Neart na Gaoithe

Commercial Fisheries Monitoring Report 3f - 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 monitoring programme to assess commercial fisheries activity in the Firth of Forth before, during, and after construction of the Neart na Gaoithe Offshore Wind Farm (NnG). This report (Report 3f) presents findings for the 2024 calendar year (the fifth full year of construction-phase monitoring) and updates the assessment against the pre-construction baseline (2017-2019) and earlier construction-phase results (2020 to 2023).

Purpose and approach

The monitoring programme aims to understand variation in commercial fishing activity over time and to support the continued relevance of the Fisheries Management and Mitigation Strategy (FMMS). While changes in fisheries activity cannot be attributed to single factors in isolation, the monitoring provides evidence to inform mitigation, engagement and interpretation of trends at appropriate spatial scales.

Datasets analysed include government landings statistics (MMO iFISH), Vessel Monitoring System (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 corridor) and the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8). The report also includes an additional socio-economic context section using Scottish Fisheries Statistics (2019-2024) to summarise trends in employment and active vessel numbers along the east coast.

Key findings

Nephrops (*Nephrops norvegicus*): Nephrops continues to underpin both local and regional fisheries. Following higher totals in 2022-2023, 2024 shows a reduction in both landed weight and first sales value at local and regional scales. Seasonal peaks remain evident but are generally less intense than the 2017-2019 baseline, indicating ongoing interannual variability consistent with broader fishery dynamics rather than a sustained, localised change.

Lobster (*Homarus gammarus*): Lobster fisheries remain resilient across the construction period. Landings and value remain strong through 2024, with seasonal peaks maintained. While 2024 is generally below the strongest recent years (notably 2022-2023) in several local ports, the fishery continues to perform well and remains a key inshore component of the local and regional catch.

Brown crab (*Cancer pagurus*): Brown crab landings remain variable. The recovery evident in 2022-2023 compared to 2020-2021 is followed by a notable drop in 2024 in the local study area, with a smaller decline at the regional scale. This suggests that the 2024 reduction is not confined to the local area, but the change appears more pronounced in the local rectangles (40E7/41E7).

Squid (*Loligo* spp. / mixed squid and octopi): Squid landings remain low overall but highly episodic. The local study area shows a pronounced increase in 2024, driven by a strong late-summer/autumn peak. In contrast, regional landings do not show a comparable uplift, supporting the interpretation that cephalopod catches are patchy and may reflect short-term shifts in distribution and/or reporting categories (including mixed squid and octopi).

Other commercial species: Across all species, Nephrops, lobster and crab continue to dominate, but secondary fisheries remain important and can shift year-to-year. Razor clams (*Ensis* species) remain a major contributor locally and regionally through 2024. At the regional scale, king scallops (*Pecten maximus*) show a marked resurgence in 2024 after several low years. These patterns underline that changes in the wider catch mix can influence total landings and value, and should be considered alongside the main shellfish 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, reflecting the port's proximity to 41E7. In 2024, several ports show moderation in value compared to 2022 to 2023, consistent with reduced Nephrops and (locally) brown crab. Dunbar remains strongly associated with the inshore lobster fishery, while Eyemouth remains characterised by its demersal trawler fleet targeting Nephrops. Smaller ports (e.g., Port Seton, Arbroath, St Abbs, Anstruther and North Berwick) continue to support active shellfish-dominated fisheries, largely undertaken by vessels under 12 m.

Spatial activity: Available AIS and VMS evidence continues to show fishing activity across the known Nephrops grounds overlapping the Offshore Export Cable Corridor, with established corridors and seasonal patterns. Wider spatial outputs (including FiSMaDiM cumulative layers where applicable) provide additional context for demersal trawl and dredge activity at the regional scale; potting outputs are not relied upon where datasets under-represent the small-vessel fleet.

Overtrawlability trials: Trials undertaken in 2021 and 2022 confirmed that the Offshore Export Cable Corridor remains suitable for demersal trawl operations, including over areas of rock protection, providing confidence that trawling can safely continue.

Employment and active vessels (east coast context, 2019-2024): Scottish Fisheries Statistics indicate a general reduction in fishing employment across the east coast over the period, driven primarily by declines in regular employment, with totals stabilising in the most recent years (2023-2024). Active vessel numbers have decreased slightly across most east coast districts, although the largest districts continue to dominate overall fleet numbers and activity.

Conclusion

Overall, commercial fishing activity in the vicinity of the NnG Offshore Wind Farm has remained active through 2024. The 2024 reporting year shows a softening in Nephrops and brown crab compared with the stronger 2022-2023 period, while lobster and razor clam fisheries remain robust and continue to provide substantial value to local ports. Squid remains episodic, with the 2024 local increase highlighting how short-lived, localised peaks can influence annual totals.

Port-level results confirm the continued importance of Pittenweem and the differing roles of Dunbar, Eyemouth and smaller ports, reflecting a mix of inshore and offshore fleet components. Spatial evidence continues to support that fishing activity persists across the area, and that any disruption during construction has been temporary and localised. The additional 2019-2024 socio-economic context indicates that wider structural changes (employment and fleet composition) are occurring along the east coast and should be considered when interpreting landings patterns at local scale.

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Abbreviations / Acronyms

ACRONYM / ABBREVIATION	DEFINITION
AIS	Automatic Identification System
APS	Annual Population Survey
Cefas	Centre for Environment, Fisheries and Aquaculture Science
COVID-19	Coronavirus Disease 2019
DoL	Depth of Lowering
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
EMSA	European Maritime Safety Agency
ES	Environmental Statement
FiSMaDiM	Fisheries Sensitivity Mapping and Displacement Modelling
FLO	Fisheries Liaison Officer
FMMS	Fisheries Management and Mitigation Strategy
FTRAG	Forth and Tay Regional Advisory Group
FTCFWG	Forth and Tay Commercial Fisheries Working Group
GVA	Gross Value Added
ICES	International Council for the Exploration of the Sea

ACRONYM / ABBREVIATION	DEFINITION
iFISH	Marine Management Organisation fisheries landings statistics database
iVMS	Inshore Vessel Monitoring System
km²	Square kilometres
m	Metres
m²	Square metres
MD-LOT	Marine Directorate – Licensing Operations Team
MMO	Marine Management Organisation
NnG	Neart na Gaoithe Offshore Wind Farm
NnGOWL	Neart na Gaoithe Offshore Wind Limited
NM	Nautical miles
OfTW	Offshore Transmission Works
ONS	Office for National Statistics
OSS	Offshore Substation
OWF	Offshore Wind Farm
PEMP	Project Environmental Monitoring Programme
S36	Section 36 consent under the Electricity Act 1989
UK	United Kingdom
VMS	Vessel Monitoring System
WTG	Wind Turbine Generator

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 and mitigation programmes for, but not limited to, commercial fish.	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. 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 [complete];
- Report 3f: 01 January to 31 December 2024 and so on continuing with reporting outputs on a 6-monthly basis to end of construction [this report].

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, Report 3d covered the period up to December 2022 and Report 3e covered the period up to December 2023. Report 3f (this Report) covers the period up to December 2024 and updates the annual analysis that has been provided in Reports 2, 3a-e for the 2024 annual period. Due to fisheries statistics data availability, Reports 3d, 3e and 3f cover an annual period of data (from 01 January to 31 December). This differs from the data availability for Reports 3a, 3b and 3c which analysed a 6-month period of data. This is due to the availability of data,

rather than a change in the monitoring approach, analysis or reporting i.e., the best, most up-to-date data has been analysed for each Report.

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.

12. A draft version of Report 3f was presented to the Forth and Tay Commercial Fisheries Working Group in May 2026. The presentation summarised the draft findings for the 2024 monitoring year and provided an opportunity for fisheries stakeholders to comment on the interpretation of the monitoring data, emerging trends and priorities for future reporting. Stakeholder feedback received during the meeting has been considered in the interpretation of results and is summarised in Appendix A, together with any associated actions and report updates.

1.5 Fisheries overview

13. 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, 3d and 3e.

14. The fisheries in operation across the NnG offshore wind farm and export cable, and surrounding area include:

- Lobster and crab creel fishery;
- Nephrops demersal trawl fishery;
- Squid demersal trawl fishery; and
- Occasional activity from other mixed demersal trawlers and scallop dredgers.

15. Vessels land to a range of ports on the north and south side of the Firth of Forth, including but not limited to (and in no particular order): Pittenweem, Dunbar, North Berwick, Cove, Eyemouth, Port Seton, Anstruther and St Monans (sometimes also referred to as St Monance).

1.6 Project related activities

16. Commencement of NnG offshore construction began in August/September 2020, with the following detailed construction activities undertaken from 2021 to 2026:

- 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;
- July 2023 to April 2025 - installation of wind turbines;
- October 2024 to May 2025 – commissioning of wind turbines (first power October 2024); and
- January 2026 – installation of rock armour at the inter-array cables

17. During construction activities, the Project has provided for disruption and cooperation agreements related to the export cable installation and NnG Wind Farm Area.

2 Methodology

18. The overall approach throughout this report is to analyse and present data for comparison with previous years of data, to build on the information provided in the previous reports, including the ES baseline and PEMP Reports 1, 2, 3a, 3b, 3c, 3d and 3e.

19. This Report 3f focuses on annual analysis for the 2024 period. Other forms of available spatial data are also presented including Vessel Monitoring System (VMS) data and Automatic Identification System (AIS) data.

20. The Marine Management Organisation (MMO) iFISH landing statistics database has been analysed to explore any changes in trends of landings across the 2024 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

21. Landing statistics from the period January 2017 to December 2024 are presented in this report.

22. Data across two spatial study areas are assessed as shown in Figure 2.1 and described as:

- Commercial fisheries local study area: ICES rectangles 40E7 and 41E7
- Commercial fisheries regional study area: 42E7-E8, 41E6-E8 and 40E6-E8.

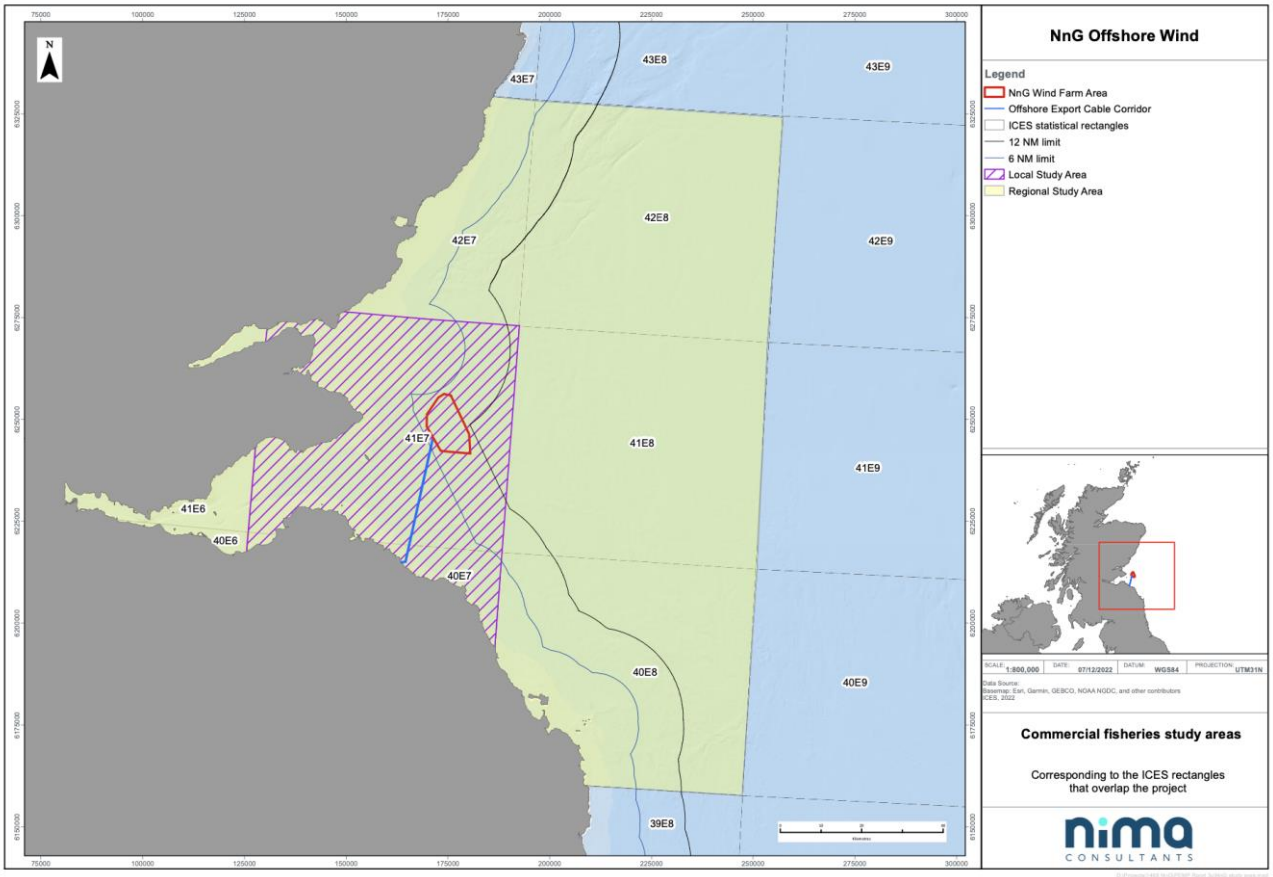

Figure 2.1. Commercial fisheries local and regional study areas.

2.2 Monitoring guidance

23. The Scottish Government's *Monitoring Offshore Windfarm Impacts on the Commercial Fishing Industry - Good Practice Guidance* (Xodus, 2025) has been reviewed to assess compliance and identify areas for improvement in PEMP monitoring approach.

24. This Report 3f (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.

25. 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.

26. The draft findings of Report 3f were presented to fisheries stakeholders through the Forth and Tay Commercial Fisheries Working Group. Stakeholders noted that the monitoring conclusions were broadly consistent with their experience of continued fishing activity within and around the NnG area. In particular, feedback indicated that reductions in Nephrops landings are likely to be influenced by wider changes in fishing effort, including fleet reduction, reduced crew availability and longer-term cyclical variation in catch returns.

27. Stakeholders also highlighted the importance of incorporating the most current and highest resolution fisheries datasets where available. It was suggested that future reporting should explore whether additional data held by Seafish could inform interpretation of landings, effort and fleet trends. NnGOWL will therefore contact Seafish to confirm what datasets may be available and whether these could be used to strengthen future PEMP reporting.

28. The consultation also reinforced the importance of improving socio-economic interpretation in future monitoring reports. Stakeholders identified crew availability and recruitment into the fishing industry as important contextual factors influencing fishing effort and landings. These issues align with the wider challenges identified, particularly where employment, fleet structure and economic indicators are available only at broader regional or national scales and are therefore difficult to attribute specifically to offshore wind farm activity.

3 Overview of landings

29. This section of Report 3f 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

30. 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 2024. Nephrops dominate both in terms of weight and value throughout the time series. Following higher landings and values in 2017-2019, activity declined in 2020-2021, rebounded strongly in 2022, and then eased again in 2023, with a further reduction evident in 2024.

31. Lobsters have remained relatively stable in landed weight across the period and continue to deliver consistently high value, peaking around 2022 and remaining strong (though slightly lower) in 2023-2024. Brown crab landings remain variable, declining after 2019, recovering in 2022-2023, and reducing again in 2024. Razor clam landings and value increased markedly from 2017, reaching sustained high levels from 2021 onwards and remaining a major component of the fishery in 2024.

32. Among secondary species, velvet crab shows moderate and fairly stable landings and value, with a modest strengthening in recent years (including 2024). King scallop shows a pronounced decline from earlier peaks and remains negligible in 2022-2024, suggesting reduced importance in the local fishery. Whelks show intermittent activity (with a small resurgence in landings in 2024), while finfish species such as cod, haddock, and whiting remain consistently minor contributors to overall landings and value.

33. Overall, these results indicate that while Nephrops continue to underpin local fisheries, the 2024 data reinforce a recent softening in Nephrops activity compared with the mid-series rebound. At the same time, diversification is evident, particularly through sustained contributions from lobster, razor clams and velvet crab (and emerging secondary shellfish in some years), which may provide some resilience in the local catch composition.

3.2 Regional study area

34. 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 2024. Nephrops remain the dominant species in terms of landed weight, with higher volumes in 2017-2019, a marked reduction in 2020-2021, recovery in 2022-2023, and a further decline evident in 2024. Brown crab also represents a substantial share of the regional fishery, although landings have generally been lower since 2020 and reduce again in 2024 compared with the 2017-2019 highs.

35. Lobsters maintain moderate but relatively stable landings across the period, but continue to deliver the highest first sales value regionally, reflecting consistently high unit prices through to 2024. King scallops show pronounced interannual variability: strong peaks in earlier years, very low landings and value during 2020-2023, and a marked resurgence in 2024. Razor clams, while smaller in volume than Nephrops or crab, show sustained growth from 2020 onwards and remain a notable contributor to both landings and value in 2024, while velvet crab landings remain moderate and broadly stable.

36. Among secondary species, surf clams and haddock show occasional increases (including higher activity in the most recent years), whereas whelks appear to have declined from earlier peaks. Squid and most finfish species (e.g., whiting, cod and plaice) continue to contribute only a minor proportion of overall regional landings and value.

37. Overall, the regional dataset highlights the continued importance of Nephrops and crab by volume alongside the consistently high value of lobster, while 2024 data indicate a renewed contribution from scallops and sustained strength in razor clams. Together, these patterns illustrate shifts in the relative contribution of key shellfish fisheries within the region, with some diversification beyond the dominant Nephrops fishery.

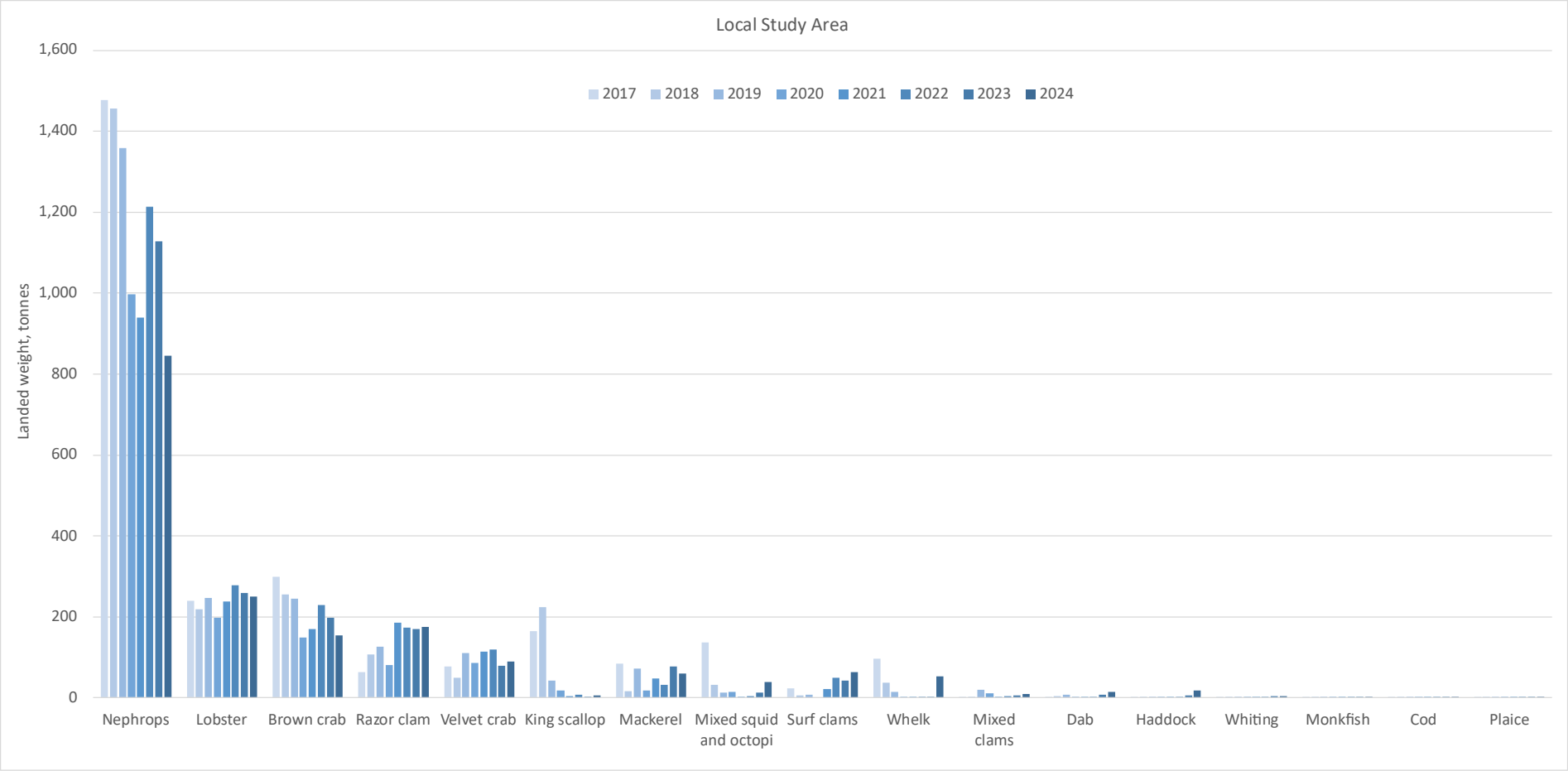

Figure 3.1. Landed weight from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

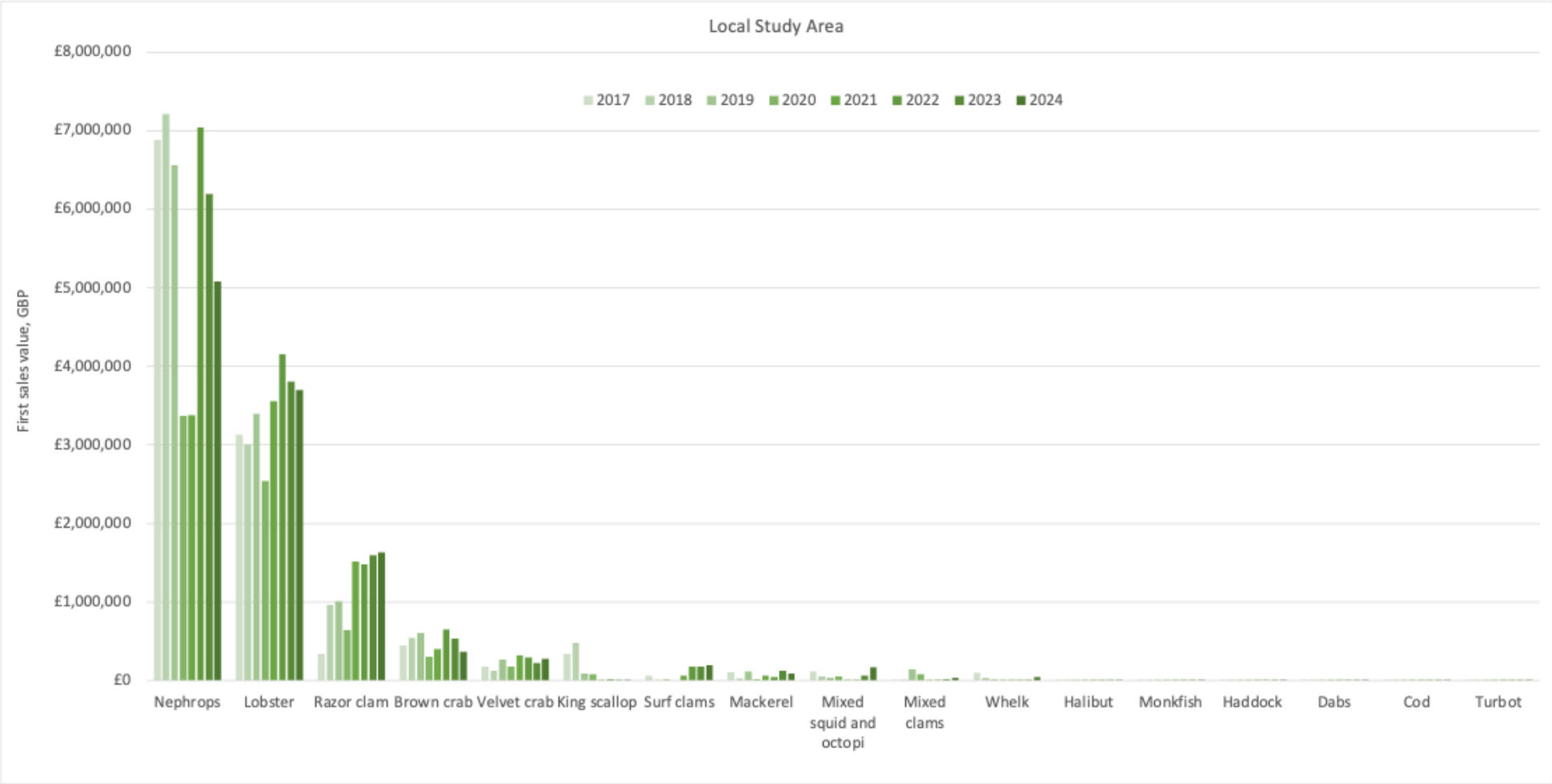

Figure 3.2. First sales value landed from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

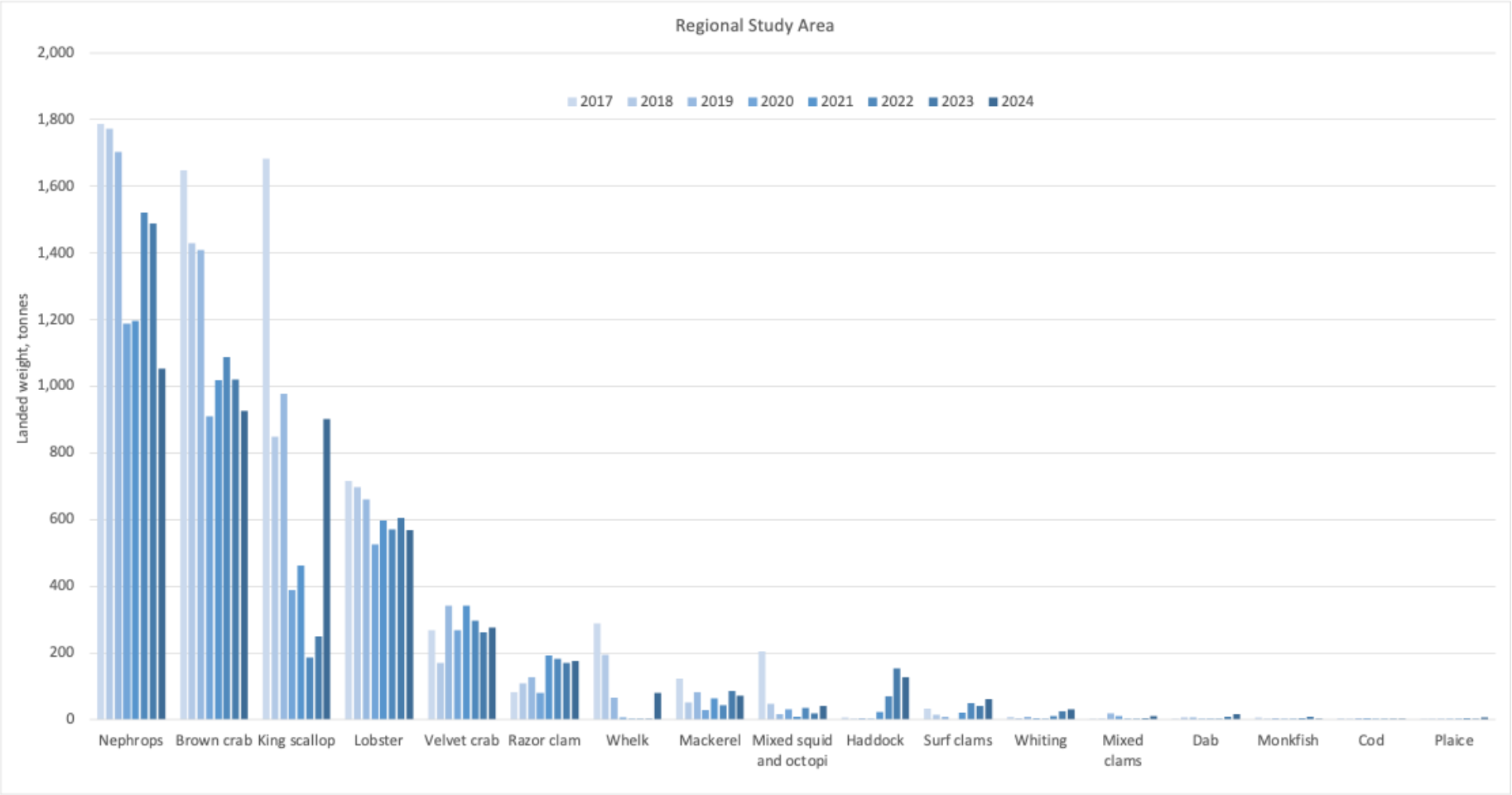

Figure 3.3. Landed weight from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

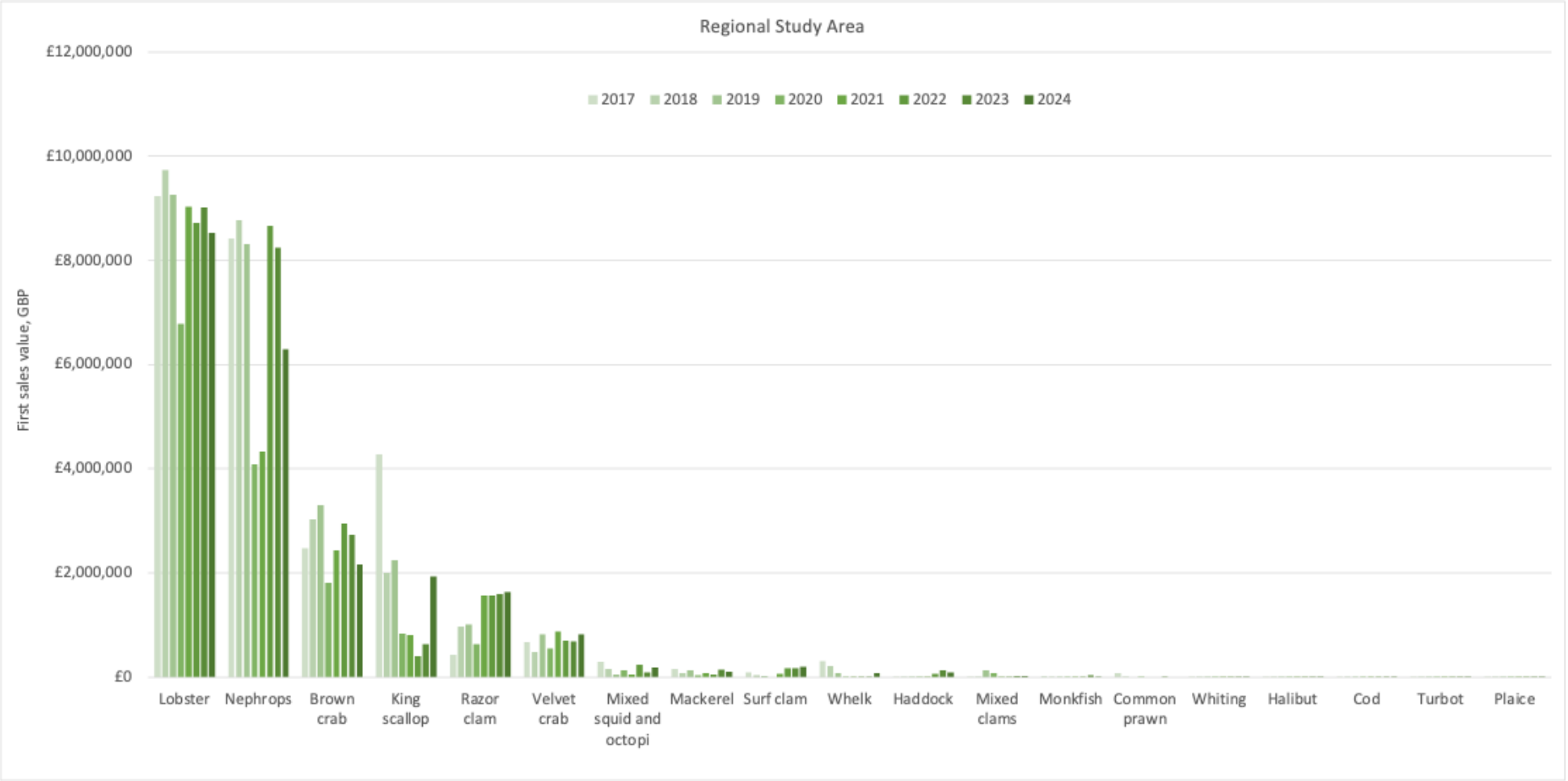

Figure 3.4. First sales value landed from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

4 Inter-annual variations for key species

4.1 Nephrops

4.1.1 Nephrops: local study area

38. 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)) are shown in Figure 4.1 for the time series Jan 2017 to Dec 2024. 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 surpassed 200 tonnes in the earlier part of the series, 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, and a summer increase again in 2024). 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 and are generally below 200 tonnes, indicating a sustained shift away from the earlier high-landing period.
    - Landings from 40E7 remain relatively consistent over time, with occasional peaks (e.g., late 2018 and summer 2022) and a renewed increase towards the end of 2024.
- Recent trends (2022-2024):
    - Landings remain lower than the early years of the dataset.
    - 2023 maintains moderate peaks (typically <150 tonnes for 41E7). In 2024, landings show a more subdued pattern overall, including a pronounced dip in early autumn followed by recovery towards year end.

39. 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, landings subsequently recover, and the additional post-construction year (2024) continues to indicate variability rather than a persistent step-change attributable to those activities.

40. The reduction in peak landings observed in the later years (post-2020), and the lower overall totals evident in 2024, could therefore reflect a combination of stock dynamics, market demand, and redistribution of effort, in addition to any short-lived spatial displacement associated with offshore construction.

41. To further examine monthly landings of Nephrops from the local study area (40E7 and 41E7), a deeper-dive analysis has been undertaken and presented in Figure 4.2, including:

- A monthly time series of landings from January 2017 to December 2024.
- 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 the individual years 2023 (blue) and 2024 (red), including linear trendlines.
- Interannual variation in monthly landings, comparing the proportional change in average monthly landings from 2017-2019 to 2020-2022, and 2020-2022 compared with 2023 and 2024.

42. **Monthly time series (2017-2024):** 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 ~150-180 tonnes. The fitted linear trendline indicates a gradual long-term decline in landed weight across the study period, with 2024 remaining within the lower range observed since 2020.

43. **Comparison of 2023 and 2024 with previous periods:** The lower-left panel compares monthly landings for 2023 and 2024 against the averages for 2017-2019 and 2020-2022. The 2017-2019 average displays consistently high landings, with strong summer and autumn peaks (e.g., July and November). The 2020-2022 average shows more moderate peaks. In 2023, landings were relatively low in the first half of the year followed by some recovery during summer, but seasonal peaks remained below the pre-2020 period. In 2024, a similar pattern is evident overall (i.e., below the 2017-2019 average), but with a clearer spring/early-summer low, a mid-year increase, and a pronounced dip in early autumn before recovery in late autumn/winter. This reinforces the continued absence of the stronger peak periods typical of 2017-2019.

44. **Interannual variation (2017-2024):** Extending the comparison to include 2024 indicates that reductions remain evident across many months when comparing 2017-2019 to 2020-2022. Relative to 2020-2022, 2023 shows a mixed pattern (some early-year improvements but declines later in the year), whereas 2024 shows more pronounced shortfalls in parts of spring and early autumn, alongside recovery later in the year. Overall, 2024 remains within the range of interannual variability but does not indicate a return to the higher seasonal peaks of the pre-2020 period.

45. **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 wider time series (now including 2024) continues to support the conclusion that any construction-related effects were temporary and localised, with landings subsequently recovering.

46. However, the longer-term downward trend, the absence of strong seasonal peaks since 2019, and the lower annual total evident in 2024 (as shown in Figure 4.2) 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.

47. **Stakeholder feedback** provided during consultation supports the interpretation that the reduction in Nephrops landings observed in recent years is likely to reflect a combination of factors, including reduced fishing effort, fleet reduction, availability of crew, market conditions and natural cyclical variation in catches. Stakeholders noted that there has historically been a cycle in catch return over time and that the recent decline may be linked, at least in part, to reduced numbers of vessels and crew operating in the fishery.

48. Stakeholders also reported that productive Nephrops fishing grounds remain present close to the NnG and neighbouring offshore wind farm areas. This local knowledge is consistent with the monitoring conclusion that fishing activity has continued within and around the Project area and that the available evidence does not indicate a sustained reduction in Nephrops availability attributable to NnG construction. Continued monitoring will remain important to distinguish wider fleet and stock-related trends from any localised project-related effects.

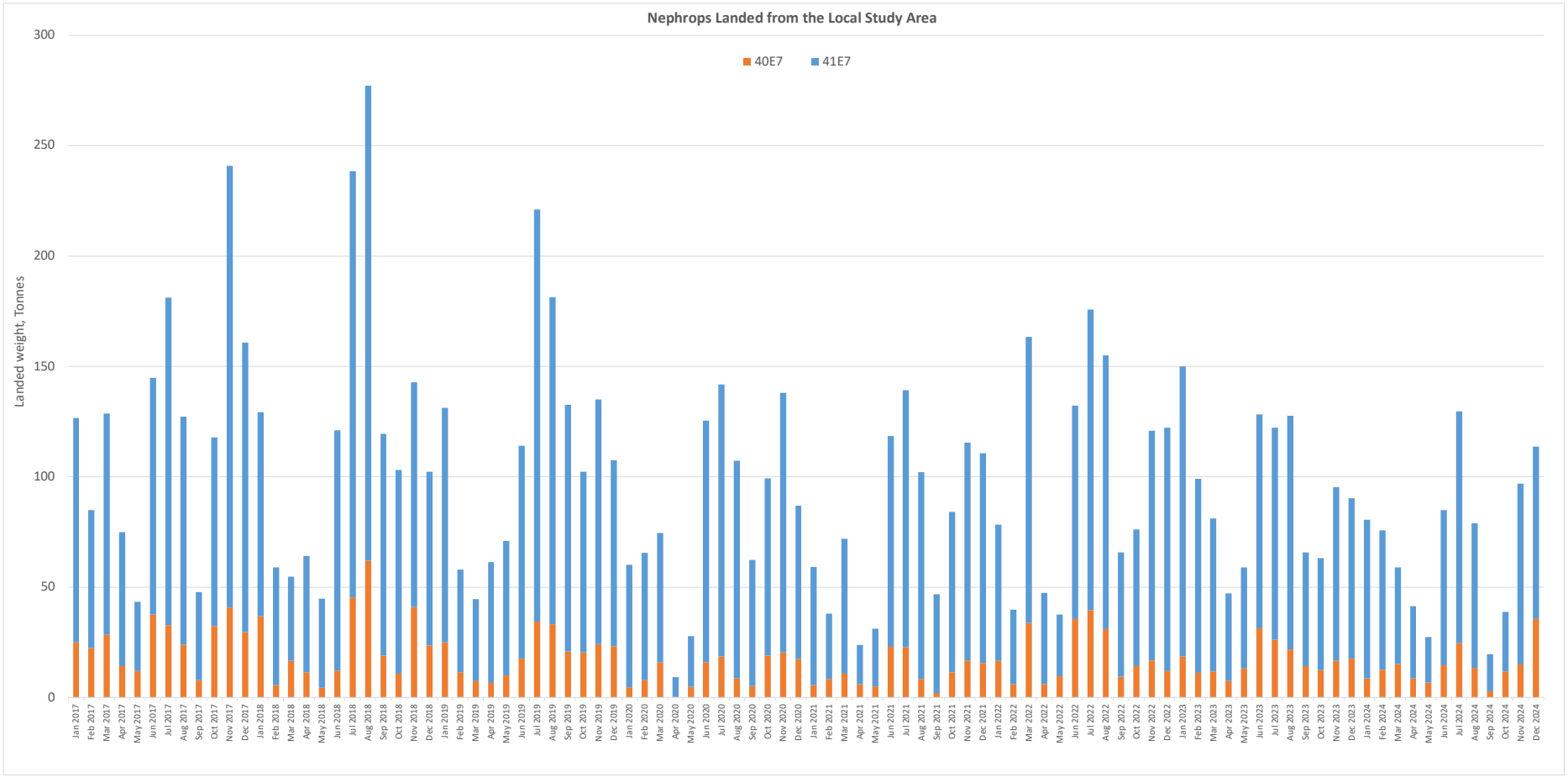

Figure 4.1. Time series of landed weight (tonnes) of nephrops by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

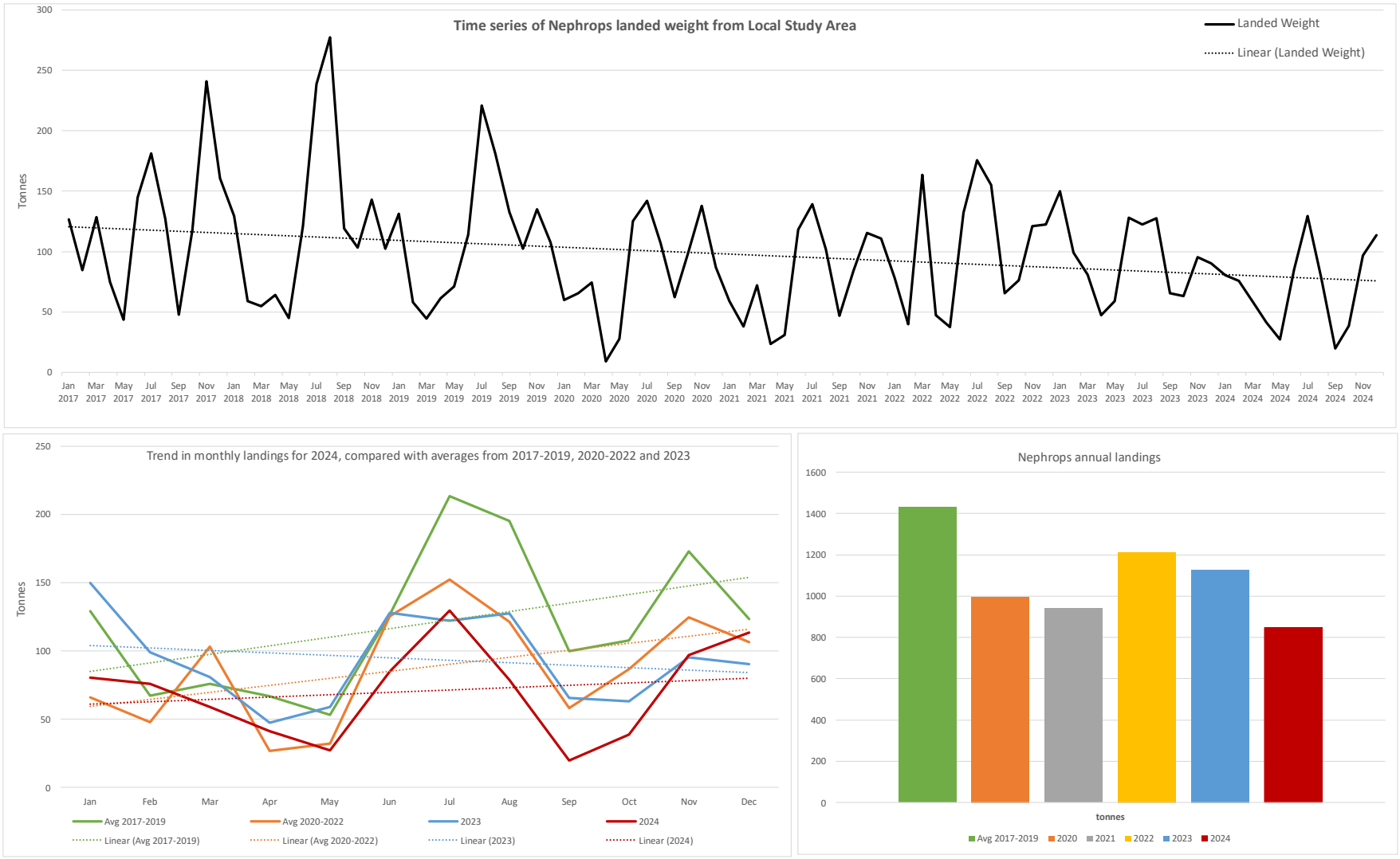

Figure 4.2. Time series, trendlines and inter-annual variation of landed weight (tonnes) of nephrops from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

4.1.2 Nephrops: regional study area

49. 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 2024.

50. As corroborated by previous Reports 1, 2, 3a, 3b, 3c, 3d and 3e, ICES rectangle 41E7 has the highest proportion of Nephrops landings in the region, with 40E6 also contributing consistently high volumes relative to other rectangles.

51. **Monthly time series (2017-2024):** 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, indicating that the decline in peak landings is not purely a local phenomenon but reflects wider regional fisheries dynamics. The 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.

52. 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.

53. Nevertheless, the fact that the strong seasonal peaks observed in 2017-2019 have not returned, and that 2024 shows a lower annual total than 2022-2023 (Figure 4.4), 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.

54. **Comparison of 2023 and 2024 with previous periods:** The most notable feature of 2023 is the front-loading of catches earlier in the year, with the highest landings occurring in January, several months earlier than the typical mid-to-late summer/autumn peak indicated by the 2017-2019 and 2020-2022 averages. In 2024, this early-year peak is less pronounced, and the seasonal pattern appears more “conventional”, with higher landings occurring in mid-summer; however, a marked reduction is evident in spring and early autumn before recovery later in the year.

55. The trendline for 2023 shows a declining slope, contrasting with the upward trends seen for both 2017-2019 and 2020-2022, indicating early abundance followed by declining catches through the year. In 2024, the pattern differs: landings dip in spring, increase into summer, fall sharply in early autumn, and then recover toward year end—highlighting continued variability in the seasonal distribution of catches rather than a return to the stronger, sustained peak periods characteristic of 2017-2019.

56. The trends in 2023-2024 monthly landings compared to earlier periods, and the interannual variation in monthly landings, largely mirror the trends and findings for the local study area, which is expected given that most landings are taken from ICES rectangle 41E7.

57. **Interpretation and monitoring:** The shift in seasonal pattern observed in 2023, with peak Nephrops landings occurring unusually early in the year (January), is noteworthy. The additional year of data indicates that 2024 does not replicate the same degree of front-loading, instead showing a more mid-year peak but with notable within-year volatility (including a pronounced autumn dip). While these changes do not appear to be directly linked to the NnG export cable installation (May-Aug 2021) or rock protection works (Nov 2021-Jan 2022), they reinforce the importance of continued monitoring to distinguish between localised, construction-related effects and broader environmental or stock-driven changes. Tracking whether the timing and magnitude of peak landings stabilise, and whether pre-2020 peak levels re-emerge, will remain important for assessing any longer-term changes in the regional Nephrops fishery.

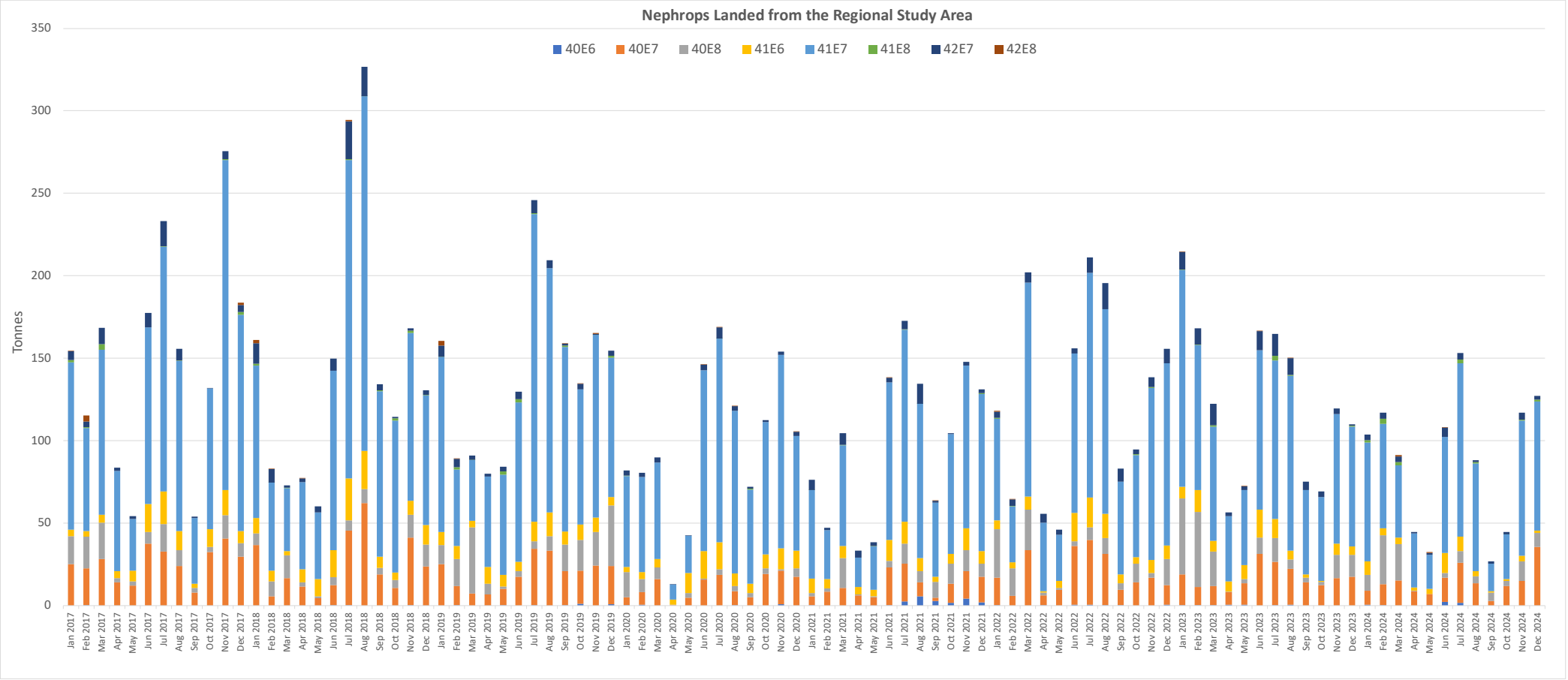

Figure 4.3. Time series of landed weight (tonnes) of nephrops by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

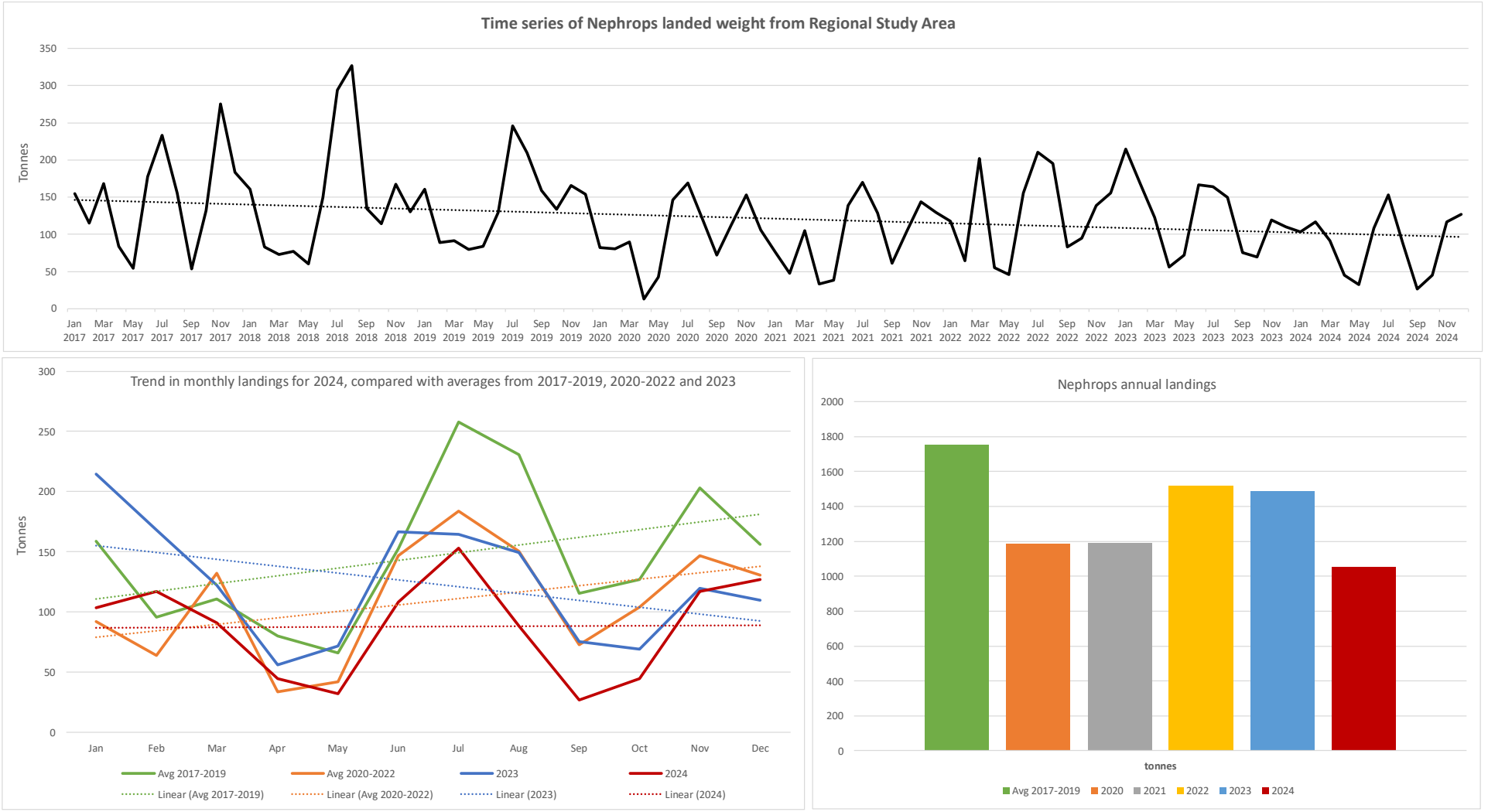

Figure 4.4. Time series, trendlines and inter-annual variation of landed weight (tonnes) of nephrops from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

4.2 Lobster

4.2.1 Lobster: local study area

58. 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 2024, 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 (2023-2024): Landings in 2023 and 2024 both show clear seasonal peaks, with 2024 exhibiting a strong mid/late-summer peak in 41E7 comparable to earlier high years, alongside smaller but consistent contributions from 40E7. Overall, recent values remain within the range of interannual variability observed across the dataset.

59. 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.

60. 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 the additional post-construction years (2023 and 2024) continue to show strong seasonal peaks, providing no evidence of a sustained reduction in catches attributable to construction activities.

61. When comparing monthly patterns (bottom left panel), the 2023 and 2024 seasonal cycles are consistent with previous years, with peak catches occurring in July-August. The magnitude of landings in 2024 is slightly lower than the record highs observed in 2022, but remains broadly comparable to 2023 and within the range of natural interannual variability and pre-construction averages (2017-2019).

62. 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. The 2024 total remains high (slightly below 2023), and continues to sit at or above the pre-construction average.

63. The evidence indicates that lobster catches in the local study area have remained resilient throughout the NnG construction period and have subsequently continued at levels comparable to, and in some years exceeding, pre-construction conditions. Seasonal peaks continue to occur reliably each year, confirming the stability of the fishery. While minor interannual fluctuations are evident (including a modest reduction in total landings in 2024 relative to 2022-2023), these fall within the expected range of natural variation.

64. 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 trends persist, but current evidence through 2024 indicates that the local lobster fishery remains stable and continues to exhibit strong seasonal productivity.

65. Stakeholder discussion did not identify evidence of a sustained adverse effect on the lobster fishery associated with NnG construction. The pattern of lobster landings presented in this report, including the continued presence of seasonal peaks and the resilience of the fishery through 2024, was broadly consistent with stakeholder understanding of the fishery. The lower landings recorded in 2020 were acknowledged as likely to reflect a combination of factors, including disruption agreements, COVID-19 and Brexit-related effects, rather than a long-term change in the fishery.

4.2.2 Lobster: regional study area

66. 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 2024.

67. 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.

68. 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.

69. 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.

70. 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.

71. 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.

72. 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. The additional year of data shows that 2024 continues this broadly stable pattern, with a clear summer peak and annual totals comparable to 2022-2023, indicating that regional lobster landings have remained resilient and within the range of interannual variability following construction activities.

73. 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 and continued stability in 2-24, with catches maintained and seasonal peaks evident, confirming that the fishery has remained resilient and continues to operate within expected variability.

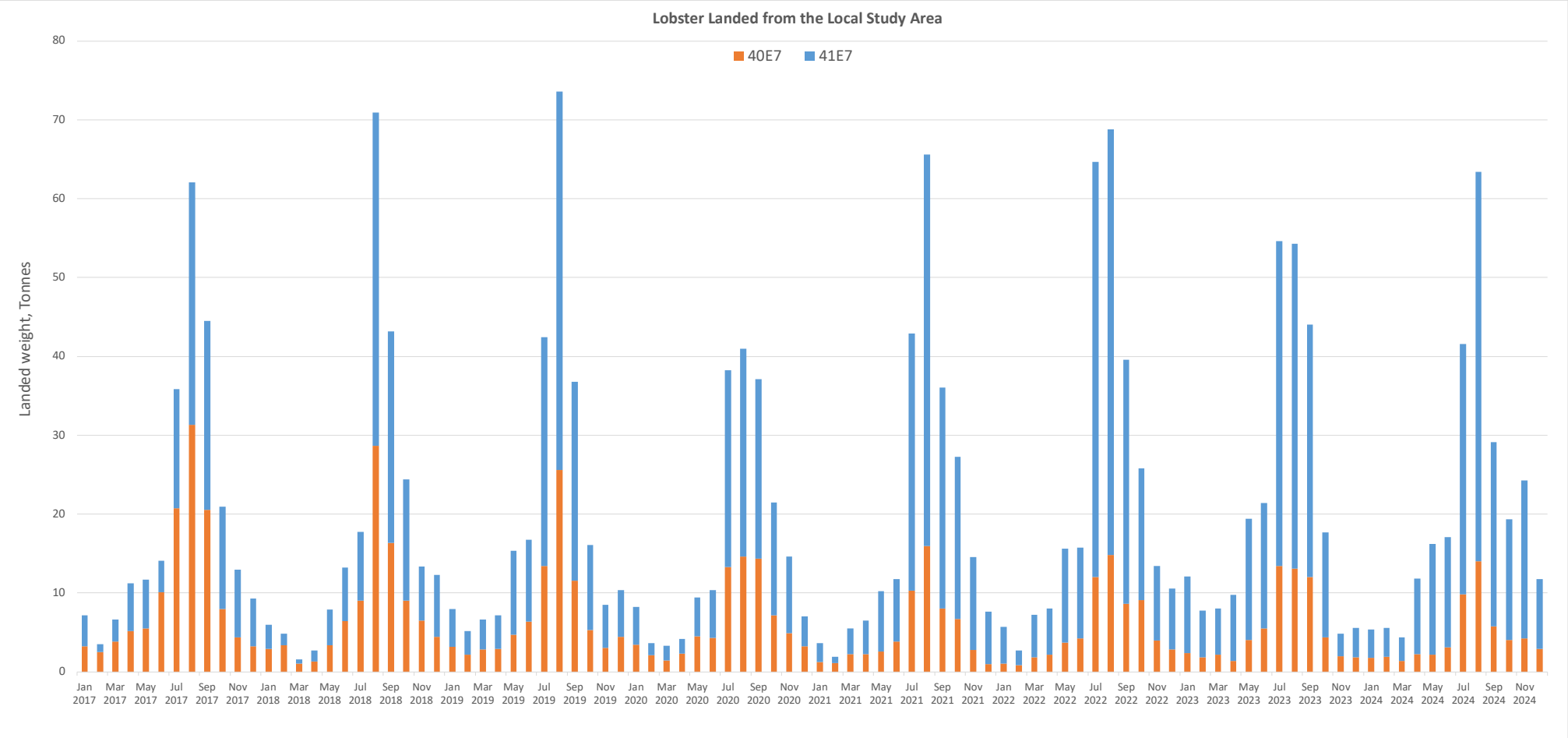

Figure 4.5. Time series of landed weight (tonnes) of lobster by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

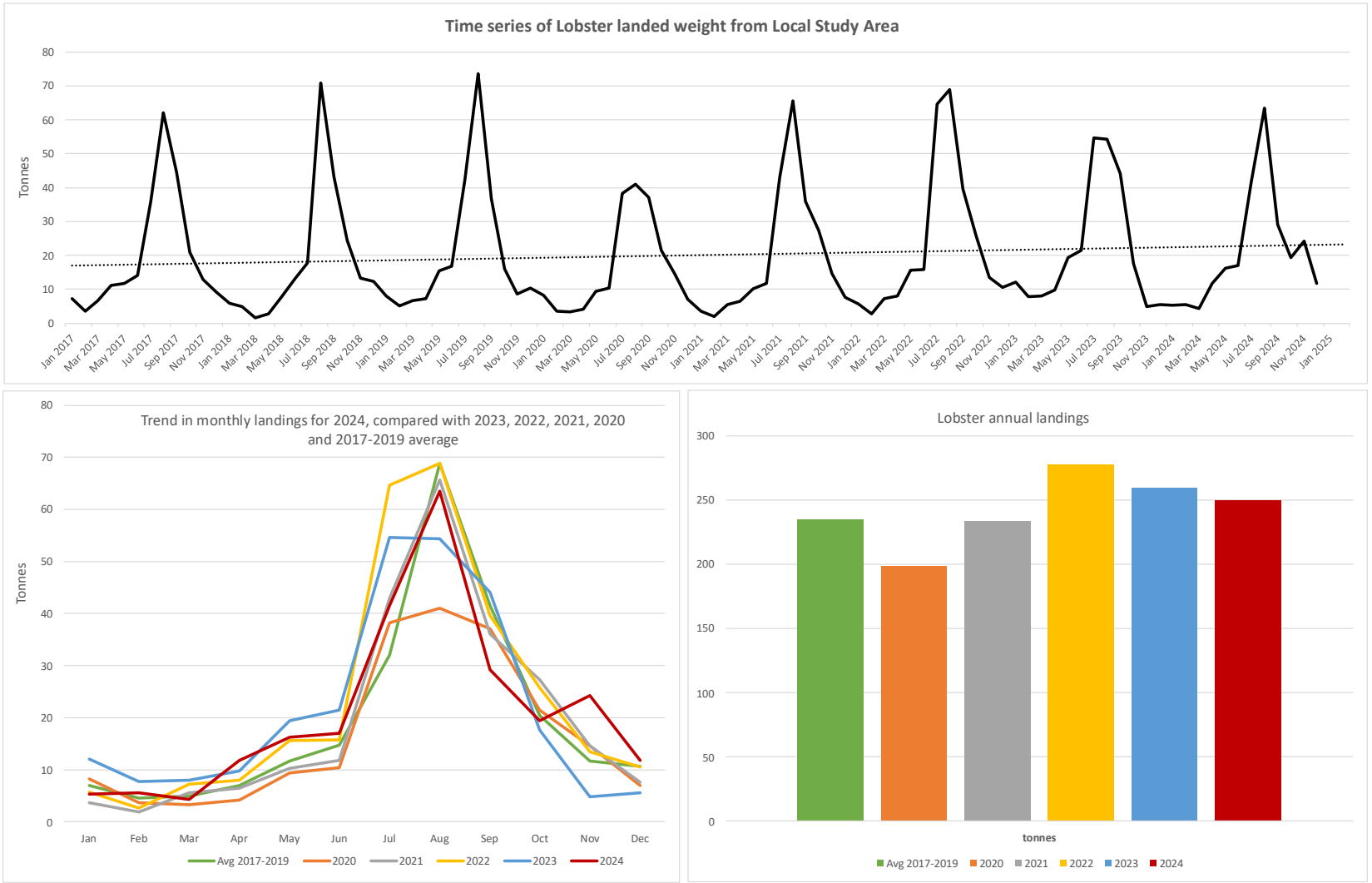

Figure 4.6. Time series, trendlines and inter-annual variation of landed weight (tonnes) of lobster from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

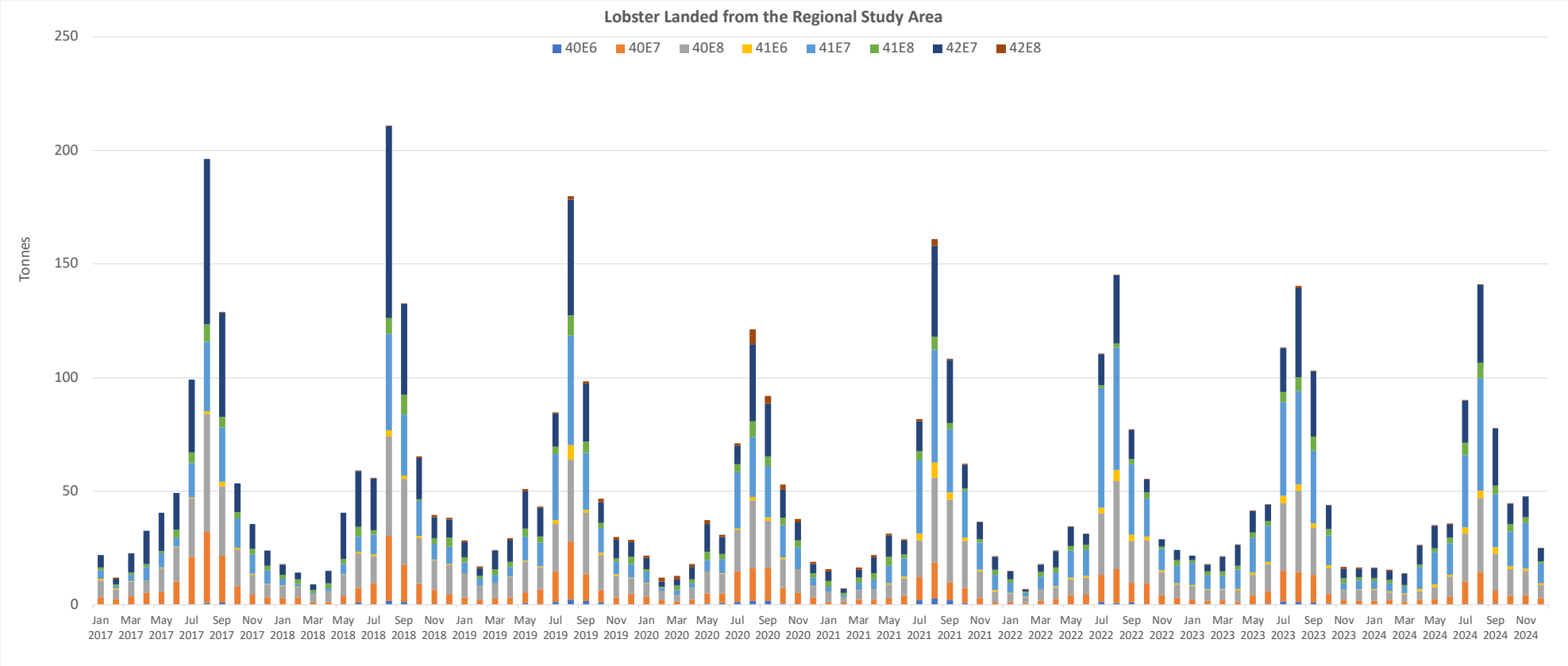

Figure 4.7. Time series of landed weight (tonnes) of lobster by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

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, 2025)

4.3 Brown crab

4.3.1 Brown crab: local study area

74. 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 2024. Landings are consistently higher from 41E7, with 40E7 providing a smaller but regular contribution throughout the time series.

75. 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 period, and the inclusion of 2024 strengthens this overall decline.

76. 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.
- 2024: Landings show a marked reduction to around 155 tonnes, comparable to the low levels observed in 2020 and substantially below 2022-2023, with fewer and lower monthly peaks across the year.

77. 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 and 2024). The pronounced drop in 2024 indicates a recent contraction in activity or availability relative to 2022-2023, although the fishery remains active across both rectangles. Overall, the extended time series continues to indicate a long-term decline from the 2017-2019 baseline, with year-to-year fluctuations superimposed on this broader downward trend.

78. Stakeholders discussed the reduction in brown crab landings in 2024 and noted that changes in catch may be influenced by wider shifts in fishing patterns, including vessels fishing further offshore. It was suggested that if effort is concentrated further offshore, fewer crabs may be available or targeted in inshore waters, which could contribute to reduced local landings.

79. Potential effects of electromagnetic fields (EMF) from subsea cables were also discussed. NnGOWL noted that NnG cables are buried and that, given the distance between receptors such as brown crab and the EMF source associated with buried cables or areas of rock protection, effects on crab migration are considered highly unlikely. Stakeholders noted that the scientific understanding of EMF effects continues to develop, including evidence from studies examining crab movement near cables. NnGOWL will continue to keep relevant evidence under review where available.

4.3.2 Brown crab: regional study area

80. 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 2024.

81. 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, particularly when the additional 2024 data are included.

82. 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. In 2024, regional landings decline again (to c. ~930 tonnes), reinforcing the longer-term downward trend evident in the regional time series (Figure 4.12), with fewer high peaks after 2019 compared to earlier years.

83. In the local study area, 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). 2023

landings (~200 tonnes) indicated continued recovery relative to 2020-2021; however, 2024 shows a pronounced drop (to approx. ~155 tonnes), bringing local totals back towards the lower levels observed in 2020.

84. Overall, the direction of change in 2024 is consistent across both spatial scales (i.e., a decline relative to 2023). However, the reduction appears more pronounced in the local study area than in the regional totals (local decline of roughly a quarter versus a smaller proportional reduction regionally). Visual inspection of the stacked monthly landings (Figure 4.11) suggests that while the major regional contributors (notably 40E8 and 42E7/42E8) continue to underpin regional catches through 2024, the local rectangles (40E7 and 41E7) contribute relatively less and show a clearer reduction in several months, meaning the local downturn is amplified in the rectangles that overlap the Project area rather than being driven uniformly across all rectangles.

85. Taken together, the 2024 data indicate that the local decline is not unique to the local study area, as a regional reduction is also evident. However, the fact that the regional fishery remains supported by substantial landings from rectangles outside the local study area (and does not fall as sharply proportionally) suggests that the 2024 decrease is more acute within 40E7/41E7 than across the region as a whole. This continued divergence supports the interpretation that broad-scale drivers (stock distribution, environmental conditions, market factors and effort allocation) are influential, while emphasising the need to keep monitoring local trends to understand whether the 2024 drop represents a short-lived fluctuation or a developing shift in local availability/effort.

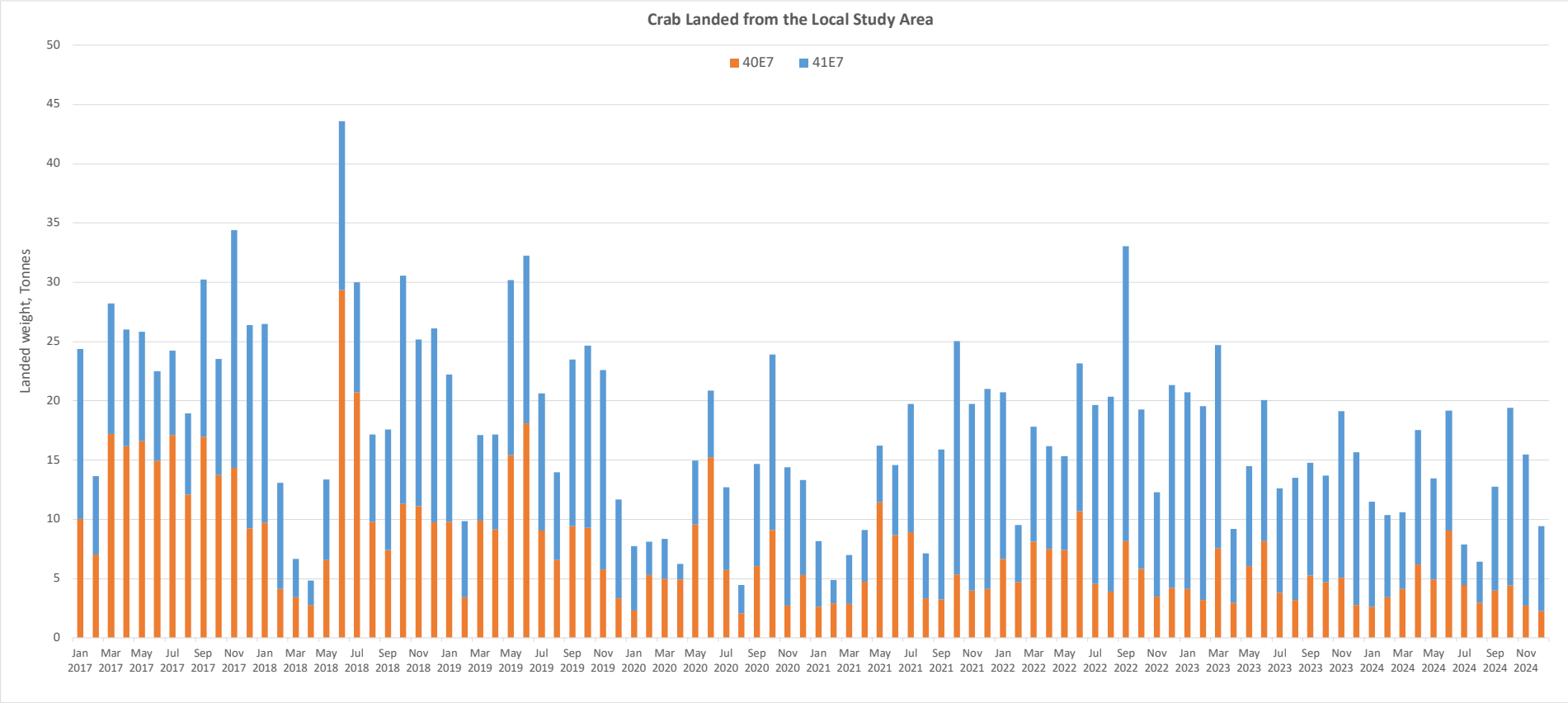

Figure 4.9. Time series of landed weight (tonnes) of brown crab by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

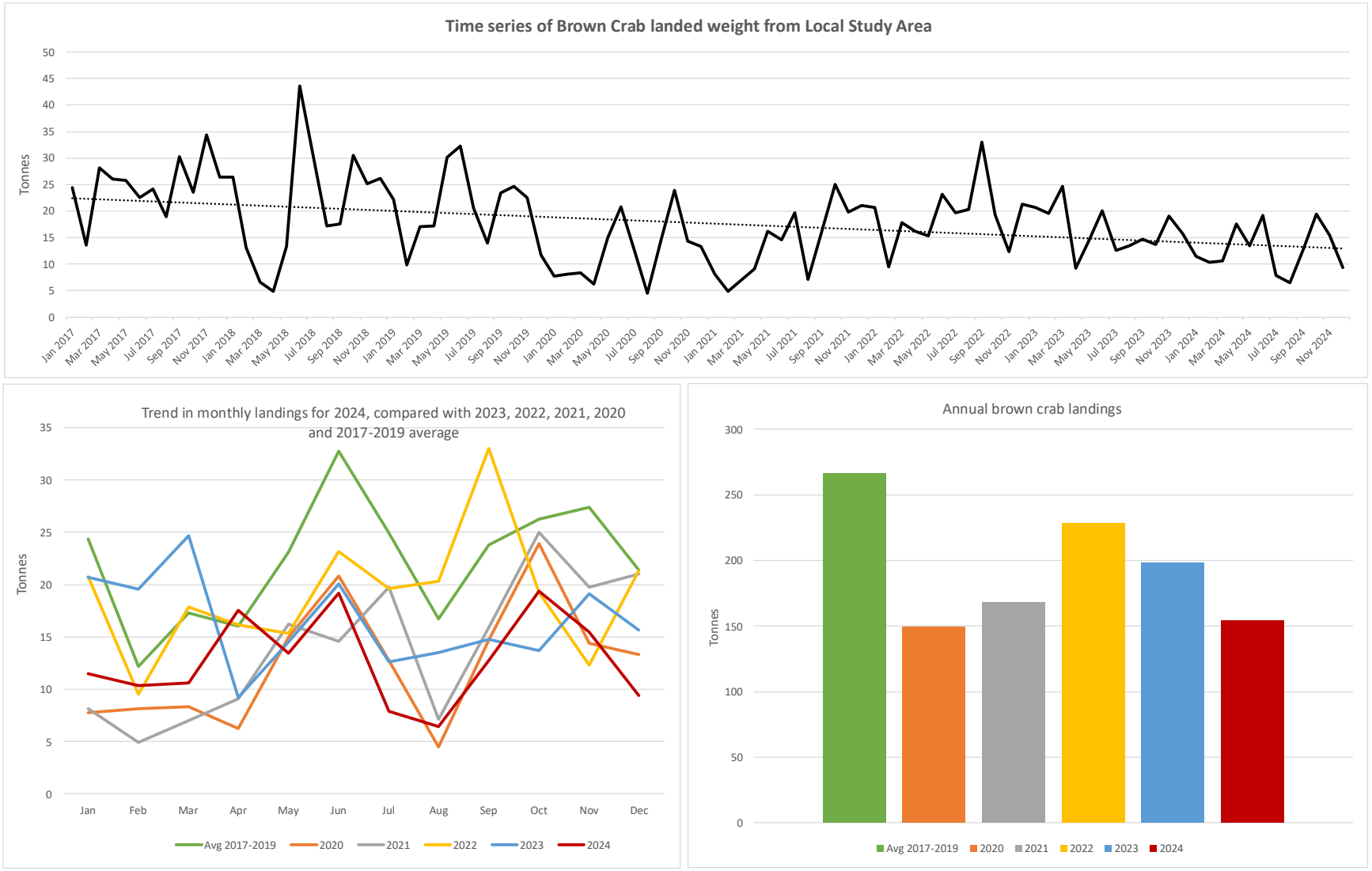

Figure 4.10. Time series, trendlines and inter-annual variation of landed weight (tonnes) of brown crab from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

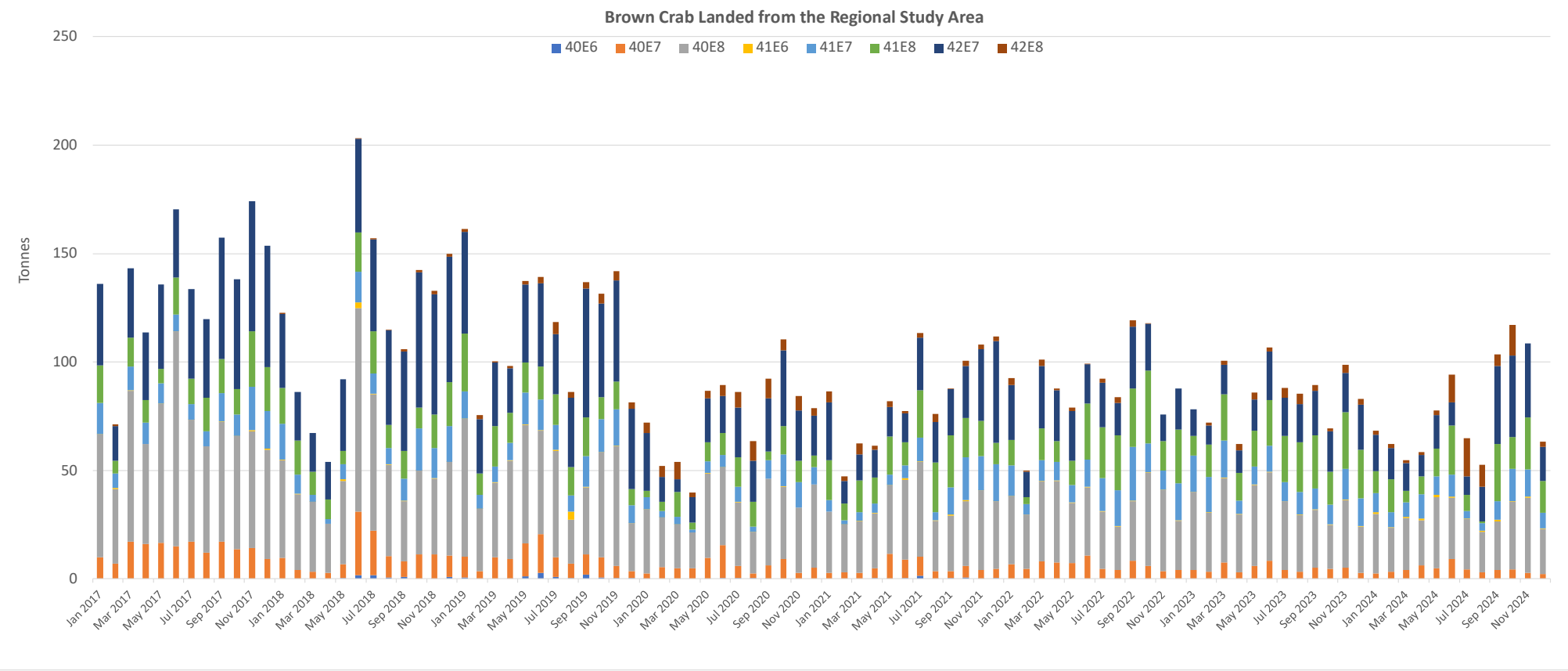

Figure 4.11. Time series of landed weight (tonnes) of brown crab by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

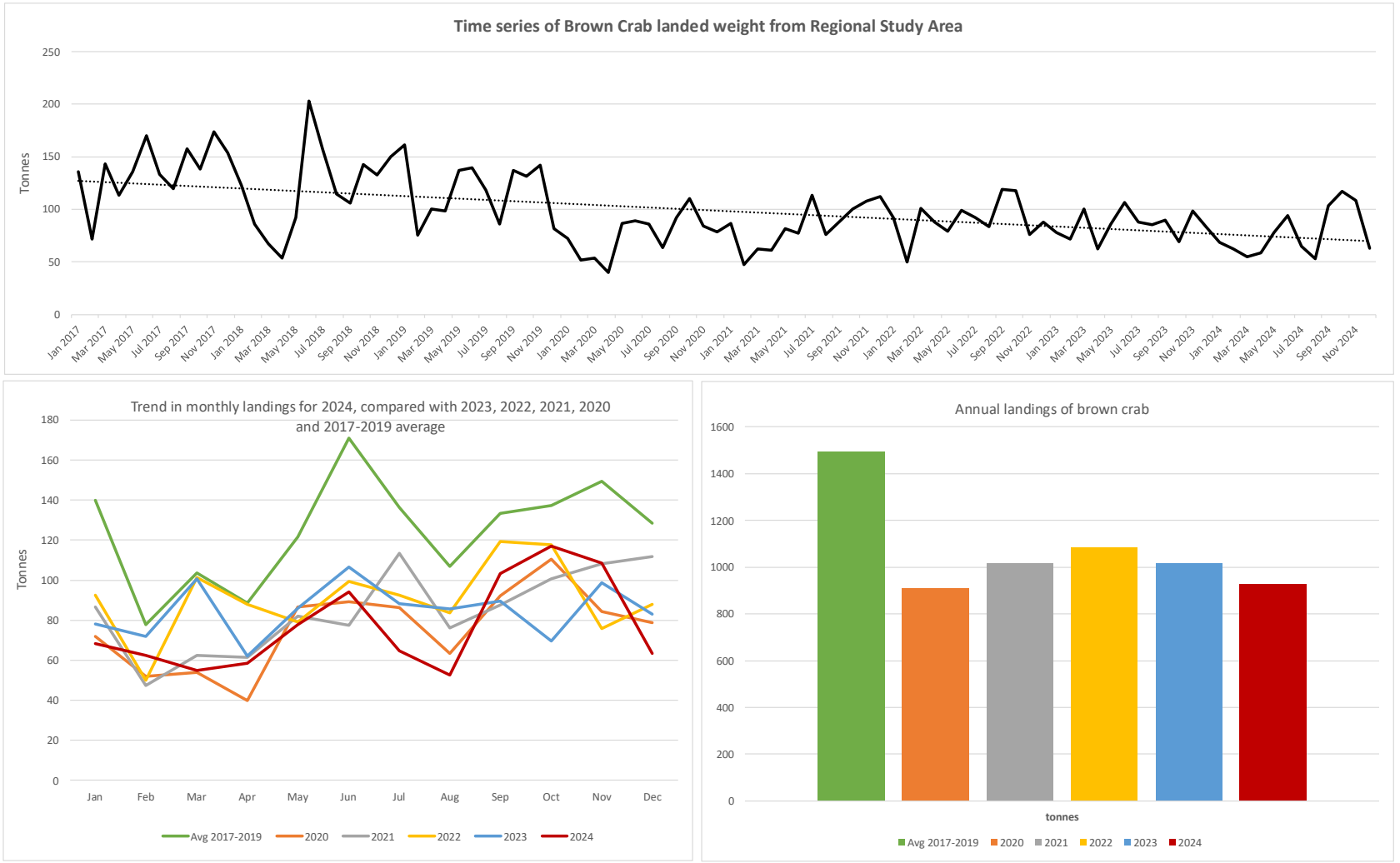

Figure 4.12. Time series, trendlines and inter-annual variation of landed weight (tonnes) of brown crab from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

4.4 Razor clam

4.4.1 Razor clam: local study area

86. 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 onwards. 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 2024.

87. 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 25-30 tonnes, particularly in 2021-2022 and again in 2024. The fitted trendline continues to suggest a gradual increase in landings across the time series, despite pronounced short-term fluctuations.

88. 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 sharply in 2021, with totals of around 185 tonnes, supported by strong peaks through the summer and early autumn. This higher level was sustained into 2022 and 2023 (both around 170 tonnes), remaining well above the baseline and 2020 levels. In 2024, landings increase slightly relative to 2023 (to approx. ~175 tonnes), including one of the highest monthly peaks in the full dataset during mid-summer, followed by a gradual reduction towards year-end.

89. Overall, razor clam landings in the local study area show interannual variability but a sustained step-change increase since 2020. Stronger monthly peaks and consistently higher annual totals from 2021 onwards indicate that this fishery has become increasingly important locally. The additional 2024 data reinforce this conclusion, showing continued high activity broadly comparable to 2021 to 2024 and remaining substantially above pre-2020 baseline levels.

4.4.2 Razor clam: regional study area

90. 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.

91. 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.

92. 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.

93. 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 approx. 170 tonnes were recorded, above the 2017-2019 baseline but below the 2021-2022 totals.
- 2024: Landings increase slightly relative to 2023 (to approx. ~175 tonnes), with a pronounced mid-year peak (June) and continued elevated activity through summer/early autumn, remaining well above baseline levels.

94. Overall, razor clam landings in the regional study area show a sustained step-change increase since 2020 and remain consistently above the 2017-2019 baseline. While interannual variability remains a feature of the fishery, the sustained high totals from 2021 onwards (including 2024) highlight its continuing importance at the regional scale, with 41E7 continuing to account for the majority of recorded landings.

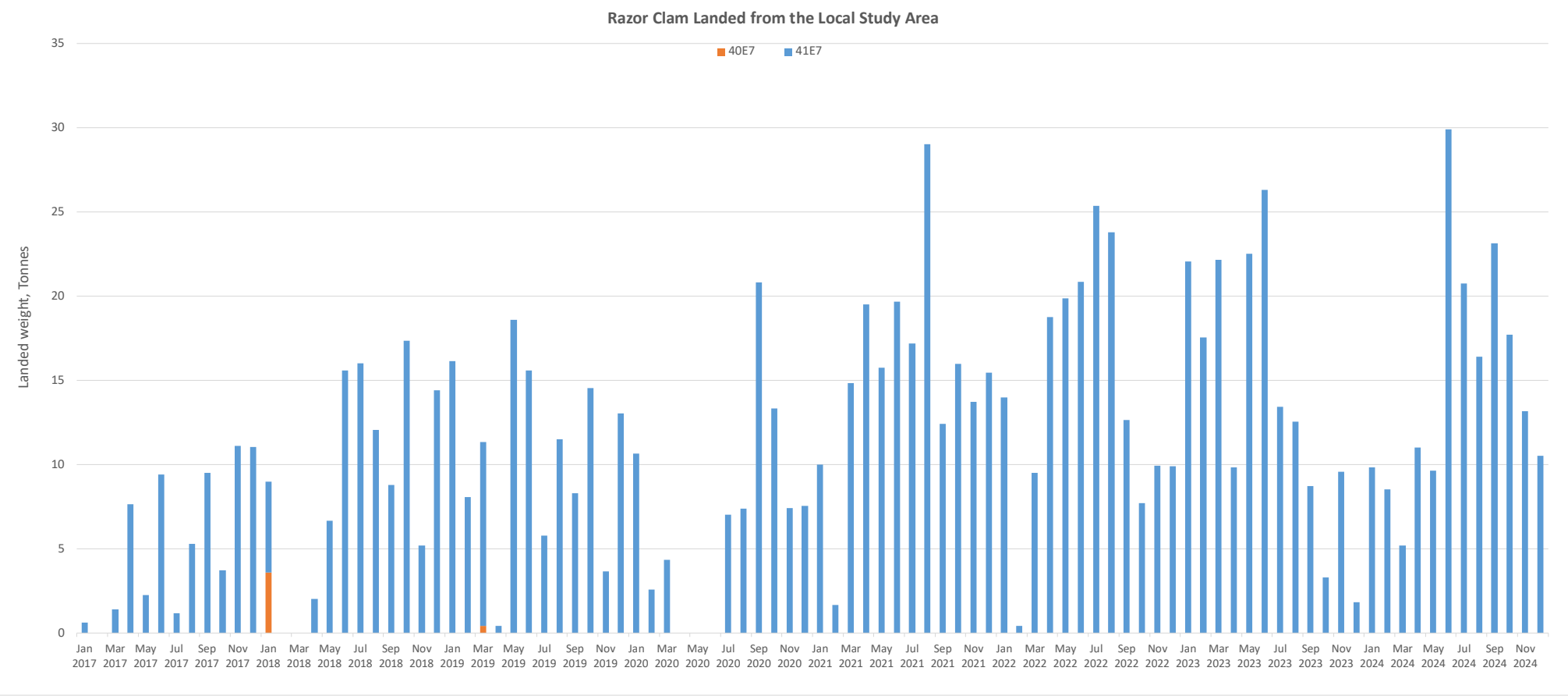

Figure 4.13. Time series of landed weight (tonnes) of razor clam by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

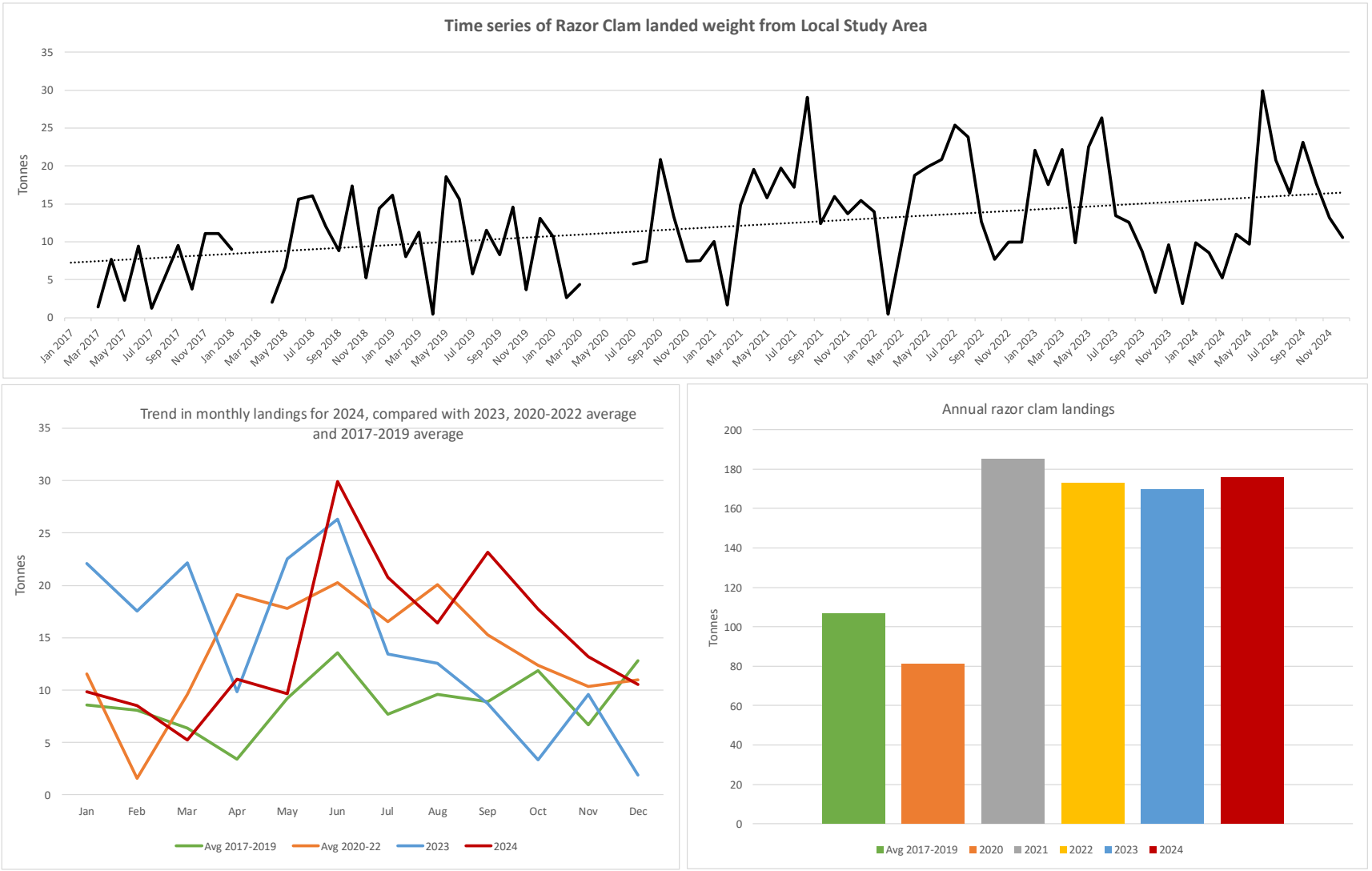

Figure 4.14. Time series, trendlines and inter-annual variation of landed weight (tonnes) of razor clam from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

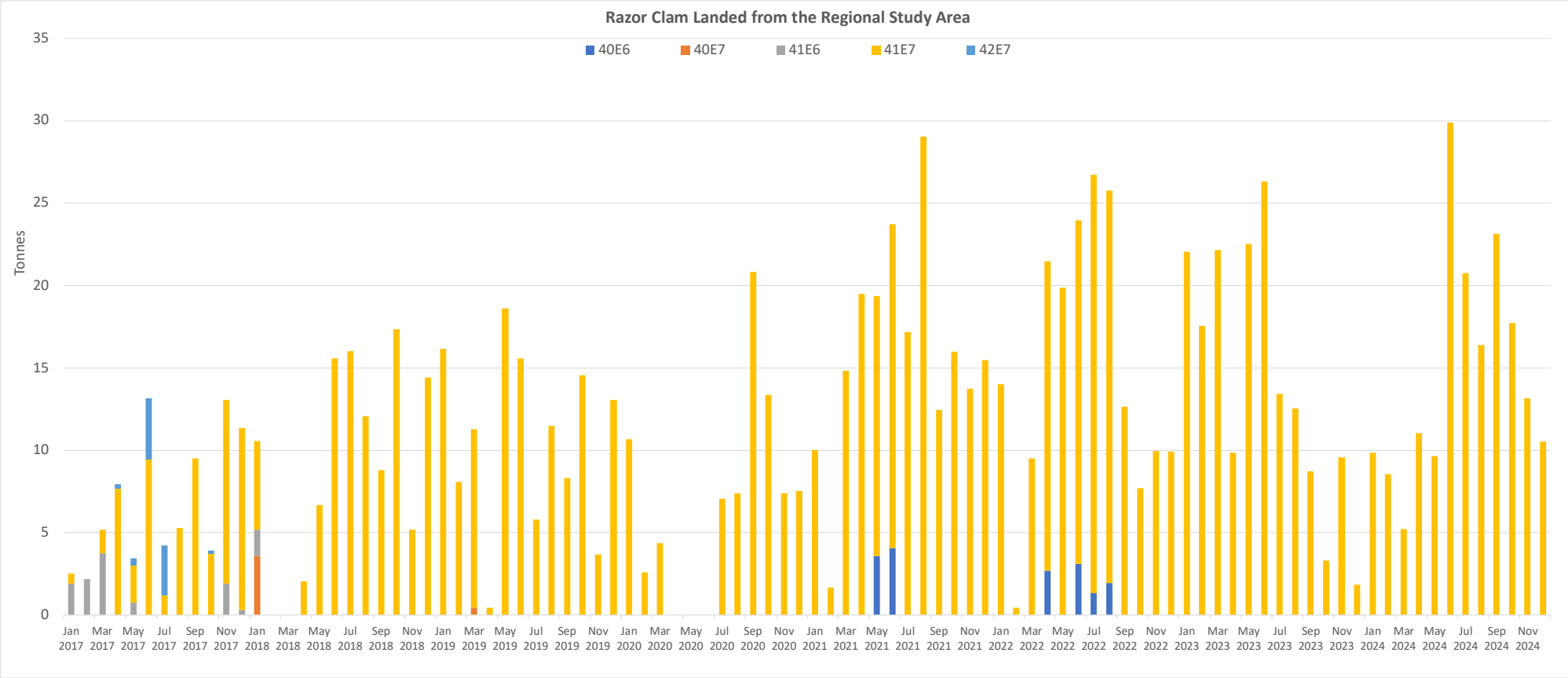

Figure 4.15. Time series of landed weight (tonnes) of razor clam by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

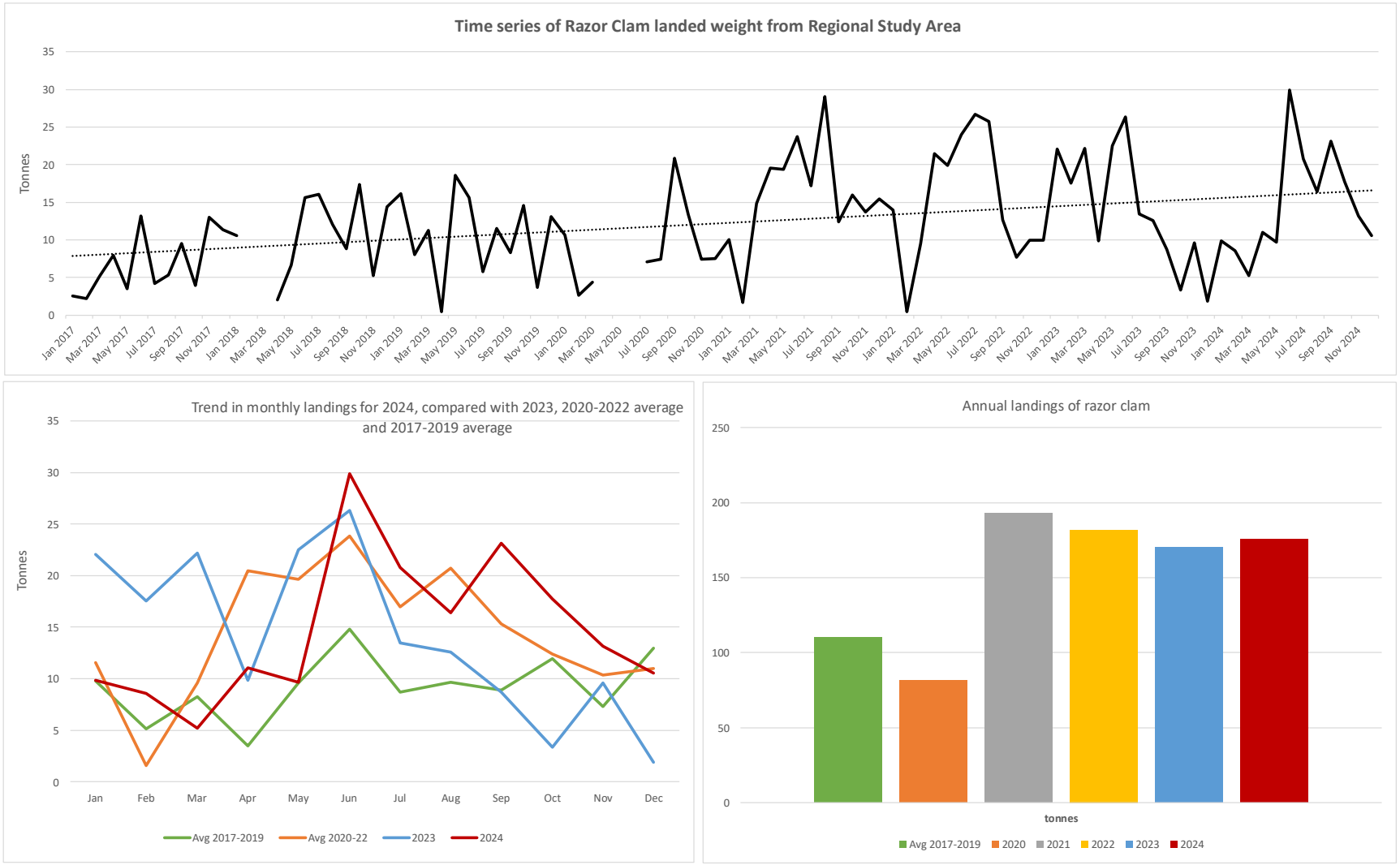

Figure 4.16. Time series, trendlines and inter-annual variation of landed weight (tonnes) of razor clam from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

4.5 Squid

4.5.1 Squid: local study area

95. 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 2024. Note that the category presented here includes both "squid" and "mixed squid and octopi", and therefore changes in landings may partly reflect variation in octopus as well as squid.

96. 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).
- A much larger spike occurs in autumn 2024, with monthly landings approaching ~20 tonnes, clearly exceeding all previous years in the dataset.
- The fitted time series line confirms that these are irregular events rather than part of a consistent seasonal cycle.

97. 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.
- 2024: A substantial increase (~39-40 tonnes), driven by the pronounced autumn peak and representing the highest annual total in the full time series.

98. The comparison of monthly patterns shows that while earlier periods (2017-2019 and 2020-2022) include occasional late summer/autumn peaks, 2024 stands out as an exceptional year, with a much stronger September-October spike than any previous year. This elevates annual landings well above the historical range for this category in the local study area.

99. Squid (and mixed squid and octopi) landings from the local study area are therefore characterised by low baseline catches punctuated by occasional sharp peaks, most often in late summer and autumn. The very large increase in 2024 indicates that while this component of the fishery is typically minor, it can become temporarily significant during high-yield periods. Given that the data category includes "mixed squid and octopi", the 2024 increase may reflect increased availability and/or targeting of octopus as well as squid, and should be interpreted accordingly when considering drivers of change and when comparing across years.

100. Stakeholders advised that squid catches are understood locally to be cyclical and highly variable, with good squid years occurring periodically. Stakeholders also noted that squid and Nephrops catches may show an inverse relationship in some years, with increases in squid coinciding with reductions in Nephrops. This local observation is consistent with the monitoring data for 2024, which show a pronounced increase in squid landings in the local study area alongside a reduction in Nephrops landings. The 2024 squid increase should therefore be interpreted as part of a highly episodic and variable fishery, rather than as evidence of a sustained change in fishing activity.

4.5.2 Squid: regional study area

101. 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 2024. 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).
- 2023-2024: smaller pulses (generally <10 tonnes), with no peak comparable to 2017, 2020 or 2022.

102. Annual totals for the region show marked interannual variability, with peak years reaching >30 tonnes (notably 2022). However, the most recent years indicate lower annual totals than the earlier peak years: 2023 is around ~20 tonnes and 2024 remains similar or slightly lower, suggesting a reduction in regional landings relative to 2022. As with the local dataset, regional squid landings are episodic and driven by occasional strong years, rather than representing a consistent annual contribution.

103. The contrast between local and regional patterns is notable when 2024 is included. While the local study area shows a substantial increase in 2024 (driven by a pronounced autumn spike), the regional dataset does not show a corresponding increase and remains well below the 2022 peak. This divergence suggests that the 2024 event recorded locally may reflect a shift in distribution and/or fishing activity into the local rectangles (40E7/41E7), rather than a uniform increase in availability across the wider region.

104. Squid (and mixed squid and octopi, where included in landings categories) remains a minor component of overall landings compared with Nephrops, lobster or crab at both spatial scales. However, the comparison of datasets indicates that landings are highly sensitive to sporadic pulses. The recent pattern of increasing landings locally in 2024 alongside stable-to-lower totals regionally, is consistent with a more localised concentration of catches in the vicinity of the local study area, rather than a broad regional increase.

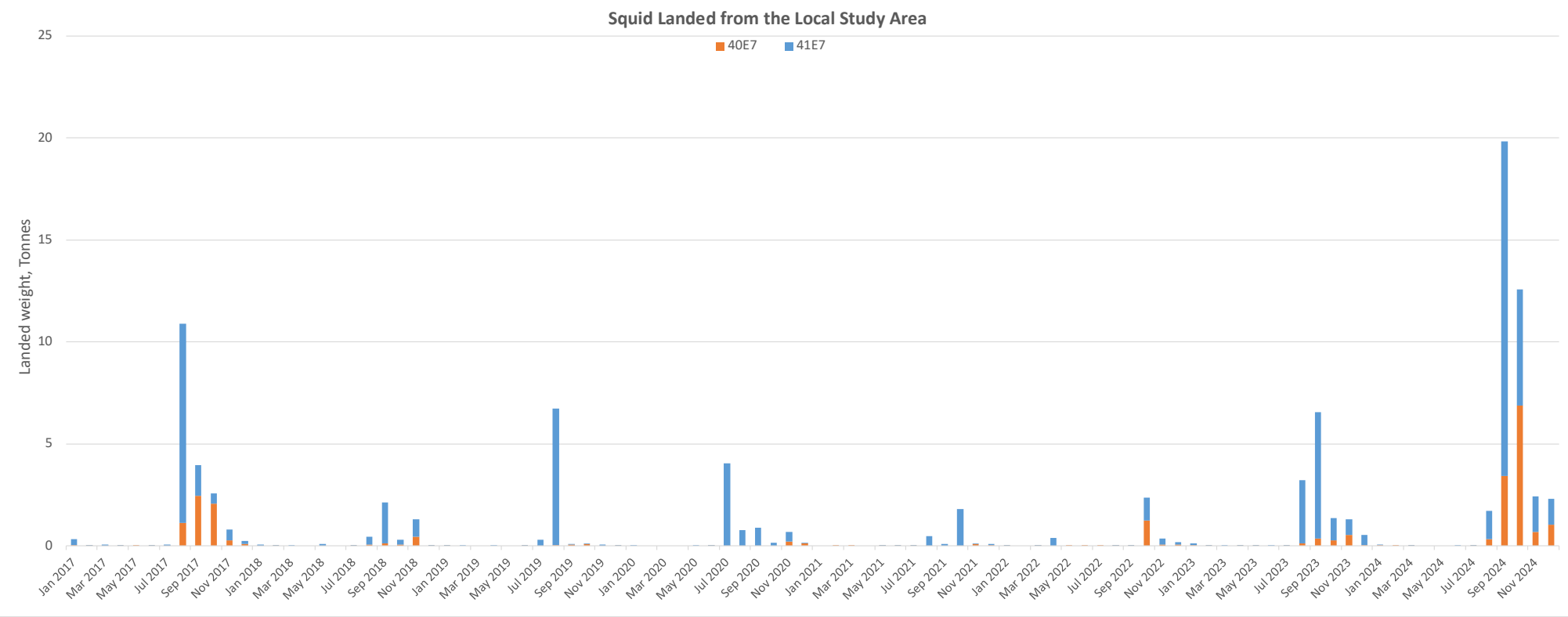

Figure 4.17. Time series of landed weight (tonnes) of squid by ICES rectangle from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

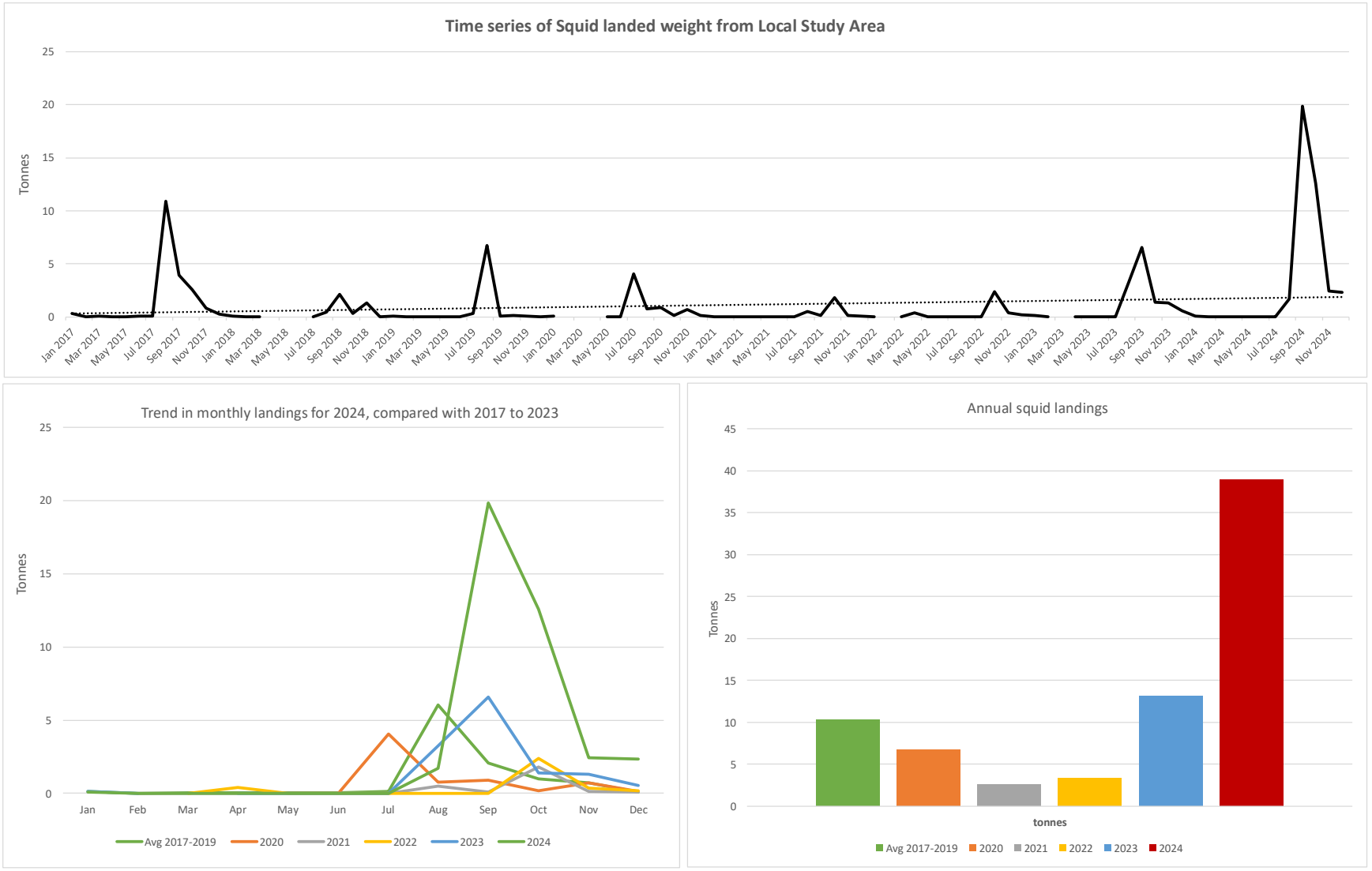

Figure 4.18. Time series, trendlines and inter-annual variation of landed weight (tonnes) of squid from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

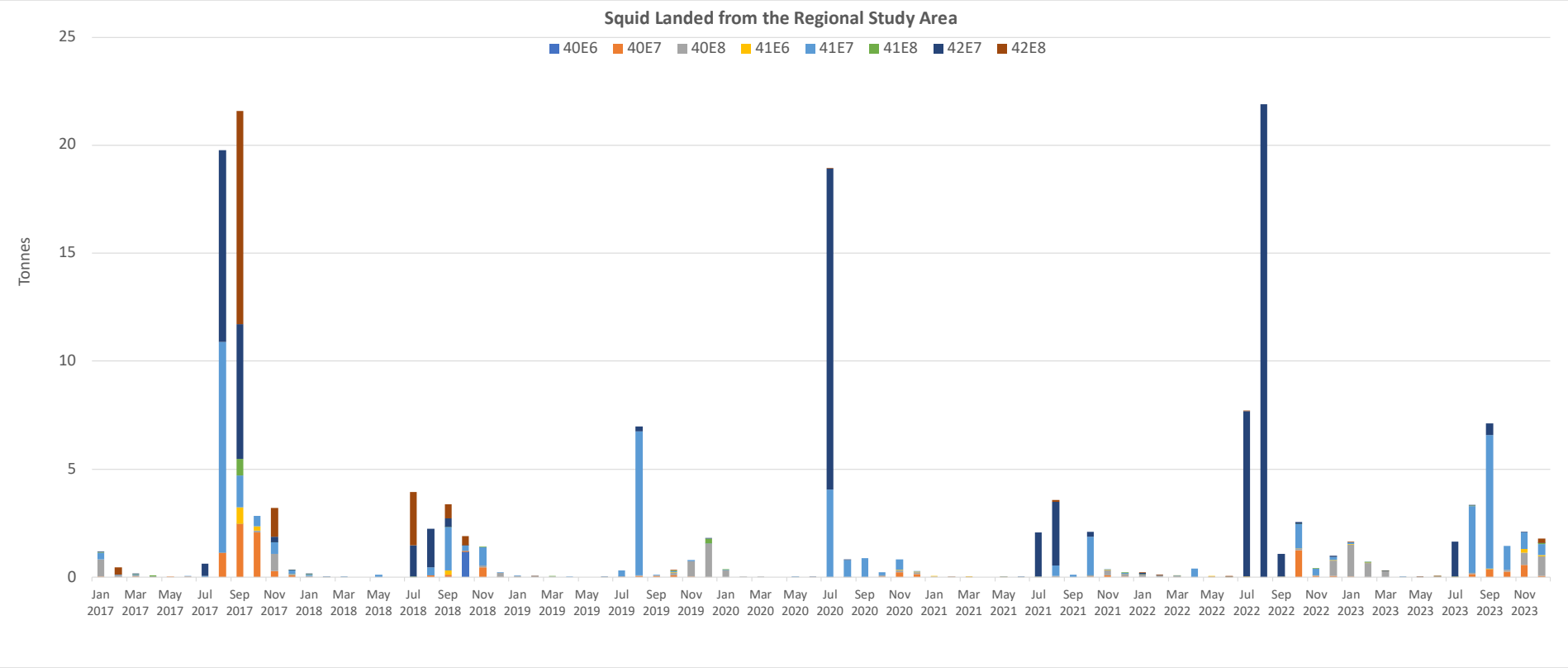

Figure 4.19. Time series of landed weight (tonnes) of squid by ICES rectangle from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

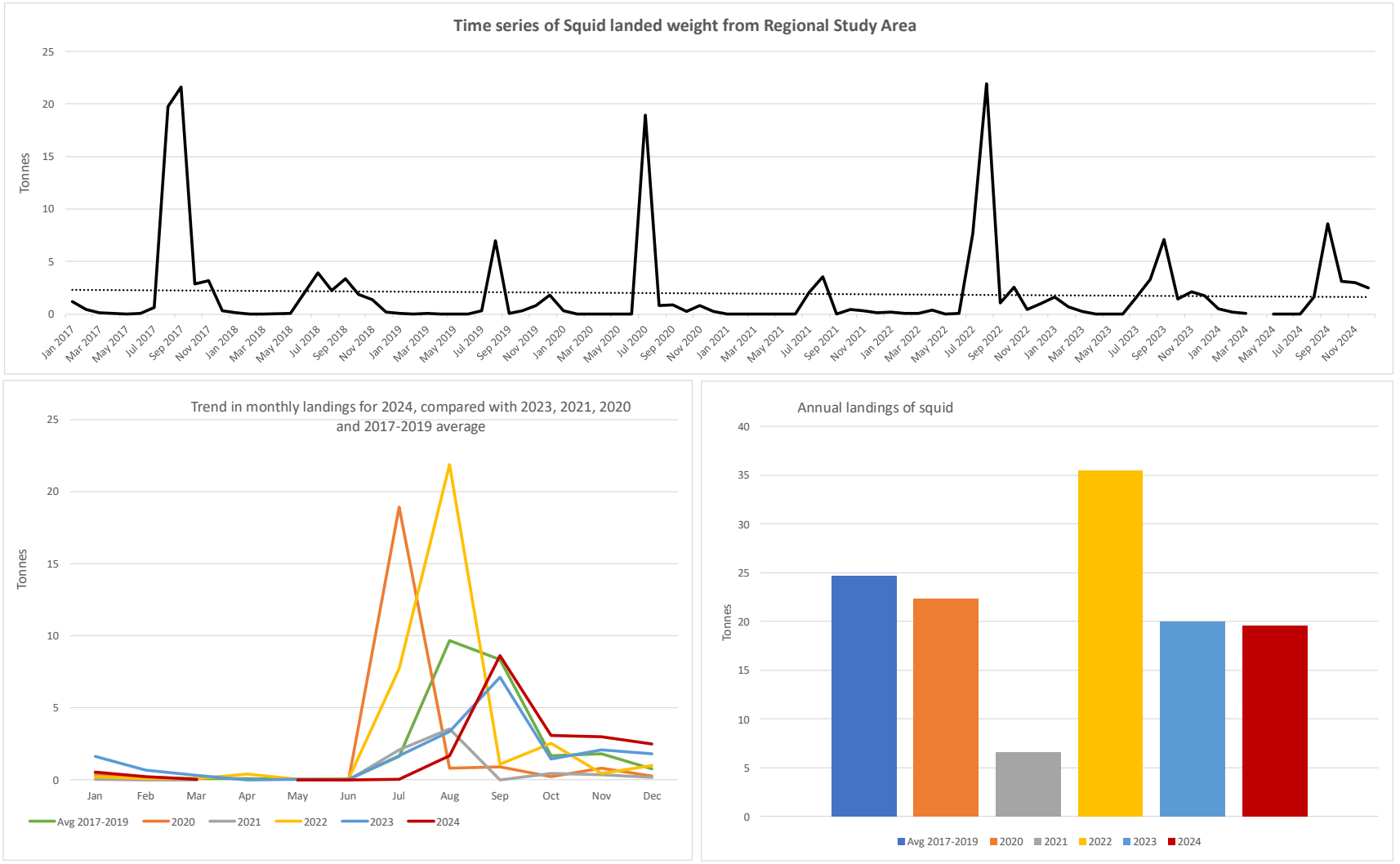

Figure 4.20. Time series, trendlines and inter-annual variation of landed weight (tonnes) of squid from the regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

5 Landings by port

105. This section of the report provides analysis of the 2021-2024 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.

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

5.1 Overview

107. Analysis of fisheries data from 2021 to 2024 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).

108. 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 and 1,786 tonnes in 2024 (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 and £11.64 million in 2024. Despite the reduction since 2022, both weight and value in 2024 remain above 2021 levels, indicating that the local fishery has retained a higher level of activity and economic value than at the start of the series, though levels in 2024 were lower than in the preceding two years.

109. For the regional study area, landed weight rose from 3,926 tonnes in 2021 to 4,078 tonnes in 2022 and 4,162 tonnes in 2023, increasing further to 4,378 tonnes in 2024. First sales value increased from £19.16 million in 2021 to £23.63 million in 2022, remained at a similar level in 2023 (£23.57 million), and then decreased to £22.15 million in 2024. This indicates continued growth in regional landed weight through 2024, alongside some easing in overall value in the most recent year.

110. The proportion of regional landings accounted for by the local study area also highlights its significance, while indicating a recent shift in relative contribution. In 2021, the local rectangles contributed 43.76% of total regional landings (by weight) and 48.19% of first sales value. These proportions increased in 2022 to 51.84% of landings and 58.80% of value, before reducing in 2023 to 47.99% and 54.20%, respectively. In 2024, the local share of regional landings by weight declined further to 40.79%, while the local share of value remained comparatively high at 52.55%. This indicates that although a smaller proportion of regional landings (by volume) originated from the local area in 2024, the local contribution to regional value remained above half, consistent with the dominance of higher-value shellfish within the local catch mix.

111. Overall, the data demonstrate that 2022 represented a high point for both landed weight and value in the local study area, followed by a decline through 2023 to 2024. Regionally, landed weight continued to increase through 2024, but first sales value reduced slightly in the most recent year. The sustained contribution of the local rectangles to regional value, despite a reduced share by volume in 2024, continues to underscore 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 2024 (data source: MMO, 2025)

STUDY AREA	ICES RECTANGLES	LANDED WEIGHT (TONNES)				FIRST SALES VALUE (£)			
		2021	2022	2023	2024	2021	2022	2023	2024
Local study area	40E7, 41E7	1,718	2,114	1,997	1,786	£9,234,481	£13,894,551	£12,773,878	£11,638,840
Regional study area	42E7, 42E8, 41E6, 41E7, 41E8, 40E6, 40E7, 40E8.	3,926	4,078	4,162	4,378	£19,161,743	£23,631,458	£23,567,013	£22,146,272
Proportion of regional landings from the local study area		43.76%	51.84%	47.99%	40.79%	48.19%	58.80%	54.20%	52.55%

112. Landed weight and value from January to December during 2021 to 2024 (Figure 5.1) show a clear seasonal pattern, with higher landings during late spring and summer (approximately May to August, peaking around July to August) and comparatively lower activity during the winter and early spring months (January to May, with February typically among the lowest months). In 2024, this seasonality remains evident, but the largest monthly peaks are more strongly driven by landings from "other regional" rectangles, consistent with the reduced local share of regional landings by weight recorded in Table 5.1.

113. Landed weight and value for 2021 to 2024 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).

114. Pittenweem consistently records the highest landed quantities and value across all years, with landings dominated by ICES rectangle 41E7. Eyemouth also lands substantial volumes and value, drawing from 40E7 and 41E7 as well as other rectangles within the regional study area. Dunbar and Port Seton show landings that are more closely linked to the local rectangles (40E7 and 41E7), whereas several other ports reflect activity primarily from outside the local study area. Notably, Peterhead represents a substantial component of the regional landings, particularly in 2024, and is dominated by rectangles outside 40E7/41E7, indicating that changes in regional totals are influenced by landings beyond the local footprint.

115. The seasonality of first sales value for landings from the local study area (40E7 and 41E7) is shown in Figure 5.3. As in previous analyses, the highest value is consistently landed into Pittenweem, followed by Eyemouth, Dunbar, Port Seton and Arbroath. Across these ports, value remains concentrated in the summer months (July to September), with 2024 showing a particularly strong late-summer peak, reflecting the continued importance of seasonal shellfish fisheries within the local study area.

116. Profiles of landings into these ports (and others) for commercial catches from the local study area is provided in Section 4.2.

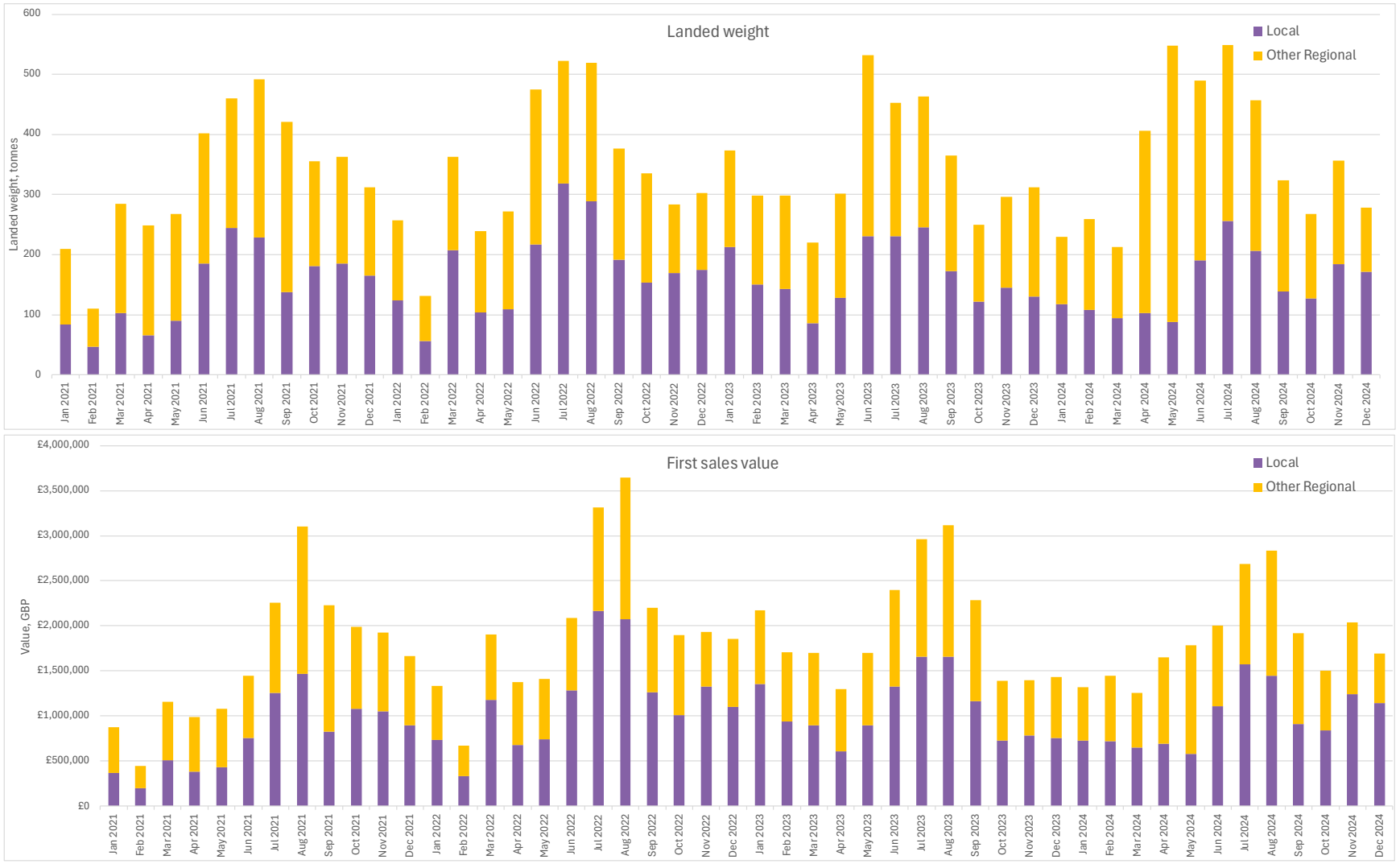

Figure 5.1. Landed weight and first sales value landed from January to December 2021 and 2024 from the total regional study area (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8), indicating the portion landed form the local study area (40E7 and 41E7) (data source: MMO, 2025)

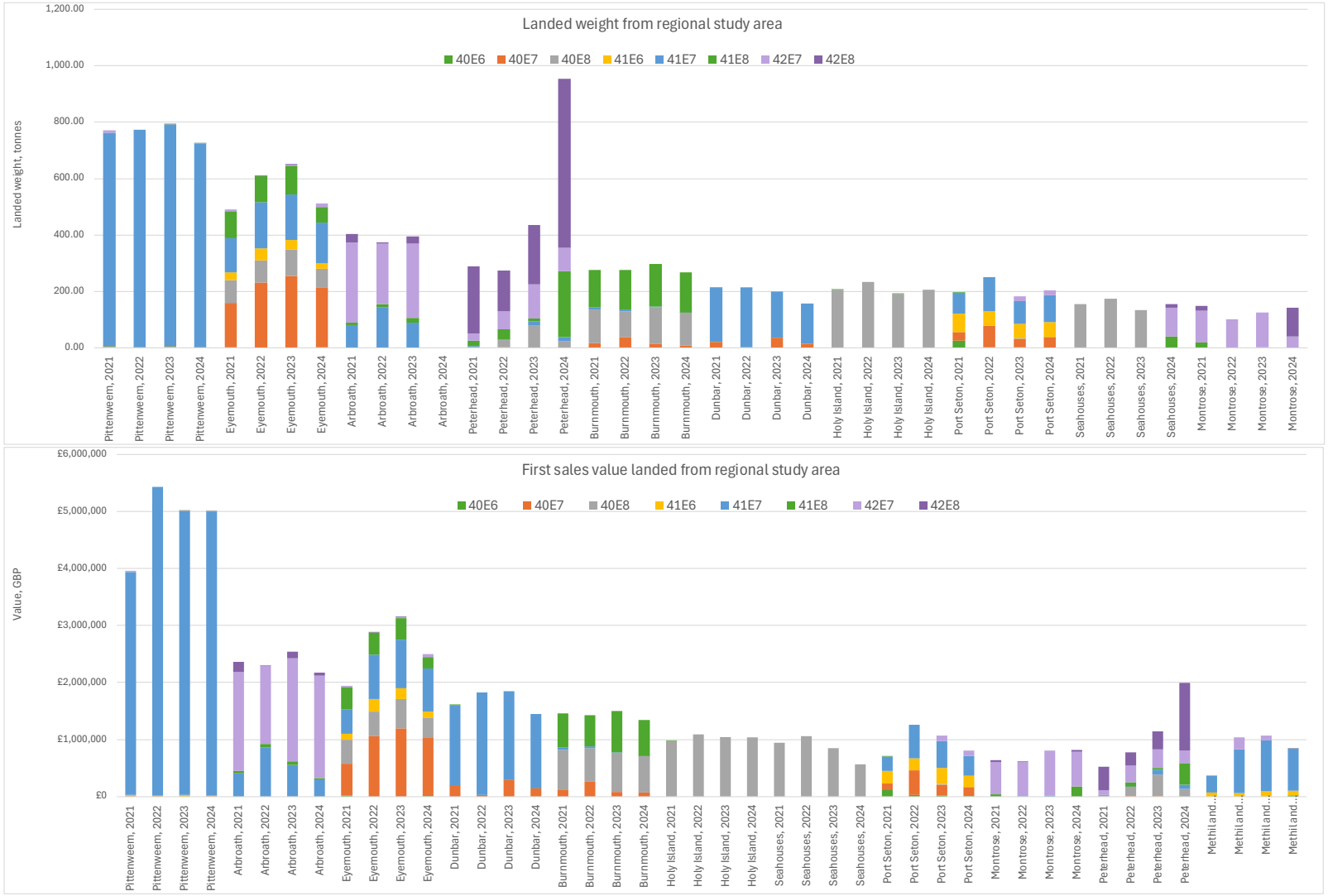

Figure 5.2. Landed weight and first sales value by port of landing from the total regional study area, 2021-2024 (ICES rectangles 42E7-E8, 41E6-E8 and 40E6-E8) (data source: MMO, 2025)

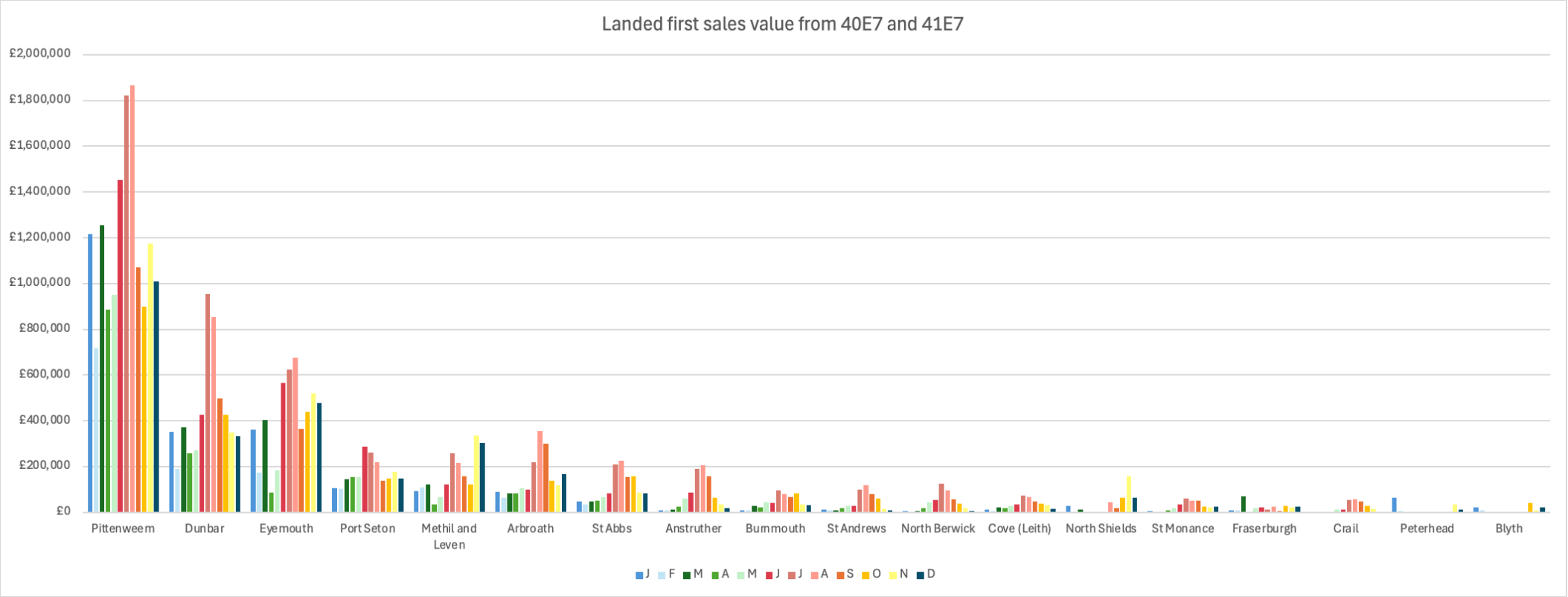

Figure 5.3. Monthly average landings indicating first sales value by port of landing from the local study area (ICES rectangles 40E7 and 41E7) average from 2021-2024 (data source: MMO, 2025)

5.2 Port profiles

117. This section provides a profile of landings for each of the key ports detailing commercial catches from the local study area from 2021 to 2024.

5.2.1 Pittenweem

118. 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 2024 are presented in Figure 5.4 by species and Figure 5.5 by gear type and vessel length category.

119. 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.

120. 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.

121. In 2024, Nephrops and razor clams remained the principal sources of value landed into Pittenweem from 40E7/41E7; however, Nephrops value reduced further compared with 2023, while razor clam value remained broadly stable (and slightly higher than 2023). Lobster value increased in 2024 relative to 2021-2023, whereas brown crab shows a marked reduction in 2024, and other categories (e.g. surf clams and velvet crab) continue to contribute smaller but persistent values.

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

123. 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.

124. In 2024, demersal trawl landings declined notably (to just over ~300 tonnes) compared with 2021-2023, while other passive gears and pots/traps remained broadly consistent with previous years; dredge landings increased, driven largely by the smallest vessel length category.

125. 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.

126. 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.

127. 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.

128. 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.

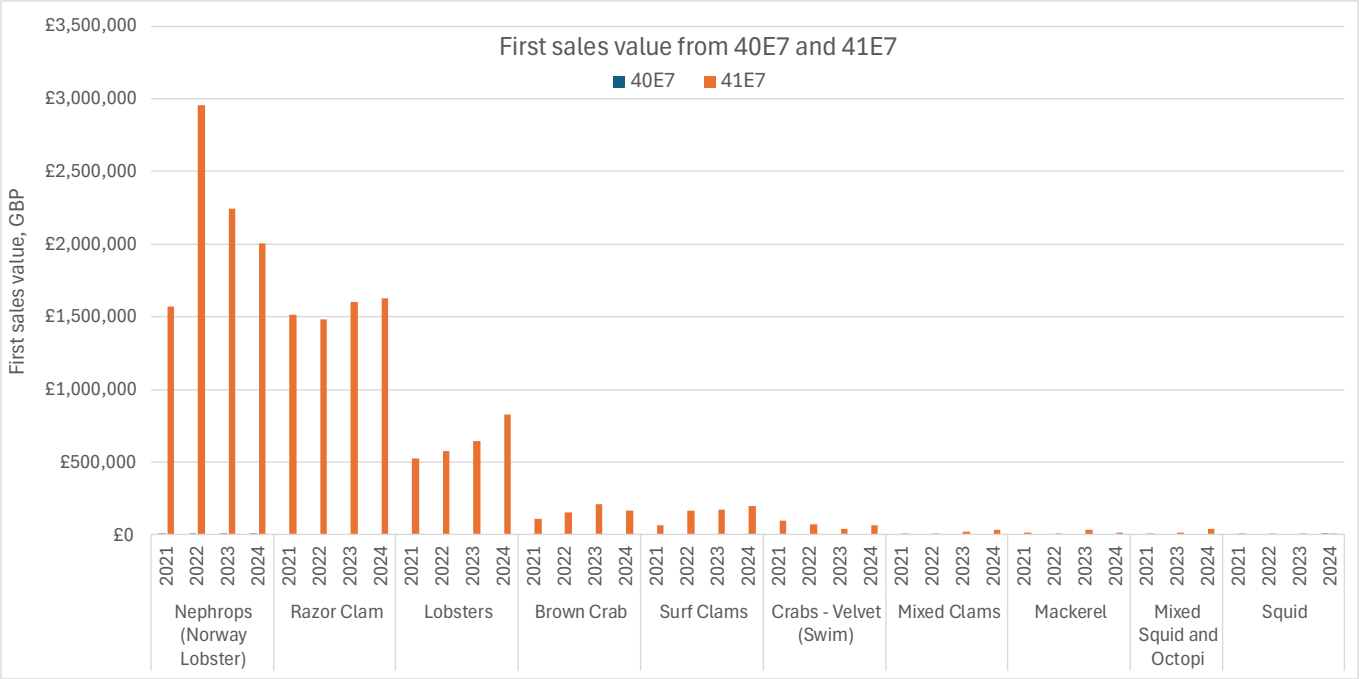

Figure 5.4. First sales value of species landed into Pittenweem from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

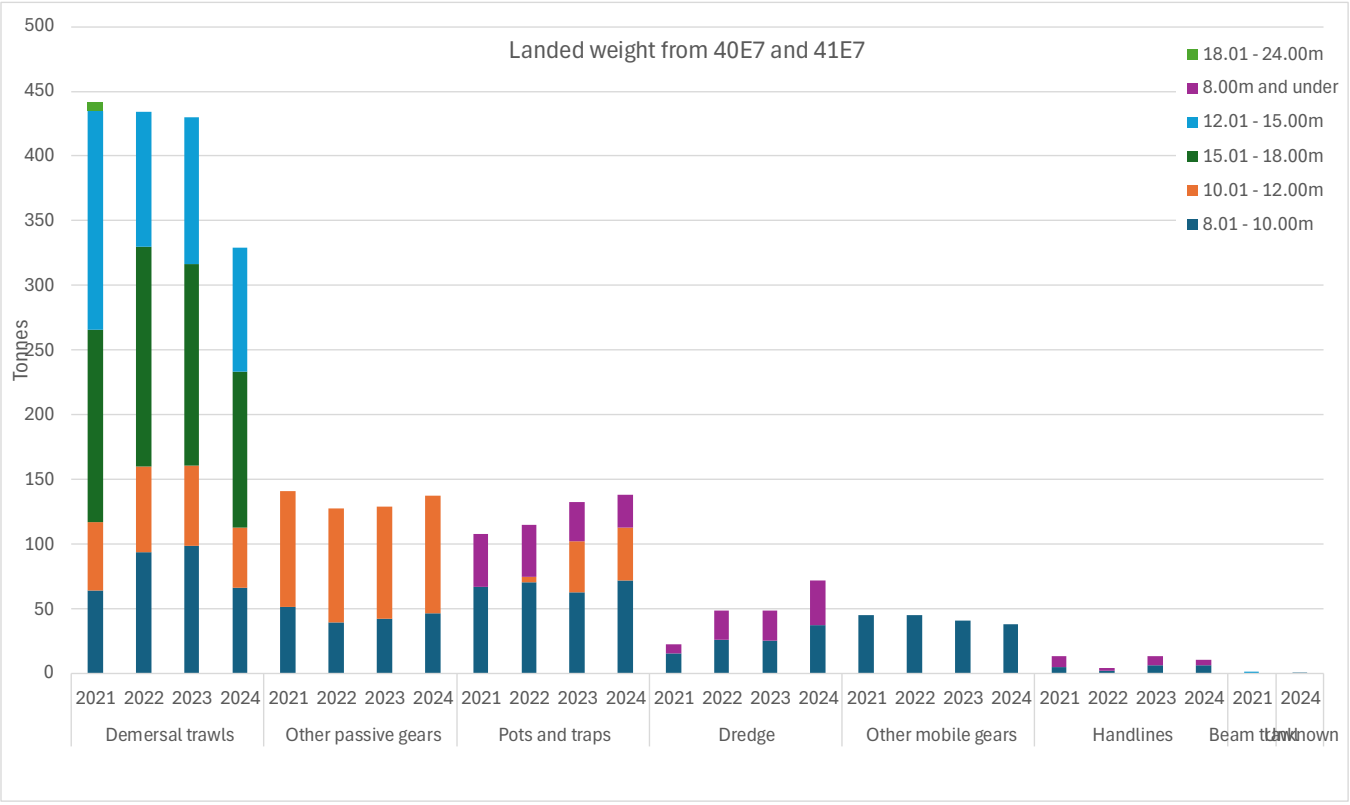

Figure 5.5. Landed weight (tonnes) of landings into Pittenweem from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

5.2.2 Dunbar

129. 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 2024 are presented in Figure 5.6 by species and Figure 5.7 by gear type and vessel length category.

130. 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.

131. 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.

132. In 2024, lobster value declined further compared with 2023 (following the 2022 peak), but lobsters remain the dominant species by value for Dunbar. Nephrops value also reduced in 2024, while brown crab and velvet crab continue to make only minor contributions. Overall, the 2024 profile indicates a broad softening in shellfish value at Dunbar relative to 2022-2023, rather than a change in species dependence.

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

134. 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.

135. 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.

136. In 2024, pots and traps remain the primary gear, but landed weight appears slightly lower than in 2022-2023. Demersal trawl landings also declined in 2024, with catches still concentrated in the 10-12 m length class. This suggests that the 2024 reduction in value is accompanied by a modest reduction in landed weight across the two main gear types, rather than a shift to alternative gears.

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

138. 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.

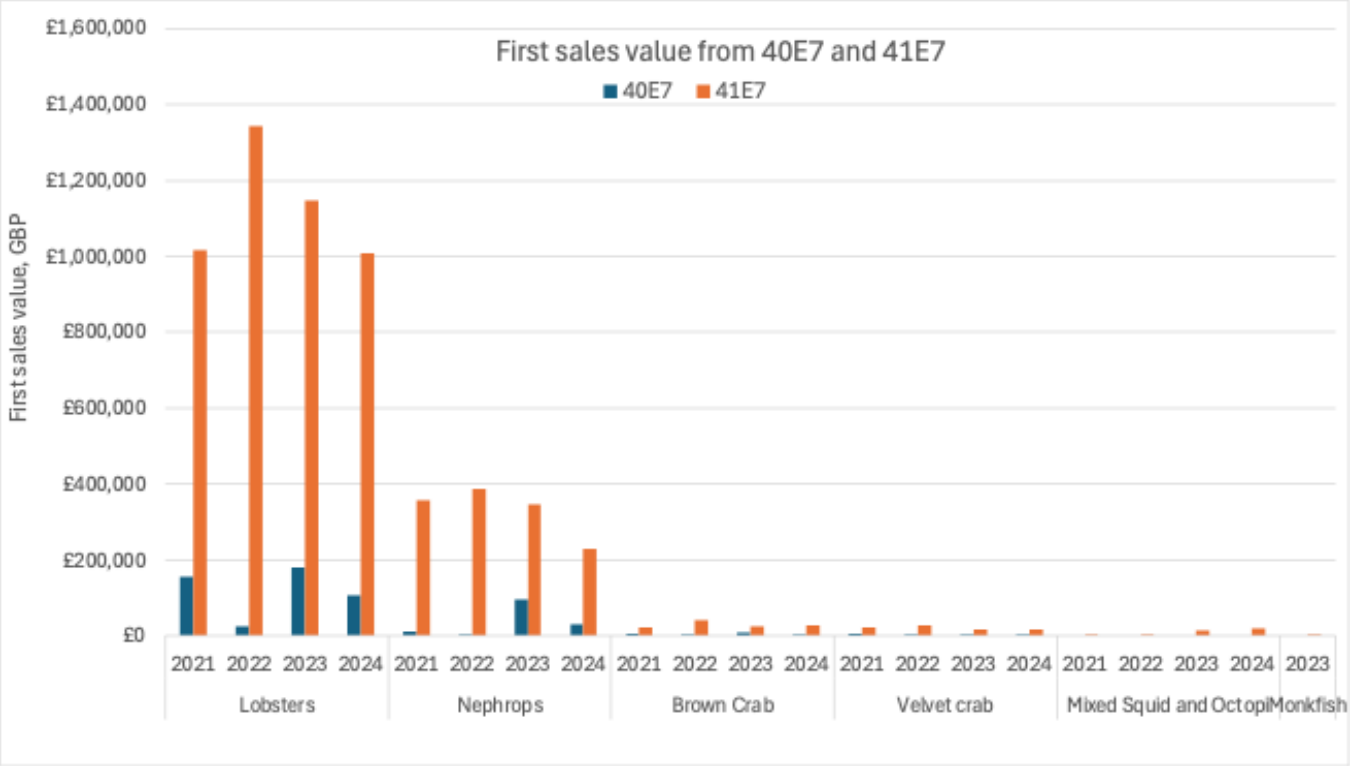

Figure 5.6. First sales value of species landed into Dunbar from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

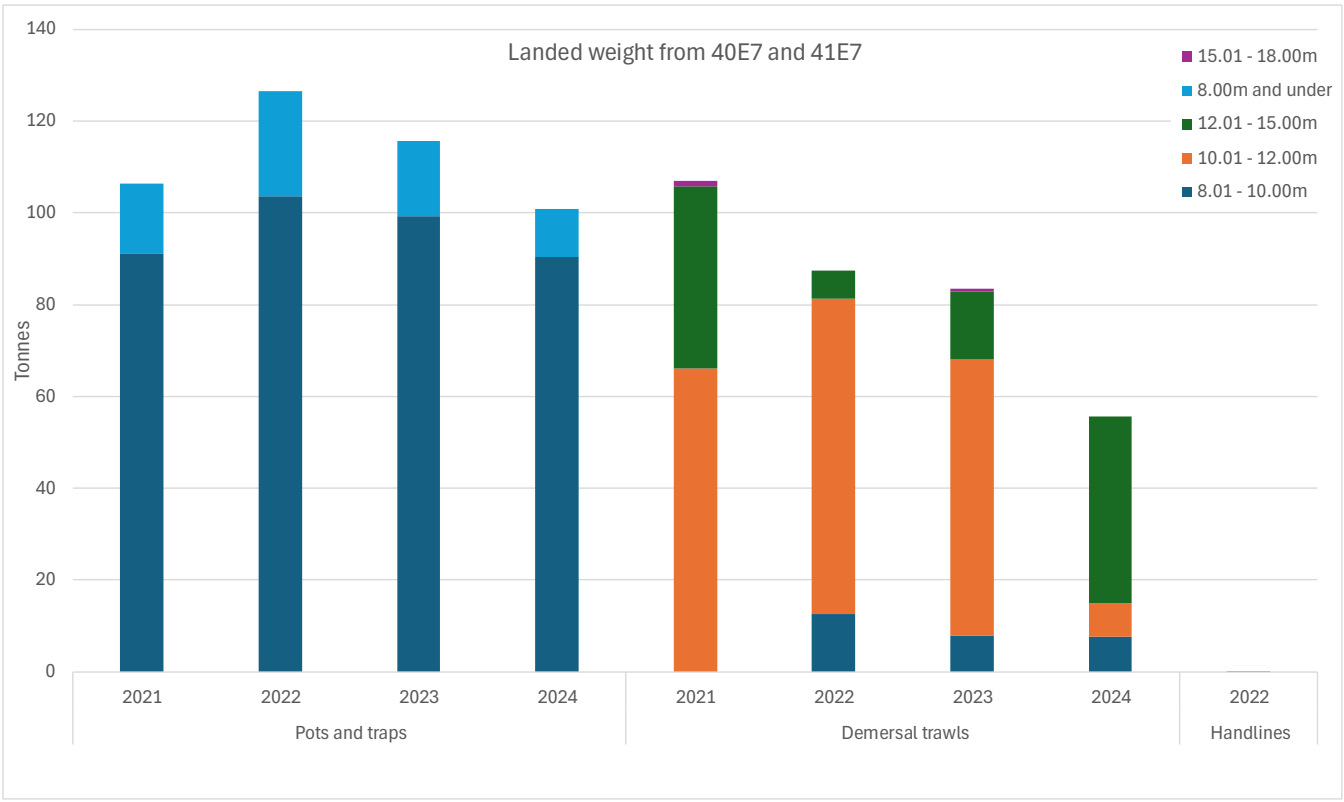

Figure 5.7. Landed weight (tonnes) of landings into Dunbar from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

5.2.3 Eyemouth

139. 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 2024 are presented in Figure 5.8 by species and Figure 5.9 by gear type and vessel length category.

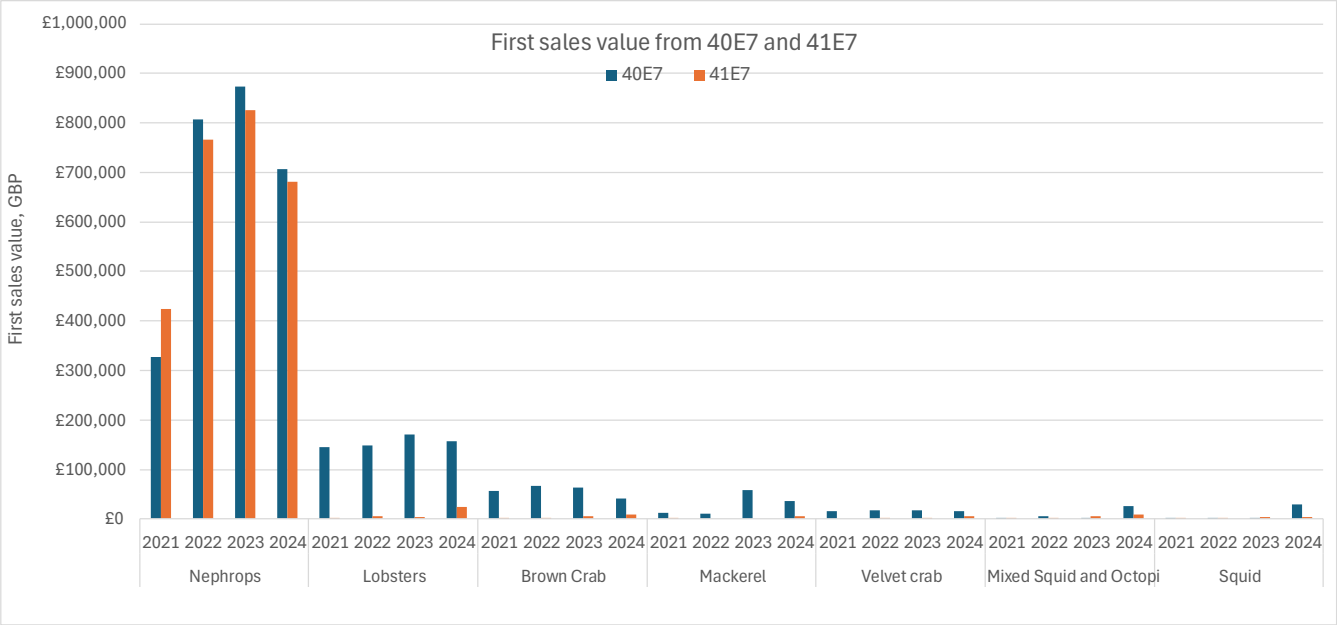

Figure 5.8. First sales value of species landed into Eyemouth 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

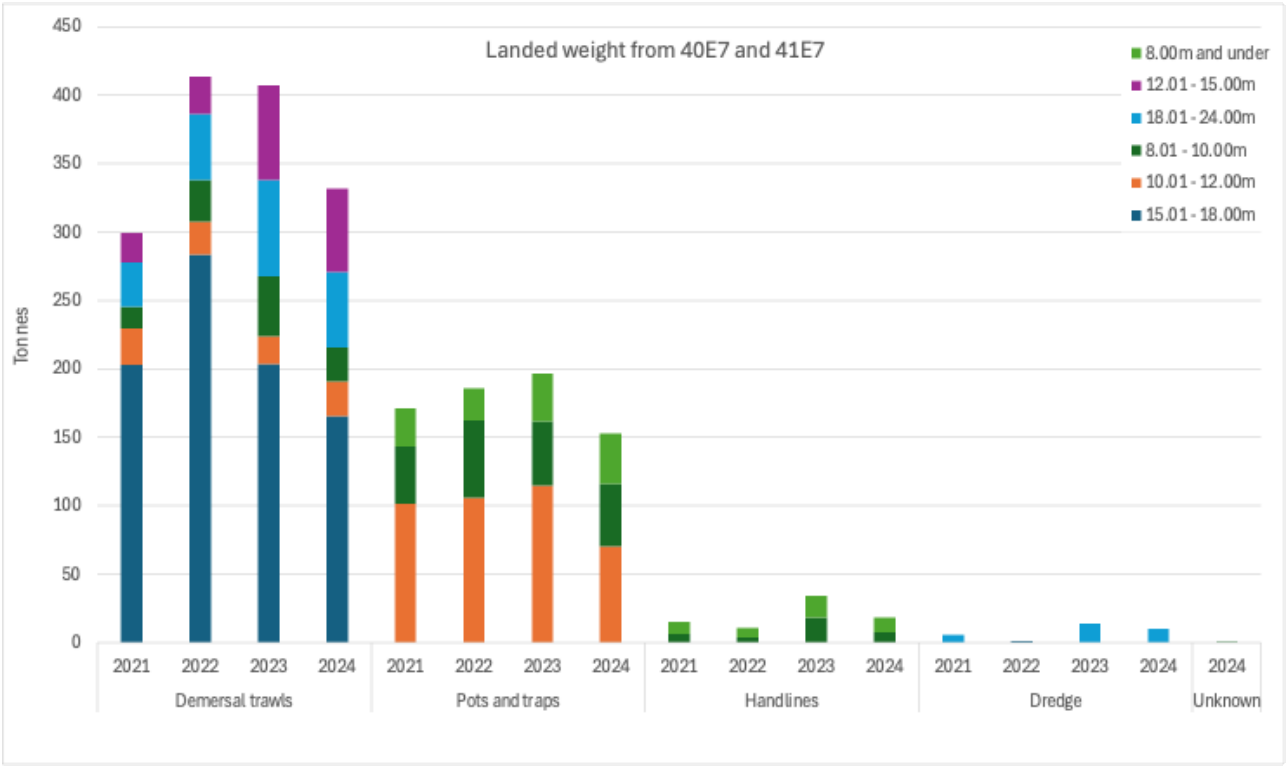

Figure 5.9. Landed weight (tonnes) of landings into Eyemouth from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

140. The data highlight that Nephrops remain the most valuable species landed at Eyemouth. Values increased from around £0.3-0.4 million in 2021 to over £0.75-0.8 million in 2022, and remained similarly high in 2023. In 2024, Nephrops values reduced modestly compared with 2022-2023, but remained well above 2021 levels, indicating continued strong economic importance despite year-on-year variability. Lobsters remain the second most valuable species group, with values broadly stable across the period, and a small decline evident in 2024.

141. Smaller but regular contributions continue to be made by brown crab, velvet crab and mackerel, although brown crab values are lower in 2024 than in 2022-2023. Other species including mixed squid and octopods and squid remain relatively minor in value terms, but squid shows a more noticeable contribution in 2024 compared with earlier years, consistent with episodic landings.

142. Overall, this species composition demonstrates that Eyemouth supports a mixed fishery, but with a clear reliance on demersal trawl Nephrops landings, supported by secondary shellfish contributions (notably lobster).

143. Demersal trawls continue to dominate landed weight. Annual totals rose strongly from 2021 into 2022-2023, and declined in 2024, though they remain a major component of landings. Across all years, the bulk of demersal trawl landings is taken by the 15-18 m fleet, with additional contributions from the 12-15 m and 18-24 m classes, confirming Eyemouth's role as a landing port for a predominantly medium-to-large trawler fleet.

144. Pots and traps provide a smaller but important contribution, increasing through 2022-2023 before falling back in 2024. These landings are primarily associated with smaller inshore vessels (notably 8-10 m and 10-12 m). Handlines remain a minor component, and dredge landings, while still small, continue to be recorded in the later years (including 2024).

145. Summary: Eyemouth's local-study-area landings remain dominated by demersal trawl Nephrops, with additional value derived from shellfish (especially lobster) landed by the inshore fleet. The 2024 data indicate a modest reduction in Nephrops value and trawl/pot landed weight relative to 2022-2023, but the overall port profile and fleet composition are unchanged, and landings remain strong compared with 2021.

5.2.4 Port Seton

146. 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 2024 are presented in Figure 5.10 by species and Figure 5.11 by gear type and vessel length category.

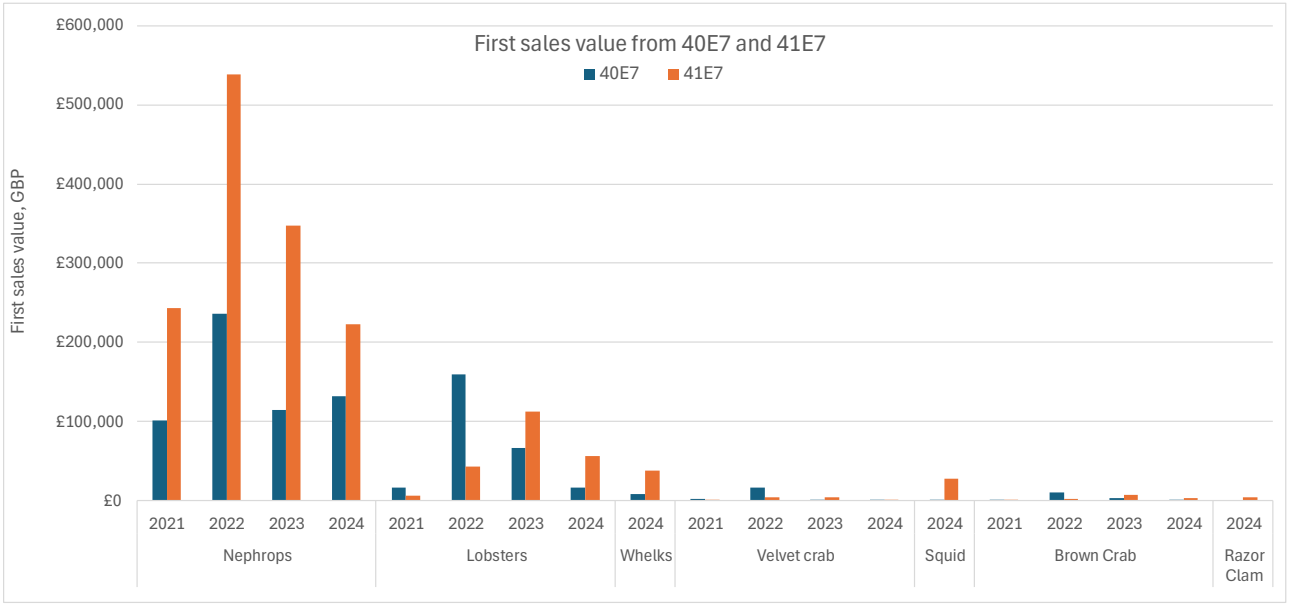

Figure 5.10. First sales value of species landed into Port Seton from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

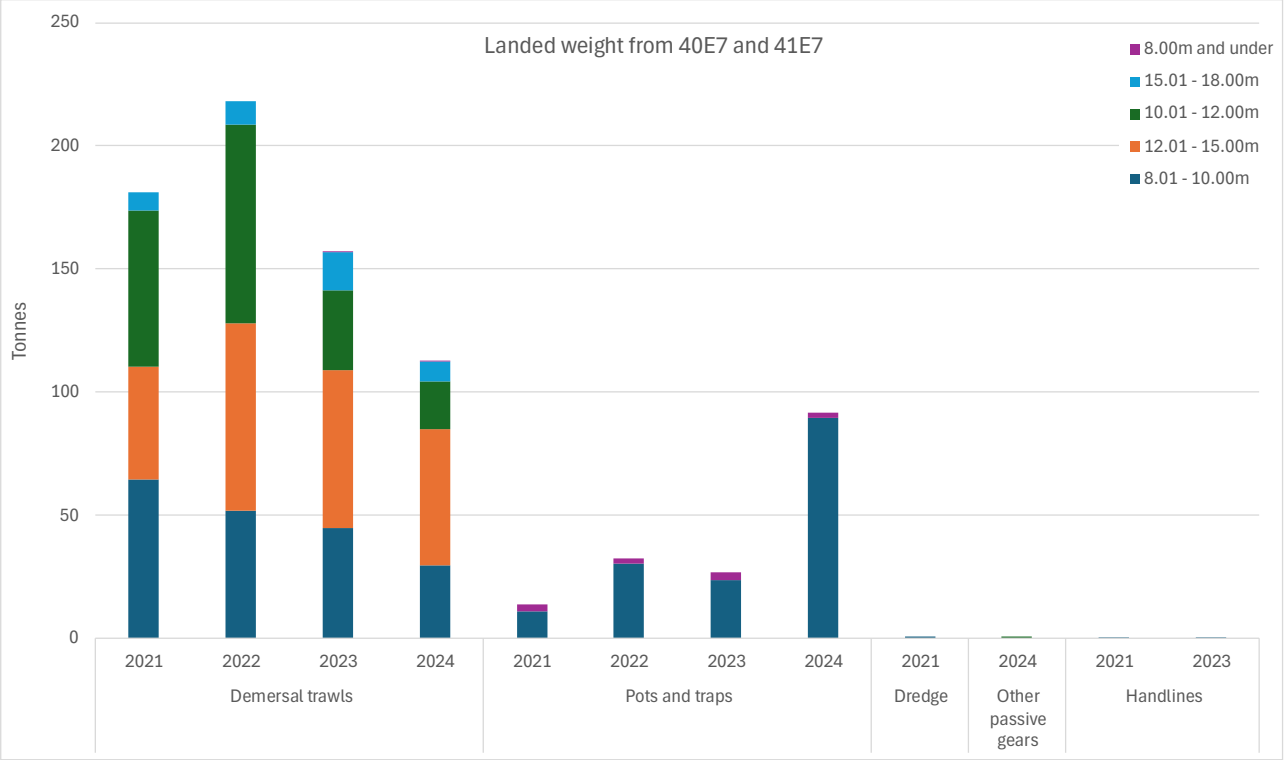

Figure 5.11. Landed weight (tonnes) of landings into Port Seton from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

147. The data indicate that Nephrops are the dominant species landed at Port Seton. First sales values increased markedly from 2021 to a peak in 2022 (driven mainly by landings from 41E7, with an additional contribution from 40E7), before reducing in 2023. In 2024, Nephrops value declined further compared to 2023, but remained above 2021 levels overall. Lobsters remain the next most important species by value, but 2024 shows a clear reduction compared with 2022-2023.

148. Smaller contributions continue to be made by velvet crab and brown crab, but values remain low relative to Nephrops and lobster. New/clearer minor components appear in 2024, including whelks and squid (and very small razor clam value), indicating some year-to-year variability and diversification in the low-volume categories.

149. Overall, the species composition continues to reflect Port Seton's reliance on shellfish fisheries, particularly Nephrops, with lobster as a secondary component. The 2024 pattern suggests a slight shift away from lobster value and a broader spread across minor shellfish/cephalopod categories, while Nephrops remains the core value driver.

150. In weight terms, demersal trawls continue to account for a substantial share of landings across the period, rising from 2021 to a high point in 2022, then declining in 2023. In 2024, demersal trawl landings reduced further (relative to 2023), consistent with the lower Nephrops value observed that year. The trawl component remains primarily associated with vessels in the 10-12 m and 12-15 m length classes, with smaller contributions from other size categories.

151. Pots and traps show a notable change in 2024. While they were a secondary gear type in 2021-2023 (tens of tonnes), pot and trap landings increase sharply in 2024, becoming a much more prominent component of landed weight. This increase is concentrated in the small inshore fleet (notably 8-10 m, with a smaller ≤8 m contribution), consistent with a strengthening of creel-based activity. Minor dredge and other passive gear landings are also recorded, but remain negligible compared with trawls and pots.

152. Summary: Port Seton remains a shellfish-dominated fishery, with Nephrops the principal value species throughout 2021-2024. However, 2024 stands out for a shift in the weight profile, with reduced demersal trawl landings alongside a pronounced increase in pot-and-trap landings by the small inshore fleet. This suggests a change in the balance of activity between trawl and creel sectors in 2024, while overall landings continue to be driven by shellfish.

5.2.5 Arbroath

153. 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 2024 are presented in Figure 5.12 by species and Figure 5.13 by gear type and vessel length category.

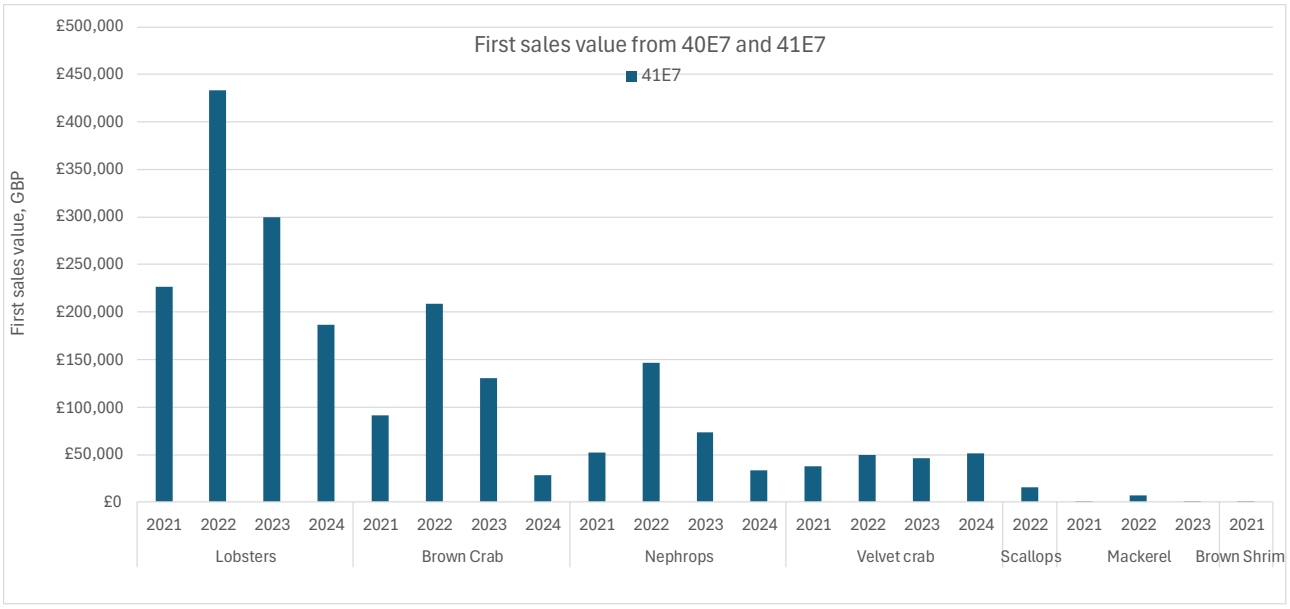

Figure 5.12. First sales value of species landed into Arbroath from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2023)

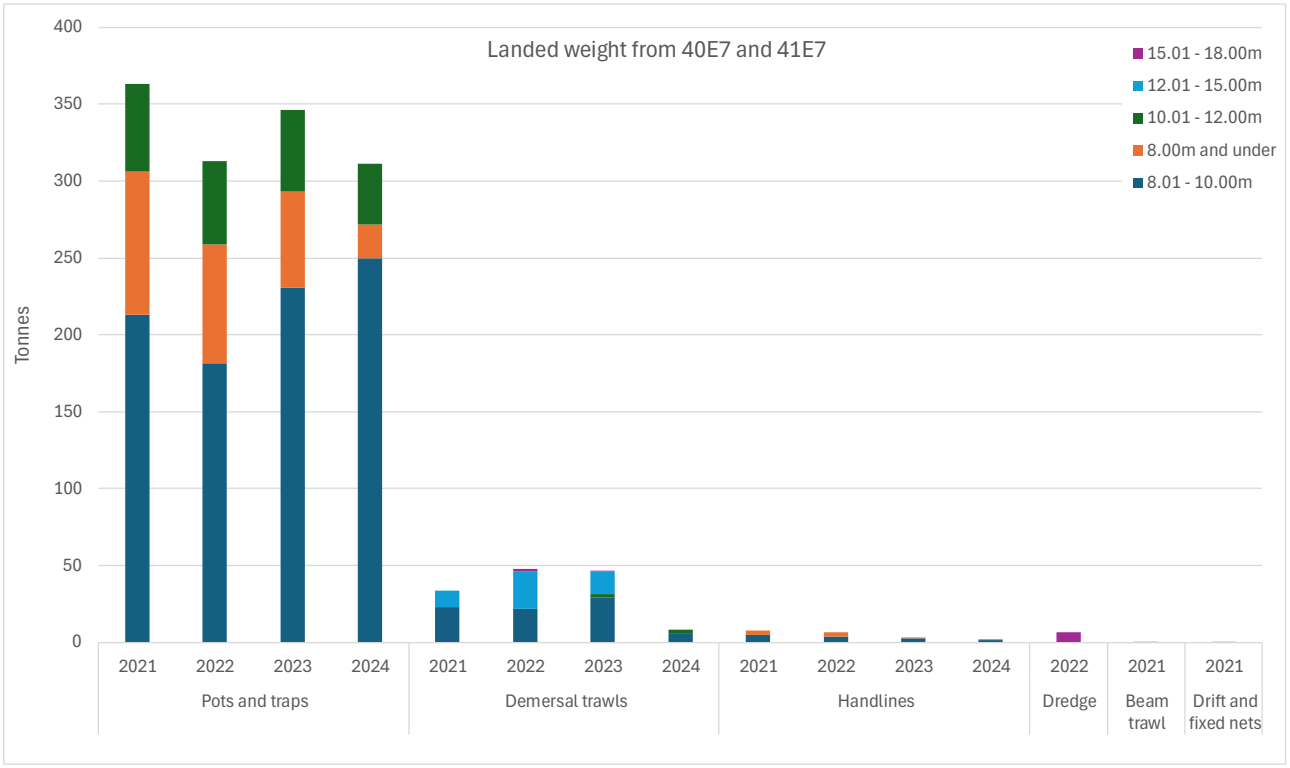

Figure 5.13. Landed weight (tonnes) of landings into Arbroath from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

154. The data show that lobsters remain 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 declining to around £0.3 million in 2023 and £0.2 million in 2024. Brown crab also continues to make an important contribution, though its value declined from over £0.2 million in 2022 to around £0.13 million in 2023 and £0.08 million in 2024.

155. Nephrops show a sharp reduction in value in 2024, following a 2022 peak near £0.14 million and a gradual fall through 2023. Velvet crabs remain stable, maintaining annual values between £40-50k. Scallops continue to appear at low but consistent levels, while mackerel and brown shrimp make minor contributions.

156. Overall, Arbroath's 2021-2024 landings remain strongly dominated by lobster and crab, with reduced Nephrops value in 2024 further reinforcing its dependence on inshore shellfish species.

157. The pots and traps fleet continues to dominate landed weight, accounting for around 300-360 tonnes annually, with a slight decrease in 2024 relative to 2021-2023. These catches are primarily taken by 8-10 m and 10-12 m vessels, with some contribution from the ≤8 m class.

158. Demersal trawls play a much smaller role but continue to operate, with landings typically between 20-40 tonnes annually, primarily by vessels under 15 m. Minor contributions from handlines and dredge gears are also evident in earlier years but remain negligible in 2024.

159. Summary: Arbroath's fishery continues to be dominated by inshore potting activity targeting lobster and crab, with reduced Nephrops and crab values in 2024 reflecting softer conditions across shellfish markets. The fleet composition remains largely small-scale (under 12 m), emphasising the port's role as an inshore shellfish base with limited trawl participation.

5.2.6 St Abbs

160. 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 2024 are presented in Figure 5.14 by species and Figure 5.15 by gear type and vessel length category.

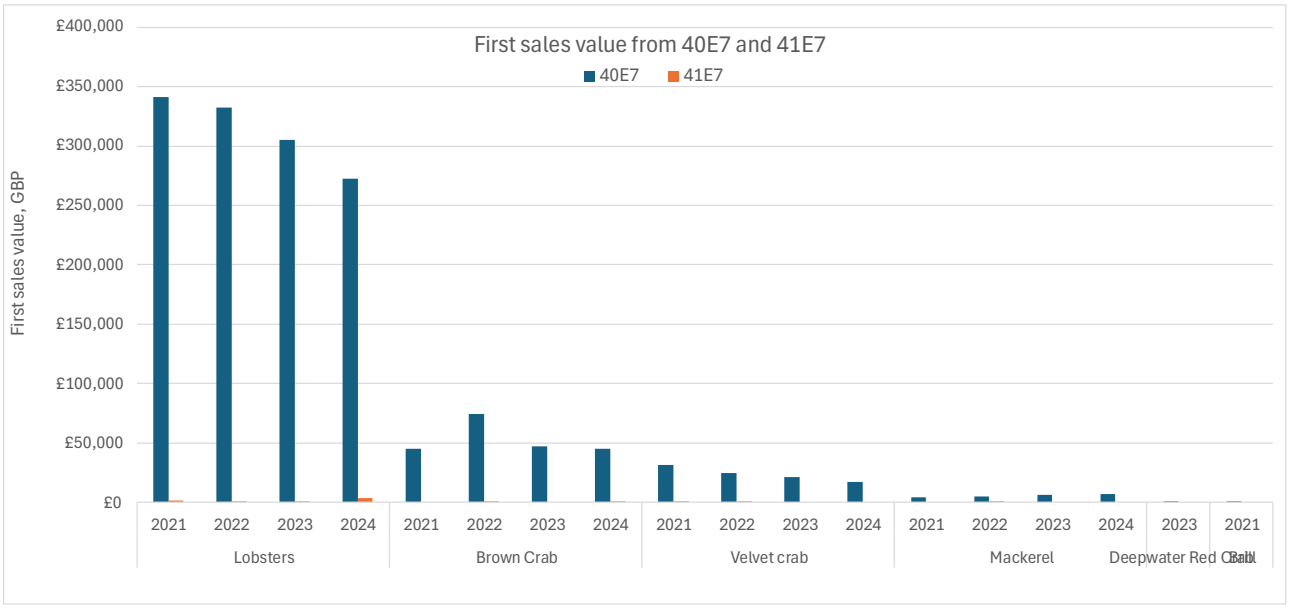

Figure 5.14. First sales value of species landed into St Abbs from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

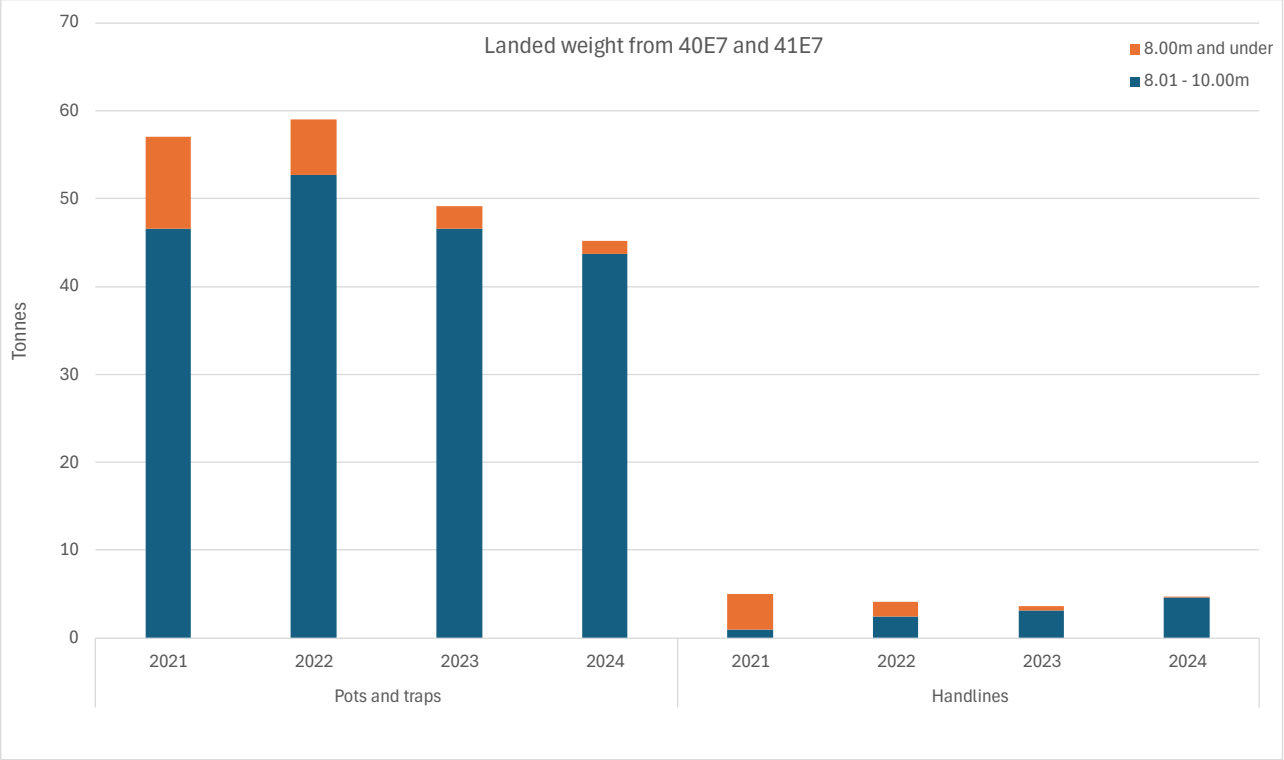

Figure 5.15. Landed weight (tonnes) of landings into St Abbs from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

161. The results show that lobsters continue to dominate the value of landings at St Abbs. Annual first sales values remained relatively high in 2021-2022 (around £0.33-0.34 million), before declining to approximately £0.31 million in 2023 and £0.27 million in 2024, indicating a gradual reduction in value in the most recent year, though lobsters remain the principal species.

162. Brown crab provides the second highest contribution by value. Values increased from around £0.05 million in 2021 to approximately £0.07 million in 2022, before declining to about £0.05 million in 2023 and remaining at a similar level in 2024. Velvet crabs continue to contribute steadily at a lower level, with values declining gradually from around £30k in 2021 to approximately £15-20k in 2024.

163. Minor contributions are also observed from mackerel, with very small but consistent values across the period. Other species, including Nephrops, scallops and deepwater red crab, do not feature significantly in the St Abbs landings profile.

164. Overall, St Abbs landings remain strongly weighted towards lobster fisheries, with brown crab and velvet crab providing smaller but consistent secondary value. The 2024 data reinforce this pattern, despite a modest reduction in overall value.

165. The fishery is dominated by pots and traps, which consistently land between 45 and 60 tonnes annually from 2021 to 2024. Landed weight shows a slight reduction in 2024 compared with earlier years but remains within the historical range. The bulk of this catch continues to be taken by vessels in the 8-10 m length class, with smaller contributions from vessels ≤8 m.

166. Handlines represent the only other gear type recorded, landing very small volumes (typically under 5 tonnes per year) throughout the period, including in 2024. No demersal trawl or dredge activity is evident in the St Abbs data.

167. Summary: St Abbs is a specialist shellfish port, with activity almost entirely centred on the inshore lobster and crab fishery, landed primarily by small vessels under 10 m using pots and traps. The 2024 data show a small reduction in value and landed weight, but no change in the underlying structure of the fishery. Compared to larger ports in the region, St Abbs remains narrowly focused on shellfish and does not exhibit a mixed fleet profile.

5.2.7 Anstruther

168. 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 2024 are presented in Figure 5.16 by species and Figure 5.17 by gear type and vessel length category.

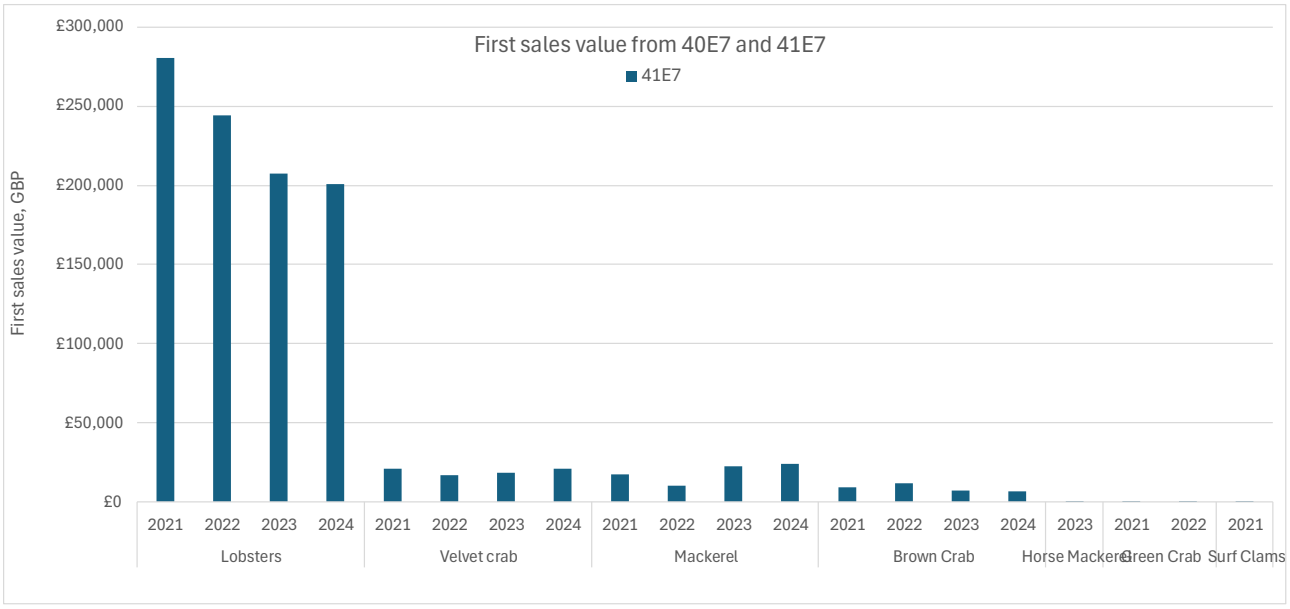

Figure 5.16. First sales value of species landed into Anstruther from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

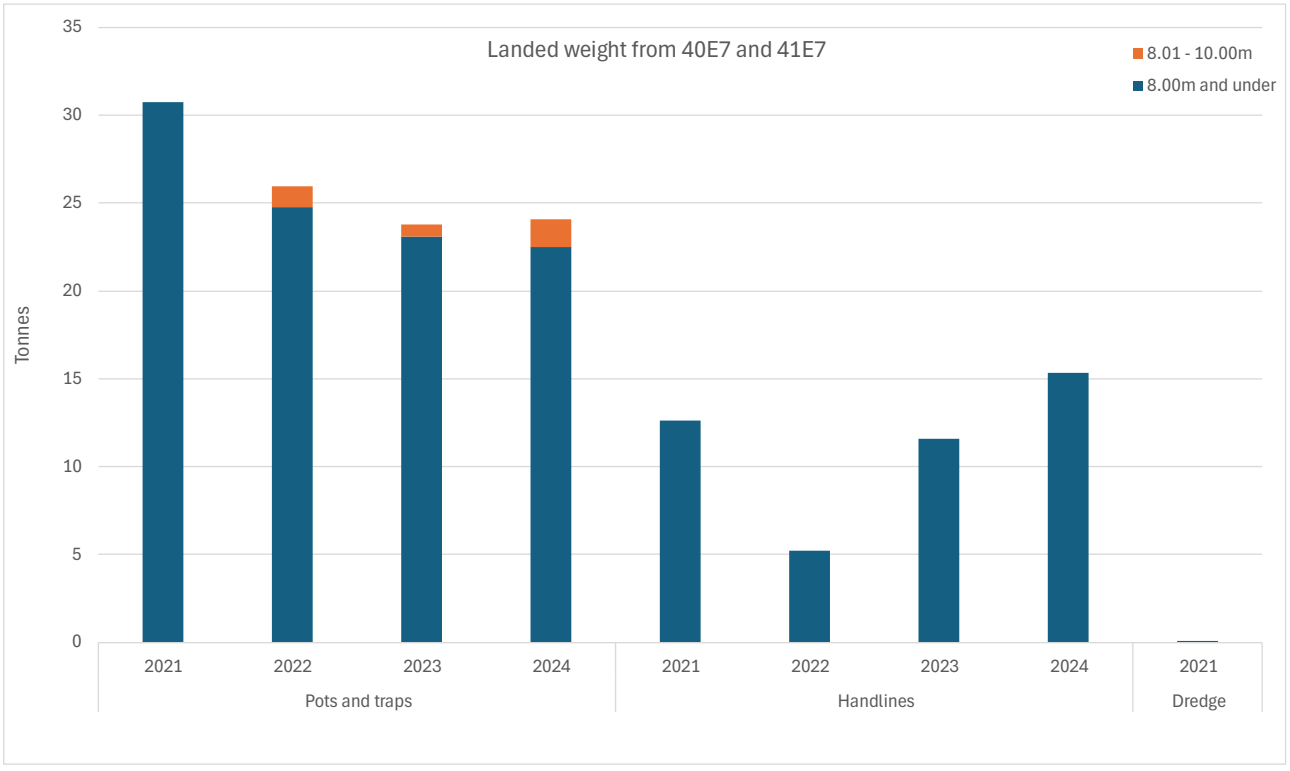

Figure 5.17. Landed weight (tonnes) of landings into Anstruther from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

169. 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 nad £0.2 in 2024. Despite this reduction, lobsters remain by far the most valuable species landed into Anstruther.

170. Secondary contributions at Anstruther continue to come from velvet crabs, mackerel, and mixed crabs, each contributing modest annual values typically in the range of £10,000-£30,000. Across 2021-2024, lobster remains by far the dominant species by value, with total sales declining gradually from approximately £0.28 million in 2021 to around £0.20 million in 2024. Minor and intermittent contributions are also recorded from brown crab and horse mackerel, while other species are negligible.

171. Overall, the species profile confirms a strongly specialised lobster-focused fishery at Anstruther, with other shellfish and occasional finfish providing only limited supplementary value. The gradual reduction in total value between 2021 and 2024 reflects lower lobster revenues rather than a diversification of species.

172. Pots and traps remain the primary gear type, consistently accounting for the majority of landed weight. Annual landings declined slightly from just over 30 tonnes in 2021 to around 23-24 tonnes in 2023-2024. These catches are overwhelmingly taken by vessels ≤8 m in length, with only very small contributions from the 8-10 m class in some years.

173. Handline fishing continues to provide a secondary contribution, with landings varying interannually. Volumes ranged from approximately 5 tonnes in 2022 to over 15 tonnes in 2024, again almost entirely from vessels under 8 m in length. A small amount of dredge activity was recorded in 2021 only, with no dredge landings evident in subsequent years.

174. No demersal trawl activity is recorded in the Anstruther data for any year between 2021 and 2024, reinforcing the exclusively inshore nature of the fishery.

175. Summary: Anstruther is a small inshore shellfish port with a highly specialised focus on lobster potting by very small vessels (≤8 m). Pots and traps dominate both landings and value, while handline fishing provides a variable but secondary contribution. Compared with nearby ports such as Pittenweem, Anstruther exhibits a narrower species and gear profile, reflecting its role as a niche, small-scale shellfish landing port.

5.2.8 North Berwick

176. 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 2024 are presented in Figure 5.18 by species and Figure 5.19 by gear type and vessel length category.

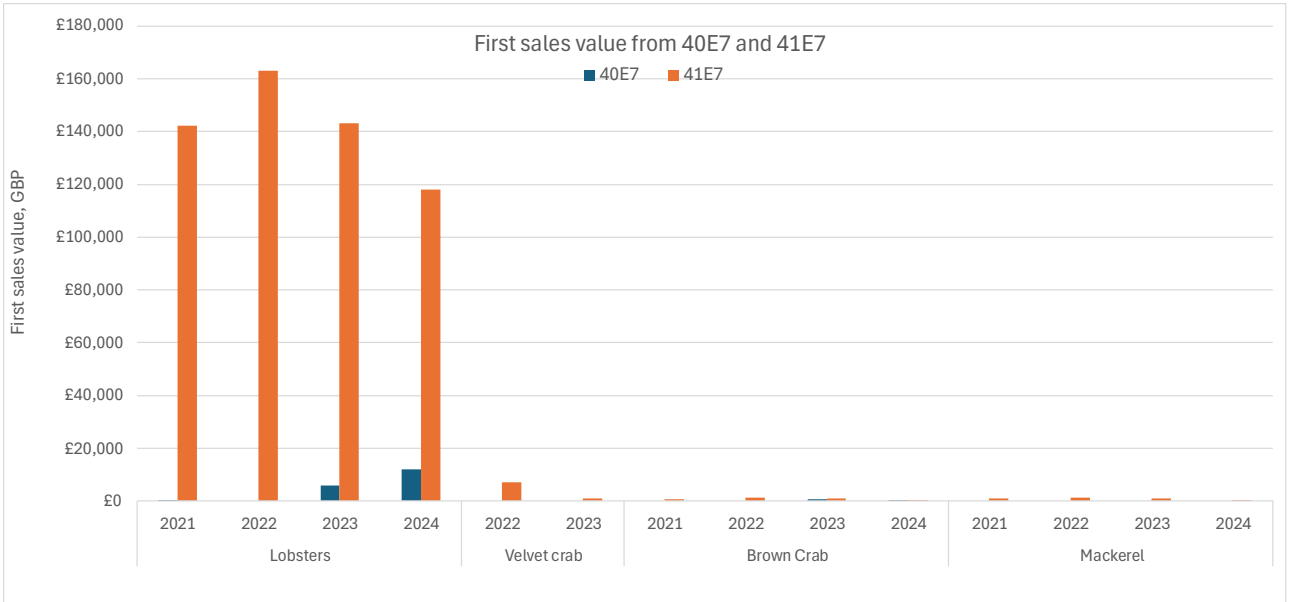

Figure 5.18. First sales value of species landed into North Berwick from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

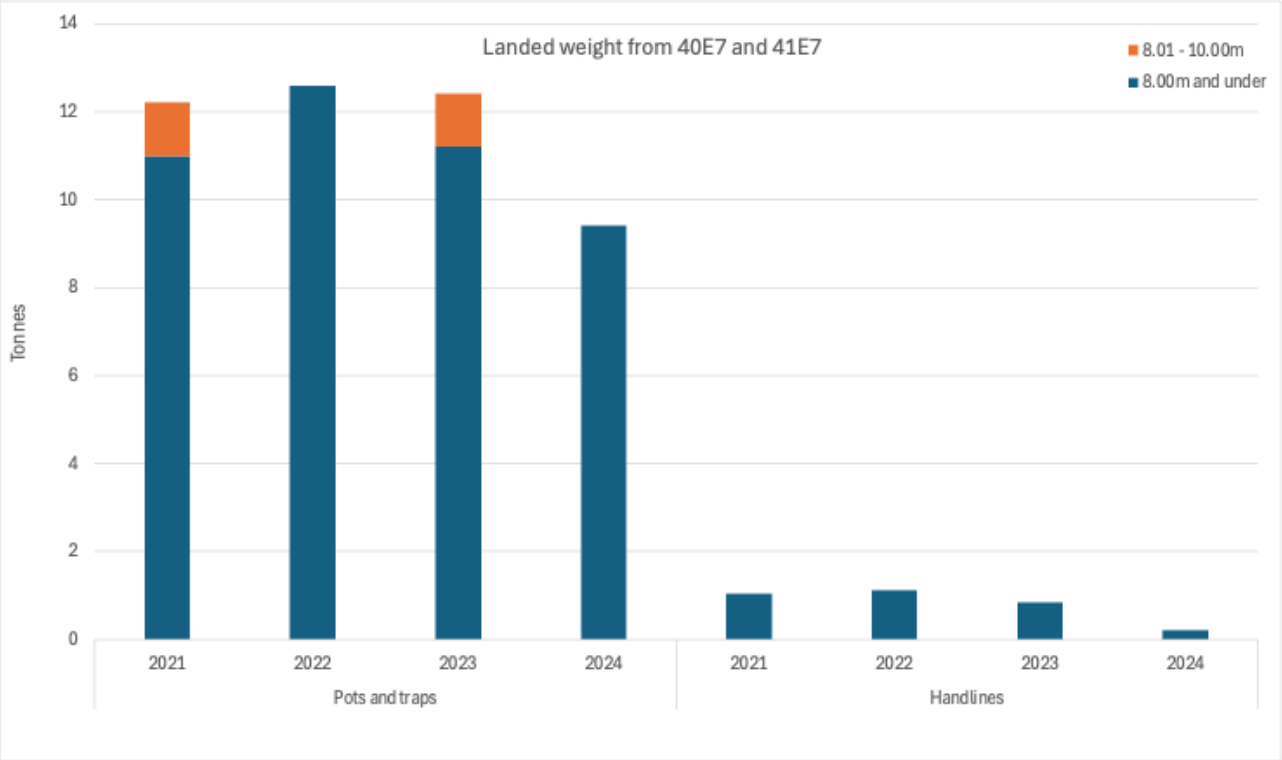

Figure 5.19. Landed weight (tonnes) of landings into North Berwick from 2021-2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type and vessel length category (data source: MMO, 2025)

177. The results demonstrate that lobsters remain by far the most valuable species landed at North Berwick. Sales values were approximately £0.14 million in 2021, increased to a peak of around £0.16 million in 2022, before declining to about £0.14 million in 2023 and further to approximately £0.12 million in 2024. Despite this reduction, lobster continues to dominate the value of landings at the port.

178. Other shellfish species make only minor contributions. Velvet crabs and mixed crabs are recorded intermittently, primarily in 2022 and 2023, but at very low values relative to lobster. Mackerel also appears in small quantities across the period, including in 2024, though its contribution to overall value remains negligible.

179. Overall, the value of landings at North Berwick is highly concentrated in lobster fisheries, with limited diversification evident across species and only modest interannual variation outside of lobster revenues.

180. Landings are dominated by pots and traps, with annual totals remaining relatively stable at around 11-13 tonnes between 2021 and 2023, before declining slightly to around 9-10 tonnes in 2024. These landings are almost entirely taken by vessels ≤8 m in length, with only very small contributions from the 8-10 m class in some years.

181. Handlines contribute consistently at a low level, generally around 1 tonne per year, with a slight reduction evident in 2024. No landings from demersal trawls or dredge gears are recorded in any year.

182. Summary: North Berwick is a small inshore port strongly specialised in lobster potting, supported by very minor contributions from other shellfish and occasional mackerel landings. The fleet is composed almost entirely of very small vessels under 10 m, highlighting the highly localised and small-scale nature of the fishery. Compared with nearby ports, North Berwick shows one of the narrowest species and gear profiles, with an increased dependence on lobster evident despite a modest decline in total value in 2024.

5.2.9 Other ports

183. 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 2024 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.

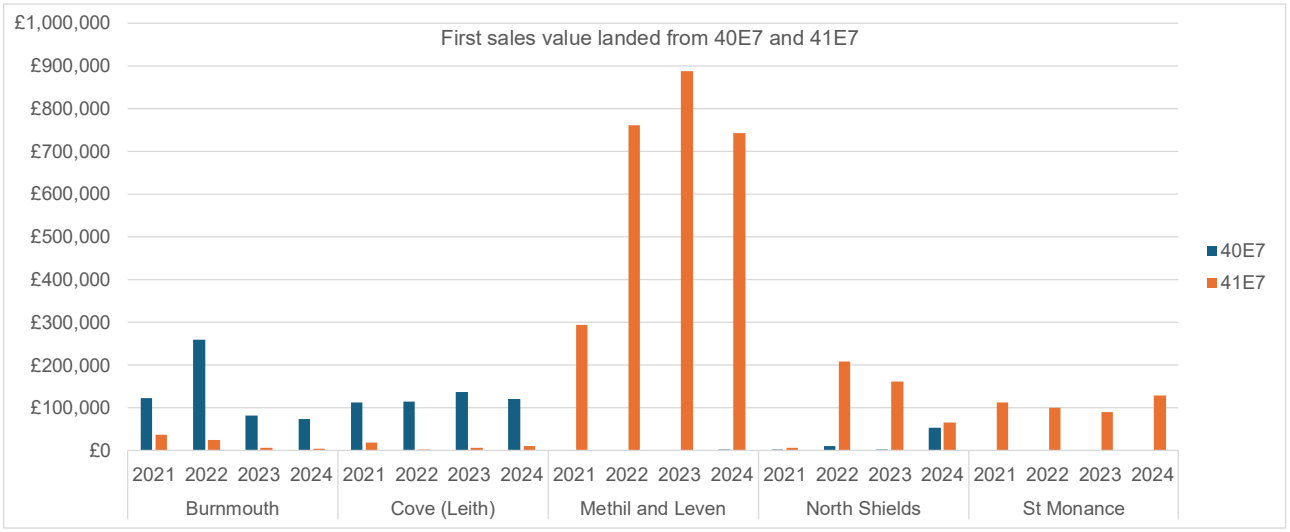

Figure 5.20. First sales value of species landed into Methil & Leven, Cove (Leith), Burnmouth, St Monance, St Andrews and North Shields from 2021 to 2024 from the local study area (ICES rectangles 40E7 and 41E7) (data source: MMO, 2025)

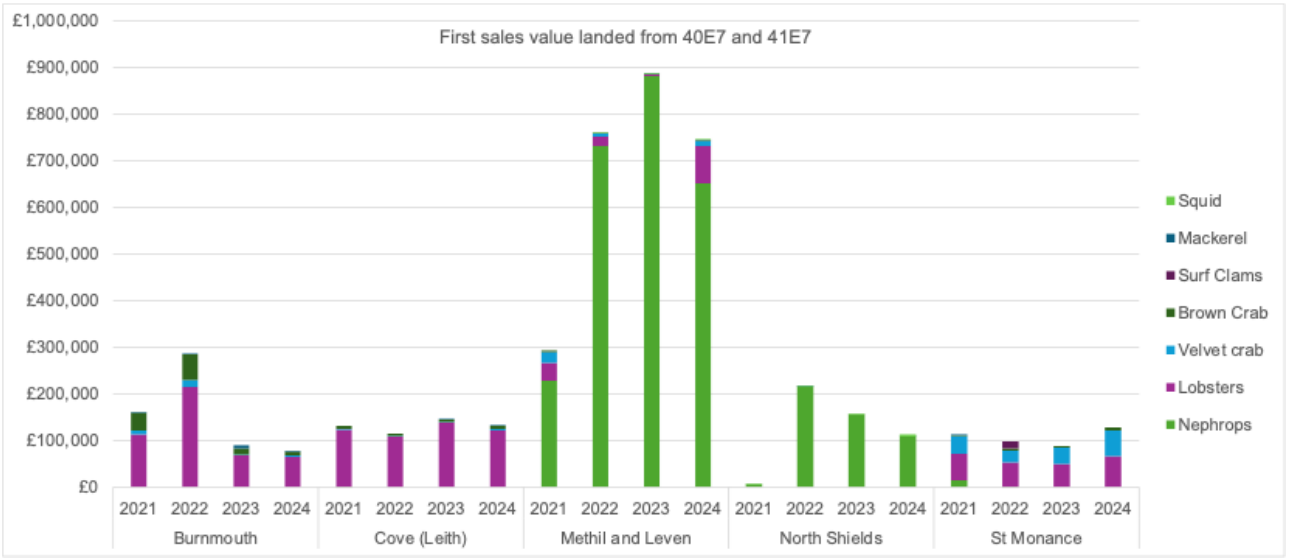

Figure 5.21. First sales value of species landed into Methil & Leven, Cove (Leith), Burnmouth, St Monance and St Andrews from 2021 - 2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating species (data source: MMO, 2025)

184. Figure 5.20 shows the total first sales value of landings into the five ports between 2021 and 2024.

- Burnmouth recorded values between £0.1-0.28 million, peaking in 2022, followed by lower values in 2023–2024 (around £0.08–0.10 million), indicating a reduced level of activity after 2022.
- 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, followed by a decline in 2024 to ~£0.75 million but remaining 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 (~£0.16 million) and fell further in 2024 (around ~£0.1–0.13 million).
- St Monance shows lower but stable landings values of around £0.1 million annually, with an increase in 2024 to ~£0.13 million.

185. Figure 5.21 presents the first sales value by species group. Overall, the key target species includes lobster, nephrops, velvet crab and brown crab.

- At Burnmouth, landings are predominately of lobsters and crabs (including brown crab and velvet crab) and lower levels of scallop, and Nephrops. Values increased in 2022 before reducing slightly in 2023 where they have remained consistent in 2024. This does reflect a drop in landings into Burnmouth, which could be due to fleet structure e.g., reduction in number of vessels or vessels operating into alternative landing ports.
- Cove (Leith) shows a similar profile, dominated by landings of lobster, with smaller quantities of crabs, Nephrops, and scallops. Total annual landed value has remained more consistent across the time period.
- Methil and Leven is heavily dominated by Nephrops, which accounts for nearly all of the significant increase in 2022-2024. Landed value peaked in 2023, with a slight drop in 2024. Noticeably, in 2024, landings of lobster into Methil and Leven have increased.
- North Shields landings are also dominated by Nephrops, with a peak in 2022, and reductions in 2023 and 2024.
- St Monance is characterised by landings of lobster and velvet crab, with smaller amounts of surf clams in 2022 and brown crab in 2024. Total annual landed value has been fairly consistent with a peak in 2024.

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

- Burnmouth shows activity dominated by vessels 10-12m in 2021 and 2022, but this fleet segment has dropped in 2023 and 2024, when landings have been primarily by under ≤10 m vessels.
- Cove (Leith) demonstrates very small contributions, with all vessels in the 8-10 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 landings are by vessels over 12m in length, with biggest contributions by vessels 18m and over.
- St Monance is much smaller in scale, with values under £0.1 million annually, all from very small vessels (≤10 m).

187. Overall, the figure highlights how Methil and Leven and North Sheilds to be dominated by larger vessels (over 12m), compared to the inshore, small-scale focus of the other ports.

188. 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 demersal trawls, alongside minor contributions from pots and traps. This diversification distinguishes it from the more inshore-focused ports.
- North Shields is dominated by demersal trawls, with a small amount from dredge in 2024.
- St Monance is dominated by pots and traps, with low levels of activity from demersal trawl and dredge.

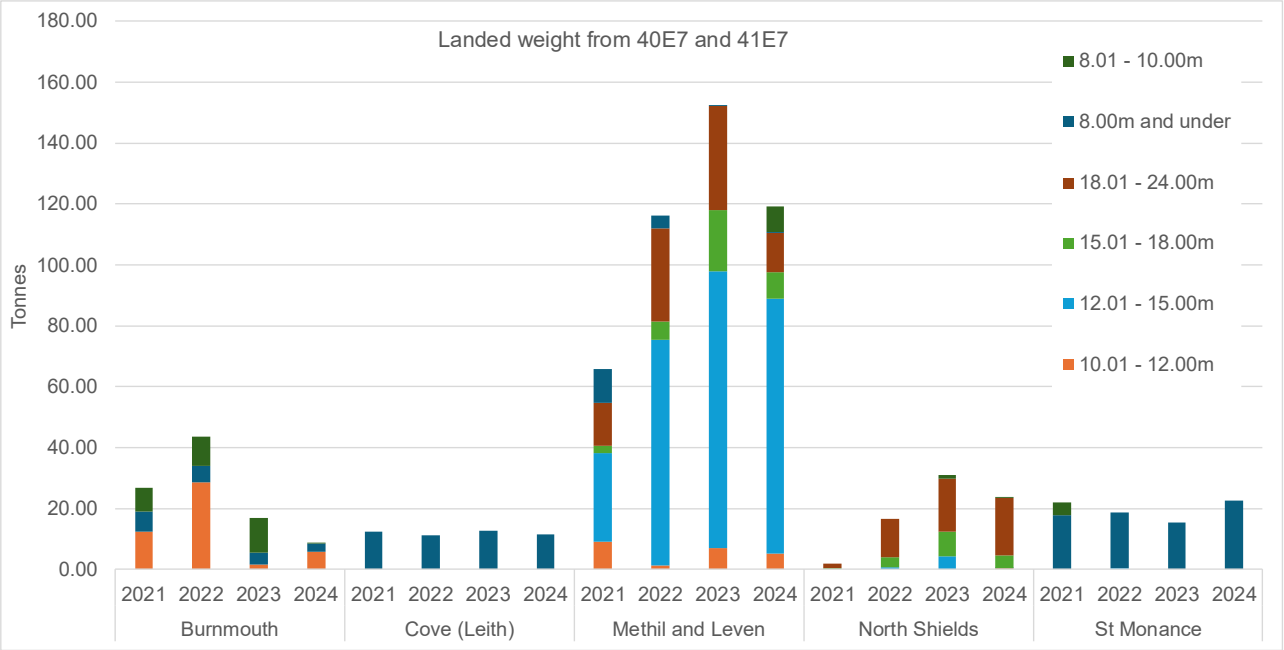

Figure 5.22. Landed weight (tonnes) of landings into Methil & Leven, Cove (Leith), Burnmouth, St Monance, St Andrews and North Shields from 2021 to 2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating vessel length category (data source: MMO, 2025)

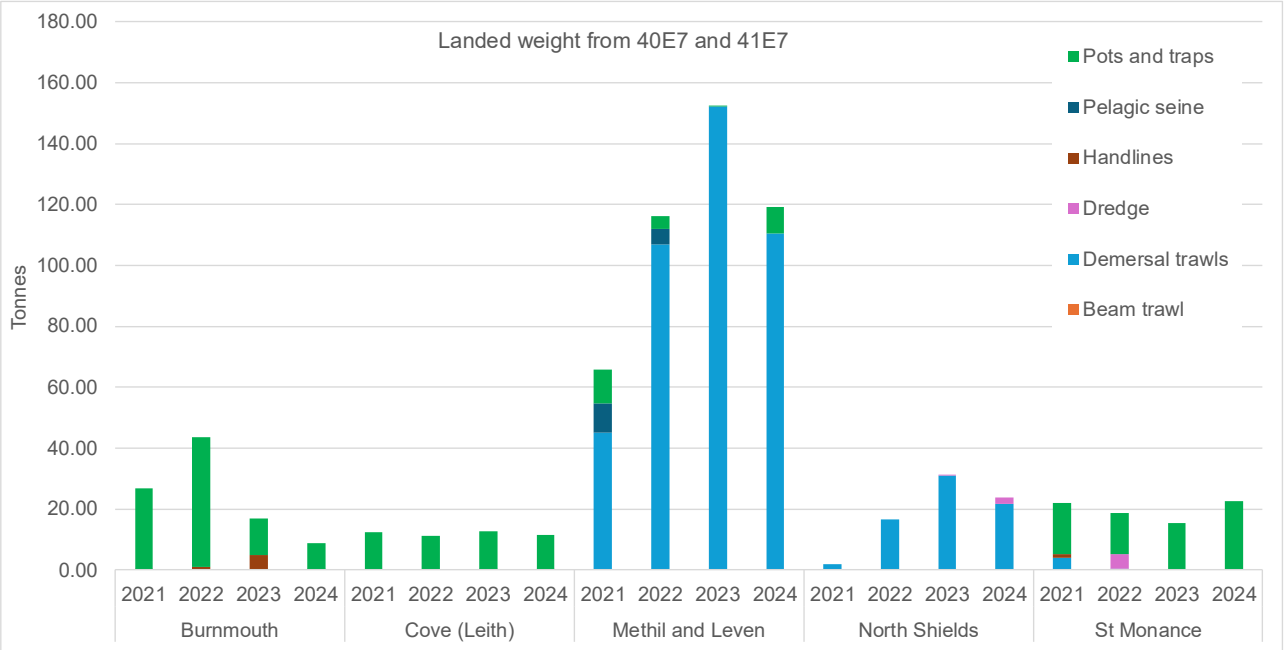

Figure 5.23. Landed weight (tonnes) of landings into Methil & Leven, Cove (Leith), Burnmouth, St Monance, St Andrews and North Shields from 2021 to 2024 from the local study area (ICES rectangles 40E7 and 41E7) indicating gear type (data source: MMO, 2025)

189. Overall, the data indicate a clear distinction between the ports. North Shields and Methil and Leven are dominated by demersal trawl activity, reflecting their stronger focus on Nephrops-directed fisheries. Both ports show an increase in first sales value in 2022, peaking in 2023, followed by a slight reduction in 2024. In contrast, Burnmouth, St Monance, and Cove (Leith) are more strongly characterised by ≤10 m inshore vessels using pots and traps, targeting lobster and crab. While these smaller ports show some year-to-year fluctuation, their overall landings values remain consistently lower than the Nephrops-focused ports.

6 Fishing fleet data

190. Scottish Fisheries Statistics for the period 2019 to 2024 were reviewed to examine recent trends in the scale and distribution of fishing activity along Scotland's east coast. The analysis focuses on indicators of employment (regularly and irregularly employed) and active fishing vessels, summarised at two spatial scales: local authority level and east coast fishing district level. This provides context on how the structure of the fleet and associated employment has changed over time, and highlights where activity is most strongly concentrated.

191. Figure 6.1 shows total trends in fishing employment on the East Coast from 2019-2024, split into regularly employed (blue bars) and irregularly employed (orange bars), with the total shown by the green line. Total employment declines steadily over the period, from around 2,000 people in 2019 to about 1,650 in 2024. This reduction is driven mainly by a fall in regular employment, which drops year-on-year (from roughly 1,750 in 2019 to around 1,420 in 2024). Irregular employment remains much lower overall and more variable, with a noticeable spike in 2020 (c. 350) before returning to lower levels and declining slightly to just over 200 by 2024.

192. The figures on fishing employment are sourced from the Marine Directorate's Scottish Sea Fisheries Statistics, which report employment on Scottish registered fishing vessels rather than employment by nationality or immigration status. They should therefore be interpreted as vessel-based employment figures and not as a count of Scottish or UK national fishers only. The report notes that figures for the wider Scottish labour force, used as a comparator, come from the ONS Annual Population Survey 2024. The Annual Population Survey is a household survey of the UK resident population and is not limited to UK nationals; however, it would not necessarily capture non-resident foreign crew or provide a breakdown of fisheries employment by visa status. Given the complexity of fisheries visa arrangements, the employment data should therefore be treated as showing the number of fishers employed on Scottish registered vessels, without distinguishing between UK and foreign workers.

193. Figure 6.2 compares the number of people employed in fishing across key East Coast districts from 2019 to 2024, split into regularly employed and irregularly employed.

194. Across the series, Fraserburgh is the dominant employment centre by a wide margin, with high regular employment in 2019 followed by a clear downward trend through to 2024; irregular employment is much smaller, but also generally declines over time. Peterhead is consistently the second-largest contributor, with regular employment remaining substantially higher than other districts and showing a modest decline overall, while irregular employment remains comparatively low.

195. Other districts (e.g., Aberdeen, Anstruther, Buckie, Eyemouth, and Scrabster) have much smaller employment totals, typically with regular employment forming the bulk of jobs and irregular employment making up a minor secondary component. Overall, the figure shows that East Coast fishing employment is concentrated in a small number of major ports, especially Fraserburgh and Peterhead, and that the reduction over time is driven mainly by changes in regular employment rather than irregular work.

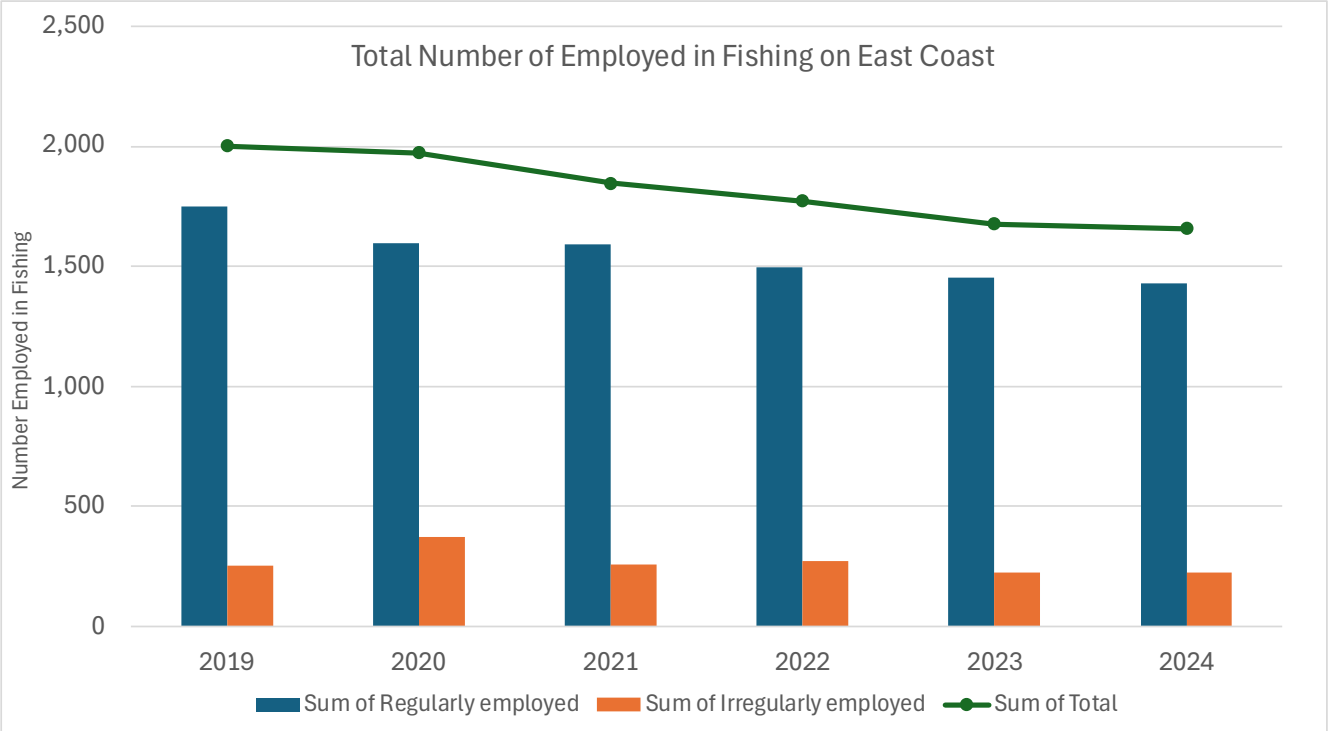

Figure 6.1. Trends in Fishing Employment on the East Coast (2019-2024) (data source: Marine Directorate, 2025)

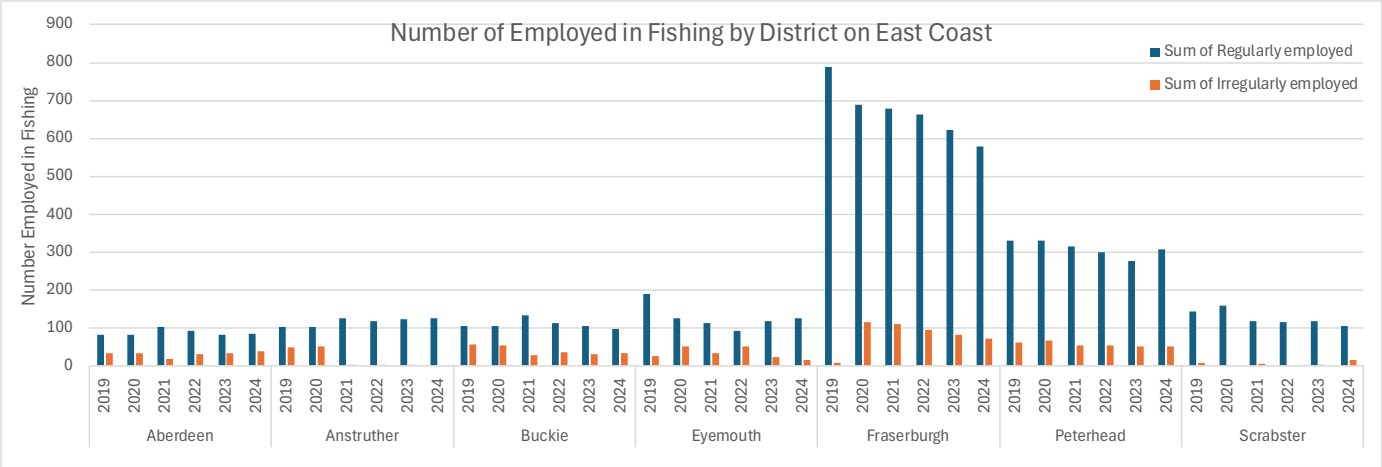

Figure 6.2. Fishing Employment on the East Coast by District (2019-2024): Regular vs Irregular Employment (data source: Marine Directorate, 2025)

196. At a local authority scale, data was analysed for the following locations: Fife, Scottish Borders, East Lothian, Angus, Edinburgh City. Across the five local authorities, fishing employment shows a clear decline between 2019 and 2022, followed by a period of stabilisation through 2023-2024. Total employment falls from 430 in 2019 to 299 in 2022 (Figure 6.3), then remains broadly steady (~297 in 2023 and 299 in 2024), suggesting the sharp contraction occurred earlier in the period, with little subsequent recovery.

197. At the individual authority scale, as shown in Figure 6.4, Fife consistently supports the largest workforce and appears comparatively resilient: employment is broadly stable in 2019-2020 (~150), then drops in 2021 (~130) and levels off thereafter, with a modest increase by 2024 (~126-127). Scottish Borders follows a similar pattern but with a more pronounced fall from ~105 (2019) to ~68 (2022), before a partial rebound to ~77 (2024).

198. East Lothian shows a sustained downward trajectory overall (from ~94 in 2019 to ~59 in 2024), with a small uptick around 2022 before declining again. Angus remains stable at around ~56-60 through 2021, then experiences a marked step-change reduction in 2022 (~35), remaining at a lower level through 2024 (~32). Edinburgh City accounts for only a very small number of fishing jobs throughout and declines from ~16 (2019) to low single digits (~3-5) from 2020 onwards.

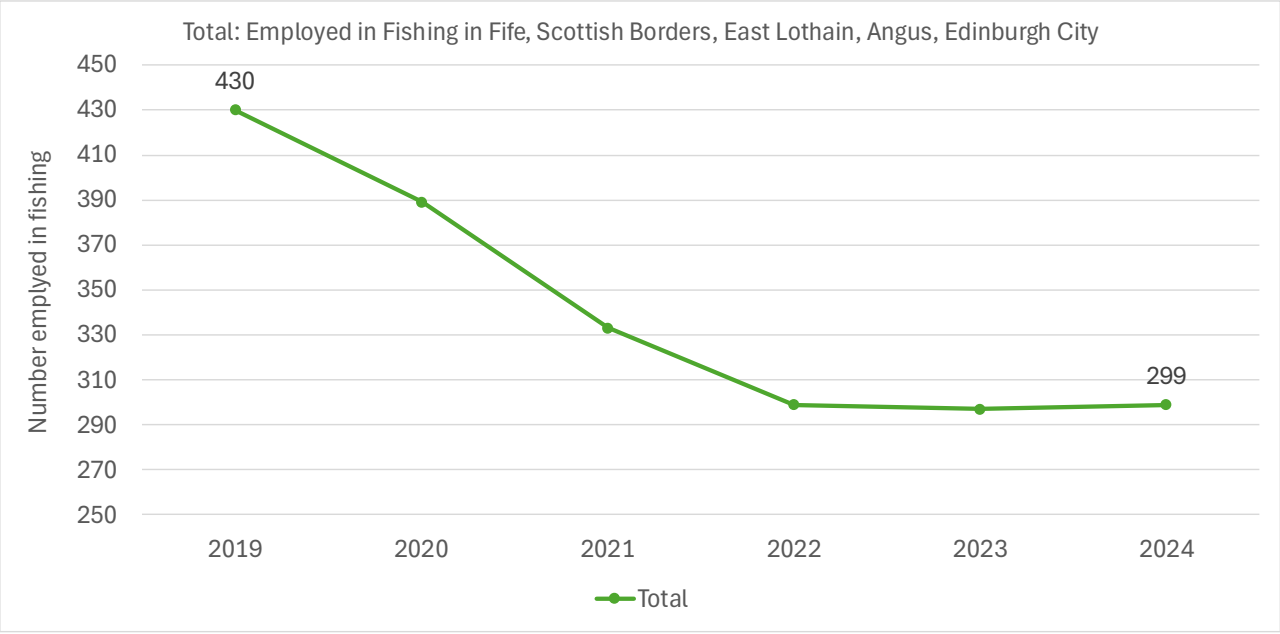

Figure 6.3. Combined fishing employment in Fife, Scottish Borders, East Lothian, Angus and Edinburgh City (2019-2024) (data source: Marine Directorate, 2025)

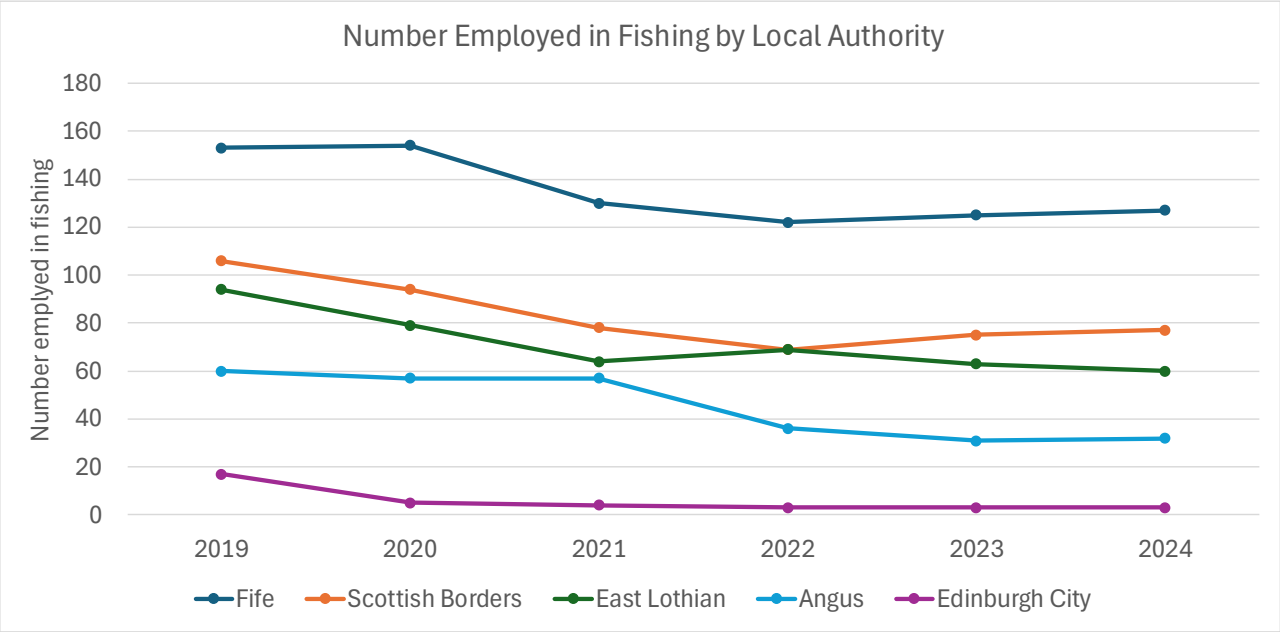

Figure 6.4. Number employed in fishing by local authority, 2019-2024 (data source: Marine Directorate, 2025)

199. Figure 6.5 compares the number of active fishing vessels across east coast districts between 2019 and 2024. Fraserburgh consistently records by far the largest fleet, with totals in excess of ~220 vessels in 2019-2022, followed by a clear decline in the most recent years to around ~200 vessels in 2024. All other districts have substantially smaller fleets (generally ~85-115 vessels) and show comparatively modest year-to-year variation. Aberdeen remains broadly stable in the mid-80s. Anstruther fluctuates around ~100 vessels, peaking in 2023 before easing slightly in 2024. Buckie shows a small decline after 2021 and remains just under ~95 vessels. Eyemouth stays close to ~100 vessels throughout, with a slight reduction in

2024. Peterhead shows a gradual reduction from 2019 towards 2023, followed by a small uptick in 2024. Scrabster remains broadly stable at around ~100 vessels across the period.

200. Figure 6.6 shows the number of active fishing vessels in the East Coast District by vessel length from 2019 to 2024, and highlights a fleet that is made up of predominantly inshore smaller vessels, ≤10 m in length. Vessels in the ≤10 m size class make up by far the largest segment in every year (around ~590–620 vessels), with a gradual decline across the period, reaching the lowest level in 2024.

201. All other length classes are much smaller by comparison and are fairly stable year to year:

- >10–12 m and >12–15 m are small components (generally ~20–30 vessels each), showing modest fluctuations and a slight downward tendency by 2024.
- >15–24 m is the largest of the non-inshore categories (roughly high-80s to ~90 vessels) with only minor variation.
- >24–40 m remains broadly steady (around ~50 vessels), with a slight easing in later years.
- >40 m is consistently the smallest group (around ~10–15 vessels), with little overall change.

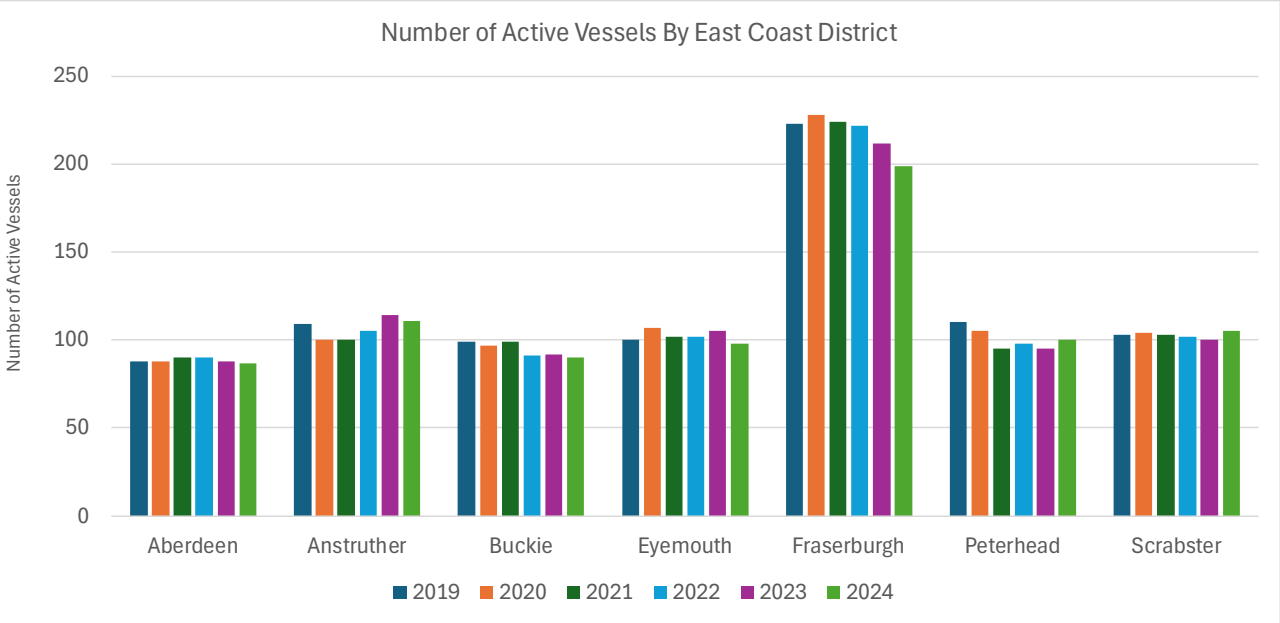

Figure 6.5. Number of Active Fishing Vessels by East Coast District (2019-2024) (data source: Marine Directorate, 2025)

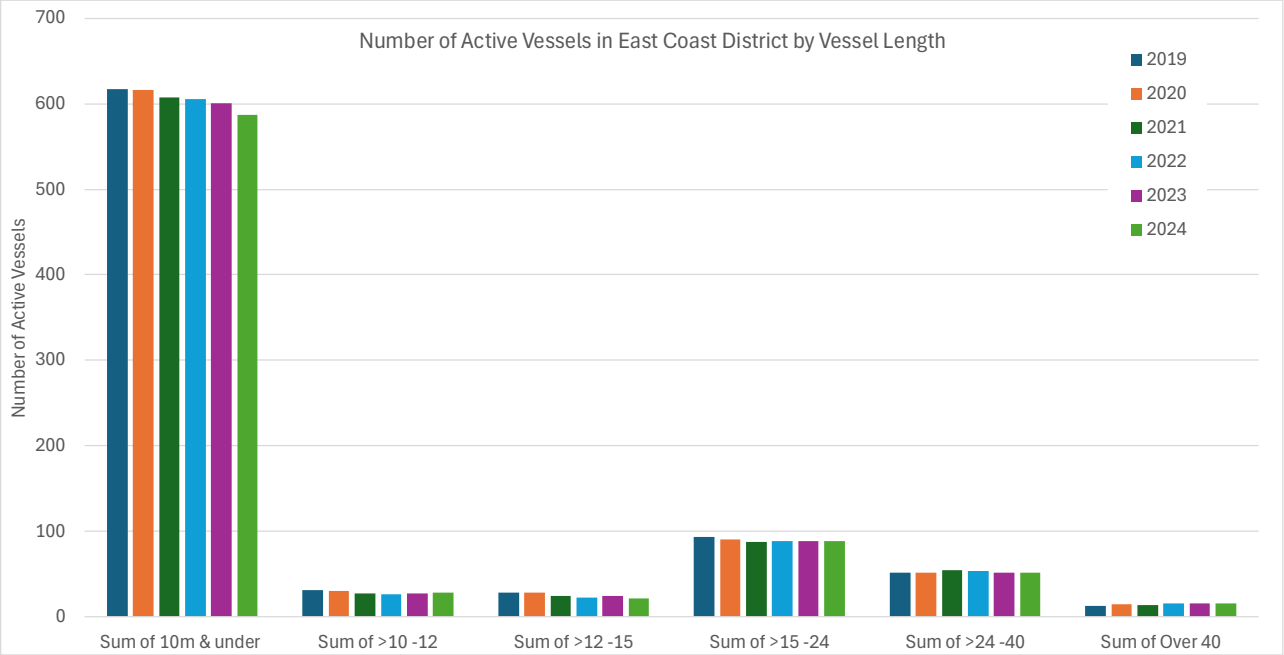

Figure 6.6. Number of Active Fishing Vessels by East Coast District (2019-2024) (data source: Marine Directorate, 2025)

202. Stakeholder feedback provides additional context for the employment and fleet trends presented in this section. Stakeholders noted that reduced fishing effort is likely to be influenced by a reduction in fleet capacity and ongoing challenges in recruiting and retaining crew. In particular, it was reported that younger people are less likely to enter the fishing industry, with some crew moving to larger vessels or leaving the sector. These observations are consistent with the Scottish Fisheries Statistics context, which indicates a decline in fishing employment across the east coast during the 2019-2024 period.

203. Stakeholders also raised the potential role of local initiatives in supporting recruitment into the fishing industry. While this is outside the direct scope of the PEMP monitoring report, the feedback highlights the importance of considering wider socio-economic drivers when interpreting changes in landings, effort and fleet activity.

7 Spatial fishing activity data

7.1 Vessel monitoring system (VMS) data

204. 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 7.1, Figure 7.2, Figure 7.3, and Figure 7.4). Data for 2021 is not yet available from the MMO and therefore 2017 to 2020 represents the most up-to-date data available for this VMS dataset. The VMS data does not include vessels under 15m, so is not representative of the entire effort by the trawl fleet.

205. 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.

206. 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.

207. 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.

7.2 Fisheries Sensitivity Mapping and Displacement Modelling (FiSMaDiM)

208. The Fisheries Sensitivity Mapping and Displacement Modelling (FiSMaDiM) project is a UK-wide initiative designed to improve understanding of the spatial distribution and intensity of commercial fishing activity and to inform sustainable planning for offshore wind developments. FiSMaDiM produces high-resolution, gridded maps of estimated fishing effort by combining VMS data with Automatic Identification System (AIS) data, interpolated to provide vessel positions at regular intervals and attributed to gear type and fishing activity within the UK EEZ over the period 2012-2021.

209. Figure 7.5 illustrates the spatial distribution of demersal otter trawl fishing effort within the regional study area, based on cumulative FiSMaDiM data for the period 2012-2021. This represents to most up-to-date data available for mapping the spatial footprint of fishing activity. Fishing effort is presented as total hours per grid cell and grouped into graduated effort bands, from very low to very high levels of activity.

210. The figure shows a well-defined and spatially coherent trawl corridor running broadly north-south along the nearshore shelf, with the highest concentrations of demersal trawl effort occurring in coastal and near-coastal waters. Several contiguous grid cells record high to very high cumulative effort, indicating areas of repeated and sustained trawling activity over the assessment period.

211. The most intense trawl activity is evident in the southern part of the regional study area, extending offshore from the coast and overlapping with ICES rectangles 40E7 and 41E7. These areas coincide with established demersal trawl grounds and reflect the importance of this zone for Nephrops and mixed demersal fisheries.

212. Within and adjacent to the NnG Wind Farm Area and the offshore export cable corridor, demersal trawl fishing effort is clearly present, with several grid cells showing moderate to high cumulative hours. This indicates that the development area lies within an actively used trawl fishing zone, rather than on its periphery.

213. Further offshore, trawl activity becomes more fragmented and generally lower in intensity, with isolated pockets of effort reflecting occasional or opportunistic fishing rather than persistent use.

214. Overall, the spatial pattern highlights demersal otter trawling as a key fishing activity in the regional and local study areas, with concentrated effort in nearshore waters and demonstrable overlap with the offshore export cable corridor. This pattern is relevant when considering potential interactions between the project and existing demersal trawl fisheries.

215. Figure 7.6 shows the spatial distribution of dredge fishing effort (hours) within the regional study area, based on cumulative FiSMaDiM data for the period 2012-2021. Fishing effort is presented by grid cell and classified into effort bands, ranging from very low activity to areas of highest cumulative dredge hours.

216. The figure indicates that dredge fishing effort is patchily distributed, with areas of higher activity forming a broad north-south corridor offshore. The highest concentrations of dredge hours occur predominantly offshore, particularly to the east

and northeast of the local study area, where multiple grid cells record moderate to high cumulative effort. In contrast, nearshore waters generally show lower levels of dredge activity, with many cells recording only minimal fishing effort.

217. Within the vicinity of the NnG Wind Farm Area and the offshore export cable corridor, dredge fishing effort is present but comparatively limited, falling largely within the lower to mid-range effort categories. This suggests that while dredge fishing does occur locally, the area is not among the principal hotspots for dredge activity within the wider region.

218. Overall, the spatial pattern reflects a fishery characterised by discrete areas of repeated dredge use rather than uniform coverage, with the most intensive activity occurring outside the immediate footprint of the project.

219. Potting fishing effort has not been mapped using FiSMaDiM data because the dataset primarily captures larger vessels and therefore under-represents the smaller inshore vessels that dominate the potting fleet.

7.3 Automatic Identification System (AIS) data

220. 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. Data has been sourced from 2019 to 2023 representing the most up-to-date data at the time of writing.

221. The AIS data is presented annually for 2019 to 2023 (Figure 7.7, Figure 7.8, Figure 7.9, Figure 7.10 and Figure 7.11) and seasonally for the same period (Figure 7.12, Figure 7.13, Figure 7.14 and Figure 7.15). 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.

222. The AIS data for 2022 and 2023 (Figure 7.10 and Figure 7.11) shows clear fishing corridors running perpendicular to the Offshore ECC which is expected to be the Nephrops trawling fleet. In 2022, areas of moderate-to-high density are more widespread, forming a broader nearshore band of elevated activity around the NnG area and across adjacent coastal waters. In 2023, the overall pattern is similar but more localised, with the highest densities appearing more concentrated, notably just west and south-west of the wind farm area, while much of the wind farm footprint and surrounding offshore area shows lower-density cells. The export cable corridor intersects areas of elevated use in both years, reflecting its alignment with existing routes/grounds, though the surrounding intensity is more diffuse in 2022 and more focused in 2023.

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

224. Figure 7.16 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.

225. Stakeholders reiterated the importance of improving the evidence base for small vessel activity, particularly because much of the inshore potting fleet is not well represented in AIS, VMS or FiSMaDiM datasets. This supports the conclusion that spatial datasets should be interpreted with caution where vessels under 15 m are under-represented. Future iterations of the PEMP reporting will continue to consider whether additional small-vessel or higher-resolution datasets, including any available iVMS or Seafish data, can be used to strengthen interpretation of spatial fishing activity.

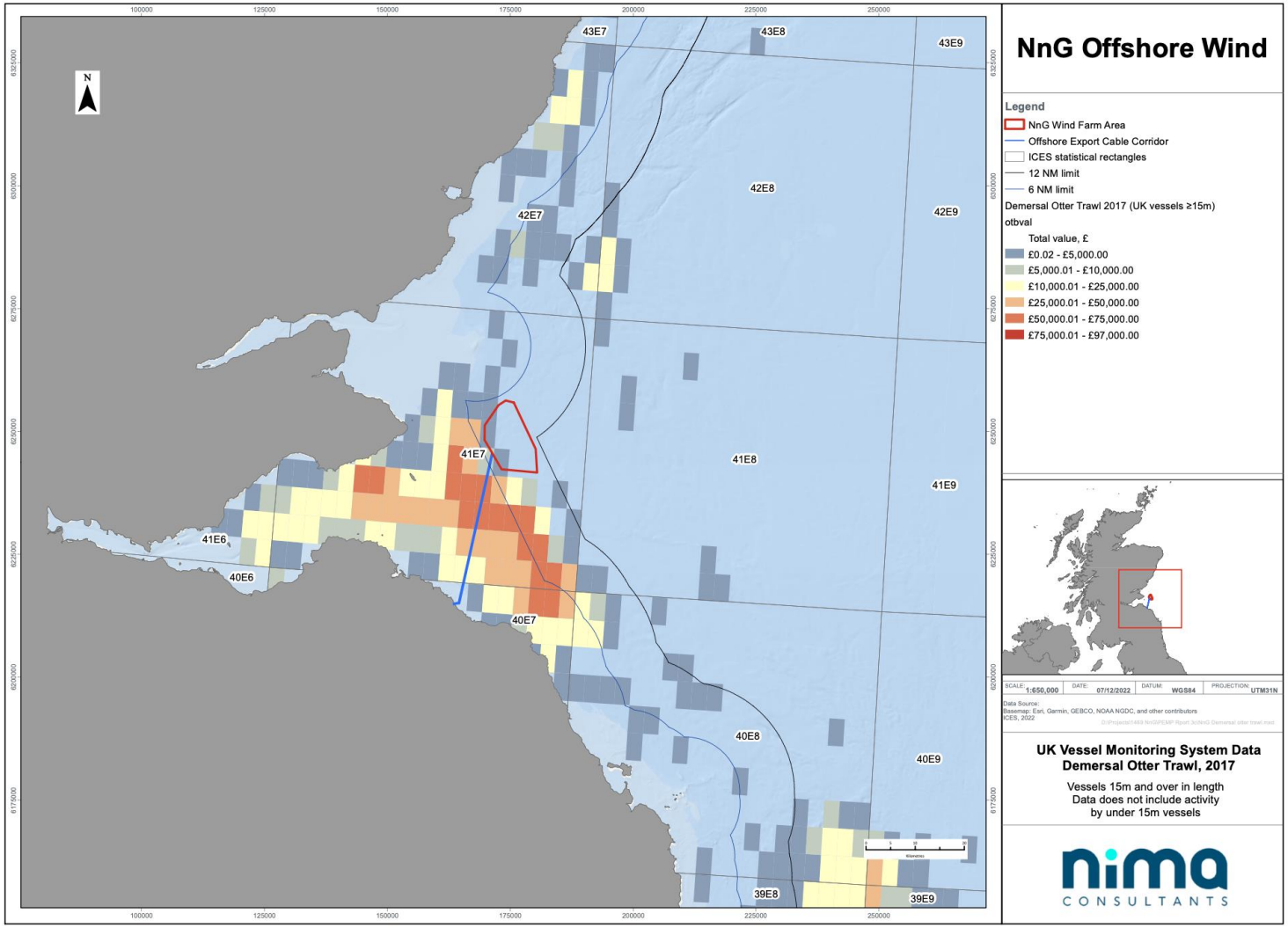

Figure 7.1. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2017 (data source: MMO, 2023)

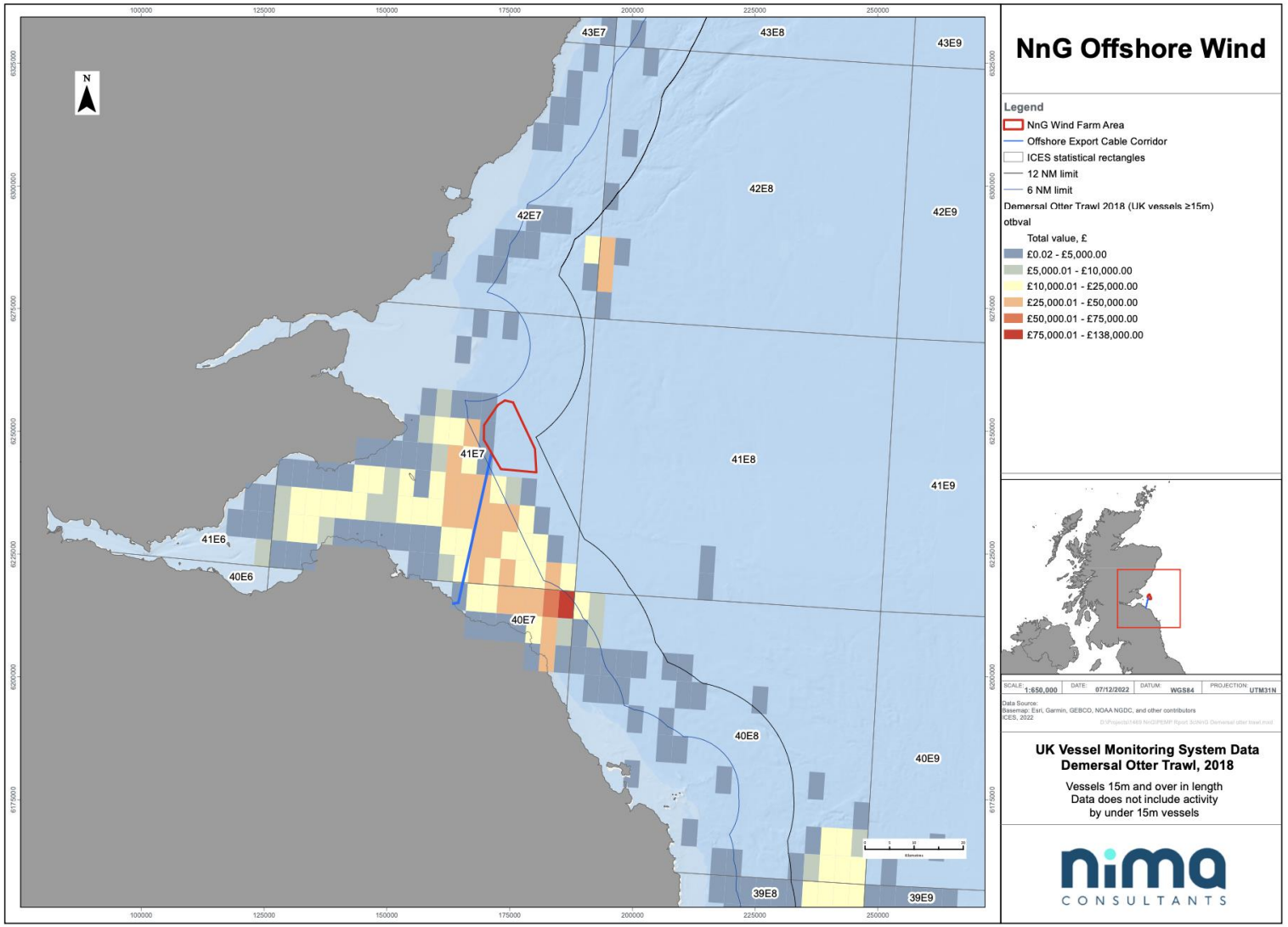

Figure 7.2. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2018 (data source: MMO, 2023)

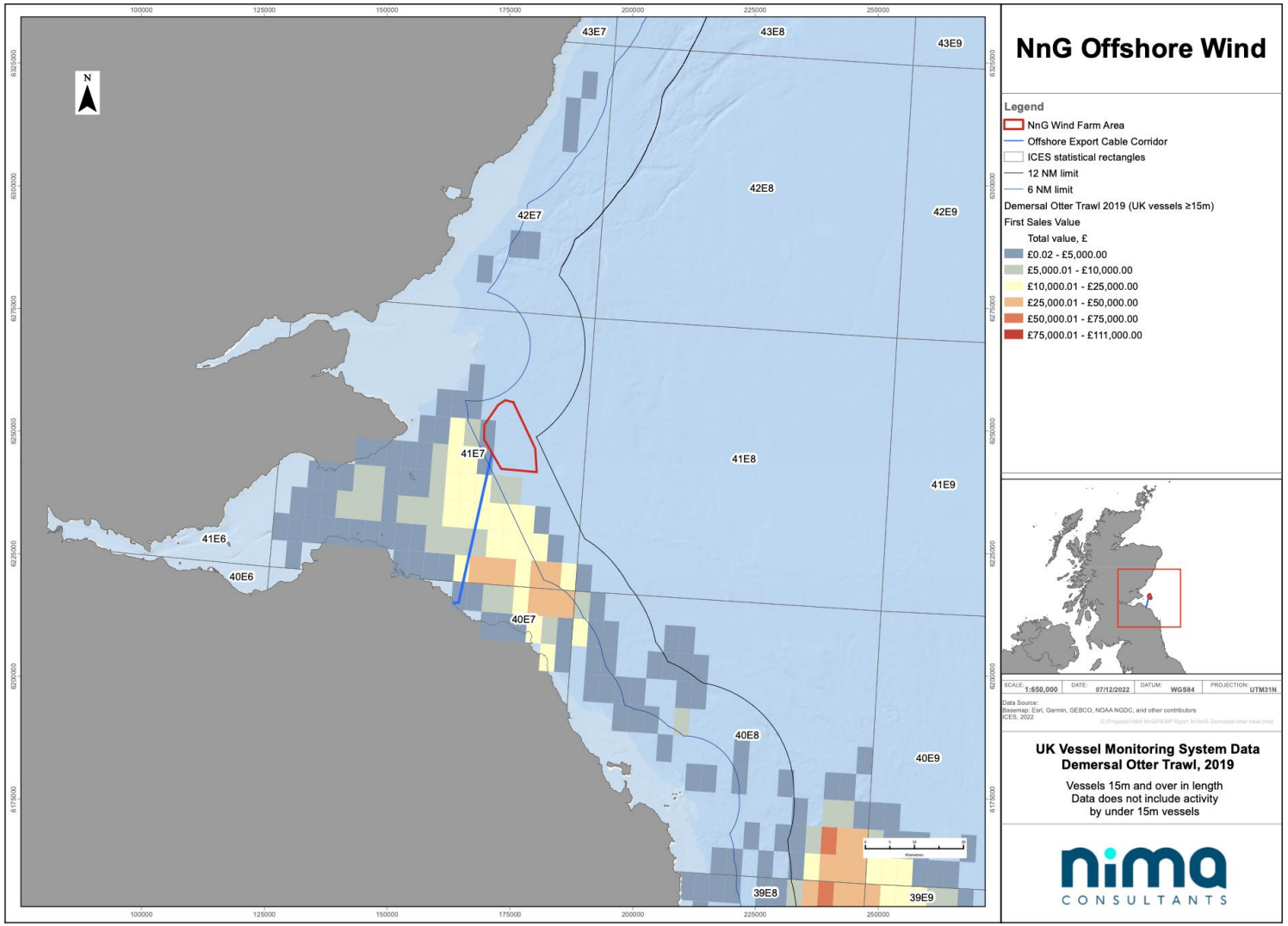

Figure 7.3. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2019 (data source: MMO, 2023)

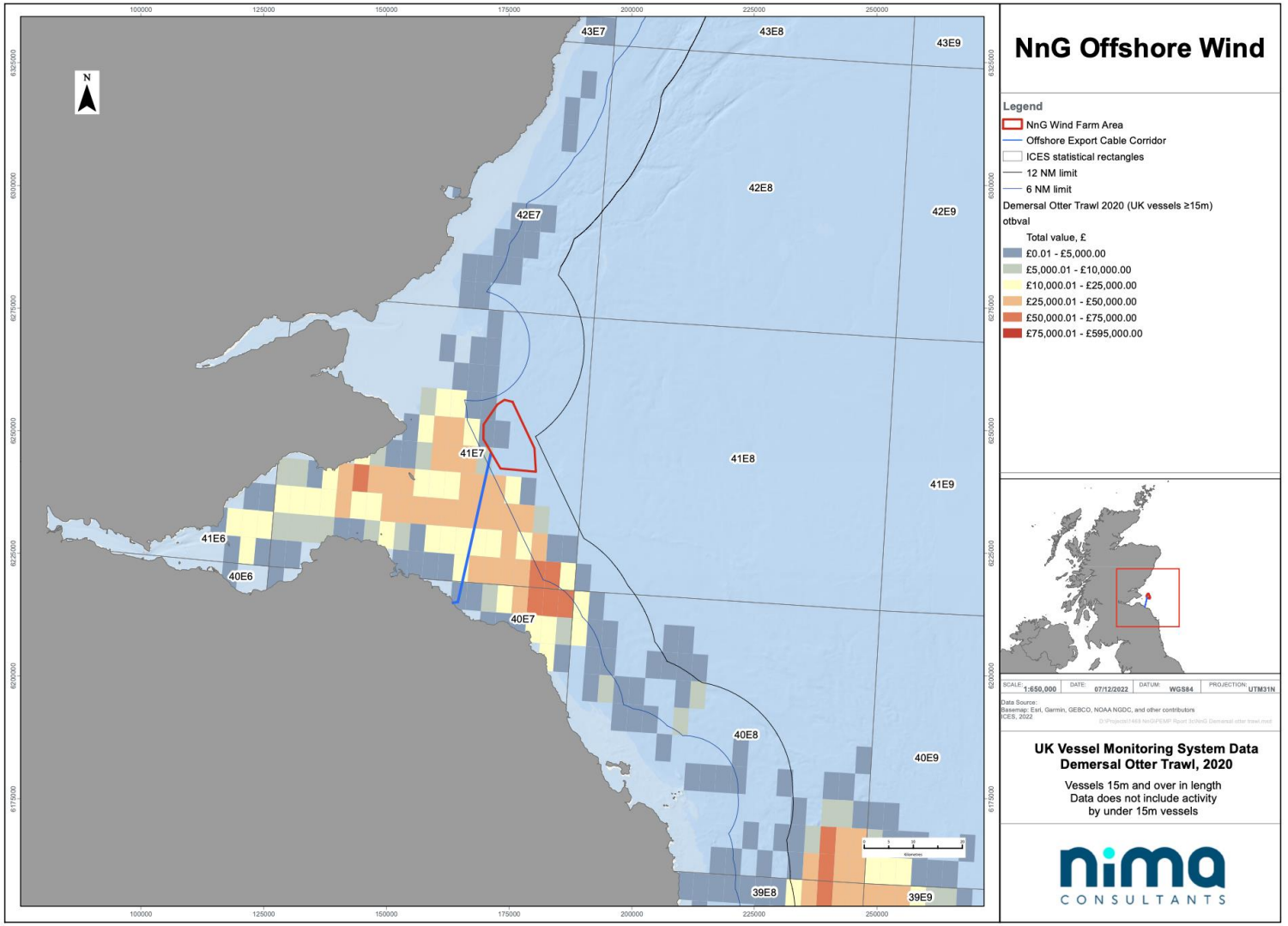

Figure 7.4. Vessel monitoring system data for UK demersal otter trawl vessels of length 15m and over indicating first sales value of catches in 2020 (data source: MMO, 2023)

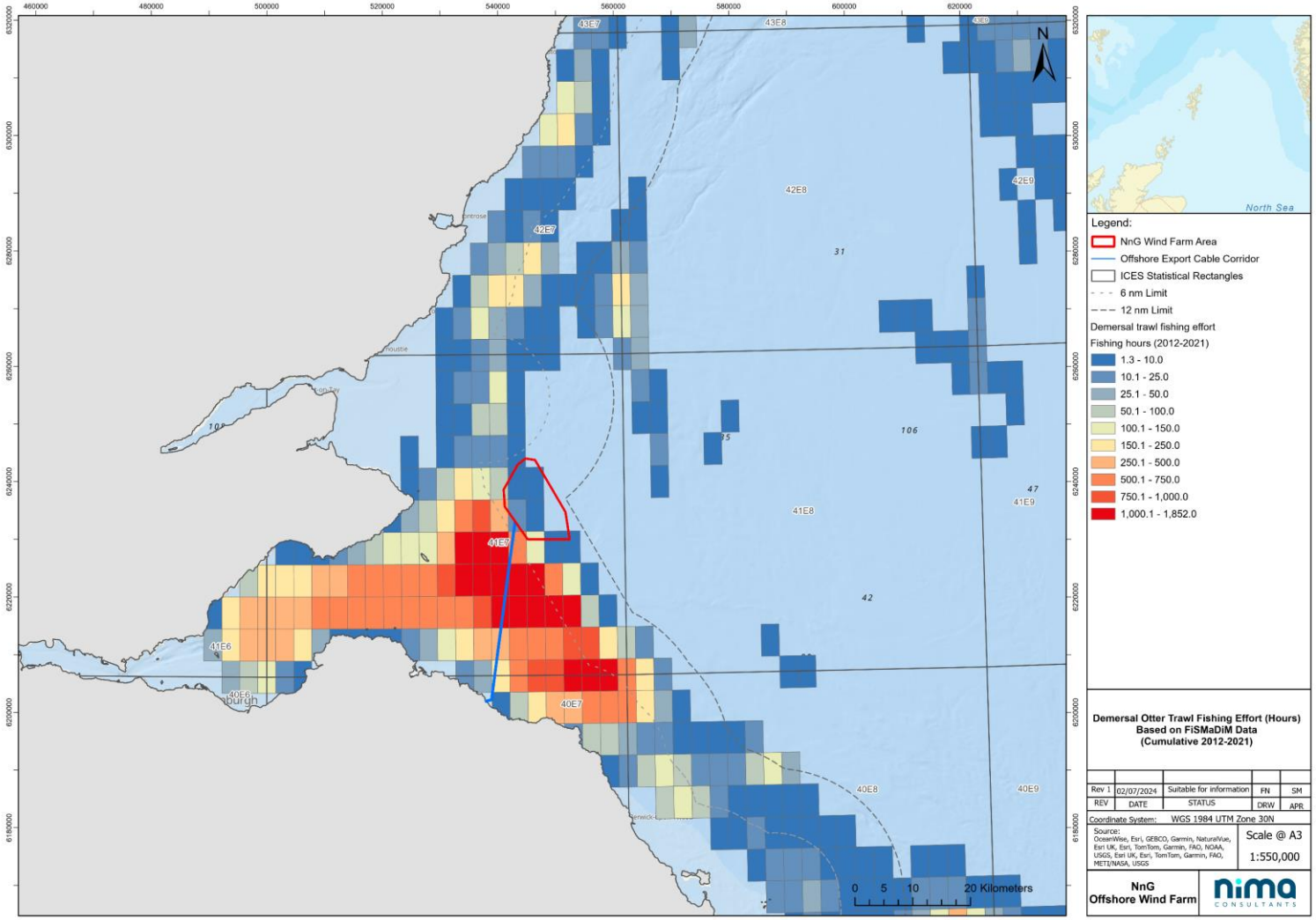

Figure 7.5. FiSMaDiM data indicating hours of fishing for demersal trawl vessels, cumulative from 2012 to 2021 (data source: Cefas, 2025)

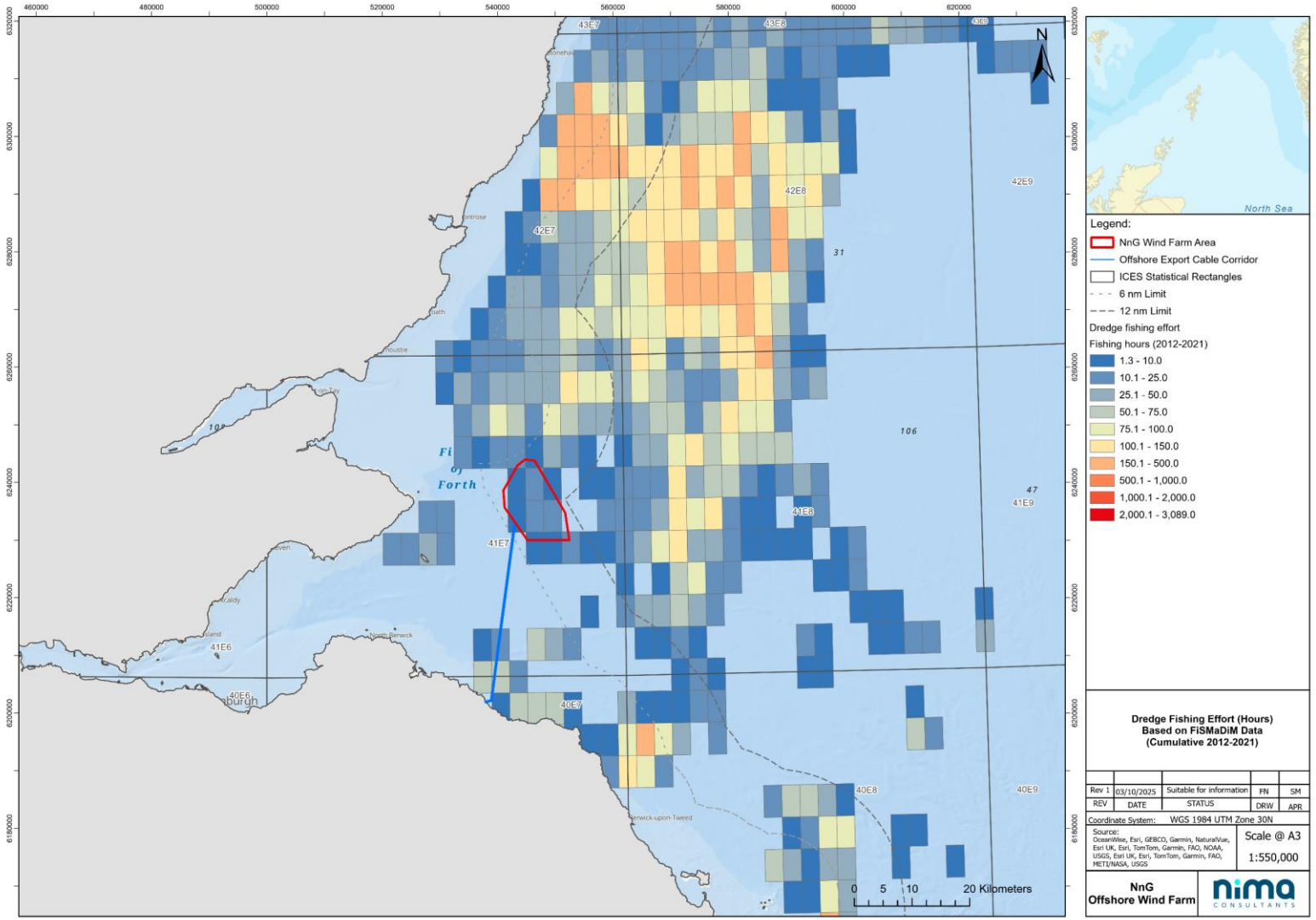

Figure 7.6. FiSMaDiM data indicating hours of fishing for dredge vessels, cumulative from 2012 to 2021 (data source: Cefas, 2025)

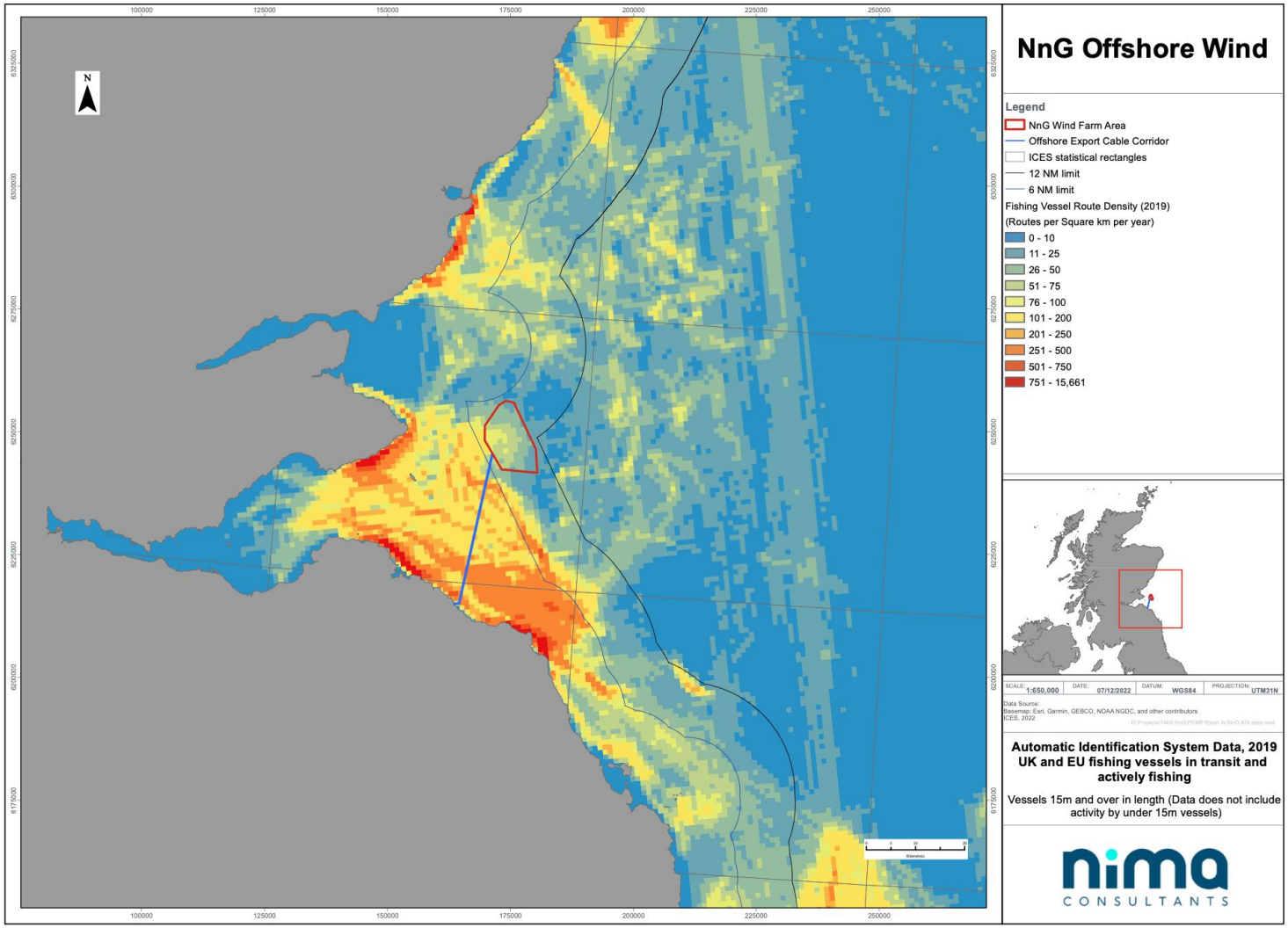

Figure 7.7. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 in 2019 (data source: EMSA, 2023)

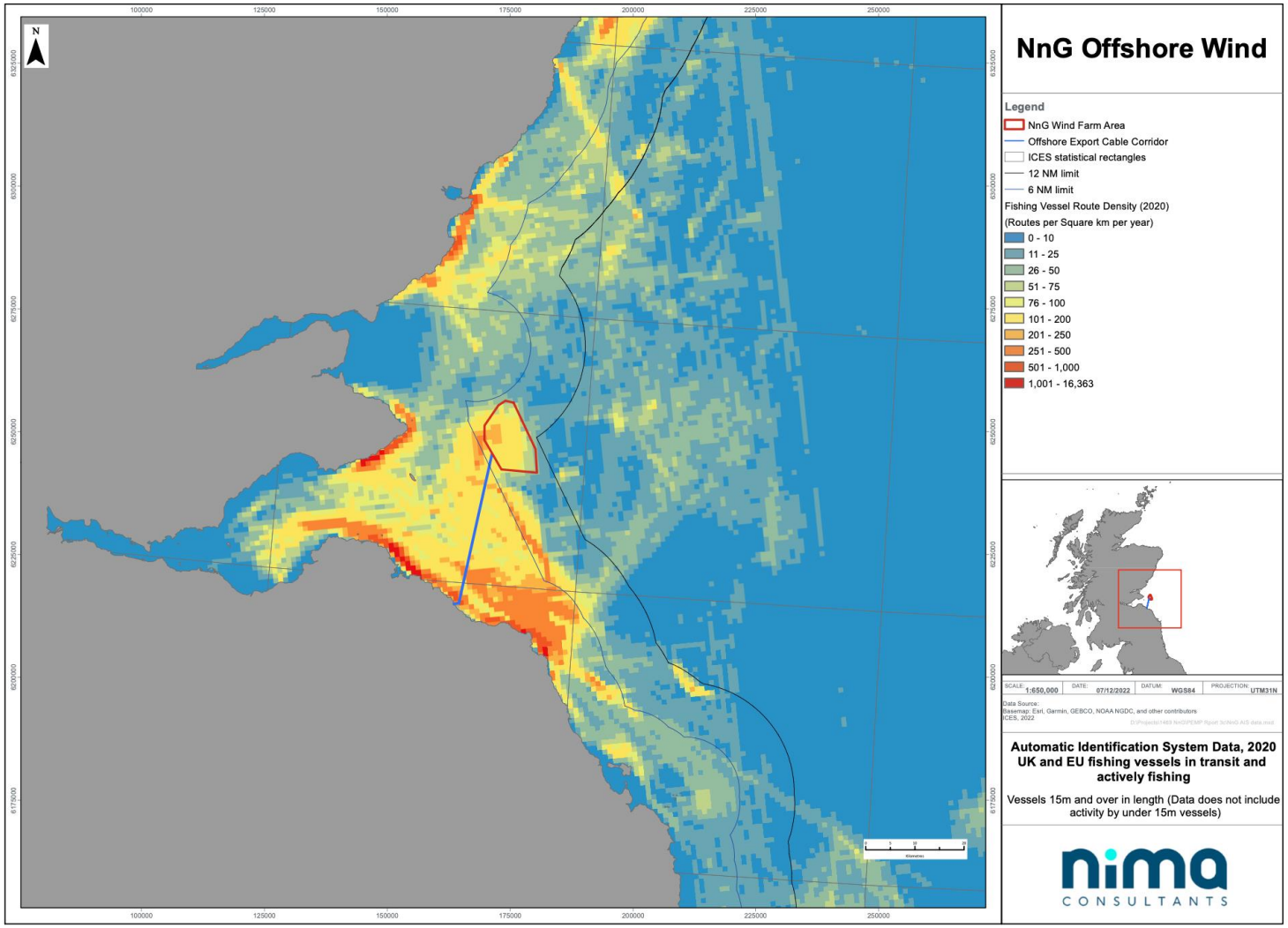

Figure 7.8. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 in 2020 (data source: EMSA, 2023)

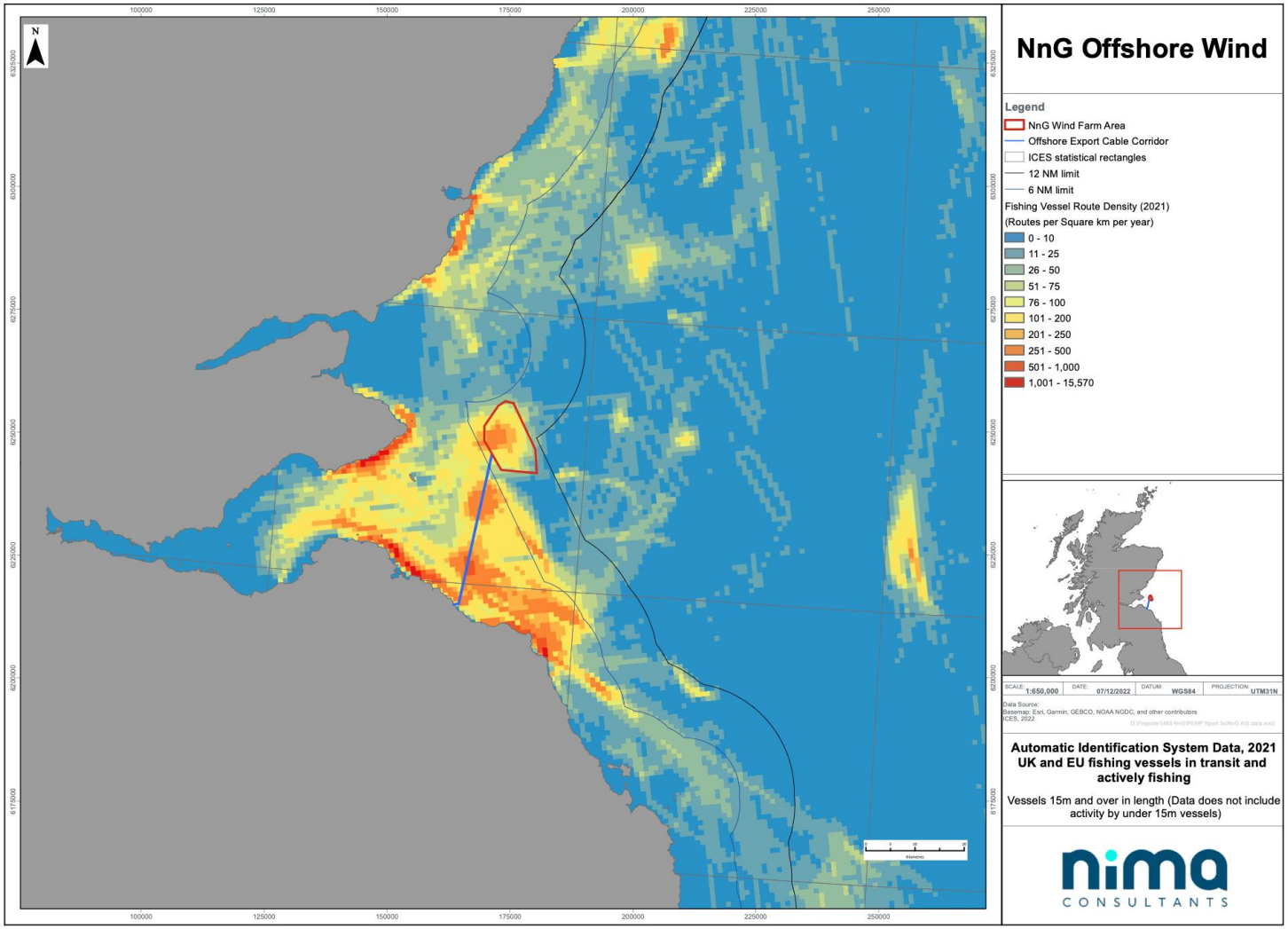

Figure 7.9. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² in 2021 (data source: EMSA, 2023)

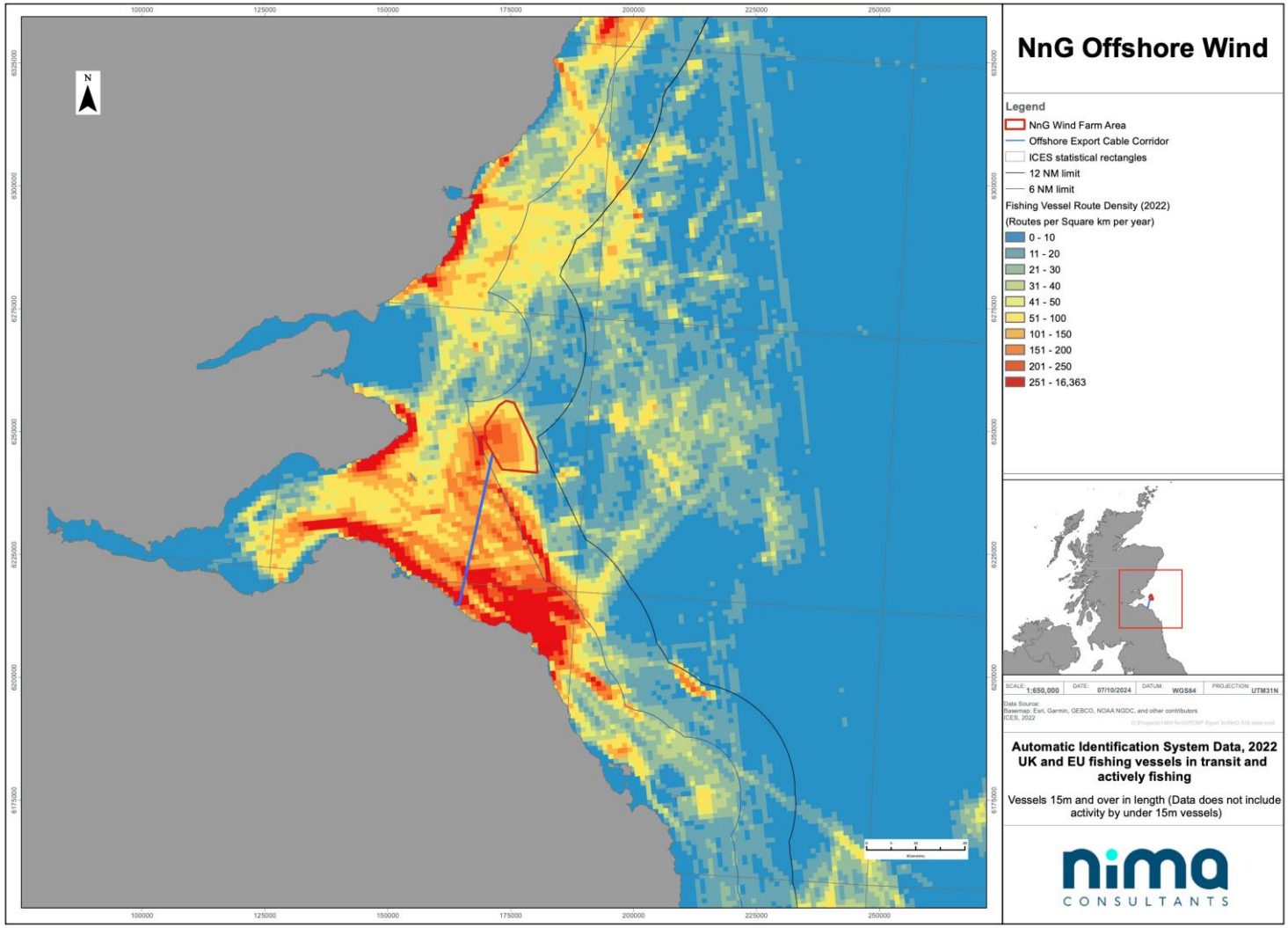

Figure 7.10. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 in 2022 (data source: EMSA, 2023)

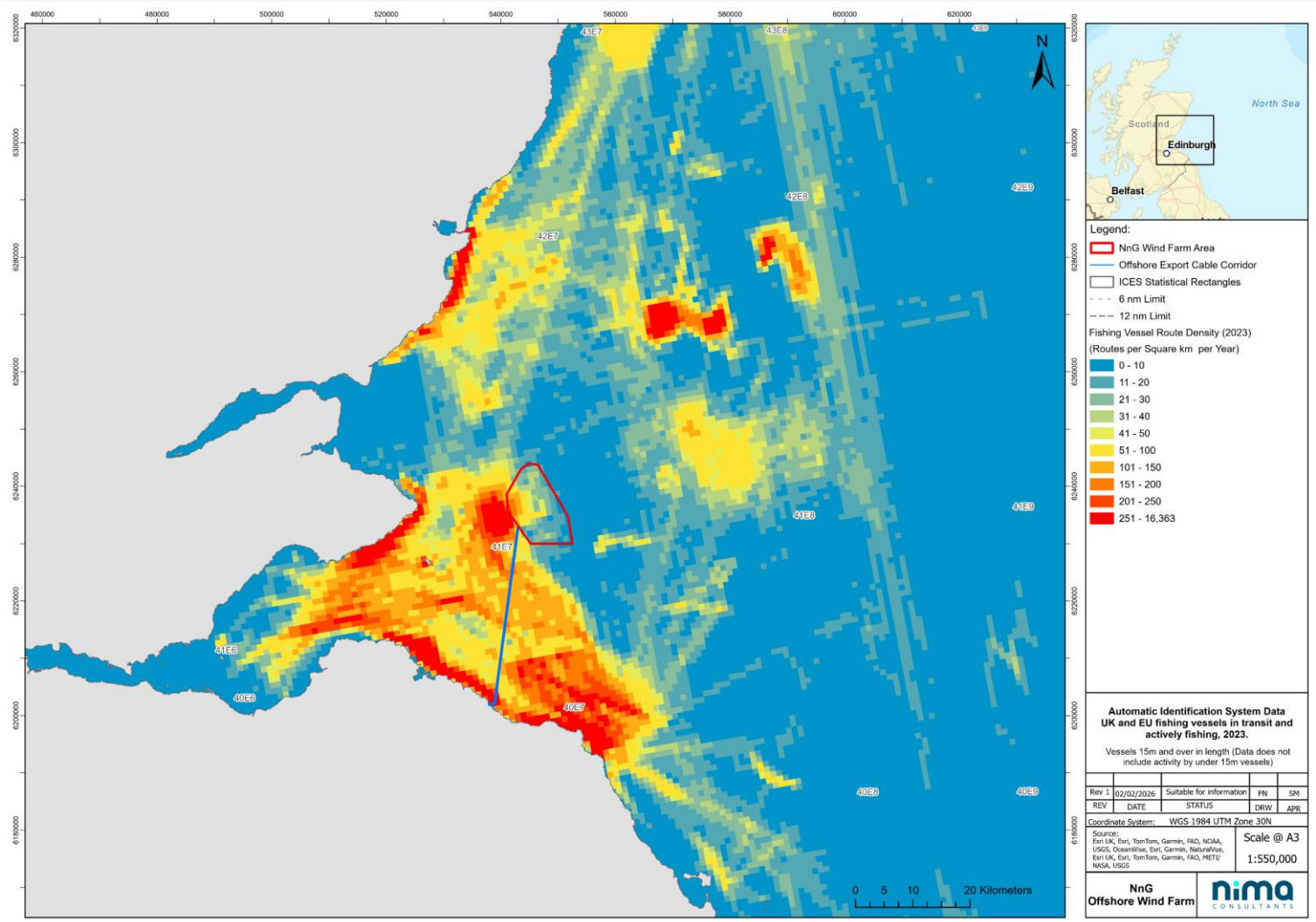

Figure 7.11. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² during 2023 (data source: EMSA, 2025)

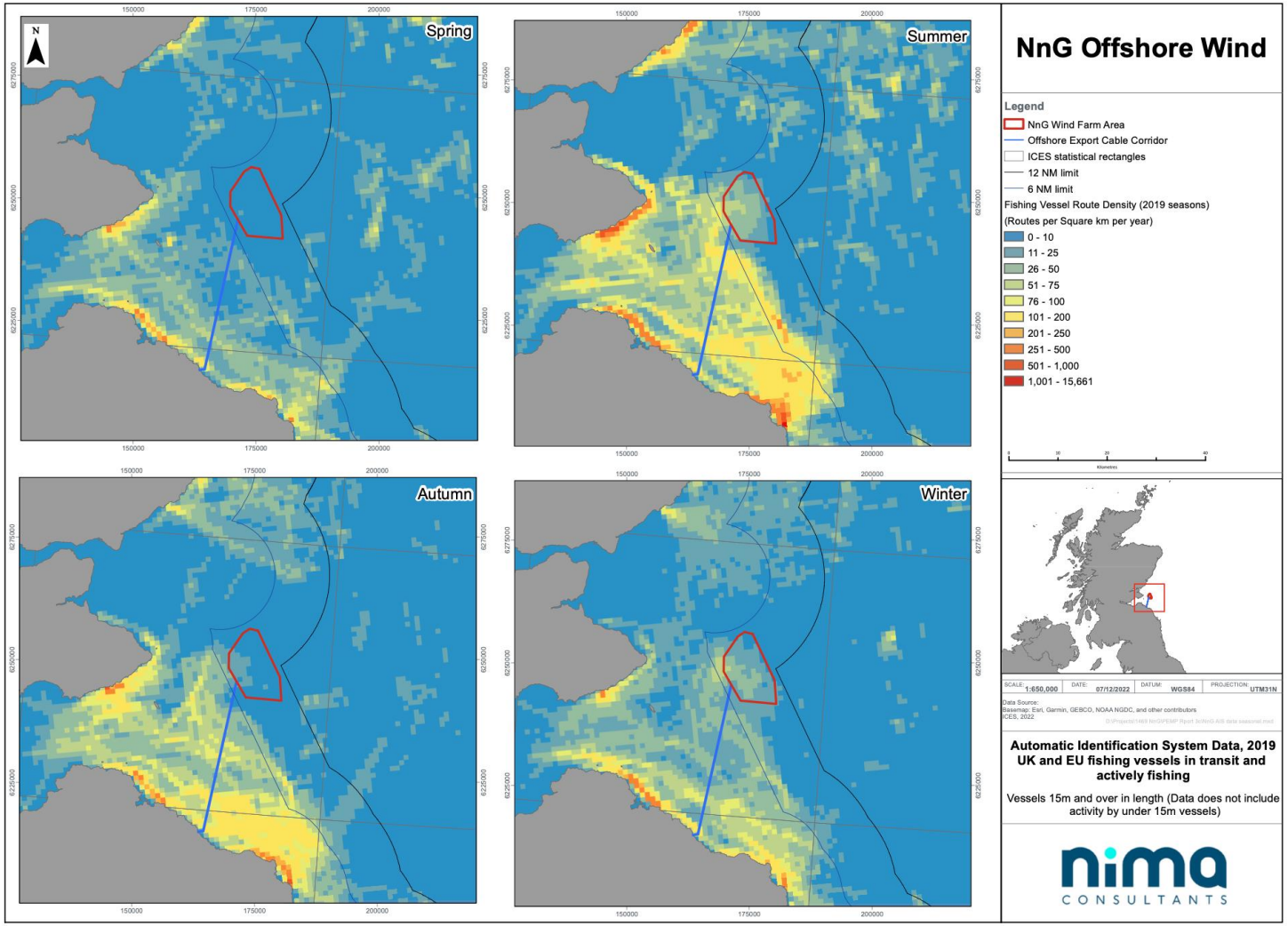

Figure 7.12. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 seasonally in spring, summer, autumn and winter of 2019 (data source: EMSA, 2023)

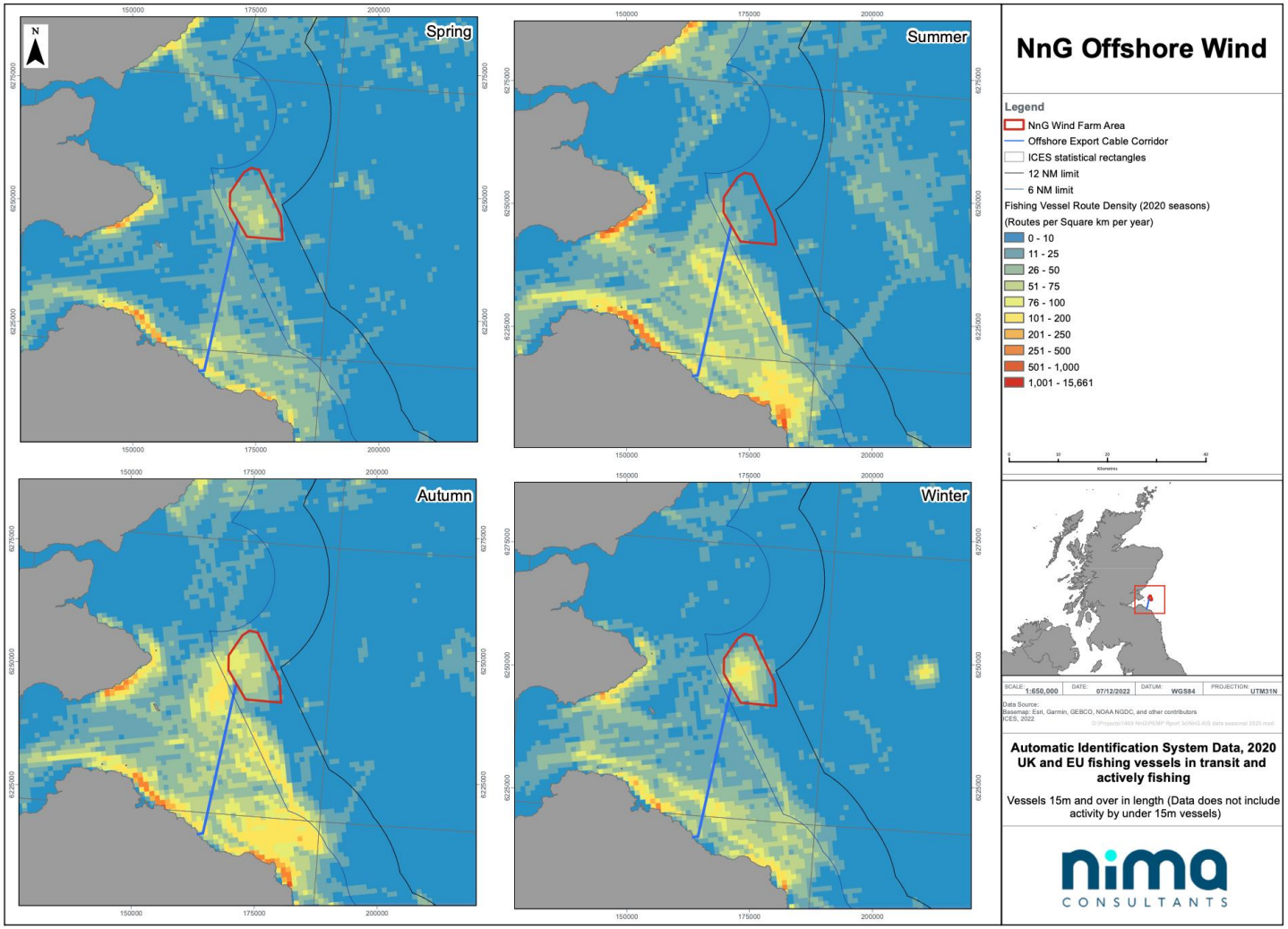

Figure 7.13. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m^2 seasonally in spring, summer, autumn and winter of 2020 (data source: EMSA, 2023)

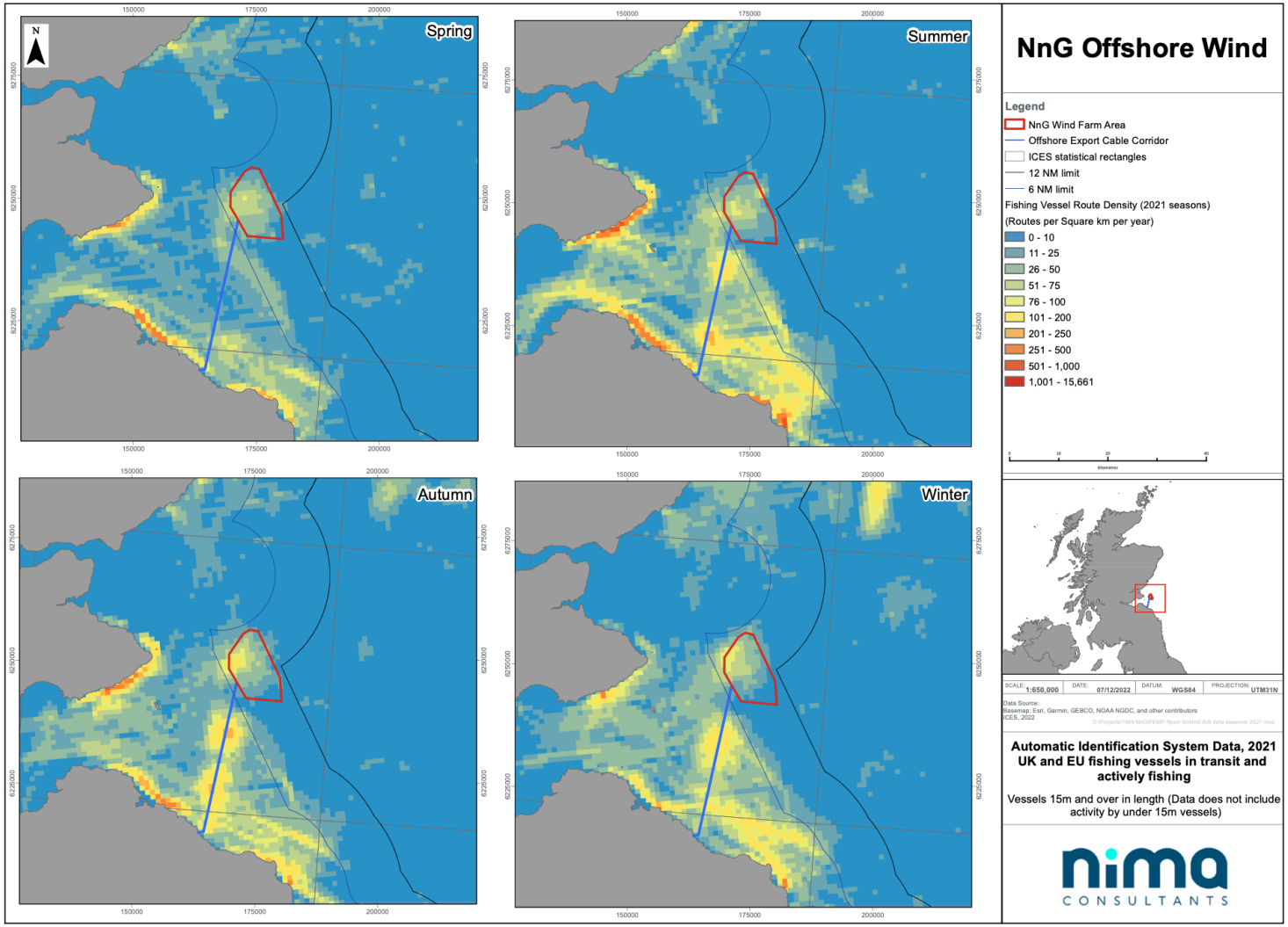

Figure 7.14. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² seasonally in spring, summer, autumn and winter of 2021 (data source: EMSA, 2023)

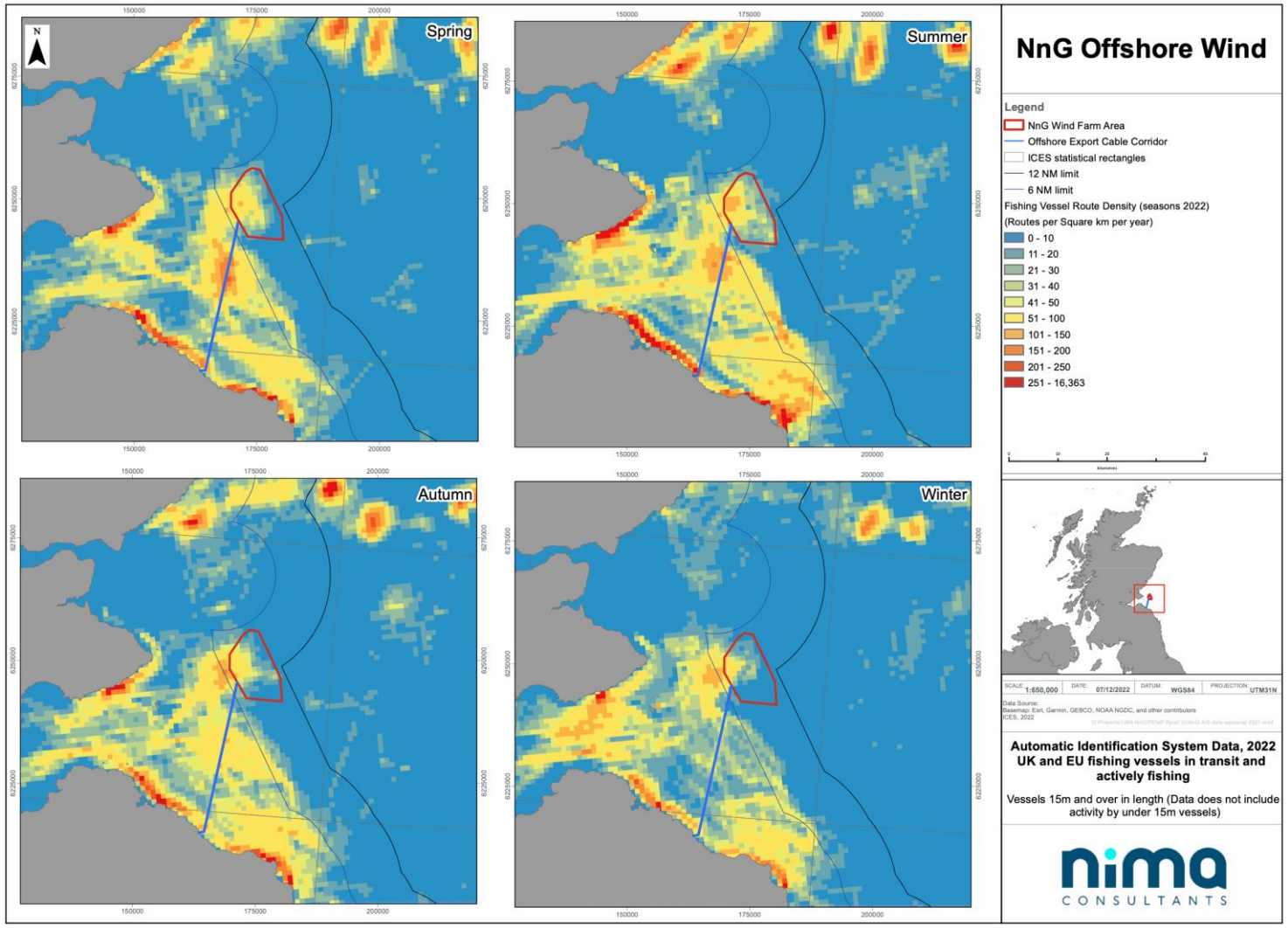

Figure 7.15. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² seasonally in spring, summer, autumn and winter of 2022 (data source: EMSA, 2023)

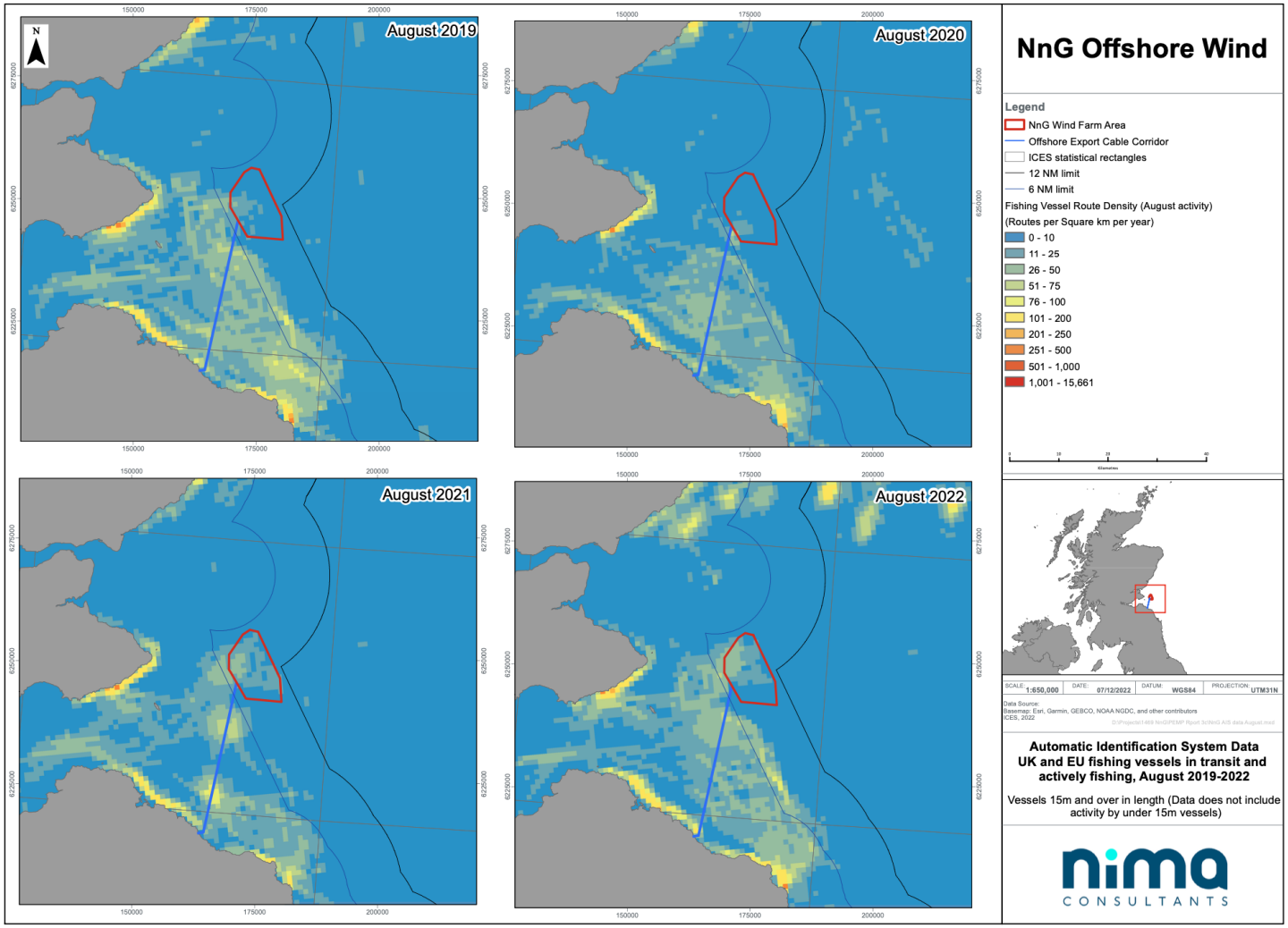

Figure 7.16. Automatic Identification system data for UK and EU fishing vessels in transit and actively fishing for all vessels of length 15m and over indicating the number of routes per m² during the month of August from 2019-2022 (data source: EMSA, 2023)

8 Overtrawlability trials

226. 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.

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

228. Overtrawlability trials were also undertaken over the inter array cables between wind turbine A19 and A15 in March 2026. These locations were selected (and agreed with the Scottish Fishermen's Federation ahead of survey commencing) based on historical fishing data showing prior demersal bottom trawl activity in this section of the offshore windfarm site. No issues were experienced during the over trawl operations and at the time of these trials the swept areas were found to be safe for normal fishing operations.

229. The location of rock placement within the NnG Offshore Wind Farm is indicated in Figure 8.1.

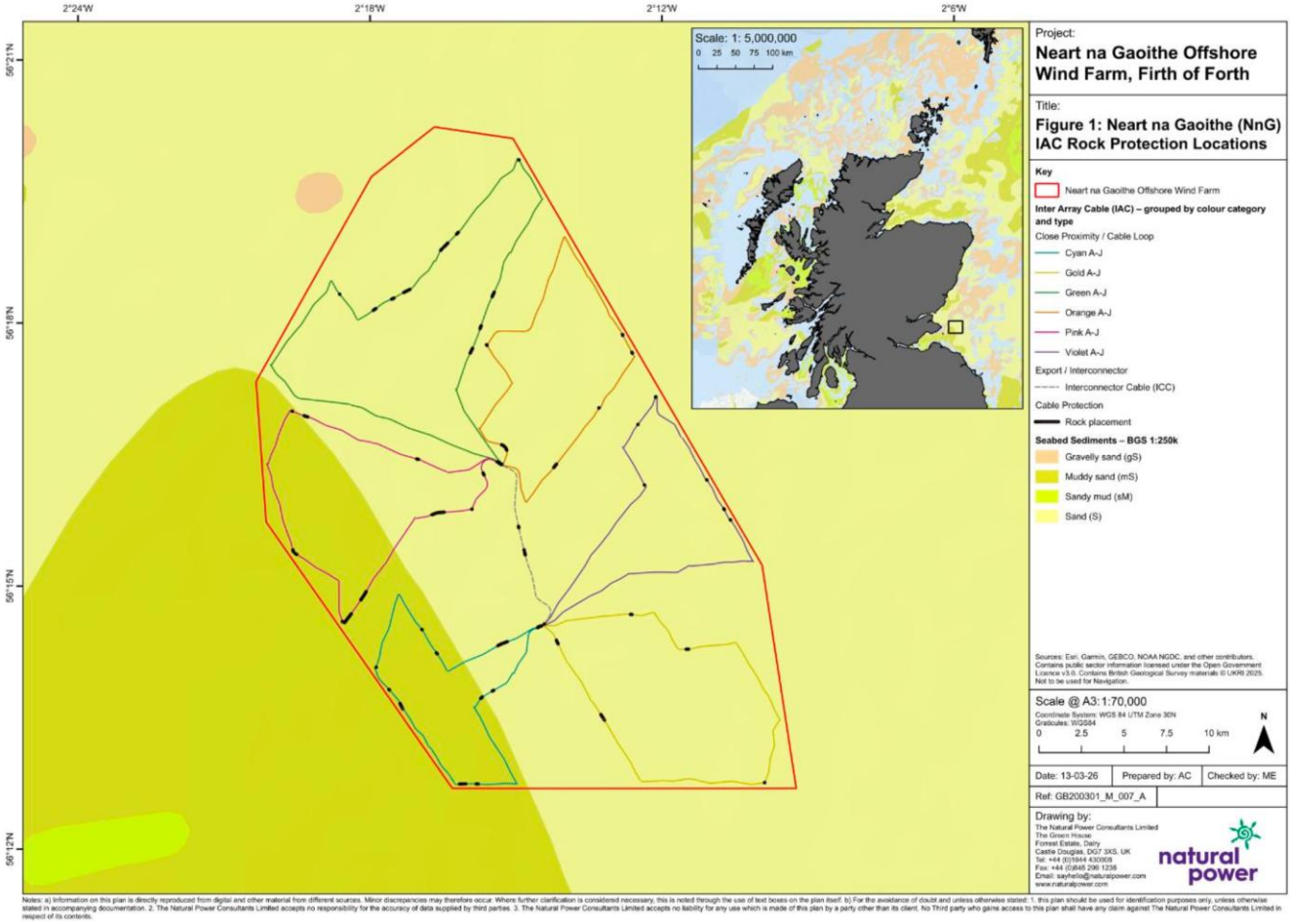

Figure 8.1. Location of cable protection within the NnG Offshore Wind Farm.

230. Stakeholders asked whether further information on cable burial depth could be provided within the PEMP reporting. The 'as-built' positions of all structures and any sub-sea infrastructure has been provided to MD-LOT in accordance with the marine licence condition. This information was also forwarded to the UK Hydrographic Office (UKHO) and Defence

Geographic Centre (DGC) for aviation and nautical charting purposes as required by the marine licence. It is therefore not considered necessary, or appropriate (given the scope of this monitoring report), to re-present this information within the PEMP reporting.

9 Conclusion

231. The analysis of fisheries activity within and around the NnG Offshore Wind Farm demonstrates that commercial fishing has remained active throughout the construction period, with the annual landings time series now extended to include 2024.

232. Across the 2017 to 2024 time series, Nephrops continues to represent the dominant species in both the local and regional study areas. However, total landings remain below the pre-construction baseline (2017-2019). Following the recovery evident in 2022-2023, Nephrops landings and value reduced again in 2024 at both spatial scales, indicating continued interannual variability and a recent softening relative to the 2022 peak.

233. Lobster fisheries continue to demonstrate resilience, with seasonal peaks maintained and annual totals remaining high through 2024. While 2024 landings are slightly lower than the strongest years (e.g. 2022-2023), the fishery remains broadly comparable to (and in some years above) pre-construction averages, underlining the ongoing strength of the inshore potting sector.

234. Brown crab landings remain variable. Although improvement was evident in 2022-2023 compared to 2020-2021, 2024 shows a marked reduction in the local study area (and a smaller decline regionally), bringing totals closer to the lower levels observed earlier in the construction period.

235. Squid (including mixed squid and octopi where reported) remains highly episodic. The local study area shows a pronounced increase in 2024, driven by a large autumn peak, whereas the regional dataset does not show a comparable uplift (remaining below earlier peak years). This highlights the sporadic but potentially economically important contribution of cephalopods, and that peaks may be localised in time and space.

236. Analysis of total landings across all species continues to provide important context for wider fisheries performance. Nephrops, lobster and crab underpin local and regional fisheries, but secondary fisheries show shifting contributions: razor clams remain a major component locally and regionally through 2024; regionally, king scallops show a marked resurgence in 2024 after several low years; and other secondary shellfish (e.g. surf clams in some years) continue to contribute at lower but sometimes persistent levels.

237. Port-level analysis for 2021-2024 reinforces the continuing central role of Pittenweem as the principal landing port for the local study area. Dunbar and Eyemouth remain important contributors with differing fleet profiles (inshore potting versus demersal trawl Nephrops). Across the network of smaller ports (e.g., Port Seton, Arbroath, Anstruther, North Berwick and St Abbs), activity remains dominated by shellfish and small vessels; 2024 typically shows modest reductions in value at several ports, while the overall structure of port dependencies remains unchanged.

238. Spatial datasets and supporting evidence continue to indicate that fishing activity overlaps the development area and offshore export cable corridor. Available AIS (to 2022), VMS (to 2020) and cumulative FiSMaDiM outputs (2012-2021) show established demersal trawl corridors and patchier dredge activity, with the NnG area located within (rather than outside) actively used trawl grounds. Potting effort is not mapped using FiSMaDiM outputs because the dataset under-represents the smaller inshore vessels that dominate that fleet segment.

239. Overtrawlability trials conducted in 2021 and 2022 verified that demersal trawl gear can safely operate across the Offshore Export Cable Corridor (including areas of rock protection), supporting confidence that seabed conditions remain suitable for normal fishing operations.

240. New fleet context (Scottish Fisheries Statistics, 2019-2024) indicates a general decline in fishing employment along the east coast over the period, driven primarily by reductions in regular employment, with stabilisation in total employment in the later years (2023-2024). Employment and vessels remain concentrated in the major east coast districts (notably Fraserburgh and Peterhead). Active vessel numbers generally show a reduction across the timeseries.

241. Stakeholder consultation on the draft Report 3f provided useful context for interpreting the 2024 monitoring results. Feedback indicated that observed reductions in Nephrops and brown crab landings are likely to reflect a combination of

wider fisheries drivers, including reduced effort, fleet and crew availability, changes in fishing location, market conditions and natural cyclical variation.

242. Stakeholder comments also support the conclusion that the FMMS remains valid and does not require update as a result of the Report 3f monitoring findings. Future PEMP reporting will continue to strengthen the evidence base where possible, including through further consideration of socio-economic indicators, small-vessel data, potential Seafish datasets and cumulative monitoring approaches.

243. Overall, the 2024 data indicate continued fishing activity within and around the NnG Offshore Wind Farm area, with year-to-year variability evident across key fisheries and secondary species. The evidence continues to support that any construction-related effects identified in the time series are temporary and localised, while broader interannual changes (including the 2024 reduction in Nephrops and brown crab) are also evident at the regional scale. Future reporting will continue to integrate available spatial and socio-economic datasets to strengthen interpretation of trends through the remaining construction period and into operation.

10 References

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Appendix A

The following table provides the comment received on Report 3f and how they have been addressed.

Consultee Comment	NnG Response	Report update
Draft Report 3f findings were presented to the Forth and Tay Commercial Fisheries Working Group in May 2026. Stakeholders were invited to provide feedback by 14 May 2026.	Noted. Feedback received during the meeting has been considered in finalising Report 3f.	Appendix A updated to record consultation. Relevant interpretation added to Sections 2.2, 4, 6, 7, 8 and 9.
Stakeholders noted that fishing activity continues within and around NnG and that the best fishing remains close to the NnG and Inch Cape sites, suggesting that wind farms have not harmed fish stocks.	Noted. This feedback is consistent with the monitoring findings, which indicate continued fishing activity within and around the Project area and do not indicate a sustained project-related effect on fish stocks.	Interpretation added to Sections 4.1 and 9.
The decline in Nephrops landings may be due to reduced fishing effort, fleet reduction and lack of crew, rather than effects of NnG. Stakeholders also noted that catch returns have historically been cyclical.	Noted. Wider fleet, effort, crew availability, market and biological factors are recognised as important contextual drivers when interpreting landings trends.	Additional context added to Sections 4.1, 6 and 9.
Stakeholders asked whether Seafish data had been used and suggested that Seafish may hold more current or higher-resolution data.	NnGOWL will contact Seafish to confirm what datasets may be available and whether these could inform future reporting.	Action added. Section 2.2 and Section 7 updated to refer to potential future use of Seafish data.

Consultee Comment	NnG Response	Report update
ACTION 77: FN to contact Seafish and check what data they have and whether anything could be used within future reporting.	Action accepted.	Action recorded and to be updated at next PEMP report.
Stakeholders noted that squid and Nephrops may be inversely proportional and that squid catches are cyclical, with good squid years occurring periodically.	Noted. This provides useful local context for interpreting the pronounced increase in squid landings in 2024.	Section 4.5 updated to include stakeholder interpretation of squid variability.
Stakeholders asked whether the decline in squid or Nephrops could be related to wind farm construction.	NnGOWL noted that the monitoring findings do not indicate a direct relationship with NnG construction and that wider regional patterns and fishery dynamics are relevant.	Sections 4.1, 4.5 and 9 updated to clarify interpretation.
Stakeholders discussed the 2024 decline in brown crab and queried whether this could relate to EMF from cables or changes in crab movement.	NnGOWL noted that NnG cables are buried and, given the distance between receptors and the EMF source associated with buried cables or rock protection, effects on crab migration are considered highly unlikely. Relevant scientific evidence will continue to be reviewed as available.	Section 4.3 updated to reflect the discussion.
ACTION 75: KW to issue BS a paper on EMF from cables and related measurements once available.	Action noted.	Action recorded.

Consultee Comment	NnG Response	Report update
Stakeholders referred to a study at St Abbs looking at crabs and EMF and noted that the effects of EMF are not yet fully understood.	NnGOWL noted the comment and will continue to consider relevant evidence where available.	Section 4.3 updated to acknowledge developing evidence base on EMF and crustacean behaviour.
Stakeholders suggested that reduced brown crab catches may reflect vessels fishing further offshore, meaning fewer crabs are caught in inshore waters.	Noted. This is considered a plausible wider fisheries driver and has been included as stakeholder context for interpreting local brown crab trends.	Section 4.3 updated.
Employment data in Section 6 should clarify whether the figures relate only to Scottish / UK fishers or whether foreign workers are included.	Noted. The employment figures are derived from the Marine Directorate's Scottish Sea Fisheries Statistics and relate to fishers employed on Scottish registered fishing vessels, rather than being a count of fishers by nationality or immigration status. The Scottish labour force comparator is sourced from the ONS Annual Population Survey; however, the report does not provide a breakdown of fisheries employment by nationality, residency or visa status. This limitation has been clarified to avoid over-interpreting the employment data.	Section 6 updated to clarify that the employment figures are vessel-based, relate to fishers employed on Scottish registered vessels, and do not distinguish between UK and foreign workers or provide a visa-status breakdown.
Stakeholders asked about the depth of cables.	The 'as-built' positions of all structures and any sub-sea infrastructure have been provided to MD-LOT in accordance with the marine licence condition. This information was also forwarded to the UK Hydrographic Office (UKHO) and Defence	Cable depth information is not included within the monitoring report. However, the United Kingdom Hydrographic Office (UKHO) has been provided with the relevant information, and nautical charts will be updated where required.

Consultee Comment	NnG Response	Report update
ACTION 78: FN to add detail into the PEMP around depth of cables for NnG.	Geographic Centre (DGC) for aviation and nautical charting purposes as required by the marine licence. It is therefore not considered necessary, or appropriate (given the scope of this report) to re-present this information within the PEMP reporting	
FN confirmed that the FMMS does not require an update in relation to the findings of the monitoring.	Noted. The Report 3f findings and stakeholder discussion support the conclusion that the FMMS remains valid.	Section 9 updated to confirm that the FMMS remains valid and does not require update based on Report 3f findings.

NnG OFFSHORE WIND

EDF power solutions

ESB Energy for generations

Neart na Gaoithe