularly in April (down by more than 100%). Comparing 2020–2022 to 2023, the picture is more mixed: early-year landings (January–March) in 2023 improved relative to 2020–2022, while later months (August–December) mostly show declines. Overall, this analysis demonstrates that while 2023 landings remain within the range of interannual variability, the return of strong peak periods typical of 2017–2019 has not yet been observed.

41. **Interpretation and monitoring:** The evidence indicates that the EIA correctly anticipated potential short-term impacts of offshore construction on the Nephrops trawl fishery and that appropriate mitigation, through disruption agreements and financial compensation, was implemented during cable installation (May–Aug 2021) and rock protection works (Nov 2021–Jan 2022). The data show that any impacts were temporary and localised, with landings subsequently recovering.

42. However, the longer-term downward trend and the absence of strong seasonal peaks since 2019 underline the need for continued monitoring. It will be important to track whether peak landing periods return in future years to ensure that no sustained long-term impacts on the fishery are occurring.

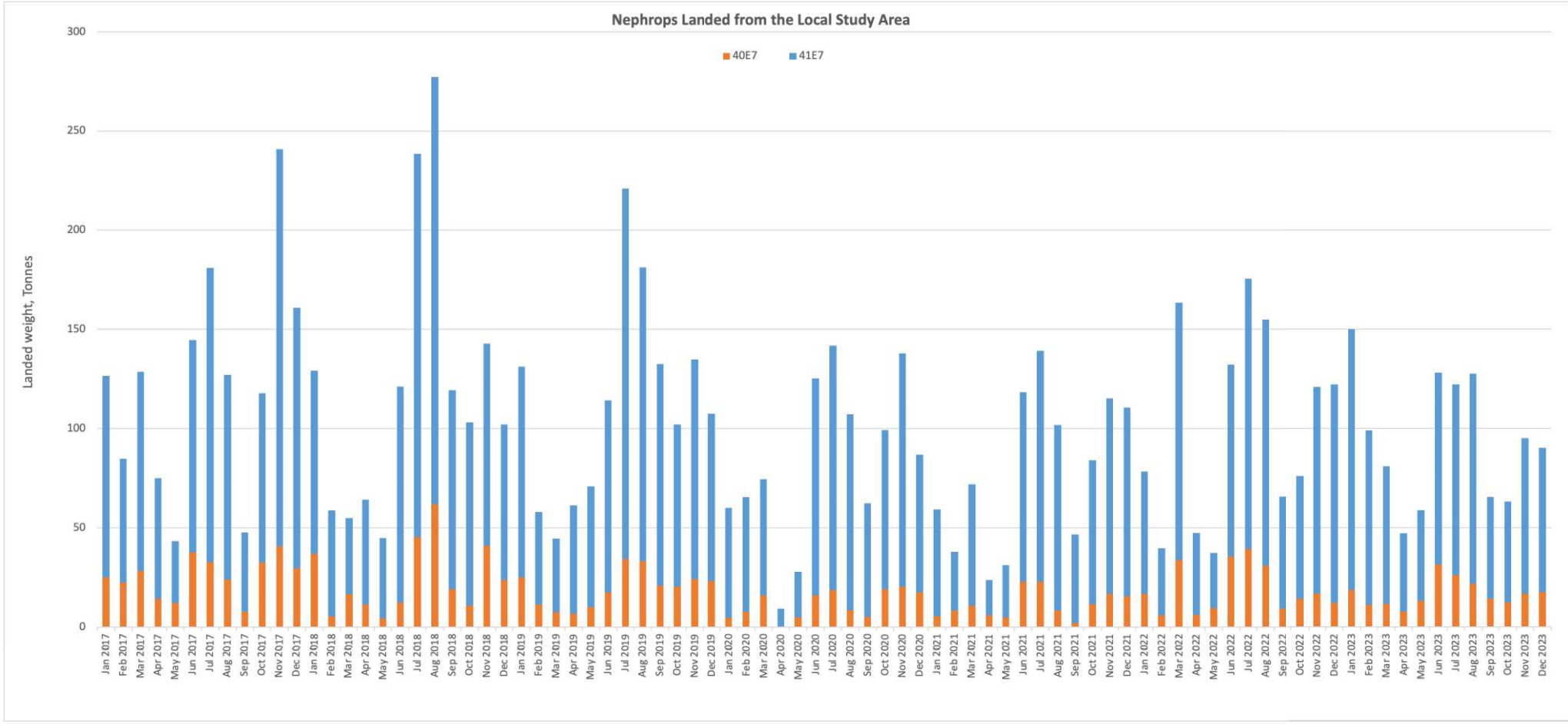

Figure 4.1. Time series of landed weight (tonnes) of nephrops by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

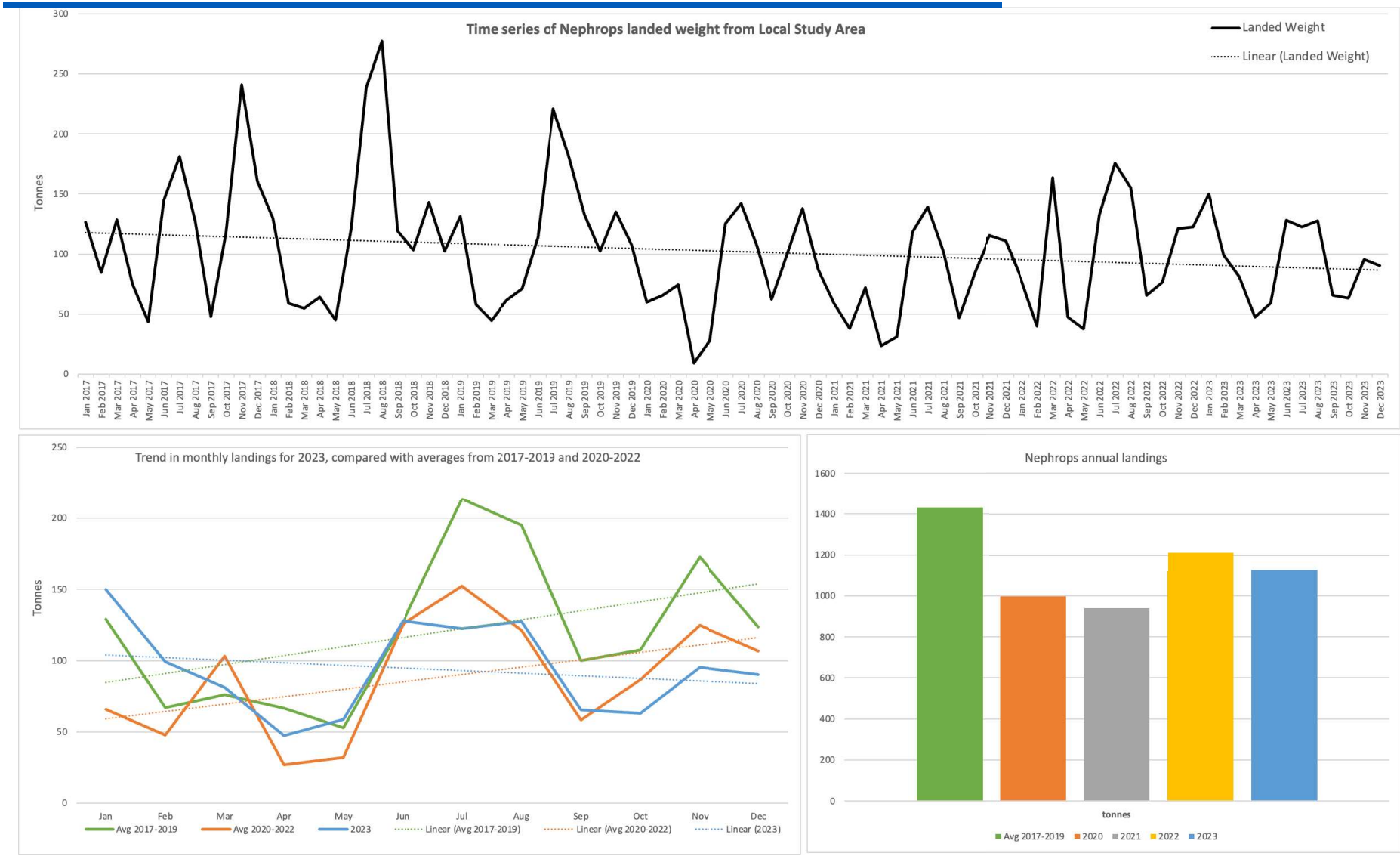

Figure 4.2. Time series, trendlines and inter-annual variation of landed weight (tonnes) of nephrops from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

4.1.2 Nephrops: regional study area

43. The monthly landings of nephrops from the regional study area are shown in Figure 4.3 and Figure 4.4 for the time series January 2017 to December 2023.

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

45. **Monthly time series (2017–2023):** At the regional scale, patterns in the wider ICES rectangles generally mirror those seen locally. Landings across the region were particularly strong in 2017–2019, with monthly totals frequently exceeding 200–300 tonnes. From 2020 onwards, peaks have been markedly lower, typically ranging between 100–180 tonnes per month. This indicates that the decline in peak landings is not purely a local phenomenon but reflects wider regional fisheries dynamics. The two rectangles 40E6 and 41E7 consistently dominate regional landings, underlining their importance to the fishery. While short-term localised dips during the NnG construction phases are evident in the local datasets, these are less pronounced regionally, suggesting that the broader fishery remained largely unaffected during construction.

46. Taken together, the evidence indicates that while localised, temporary impacts were observed during construction, they were appropriately mitigated and did not result in wider fishery disruption. The longer-term reduction in seasonal peak landings since 2020 is a regional trend, most likely linked to stock dynamics, environmental factors, or market influences rather than site-specific construction effects.

47. Nevertheless, the fact that the strong seasonal peaks observed in 2017–2019 have not yet returned highlights the importance of continued monitoring. It will be critical to track whether peak landing periods re-establish in future years to ensure no lasting impacts occur and to separate wider stock-driven variability from localised construction effects.

48. **Comparison of 2023 with previous periods:** The most notable feature of 2023 is the front-loading of catches earlier in the year. Whereas previous averages show peak landings in mid-to-late summer and autumn, in 2023 the highest landings occurred in January, several months earlier than expected. This suggests a shift in either fishing effort timing or Nephrops availability in the early part of the year.

49. The trendline for 2023 shows a declining slope, contrasting with the upward trends seen for both 2017–2019 and 2020–2022. This indicates that, unlike previous years where landings built toward strong summer/autumn peaks, 2023 was characterised by early abundance followed by declining catches through the year.

50. The trends in 2023 monthly landings compared to 2017-2021 and the inter-annual variation of monthly landings largely mirrors the trends and findings for the local study area, which is expected given that most of the landings are taken from ICES rectangle 41E7.

51. **Interpretation and monitoring:** The shift in seasonal pattern observed in 2023, with peak Nephrops landings occurring unusually early in the year (January) rather than in the traditional summer and autumn periods, is noteworthy. While this front-loading of catches does not appear to be directly linked to the NnG export cable installation (May–Aug 2021) or rock protection works (Nov 2021–Jan 2022), it highlights the importance of continued monitoring to distinguish between localised, construction-related effects and broader environmental or stock-driven changes. The evidence suggests that construction impacts were temporary and effectively mitigated, but the ongoing variability in seasonal distribution, including the 2023 shift toward earlier landings, points to potential changes in stock dynamics, fleet behaviour, or environmental conditions at the regional scale. Tracking whether this earlier peak becomes a consistent feature in future years will be critical to ensuring no longer-term impacts on the Nephrops fishery are overlooked.

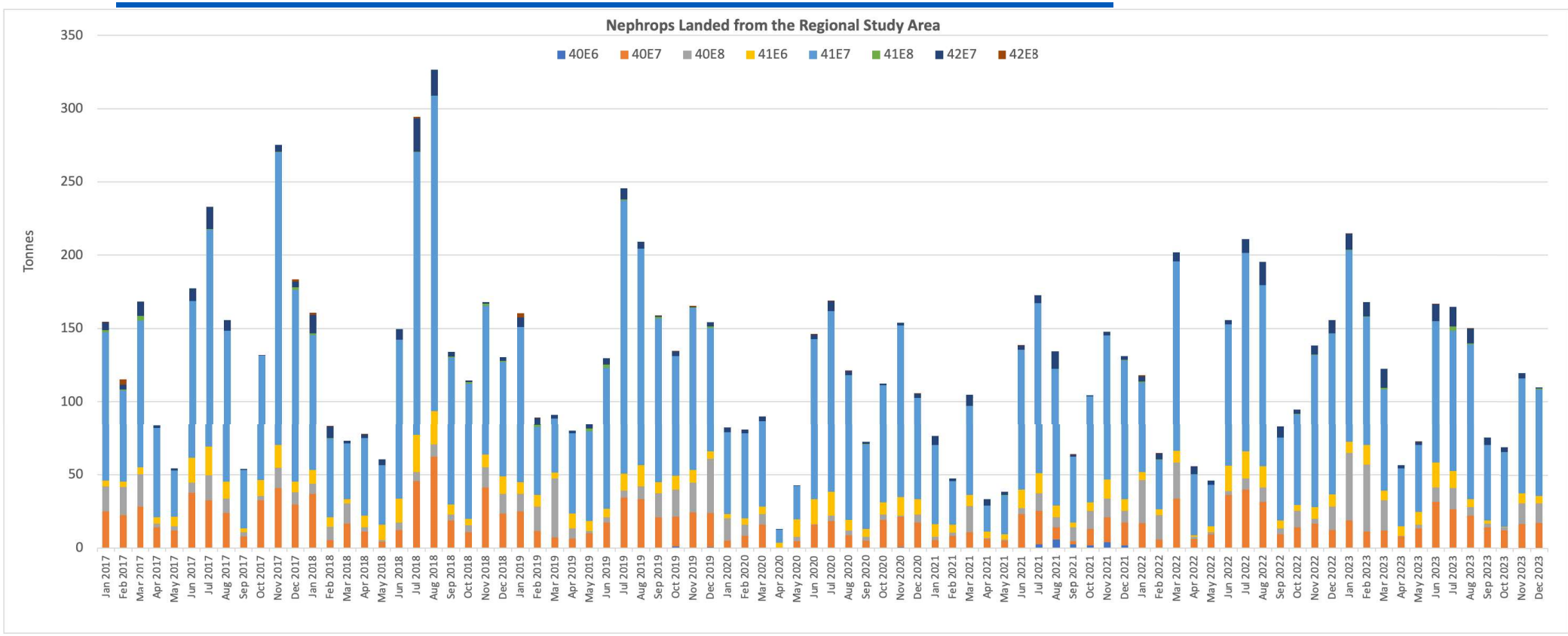

Figure 4.3. Time series of landed weight (tonnes) of nephrops by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

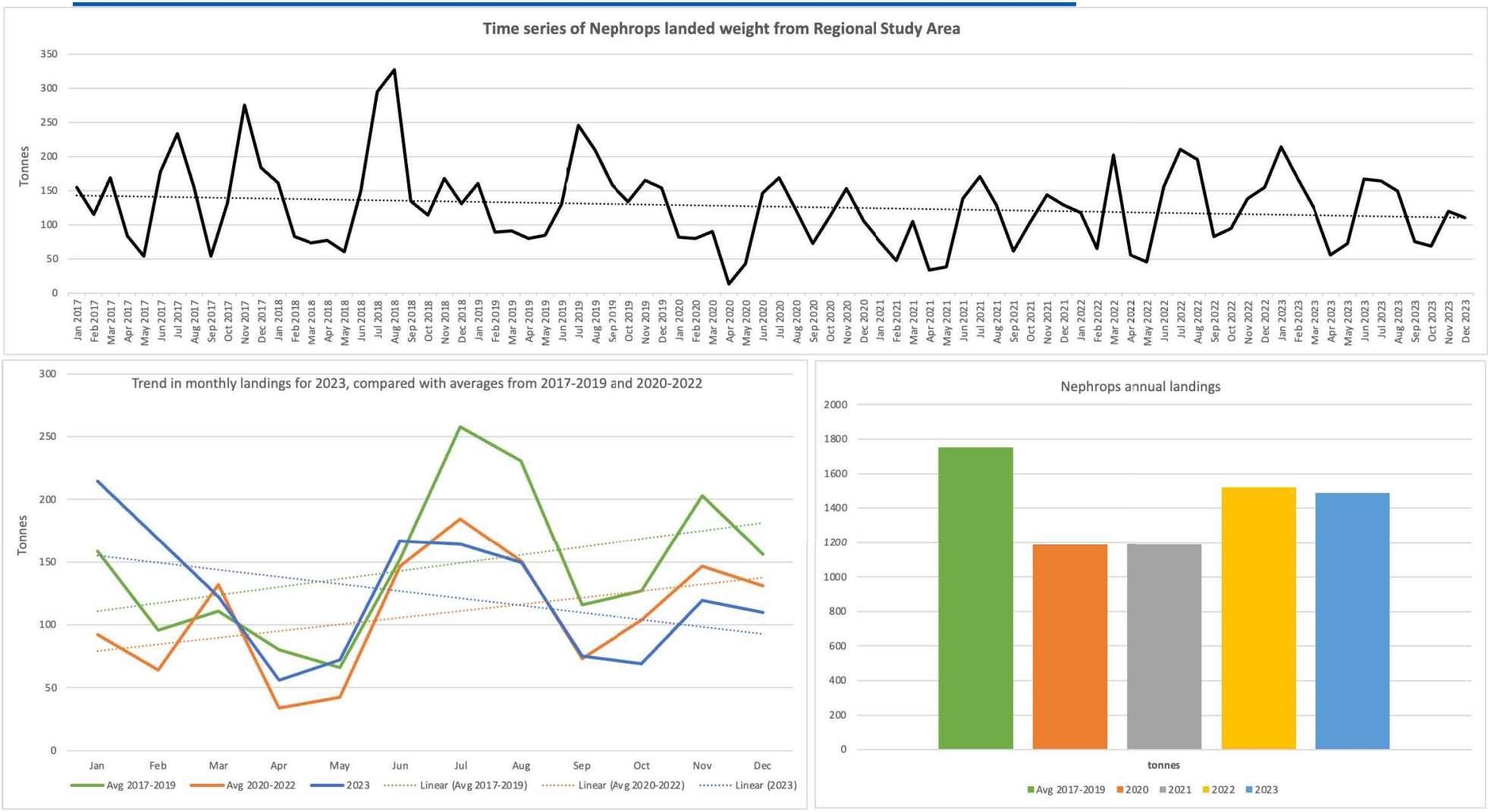

Figure 4.4. Time series, trendlines and inter-annual variation of landed weight (tonnes) of nephrops from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2021)

4.2 Lobster

4.2.1 Lobster: local study area

52. The monthly landings of lobster from the local study area are shown in Figure 4.5 and Figure 4.6 for the time series January 2017 to December 2023, with the following key trends:

- Seasonal peaks: Landings are highly seasonal, with sharp increases during the summer and early autumn months (July–September) each year. Peaks frequently exceed 60–70 tonnes in 41E7 and 25–30 tonnes in 40E7.
- Dominance of 41E7: Catches from 41E7 consistently outweigh those from 40E7, accounting for the majority of landed lobster across the time series.
- Construction period (Aug 2020 onwards): In the months immediately following the start of array area construction (August 2020), seasonal peaks in 2020 and 2021 remained evident, with maximum landings comparable to pre-construction years (~60–70 tonnes).
- Recent landings (2023): Landings in 2023 show clear seasonal peaks, with August and September catches in 41E7 reaching 50–55 tonnes, alongside smaller but consistent contributions from 40E7. These values are broadly in line with previous seasonal highs, indicating recovery of fishing activity.

53. Analysis of lobster landings within the local study area (ICES rectangles 40E7 and 41E7) shows a strongly seasonal fishery, with catches peaking consistently in the summer and early autumn months (July–September) and remaining low during winter. In Figure 4.6 the time series (top panel) demonstrates clear annual peaks, with landings regularly exceeding 60–70 tonnes during the main fishing season. These peaks are most prominent in 41E7 (Figure 4.5), which dominates lobster landings throughout the dataset.

54. The fitted trendline across the time series indicates a slight upward trend in lobster landings since 2017, contrasting with the downward trend observed for Nephrops. Importantly, construction of the NnG array area commenced in August 2020, with export cable installation in May–Aug 2021 and rock protection works Nov 2021–Jan 2022. Seasonal peaks remained visible in both 2020 and 2021, and while the 2020 August peak was lower than previous years, there is no evidence of a sustained reduction in catches immediately after construction.

55. When comparing monthly patterns (bottom left panel), the 2023 seasonal cycle is consistent with previous years, with peak catches occurring in July–August. The magnitude of landings in 2023 (~55–65 tonnes at peak) is slightly below the record highs observed in 2022 (~70 tonnes), but remains well within the range of natural interannual variability and comparable to pre-construction averages (2017–2019).

56. Annual totals (bottom right panel) reinforce this conclusion. Average landings for 2017–2019 were approximately 235 tonnes, while 2020 (construction year) recorded a slight dip (~200 tonnes). However, totals subsequently rebounded, with 2021 (~230 tonnes) and 2022 (~280 tonnes) showing strong recovery, and 2023 (~260 tonnes) maintaining high levels of catch. This demonstrates that the lobster fishery has not only recovered following construction, but in recent years has operated at or above pre-construction levels.

57. The evidence indicates that lobster catches in the local study area have remained resilient throughout the NnG construction period and have subsequently returned to, and in some years exceeded, pre-construction levels. Seasonal peaks continue to occur reliably each year, confirming the stability of the fishery. While minor interannual fluctuations are evident, these fall within the expected range of natural variation.

58. Overall, the data support the conclusion that the EIA correctly anticipated potential effects, and that impacts on lobster fisheries were temporary, localised, and effectively mitigated. Continued monitoring will remain important to ensure these positive trends persist, but current evidence demonstrates that the local lobster fishery remains in a healthy and stable condition.

4.2.2 Lobster: regional study area

59. The monthly landings of lobster from the regional study area are shown in Figure 4.7 and Figure 4.8 for the time series January 2017 to December 2023.

60. Within the regional study area, a high proportion of landings continue to be derived from ICES rectangles that do not directly overlap with the Project footprint, notably 42E7 and 40E8 (shown in navy and grey in earlier figures). These areas consistently make a significant contribution to regional lobster catches.

61. The time series of landings shows an overall reduction in 2020, which is likely attributable to the combined effects of the COVID-19 pandemic and associated restrictions. Despite this reduction in overall landings, the regional study area maintained its characteristic summer peak in 2020, in contrast to the local study area where the summer peak was absent. This is an important distinction, and likely reflects the influence of both the construction of the NnG Offshore Wind Farm and the associated disruption agreements made with local commercial fishing businesses.

62. Figure 4.8 illustrates that although overall catch volumes were reduced in 2020, the summer peak at the regional scale was maintained. This peak primarily originated from rectangles outside the local study area (e.g. 42E8 and 40E8), highlighting a key variation between the local and regional responses in that year.

63. In 2021, regional landings increased relative to 2020 and more closely followed the seasonal trend of the 2017–2019 baseline period, albeit at a lower magnitude. This suggests a degree of recovery from 2020 levels, though peak catches had not fully returned to pre-2020 averages.

64. Regional landings in 2022 remained below the 2017–2019 baseline, but catches in the local study area increased sharply in the same year. This may indicate that the lower lobster landings observed during construction in August 2020 contributed to a higher abundance and catchability in 2022, reinforcing the importance of monitoring across both scales.

65. In 2023, lobster landings across the regional study area stabilised at levels similar to 2021, with summer peaks evident but lower than those of the 2017–2019 average. Importantly, annual totals for 2023 were higher than 2020 and 2021, and broadly consistent with 2022, suggesting that regional lobster landings have returned to a stable condition following construction activities.

66. The variation in trends between the local and regional study areas demonstrates the importance of monitoring at multiple spatial scales. The evidence highlights:

- A reduction in lobster landings in 2020, with the loss of the summer peak locally but not regionally;
- Increased landings in 2021, indicating recovery both locally and regionally;
- A marked increase in 2022, particularly locally, with regionally stable but lower levels;
- Stabilisation in 2023, with catches maintained and seasonal peaks evident, confirming that the fishery has remained resilient and continues to operate within expected variability.

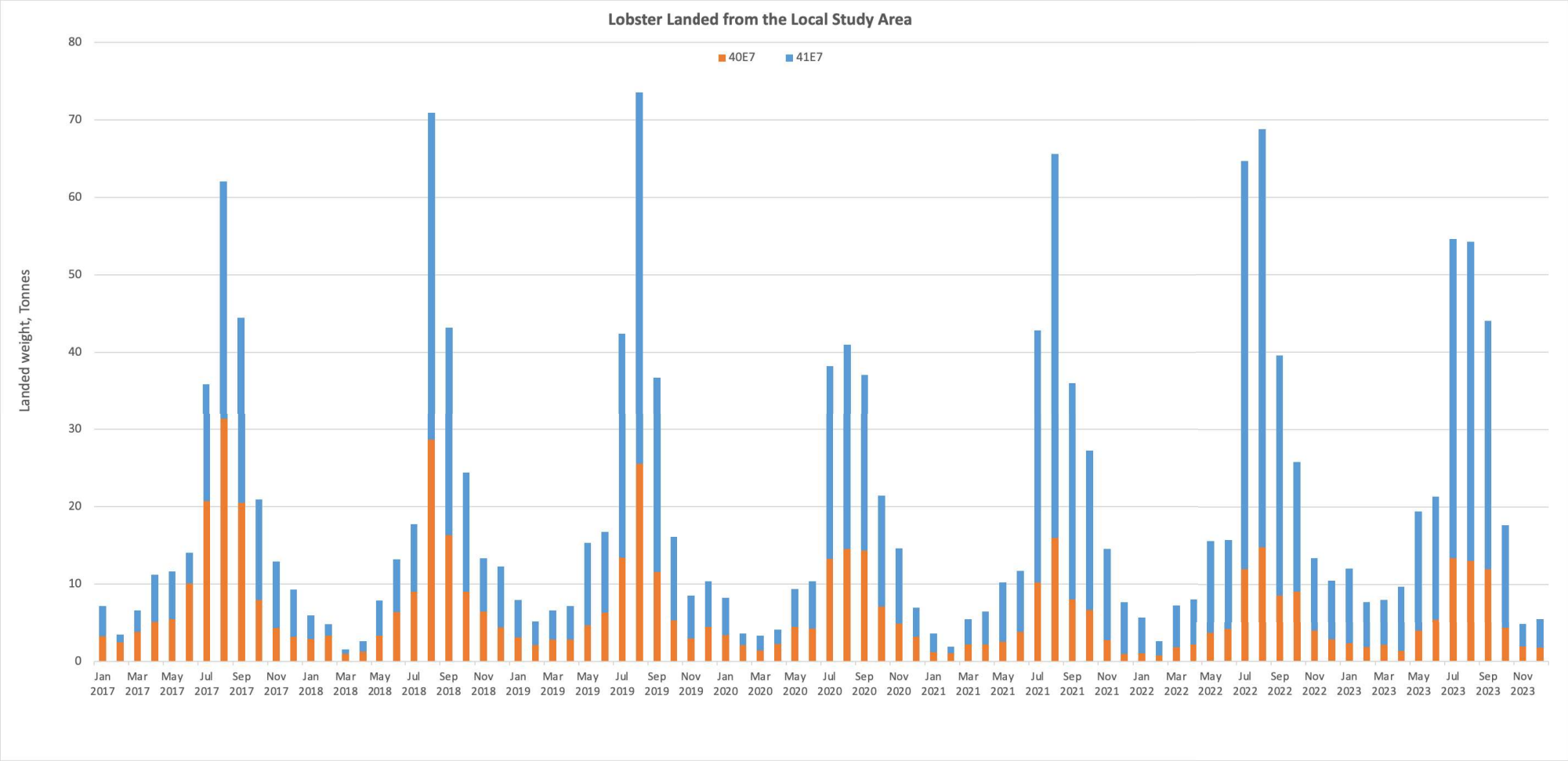

Figure 4.5. Time series of landed weight (tonnes) of lobster by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

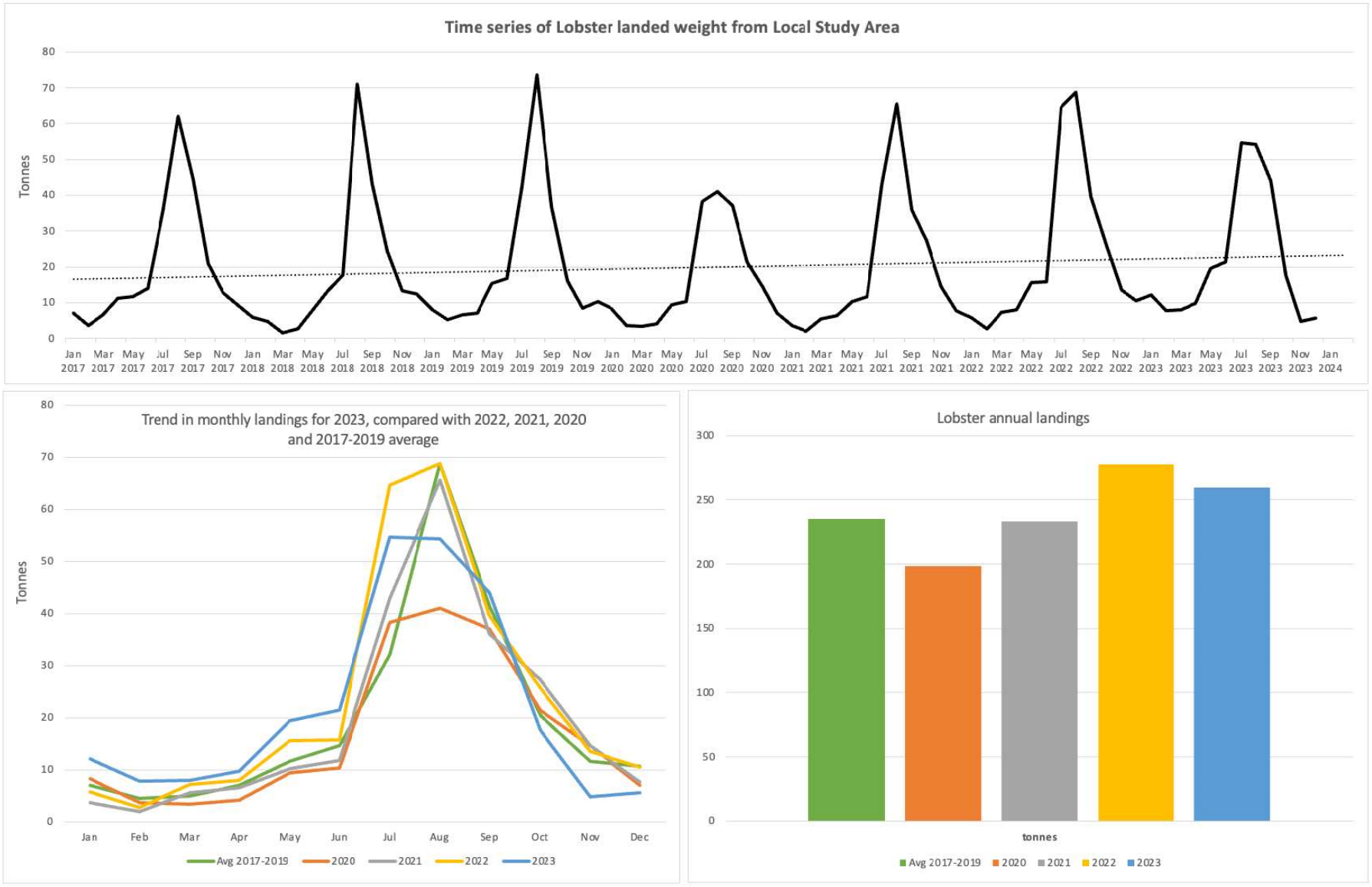

Figure 4.6. Time series, trendlines and inter-annual variation of landed weight (tonnes) of lobster from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

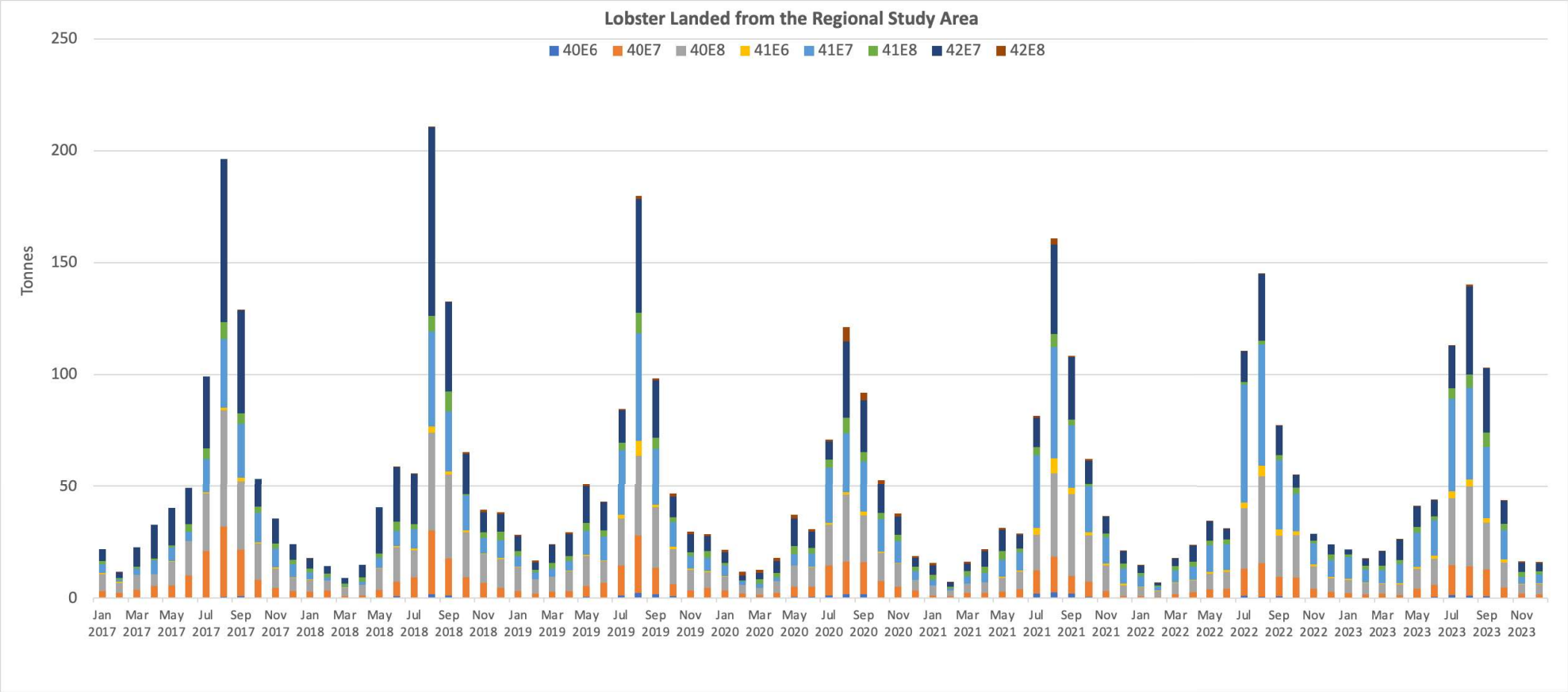

Figure 4.7. Time series of landed weight (tonnes) of lobster by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

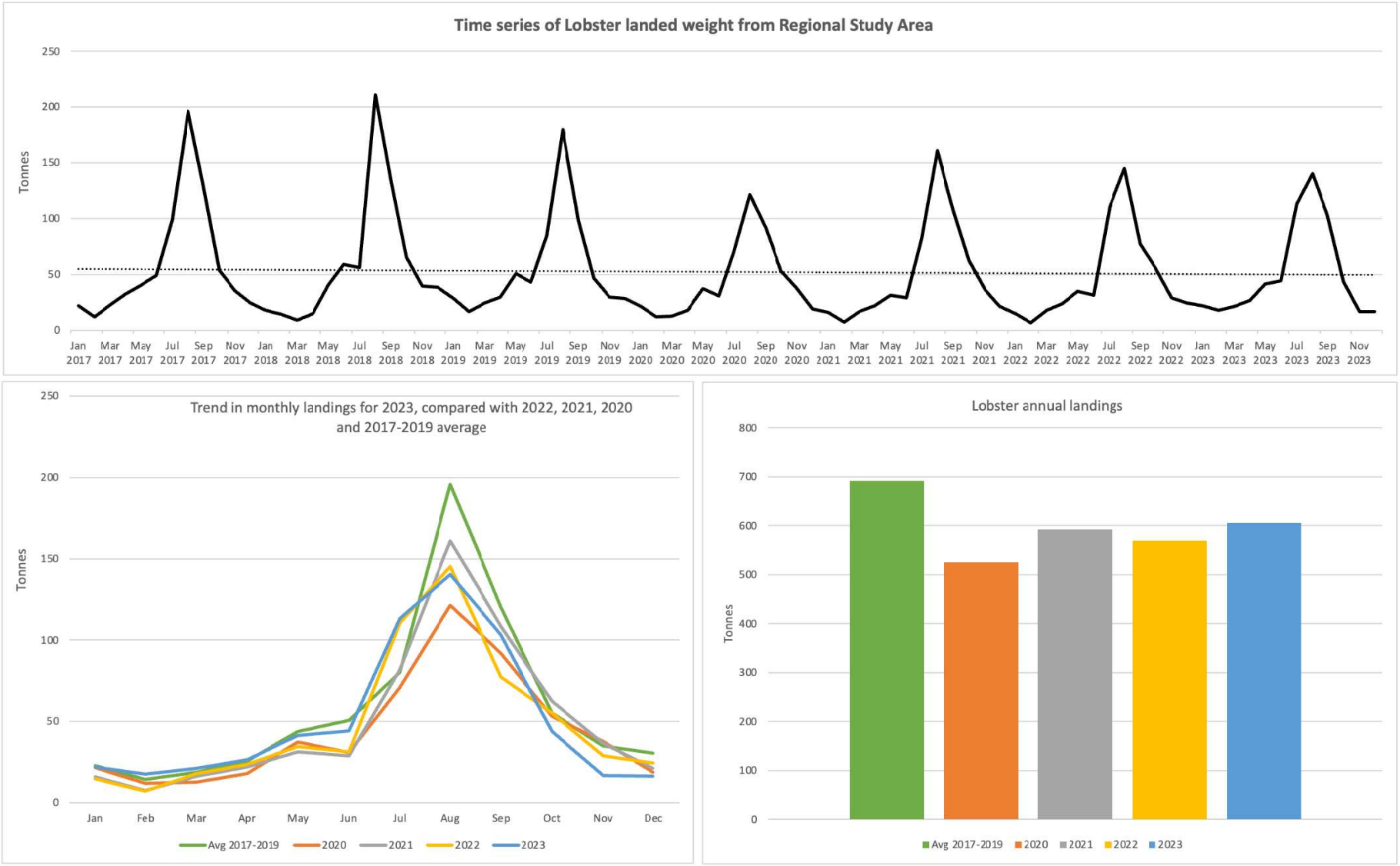

Figure 4.8. Time series, trendlines and inter-annual variation of landed weight (tonnes) of lobster from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

4.3 Brown crab

4.3.1 Brown crab: local study area

67. The monthly landings of brown crab from the local study area are shown in Figure 4.9 and Figure 4.10 for the time series January 2017 to December 2023. Landings are consistently higher from 41E7, with 40E7 providing a smaller but regular contribution throughout the time series.

68. The long-term dataset shows considerable variability, with monthly totals ranging from below 10 tonnes to peaks of 30–45 tonnes in several years (notably 2018, 2019 and 2022). The fitted trendline indicates a gradual downward trend across the seven-year period.

69. The following points are noted in relation to the annual and seasonal patterns:

- 2017–2019 baseline: Annual landings averaged around 265 tonnes, with frequent monthly totals above 20 tonnes.
- 2020: Landings fell to around 150 tonnes, representing the lowest annual total in the time series.
- 2021: Landings increased slightly to approximately 165 tonnes, but remained below the baseline average.
- 2022: Annual totals rose to around 230 tonnes, supported by several strong monthly peaks, including one of the highest values in the dataset (>40 tonnes).
- 2023: Landings of around 200 tonnes were recorded, remaining above 2020–2021 levels but below the 2017–2019 baseline.

70. The crab landings in the local study area are characterised by interannual variability, with higher totals in some years (e.g. 2018, 2019, 2022) and lower levels in others (2020, 2021). While catches in 2022 and 2023 were below the 2017–2019 baseline, they were higher than in 2020 and 2021, indicating that the fishery has remained active and productive across the time series.

4.3.2 Brown crab: regional study area

71. The monthly landings of brown crab from the regional study area are shown in Figure 4.11 and Figure 4.12 for the time series January 2017 to December 2023.

72. When comparing brown crab landings from the local study area (ICES rectangles 40E7 and 41E7) with those from the regional study area, some clear differences emerge.

73. At the regional scale, annual landings averaged around 1,450 tonnes during the 2017–2019 baseline. A sharp reduction occurred in 2020 (~900 tonnes), followed by modest increases in 2021 (~1,020 tonnes) and 2022 (~1,100 tonnes). In 2023, landings stabilised at approximately 1,020 tonnes, remaining below the 2017–2019 average. The long-term time series for the region indicates a gradual downward trend, with fewer high peaks after 2019 compared to earlier years.

74. In the local study area, the pattern is somewhat different. Baseline annual landings in 2017–2019 averaged ~265 tonnes. As at the regional scale, 2020 saw a reduction (~150 tonnes), followed by increases in 2021 (~165 tonnes) and a stronger rebound in 2022 (~230 tonnes). Importantly, 2023 landings in the local study area (~200 tonnes) represent a more substantial recovery relative to the 2020 low point compared to the regional picture.

75. This means that while both local and regional datasets show reductions compared to the 2017–2019 baseline, the magnitude of recovery has been greater locally. Landings in the local study area have returned closer to pre-2020 levels, whereas regional totals remain further below baseline averages.

76. The difference in recovery between the local and regional datasets suggests that the observed changes are not solely attributable to localised construction activity. If effects were primarily linked to the NnG project footprint, one would expect a more sustained reduction in the local study area relative to the regional context. Instead, the local study area shows relatively stronger recovery. This points towards the influence of wider factors, such as natural variability in stock distribution, market demand, or broader fishery dynamics, being more significant drivers of the trends observed in brown crab landings.

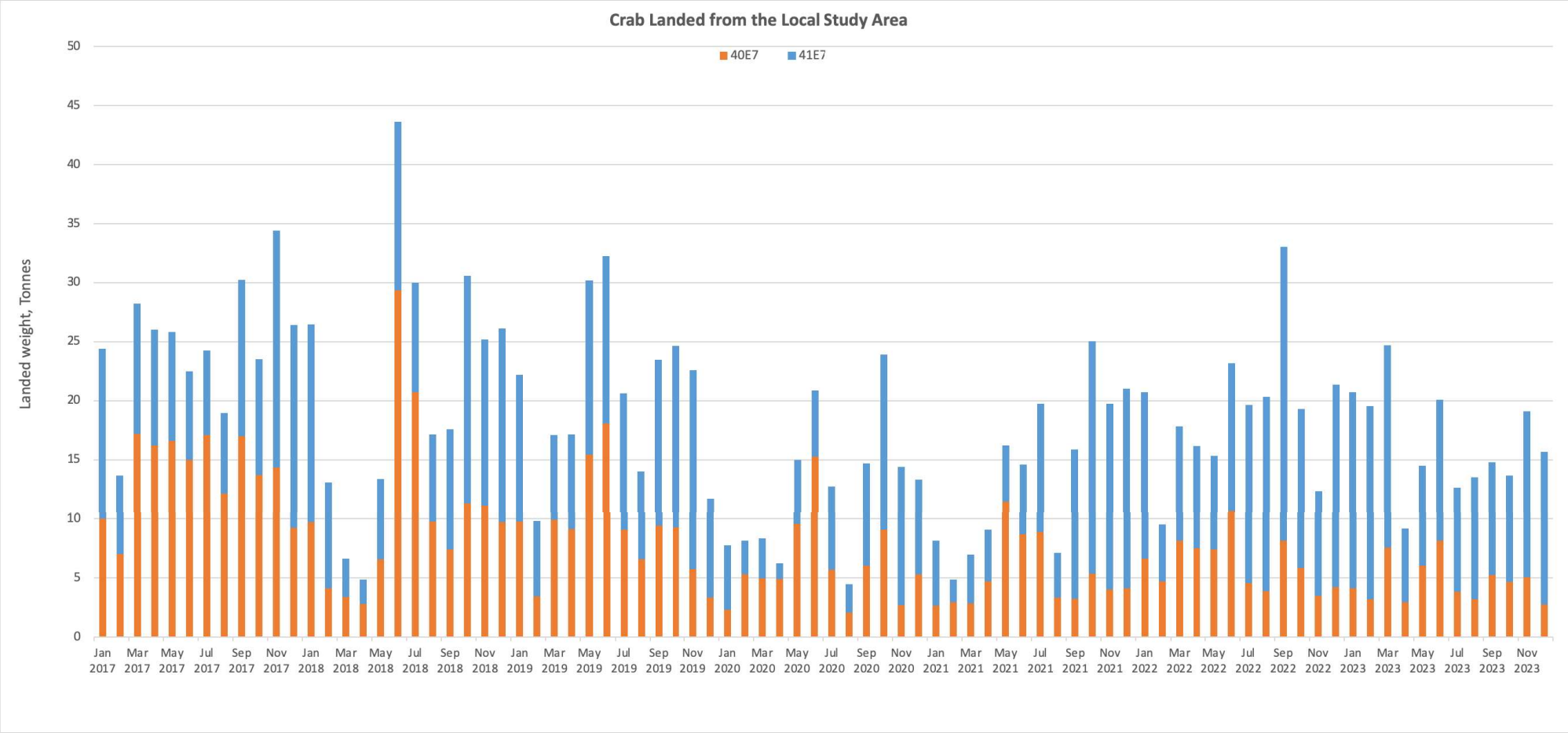

Figure 4.9. Time series of landed weight (tonnes) of brown crab by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

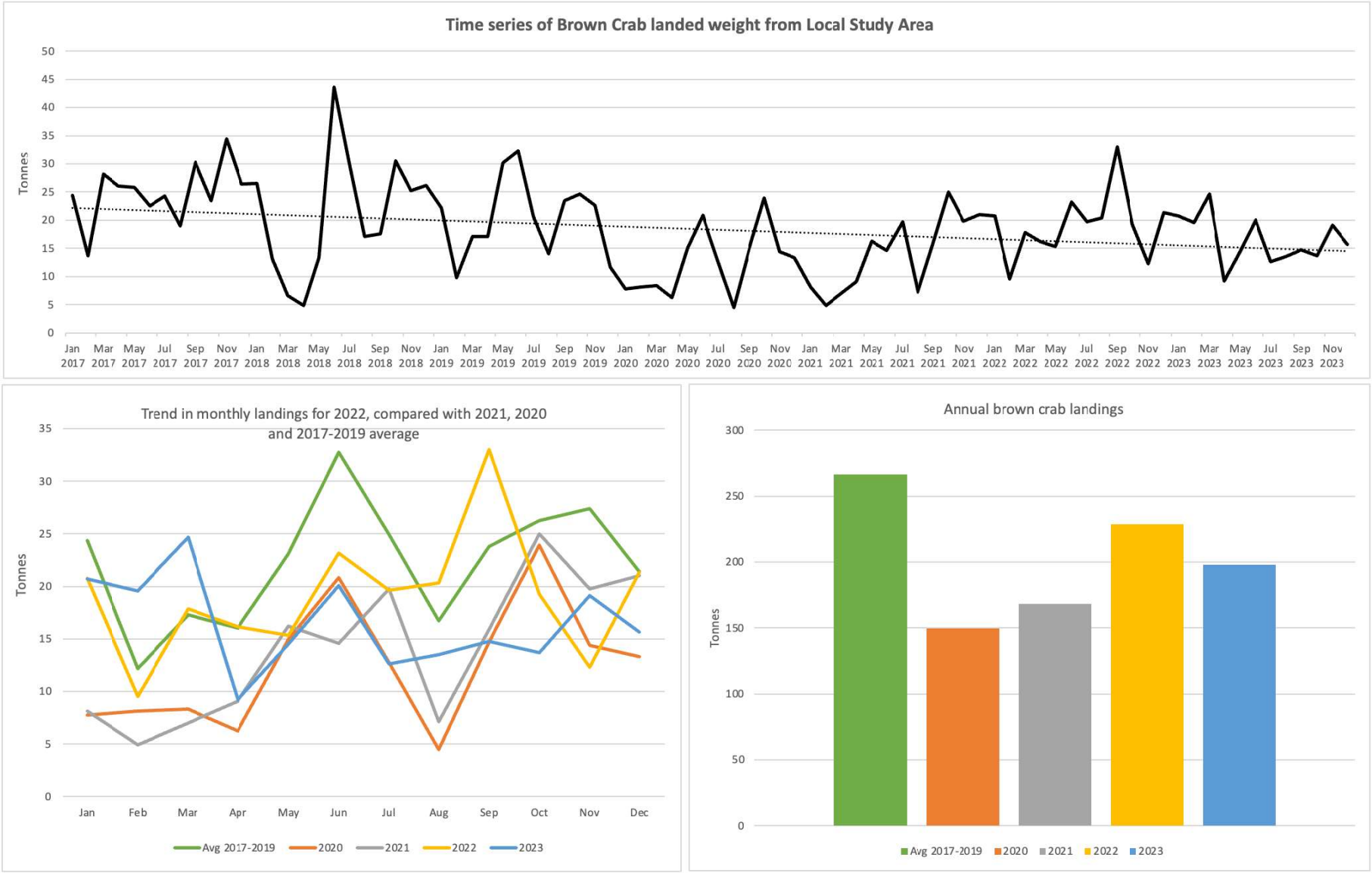

Figure 4.10. Time series, trendlines and inter-annual variation of landed weight (tonnes) of brown crab from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

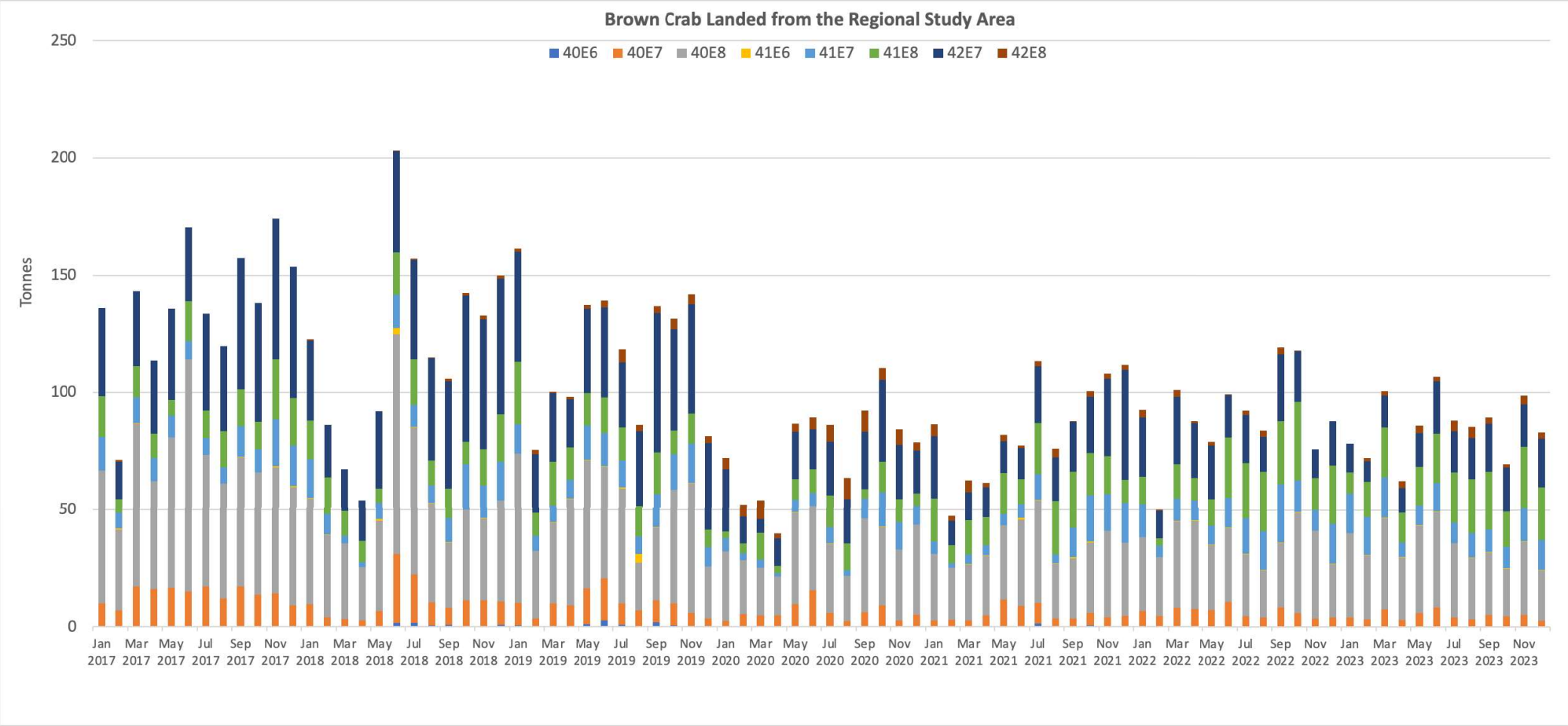

Figure 4.11. Time series of landed weight (tonnes) of brown crab by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

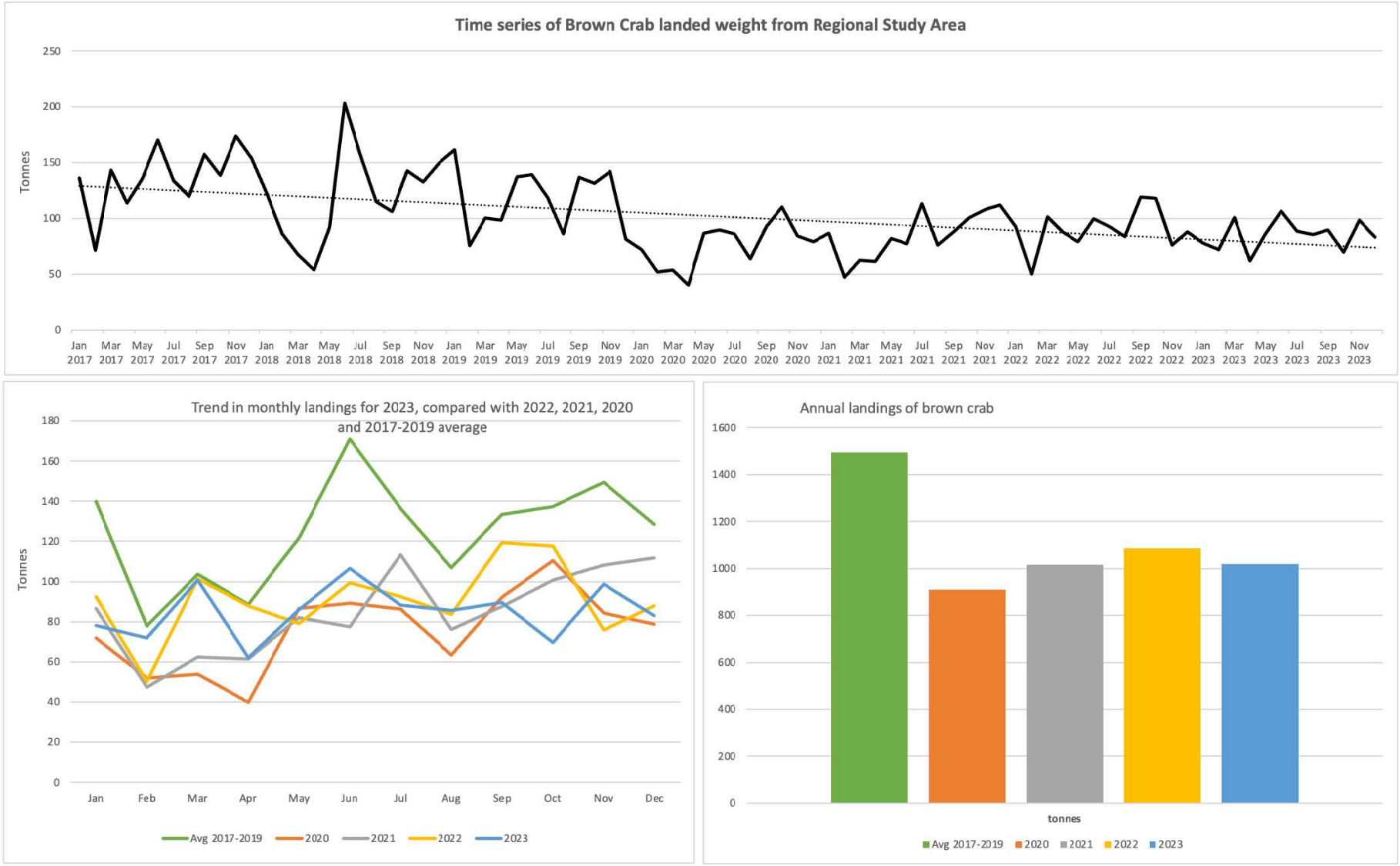

Figure 4.12. Time series, trendlines and inter-annual variation of landed weight (tonnes) of brown crab from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

4.4 Razor clam

4.4.1 Razor clam: local study area

77. Analysis of all species landed from the local study area (see Section 3) indicates that razor clam has grown in importance over time and is therefore included in the inter-annual analysis for Report 3e. The monthly landings of razor from the local study area are shown in Figure 4.13 and Figure 4.14 for the time series January 2017 to December 2023.

78. Landings are consistently higher from rectangle 41E7, with 40E7 contributing small but occasional amounts. The dataset highlights substantial month-to-month variability, with totals ranging from fewer than 5 tonnes in some months to peaks above 25 tonnes, particularly in 2021 and 2022. The fitted trendline suggests a gradual increase in landings across the seven-year period.

79. Annual and seasonal patterns indicate clear fluctuations over time. During the 2017–2019 baseline, annual landings averaged around 110 tonnes, with occasional monthly totals exceeding 15 tonnes. In 2020, landings dropped to below 90 tonnes, marking the lowest annual figure in the series. Activity increased again in 2021, with totals of around 180 tonnes, supported by strong peaks in July and September. This high level was sustained into 2022, which recorded similar values and included some of the highest monthly totals in the dataset. In 2023, landings declined slightly to around 170 tonnes but remained well above the baseline and 2020 levels.

80. Overall, razor clam landings in the local study area show interannual variability with notable increases since 2020. Stronger monthly peaks in recent years suggest that this fishery has become increasingly important locally, with 2021 and 2022 standing out as particularly productive years.

4.4.2 Razor clam: regional study area

81. The monthly landings of brown crab from the regional study area are shown in Figure 4.15 and Figure 4.16 for the time series January 2017 to December 2023.

82. Landings are dominated by rectangle 41E7, with occasional contributions from 40E6, 40E7, 41E6, and 42E7. This pattern is consistent throughout the series, with 41E7 providing the bulk of recorded landings.

83. The long-term dataset shows considerable variability, with monthly totals ranging from close to zero to peaks above 30 tonnes. Several strong peaks are evident, particularly in 2018, 2019, 2021, and 2022. The fitted trendline indicates a gradual upward trend across the seven-year period, in contrast with the slightly declining trend observed locally.

84. The following points are noted in relation to the annual and seasonal patterns:

- 2017–2019 baseline: Average annual landings were around 110 tonnes, with monthly totals typically ranging between 5–20 tonnes.
- 2020: Landings fell to around 80 tonnes, the lowest annual total in the dataset.
- 2021: Landings recovered strongly to approximately 230 tonnes, more than doubling the 2020 total.
- 2022: Landings remained high at around 215 tonnes, supported by sustained monthly peaks of 20–30 tonnes.
- 2023: Landings of around 175 tonnes were recorded, above the 2017–2019 baseline but below the 2021–2022 totals.

85. Overall, razor clam landings in the regional study area show greater consistency and a more evident increasing trend compared with the local study area. While interannual variability remains a feature of the fishery, the sustained high totals in 2021 and 2022 highlight its continuing importance, with 2023 maintaining activity well above early baseline levels.

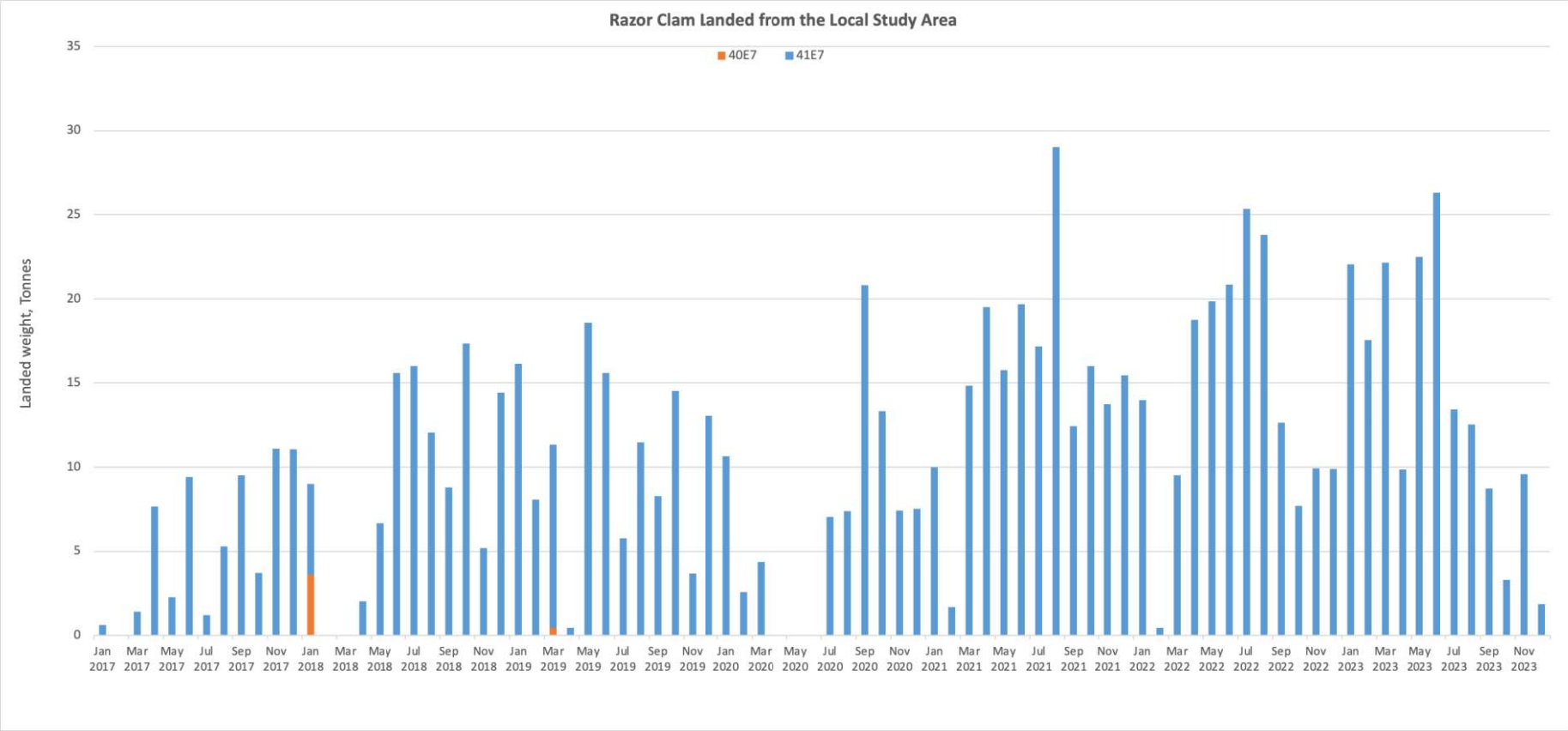

Figure 4.13. Time series of landed weight (tonnes) of razor clam by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

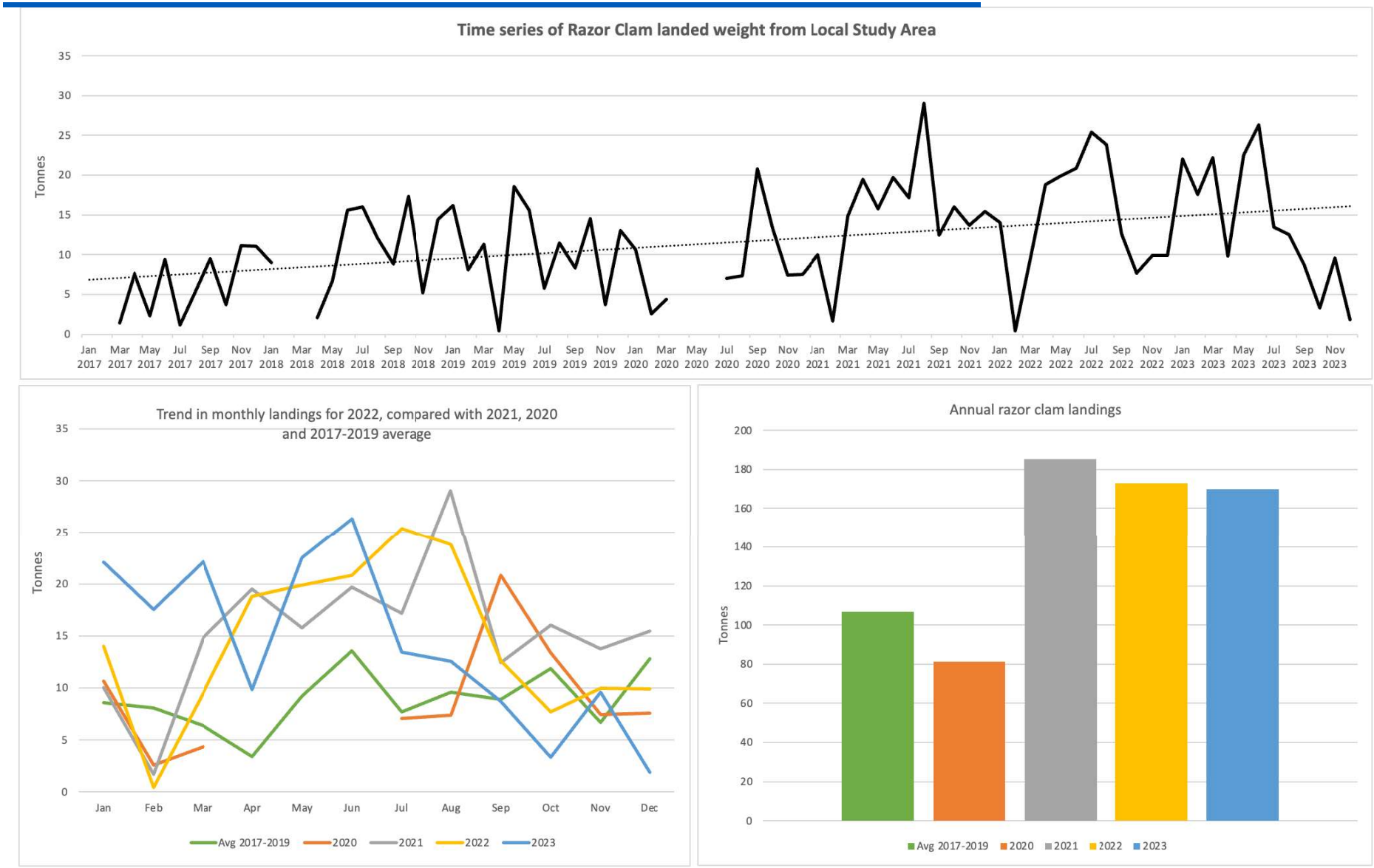

Figure 4.14. Time series, trendlines and inter-annual variation of landed weight (tonnes) of razor clam from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

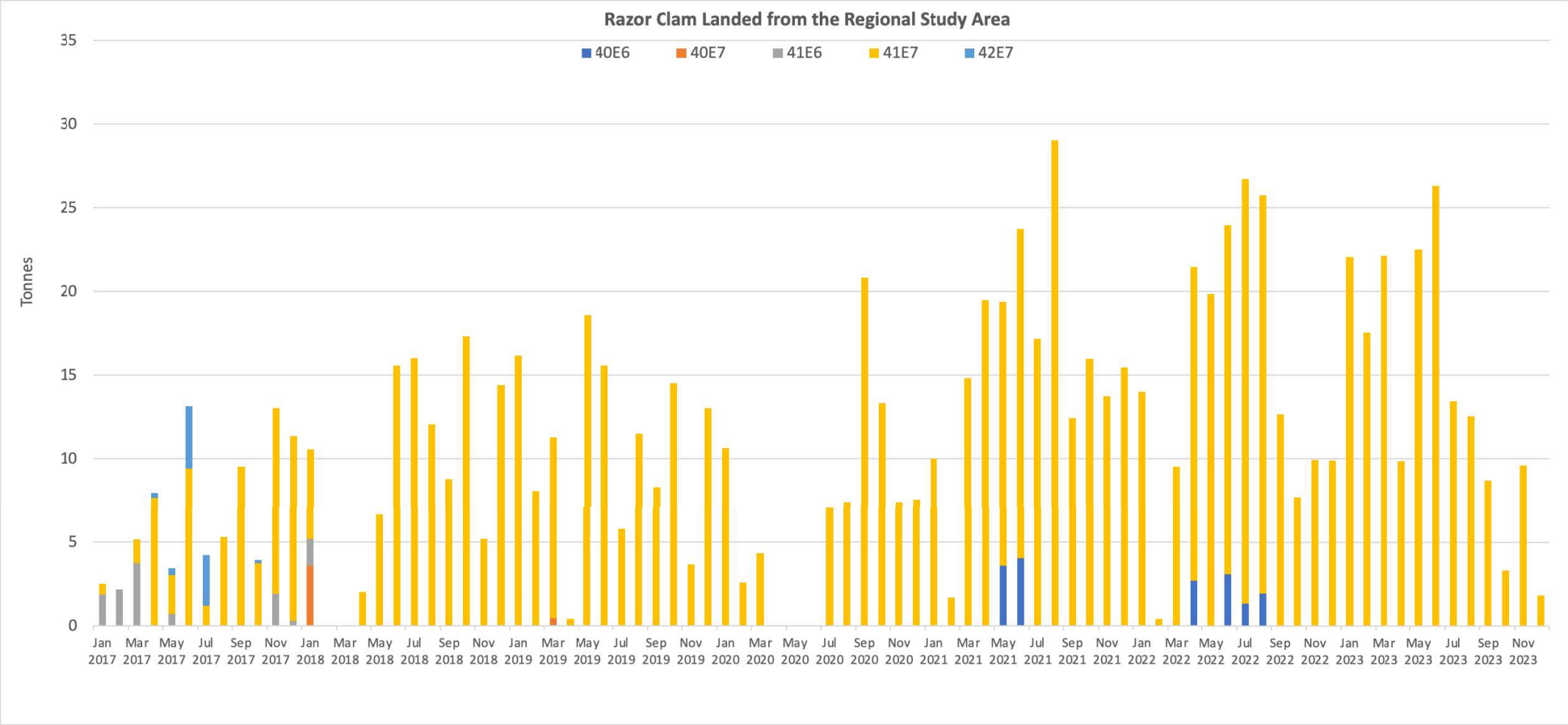

Figure 4.15. Time series of landed weight (tonnes) of razor clam by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

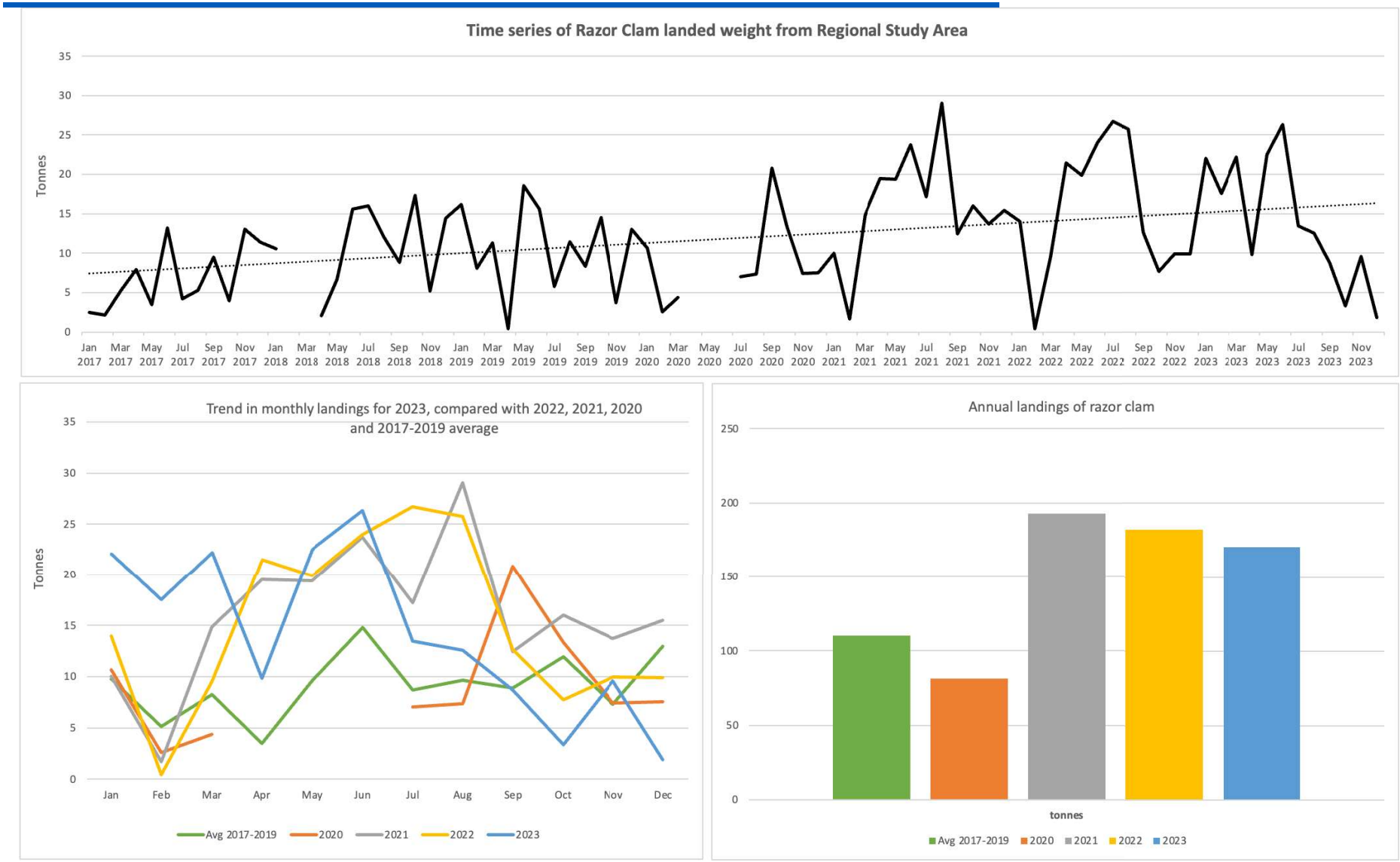

Figure 4.16. Time series, trendlines and inter-annual variation of landed weight (tonnes) of razor clam from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

4.5 Squid

4.5.1 Squid: local study area

86. The monthly landings of squid from the local study area are shown in Figure 4.17 and Figure 4.18 for the time series January 2017 to December 2022.

87. The time series demonstrates that squid landings are generally low and sporadic, with most months recording minimal or no landings. However, occasional sharp peaks are evident:

- The largest spike occurred in autumn 2017, with landings reaching over 10 tonnes.
- Subsequent smaller peaks were recorded in 2019 (~6–7 tonnes), 2020 (~4 tonnes), and 2021 (~3 tonnes).
- Another pronounced increase is observed in late 2023 (~6–7 tonnes).
- The fitted time series line confirms that these are irregular events rather than part of a consistent seasonal cycle.

88. Squid landings are typically concentrated in late summer and autumn (July–October), but not every year produces significant catches. Annual totals show high variability:

- 2017: ~13 tonnes, the highest in the dataset.
- 2018–2021: Lower totals, generally between 2–6 tonnes.
- 2022: Among the lowest years (~3 tonnes).
- 2023: A marked increase (~14 tonnes), the highest since 2017.

89. The comparison of monthly averages shows that while 2017–2019 and 2020–2022 both had some seasonal peaks, 2023 stands out for a pronounced late summer/autumn spike, lifting annual totals above previous years.

90. Squid landings from the local study area are characterised by low baseline catches punctuated by occasional sharp peaks, most often in late summer and autumn. These peaks contribute disproportionately to annual totals, which explains the strong year-to-year variation. The notable increase in 2023 demonstrates that while squid is a minor component of landings, it remains a species of interest due to the potential for sudden, high-yield periods.

4.5.2 Squid: regional study area

91. The monthly landings of squid from the regional study area are shown in Figure 4.19 and Figure 4.20 for the time series January 2017 to December 2023. At the regional scale, landings show a similar sporadic pattern, but with larger and more frequent peaks. The dataset is dominated by catches from 40E6 and 41E7, with other rectangles contributing smaller volumes. Notable peaks include:

- 2017: a sharp rise to over 20 tonnes in late summer/autumn.
- 2020: a strong peak (~18 tonnes).
- 2022: another significant peak (~22 tonnes), the highest in the series notably from 42E7 (north of the Array Area).
- Other years, including 2018, 2019, 2021 and 2023, show smaller but still visible pulses of landings.

92. Annual totals for the region range from ~10 tonnes in quieter years to over 30 tonnes in peak years, with higher variability than the local dataset. Both the local and regional datasets show squid landings to be episodic, dominated by occasional peaks rather than consistent annual contributions. The regional study area records larger peaks and higher annual totals, indicating that the wider area supports a greater level of squid fishing activity than the local area alone.

93. While the local study area had its strongest years in 2017 and 2023, the regional dataset shows additional high peaks in 2020 and 2022, which were less pronounced locally. This suggests that squid abundance and catches are patchy and unevenly distributed, with stronger pulses sometimes occurring outside the local area.

94. Squid landings in both the local and regional study areas are relatively minor compared with Nephrops, lobster, or crab, but both datasets show that landings are driven by occasional strong years. At the regional level, these peaks are larger and more frequent, whereas in the local area they are less common but still notable, particularly in 2017 and 2023.

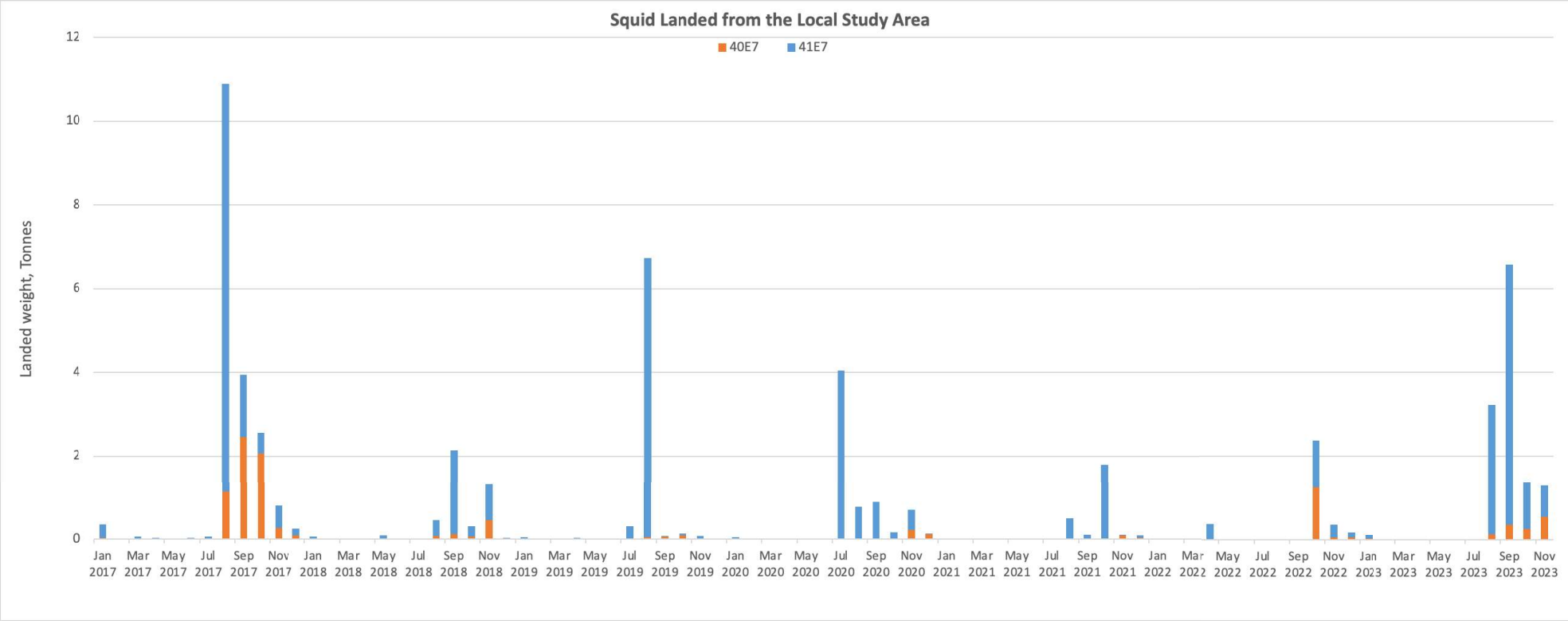

Figure 4.17. Time series of landed weight (tonnes) of squid by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

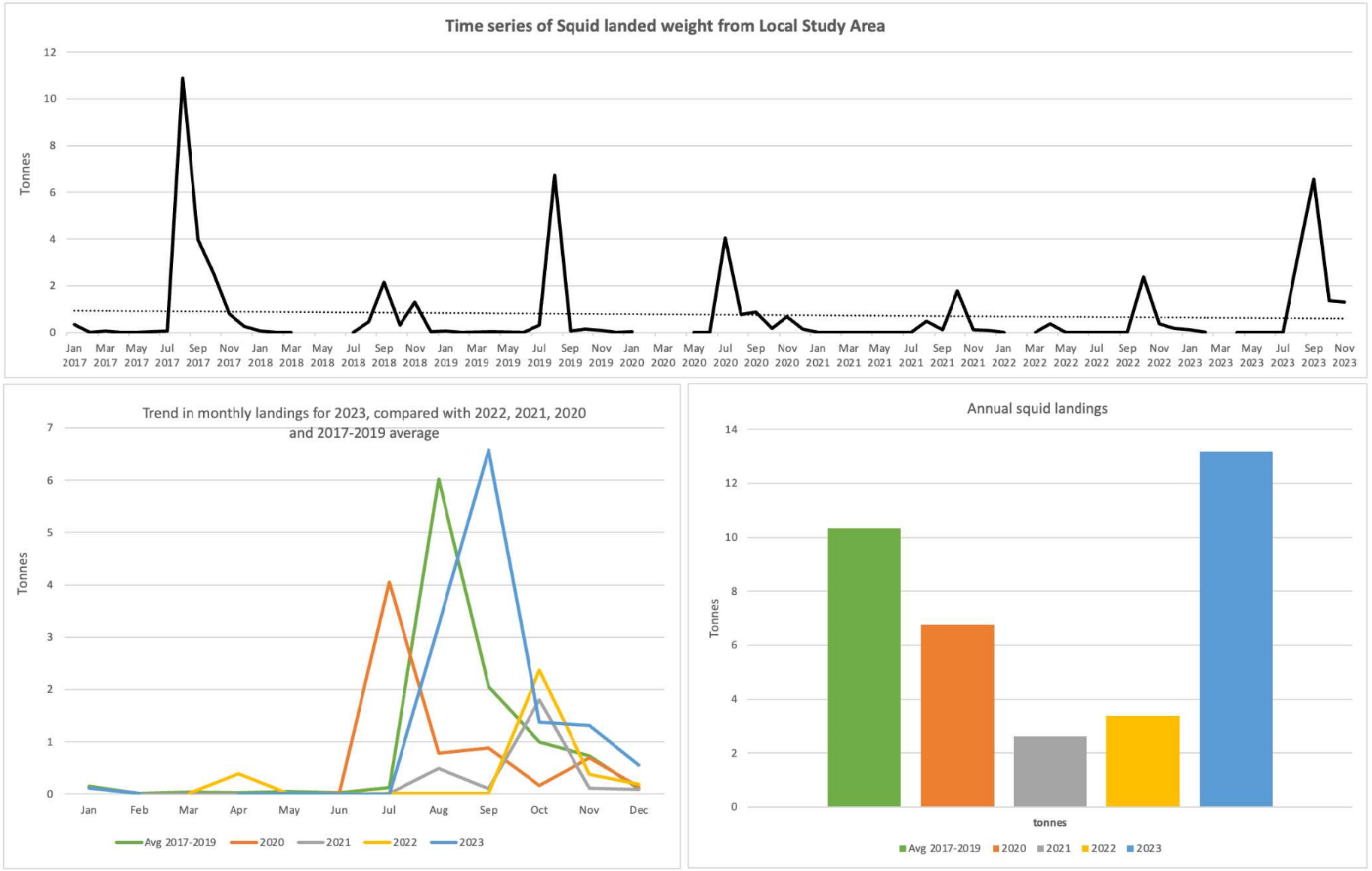

Figure 4.18. Time series, trendlines and inter-annual variation of landed weight (tonnes) of squid from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2021)

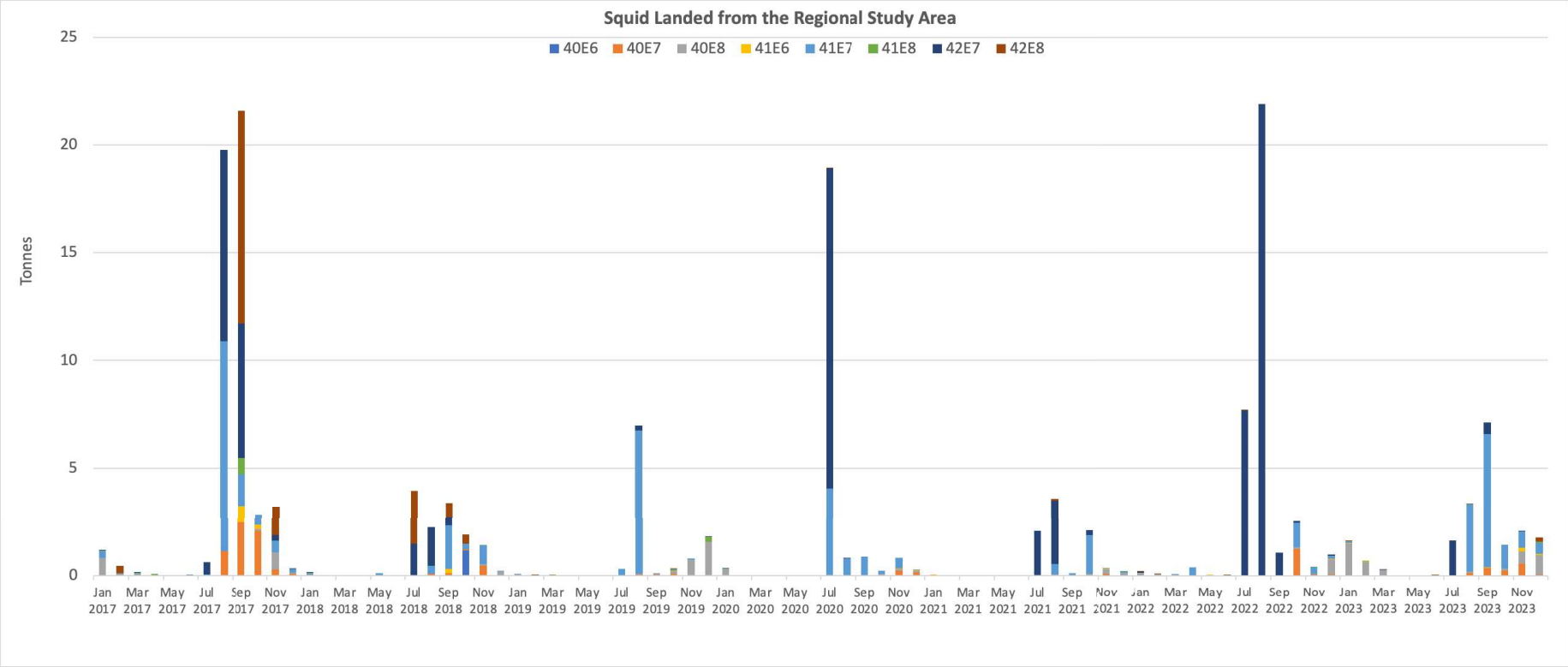

Figure 4.19. Time series of landed weight (tonnes) of squid by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

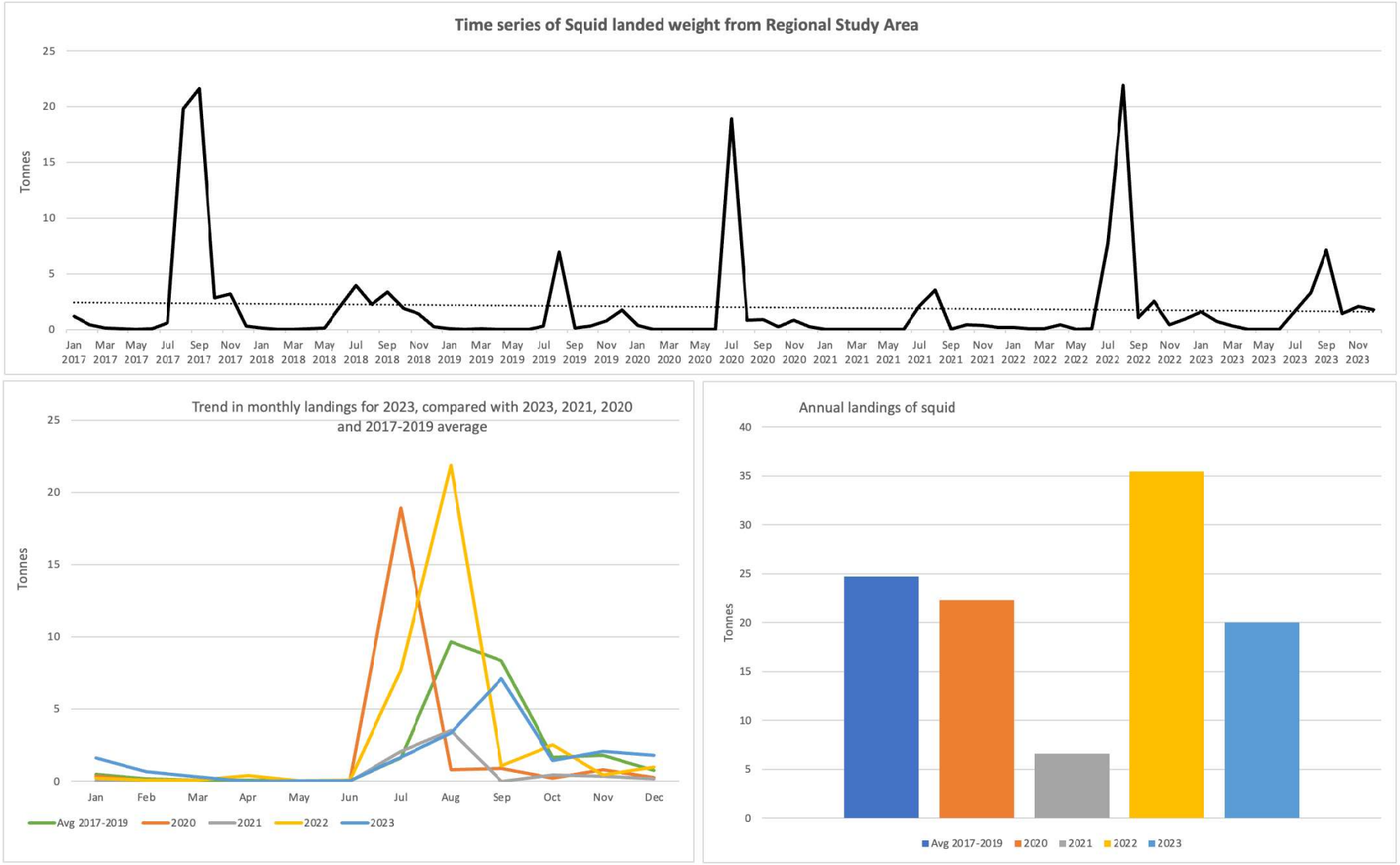

Figure 4.20. Time series, trendlines and inter-annual variation of landed weight (tonnes) of squid from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

5 Landings by port

95. This section of the report provides analysis of the 2021-2023 MMO landings dataset which allows concurrent analysis across both ICES rectangles and port of landing. The MMO dataset has been analysed to understand which ports of landings are important across the local and regional study area.

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

5.1 Overview

97. Analysis of fisheries data from 2021 to 2023 demonstrates the continuing importance of the local study area (ICES rectangles 40E7 and 41E7) within the wider regional context (ICES rectangles 42E7, 42E8, 41E6, 41E7, 41E8, 40E6, 40E7, and 40E8).

98. In the local study area, landed weight increased from 1,718 tonnes in 2021 to a peak of 2,114 tonnes in 2022, before decreasing slightly to 1,997 tonnes in 2023 (Table 5.1). First sales value followed a similar trajectory, rising from £9.23 million in 2021 to £13.89 million in 2022, before moderating to £12.77 million in 2023. Despite the reduction between 2022 and 2023, both weight and value in the most recent year remained significantly higher than in 2021, indicating a sustained improvement in economic contribution over the three-year period.

99. For the regional study area, landed weight rose more steadily, from 3,926 tonnes in 2021 to 4,078 tonnes in 2022, and then to 4,162 tonnes in 2023. First sales value increased from £19.16 million in 2021 to £23.63 million in 2022, with a similar level recorded in 2023 (£23.57 million). This reflects consistent growth in both landed weight and value, though with less pronounced year-on-year changes than those observed locally.

100. The proportion of regional landings accounted for by the local study area also highlights its significance. In 2021, the local rectangles contributed 43.8% of total regional landings and 48.2% of first sales value. These proportions increased in 2022 to 51.8% of landings and 58.8% of value, before reducing slightly in 2023 to 48.0% and 54.2%, respectively. Across the three years, the local study area consistently contributed close to half of all regional landings and more than half of the value, underscoring its central role in the regional fishery.

101. Overall, the data demonstrate growth in both landed weight and value across the local and regional scales, with the local study area showing particularly strong performance in 2022. The sustained contribution of the local rectangles highlights their importance in supporting the economic value of the wider regional fishery.

Table 5.1. Total landings from local and regional study areas for 2021 to 2023 (data source: MMO, 2024)

STUDY AREA	ICES RECTANGLES	LANDED WEIGHT (TONNES)			FIRST SALES VALUE (£)		
		2021	2022	2023	2021	2022	2023
Local study area	40E7, 41E7	1,718	2,114	1,997	£9,234,481	£13,894,551	£12,773,878
Regional study area	42E7, 42E8, 41E6, 41E7, 41E8, 40E6, 40E7, 40E8.	3,926	4,078	4,162	£19,161,743	£23,631,458	£23,567,013
Proportion of regional landings from the local study area		43.76%	51.84%	47.99%	48.19%	58.80%	54.20%

102. Landed weight and value from January to December during 2021 to 2023 (Figure 5.1) indicates a peak in landings during summer, notably July and August, and lower activity during January to May, notably low in February.

103. Landed weight and value for 2021 to 2023 is presented by port of landing and ICES rectangle in *Figure 5.2* for the regional study area, which includes ICES rectangles 40E7 and 41E7 (which make up the local study area).

104. The highest quantity and value are landed into Pittenweem for all years, with landings almost exclusively from ICES rectangle 41E7. Landings into Dunbar are primarily 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 and Burnmouth are predominately from outside the local study area.

105. The seasonality of first sales value landed by port of landing is depicted in Figure 5.3 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.

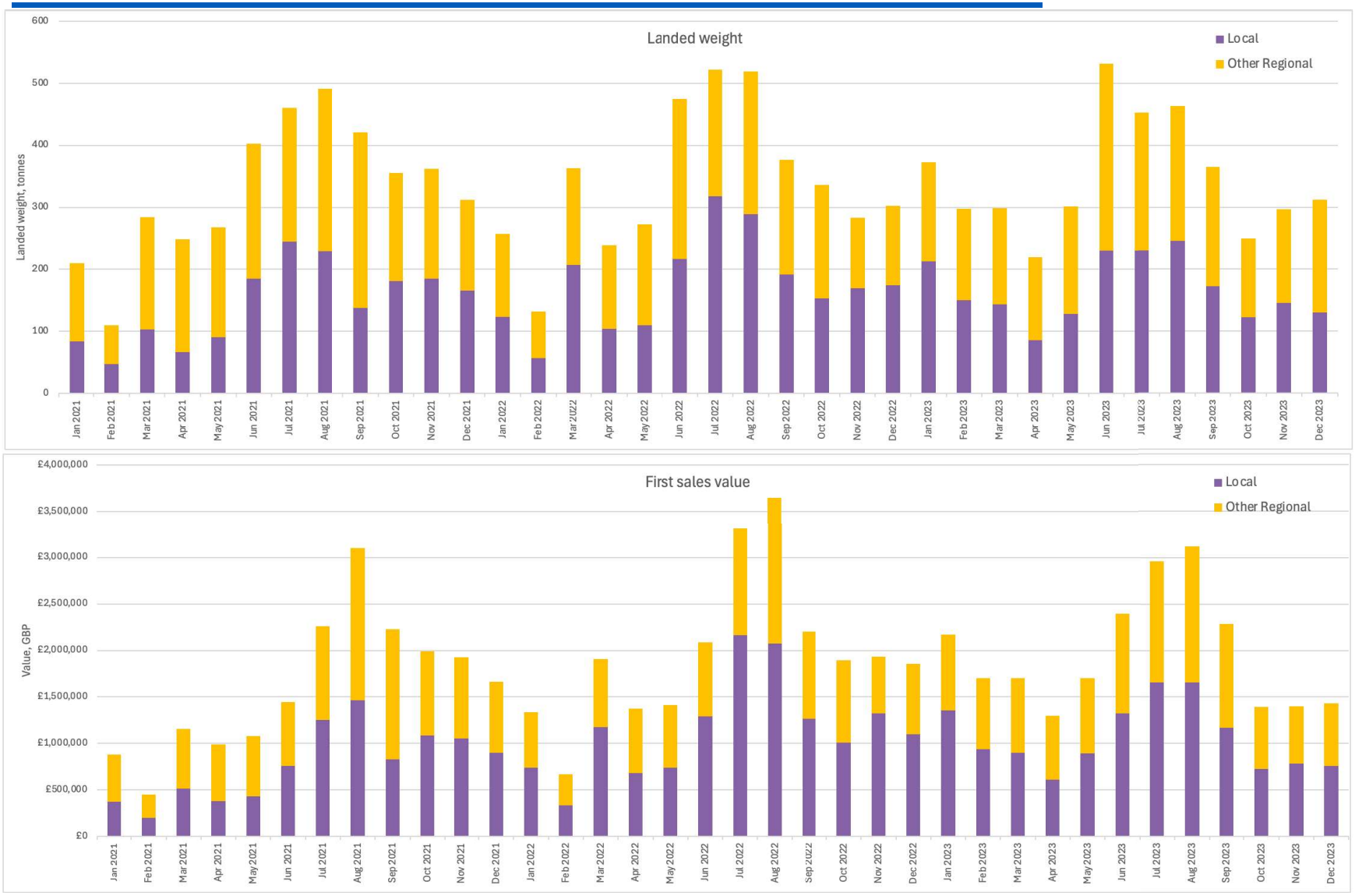

Figure 5.1. Landed weight and first sales value landed from January to December 2021 and 2023 from the total regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8), indicating the portion landed form the local study area (40E7 and 41E7) (data source: MMO, 2023)

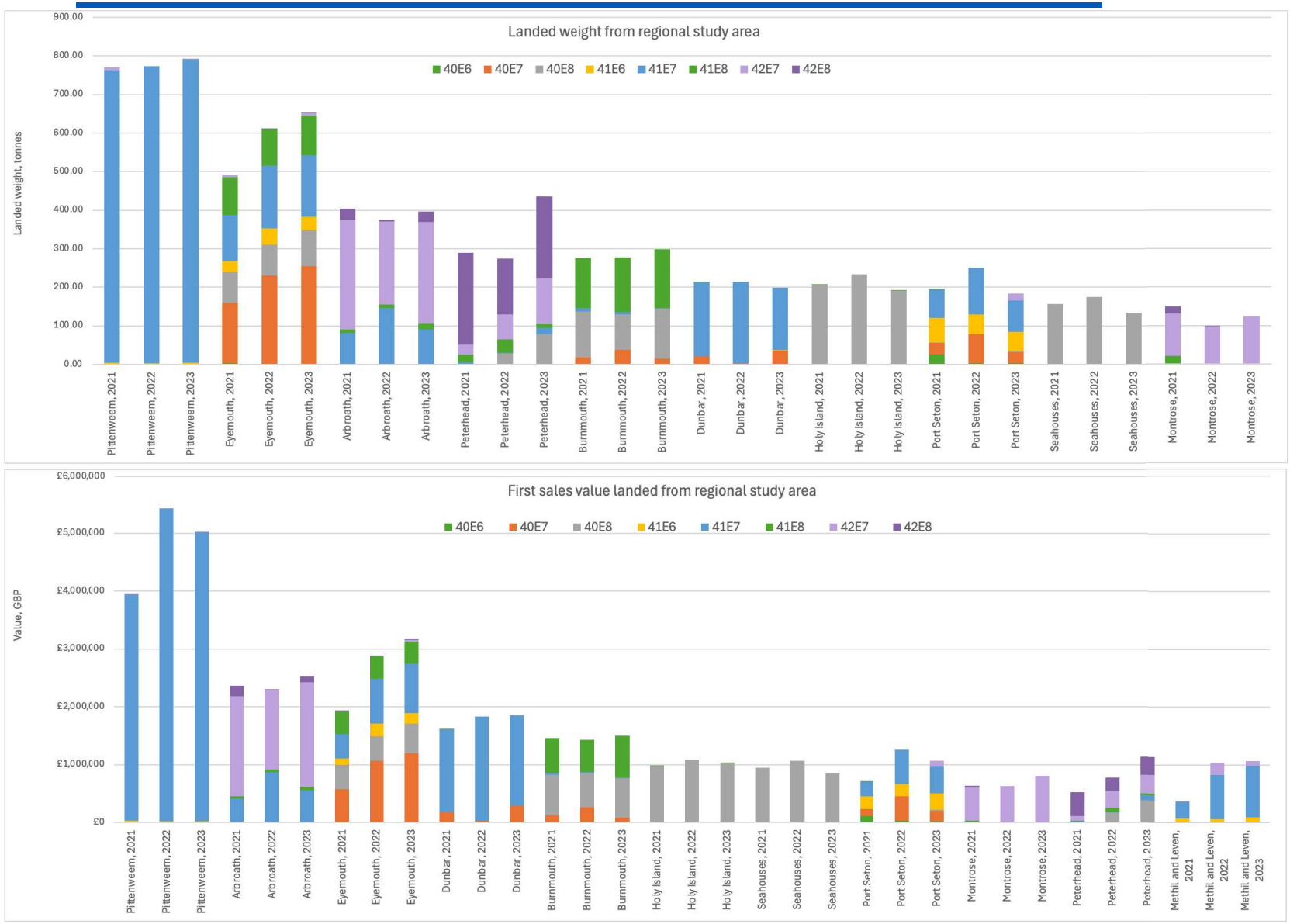

Figure 5.2. Landed weight and first sales value by port of landing from the total regional study area, 2021-2023 (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2024)

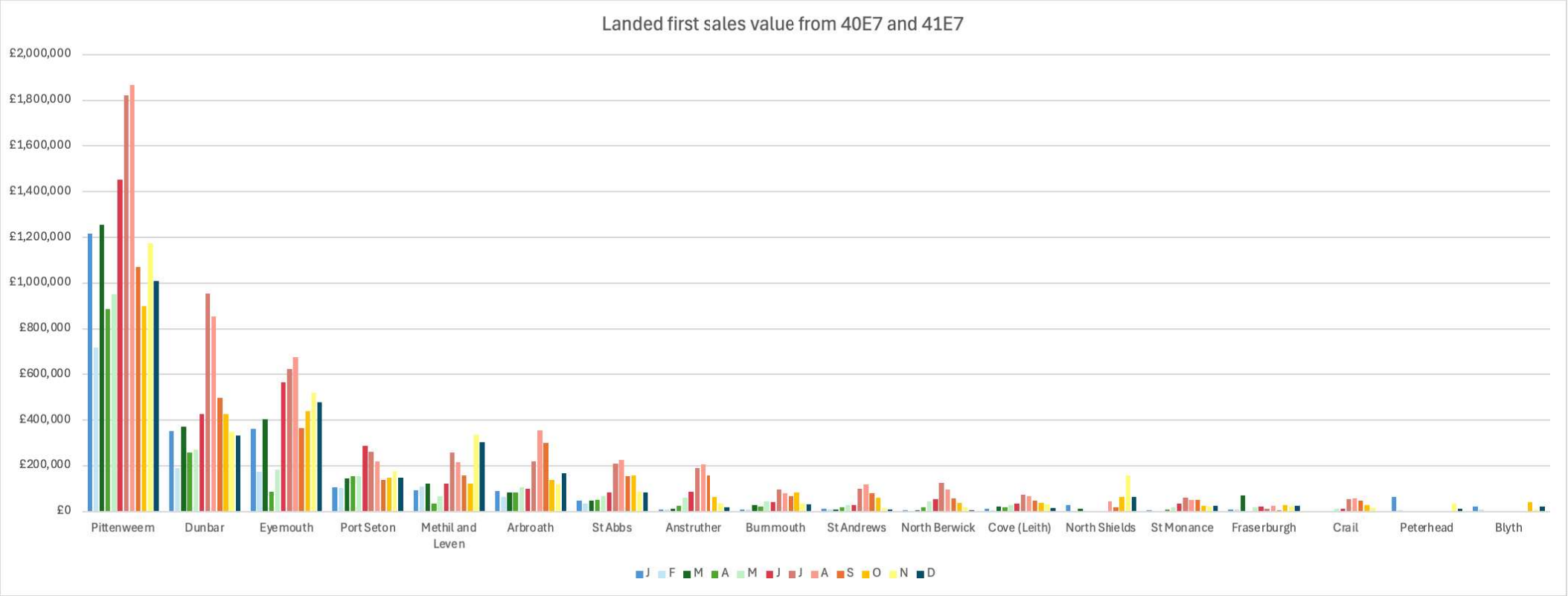

Figure 5.3. Monthly average landings indicating first sales value by port of landing from the local study area (ICES rectangles 40E7 and 41E7) average from 2021-2023 (data source: MMO, 2024)

5.2 Port profiles

106. This section provides a profile of landings for each of the key ports detailing commercial catches from the local study area from 2021 to 2023.

5.2.1 Pittenweem

107. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Pittenweem from 2021 to 2023 are presented in Figure 5.4 by species and Figure 5.5 by gear type and vessel length category.

108. The results demonstrate that Nephrops dominate landings by value, increasing from around £1.6 million in 2021 to a peak of just under £3.0 million in 2022, before reducing slightly to £2.3 million in 2023. Razor clams also represent a major component, contributing consistently between £1.4–1.6 million per year across the three years.

109. Other key species include lobster, with annual values between £0.5–0.7 million, and crabs (mixed sexes), which generated values between £0.3–0.6 million. Smaller but notable contributions come from surf clams, velvet crabs, mackerel, and squid. High-value but low-volume species such as monkfish/anglers and halibut also appear but at much lower levels.

110. Overall, the species composition indicates a strong reliance on Nephrops and razor clam fisheries, supported by a diverse mix of other shellfish and finfish.

111. Demersal trawls are the dominant gear, with annual landings consistently above 400 tonnes. These catches are mainly taken by vessels in the 8–10 m, 10–12 m, 12–15 m, and 18–24 m length categories, indicating participation by both smaller inshore vessels and larger trawlers.

112. Other passive gears (such as creels and lines) are the second most important category, landing between 120–150 tonnes annually, with effort concentrated in the 8–10 m and 10–12 m size classes. Pots and traps also contribute significantly, with landings between 100–130 tonnes, again primarily by smaller vessels.

113. Landings from other mobile gears are lower (40–50 tonnes annually), while dredge gears contribute smaller but consistent volumes (around 20–40 tonnes). Handlines make only a minor contribution, with a few tonnes landed per year.

114. The distribution of landings across vessel lengths highlights the importance of the small-scale fleet (<12 m) for Pittenweem, particularly in passive gear and pot fisheries, while larger trawlers (18–24 m) provide a significant share of demersal trawl landings.

115. Summary: At Pittenweem, the fishery is dominated by Nephrops and razor clams in terms of value, while demersal trawls and passive gears account for the majority of landed weight. The combination of larger offshore trawlers and a strong small-scale creel and passive gear fleet underlines the port's role as a diverse mixed-fishery landing site.

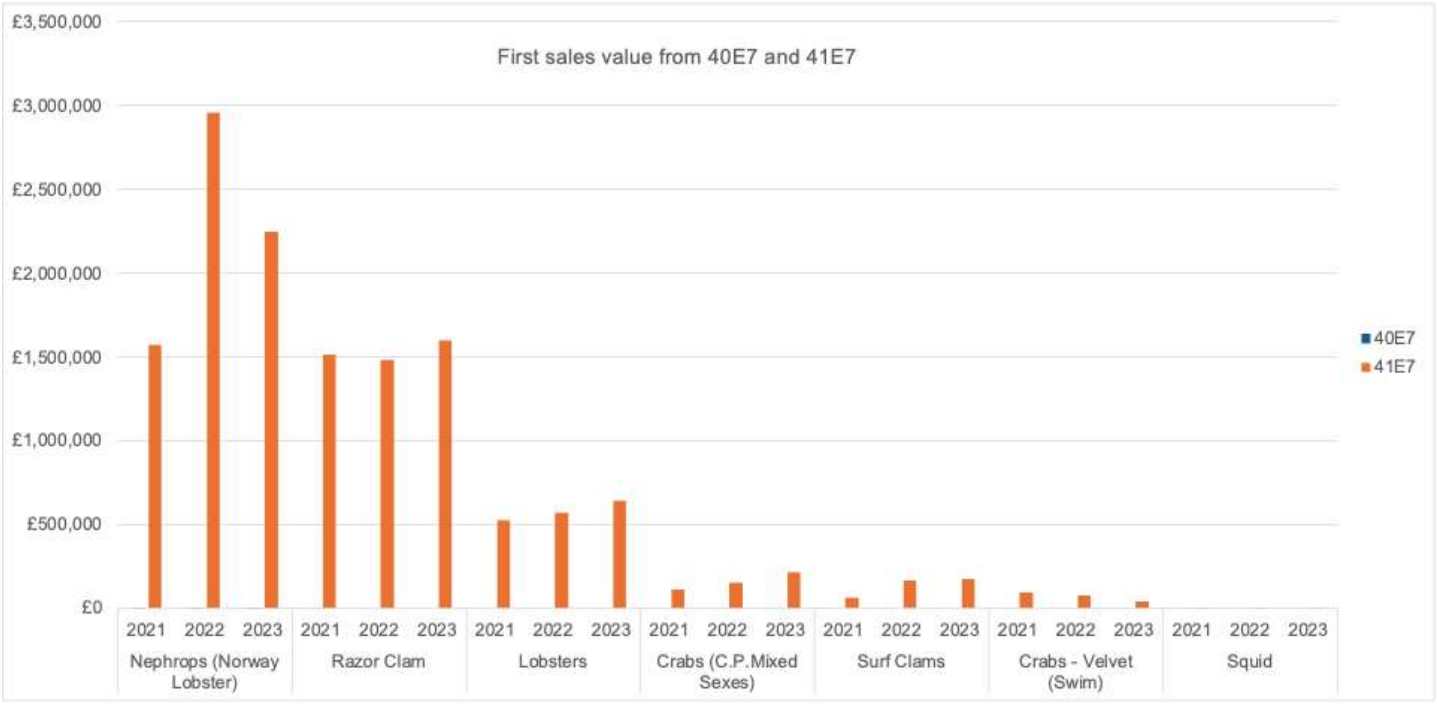

Figure 5.4. First sales value of species landed into Pittenweem from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

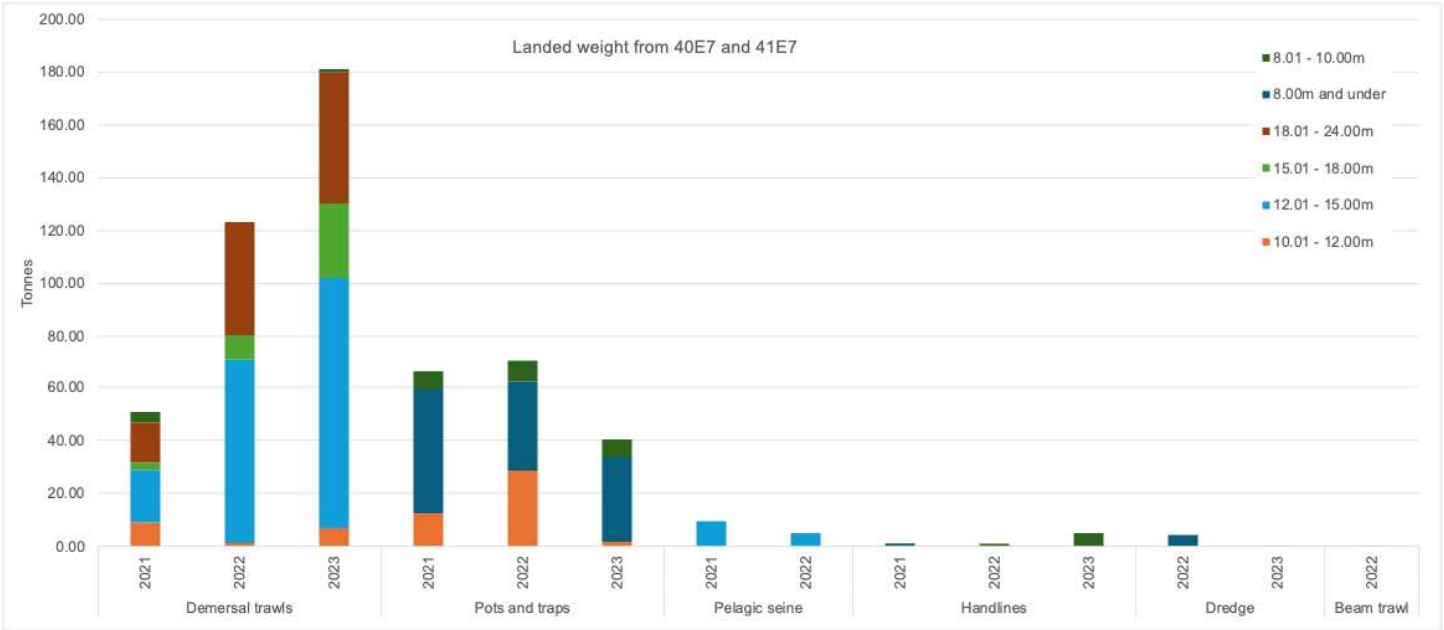

Figure 5.5. Landed weight (tonnes) of landings into Pittenweem from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

5.2.2 Dunbar

116. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Dunbar from 2021 to 2023 are presented in Figure 5.6 by species and Figure 5.7 by gear type and vessel length category.

117. The results highlight that lobsters are the most important species group for Dunbar in terms of value. Landings increased from around £1.0 million in 2021 to a peak of £1.35 million in 2022, before reducing slightly to £1.1 million in 2023. Nephrops also represent a key component, contributing around £0.3–0.4 million annually, with relatively stable values across the three years.

118. Other shellfish species make smaller contributions. Crabs (mixed sexes) provide modest value, while velvet crabs contribute at low but consistent levels. Low-value but diverse landings of monkfish/anglers, squid, whelks, scallops, and mackerel are also evident, though all contribute much less compared to lobsters and Nephrops.

119. Overall, the species composition for Dunbar indicates a strong reliance on shellfish, particularly lobsters, supported by secondary contributions from Nephrops and crabs.

120. Pots and traps dominate landings, accounting for around 100–125 tonnes annually. The majority of this catch is made by vessels in the 8–10 m length class, with additional contributions from ≤8 m vessels. This highlights the importance of the small-scale inshore fleet in sustaining the local lobster and crab fishery.

121. Demersal trawls represent the second most important gear type, landing around 80–100 tonnes annually. These catches are largely taken by vessels in the 10–12 m length class, with smaller contributions from the 8–10 m and 12–15 m classes. A small amount of landings were also made by vessels in the 15–18 m range in 2021.

122. Handline landings were recorded in 2022, though these volumes were minimal compared to pots and trawls.

123. Summary: Dunbar's fishing profile is defined by its inshore potting fleet targeting lobster and crab, supported by a smaller but steady contribution from demersal trawlers. In terms of value, lobsters are the dominant species, with Nephrops providing an important secondary component. The reliance on small vessels underlines the port's role as a centre for local, shellfish-focused fisheries.

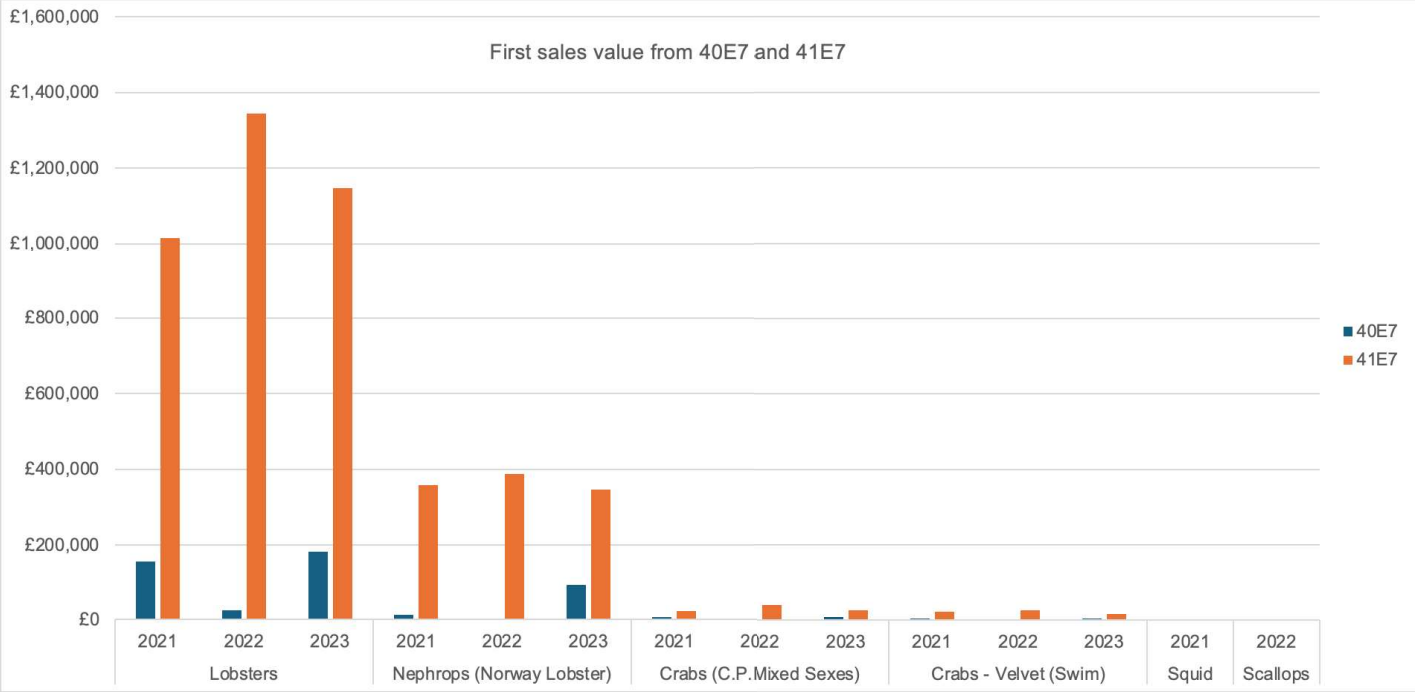

Figure 5.6. First sales value of species landed into Dunbar from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

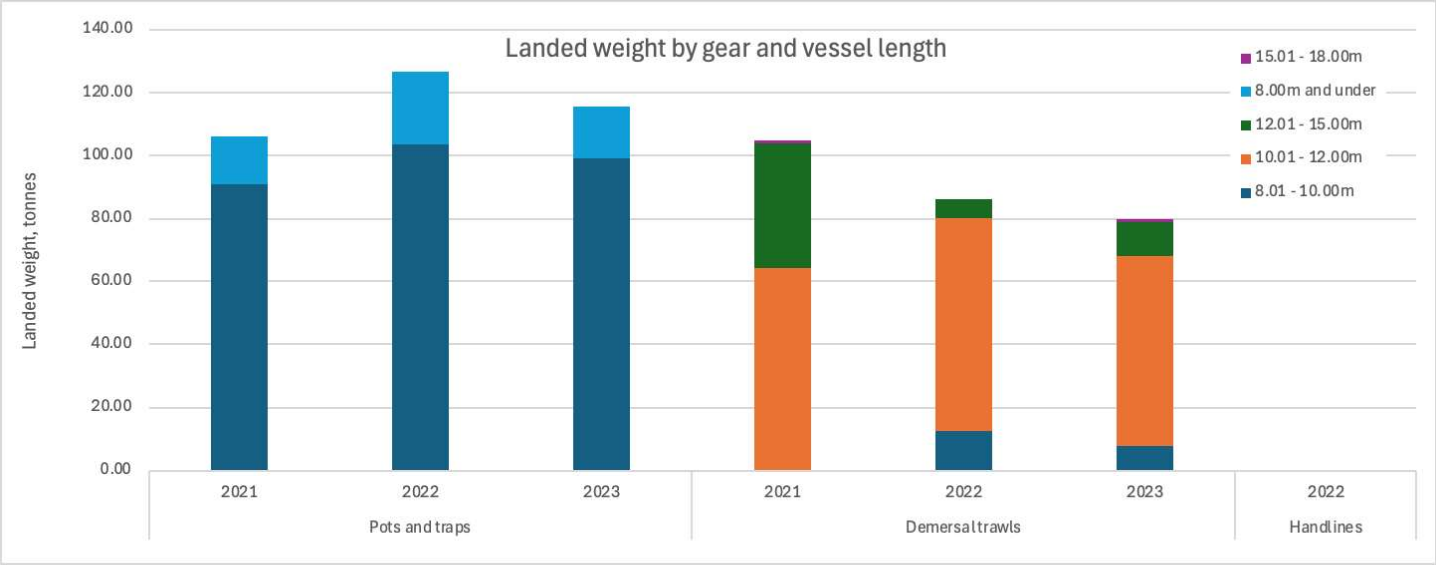

Figure 5.7. Landed weight (tonnes) of landings into Dunbar from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

5.2.3 Eyemouth

124. 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 2021 to 2023 are presented in Figure 5.8 by species and Figure 5.9 by gear type and vessel length category.

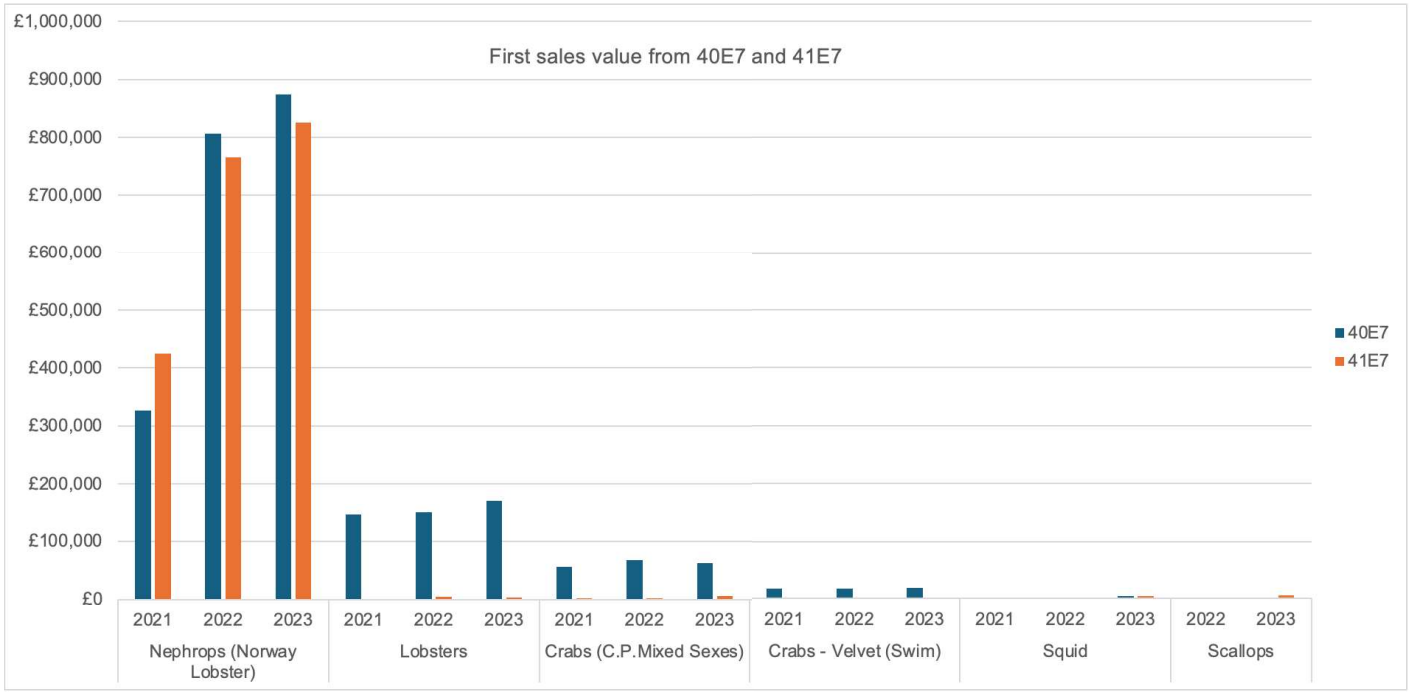

Figure 5.8. First sales value of species landed into Eyemouth 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

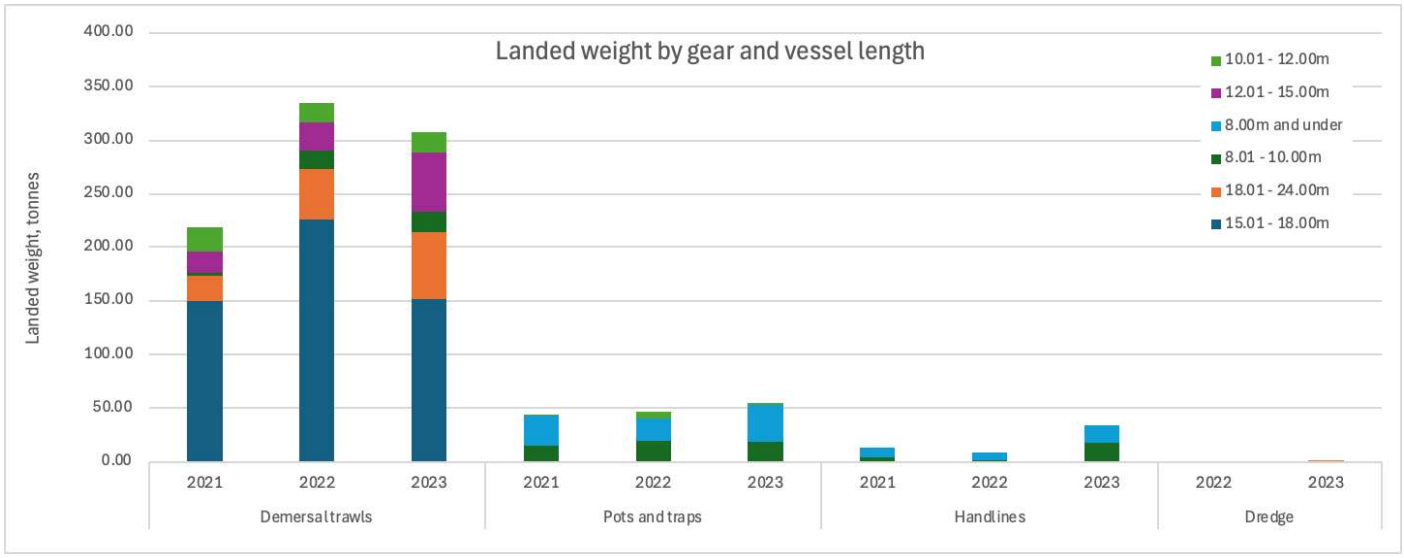

Figure 5.9. Landed weight (tonnes) of landings into Eyemouth from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

125. The data highlight that Nephrops are the most valuable species landed at Eyemouth. Values increased from approximately £0.35 million in 2021 to over £0.8 million in 2022, before holding steady at similar levels in 2023. Lobsters are the second most important species, with values rising from around £0.14 million in 2021 to nearly £0.18 million in 2023, showing modest but consistent growth.

126. Smaller but regular contributions are made by crabs (mixed sexes), velvet crabs, and mackerel, each generating tens of thousands of pounds annually. Other species, including squid, scallops, halibut, monkfish/anglers, turbot, and whelks, are present in landings but at relatively low values.

127. This species composition demonstrates that Eyemouth has a mixed fishery, though Nephrops and lobsters dominate the value of landings.

128. Demersal trawls dominate landings, with annual totals increasing from just under 200 tonnes in 2021 to around 330 tonnes in 2022, before stabilising at just over 300 tonnes in 2023. The majority of this catch comes from vessels in the 15–18 m class, supported by contributions from the 18–24 m and 12–15 m categories, showing that Eyemouth is serviced by a predominantly medium-to-large trawler fleet.

129. Pots and traps contribute smaller but steady amounts (30–50 tonnes annually), primarily from 8–10 m and 10–12 m vessels, underlining the role of the inshore fleet in supporting shellfish landings. Handlines provided a minor contribution in 2021 and 2023. Dredge landings were only recorded in 2023, though at very low levels.

130. Summary: Eyemouth's landings are dominated by demersal trawl fisheries for Nephrops, with significant additional value derived from lobster potting by the inshore fleet. Compared to ports like Pittenweem and Dunbar, Eyemouth shows a stronger reliance on medium-to-large trawlers, while still maintaining a supporting shellfish fishery from small vessels.

5.2.4 Port Seton

131. 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 from 2021 to 2023 are presented in Figure 5.10 by species and Figure 5.11 by gear type and vessel length category.

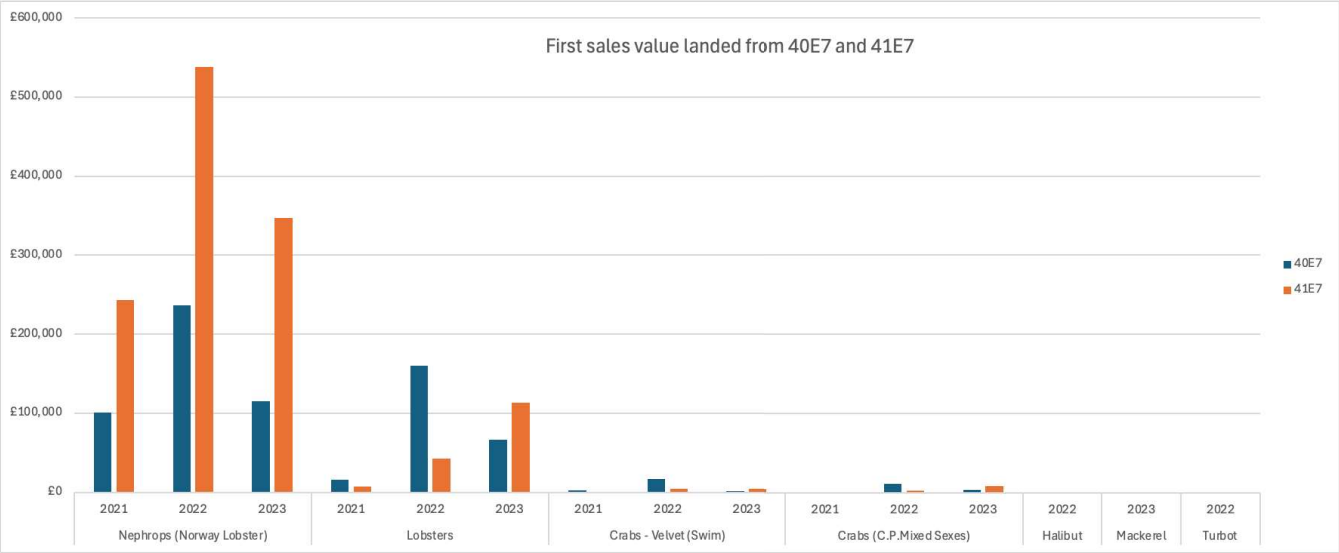

Figure 5.10. First sales value of species landed into Port Seton from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

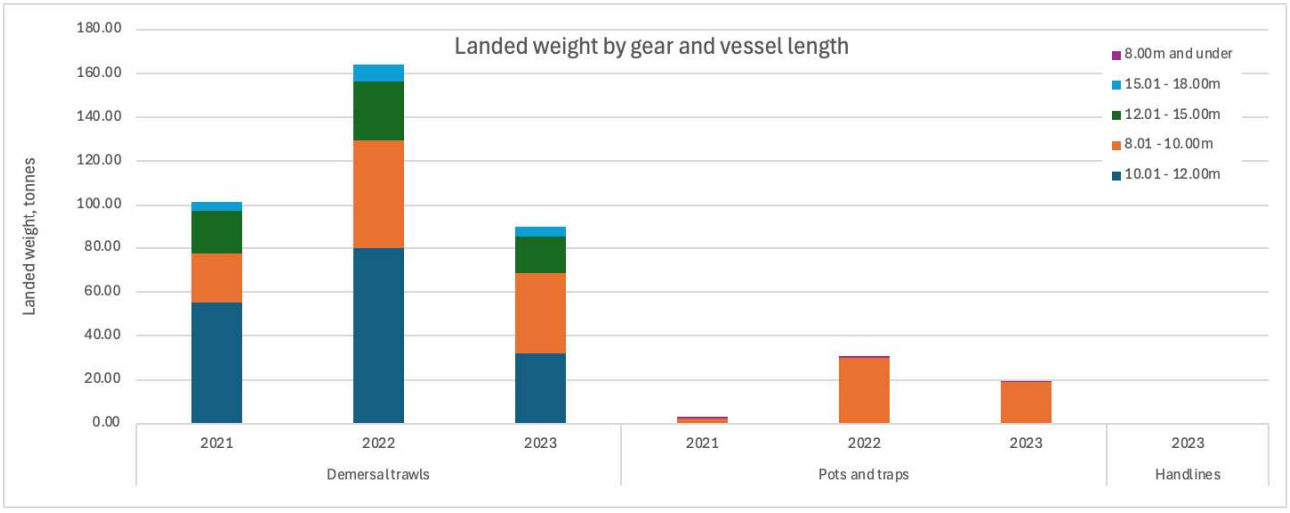

Figure 5.11. Landed weight (tonnes) of landings into Port Seton from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

132. The data indicate that Nephrops are the dominant species landed at Port Seton. Values increased from around £0.1 million in 2021 to over £0.5 million in 2022, before reducing to approximately £0.35 million in 2023. Lobsters are the next most important species, with annual values rising from around £0.16 million in 2021 to around £0.18 million in 2023, showing a relatively steady trend.

133. Smaller contributions are made by velvet crabs, brown crabs, and occasional landings of halibut, turbot, and mackerel, though their overall values remain low compared to Nephrops and lobsters.

134. This species composition highlights Port Seton's dependence on shellfish fisheries, particularly Nephrops and lobster, with only minor contributions from finfish.

135. Demersal trawls dominate the fishery in weight terms, with landings rising from around 100 tonnes in 2021 to a peak of 160 tonnes in 2022, before declining to around 90 tonnes in 2023. These catches are primarily taken by vessels in the 10–12 m and 8–10 m length classes, with smaller contributions from the 12–15 m and 15–18 m categories.

136. Pots and traps represent the secondary gear type, with landings recorded at 30 tonnes in 2022 and 20 tonnes in 2023, almost entirely from the 8–10 m length class, reflecting the importance of the small inshore fleet for lobster and crab fisheries. Handlines made a small contribution in 2023.

137. Summary: Port Seton's fishery is dominated by Nephrops and lobsters, with demersal trawls providing the majority of landings and value, supported by smaller-scale potting activity from the inshore fleet. Compared to other ports in the area, Port Seton demonstrates a mixed structure with both trawl and creel activity, though overall volumes are lower than larger ports such as Eyemouth or Pittenweem.

5.2.5 Arbroath

138. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Arbroath from 2021 to 2023 are presented in Figure 5.12 by species and Figure 5.13 by gear type and vessel length category.

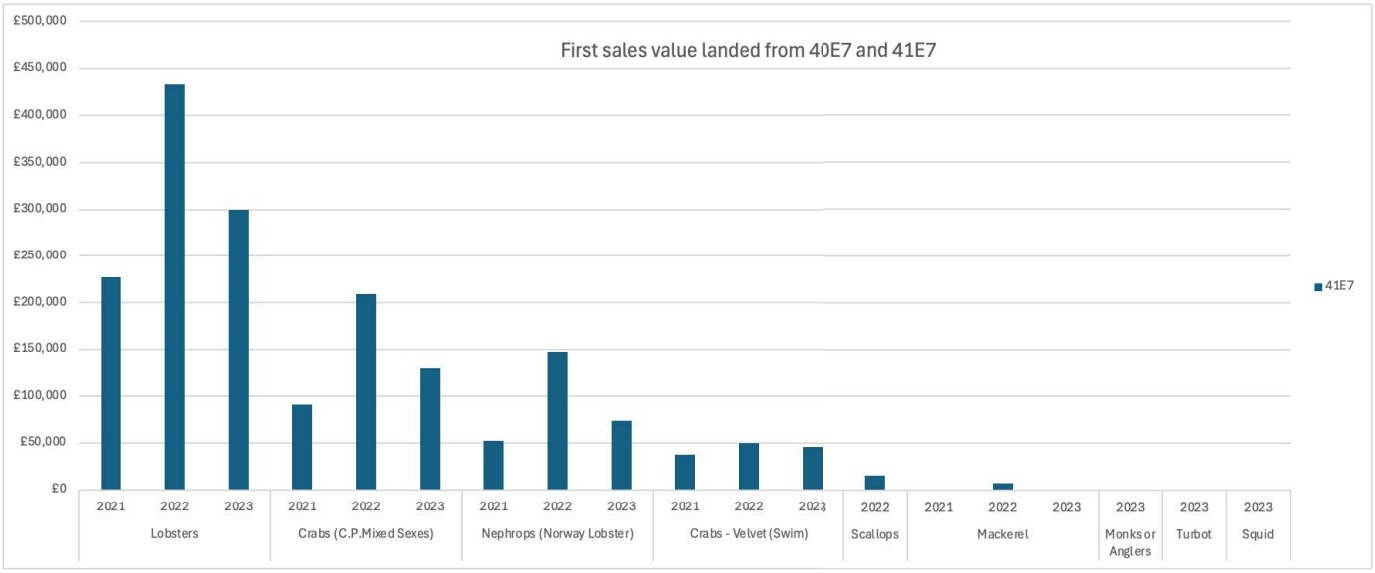

Figure 5.12. First sales value of species landed into Arbroath from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

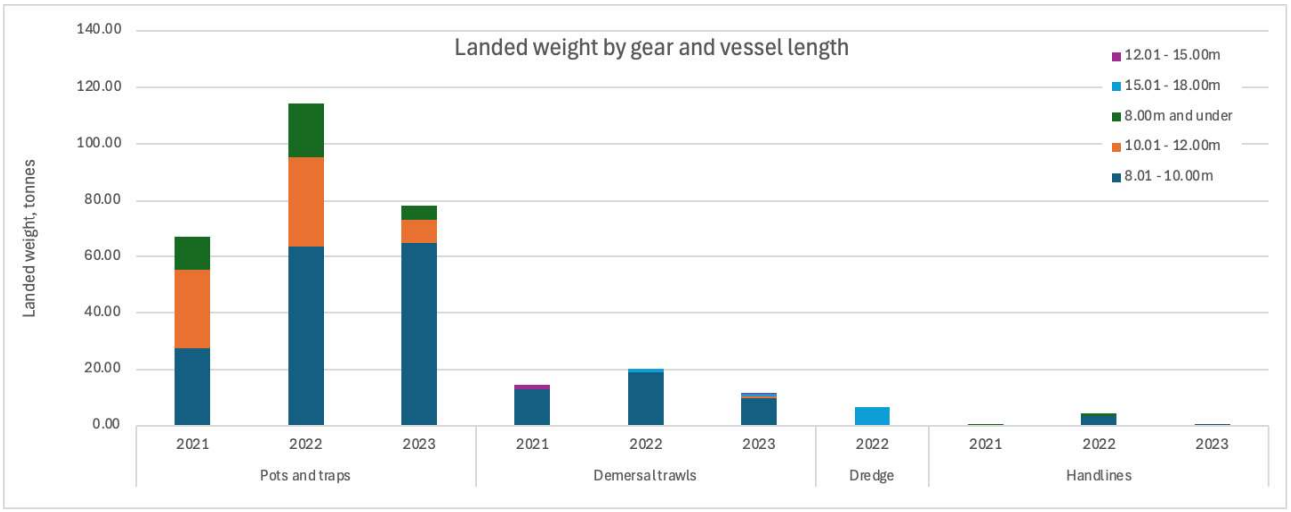

Figure 5.13. Landed weight (tonnes) of landings into Arbroath from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

139. The data show that lobsters are the most valuable species landed at Arbroath. Values increased from around £0.23 million in 2021 to a peak of £0.43 million in 2022, before reducing slightly to £0.3 million in 2023. Crabs (mixed sexes) also make an important contribution, with values ranging from £0.09 million in 2021 to over £0.2 million in 2022, dropping back to £0.13 million in 2023.

140. Nephrops (Norway lobster) represent another notable component, peaking at around £0.14 million in 2022, while velvet crabs contributed steadily at lower levels (c. £40–50k annually). Small contributions were also made by scallops, mackerel, monkfish/anglers, turbot, and squid, though these species accounted for relatively minor value.

141. Overall, Arbroath's landings are strongly weighted towards lobster and crab fisheries, with Nephrops providing secondary value.

142. The majority of landings are made by pots and traps, with annual weights rising from approximately 65 tonnes in 2021 to over 110 tonnes in 2022, before reducing to around 80 tonnes in 2023. These catches are largely made by vessels in the 8–10 m and 10–12 m length classes, with some contribution from ≤8 m vessels in 2022.

143. Demersal trawls play a much smaller role, with landings around 10–20 tonnes annually, and only recorded in 2021–2023. These are primarily associated with smaller vessels (≤15 m). Additional contributions came from dredge gears in 2022 and handlines in 2021–2023, though these were minor.

144. Summary: Arbroath's fishery is dominated by inshore potting activity targeting lobsters and crabs, supported by smaller-scale contributions from Nephrops, velvet crabs, and occasional finfish. The fleet is primarily composed of small vessels under 12 m, underlining Arbroath's role as an inshore shellfish port with relatively limited trawl or dredge activity compared to larger ports.

5.2.6 St Abbs

145. 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 from 2021 to 2023 are presented in Figure 5.14 by species and Figure 5.15 by gear type and vessel length category.

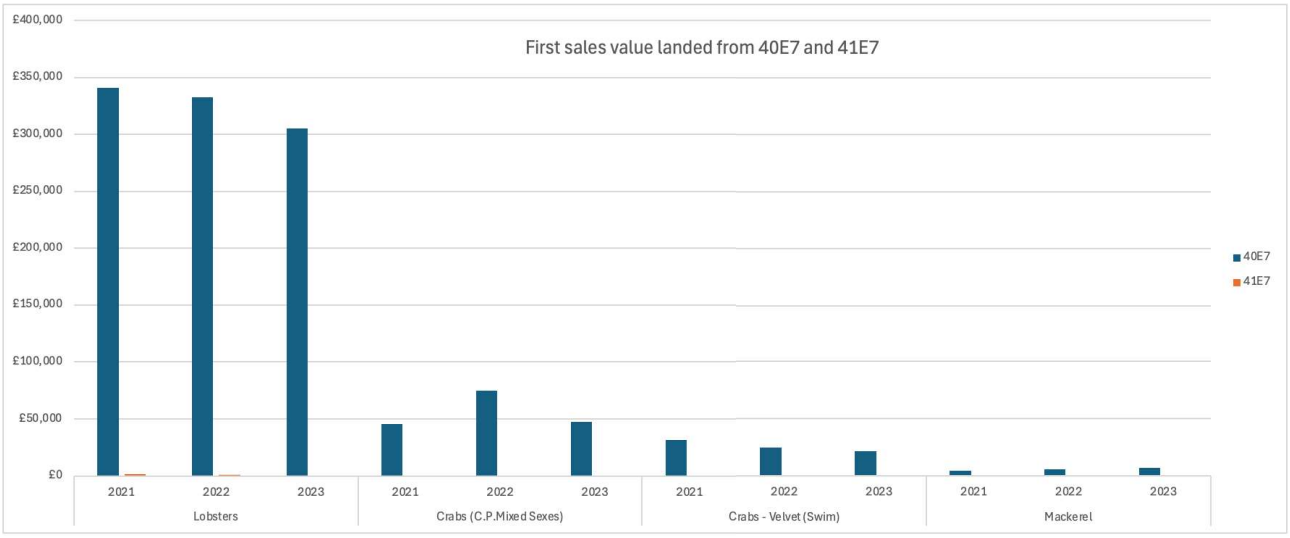

Figure 5.14. First sales value of species landed into St Abbs from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

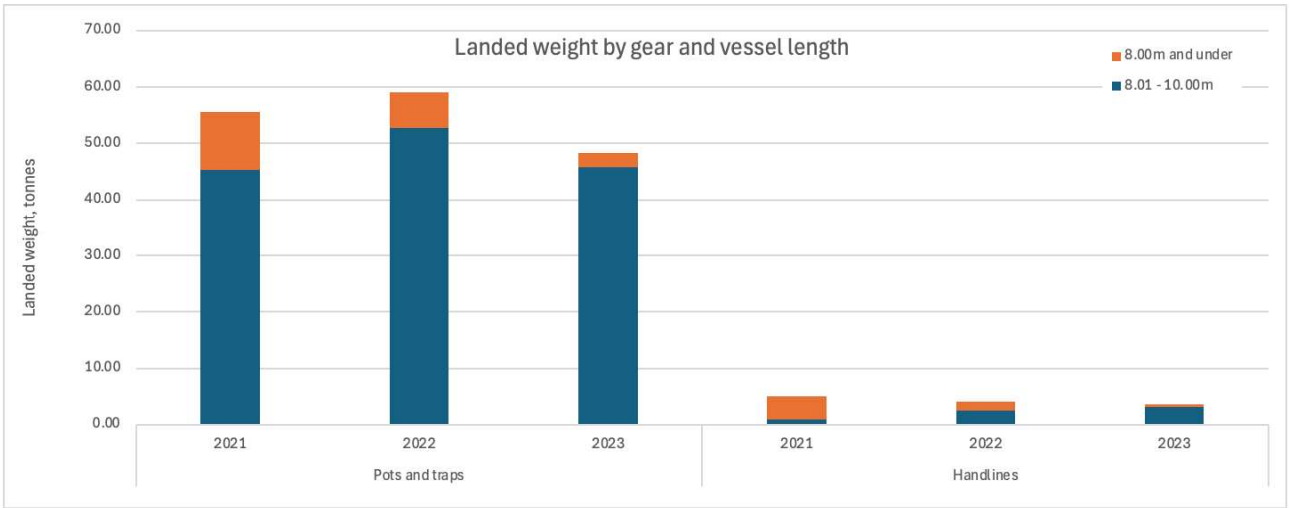

Figure 5.15. Landed weight (tonnes) of landings into St Abbs from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

146. The results show that lobsters dominate the value of landings at St Abbs. Annual sales values remain relatively consistent, at around £0.33–0.34 million in 2021–2022, before reducing slightly to £0.31 million in 2023.

147. Brown crab provide the second highest contribution, with values of around £0.05 million in 2021, rising to approximately £0.07 million in 2022, before declining back to about £0.05 million in 2023. Velvet crabs contribute steadily at a lower level, with values of £20–30k annually.

148. Minor contributions are also observed from mackerel (small values across all three years). Other species such as Nephrops and scallops do not feature significantly in the St Abbs landings profile.

149. Overall, St Abbs landings are heavily weighted towards lobster fisheries, with crabs providing additional but smaller value.

150. The fishery is dominated by pots and traps, which consistently land between 45 and 60 tonnes annually across the three years. The bulk of this catch is taken by vessels in the 8–10 m length class, with smaller contributions from vessels ≤8 m.

151. Handlines represent the only other gear type recorded, landing very small volumes of under 5 tonnes per year across 2021–2023. No demersal trawl or dredge activity is evident in the St Abbs data.

152. Summary: St Abbs is a specialist shellfish port, with its activity almost entirely centred on the inshore lobster and crab fishery, landed primarily by small vessels under 10 m using pots and traps. Compared to larger ports in the region, St Abbs is more narrowly focused on shellfish and does not demonstrate the same mixed fleet structure.

5.2.7 Anstruther

153. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into Anstruther from 2021 to 2023 are presented in Figure 5.16 by species and Figure 5.17 by gear type and vessel length category.

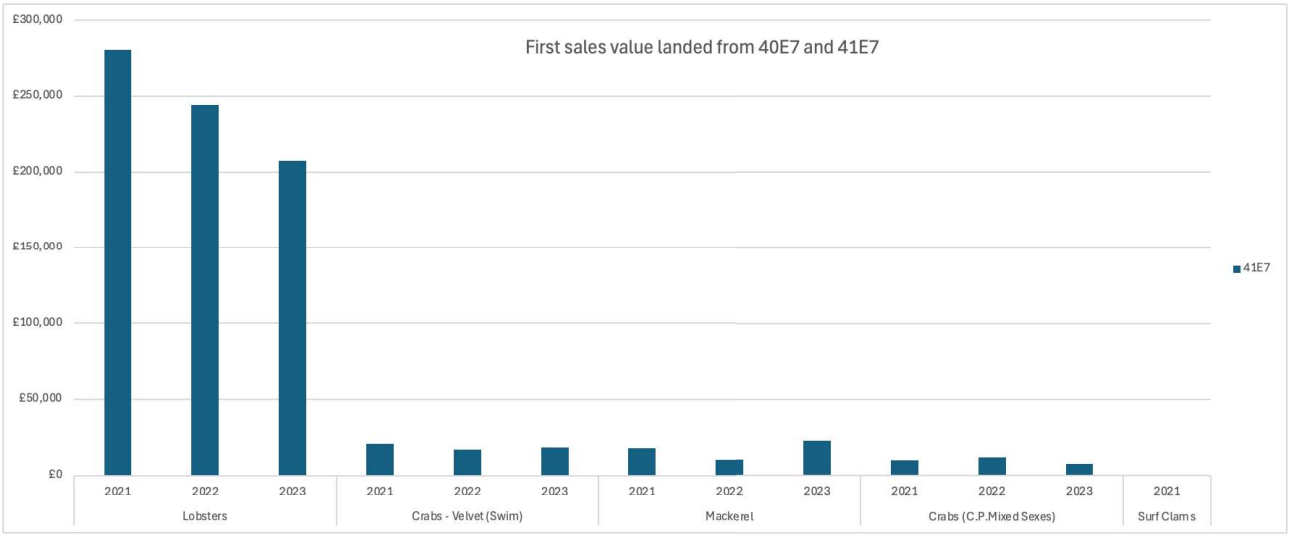

Figure 5.16. First sales value of species landed into Anstruther from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

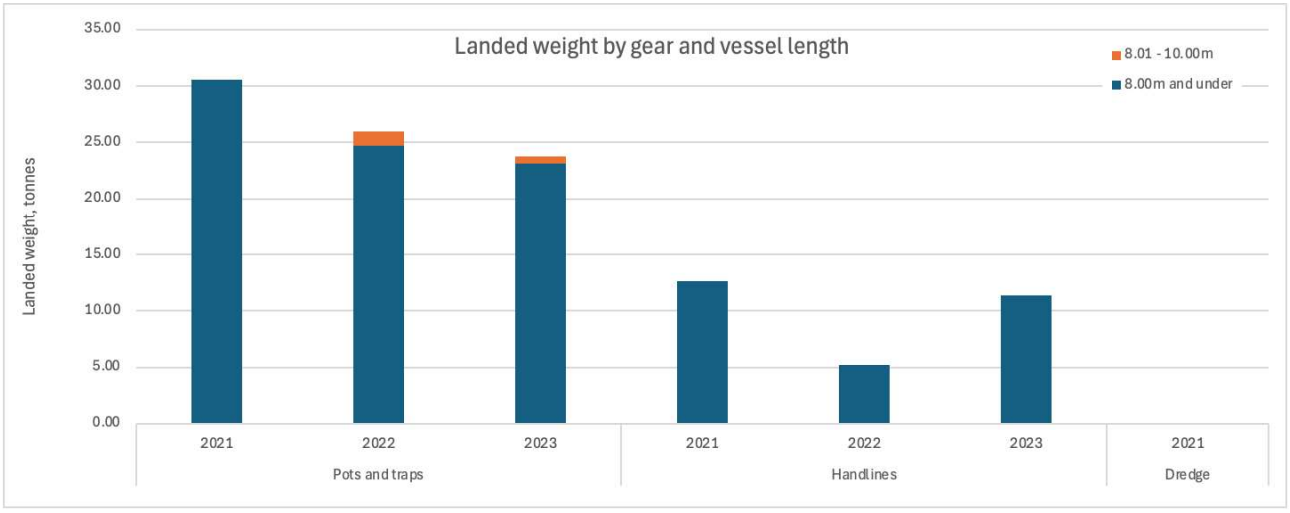

Figure 5.17. Landed weight (tonnes) of landings into Anstruther from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

154. The results clearly show that lobsters dominate the value of landings. Annual sales values were around £0.28 million in 2021, before decreasing slightly to £0.24 million in 2022 and £0.21 million in 2023. Despite this reduction, lobsters remain by far the most valuable species landed into Anstruther.

155. Secondary contributions come from velvet crabs, mackerel, and mixed crabs, each contributing modest annual values of between £10,000–£30,000. In 2021, there was also a small contribution from surf clams, while in later years the species composition became more concentrated around lobsters and crabs.

156. Overall, the species profile highlights a specialised lobster-focused fishery, with other shellfish and occasional finfish providing only minor additional value.

157. Pots and traps are the primary gear type, consistently landing between 23 and 31 tonnes annually over the three years. These landings are almost entirely taken by vessels ≤8 m in length, with only small contributions from the 8–10 m class in 2022.

158. Handlines provide an additional source of landings, ranging from 5 tonnes in 2022 to around 15 tonnes in 2021 and 2023, again largely by vessels under 8 m. A small amount of landings from dredge activity was recorded in 2021.

159. No demersal trawl activity is evident in the Anstruther data.

160. Summary: Anstruther is a small inshore shellfish port, heavily reliant on lobster potting by very small vessels (≤8 m). Handline fishing provides a secondary contribution, while other gears are minimal. Compared to nearby ports such as Pittenweem, Anstruther demonstrates a more niche, small-vessel focus on shellfish, with very limited species or gear diversity.

5.2.8 North Berwick

161. 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 from 2021 to 2023 are presented in Figure 5.18 by species and Figure 5.19 by gear type and vessel length category.

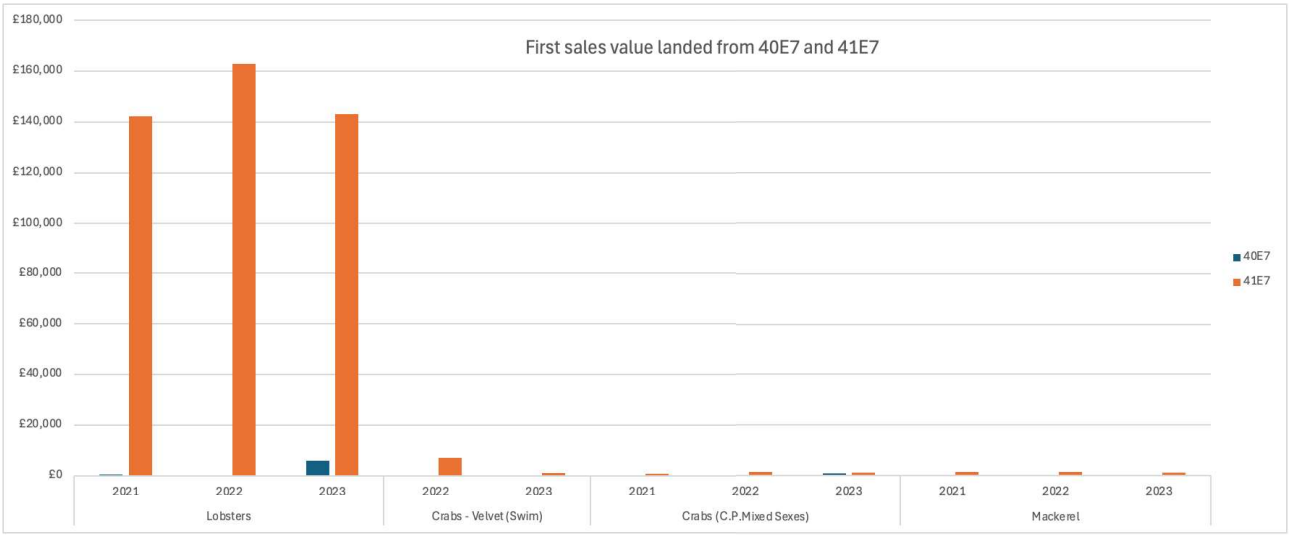

Figure 5.18. First sales value of species landed into North Berwick from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

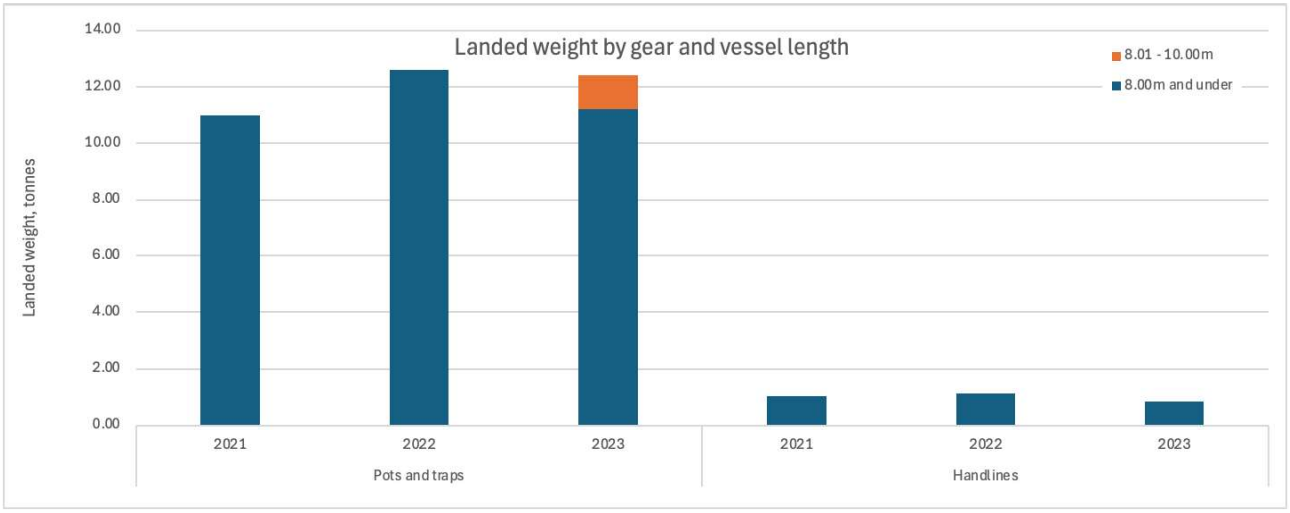

Figure 5.19. Landed weight (tonnes) of landings into North Berwick from 2021-2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2024)

162. The results demonstrate that lobsters are by far the most valuable species landed at North Berwick. Sales values were around £0.14 million in 2021, increased to a peak of £0.16 million in 2022, before reducing slightly to around £0.14 million in 2023.

163. Other shellfish species make smaller contributions. Velvet crabs and mixed crabs are recorded in 2022 and 2023, but their values are very low compared with lobster. Mackerel also appears in small quantities across the three years.

164. Overall, the value of landings is highly concentrated in lobsters, making this the dominant fishery for North Berwick.

165. Landings are dominated by pots and traps, with annual totals of around 11–13 tonnes. These are almost entirely caught by ≤8 m vessels, with a small contribution from 8–10 m vessels in 2023.

166. Handlines also contribute across all three years, though at a much lower level (around 1 tonne annually). No landings from demersal trawls or dredges were recorded.

167. Summary: North Berwick is a small inshore port, strongly specialised in lobster potting, supported by minor contributions from crabs and mackerel. The fleet is made up almost entirely of very small vessels under 10 m, highlighting the highly localised and small-scale character of the fishery. Compared with nearby ports, North Berwick shows the narrowest focus on lobster fisheries.

5.2.9 Other ports

168. Commercial species caught by UK vessels of all lengths fishing within the local study area (ICES rectangles 40E7 and 41E7) and landed into six other ports: Methil & Leven, Cove (Leith), Burnmouth, St Monance, St Andrews and North Shields from 2021 to 2023 are presented in Figure 5.20 by ICES rectangle, Figure 5.21 by species, Figure 5.22 by vessel length category and Figure 5.23 by gear type.

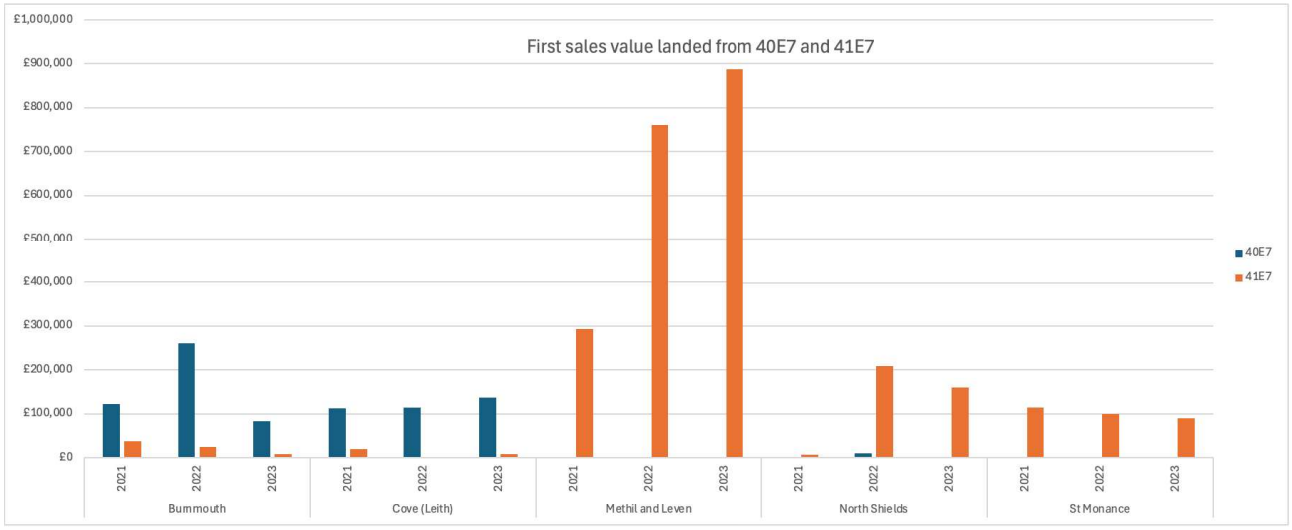

Figure 5.20. First sales value of species landed into Methil & Leven, Cove (Leith), Burnmouth, St Monance, St Andrews and North Shields from 2021 to 2023 from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2024)

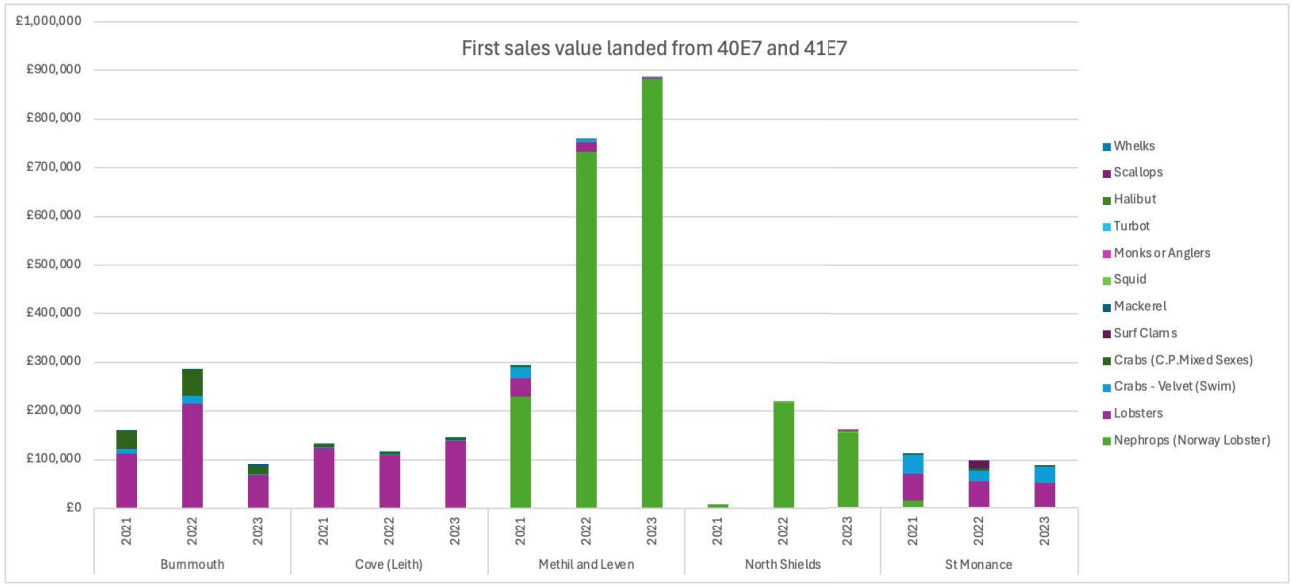

Figure 5.21. First sales value of species landed into Methil & Leven, Cove (Leith), Burnmouth, St Monance and St Andrews from 2021 - 2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2024)

169. Figure 5.20 shows the total first sales value of landings into the five ports between 2021 and 2023.

- Burnmouth recorded values between £0.1–0.25 million, peaking in 2022. This reflects a modest but steady scale of activity.
- Cove (Leith) shows lower overall values, consistently under £0.15 million per year, highlighting its small contribution relative to other ports.
- Methil and Leven stands out, with a sharp increase in landings value, rising from £0.3 million in 2021 to around £0.9 million in 2023, making it the largest contributor among the ports presented.
- North Shields reported moderate levels, increasing from near-zero in 2021 to around £0.2 million in 2022, before dropping back slightly in 2023.
- St Monance shows lower but stable landings values of around £0.1 million annually.

170. Figure 5.21 disaggregates the first sales value by species group.

- At Burnmouth, landings are diverse, including lobsters, crabs (mixed and velvet), scallops, and Nephrops, with no single species dominating. Values increased in 2022 before reducing slightly in 2023.
- Cove (Leith) shows a similar mixed profile, with contributions from lobsters, crabs, Nephrops, and scallops, but on a smaller scale compared to Burnmouth.
- Methil and Leven is heavily dominated by halibut, which accounts for nearly all of the significant increase in 2022–2023. This makes it distinct from the other ports, where shellfish dominate.
- North Shields also shows a concentration in halibut, alongside some contributions from Nephrops and lobsters in 2022.
- St Monance is more balanced, with contributions from lobsters, Nephrops, velvet crabs, and mixed crabs, but at low total values compared to the larger ports.

171. Overall, the key target species includes lobster, nephrops, velvet crab and brown crab. Lobster are landed into all these ports, except North Shields, while nephrops are predominately landed into Methil and Leven, North Shields and St Monance (in 2021 only). These figures demonstrate clear contrasts in the nature of the fisheries across the five ports:

- Methil and Leven is highly specialised in halibut, driving its sharp rise in value.
- North Shields also shows a strong halibut focus, with supplementary shellfish landings.
- Burnmouth and St Monance are more traditional inshore shellfish ports, reliant on lobsters and crabs.
- Cove (Leith) represents the smallest contributor, with a mixed but low-value profile.

172. Together, the data highlight how species composition differs significantly between ports, with some dominated by finfish (halibut) while others remain reliant on shellfish.

173. Figure 5.22 presents landed sales values broken down by vessel length.

- Burnmouth shows activity dominated by vessels ≤10 m, with a modest increase in 2022 before declining again in 2023.
- Cove (Leith) demonstrates very small contributions, also concentrated in the ≤10 m length class, reflecting the very local scale of operations.
- Methil and Leven stands out with a sharp rise in 2022 and especially 2023, when sales value exceeded £1.5 million. This was spread across multiple vessel length classes, but particularly notable is the large contribution from pelagic and demersal vessels in the 12–24 m range, supported by smaller inshore vessels.
- North Shields shows relatively small but diverse contributions, including vessels up to 18 m, with the highest values in 2022.
- St Monance is much smaller in scale, with values under £0.1 million annually, all from very small vessels (≤10 m).

174. Overall, the figure highlights how Methil and Leven differs markedly, with a broader fleet profile and higher value compared to the inshore, small-scale focus of the other ports.

175. Figure 5.23 shows landed sales values broken down by fishing gear.

- Burnmouth is dominated by pots and traps, reflecting its inshore shellfish character.

- Cove (Leith) also relies solely on pots and traps, at very low levels.
- Methil and Leven is markedly different, with its sharp rise in 2022–2023 driven by pelagic seine and demersal trawls, alongside minor contributions from pots and traps. This diversification distinguishes it from the more inshore-focused ports.
- North Shields shows mixed gears, with demersal trawls contributing the most in 2022, supplemented by handline and trap landings.
- St Monance is entirely based on pots and traps, at consistently low levels of activity.

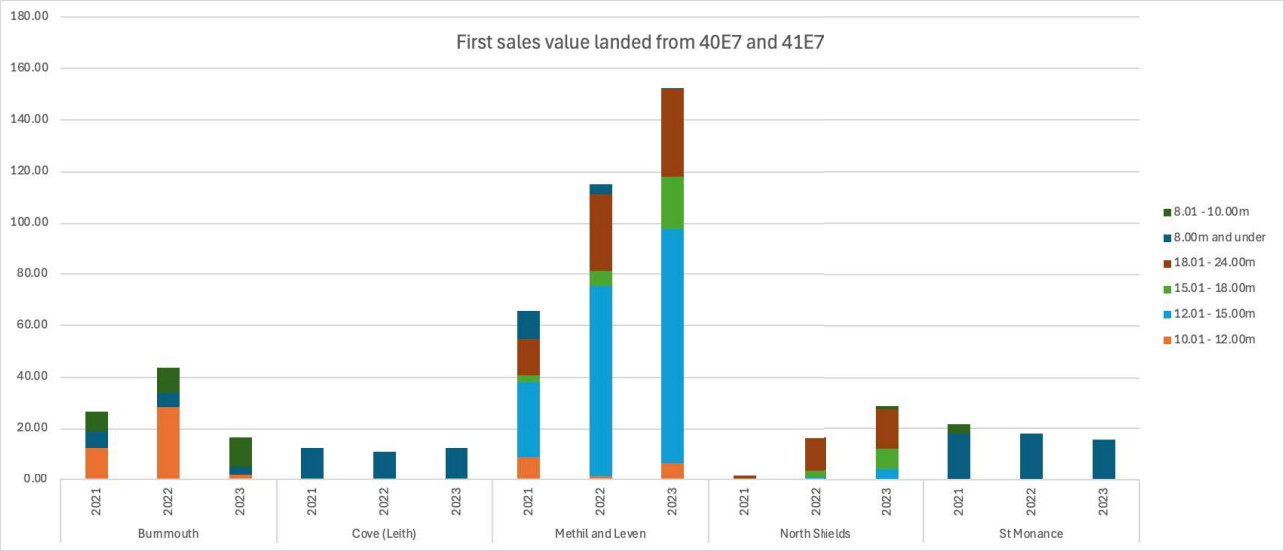

Figure 5.22. Landed weight (tonnes) of landings into Methil & Leven, Cove (Leith), Burnmouth, St Monance, St Andrews and North Shields from 2021 to 2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating vessel length category (data source: MMO, 2024)

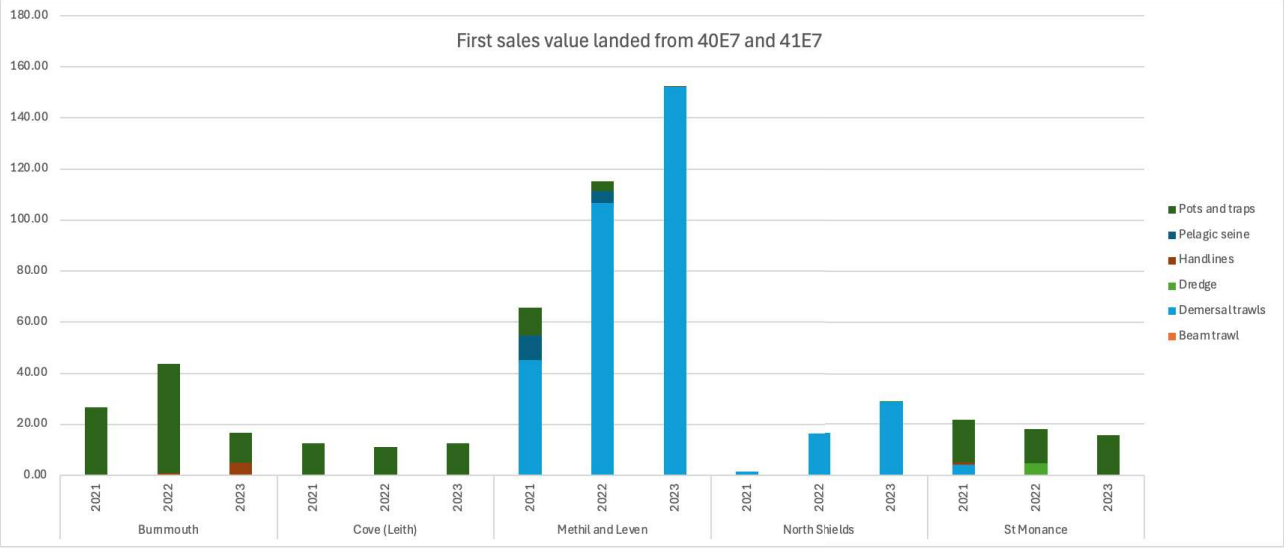

Figure 5.23. Landed weight (tonnes) of landings into Methil & Leven, Cove (Leith), Burnmouth, St Monance, St Andrews and North Shields from 2021 to 2023 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type (data source: MMO, 2024)

176. Overall, the data shows that most small ports, including Burnmouth, St Monance, and Cove (Leith), are dominated by ≤10 m vessels using pots and traps, with modest and stable sales values. North Shields displays a more mixed profile, with contributions from demersal trawls and handlines. In contrast, Methil and Leven is an outlier, with sharp growth in 2022–2023 driven by larger vessels and demersal trawl gear, distinguishing it from the predominantly inshore, shellfish-focused activity of the other ports.

6 Spatial fishing activity data

177. 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 6.1, Figure 6.2, Figure 6.3, and Figure 6.4). 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.

178. 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 ECC.

179. 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.

180. 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.

181. 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.

182. The AIS data is presented annually for 2019 to 2022 (Figure 6.5, Figure 6.6, Figure 6.7 and Figure 6.8) and seasonally for the same period (Figure 6.9, Figure 6.10, Figure 6.11 and Figure 6.12). 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 appear 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.

183. The AIS data for 2022 (Figure 6.8) shows clear fishing corridors running perpendicular to the Offshore ECC which is expected to be the Nephrops trawling fleet.

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

185. Figure 6.13 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.

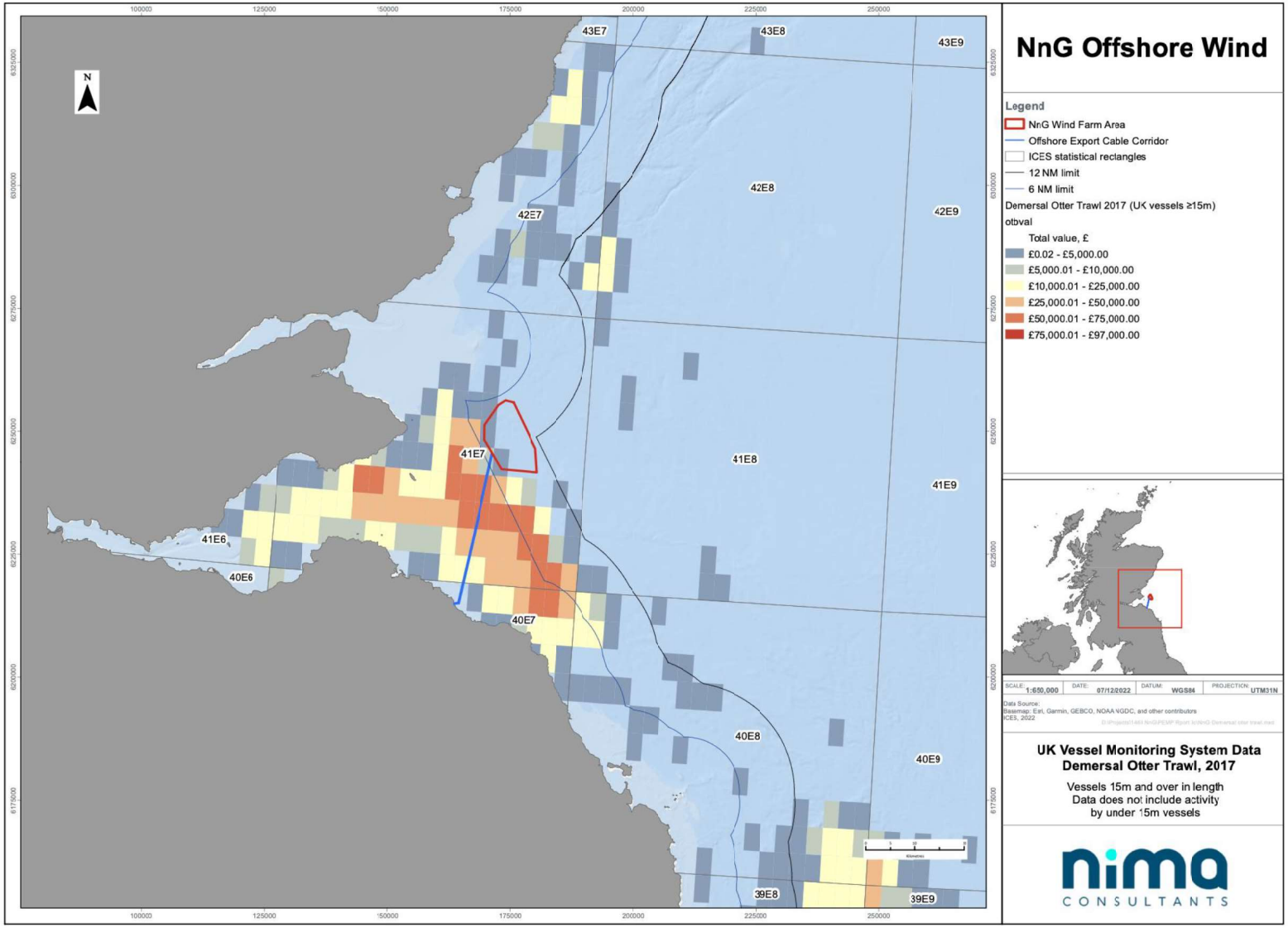

Figure 6.1. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2017 (data source: MMO, 2023)

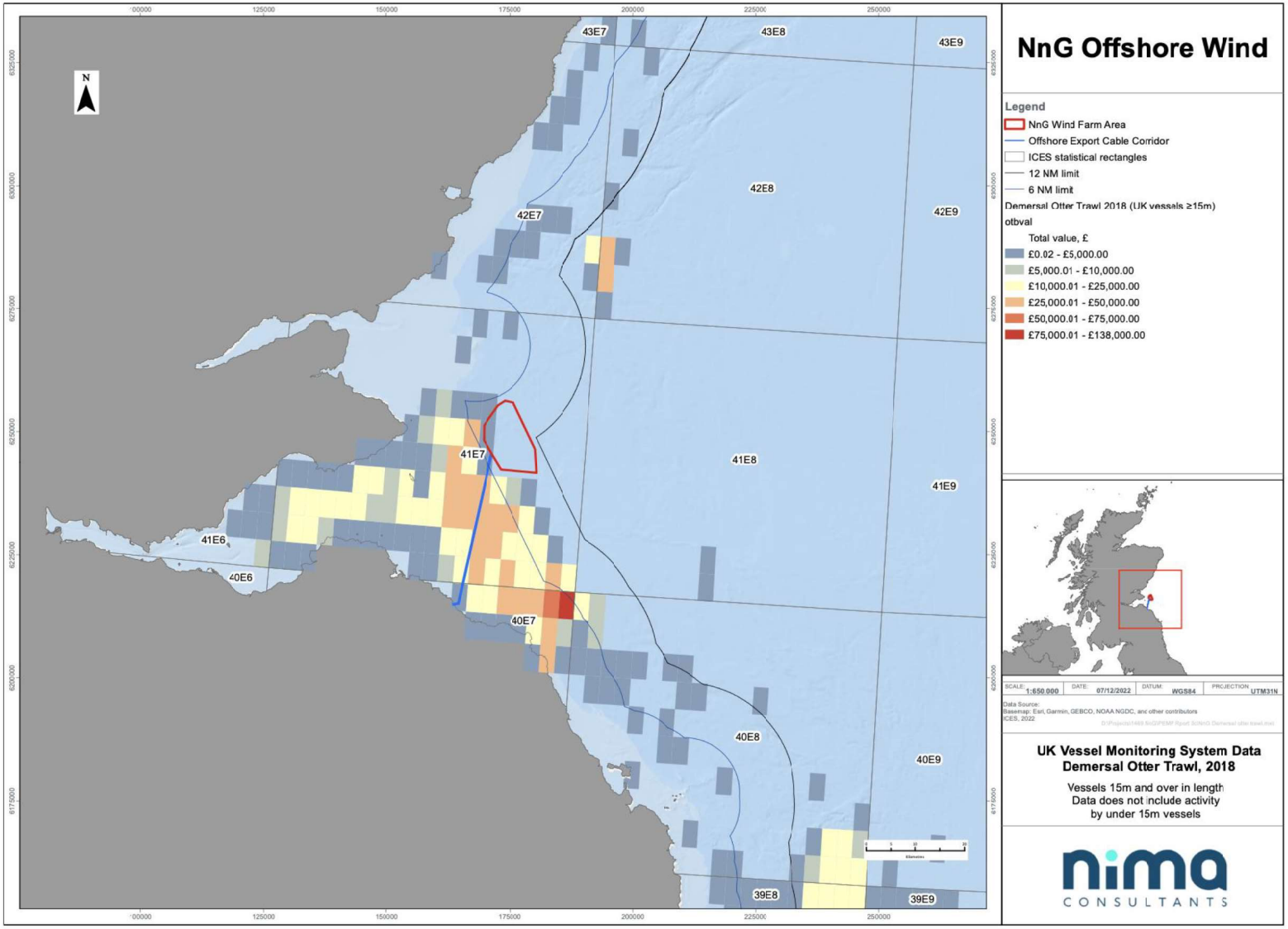

Figure 6.2. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2018 (data source: MMO, 2023)

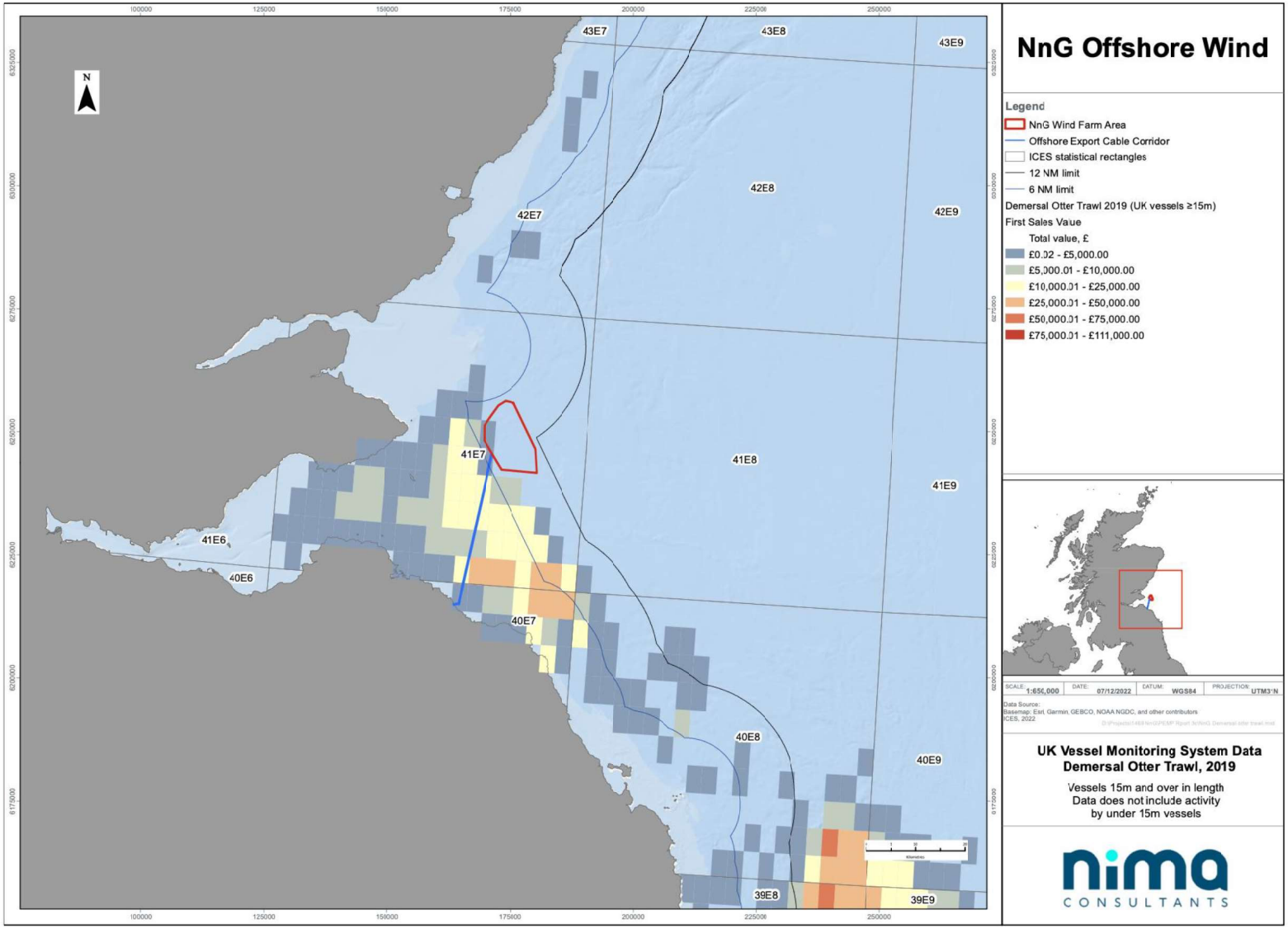

Figure 6.3. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2019 (data source: MMO, 2023)

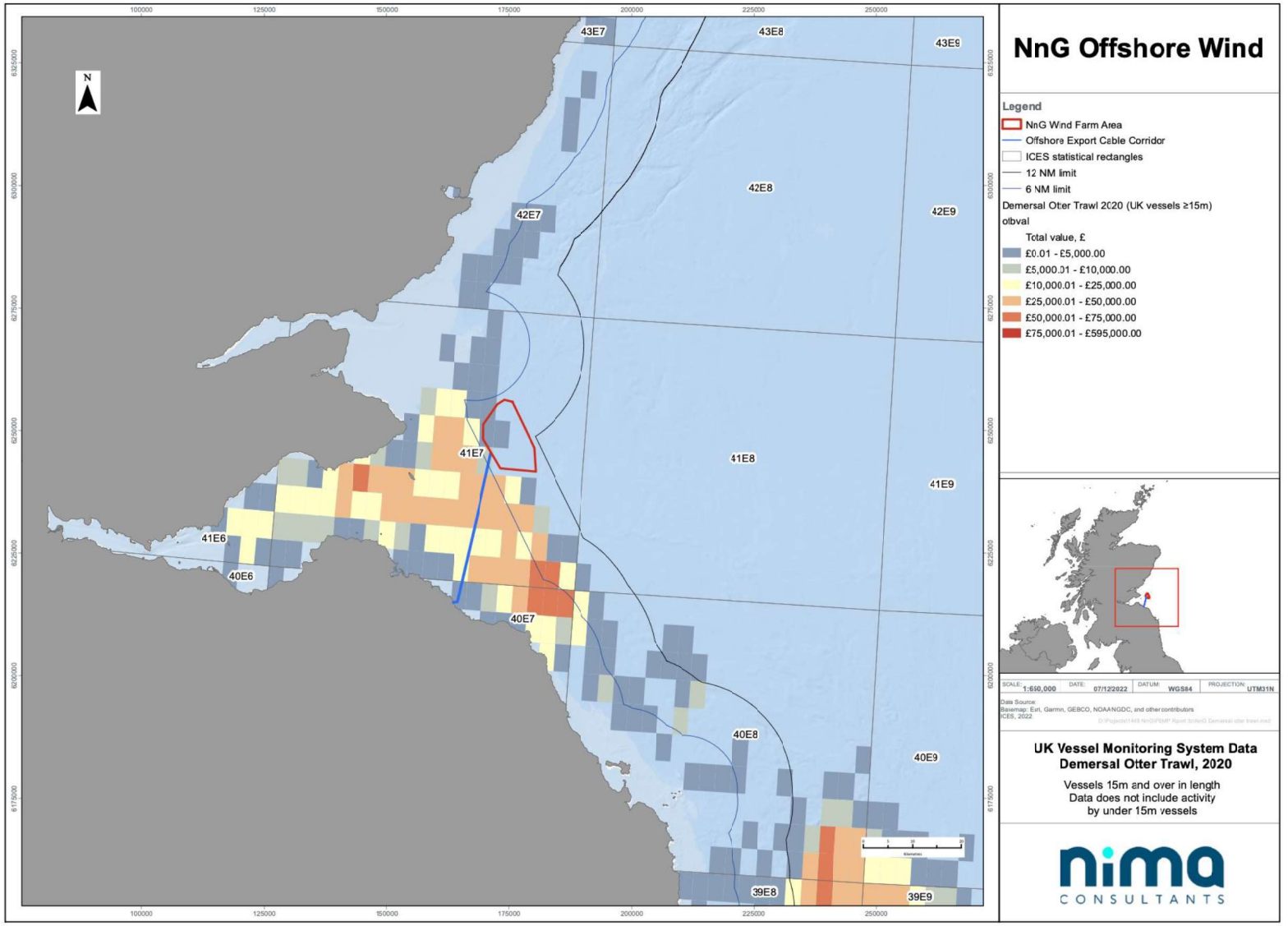

Figure 6.4. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2020 (data source: MMO, 2023)

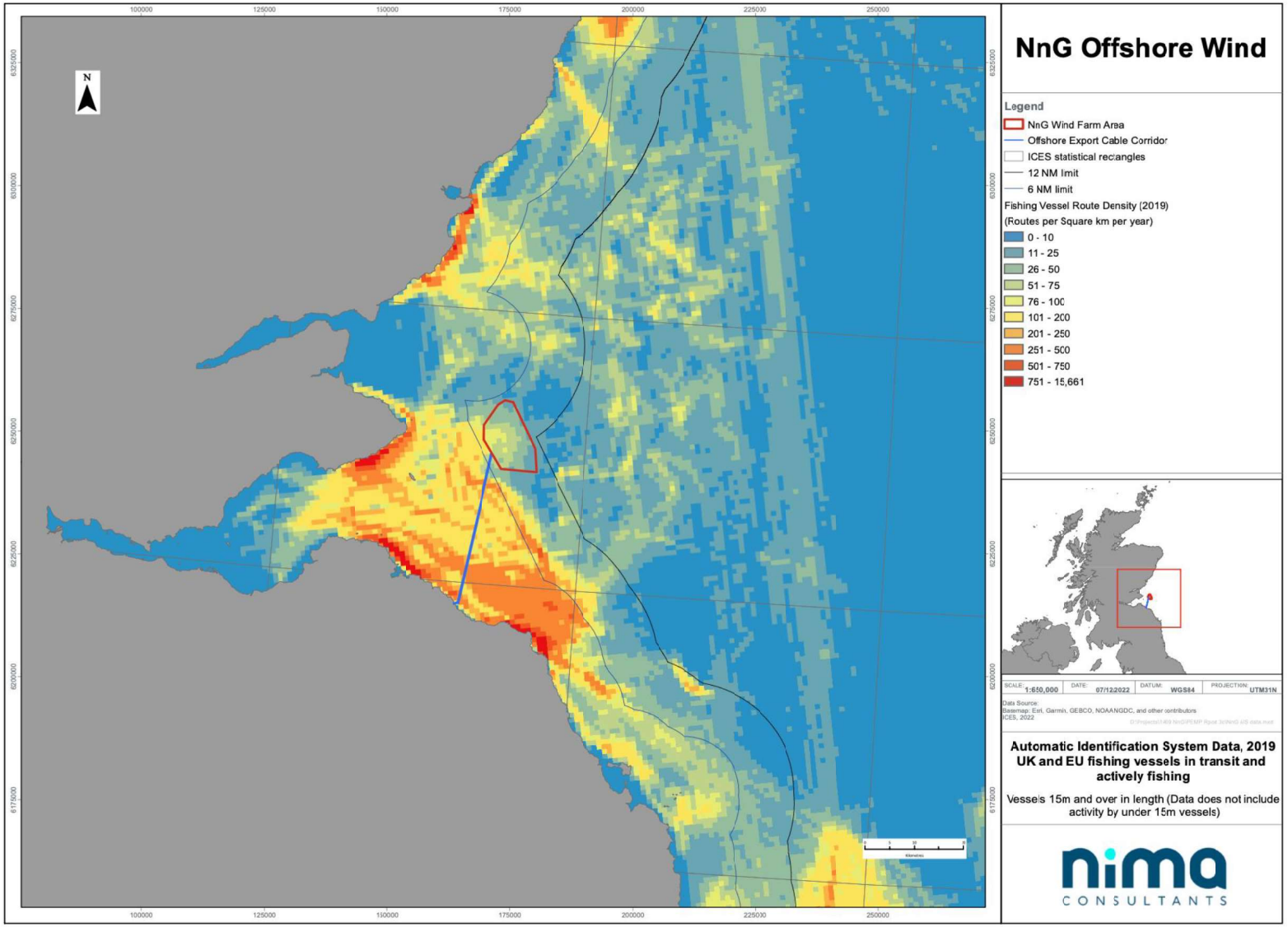

Figure 6.5. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² in 2019 (data source: EMSA, 2023)

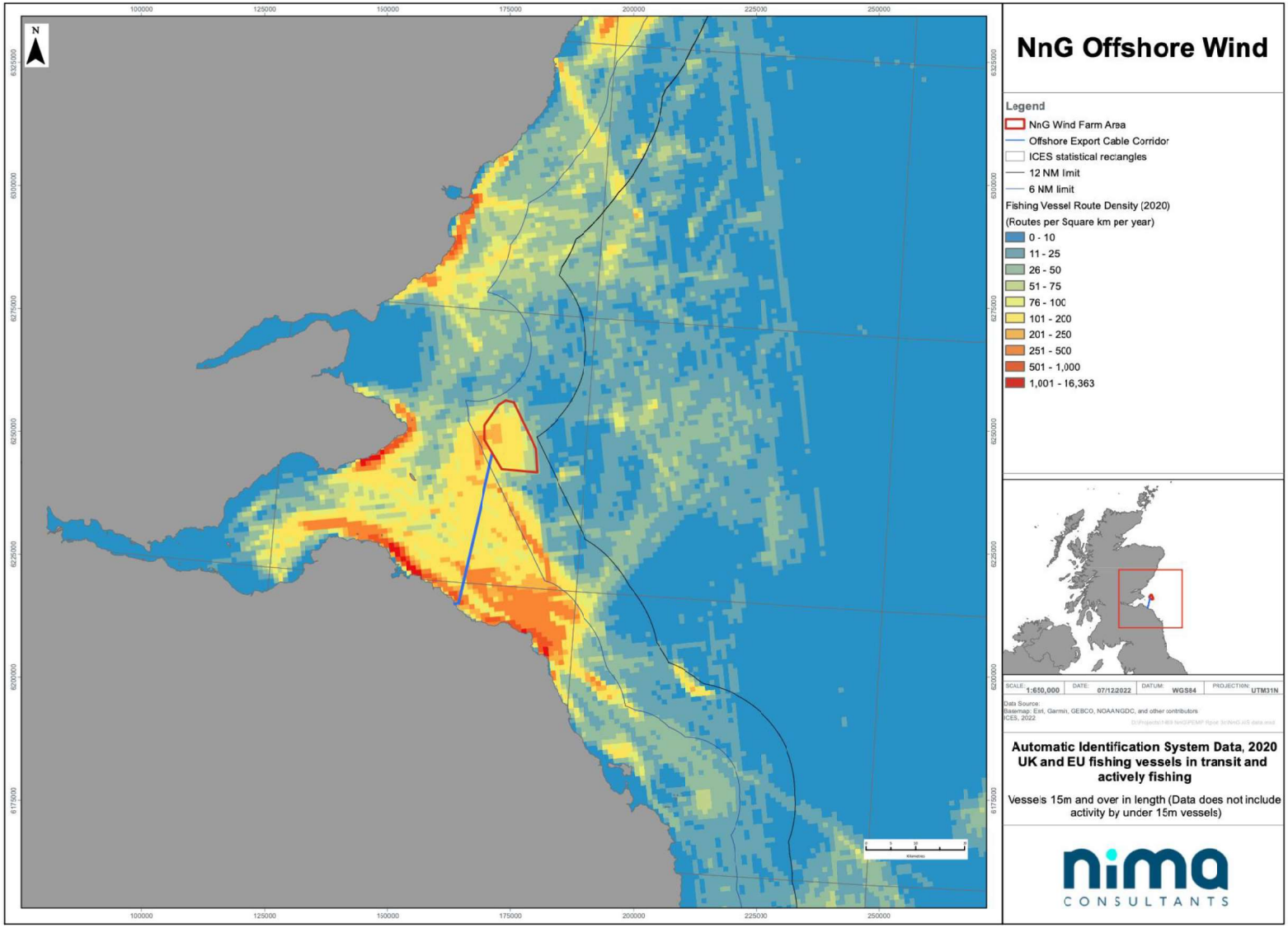

Figure 6.6. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² in 2020 (data source: EMSA, 2023)

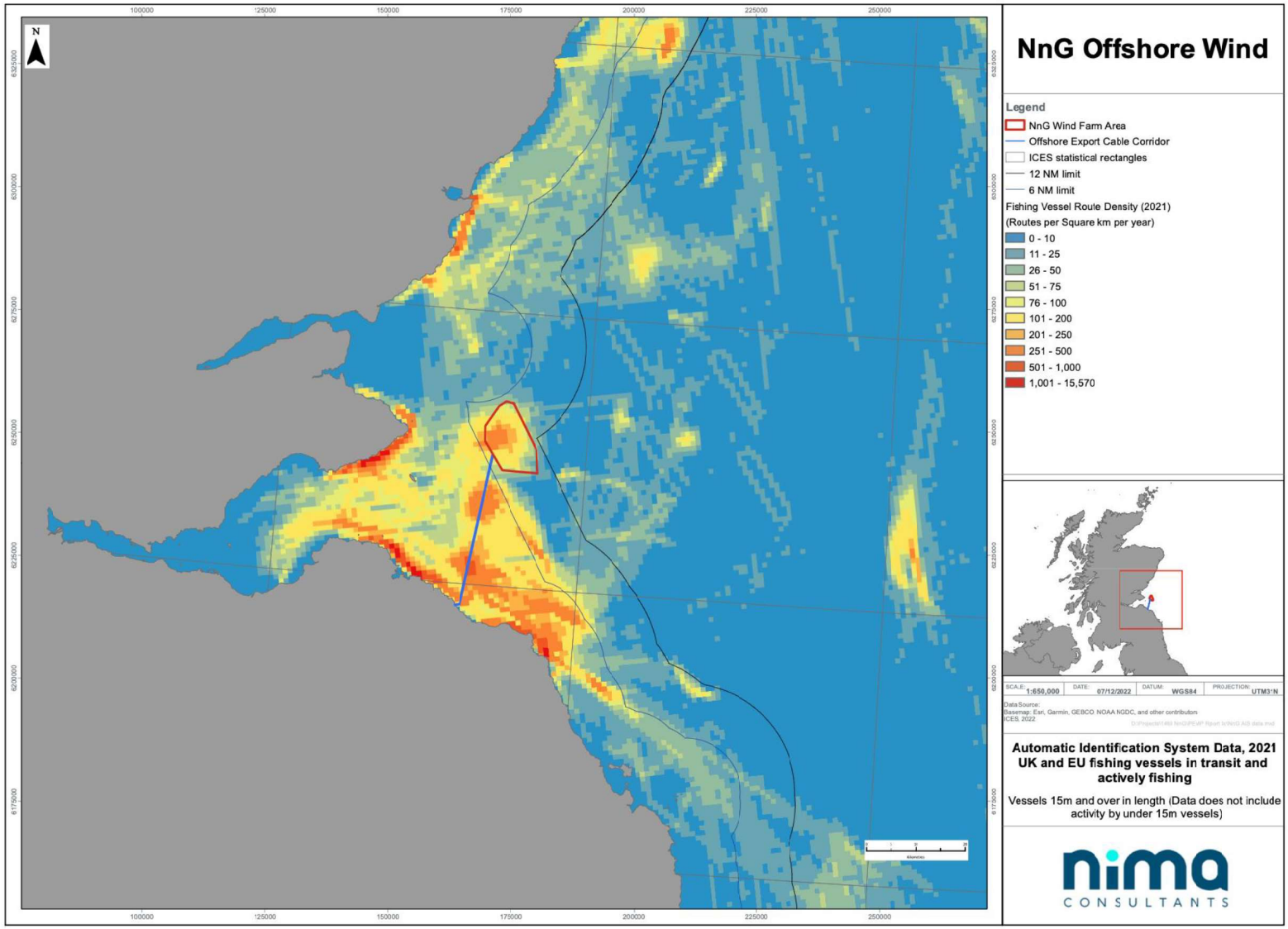

Figure 6.7. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 in 2021 (data source: EMSA, 2023)

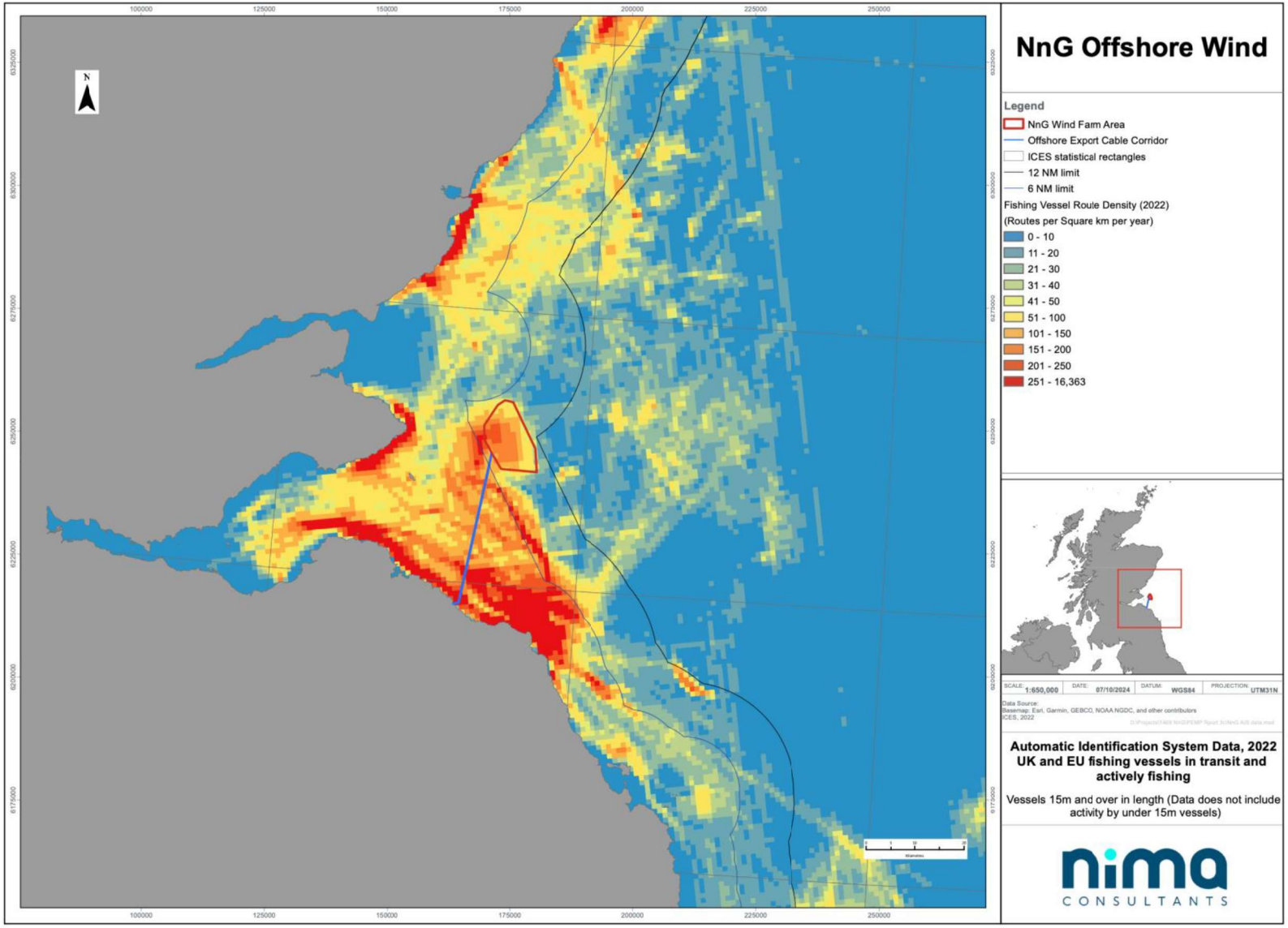

Figure 6.8. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 in 2022 (data source: EMSA, 2023)

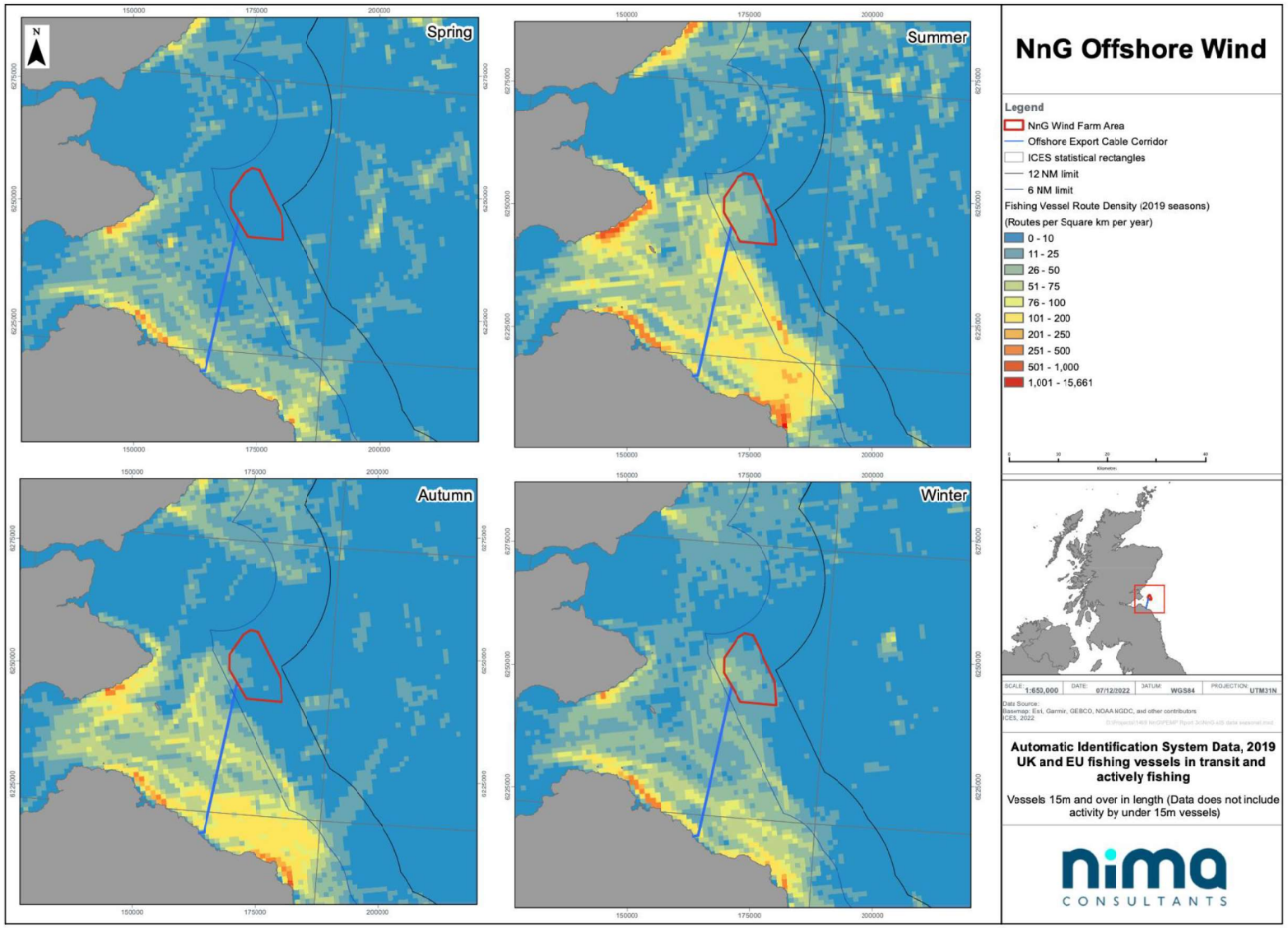

Figure 6.9. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² seasonally in spring, summer, autumn and winter of 2019 (data source: EMSA, 2023)

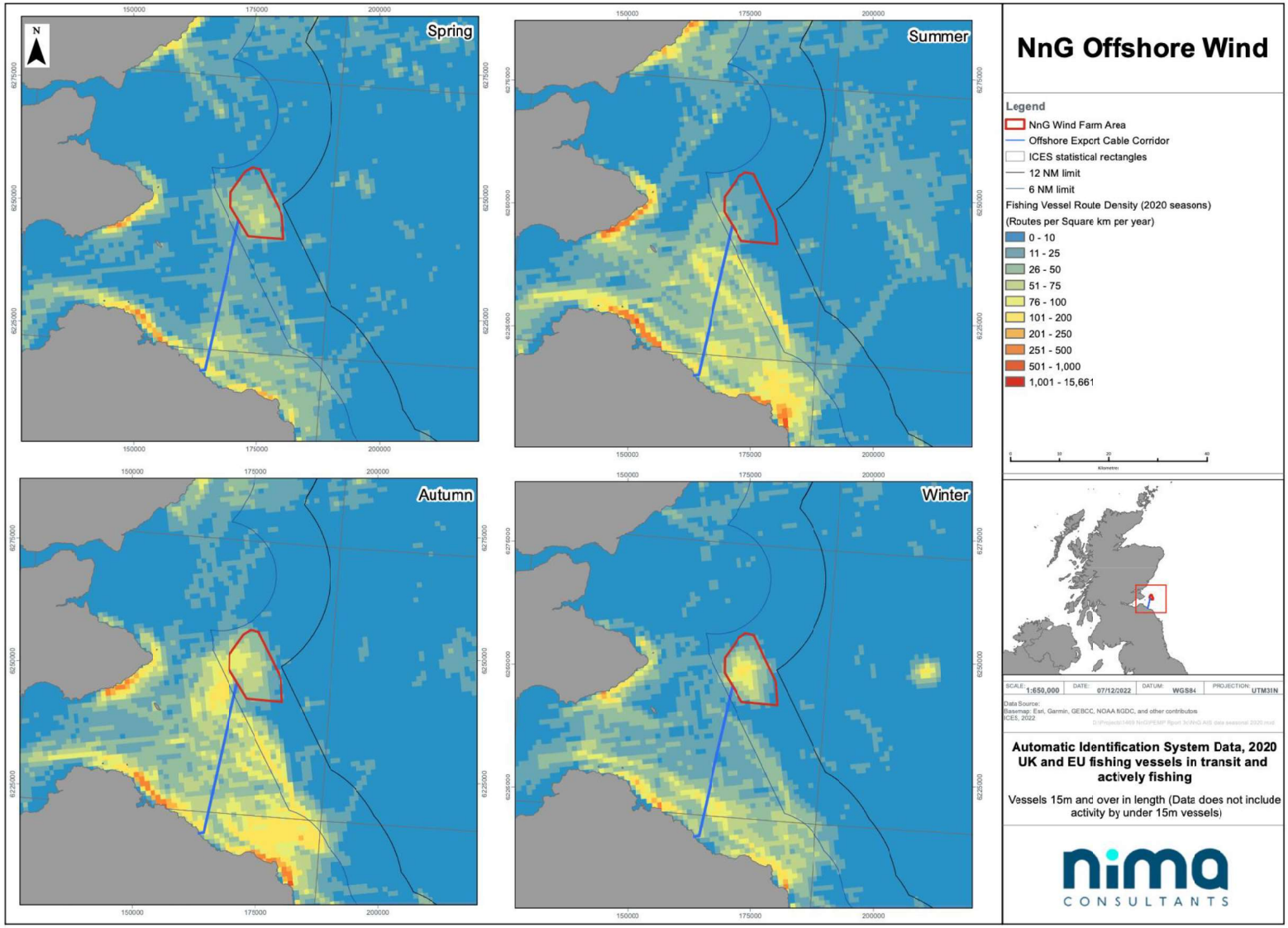

Figure 6.10. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² seasonally in spring, summer, autumn and winter of 2020 (data source: EMSA, 2023)

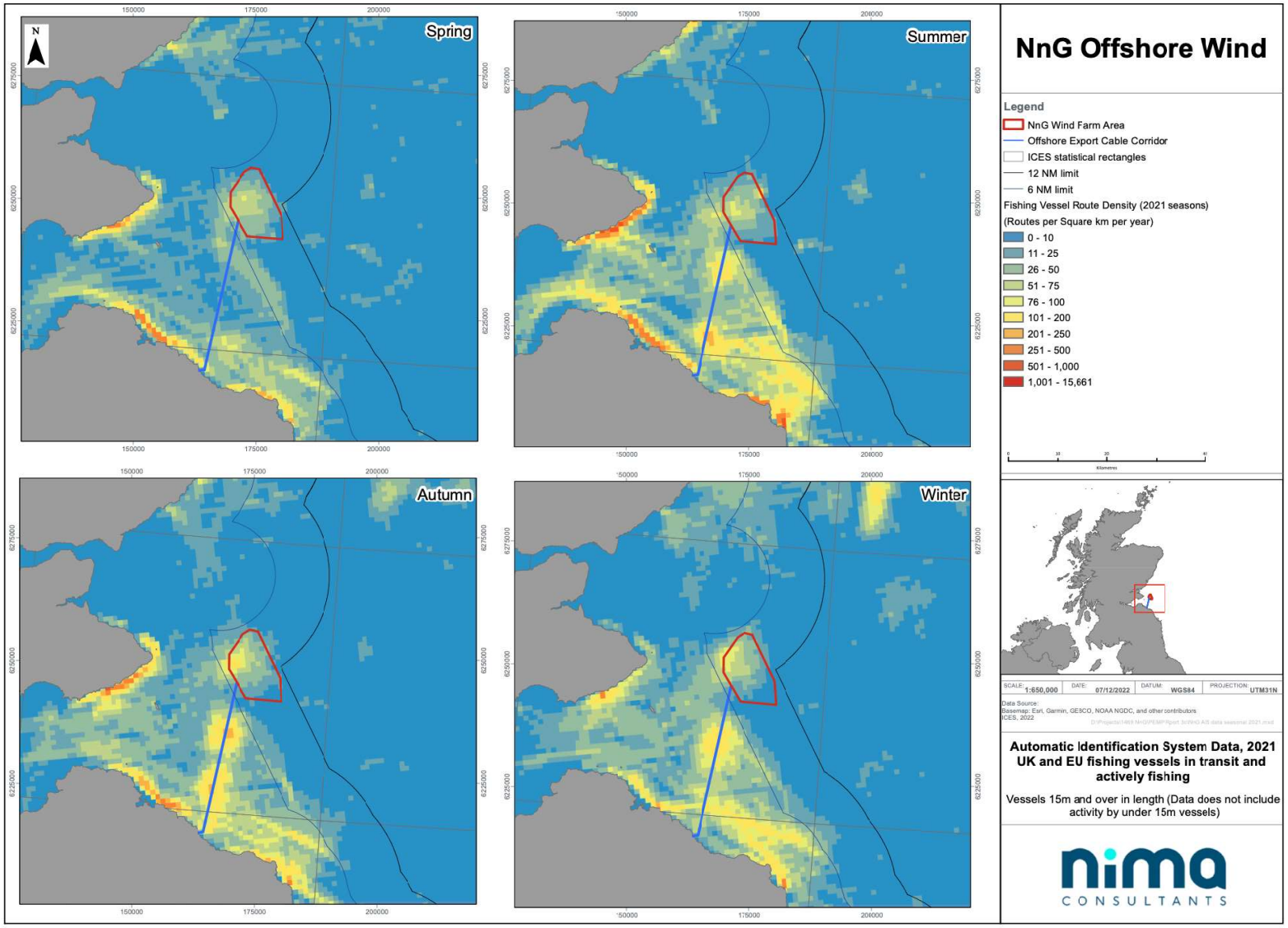

Figure 6.11. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² seasonally in spring, summer, autumn and winter of 2021 (data source: EMSA, 2023)

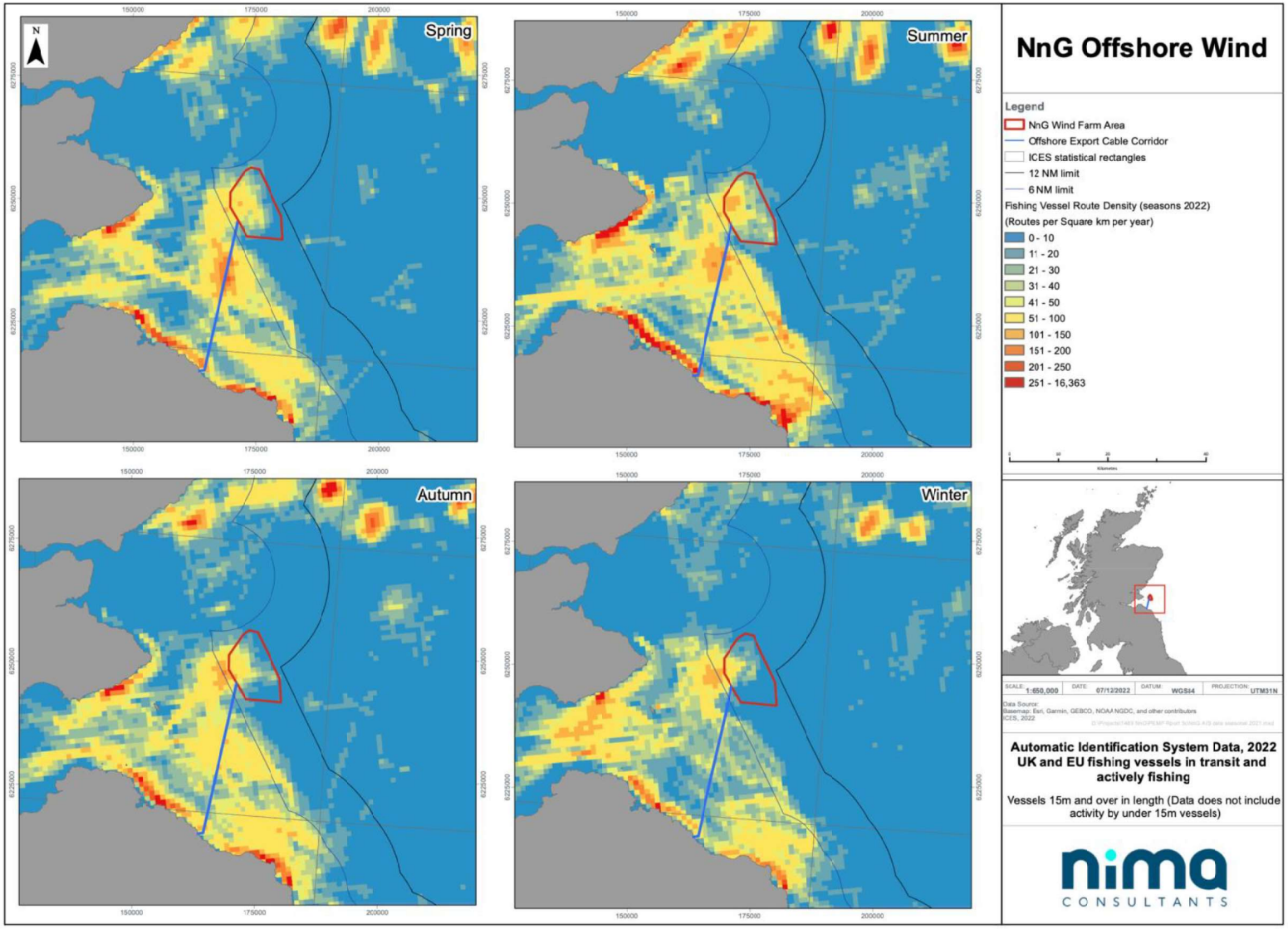

Figure 6.12. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 seasonally in spring, summer, autumn and winter of 2022 (data source: EMSA, 2023)

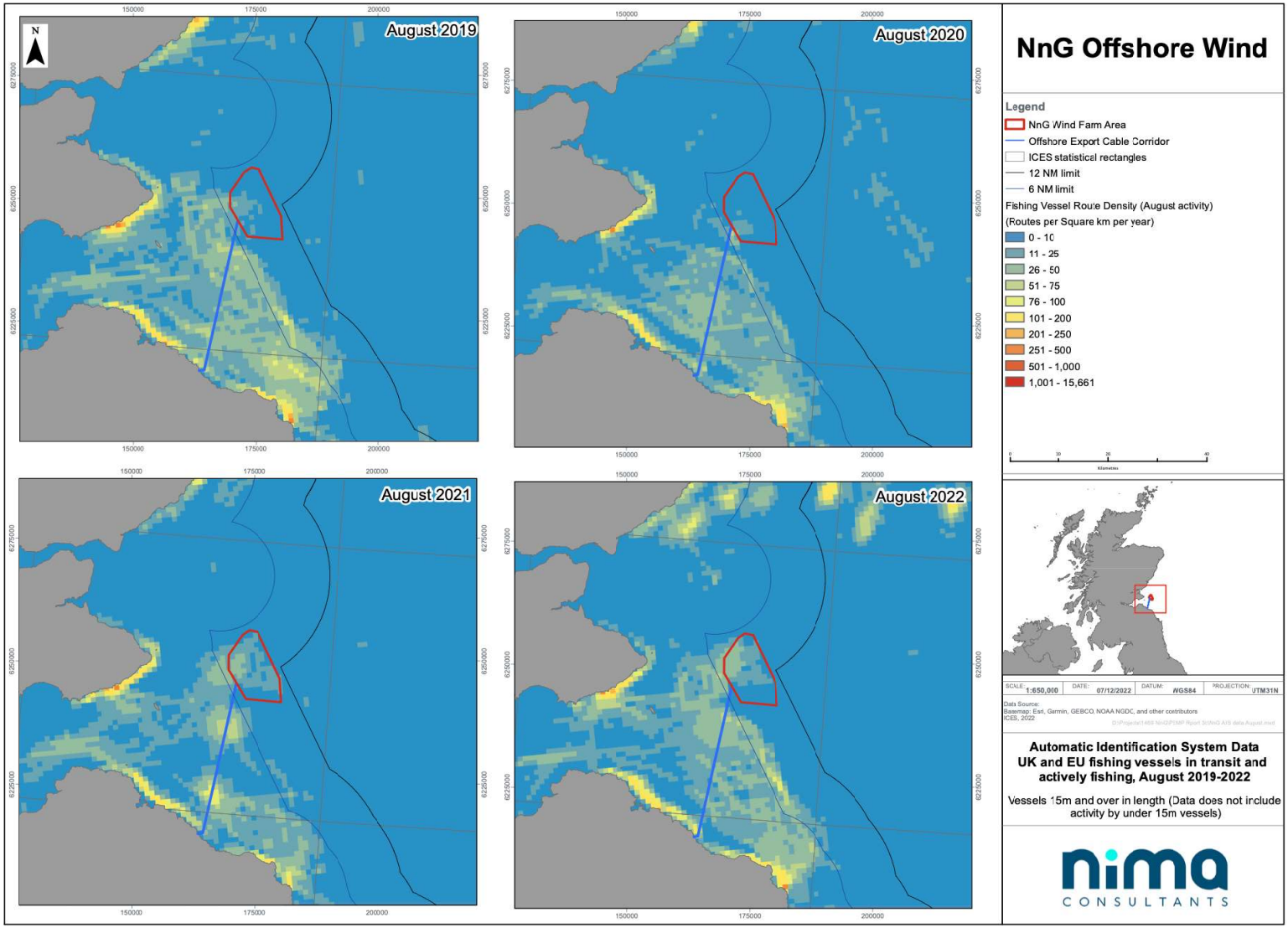

Figure 6.13. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² during the month of August from 2019-2022 (data source: EMSA, 2023)

7 Overtrawlability trials

186. Overtrawlability trials along the Offshore ECC were undertaken in 2021 and 2022 including two campaigns of trials:

- In 2021 the focus was across the length of the Offshore ECC. In total 21 crossings from east to west were undertaken, in addition to three north to south tows along the cable length between these east-west transect positions. Verification sweeps were completed using Nephrops demersal otter trawl fishing gear.
- In 2022 the focus was at specific identified locations including areas of rock protection. In total 12 verification sweeps were undertaken using Nephrops demersal otter trawl fishing gear.

187. The overtrawlability trials in 2021 and 2022 concluded that the swept areas were considered safe to allow normal fishing operations to proceed.

8 Conclusion

188. The analysis of fisheries activity within and around the NnG Offshore Wind Farm demonstrates that commercial fishing has remained active and resilient throughout the construction period, including 2023, the fourth full year of construction-phase monitoring.

189. Across the 2017 to 2023 time series, **Nephrops** continues to represent the dominant species in both the local and regional study areas, though total landings remain below the pre-construction baseline (2017-2019). A modest recovery was observed through 2022 and 2023, with seasonal peaks maintained but at lower intensity than historic highs. These findings suggest that, while construction activities may have temporarily influenced access or fishing behaviour during specific periods, the overall Nephrops fishery has remained viable and productive.

190. **Lobster** fisheries have demonstrated consistent strength, with stable or increasing landings over recent years. The return of pronounced summer peaks in 2022 and 2023 indicates that this key inshore fishery has continued to perform well, supported by sustained activity across the main potting ports, including Pittenweem, Dunbar, and Port Seton.

191. **Brown crab** landings remain more variable, with overall totals below baseline levels but showing clear improvement compared to 2020-2021. The local study area exhibits a stronger pattern of recovery than the wider region, suggesting continued engagement in nearshore fisheries despite ongoing project activity.

192. **Squid** landings remain highly variable and seasonal, with notable peaks observed in late 2022 and again in 2023, the latter being among the highest levels recorded since 2017. This highlights the sporadic but economically important role of squid within the regional catch composition.

193. Analysis of **total landings across all species** provides valuable context for understanding broader fisheries performance. Nephrops, lobster, and brown crab continue to underpin the local and regional economies; however, changes in secondary fisheries are also evident. At the local scale, **razor clams** have become increasingly important, supported by sustained high landings through 2021-2023. Regionally, razor clam activity has also strengthened, while scallops and whelks have declined slightly and surf clams show small but consistent increases. These trends indicate subtle shifts in species composition across the Firth of Forth fishing grounds.

194. Port-level analysis reinforces the significance of **Pittenweem**, which remains the principal landing port for vessels operating in and around the NnG area. Dunbar and Eyemouth continue to contribute strongly, with landings increasing through 2022 and 2023, reflecting the resilience of both inshore and offshore components of the fleet. A network of smaller ports, including Port Seton, Anstruther, Arbroath, North Berwick, and St Abbs, maintain active roles dominated by shellfish landings, supporting the economic diversity of the coastal fishing sector.

195. Spatial datasets (AIS and VMS) confirm that fishing effort across the local and regional study areas has largely returned to expected levels, following temporary reductions during peak construction activities. By 2023, vessel activity had re-established well-defined trawl corridors and seasonal potting grounds consistent with historical patterns.

196. Overtrawlability trials conducted in 2021 and 2022 verified that fishing gear can safely operate across the Offshore Export Cable Corridor (ECC), including areas of rock protection. These findings provide assurance to both regulators and the fishing industry that the seabed remains suitable for normal fishing operations.

197. Overall, the 2023 data indicate that fisheries operating within and around the NnG Offshore Wind Farm area have remained active throughout the construction period. Variability in landings continues to be evident across years and seasons, reflecting the dynamic nature of fishing activity within the region. The results provide no indication of a sustained decline in overall fishing activity within the vicinity of the project.

198. Further monitoring will be undertaken in **Report 3f**, which will incorporate additional datasets currently under review, including those from the Fisheries Sensitivity Mapping and Displacement Modelling (FiSMaDiM) project and socio-economic data requests to enhance understanding of fleet performance and trends through the operational phase of the NnG Offshore Wind Farm.

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Appendix A

The following table provides the comment received on Report 3e and how they have been addressed. [To be populated when comments received]

Consultee Comment	NnG Response	Report update

NnG OFFSHORE WIND

EDF power solutions

ESB Energy for generations

Neart na Gaoithe