MACHAIRWIND OFFSHORE WINDFARM

Appendix 12.1 Commercial Fisheries Technical Report

nimo CONSULTANTS

Quality Control Page

Document details	
Document reference	PC3479-RHD-ZZ-XX-RP-X-0048
Document title	MachairWind Offshore Windfarm EIA Report
Document subtitle	Appendix 12.1: Commercial Fisheries Technical Report
Date	25/03/2026
Version	3.0
Author	Nima Consultants Ltd
Client Name	ScottishPower Renewables Limited

Document history						
				Approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
Draft issue	1.0	FN	SM	CC	24/11/25	For client review
Draft issue	2.0	FN	SM	CC	20/01/26	For client review
Draft issue	3.0	FN	SM	CC	25/03/26	For sign off

Contents

List of Tables

List of Figures

Acronyms and Abbreviations

Term	Definition
AIS	Automatic Identification System
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
DCF	Data Collection Framework
ECC	Export Cable Corridor
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMSA	European Maritime Safety Agency
EU	European Union
FiSMaDiM	Fisheries Sensitivity Mapping and Displacement Modelling
FLO	Fisheries Liaison Officer
FU	Functional Unit
GIS	Geographic Information System
ICES	International Council for the Exploration of the Sea
IFG	Inshore Fishery Group
MCRS	Minimum Conservation Reference Size
MMO	Marine Management Organisation
OCAS	Offshore Cable Area of Search
MSY	Maximum Sustainable Yield
NMPi	National Marine Plan interactive
NRA	Navigational Risk Assessment
PLN	Port letters and numbers
RBS	Register of Buyers and Sellers
RIFG	Regional Inshore Fishery Group
SAR	Swept Area Ratio

Term	Definition
SPFA	Scottish Pelagic Fishermen's Association
TAC	Total Allowable Catch
TCA	Trade and Cooperation Agreement
UK	United Kingdom
VMS	Vessel Monitoring System
WDA	Windfarm Development Area
WTG	Wind Turbine Generator

Glossary

Term	Meaning
Brexit	The withdrawal of the United Kingdom (UK) from the European Union (EU).
Bycatch	Catch which is retained and sold but is not the target species for the fishery.
Carapace	The hard upper shell of a crustacean.
COVID-19 pandemic	The COVID-19 pandemic was a global outbreak of coronavirus, an infectious disease caused by the severe acute respiratory syndrome coronavirus, first identified in 2019.
Creel	Creel is typically a Scottish term for a pot or trap deployed by an inshore vessel. Pots and traps are generally rigid structures into which fish or shellfish are guided or enticed through funnels that make entry easy but from which escape is difficult. There are many different styles and designs, each one has been designed to suit the behaviour of its target species.
Demersal	Living on or near the seabed.
Demersal trawl	A fishing net used by towing the trawl along or close to the seabed.
Dhan	A marker flag made of very hard wearing material located on a pole or buoy to mark location of fishing gear.
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed development over and above the existing circumstances (or 'baseline').
EIAR	The Environmental Impact Assessment Report (EIAR) prepared to assess the likely significant effects of the Project on the environment.
Fish stock	Any natural population of fish which an isolated and self-perpetuating group of the same species.

Term	Meaning
Fishery	A group of vessel voyages which target the same species or use the same gear.
Fishing ground	An area of water or seabed targeted by fishing activity.
Fishing mortality	Mortality due to fishing; death or removal of fish from a population due to fishing.
Fleet	A physical group of vessels sharing similar characteristics (e.g. nationality).
Gadoids	From the Gadidae family of marine fish, included in the order Gadiformes, known as the cods, codfishes, or true cods, including cod, haddock, whiting, and pollock.
Gear type	The method/equipment used for fishing.
Gear type TR1	A classification of gear type that includes bottom trawls, Danish seines and similar towed gear, excluding beam trawls, of mesh size greater than or equal to 100 millimetres (mm). Gears of this type are typically used to target whitefish, including cod.
Gear type TR2	A classification of gear type that includes bottom trawls, Danish seines and similar towed gear, excluding beam trawls, of mesh size greater than or equal to 70 mm and less than 100 mm. Gears of this type are typically used to target nephrops, but may also catch significant amounts of cod.
iFish database	The Marine Management Organisation (MMO) fisheries database of commercial fisheries landings statistics for vessels registered in the UK.
Industrial fishery	Highly mechanised commercial fishing operations whose ultimate products are principally fish meal and fish oil.
International Council for the Exploration of the Seas (ICES) statistical rectangles	ICES standardise the division of sea areas to enable statistical analysis of data. Each ICES statistical rectangle is ‘30 minutes latitude by 1 degree longitude' in size (approximately 30 x 30 nautical miles). A number of rectangles are amalgamated to create ICES statistical areas.
Landing obligation	A regulation first introduced in 2015 and fully in force since January 2019 meaning that no commercial fishing vessel can return any quota species of any size to the sea once caught. This includes slipping or discarding the catch. Once caught, all quota species must be landed and counted against quota. This applies to all UK vessels of all lengths, unless an exemption has been granted e.g. based on species survivability.
Landings	Quantitative description of amount of fish returned to port for sale, in terms of value or weight.
Maximum Sustainable Yield	Maximum sustainable yield (MSY) is the largest yield (catch, in tonnes) that can be taken from a specific fish stock over an indefinite period under constant environmental conditions. Fishing at MSY levels should ensure the capacity of the stock to continue to produce this level in the long term.
Métier	A homogenous subdivision, either of a fishery by vessel type or a fleet by voyage type.

Term	Meaning
Minimum Conservation Reference Size (MCRS)	A technical measure that limits the size of fish or shellfish species that can be legally landed and sold. The MCRS varies per species.
Otter trawl	A net with large rectangular boards (otter boards) which are used to keep the mouth of the trawl net open. Otter boards are made of timber or steel and are positioned in such a way that the hydrodynamic forces, acting on them when the net is towed along the seabed, pushes them outwards and prevents the mouth of the net from closing.
Pelagic	Of or relating to the open sea.
Pelagic trawl	A net used to target fish species in the mid water column.
Quota	A proportion of the Total Allowable Catch for a fish stock.
Recruitment	Recruitment can be defined as the number of fish surviving to enter the fishery or to some life history stage such as settlement or maturity.
Scallop dredge	A method to catch scallop using steel dredges with a leading bar fitted with a set of spring loaded, downward pointing teeth. Behind this toothed bar (sword), a mat of steel rings is fitted. A heavy net cover (back) is laced to the frame, sides and after end of the mat to form a bag.
Spawning	The act of releasing or depositing eggs (fish).
Spawning stock biomass	The combined weight (in tonnes) of all the fish of one specific stock that are old enough to spawn. It provides an indication of the status of the stock and the reproductive capacity of the stock.
Stock assessment	An assessment of the biological stock of a species and its status in relation to defined references points for biomass and fishing mortality.
Total Allowable Catch (TAC)	TACs are catch limits, expressed in tonnes or numbers, that are set for some commercial fish stocks.
Vessel Monitoring System (VMS)	A system used in commercial fishing to allow fisheries management and enforcement authorities to monitor, minimally, the position, time at a position, and course and speed of fishing vessels.
Windfarm Development Area (WDA)	The application boundary within the OAA where consent will be sought for the proposed WDA infrastructure. The WDA infrastructure is subject to Section 36 consent and marine licence applications (generation and transmission) which are being applied for separately from the Offshore ECC infrastructure and OnTDA infrastructure.
Wind Turbine Generator (WTG)	A wind turbine generator which converts wind energy into electrical energy. Each wind turbine generator is a complex system composed of a high number of components. Typically, the main components include the rotor assembly (composed of three blades and a hub); the nacelle (containing a generator, shaft and gearbox, power electronic converter and transformer); and the tower (containing lifting equipment and the switchgear).

1 INTRODUCTION

1.1 CONTEXT

1. This Technical Appendix provides a detailed characterisation of the commercial fisheries in operation across the proposed MachairWind Offshore Windfarm Windfarm Development Area (WDA). This Technical Appendix accompanies **Chapter 12 Commercial Fisheries** of the Environmental Impact Assessment Report (EIAR) and has been prepared by NiMa Consultants Ltd.

1.2 PROJECT BACKGROUND

2. ScottishPower Renewables (SPR) is intending to develop the proposed MachairWind Project (the Project). The Project consists of the WDA including all permanent and temporary works areas, as well as offshore substation platform(s) (OSPs), inter-array cables, wind turbine generators (WTG) with fixed foundations and the portion of the export cable within the WDA. The Project will include up to 144 WTGs within the WDA.
3. The Offshore Export Cable Corridor (ECC), including the export cable from the WDA to landfall is not included as part of this Technical Appendix.
4. The Project is situated off the northwest of Islay and west of Colonsay and is approximately 448 km^2 in size. The proposed WTGs will be located within a WDA restricted build area of approximately 397 km^2 within the WDA.

1.3 AIMS

5. The information on commercial fisheries activity presented in this report is intended to inform the EIAR by providing a detailed understanding of the commercial fisheries baseline with an extended timeline of 13 years (2011 to 2023), against which the potential impacts of the Project can be assessed.
6. Commercial fisheries activity described in this report is defined as fishing activity legally undertaken where the catch is sold for taxable profit. Aquaculture and charter angling are not included in this Technical Appendix.

2 STUDY AREA

7. The Project is located within International Council for the Exploration of the Sea (ICES) Division 6a, West of Scotland; within the United Kingdom (UK) Exclusive Economic Zone (EEZ) waters. The WDA is located within the UK territorial waters 12 nautical miles (nm) boundary, with the majority within the 6 nm boundary. For the purpose of statistical analysis, ICES Division 6a is divided into statistical rectangles which are consistent across all Member States operating in the Northeast Atlantic. Each ICES statistical rectangle is '30 min latitude and 1 degree longitude' in size, which equates to approximately 30 nm^2 or 3,600 km^2.

8. The WDA is located across two ICES rectangle: 40E3 and 41E3; which form the commercial fisheries local study area for the purposes of the EIAR (**Figure 2.1**).

9. In order to understand fishing activity in waters adjacent to the Project, a commercial fisheries regional study area has been defined to include the commercial fisheries local study area together with the surrounding ICES rectangles, covering 12 ICES rectangles in total. Analysis of data at the scale of the commercial fisheries regional study area takes into consideration that most commercial fish and shellfish receptor populations are distributed at a wider spatial scale, ensuring that potential implications of displacement of fishing activity can be adequately understood.

10. To summarise, there are 2 scales of commercial fisheries study areas as follows:

- Commercial fisheries local study area: 40E3 and 41E3;
- Commercial fisheries regional x: 39E2-39E4, 40E2-40E4, 41E2-41E4 and 42E2-42E4.

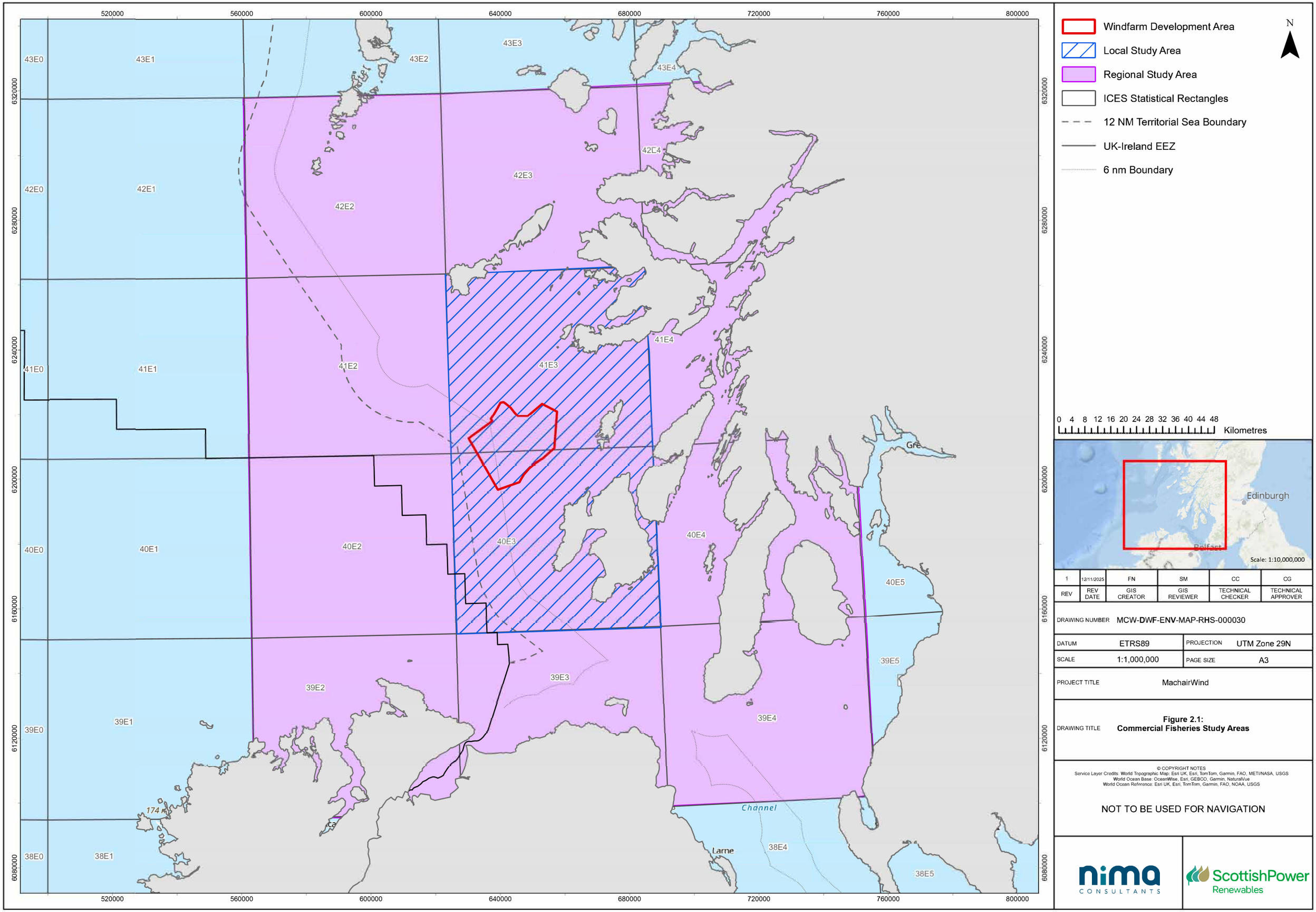
11. The commercial fisheries local and regional study areas were presented to fishers and commercial fisheries representatives on the follow occasions:

- Commercial Fisheries Scoping Workshop, held in June 2024 (online); stakeholders noted that the cumulative effects assessment to be undertaken across the geographic scale of the SWCRIFG.
- Hazard Workshops, held in June 2025 (Islay and online) and July 2025 (Edinburgh and online); stakeholders raised no concerns nor suggested modifications to the study areas.
- Commercial Fisheries Working Group meeting, held in December 2025 (Aberdeen and online), noting the study have not changed since scoping and cumulative study area was previously agreed as the SWCRIFG area.

2.1 WINDFARM DEVELOPMENT AREA

12. The evolution of the MachairWind WDA boundary is illustrated in **Figure 2.2**. The red line represents the current WDA boundary, the green line shows the boundary presented at the scoping stage, and the black line indicates the original option agreement area.

13. The scoping boundary was reduced in the south and east (adjacent to Colonsay) to maintain safe navigation routes and avoid the placement of isolated turbines in these areas, providing secondary benefits through improved fisheries access. In the north-east corner, the boundary was refined to ensure continued maintenance access to the Dubh Artach lighthouse, which also coincides with an identified area of fishing activity now lying outside the WDA. Fishing activity and access were taken into account alongside other relevant environmental and socio-economic considerations in the refinement and constraints mapping process. Specifically, these refinements provide secondary benefits for fisheries by maintaining access to traditional fishing grounds targeted by the potting fleet in the south, north and east (adjacent to Colonsay) and also avoiding discrete scallop areas in the north-east corner.



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000030

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

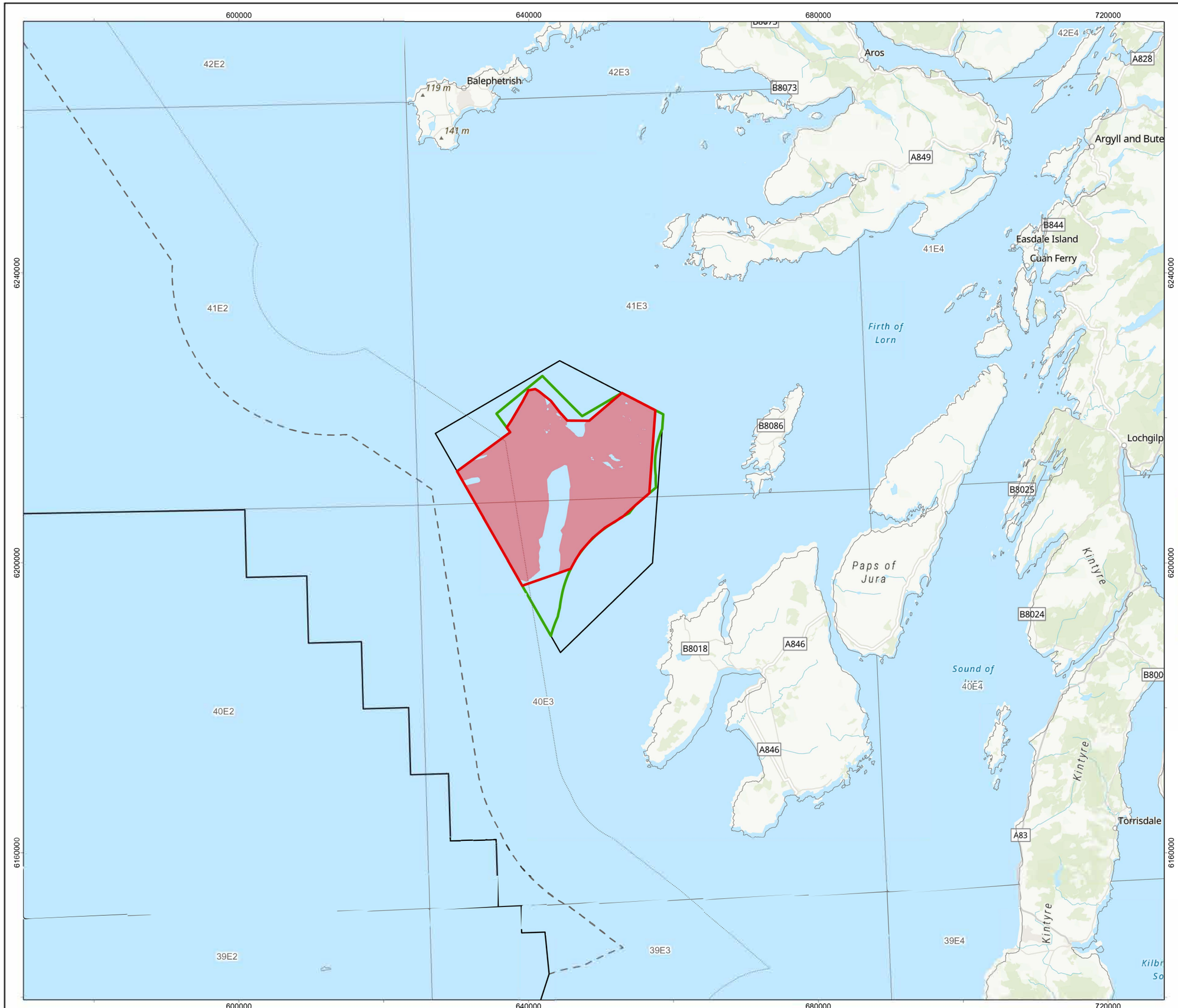
DRAWING TITLE: **Figure 2.1: Commercial Fisheries Study Areas**

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

Buildable Area

Option Agreement Area

Scoping (old) Windfarm Development Area

ICES Statistical Rectangles

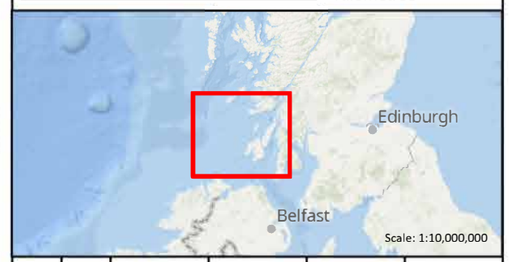
12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

N

0 4 8 12 16 20 24 Kilometres



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000031		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:500,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		
DRAWING TITLE	**Figure 2.2: Project Boundary Refinement**		

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description

3 METHODOLOGY

3.1 APPROACH

14. This report has been developed through an extensive and thorough analysis of data and literature, with analysis undertaken through a desktop study. The assessment encompasses both publicly available data sets and data obtained through specific requests. Landings statistics have been analysed using Microsoft Excel, while Vessel Monitoring System (VMS) data and Automatic Identification System (AIS) data have been evaluated using ArcPro Geographic Information System (GIS) software.

15. In addition to quantitative data, qualitative insights have been gathered through direct consultation with the fishing industry including via the Fisheries Liaison Officer (FLO).

3.2 DESKTOP STUDY

16. A detailed desktop review of existing studies and datasets was undertaken to gather information on commercial fisheries within the commercial fisheries local and regional study areas. **Table 3.1** summarises the studies and datasets used.

17. Data has been sourced from Marine Directorate National Marine Plan interactive (NMPi), the UK Marine Management Organisation (MMO), ICES, the European Union (EU) Data Collection Framework (DCF), and the European Maritime Safety Agency (EMSA).

18. Engagement and discussion with the fishing industry organisations has provided vital insight into the location and importance of specific fishing grounds to a range of different fisheries. In particular, a series of plotter data screenshots from different samples of organisations' member fishing vessels has provided clarity on the spatial distribution of fishing grounds within the area, including information obtained by the FLO.

19. Where data sources allow, a 5 to 13-year trend analysis has been undertaken, using the most recent annual datasets available at the time of writing. The temporal extent of this time period is dependent on each data source analysed, e.g. 2012 to 2016; 2016 to 2020; or 2011 to 2023, as annotated in **Table 3.1** .

20. Relevant literature from a number of sources has also been reviewed in the preparation of this report. A full list of references is provided at the end of this report and are cited within the text where appropriate.

Table 3.1: Summary of key data sources.

Source	Title	Year	Reference
MMO	Landings statistics data for UK-registered vessels, with data query attributes for: landing year; landing month; vessel length category; ICES rectangle; vessel/gear type; port of landing; species; live weight (tonnes); and value (£).	2011 to 2024	MMO, 2016, 2022a; MMO, 2024a; MMO, 2024b; MMO, 2025a
EU DCF database	Landings statistics for EU registered vessels with data query attributes for: landing year; landing quarter; ICES rectangle; vessel length; gear type; species; and, landed weight (tonnes).	2012 to 2016	EU DCF, 2022
MMO	VMS data for UK registered vessels ≥15 m length. Note that UK vessels ≥12 m in length have VMS on board, however, for this dataset, the MMO provide amalgamated VMS datasets for ≥15 m vessels only. VMS data sourced from MMO displays the first sales value (£) of catches.	2016 to 2020	MMO, 2022b
MMO	VMS data for UK registered vessels ≥12 m length showing cumulative proportion of effort by gear type.	2019 to 2023	MMO, 2025b
ICES	VMS data for EU registered vessels ≥12 m length.	2016 to 2020	ICES, 2022

Source	Title	Year	Reference
	VMS data sourced from ICES displays the surface Swept Area Ratio (SAR) of catches by different gear types and covers EU (including UK) registered vessels 12 m and over in length. Surface SAR indicates the number of times in an annual period that a demersal fishing gear makes contact with (or sweeps) the seabed surface. Surface SAR provides a proxy for fishing intensity.		
EMSA	Fishing vessel route density, based on vessel AIS positional data. AIS is required to be fitted on fishing vessels ≥15 m length.	2019 to 2022	EMSA, 2023
Marine Directorate	Surveillance data indicating vessel nationality and gear type for actively fishing vessels.	20179to 2024	Marine Directorate, 2025
Marine Directorate	Scottish fishing vessel VMS data indicating fishing intensity by gear type.	2009 to 2013	Marine Directorate, 2024
Brown and May Marine	Gear observation survey	2023	Brown & May Marine, 2023
SPFA	Scottish Pelagic Fishermen's Association (SPFA) VMS data for Scottish pelagic trawl member vessels 2013 to 2021.	2013 to 2021	SPFA, 2024a
SPFA	SPFA plotter data for Scottish pelagic trawl member vessels indicating location of fishing.	Long term data series*	SPFA, 2024b
SFF	Scottish Fishermen's Federation (SFF) vessel plotter data indicating location of fishing.	Long term data series*	SFF, 2024 [Confidential]
SWFPA	Scottish White Fish Producers Association (SWFPA) identified fishing grounds.	Long term data series*	SWFPA, 2024 [Confidential]

*Long term data series is collated across several years (e.g., up to 10) for an undefined period and from a sample of vessels that are members of each specified association.

3.3 DATA LIMITATIONS AND UNCERTAINTIES

21. A range of different data limitations and uncertainties exist for all of the commercial fisheries datasets assessed within this report. The level of uncertainty and confidence of each data set is defined in **Table** 3.2 based on recognised data quality dimensions used in marine data assessments (e.g., spatial resolution, temporal coverage, and reporting completeness), and informed by the professional expertise of the assessment team.

22. Limitations of landings data include the spatial size of ICES rectangles which can misrepresent actual activity across the Project; and care is therefore required when interpreting these data.

23. All commercial landings by UK-registered fishing vessels are covered by the Registration of Buyers and Sellers and Designation of Sales Notes Scheme 2005 (Register of Buyers and Sellers (RBS) legislation), which requires that all first-sales of fish and shellfish are reported by registered buyers. Consequently, landings from UK vessels of all sizes are recorded within the relevant fisheries databases (for example the MMO iFish database for England & Wales and the Marine Scotland Compliance systems in Scotland).

24. Although there is no statutory requirement for owners (or masters) of vessels under 10 m in overall length to submit logbook returns, the RBS legislation still applies: registered buyers must provide sales notes for all commercially sold fish and shellfish. This legislation applies to licensed fishing vessels of all lengths, and mandates that the vessel name and port letters and numbers (PLN) of the landing vessel are recorded for each sale.

25. In the Scottish context, for vessels of 10 m and under, landing statistics are derived from two key information streams:

- Sales notes submitted by the registered buyers.
- A landing-declaration form called the FISH1 form, submitted by the vessel owner/master. The FISH1 is a weekly landing declaration form that must be completed in respect of all landings of all species by a vessel of 10 m or under in overall length.

26. The FISH1 form requires mandatory completion of all relevant fields and must be submitted to the administering Fishery Office within 48 hours of the end of the fishing week (a fishing week runs from 00:01 Sunday to 23:59 Saturday). The form collects, for each day at sea, details including:

- Gear type used, mesh size where relevant.
- Statistical rectangle (or latitude/longitude) of the area where the majority of the catch was taken.
- Species, state/presentation (e.g., fresh, frozen, alive), landed weight in kilograms, associated discard/low-size data (below minimum conservation reference size) where applicable.
- Port of departure and port of landing; buyer or transporter registration (or note if landed to keeps) and any comments relating to the voyage.

27. Where certain items such as gear type or fishing area are not specified on the sales note, fishery officers may supplement that data using local knowledge (e.g., from port inspections, aerial/sea surveillance, and discussions with owner/operator) to ensure the landings database is complete.

28. Limitations of VMS data are primarily focused on the coverage being limited to larger vessels (15 m and over for UK fishing vessels). It is important to be aware that where mapped VMS data may appear to show inshore areas as having lower (or no) fishing activity compared with offshore areas, this is not necessarily the case because VMS data do not include vessels typically operating in inshore areas (i.e. which typically comprises vessels <15 m in length). To assist in mitigating the risk of under-representing smaller inshore vessels, site-specific marine traffic survey data comprising information on vessel movements gathered by both AIS and radar has been analysed alongside publicly sourced VMS and AIS data.

29. Marine Scotland Compliance fisheries patrol vessels and surveillance aircraft are responsible for monitoring fishing activity within Scottish waters. These operations are undertaken to construct an on-going picture of fishing activity within the Scottish EEZ and to make effective use of patrol vessel activity by coordinated use of surveillance data. As with other forms of monitoring, these data cannot be considered to give an accurate picture of the actual level of activity and have a number of limitations, including:

- Patrol effort by vessels and patrol aircraft are optimised for enforcement purposes and not collection of sightings data. Areas with fewer fisheries enforcement issues are therefore likely to be visited less often and result in lower data confidence;
- Surveillance data are only indicative of areas where fishing activities occur, as there is no continuous monitoring of activities;
- Surveillance data present a snapshot of activity in an area and it cannot be assumed that if no vessels have been sighted then no fishing takes place; and
- Vessels fishing at night would likely remain undetected.

Table 3.2: Data limitations and uncertainty (the uncertainty and confidence levels are defined based on judgement and are intended to inform the appropriateness of data used to inform the EIAR).

Source	Type of data	Limitation and uncertainty
MMO (2022a), MMO (2024a), MMO (2025a)	Landings statistics (2011 to 2024) data for UK-registered vessels.	The data is recorded from sales notes and landing declarations for all vessel lengths. Due to the UK legislation of RBS, data is considered accurate and verifiable. Data assessed with low uncertainty and high confidence.
EU DCF	Landings statistics (2012 to 2016) data for EU landings from the local	The data is submitted by individual member states and therefore limitations vary per country. Vessels under 10 m may

Source	Type of data	Limitation and uncertainty
	and regional study area by country, species and gear type.	be omitted or misrepresented by the data. Accuracy is likely to be greater for landings from larger vessels. For UK vessels under 10 m, length data is assessed with high uncertainty and low confidence. For all other EU vessels, data is assessed with low uncertainty and high confidence.
MMO (2022b)	UK VMS data for vessels ≥15 m length (2016-2020).	The data is only available for 15 m and over vessels, so is not representative of <15 m vessels. Data assessed with medium uncertainty and medium confidence.
MMO (2025b)	UK VMS data for vessels ≥12 m length (2019-2023).	The data is only available for 12 m and over vessels, so is not representative of <12 m vessels. Data assessed with medium uncertainty and medium confidence.
ICES	EU SAR data for vessels ≥12 m length.	The data is only available for 12 m and over vessels, so is not representative of <12 m vessels. Data assessed with medium uncertainty and medium confidence.
EMSA	AIS data for fishing vessels ≥15 m length.	The data is only available for 15 m and over vessels, so is not representative of <15 m vessels. Data assessed with medium uncertainty and medium confidence.
Anatec	Marine traffic (AIS and radar) survey data (2023).	An assessment undertaken into fishing vessel activity within the Navigational Risk Assessment (NRA). Data assessed with low uncertainty and high confidence.
Brown and May Marine (2023)	Scouting data	The data is for all vessel lengths. Data presents a snap-shot of activity at a specific time and is not routinely collected. Data assessed with medium uncertainty and medium confidence.
Fishing industry	Plotter data	The data is for a selection of representative vessels that are members of specific organisations and therefore does not represent all fishing activity. Plotter data is available across a long-term basis, expected to be approximately 10 years, however the time period is unknown and therefore does not allow identification of changes in fishing activity over time. Data is assessed with medium uncertainty and high confidence.

4 KEY SPECIES

4.1 INTRODUCTION

30. The key commercial species caught across the commercial fisheries local and regional study areas are discussed in this section in terms of biological characteristics, seasonal trends, and relevant fisheries management.

4.2 SHELLFISH

4.2.1 BROWN CRAB

31. Brown crab *Cancer pagurus* (also known as edible crab) is a long-lived, large decapod crustacean. Brown crabs are very productive animals and each female can hatch between 1-4 million eggs. Post larvae are known to settle inshore and juvenile crabs are more common in shallow waters. Adult crabs undertake extensive migrations, which may be associated with their reproductive cycle. Brown crab is found across a wide range of habitat types, ranging from rocky reefs to soft mud and sand.

32. Brown crab are caught by pots and have no Total Allowable Catch (TAC) or quotas in place. Primary management is by the technical measure of a MCRS of 140 mm carapace width (CW) north of 56°N and 130 mm CW south of 56°N, with the exception of the Firth of Forth.

33. Additionally, it is prohibited to land female egg-bearing edible crabs or crabs that have recently moulted, in accordance with The Sea Fisheries (Shellfish) Act 1967. When using pots or creels, landings of detached crab claws are restricted to no more than 1% of the total catch. If crab claws are by-catch from another fishery, the limit is set at 75 kg, as outlined in Article 18(4) of Council Regulation (EC) No 850/98.

34. The most recent stock assessment by Marine Scotland Science for brown crab was published in 2023 based on stock assessment from 2016-2019 (Mesquita *et al.,* 2023). The WDA is located in the South Minch stock assessment area, which includes areas from Islay and Jura in the South, to Skye in the North (**Figure 4.1**).

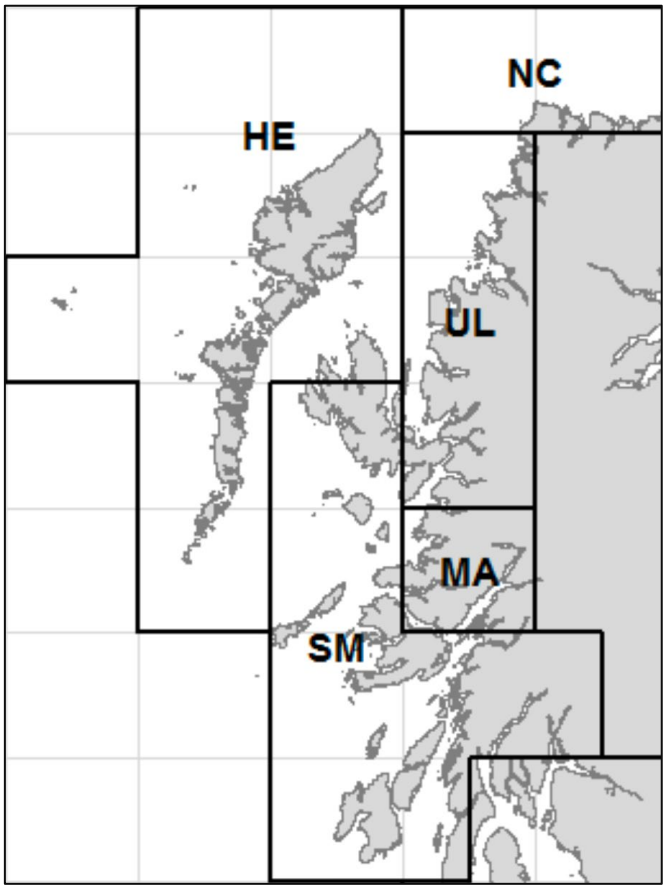


Figure 4.1: Crab and lobster fishery assessment areas in Scotland [SM: South Minch, MA: Mallaig, HE: Hebrides, UL: Ullapool, NC: North Coast (Mesquita *et al.,* 2023)

35. In the South Minch region it was found that both males and females are fished above F_{MSY} (Mesquita *et al.,* 2023). F_{MSY} is the level of fishing mortality that supports the biomass reaching maximum sustainable yield (MYS). Sustained fishing pressure at this level, or an increase in fishing mortality could potentially reduce the biomass and the yield per recruit in the long term.

36. Survey data suggest declining recruitment and sustained high exploitation. The South Minch is one of the principal fishing areas for brown crab in Scotland, alongside the Hebrides, Orkney, and East Coast. Collectively, these regions accounted for over 60% of national brown crab landings between 2016–2020. In 2019, the South Minch contributed around 17.2% of total Scottish brown crab landings, decreasing to 14.5% in 2020.

4.2.2 VELVET CRAB

37. The velvet crab *Necora puber* (also known as velvet swimming crab) is a decapod crab species found in northwest Europe from Norway to the Shetlands and south to Spain and the Canary Isles and in the Mediterranean off the coasts of Malta. It is a fast moving and aggressive species, most commonly found on rocky substrates at depths of about 25-40 m, but also down to 80 m. Velvet crabs feed on both animal and algal material, with brown algae being the dominant item found in gut content analysis.

38. Females grow more slowly and to a smaller maximum size than males, differences which are likely to be due to reduced growth during the females egg bearing phase. Growth is highly seasonal and moulting generally occurs from June to August for males and females. Velvet crabs typically live for 4-6 years and recruit to the fishery at around age 3 (65 mm CW).

39. They reach maturity at a carapace width of approximately 50 mm, although size at maturity varies according to location. Mating occurs after females have moulted, when their shell is still soft. In contrast to brown crabs, velvet crabs are not thought to undertake extensive migrations and rarely move further than a few hundred metres.

40. The velvet crab fishery in Scottish waters is managed under a shellfish licence/entitlement system and subject to a minimum landing size of 70 mm carapace width (excluding any local variations) as well as prohibition on landing berried (egg-bearing) velvet crabs. Fishing for velvet crab tends to be better in areas of strong currents and is typically undertaken in depths less than 20 m. Velvet crab are principally caught as a bycatch retained species as part of the brown crab and lobster targeted fisheries. Velvet crabs are sold live with transportation to southern Europe by vivier lorries, mainly destined for the Spanish market.

41. The South Minch is one of the four significant velvet crab fisheries in Scotland, alongside the Hebrides, Orkney, and East Coast. South Minch landings accounted for about 23–24% of Scottish totals during 2016–2019. The latest Marine Scotland stock assessment (Mesquita *et al.,* 2023) indicates that in the South Minch, male velvet crabs are currently fished at F_{MSY} and females above F_{MSY}. Males dominate the landings (60-80% by number) and show a decreasing trend in fishing mortality.

4.2.3 GREEN CRAB

42. Green crab *Carcinus maenas* is found on all types of shore, from high water to depths of 60 m in the sublittoral, but it is predominantly a shore and shallow water species. It tolerates a wide range of salinities and is especially abundant in estuaries and salt marshes.

43. Green crab are eaten mainly by fish and birds (e.g. gulls, commorants, eider ducks) although it depends on the size of the crabs and on geographic location

44. In northern parts of Britain, green crab migrate to subtidal areas and remains there until spring. During this time the crabs are inactive in shelters and do not feed (Dittmann & Villbrandt, 1999).

45. In general, green crab are often caught as bycatch retained species as part of brown crab and lobster targeted fisheries.

4.2.4 LOBSTER

46. Lobster *Homarus gammarus* is a long-lived decapod crustacean. Lobster breed once per year in the summer and newly berried females begin to appear from September to December. Lobsters do not undertake any significant migrations and juveniles in the first 3-4 years of life may be particularly sedentary. From hatching it takes approximately 5 years for a lobster to recruit to the fishery. Lobsters typically inhabit rocky reef and rough ground, sheltering in crevices between rocks and boulders. The availability of suitable habitat is considered to influence the carrying capacity and size structure of lobster populations (Seitz *et al*., 2014).

47. There are no TACs or quotas in place for lobster. Primary management is by the technical measure of a MCRS of 87 mm (Council Regulation 850/98).

48. In addition, it is illegal to land ‘V’-notched lobsters, or animals that have been mutilated in any way (The Lobsters and Crawfish (Prohibition of Fishing and Landing) (Scotland) Order 1999). Lobsters can only be retained on board or landed whole (Article 18(3) of Council Regulation (EC) No 850/98) and there is a maximum landing size of 155 mm for female lobsters (Article 9 of The Inshore (Prohibition of Fishing Methods) (Scotland) Order 2004).

49. Lobster is one of the highest value commercially exploited shellfish species per kilogram found in UK waters. Fishing activity typically peaks across summer months and they are often live stored for the Christmas markets.

50. Lobster is a key target species in the South Minch and are the second most economically important in the region. In the South Minch region the stock assessment from 2016-2019 (Mesquita *et al.,* 2023) found that both males and females are fished above F_{MSY}, with high exploitation and slightly increasing fishing mortality.

4.2.5 RAZOR CLAM

51. Razor clam *Ensis ensis*, *E. magnus* and *E. siliqua* (also known as razorfish or razor shell) are bivalve molluscs that live in vertical burrows in fine sand and muddy habitats, from extreme low water down to 60 m depth.

52. The fishery for razor clams (species in the genus Ensis spp.) in Scotland is subject to a prohibition on fishing and landing in most cases. Under The Razor Clams (Prohibition on Fishing and Landing) (Scotland) Order 2017 most commercial fishing for razor clams is prohibited, and landing them is likewise prohibited unless under specific authorised conditions.

53. A trial fishery for razor clams (via electro-fishing) has been in place since 2018 in selected trial zones around Scotland, via the Scottish Association for Marine Science (SAMS) project RAZOR 2017 and through Marine Directorate monitoring.

54. Razor clam are harvested via divers and logged under the 'other passive gear' category. Electrofishing is used to induce the clams to emerge from the sediment, enabling subsequent collection by divers.

4.2.6 NEPHROPS

55. Nephrops *Nephrops norvegicus* also known as prawn or Norway lobster, and hereafter referred to as 'nephrops' (non-italicised, reflecting its use as a common name), is a small lobster, pale orange in colour. It grows to a maximum total length of 25 cm (including the tail and clawed legs), although individuals are normally between 18-20 cm. Nephrops do not reach sexual maturity until 2-3 years. Life span in the North Sea is understood to be 8-9 years.

56. They are found in soft sediment, commonly at depths of between 200 m and 800 m, although considerable populations exist at depths <200 m. They live in shallow burrows and are common on grounds with fine cohesive mud which is stable enough to support their unlined burrows.

57. Nephrops is the most economically important target species in the regional study area.

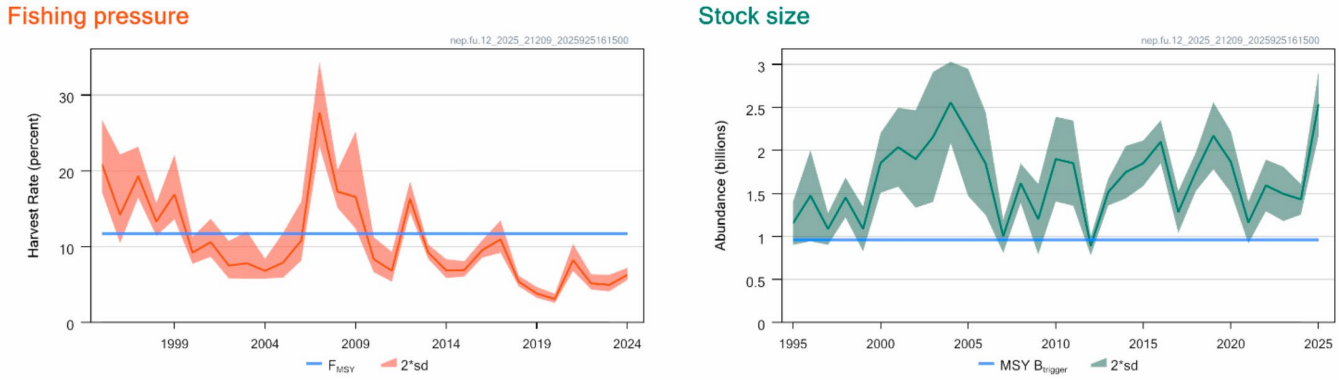
58. Nephrops stock assessments are conducted by ICES. Stock assessments are produced for 33 areas across the northeast Atlantic, called Functional Units (FUs). However, management is applied to 18 areas, called management units. The commercial fisheries local study area is not located within a nephrops FU. Management is applied via a TAC set for the whole of ICES Division 6, including Rockall and West of Scotland and covering North Minch, South Minch and Clyde and Jura FUs (ICES, 2024a).

59. There is a MCRS of 70 mm total length (and 20 mm carapace length) for nephrops in the West of Scotland. The landing obligation requires target species to be landed and therefore prohibits the discarding of quota species. In UK waters, the landing obligation is implemented via the Fisheries Act 2020 UK Statutory Instrument 2020 No.1542. For the nephrops trawl fishery in the West of Scotland, there is a de minimis exemption from the landing obligation to allow vessels to discard a limited amount of nephrops below MCRS.

60. Under the Fisheries Act 2020, the Marine Directorate are currently developing a Nephrops Fisheries Management Plan for the West of Scotland.

61. The northern section of the WDA (which overlaps ICES rectangle 41E3) is included in the South Minch nephrops FU. Stock assessments are undertaken annually by ICES using underwater TV surveys. The South Minch nephrops FU stock status is considered to be in good condition, with abundance above the MSY trigger reference point and fishing pressure below the corresponding MSY for harvest rate (**Figure 4.2**) (ICES, 2025).

Figure 4.2: Nephrops South Minch FU stock assessment indicating fishing pressure and stock size (ICES, 2025)



4.2.7 KING SCALLOP

62. King scallop *Pectan maximus* are most common in water depths of 20 m to 70 m, in areas of clean firm sand and fine gravel exposed to water currents, which provide good feeding conditions for this bivalve mollusc. Adults are largely sedentary and usually found recessed in sediment. King scallop live for 10 to 15 years and reach reproductive maturity between 3-5 years, at a size of 60 mm; the average maximum size is 160 mm. Recruitment is usually unpredictable as it depends not only on successful spawning and larval production but also on if larvae are retained or transported to areas suitable for larval settlement. Larvae are pelagic making settlement in a particular area somewhat unpredictable, which leads to an unstable age structure within stocks. As a consequence of this, scallop beds frequently show a regional separation of year classes and spatial variability in age structure.

63. The latest analytical assessment of stock status in Scottish waters was undertaken in 2024. The WDA overlaps the North West and West of Kintyre scallop stock assessment areas. In the North West assessment area, spawning stock biomass (SSB) is currently estimated to be below the precautionary reference point, indicating that the stock is in a more vulnerable state compared to other Scottish scallop fisheries. Although fishing mortality remains within safe limits and below the FMSY proxy, the low biomass suggests limited reproductive capacity and potential risks to future recruitment. The Marine Directorate advice for this area is therefore to maintain current fishing effort without any increase, ensuring that fishing mortality remains at sustainable levels (Dobby *et al.,* 2025). In contrast, the West of Kintyre assessment area shows a more stable stock condition, with both fishing mortality (F) and SSB estimated to be within safe biological limits relative to provisional reference points. Stock biomass in this area remains above the precautionary threshold, reflecting reduced fishing pressure in recent years and improving stock resilience.

64. There are no TACs (i.e. catch limits) or quotas in place for this species; instead, UK scallop fisheries are controlled predominantly through the use of minimum legal landing sizes, gear restrictions, seasonal closures and some effort controls on the largest boats. An EU MCRS exists of 100 mm (Council Regulation 850/98).

4.2.8 WHELK

65. Common whelk are a gastropod mollusc that inhabits mixed sediment from the low water mark down to 1,200 m, being most common in water depths between 0 and 50 m. Whelk reach reproductive maturity at different sizes depending on their geographical location and environmental conditions. Whelks grow to 150 mm and live for up to 15 years, reaching maturity at 2 to 3 years. European populations are understood to breed from autumn to winter (Kideys et al., 1993). Eggs are fertilised internally and laid on hard benthic substrata, with juveniles emerging after approximately 3 to 5 months. The life cycle therefore has no pelagic phase, leading to limited dispersal between populations.

66. Whelk fisheries have typically been expanding around the UK in recent years as prices have increased and export to non-EU countries has grown. No TAC or quotas are in place for whelk. The current EU-wide MLS for whelks is 45 mm, noting that around the UK, whelks typically reach maturity between 45 mm and 78 mm.

67. Whelk landings from the local study area indicate growth in this fishery from 2017 to 2023, with average landings of 75 tonnes per annum (from 2019 to 2023).

4.3 PELAGIC FINFISH

4.3.1 HERRING

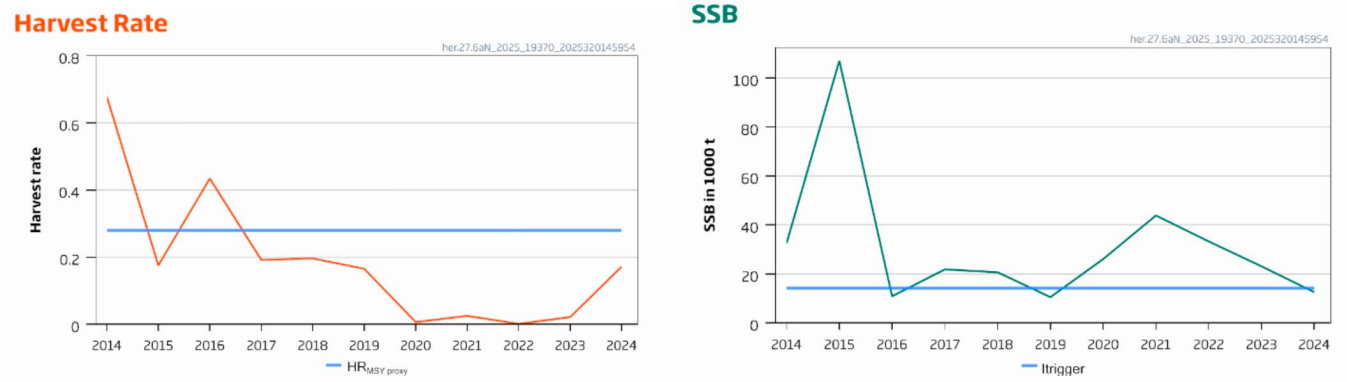
68. Herring *Clupea harengus* is a pelagic shoaling species that move between spawning and wintering grounds in coastal areas and feeding grounds in open water. Herring populations are known to use traditional spawning grounds, many of which are along shallow coastal areas (15 m to 40 m depth), or on offshore banks down to 200 m. Spawning usually occurs on gravel or rock bottoms. Spawning is highly associated with benthic habitat type.

69. Applicable to directed herring fisheries in the West of Scotland, there is a MCRS of 23 cm for human consumption (6 cm above the size of maturity). Catches below this size must be landed but cannot be sold for human consumption, and so are less valuable.

70. The latest ICES (2025c) advice indicates that the spawning stock biomass is just below the biomass index trigger reference points and the fishing pressure is well below fishing mortality reference points, although has seen a recent increase (**Figure 4.3**).

71. Gravel substratum is an essential habitat for herring spawning in autumn. ICES notes that there has been an increase in marine anthropogenic activity that may have a negative impact on the spawning habitat of herring (ICES, 2025c). This includes dumping of dredge spoil, the extraction of marine aggregates (e.g. gravel and sand), and the erection of structures such as wind turbines in the vicinity of spawning grounds. ICES advice stats that "*activities that have a negative impact on the spawning of herring should not occur, unless the effects of these activities have been assessed and shown not to be detrimental to the productivity of the stock*" (ICES, 2025c).

Figure 4.3: Herring autumn spawners (West of Scotland) stock assessment indicating fishing pressure and stock size (ICES, 2025c)



4.3.2 SPRAT

72. Sprat *Sprattus sprattus* is a small pelagic shoaling fish, widely distributed in the Northeast Atlantic and common throughout coastal and offshore waters of the West of Scotland and the southern Celtic Seas. It forms dense schools, primarily in the upper layers of the water column, often mixing with juvenile herring. Sprat feed mainly on zooplankton and play a key trophic role as prey for commercial fish species, seabirds, and marine mammals. Spawning occurs in spring and early summer, with pelagic eggs and larvae dispersed by currents; spawning generally takes place in offshore waters, though adults often aggregate nearshore before spawning.

73. For sprat fisheries in the West of Scotland (ICES Subarea 6 and Divisions 7.a–c, 7.f–k), there is currently no total allowable catch (TAC) and no defined management plan for this stock. Catches are made almost entirely by mid-water trawls, and discarding is considered negligible (<1%).

74. The latest ICES (2025) advice applies a precautionary approach because reference points for MSY or precautionary biomass are not defined for this stock. The assessment is Category 5 (data-limited), relying only on catch data. Applying a 20% precautionary buffer, ICES advises that catches should be no more than 1,792 tonnes annually in 2026 and 2027, reduced from 2,240 tonnes in 2024–2025.

4.4 DEMERSAL FINFISH

4.4.1 BALLAN WRASSE

75. Ballan wrasse *Labrus bergylta* is a valuable species in the aquaculture sector, particularly in salmon farming, where it is employed as a cleaner fish to control parasitic sea lice infestations. This natural method of lice control reduces the reliance on chemical treatments and promotes more sustainable farming practices. Ballan wrasse in the West of Scotland are caught using species-specific pots or traps and sold live to aquaculture companies.

76. While breeding of ballan wrasse in aquaculture is being explored in Scotland to supply the salmon farming industry, recent commercial landings indicate that it remains an important fishery in the local study area.

5 KEY FISHING GEARS AND FLEETS

5.1 INTRODUCTION

77. There are 3 descriptive units used for defining fisheries (Marchal, 2008):

- Fishery – a group of vessel voyages which target the same species or use the same gear;
- Fleet – a physical group of vessels sharing similar characteristics (e.g. Nationality, gear and target species);
- Métier – a homogenous subdivision, either of a fishery by vessel type or a fleet by voyage type.

78. A range of fleets target different fisheries across the commercial fisheries local and regional study areas which are described on a fleet basis within this section.

79. Fisheries restrictions are presented in **Figure 5.1**. There are no fisheries restrictions overlapping the WDA.

5.2 FLEET CHARACTERISTICS

80. The inshore fishing fleet operating from ports along the west coast of Scotland and the Inner Hebrides, including Oban (Mainland Argyll), Port Ellen and Port Askaig (Islay), Fionnphort and Ulva Ferry (Mull), and Tiree, is characterised predominantly by small vessels under 10 metres in length, engaged primarily in creel /potting fishing for shellfish species such as brown crab, lobster, velvet crab, and nephrops. These vessels typically operate within 6–12 nautical miles of shore and are supported by seasonal and part-time fishers based in small island communities.

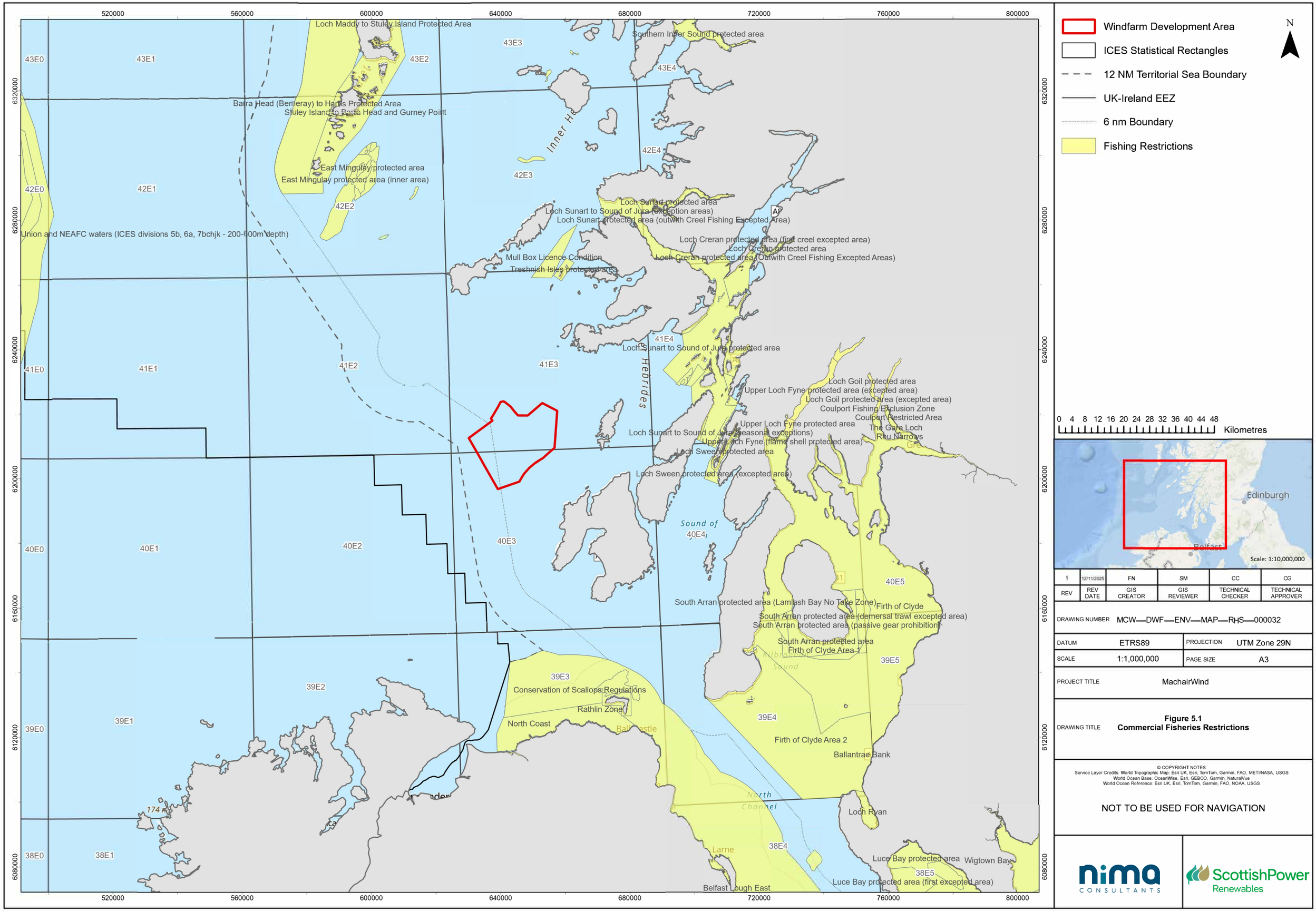
81. According to the Scottish Sea Fisheries Statistics 2024, Scotland had 1,998 active fishing vessels, of which 1,525 (76%) were 10 metres and under. More than half of this smaller-vessel category (approximately 52%) fish mainly using creels, reflecting the importance of the shellfish sector to west coast ports. Larger mobile-gear vessels (>10 m) comprise around 24% of the national fleet, with only a small proportion operating regularly on the west coast.

82. Employment data show that 3,735 fishers worked on Scottish vessels in 2024, with inshore and island areas supporting proportionally higher levels of fishing employment compared to the national average. Fishing represents an important local employer within Argyll and Bute, where small island ports such as Islay, Mull, and Tiree sustain mixed inshore fisheries and part-time or seasonal livelihoods linked to the shellfish sector.

83. Within the Campbeltown, Oban, and Mallaig districts, which encompass the MachairWind project's local and regional study areas, fleet activity is dominated by creel and Nephrops trawl vessels, supported by a smaller number of scallop dredgers and occasional mobile-gear operators targeting demersal species. These districts collectively account for around 10–12% of the total Scottish fleet and a comparable proportion of fishing employment, with individual ports supporting a mix of owner-operators and small crewed vessels.

84. Fishing from Islay and Colonsay is generally small-scale, with a limited number of creel vessels operating from sheltered harbours and slips, often landing to Port Ellen and Port Askaig for onward transport to Oban or mainland markets. Fionnphort and Ulva Ferry (Mull) act as local bases for mixed potting and dive fisheries, with a few vessels occasionally targeting scallops and razor clams.

85. Overall, the fleet associated with the MachairWind regional study area is typical of the West Coast inshore sector, characterised by small, family-owned vessels, a reliance on shellfish resources, and a high socio-economic dependence on fishing across island and coastal communities.



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW—DWF—ENV—MAP—RHS—000032		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		
DRAWING TITLE	**Figure 5.1** **Commercial Fisheries Restrictions**		

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description

5.3 POTTING

86. **Figure 5.2** shows typical potting vessels based at Port Askaig and Port Ellen, Islay; and **Figure 5.3** shows typical creels used in the area. The configuration of the gear in the water while fishing is depicted in **Figure 5.4** and **Table 5.1** describes the profile of potting vessels active across the commercial fisheries regional study area.

87. Creels or pots are used for the capture of lobsters and crabs, including brown crab, velvet swimming crab and green crab. Creels are typically rigged in 'fleets' or 'strings' of between 15 to 60 pots, depending upon vessel size and area fished. Hundreds of pots can be deployed across a fishing location. Lengths of fleets may range from 100 m to over 1,500 m, anchored at each end with anchors or chain clump weights. A variety of surface markers are used, including flagged dhans, buoys and cans. Soak times, the time between emptying and re-baiting the pots, can vary between 6 and 168 hours, but would typically be 24 hours. All pots are worked on a rotational basis; after hauling and emptying, pots are baited and reset. Creel design is typically D-shaped in section and made from steel rods covered in netting and protected or 'bumpered' with rope or rubber strips. Creels are usually deployed on rocky substrate, though may less frequently be found on other softer substrates, such as mud when targeting nephrops.

88. Larger potters working further offshore make fishing trips lasting around 2 days. Smaller potters under 10 m in length operate as day boats, returning to port after hauling, emptying, baiting and resetting fleets of pots. Potting vessels may target a single or multiple shellfish species.

89. A recent innovation in inshore fishing gear involves the use of pots equipped with internal lights to attract scallops, commonly referred to as "disco pots." These modified pots are designed with light-emitting devices that stimulate scallop movement, encouraging individuals to enter a dedicated collection chamber. The technique is still in the exploratory phase, with limited practical deployment to date, and has not yet been used in the immediate area. However, it presents a clear opportunity for development given the local seabed characteristics, particularly areas of sandy gravel substrate known to support scallop aggregations. Some fishers have begun trialling hybrid pot designs, combining a baited section targeting crab and lobster with a lighted section for scallops, separated by internal partitions to prevent interaction or damage between the different catches. This dual-purpose setup allows for efficient species targeting while maintaining catch integrity within a single gear system.

Table 5.1: Profile of typical potting vessels

Parameter	Indicative Details
Main target species	Brown crab, lobster, velvet swimming crab, green crab, ballan wrasse, nephrops, king scallop.
Nationality	Scottish
Vessel length	Over 10 m and under 10 m
Horsepower	60 to 350 hp
Typical towing speed	0 to 9 knots
Typical gear	Fleets of baited pots placed on the seabed. Pots typically hauled daily but may be left a number of days. Generally, day boats that return to port daily.

Figure 5.2: Typical potting vessels based at Port Askaig (top) and Port Ellen, Islay (NiMa, 2024)

Figure 5.3: Typical creel gear (NiMa, 2024)

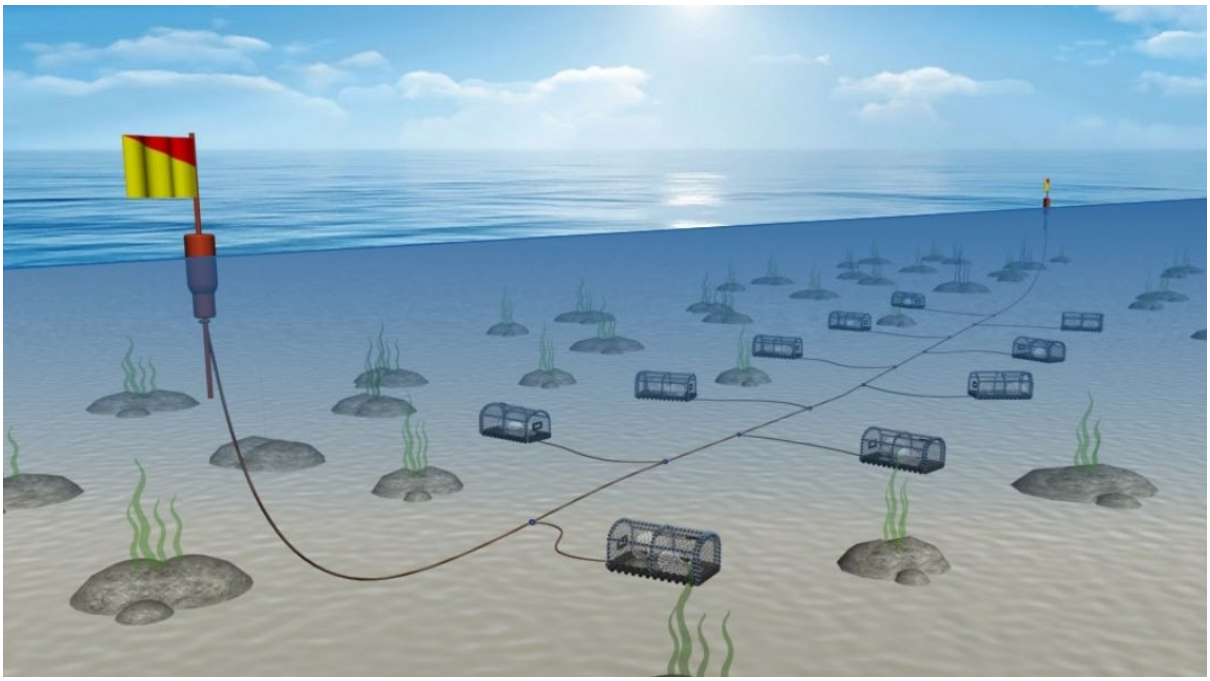


Figure 5.4: Profile of typical potting gear configuration (Seafish, 2022)

5.4 DEMERSAL OTTER TRAWL

90. **Figure 5.5** shows typical demersal otter trawlers based at Oban and **Figure 5.6** depicts associated gear as deployed while actively fishing. **Table 5.2** describes the profile of demersal otter trawling vessels active across the commercial fisheries regional study area. Otter trawls typically catch nephrops and mixed demersal whitefish species; however, the species composition of the catch depends on the area and depth fished, and the gear design.

91. Vessel numbers vary, and their presence is dependent upon the success of demersal and/or nephrops catches elsewhere.

Table 5.2: Profile of typical demersal otter trawling vessels

Parameter	Indicative Details
Main target species	Nephrops and mixed demersal whitefish species
Nationality	Scottish
Vessel length	16 to 35 m
Horsepower	300 to 850 hp
Typical towing speed	2 to 6 knots
Typical gear	Possible twin or multi-rig bottom trawl. 2 trawl doors (‘otter boards’) approximately 1 tonne each hold the net open. Various forms of ground gear depending on target species.

Figure 5.5: Profile of typical demersal otter trawler vessels based at Oban (NiMa, 2024)

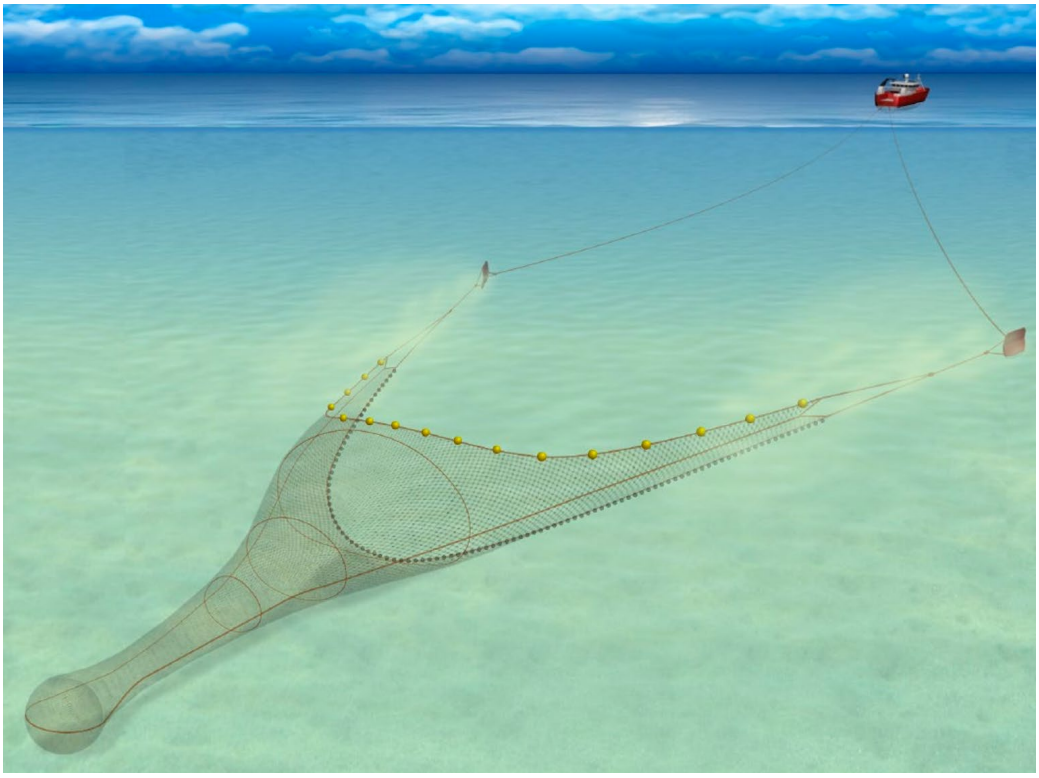


Figure 5.6: Trawl gear diagram (Seafish, 2022)

5.5 DREDGE

92. A typical scallop dredging vessel is shown in **Figure 5.7** and **Table 5.3** describes the profile of scallop dredging vessels active across the commercial fisheries regional study area.

93. Dredges are rigid structures that are towed along the seabed to target various species of shellfish. Scallop dredgers fish as the tooth bar of each dredge rakes through the sediment lifting out scallops and the spring-loaded tooth bar swings back, allowing the dredge to clear obstacles on the seabed. The dredges are held in a series on 2 beams, which are fished on each side of the vessel, as shown in **Figure 5.8**.

94. UK scallop dredgers operate around the entire coastline of the UK. Scallop dredging takes place year round. The UK scallop fleet comprises two principal components: larger vessels (>20 m) that undertake wide-ranging operations across both inshore and offshore scallop grounds, and smaller vessels (<15 m) that typically operate within local inshore areas. Larger nomadic vessels tend to fish intensely in an area until harvesting scallops becomes unprofitable. They will then move on to new areas but will return a number of years later when the scallop stocks have returned to a level where dredging for them has once again become viable. Due to this fishing pattern, a large scallop dredger may operate in 4 or 5, or even more, areas and rotate around them over a period of several years. In this way, most of the suitable grounds around the UK are fished. At the other end of the spectrum are the smaller, inshore vessels, including some who will only fish for scallops on a part time basis, and others who rely on scallops for the majority of their income. These vessels are restricted, primarily by their size, in the areas and weather that they can fish meaning that they are likely to dredge for scallops only in their local area. The catching capacity of these vessels is significantly lower than the large vessels due to the lower number of dredges they can tow.

95. Scallop dredging is an activity which is generally engaged by larger (>10 m vessel length) vessels due to the engine capacity required to tow this heavy fishing gear.

96. Not all scallops in the path of the dredge are retained by the dredges and efficiency of the Newhaven dredge (commonly used in the UK commercial scallop fishery) can vary between <10% on soft ground

to 51% on hard ground. Dredge efficiency is affected by ground type (e.g. soft sand, gravel, or cobble), towing speed, warp length, tide strength, and direction and the experience of the skipper.

Table 5.3: Profile of typical dredging vessels

Parameter	Indicative Details
Main target species	King Scallop
Nationality	Scottish, English, Northern Irish or Welsh
Vessel length	10 to 25 m
Horsepower	200 to 400 hp
Typical towing speed	2 to 6 knots
Typical gear	Up to 16 dredges per side of vessel. Each dredge consists of a triangular frame leading to an opening, a tooth bar with spring-loaded teeth, and a bag of steel rings and netting back.

Figure 5.7: Typical scallop dredge vessel (Source: Fishing News)

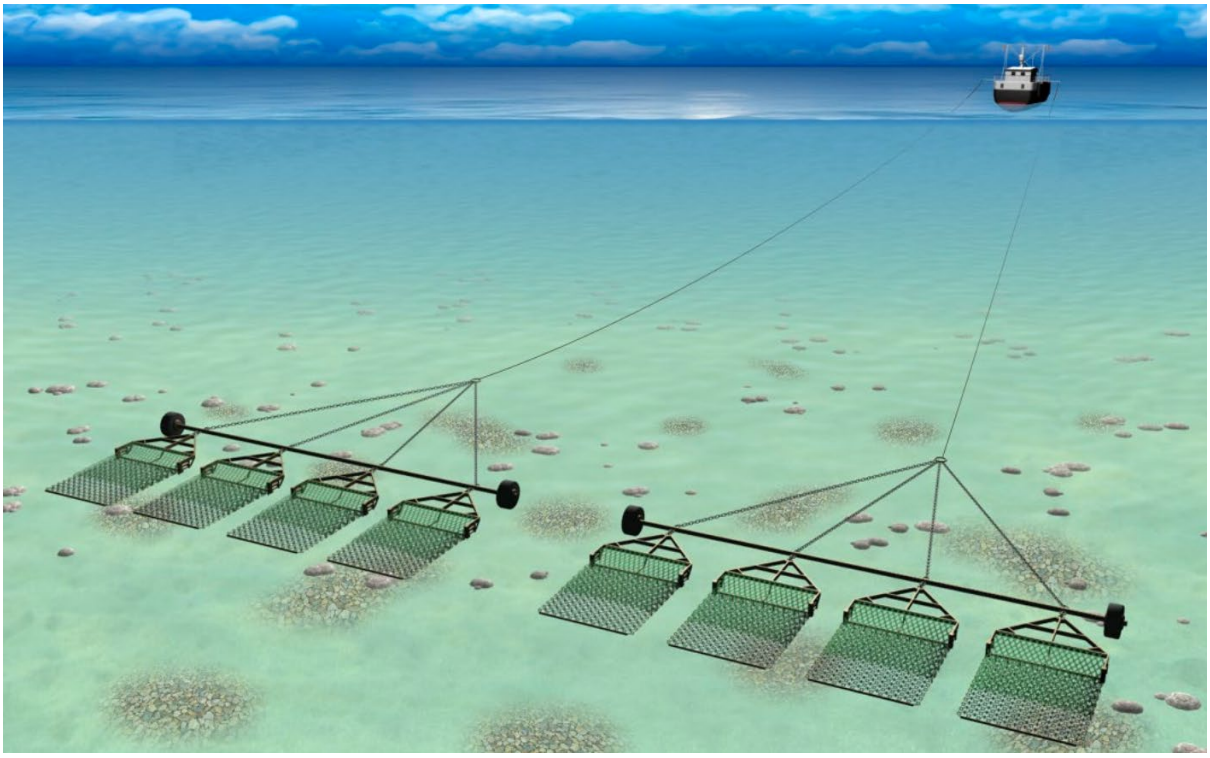


Figure 5.8: Profile of typical scallop dredging gear (Seafish, 2022)

5.6 PELAGIC TRAWL

97. **Figure 5.9** shows a typical pelagic trawl vessel and **Table 5.4** describes the profile of pelagic trawl vessels active across the commercial fisheries local and regional study areas.

98. Pelagic or mid-water trawls are towed at the appropriate level in the water column to intercept shoaling fish such as sprat, herring and mackerel, as shown in **Figure 5.10**. The location of the shoals is determined by sonar or vertical sounder echoes. Pelagic vessels typically require up to 2 nm to position their nets, undertake a tow and then haul nets.

99. Pelagic trawl activity contributes only a minor component of the total catch in the area. Landings consist primarily of occasional one-off hauls of herring and mackerel, along with more regular but still low-volume catches of sprat. These landings are typically made by larger vessels exceeding 15 m in length.

Table 5.4: Profile of typical pelagic trawling vessels

Parameter	Indicative Details
Main target species	Sprat, mackerel, herring, horse mackerel
Nationality	Scottish
Vessel length	30 to 50 m
Horsepower (hp)	500 to 1,200 hp
Typical towing speed	2.5 to 5 knots
Typical gear	Pair or single trawls. Net depth changed by altering either warp (rope) length or towing speed.

Figure 5.9: Typical pelagic trawl and vessel (NiMa, 2024)

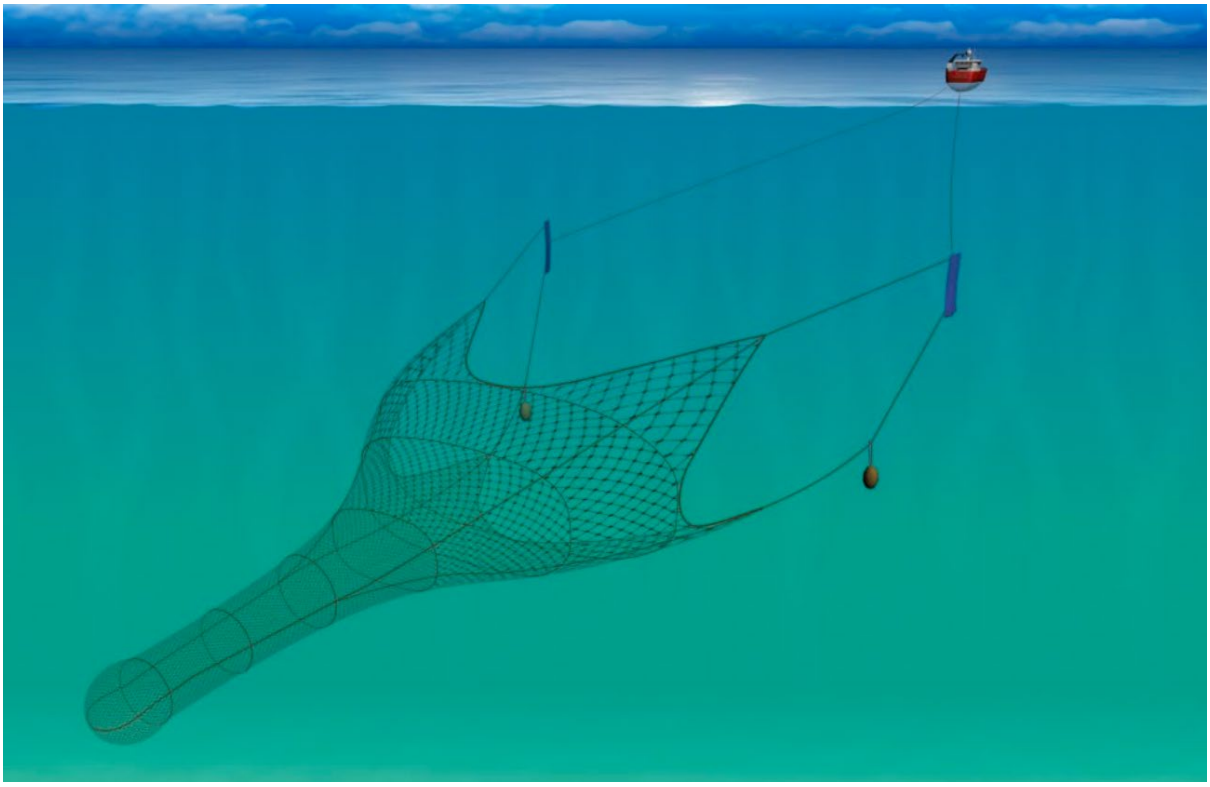


Figure 5.10: Profile of typical pelagic trawling gear (Seafish, 2022)

6 OVERVIEW OF LANDING STATISTICS

6.1 COMMERCIAL FISHERIES LOCAL STUDY AREA

100. Commercial fisheries statistics for the annual first sales value and landed weight by UK vessels operating within the specified commercial fisheries local study area (40E3 and 41E3) are shown in **Figure 6.1** and **Figure 6.2** respectively. An annual average value of £6.7 million was landed by all UK vessels for the years 2019 – 2024 from the commercial fisheries local study area, compared to an average value of £5.7 million per annum from 2014 – 2018 (based on landing statistics data from the MMO, 2022a, 2024a, 2025a). The timeseries considers landings from 2011 – 2024 to explore long term trends in catches from the local study area.

101. The local study area is defined as ICES rectangles 40E3 and 41E3 (**Figure 2.1**), which overlaps with the WDA.

102. The statistics indicate that brown crab are the most economically important species, with an average annual value of £1.62 million, based on 2011 - 2024 timeseries, and more recently £2.1 million annually from 2019 to 2024. As indicated in **Figure 6.1** landings of brown crab have fluctuated across the timeseries, with significant peaks in 2018 (£3.3 million in first sales value landed form local study area) and 2019 (£3.6 million).

103. Nephrops are the second most economically important, followed by king scallop, with £1.6 million and £1.2 million respectively landed on average annually (based on data from 2011 - 2024). Other important species include lobster (£791,000 per annum), velvet crab (£426,000) and razor clam (£490,000 per annum). Landings of lobster have increase significantly over the time series and razor clam has shown high growth from 2020 onwards.

104. By weight, landings are also dominated by brown crab with an average of 900 tonnes per annum. A significant drop in brown crab landings is noted from the local study area from 2020 onwards, both in terms of landed value and landed weight, although there was a slight increase in 2024 with 858 tonnes landed, which is approaching the long-term average.

105. Landings of king scallop average 436 tonnes across the time series, also with notable declines from high catches in 2011 to 2014, drops to a low in 2018, retuning to average levels from 2021 onwards.

106. Landings of nephrops have also seen an overall decline, while catches of sprat are sporadic and velvet crab landings more consistent.

107. The majority of landings by UK fishing vessels are made by vessels registered in Scotland (85% by value), with a smaller proportion by Northern Irish (14% by value) and English (1% by value) vessels. This has been consistent throughout the timeseries analysed (**Figure 6.3**).

108. Landings statistics data per annum are presented in **Figure 6.4**, indicating that the highest value landings were made from 2019 - 2024 when the annual average was £6.7 million, compared to £5.5 million from 2014 - 2018 and £6.4 million from 2011 - 2013.

109. Landed value by gear type for the commercial fisheries local study area is shown in **Figure 6.5**. The highest value is landed by pots and traps, with an average of £3.3 million landed per annum. A significant peak is noted in 2018-2019, aligned with the peak seen in brown crab landings. However, the trend in landings by potting gear for 2020 to 2024 does not reflect the drop in brown crab landings; this is because a number of species are caught in pots, including lobster, velvet crab and nephrops (**Figure 6.6)**.

110. It is noted that 2 different demersal otter trawl gears are used to target demersal fisheries, each with different mesh size ranges as defined by internationally recognised gear groupings; specifically gear type TR1 (with net mesh size of ≥100 mm) to target haddock, and gear type TR2 (with net mesh size of 70 mm to 99 mm) to target nephrops. Both gear types retain a mix of demersal species as bycatch. The predominate gear type used in the local and regional study areas is TR2 in a nephrops targeted fishery.

111. Seasonality of landings from the local study area are depicted in **Figure 6.7**. Brown crab show strong peaks in the autumn months and early winter. King scallop landings occur mainly in summer and autumn, while nephrops are concentrated in spring and summer. Velvet swimming crab is landed fairly evenly throughout the year, with a sudden spike in December. Razor clam landings take place from

spring through autumn, with very low levels over winter months. The lobster fishery peaks in summer, notably in August, and whelk is predominately landed in spring and early summer.

112. These seasonal peaks demonstrate the need for fishers to target different species at different times of year, often requiring the use of combinations of gear types suited to each fishery. Fishers move between grounds on a seasonal basis to locate the best areas for specific target species, guided both by patterns of species movement and migration and by their experience of where the highest-quality catch can be obtained at different times of year.

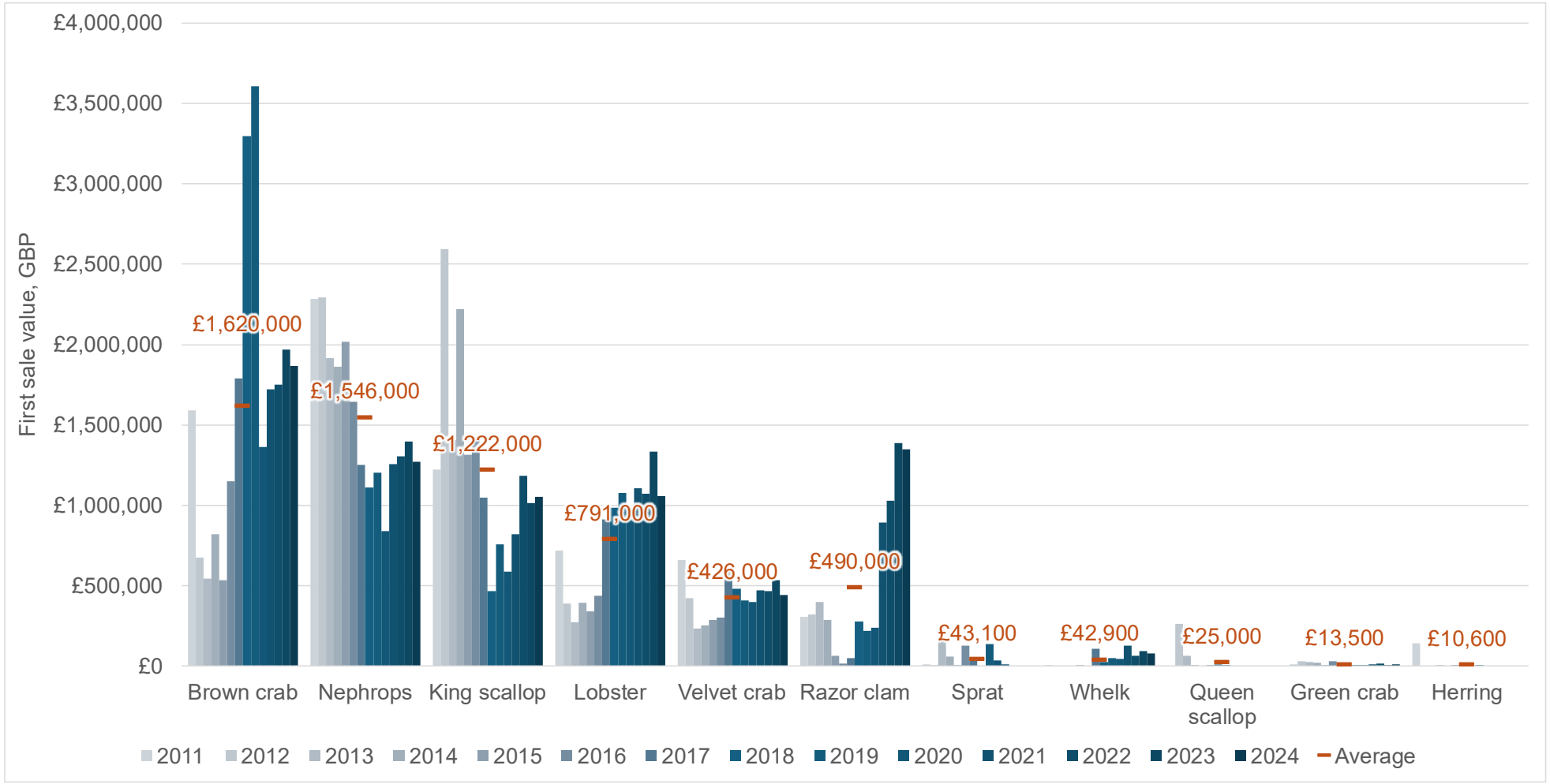


Figure 6.1: Key species by annual landed value (GBP) (2011 to 2024) from the commercial fisheries local study area (MMO, 2022a; MMO, 2024a; MMO, 2025a)

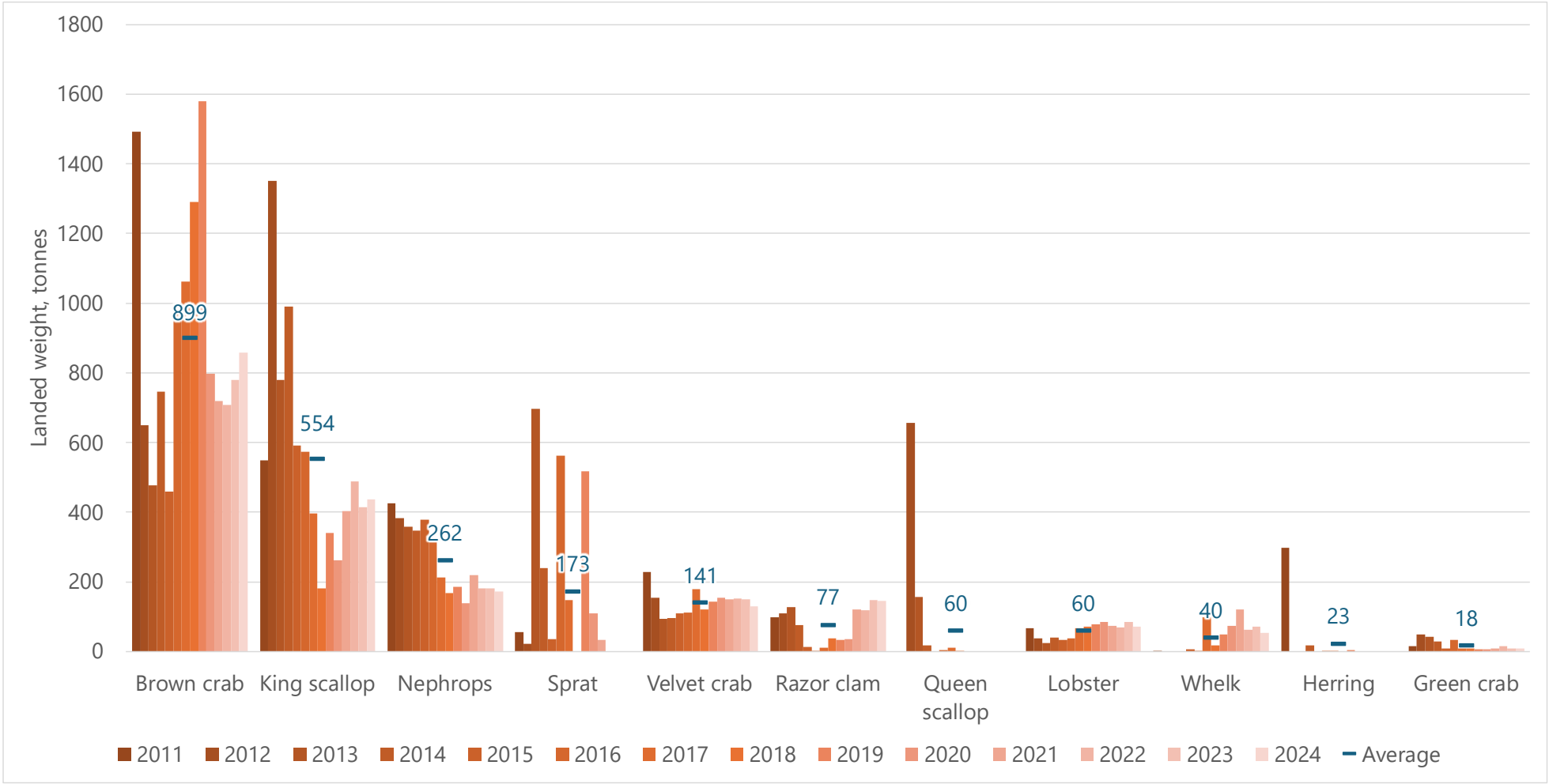


Figure 6.2: Key Species by annual landed weight (tonnes) (2011 to 2024) from the commercial fisheries local study area (MMO, 2022a; MMO, 2024a; MMO, 2025a)

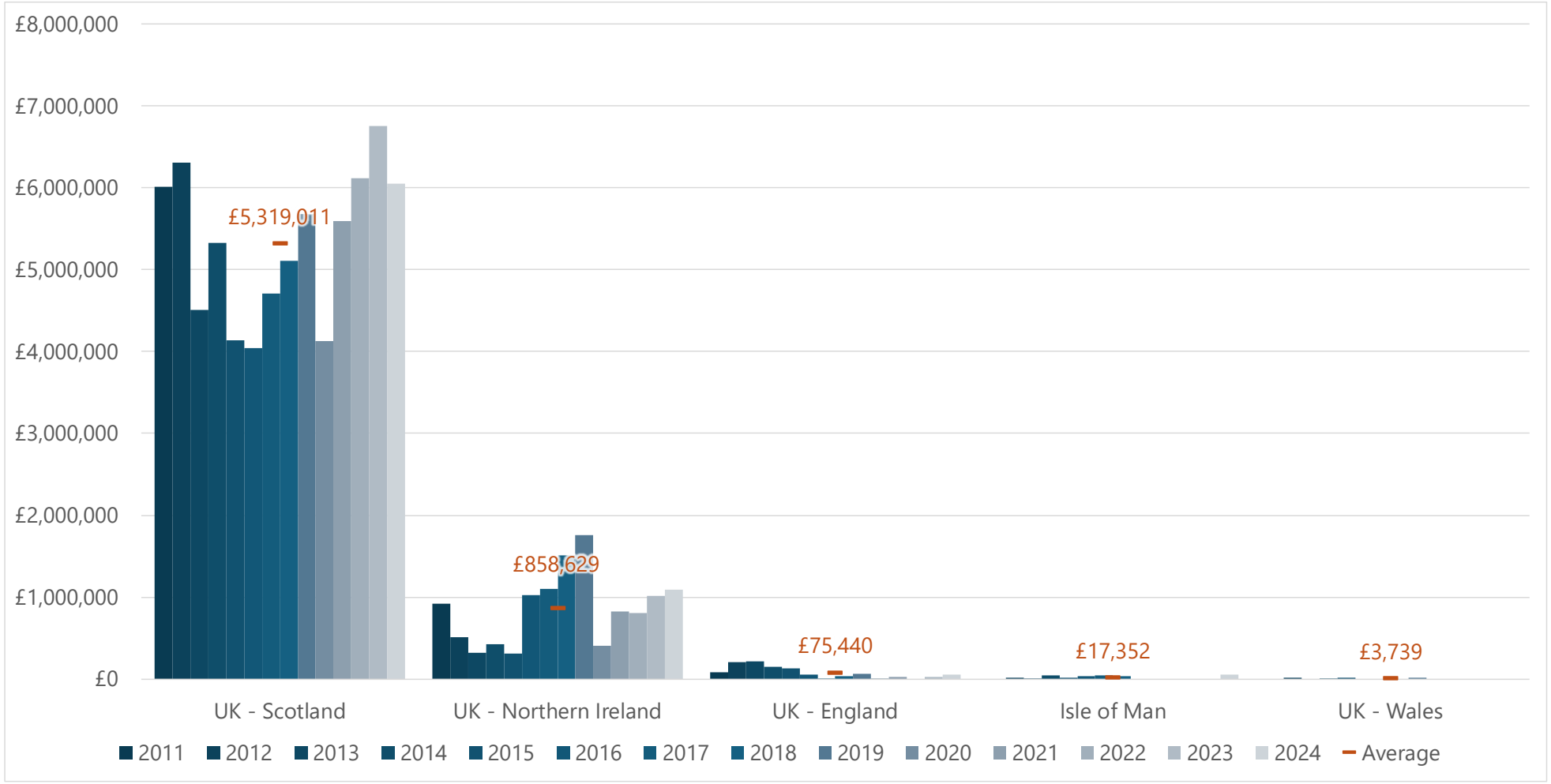


Figure 6.3: Annual landed value (GBP) (2011 to 2024) by vessel nationality from the commercial fisheries local study area (MMO, 2022a; MMO, 2024a; MMO, 2025a)

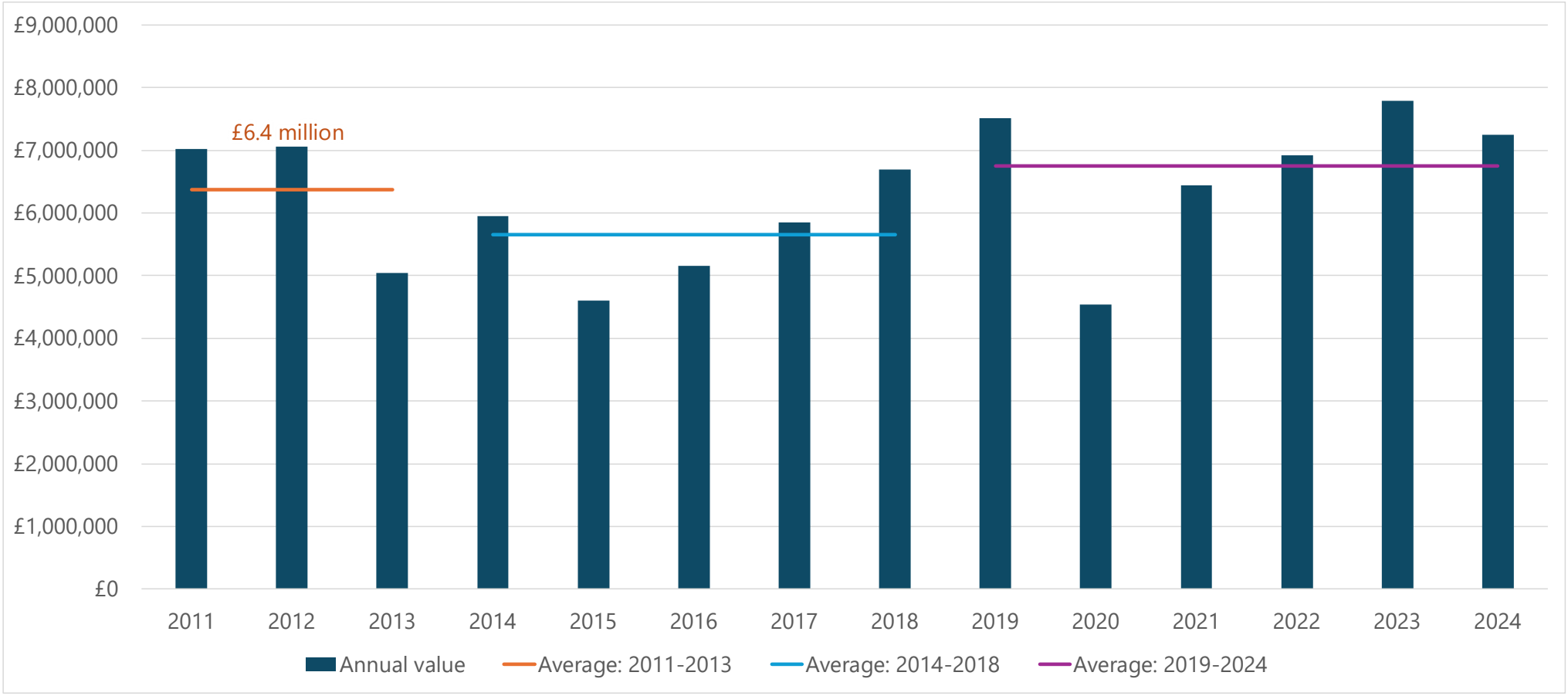


Figure 6.4: Annual landed value (GBP) (2011 to 2024) from the commercial fisheries local study area indicating average annual values from 2011-2013, 2014-2018 and 2019-2024 (MMO, 2022a; MMO, 2024a; MMO, 2025)

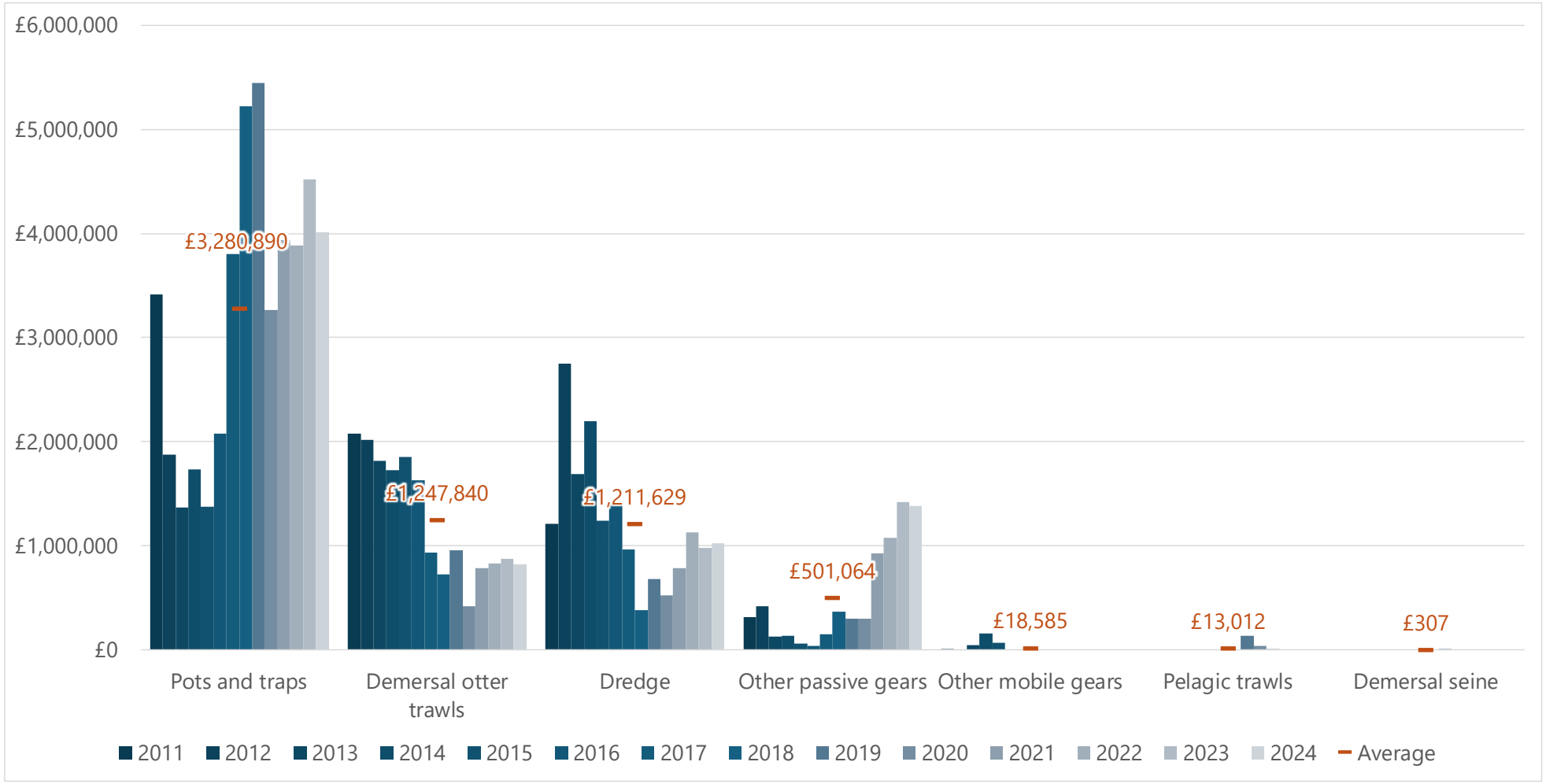


Figure 6.5: Annual landed value (GBP) (2011 to 2024) from the commercial fisheries local study area by gear type (MMO, 2022a; MMO, 2004a; MMO, 2025a)

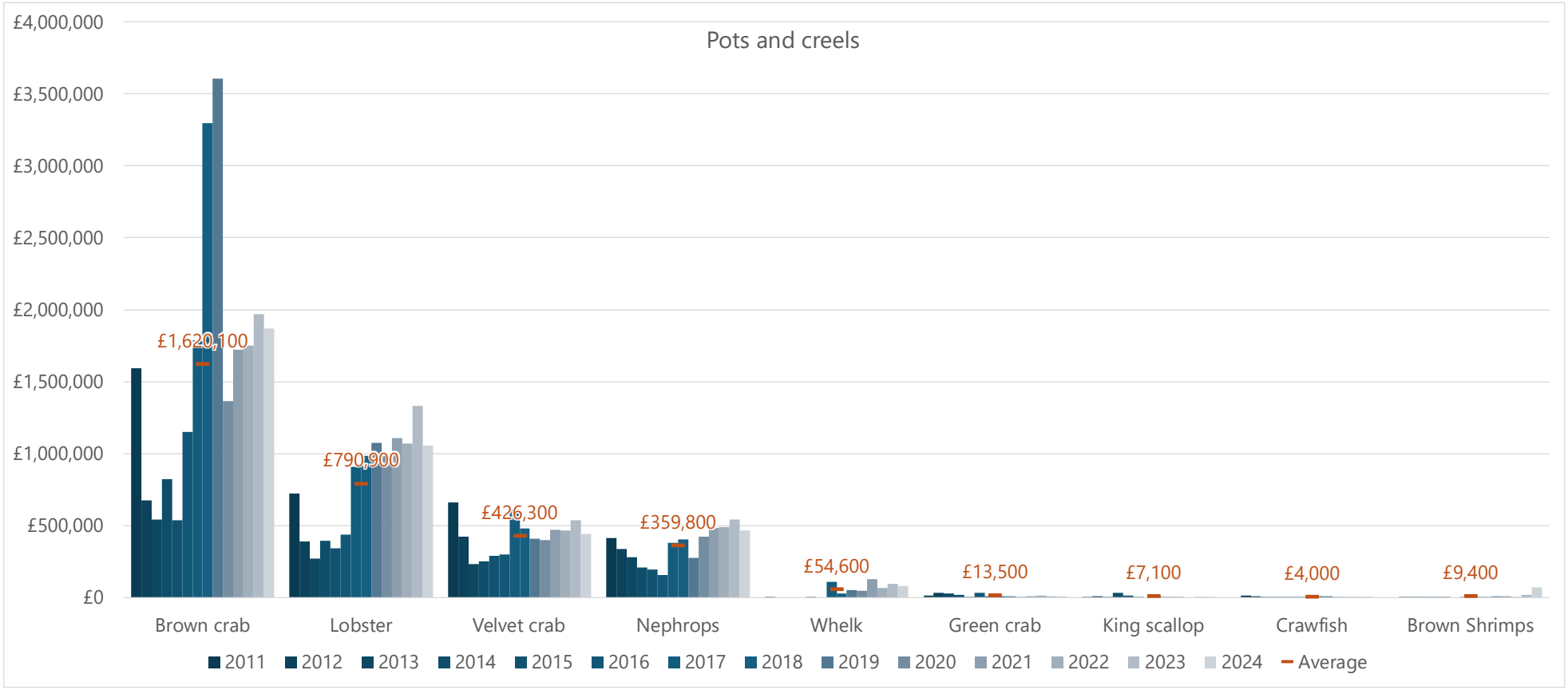


Figure 6.6: Annual landed value (GBP) (2011 to 2024) from the commercial fisheries local study area by pots, traps and creels by species (MMO, 2022a; MMO, 2024a' MMO, 2025a)

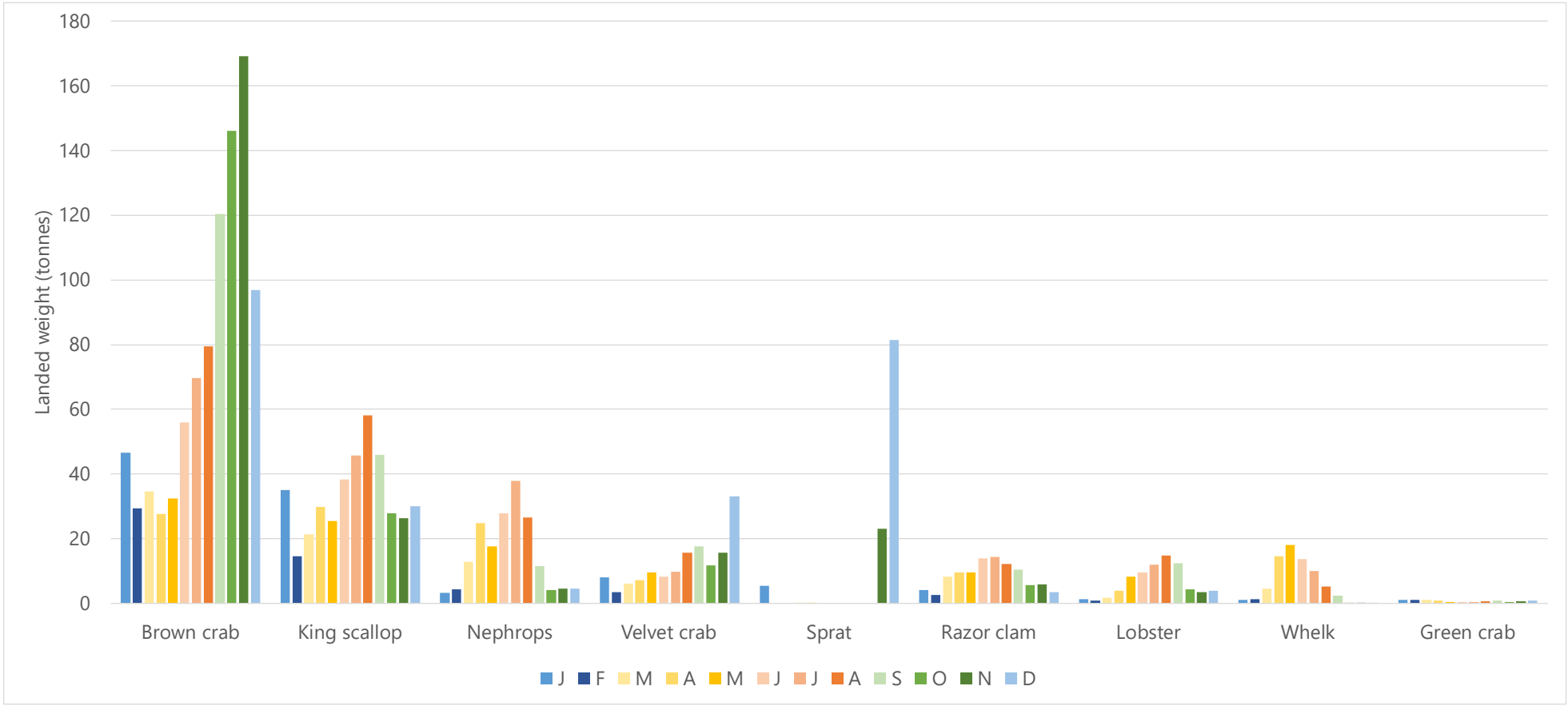


Figure 6.7: Average monthly landed value (GBP) (2019 to 2024) by species from the commercial fisheries local study area (MMO, 2022a; MMO, 2024a; MMO, 2025a)

6.1.1 LANDINGS BY PORT

113. Commercial fisheries landings from the local study area by port of landing are depicted in **Figure 6.8** per annum from 2019 to 2024; in **Figure 6.9** showing the average annual landed value by port and species; and in **Figure 6.10** by port and gear type.

114. Overall, the highest landings by value occurred at Oban, which consistently ranked top across the six-year period, followed by Tiree, Fionnphort, Port Ellen, and Crinan. Most ports show fluctuating or slightly declining trends in landed value over the period, reflecting general reductions in effort or quantity landed. A notable outlier is Rathmullen, which recorded a single year of exceptionally high landings in 2019, related to landings of brown crab by Northern Irish vessels using pots/ traps. In contrast, smaller ports such as Ulva Ferry, Bunessan, and Bowmore consistently reported lower total values, indicating small-scale local fishing activity.

115. The composition of catches varies between ports, reflecting differences in local fisheries. Oban shows a diverse mix dominated by lobster, nephrops, king scallop, and brown crab, while Tiree, Fionnphort, and Port Askaig are primarily supported by brown crab and nephrops. Port Ellen shows substantial contributions from king scallop and nephrops, whereas Crinan is dominated by king scallop and lobster. At smaller ports such as Greencastle, Islay, and Bunessan, landings are mainly composed of nephrops, brown crab, and ballan wrasse, with occasional mackerel or velvet crab landings. These differences highlight the multi-species, mixed inshore nature of the fishery in this region.

116. **Figure 6.10** presents the average annual landed value by gear type, showing that pots and traps dominate across all ports, particularly at Tiree, Fionnphort, Port Askaig, and Islay, reflecting the prevalence of creel fisheries targeting crab and lobster. Dredge gear contributes significantly at Oban, Crinan, and Port Ellen, consistent with the importance of the king scallop fishery in these locations. Smaller contributions from demersal and pelagic trawls appear at Oban and Crinan, while other passive gears and handlines represent minor components in several ports. This pattern demonstrates that the local fisheries are predominantly pot-based, with dredge and trawl activity concentrated at a few key landing ports.

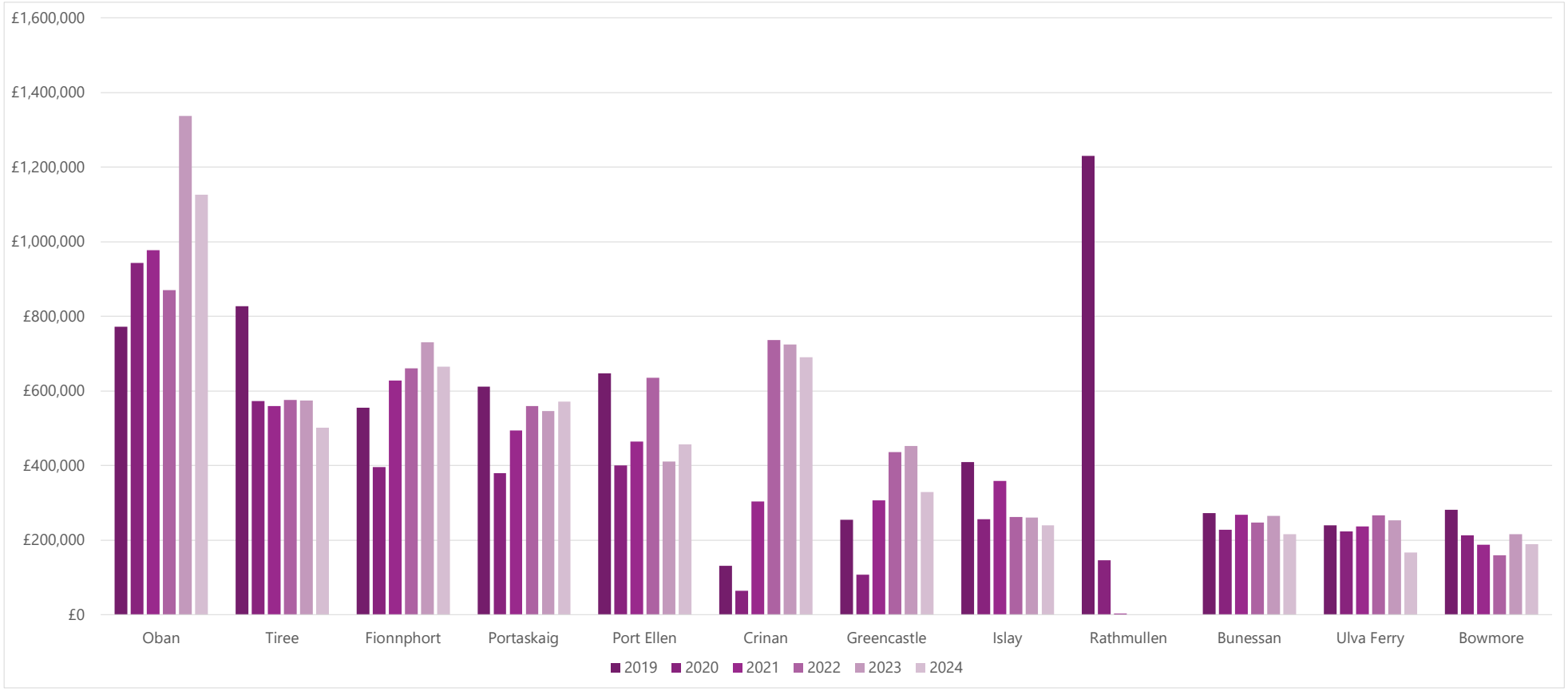


Figure 6.8: Landed value (GBP) (2019 to 2024) from the commercial fisheries local study area by UK vessels indicating the port of landing (MMO, 2024a; MMO, 2025a)

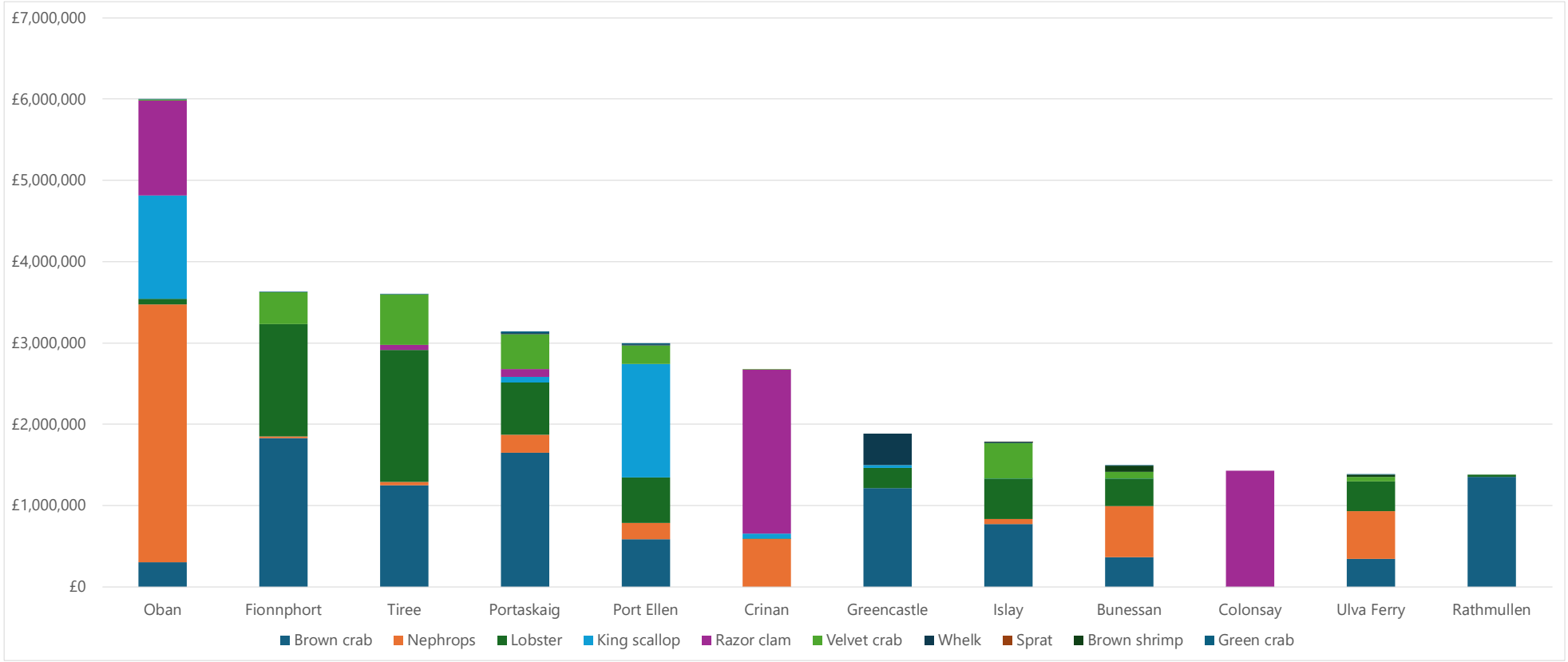


Figure 6.9: Average annual landed value (GBP) (2019 to 2024) from the commercial fisheries local study area by UK vessels indicating the port of landing and species (MMO, 2024a; MMO,2025a)

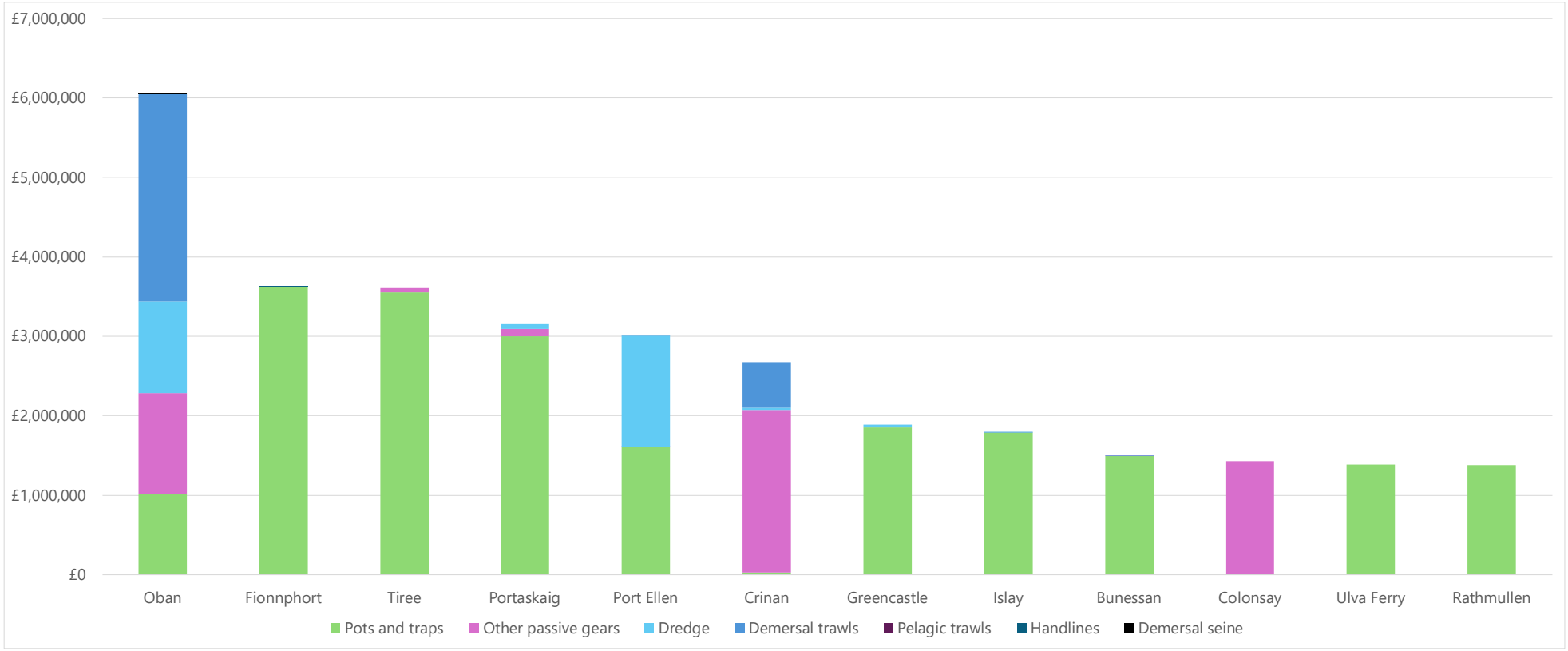


Figure 6.10: Average annual landed value (GBP) (2019 to 2024) from the commercial fisheries local study area by UK vessels indicating the port of landing and gear type (MMO, 2024a; MMO, 2025a)

6.2 COMMERCIAL FISHERIES REGIONAL STUDY AREA

117. Commercial fisheries statistics presenting data for the annual (2011-2024) first sale value and landed weight by UK vessels from the commercial fisheries regional study area (12 ICES rectangles) are shown in **Figure 6.11** and **Figure 6.12** respectively. Average annual values are calculated across this 14-year period (2011 to 2024).

118. The statistics indicate that within the wider commercial fisheries regional study area, landings are dominated by nephrops by value and weight. The region is clearly associated with a demersal trawl fishery targeting this benthic invertebrate which is associated with fine muddy habitat. Nephrops in the West of Scotland are targeted within two nephrops FUs: North Minch and South Minch. Significant peaks in mackerel landings are noted in 2016 (£23 million) and recently in 2023 (£21 million).

119. Other species caught from the regional study area are similar to those in the local study area: King scallop, brown crab, lobster, and velvet crab. King scallop has higher landings within the regional study area, compared to other species.

120. Early peaks in queen scallop landings in 2011 and 2012 were by Scottish and Northern Irish vessels.

121. Landings are predominately made by Scottish vessels (82% by value) and Northern Irish vessels (16% by value) (**Figure 6.13**); operating potting gear, demersal otter trawls and dredge (**Figure 6.14**).

122. **Figure 6.14** illustrates the average annual value of landings from the regional study area between 2019 and 2024, indicating fishing gear type and vessel nationality. The results show that the majority of landings by value are made by Scottish vessels, particularly from pots and traps, which contribute almost half of the total landed value across the period. Demersal trawls represent the second most valuable gear type, followed by dredges and other passive gears (e.g. creels and lines).

123. Smaller contributions come from pelagic trawls, demersal seines, and handlines, while beam trawls and longlines play only a minor role. Vessels from Northern Ireland account for a noticeable proportion of the demersal trawl and dredge value (shown in teal), and Isle of Man vessels also contribute small amounts, particularly to dredge fisheries. Landings from Ireland, England, Guernsey, and Wales are present but make up a very small fraction of the total. Overall, the figure highlights that Scottish vessels dominate regional landings, and pot-based and demersal trawl fisheries are the principal contributors to economic value.

124. Fishing vessel landings first sales value by ICES rectangle across the commercial fisheries regional study area are shown in **Figure 6.15** for vessel nationality and **Figure 6.16** for gear type; with data included for all UK vessels landing into UK and non-UK ports and non-UK vessel landings into UK ports.

125. Specifically, **Figure 6.15** presents the average annual value of landings by ICES statistical rectangle (39E2 – 42E4) for 2019–2024, identifying the nationality of vessels operating in each area.

126. The distribution shows that Scottish vessels (dark blue) provide the largest contribution to total landings across all rectangles, with particularly high values recorded in rectangles 40E4 and 39E4, corresponding to grounds off the west coast of Scotland and around Mull and Islay.

127. Northern Irish vessels (light teal) also contribute notably in rectangles 39E3, 39E4, 40E3, and 42E2, reflecting overlap between the west coast and Northern Ireland fleets targeting scallops and nephrops. Isle of Man vessels (red) make small but visible contributions, particularly in 39E4 and 40E4, associated with their proximity to shared fishing grounds in the North Channel. Minor landings from Ireland and England appear sporadically. Overall, the pattern confirms that landings value is concentrated in rectangles 39E4 and 40E4, driven largely by Scottish vessels using pots, trawls, and dredges.

128. As shown in **Figure 6.16,** across the region, pots and traps (green) and demersal trawls (purple) are the dominant gears, accounting for the bulk of landings in most rectangles. The highest weights occur in rectangles 40E4 and 39E4, corresponding to the same high-value areas identified in **Figure 6.15**. Dredges (light blue) make a substantial contribution in rectangles 40E3, 41E3, and 42E3, reflecting active scallop fishing grounds. Other passive gears and pelagic trawls appear in smaller quantities, while handlines, demersal seines, and longlines contribute minimally.

129. Overall, **Figure 6.16** shows a clear spatial overlap between high-value and high-weight landings, dominated by pot and trawl fisheries, with dredge activity forming an important secondary component in several west coast rectangles.

130. The seasonality of landings across the commercial fisheries regional study area for key species are depicted in **Figure 6.17**, highlighting distinct seasonal patterns in fishing activity and species availability.

131. Nephrops dominate overall landings, with strong peaks from spring through early autumn (March–September) and maximum landings recorded in June and July. Brown crab shows a similar seasonal trend, with catches rising steadily through spring and peaking in late summer and early autumn (August–October). King scallop landings are highest from late summer to early winter (August–November), reflecting the main scallop fishing season.

132. Among other shellfish species, velvet crab landings are relatively even throughout the year but increase sharply in December, while lobster catches peak in summer (June–August). Whelk landings are concentrated in spring and early summer (April–June).

133. For finfish, herring and sprat show short, well-defined seasonal peaks: herring landings are primarily in autumn (October–November), while sprat peaks occur in late autumn and early winter (November–December). Razor clam and green crab landings are minor overall, with modest activity between spring and autumn.

134. This pattern reflects the highly seasonal nature of inshore fisheries in the region, driven by species behaviour, migrations, and management measures influencing when and where fishing effort is directed.

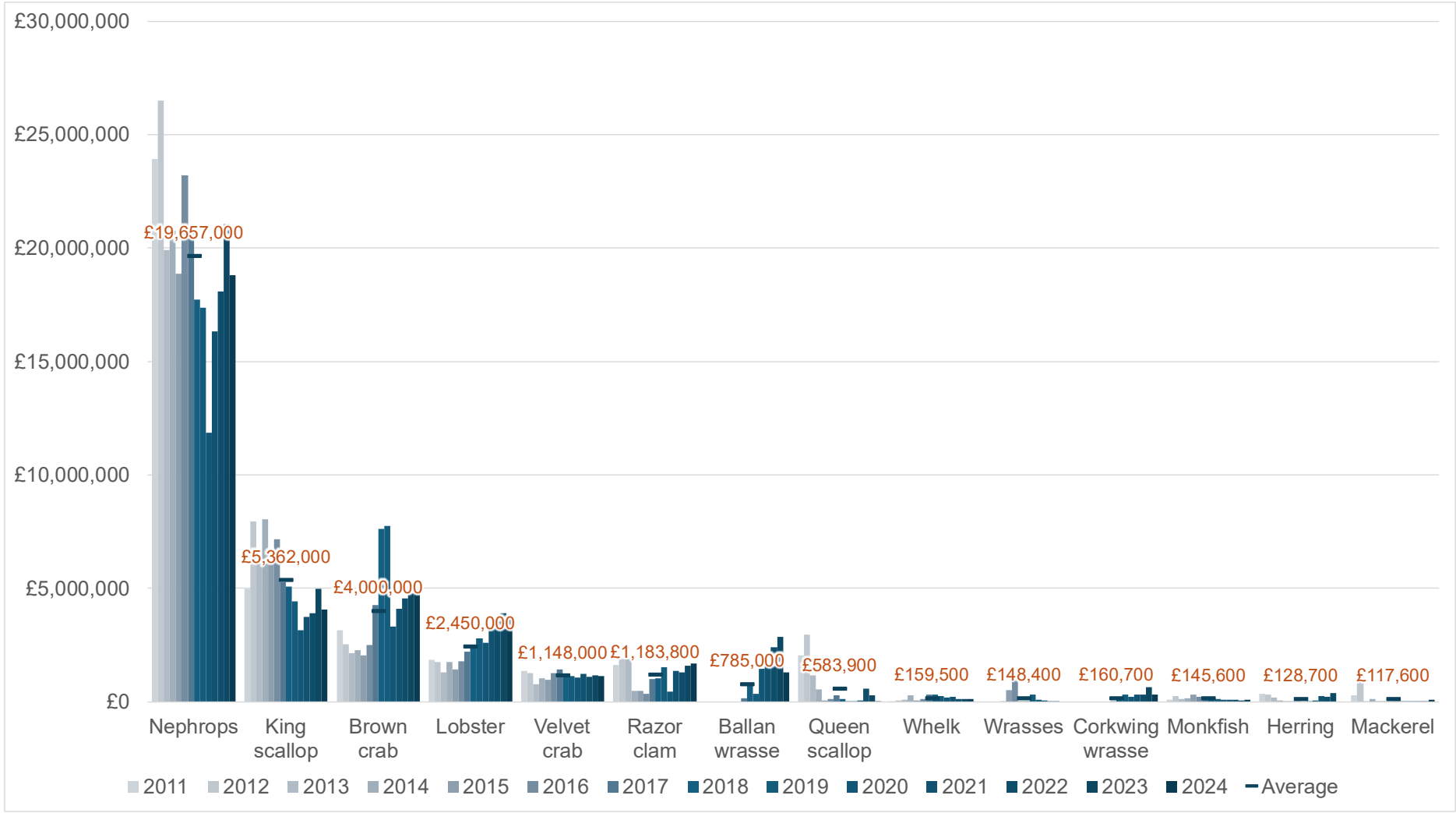


Figure 6.11: Key species by annual landed value (GBP) (2011 to 2024) by UK vessels from the commercial fisheries regional study area, note different scale for mackerel (MMO, 2022a; MMO, 2024a; MMO, 2025a)

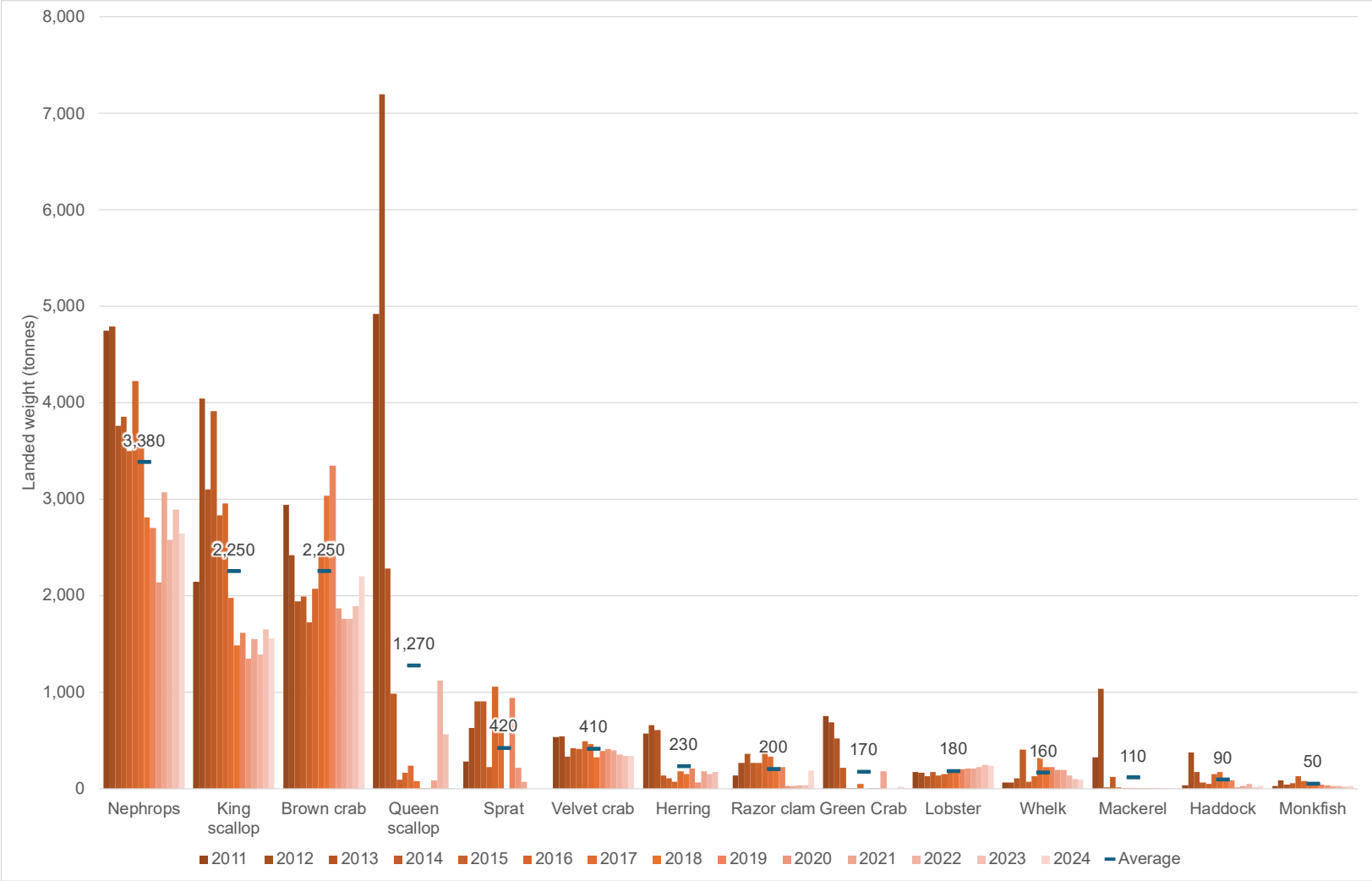


Figure 6.12: Key species by annual landed weight (tonnes) (2011 to 2024) by UK vessels from the commercial fisheries regional study area, note different scale for mackerel (MMO, 2022a; MMO, 2024a; MMO, 2025a)

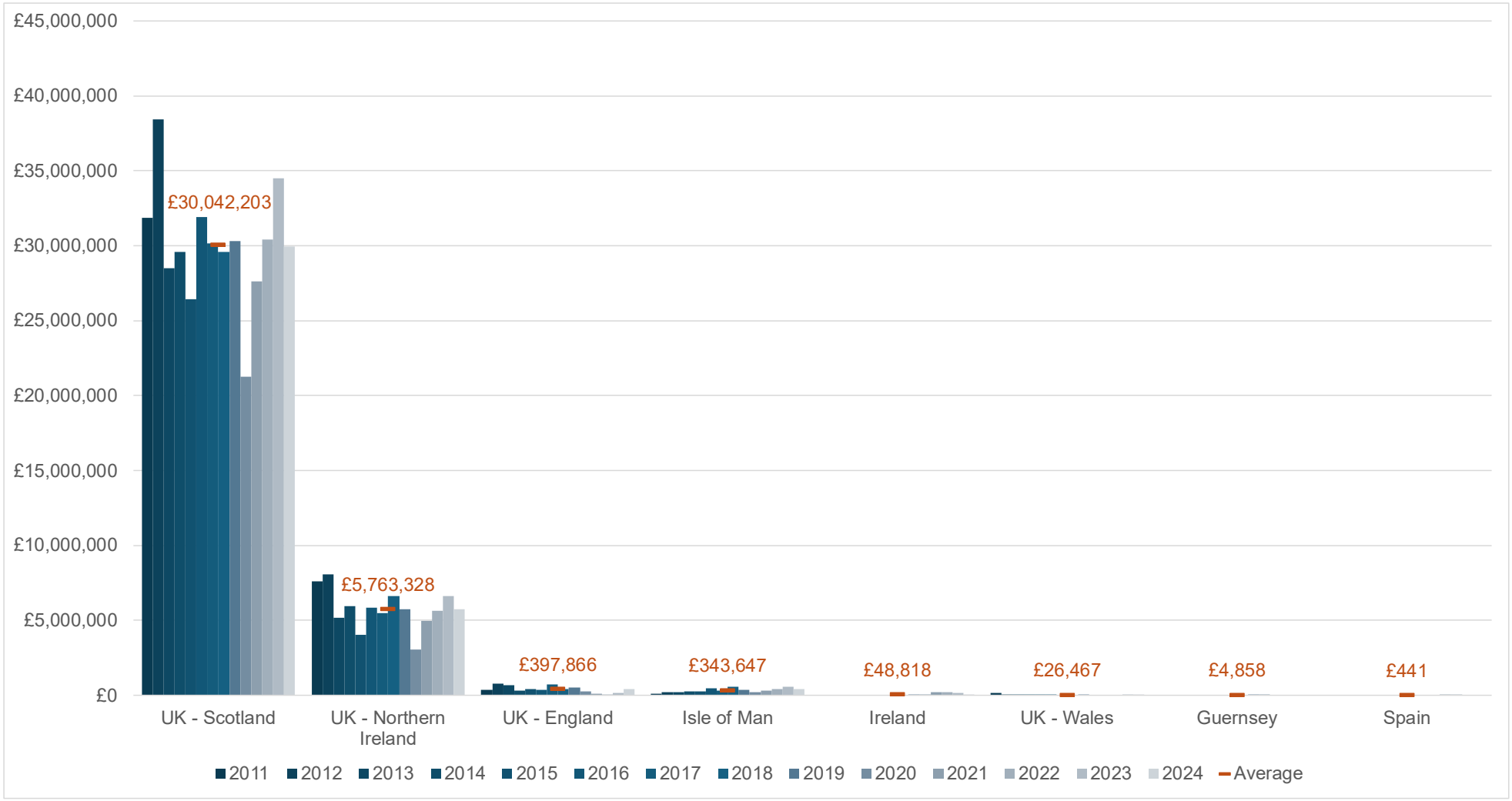


Figure 6.13: Annual landed value (GBP) (2011 to 2024) by vessel nationality from the commercial fisheries regional study area (MMO, 2022a; MMO, 2024a; MMO, 2025a) [Data includes all UK vessels landing into UK and non-UK ports and non-UK vessel landings into UK ports]

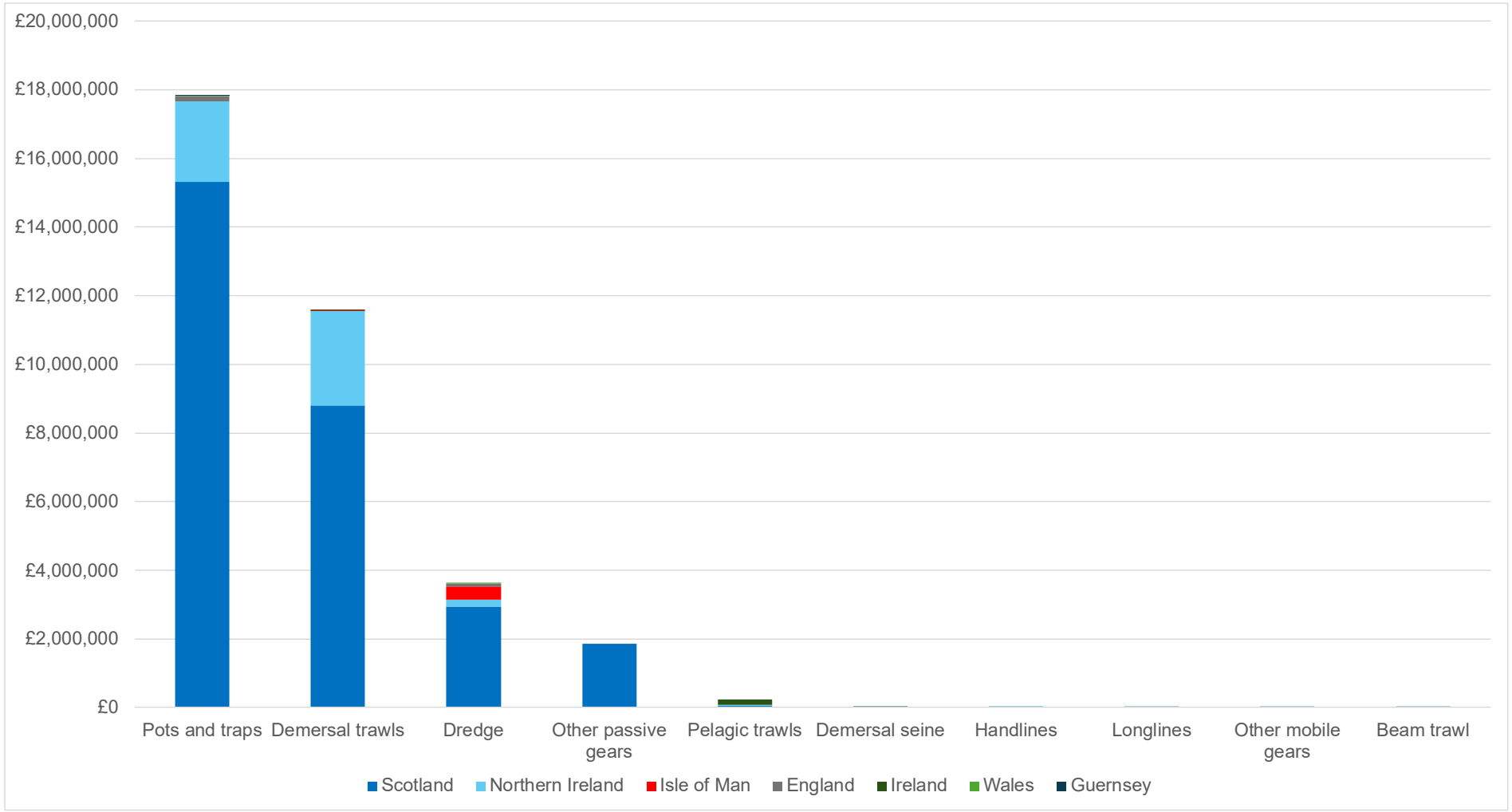


Figure 6.14: Average annual landed value (GBP) (2019 to 2024) by gear type and vessel nationality from the commercial fisheries regional study area (MMO, 2022a; MMO, 2024a; MMO, 2025a). [Data includes all UK vessels landing into UK and non-UK ports and non-UK vessel landings into UK ports]

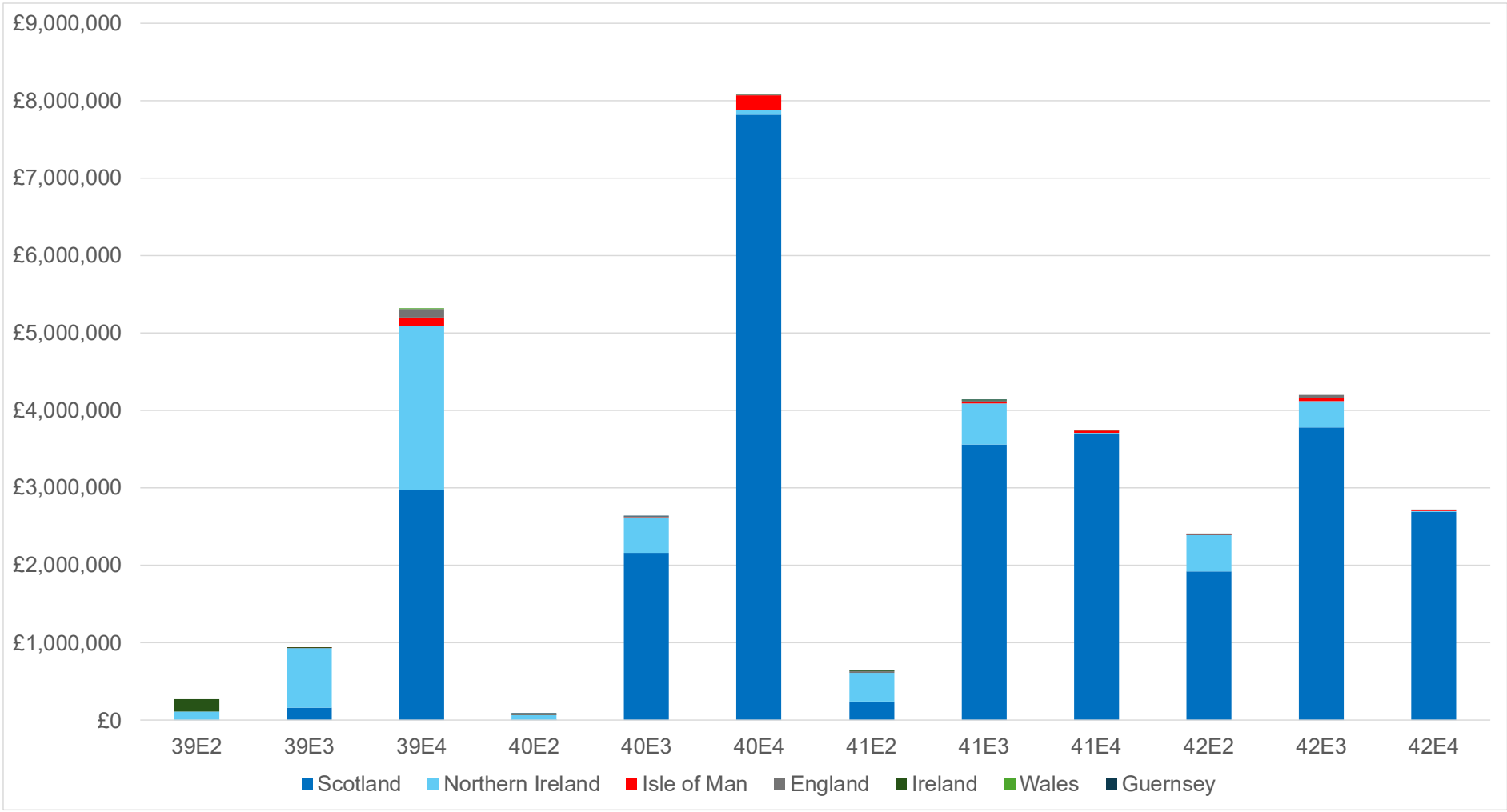


Figure 6.15: Average annual landed value (GBP) (2019 to 2024) by ICES rectangle from the commercial fisheries regional study area indicating vessel nationality (MMO, 2022a; MMO, 2024a; MMO, 2025a). [Data includes all UK vessels landing into UK and non-UK ports and non-UK vessel landings into UK ports]

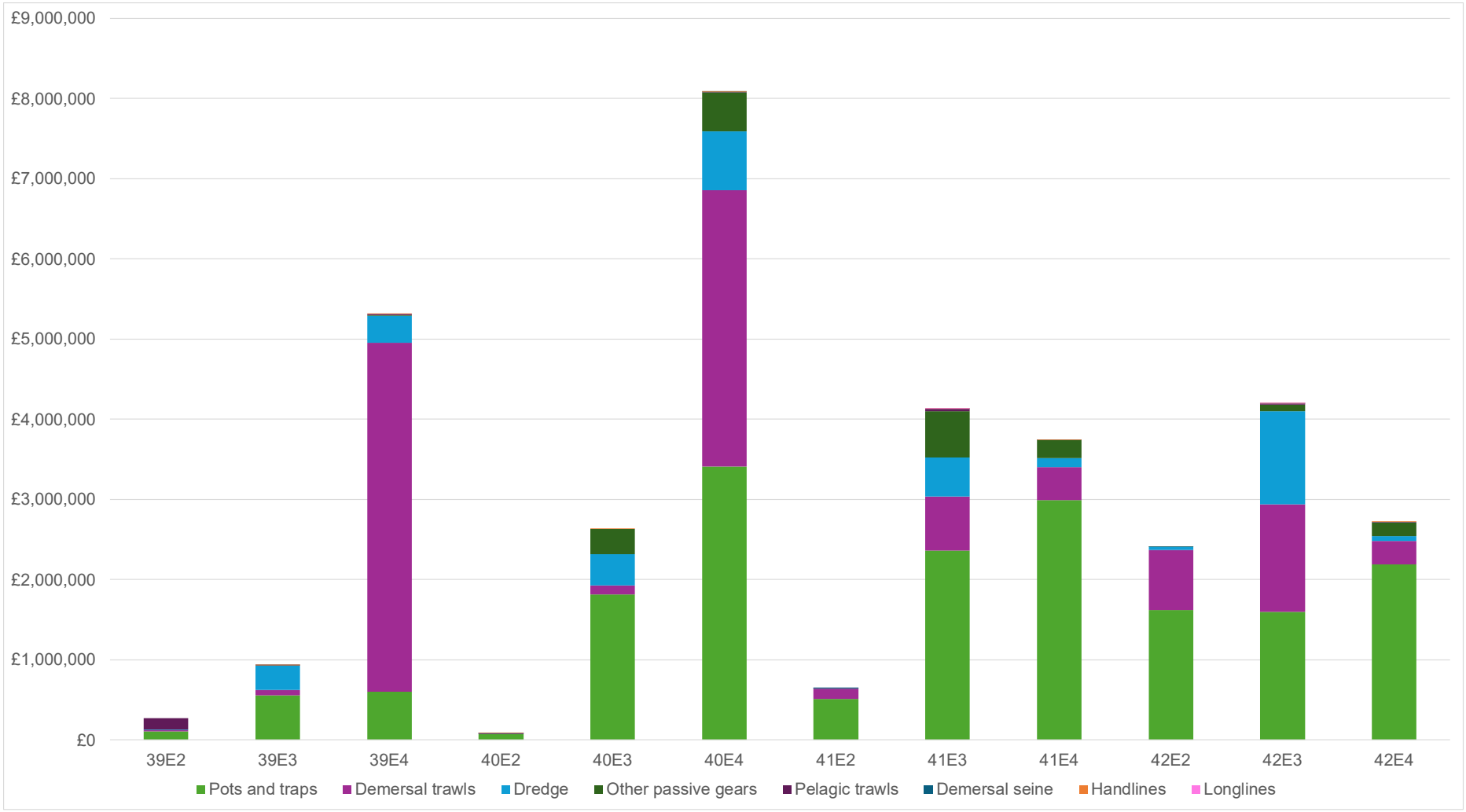


Figure 6.16: Average annual landed weight (tonnes) (2019 to 2024) by ICES rectangle from the commercial fisheries regional study area indicating gear type (MMO, 2022a; MMO, 2024a; MMO, 2025a). [Data includes all UK vessels landing into UK and non-UK ports and non-UK vessel landings into UK ports]

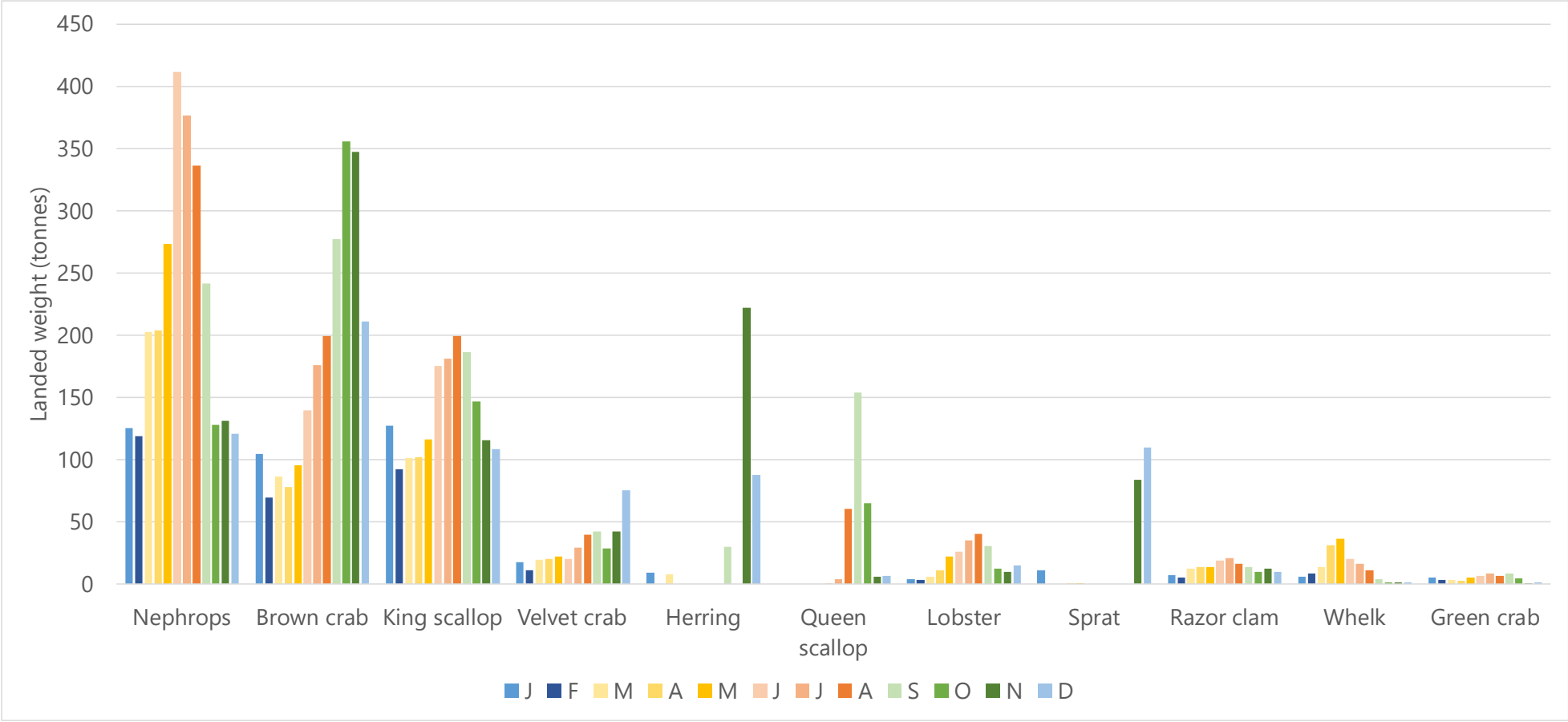


Figure 6.17: Average monthly landed value (GBP) (2019 to 2024) by species from the commercial fisheries regional study area (MMO, 2022a; MMO, 2024a; MMO, 2025a). [Data includes all UK vessels landing into UK and non-UK ports and non-UK vessel landings into UK ports]

7 SPATIAL FISHING ACTIVITY

7.1 FISHING INTENSITY BASED ON VMS DATA

135. This section presents the spatial mapping data and information available to inform the location and intensity of fishing across the commercial fisheries regional study area, and at a wider spatial scale as available.

136. VMS data has been obtained from the following different sources, with varying details as follows:

- Marine Directorate Scottish vessel VMS data sourced from the NMPi data catalogue indicating fishery effort data by gear type;
- MMO VMS data displaying the first sales value (£) of catches and covers UK registered vessels 15 m and over in length from 2016 to 2020;
- ICES VMS data displays the surface SAR of catches by different gear types and covers EU (including UK) registered vessels 12 m and over in length. Surface SAR indicates the number of times in an annual period that a demersal fishing gear makes contact with (or sweeps) the seabed surface. Surface SAR provides a proxy for fishing intensity and has been analysed to determine an average annual SAR based on data from 2016 to 2020;

137. **Potting** activity of Scottish vessels under 12 m in length operating potting gear is depicted in **Figure** 7.1**.** This data is redacted (i.e., greyed out) where the information is amalgamated for fewer than 5 vessels. Unfortunately, this has resulted in most of the data being redacted, so it does not inform relative importance of the WDA with respect to the regional study area. It does, however, confirm that potting activity occurs across the majority of the WDA, as well as some level of activity throughout most of the inshore area, out to 6 nm. Areas of high value are noted close to shore, including immediately north of Islay.

138. Potting VMS data for fishing activity by vessels 15 m and over is depicted in **Figure 7.2** for 2020 and **Figure 7.3** for 2016 - 2019, indicating activity by 15 m and over vessels, registered in the UK (including Scotland, Northern Ireland, England, Wales and Crown Dependencies). Potting vessels are typically smaller than 15 m in length and therefore not represented within the VMS dataset analysed. However, high levels of activity by the 15 m and over fleet targeting the WDA is noted in 2020 and 2017.

139. Distribution of crab fisheries based on older datasets of amalgamated VMS intensity for the period 2009 - 2013 is shown in **Figure 7.4**. This illustrates high intensity crab fisheries across the north west portion of the WDA.

140. Data for under 12 m vessels is not well represented. The FLO has gained an understanding of key areas and the range of fishing grounds targeted from individual vessel owners, including through provision of plotter data. This is confidential and has not been included within the EIAR. To further inform the activity by under 12 m vessels, data from ScotMap (Marine Directorate, NMPi, 2013) has been analysed, including monetary value from crab and lobster potting fisheries (**Figure 7.5**) and the number of vessels in operation (**Figure 7.6**). This data was developed through interviews with fishers and while it is considered historic, it does provide useful insight into the distribution of activity. The ScotMap data indicates moderate-high levels of potting activity within the WDA, as well as the surrounding grounds.

141. **Demersal otter trawl** activity is depicted in **Figure 7.7** to **Figure 7.12**, indicating very limited overlap with the WDA. Within the local study area, the majority of the demersal otter trawl activity is located to the east of the WDA, south of Jura and Islay, and within the Clyde region. The demersal otter trawl fishery targets both nephrops and whitefish fisheries, including whiting, haddock and mixed demersal species. Fishing intensity mapping (**Figure 7.11**) indicates that nephrops grounds do not overlap with the WDA.

142. Demersal seine activity is depicted in **Figure 7.13** to **Figure 7.14** which shows very low levels of activity across the regional study area.

143. **Dredge** activity is depicted in **Figure 7.15** to **Figure 7.20** indicating very low levels of activity by this gear type across the WDA. A small area targeted by scallop dredgers is noted immediately north of the WDA.

144. **Beam trawl** activity is depicted in **Figure 7.21** indicating negligible activity across the WDA, and commercial fisheries local and regional study areas.

145. **Pelagic trawl** activity is depicted in in **Figure 7.22** for UK vessels based on VMS data sourced from the MMO for 2016-2020. The nature of pelagic trawling activity means that vessels track shoals of fish and deploy fishing gear to harvest a portion of that migrating shoal. This means activity is associated with the migration route of the shoaling fish which, in the case of herring, could be linked to spawning substrate. Fishing locations are therefore generally across a wider area and vary spatially on an annual basis. This fishery is highly seasonal, with activity for approximately 8-12 weeks in the year. No activity is noted within the WDA.

146. Under 12m fleet: Activity by scallop diving fisheries is depicted in **Figure 7.23**, based on ScotMap data. This indicates no activity within the WDA, with catches focused on very close inshore areas.

147. Additional data for the value of catches by Scottish under 12 m vessels is presented in **Figure 7.24** for diving activity, **Figure 7.25** for rod and line or gears with hooks, and **Figure 7.26** for set net activity. The majority of the data is redacted due to coverage being less than 5 vessels, but it does indicate negligible activity across the WDA.

148. Explore Marine Plans data published by the MMO has also been reviewed to provide more recent contextual information on fishing activity up to 2023. The Explore Marine Plans layer for Cumulative Effort (kWh), Pots and Traps presents the spatial distribution of fishing activity for the UK over 12 m fleet for the period 2016 to 2023, visualised as the cumulative proportion of total fishing effort, whereby each grid cell is ranked according to its proportional contribution to total effort and the highest percentage cells represent the greatest fishing intensity (MMO, 2025b). Although the published marine planning resource formally applies to England and the underlying fisheries mapping analysis was undertaken at a national scale, the online mapping coverage extends across the MachairWind WDA and was reviewed for the site and surrounding waters. This review corroborates the characterisation presented in this section, indicating that potting activity occurs across the WDA, while only low levels of activity are apparent for other gear types, including demersal trawl and scallop dredge. The more recent VMS-based mapping to 2023 therefore provides additional support for the overall characterisation of fishing activity across the site (MMO, 2025b).

7.2 FISHING INTENSITY BASED ON AIS DATA

149. Fishing vessel route density, based on vessel AIS positional data, is shown in **Figure 7.27** for 2023, **Figure 7.28** for 2019 - 2022 and presented seasonally for 2022 in **Figure 7.29** depicting activity in spring, summer, autumn, and winter. AIS is required to be fitted on fishing vessels ≥15 m length. The data is specific to fishing vessels and indicates the route density per square kilometre (km^2) per year. This data does not distinguish between transiting vessels and active fishing, but does provide a useful source to corroborate fishing grounds.

150. AIS data corroborates the very limited activity of fishing vessels across the array area for vessels fitted with AIS.

7.3 FISHING INTENSITY BASED ON MARINE TRAFFIC SURVEY DATA

151. Project-specific marine traffic surveys were undertaken from 01 December to 16 December 2023, 16 August to 31 August 2024 and 20 January to 30 January 2025 using AIS and radar tracking and visual observations to record vessel activity across the WDA. In addition, AIS data across the entire 2024 period has been interrogated to inform a NRA presented in **Appendix 13.1 Navigational Risk Assessment.**

7.4 FISHING ACTIVITY BASED ON SCOUTING SURVEYS

152. Fisheries scouting surveys were undertaken to observe locations of potting gear based on marker buoys. Fisheries scouting surveys data is presented in **Figure 7.30**, indicating records of potting activity throughout the majority of the WDA.

7.5 FISHING ACTIVITY BASED ON FISHERIES SENSITIVITY MAPPING AND DISPLACEMENT MODELLING

153. The Fisheries Sensitivity Mapping and Displacement Modelling (FiSMaDiM) project has been funded by The Crown Estate and led by Cefas, in collaboration with University of St Andrews and Scottish Government. It aimed to fill key evidence gaps, including identification of fishing activities at a high-spatial resolution in potential offshore windfarm areas and improvement of methods to estimate fishing intensity of fishing vessels in UK waters (Mendo *et.al.,* 2024).

154. The FiSMaDiM Public Web App was published in 2025 (Cefas, 2025), and the following mapping data, based on merged AIS and VMS data obtained from the MMO, has been obtained from the Public Web App:

- Demersal trawl fishing effort (**Figure 7.31**) and vessel numbers (**Figure 7.32**), indicating relatively low effort within the WDA, and relatively higher effort and activity to the north and north west of the Project;
- Demersal seine effort (**Figure 7.33**) indicating no effort within the WDA, and very low effort throughout the commercial fisheries regional study area;
- Dredge effort (**Figure 7.34**) and vessel numbers (**Figure 7.35**), indicating no effort within the WDA, with effort focused south of Islay;
- Pelagic trawl effort (**Figure 7.36**) and vessel numbers (**Figure 7.37**), indicating no effort within the WDA, with activity located to the west and south;
- Potting effort (**Figure 7.38**) and vessel numbers (**Figure 7.39**), indicating moderate-high effort within the WDA.

7.6 SURVEILLANCE DATA

155. Surveillance sightings data were obtained from the Marine Directorate for the period 2016 to 2024. The dataset provides spatially referenced records of observed vessel activity and is presented to indicate (i) vessel activity type (e.g. fishing, steaming and stationary/laid), (ii) vessel nationality, and (iii) gear type where this could be determined.

156. **Figure 7.40** presents surveillance sightings classified by activity type (fishing, laid stationary and steaming). Overall, sightings are concentrated in coastal and inshore waters, particularly along the west coast sea lochs and sounds, with comparatively sparse activity offshore.

157. In relation to the WDA, only a small number of sightings are recorded within and immediately adjacent to the WDA footprint. Where sightings do occur around the WDA, they appear to be primarily associated with fishing activity, with additional points consistent with vessels steaming through the wider offshore area rather than sustained use of the WDA itself.

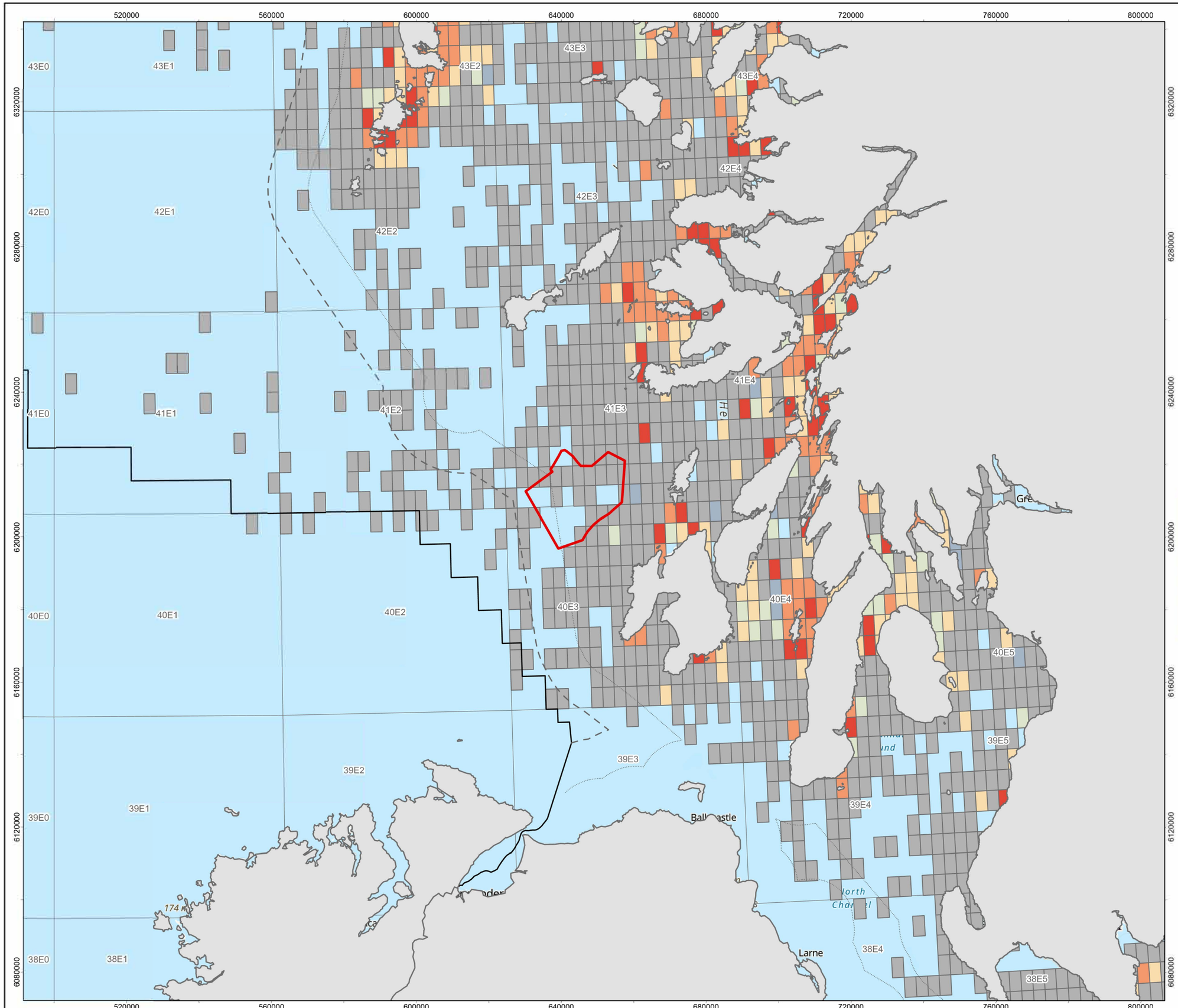
158. **Figure 7.41** shows surveillance sightings by vessel nationality. The spatial pattern is dominated by UK-flagged activity, which is widespread and most densely distributed in inshore waters and along the west coast (including the Minch and Inner Hebrides), with lower densities offshore. In the vicinity of the WDA, as discussed, sightings are limited in number and are predominantly UK-flagged. Non-UK sightings are comparatively infrequent in the wider region and are not a defining feature of activity within the WDA.

159. **Figure 7.42** differentiates sightings by gear type, with key gears represented in the following colours:

- Light blue - labelled as ‘trawler’ in the dataset: likely demersal otter trawl targeting Nephrops and/or demersal whitefish.
- Dark blue - labelled as ‘demersal trawler’: demersal otter trawl, similarly associated with Nephrops and/or demersal whitefish.

- Red - potting: static gear, targeting crab and lobster.
- Yellow - dredge: scallop dredge, targeting king scallop.
- Black - hand gathering / line fishing: primarily inshore/coastal activity.
- Purple - stern trawler: could represent pelagic or demersal stern trawling activity.
- Grey - unknown: sightings where gear type could not be assigned.

160. Across the wider area, gear-type sightings are most concentrated in inshore waters (notably where potting and other inshore activities are prevalent), while offshore areas show more dispersed trawling-related sightings and transit. Within and immediately around the WDA, sightings are relatively few and are dominated by trawl categories (light and dark blue), indicating intermittent use by vessels likely engaged in demersal otter trawling (targeting Nephrops and/or demersal whitefish). There are a small number of potting sightings (red) within the WDA footprint, indicating use of the WDA by static gear fisheries targeting crab and lobster.



N

Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Potting under 12m, 2017-2021

Annual Average Value

- Under 5 vessels (data redacted)
- £0.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £20,000.00
- £20,000.01 - £50,000.00
- Greater than £50,000

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

Scale: 1:10,000,000

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000033

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

DRAWING TITLE

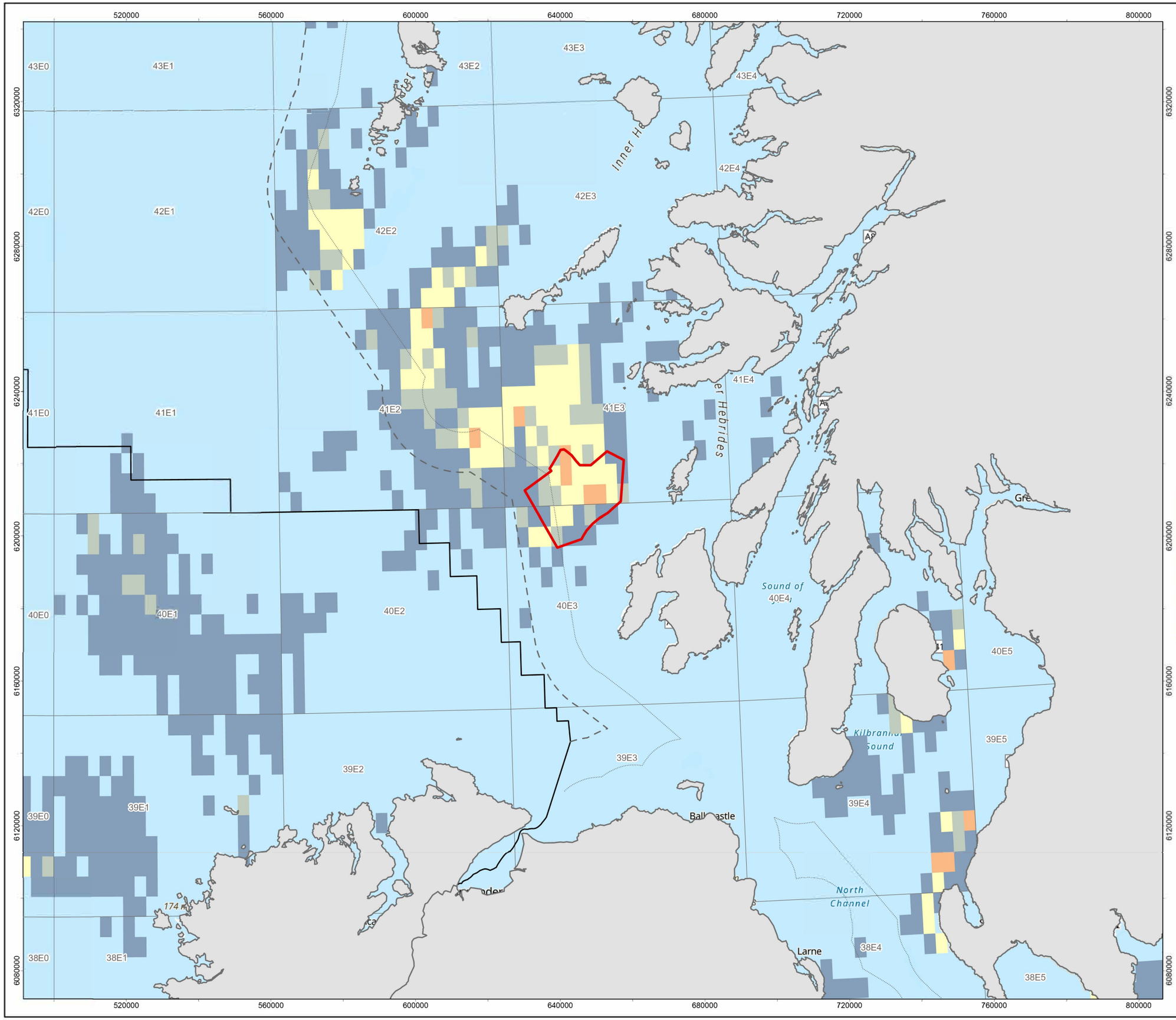
Figure 7.1
Potting Average Annual Value
Scottish Under 12 m Vessels
(Data from 2017-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000034

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

DRAWING TITLE:

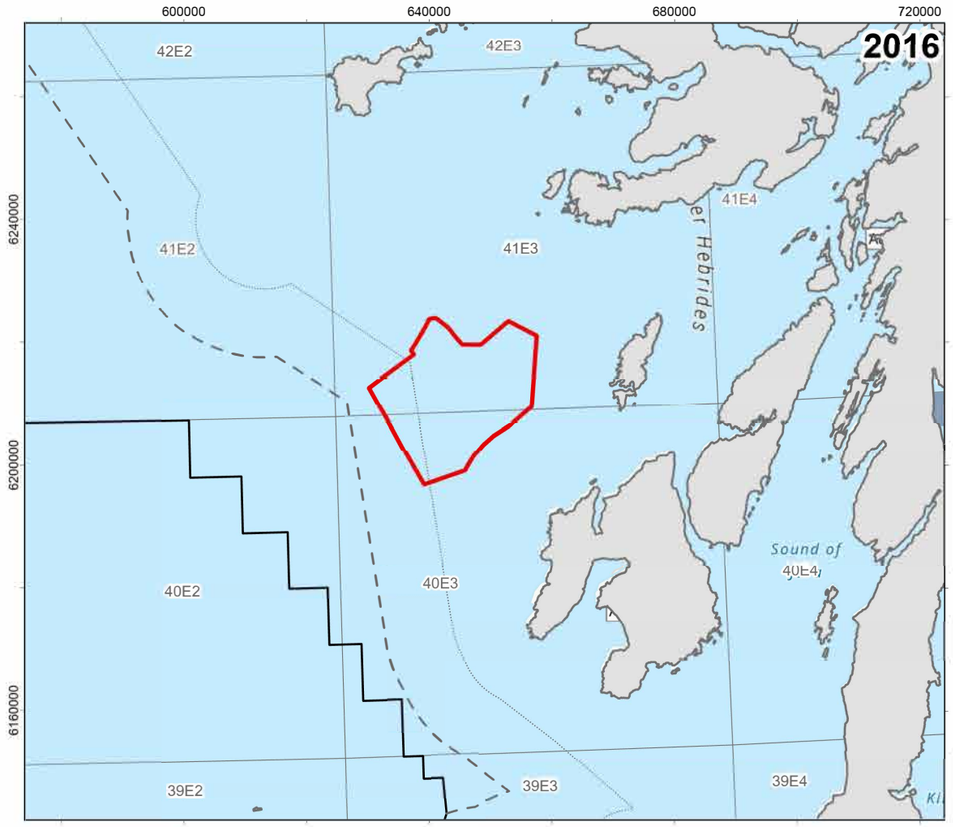
Figure 7.2
Potting Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2020

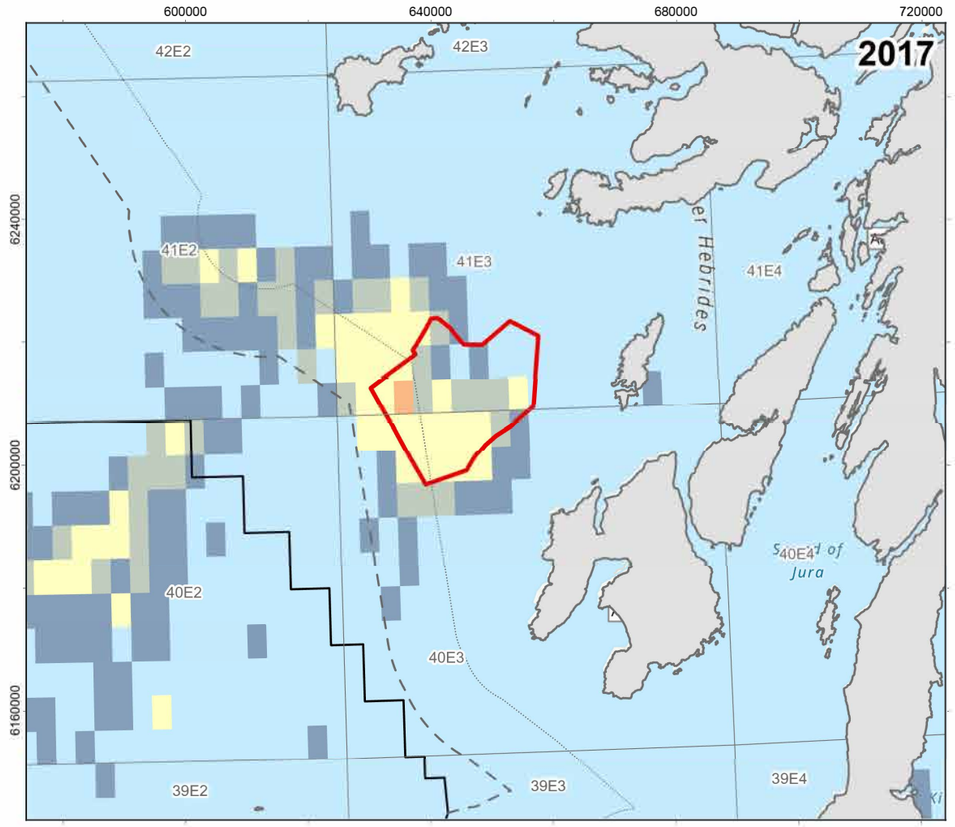
NOT TO BE USED FOR NAVIGATION

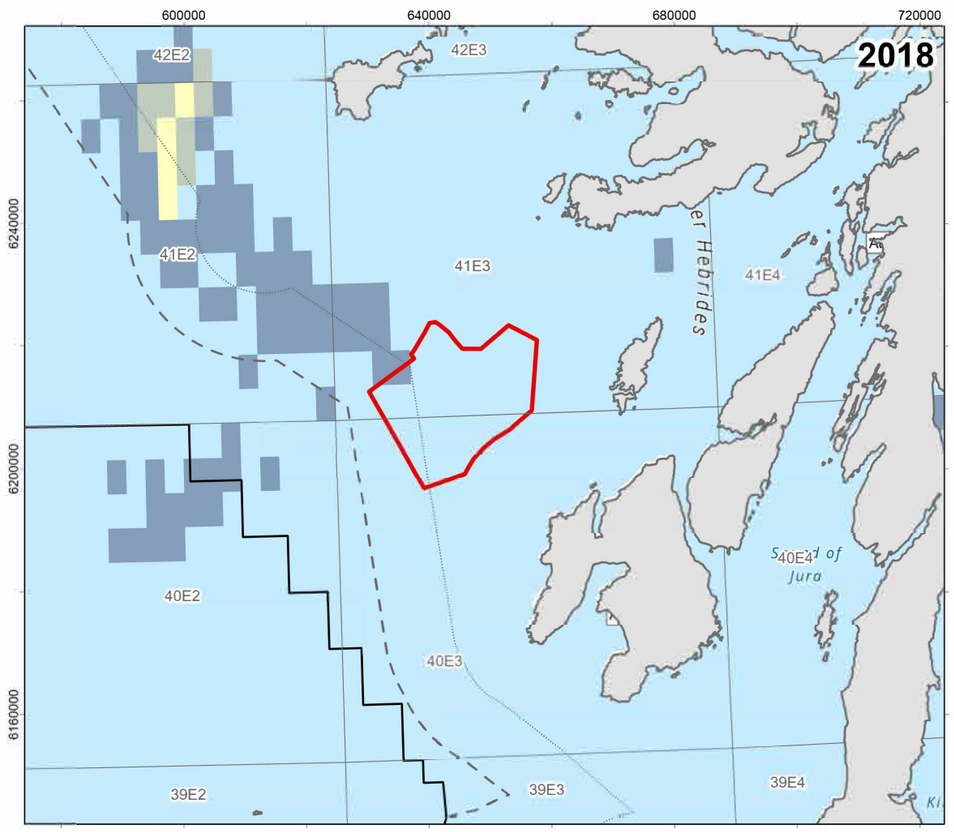
nima CONSULTANTS

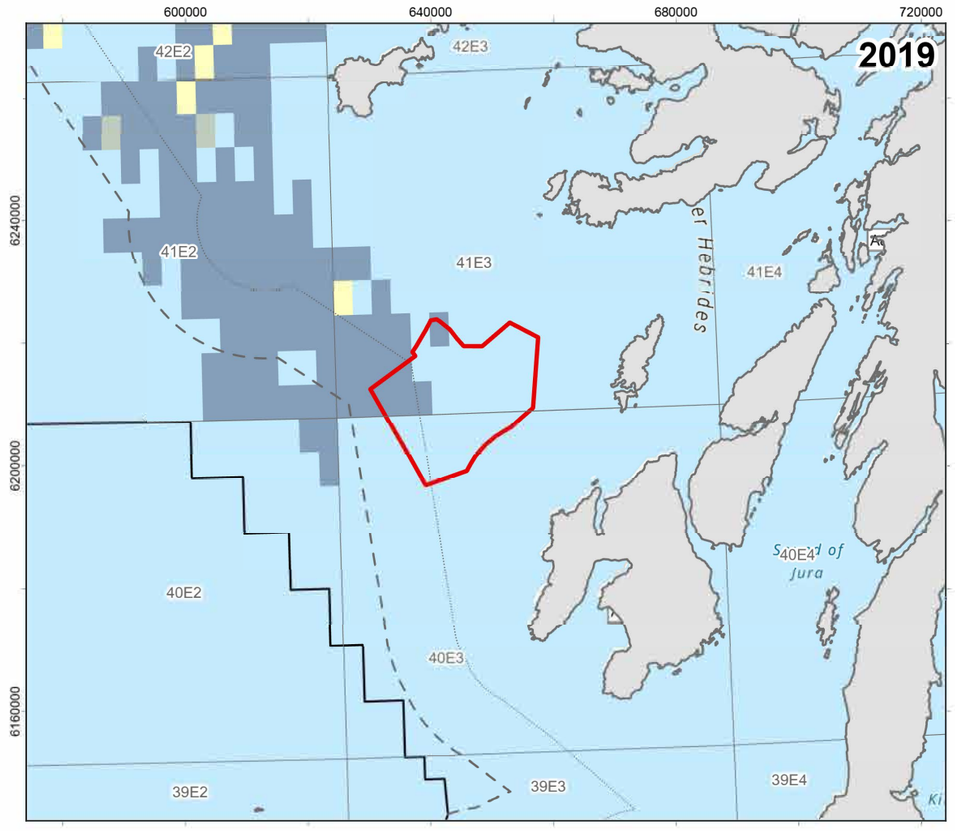
ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description









Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Potting (UK vessels ≥15m)

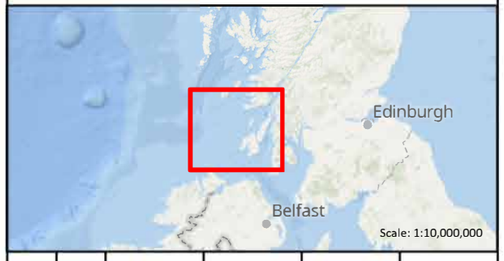
First Sales Value

Total value, £

- £0.01 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £101,000.00

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000035

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

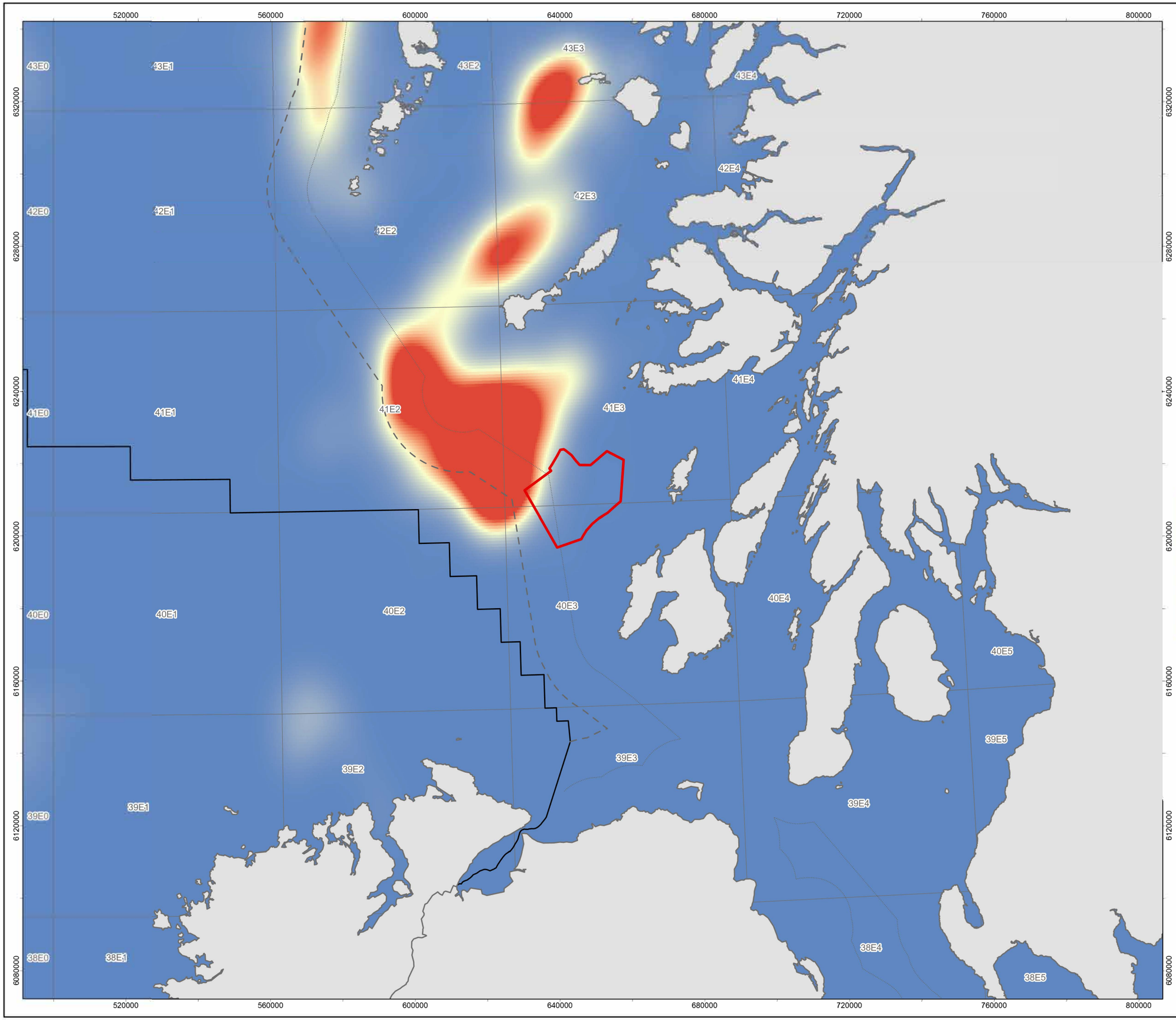
Figure 7.3
Potting Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2016 to 2019

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

ICES statistical rectangles

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Crab 2009-2013 amalgamated VMS intensity

Value

0.958109

0

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000036

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

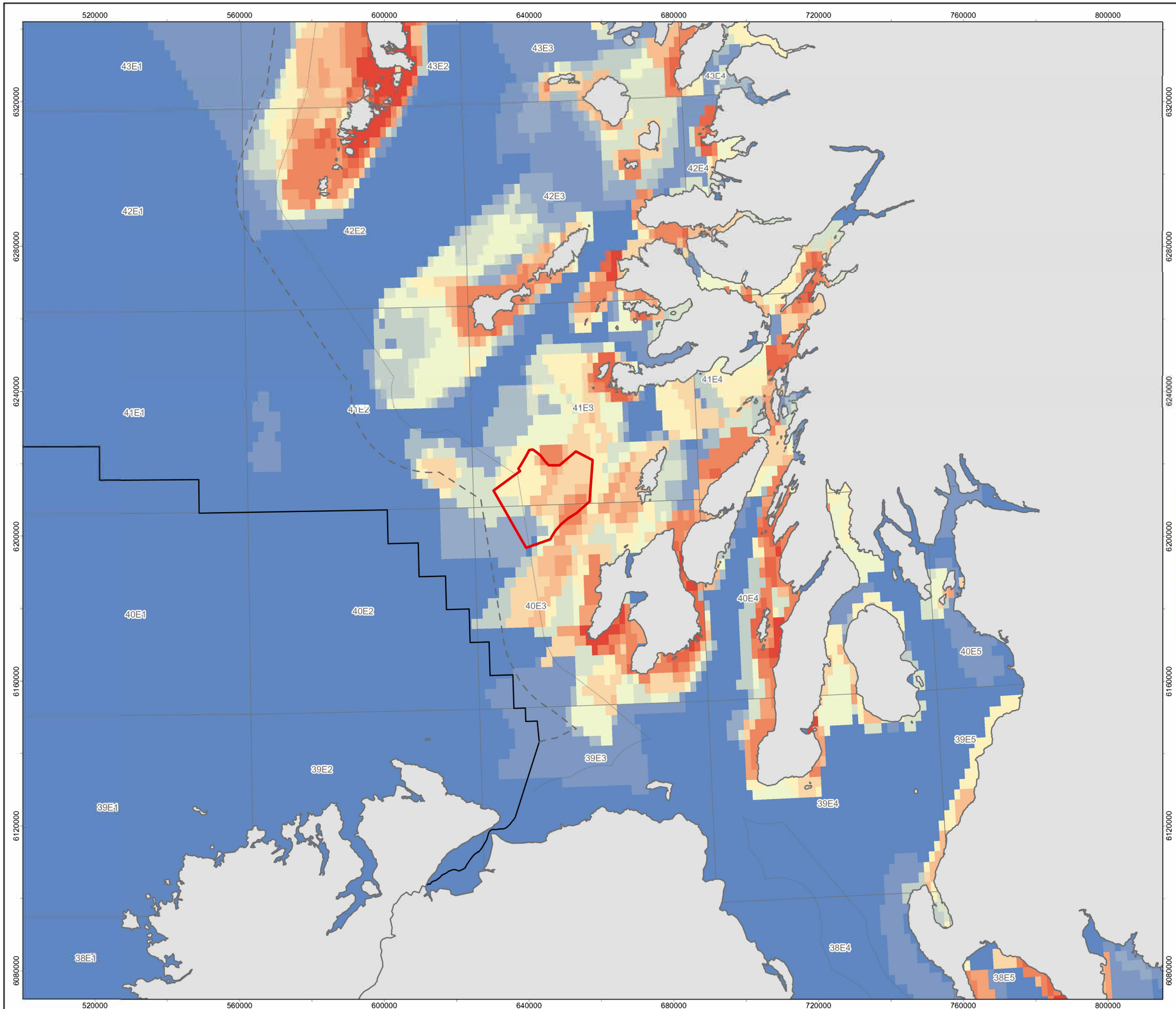
DRAWING TITLE: **Figure 7.4**
Crab Fishery Amalgamated VMS Intensity, 2009 to 2013

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area
ICES statistical rectangles
12 NM Territorial Sea Boundary
UK-Ireland EEZ
6 nm Boundary

Crab and Lobster Pots (ScotMap, 2013)
Monetary Value (£)

- <1
- 1 - 272
- 273 - 408
- 409 - 544
- 545 - 681
- 682 - 953
- 954 - 1,225
- 1,226 - 1,497
- 1,498 - 1,906
- 1,907 - 2,450
- 2,451 - 3,131
- 3,132 - 5,308
- 5,309 - 7,486
- 7,487 - 34,708

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000037

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

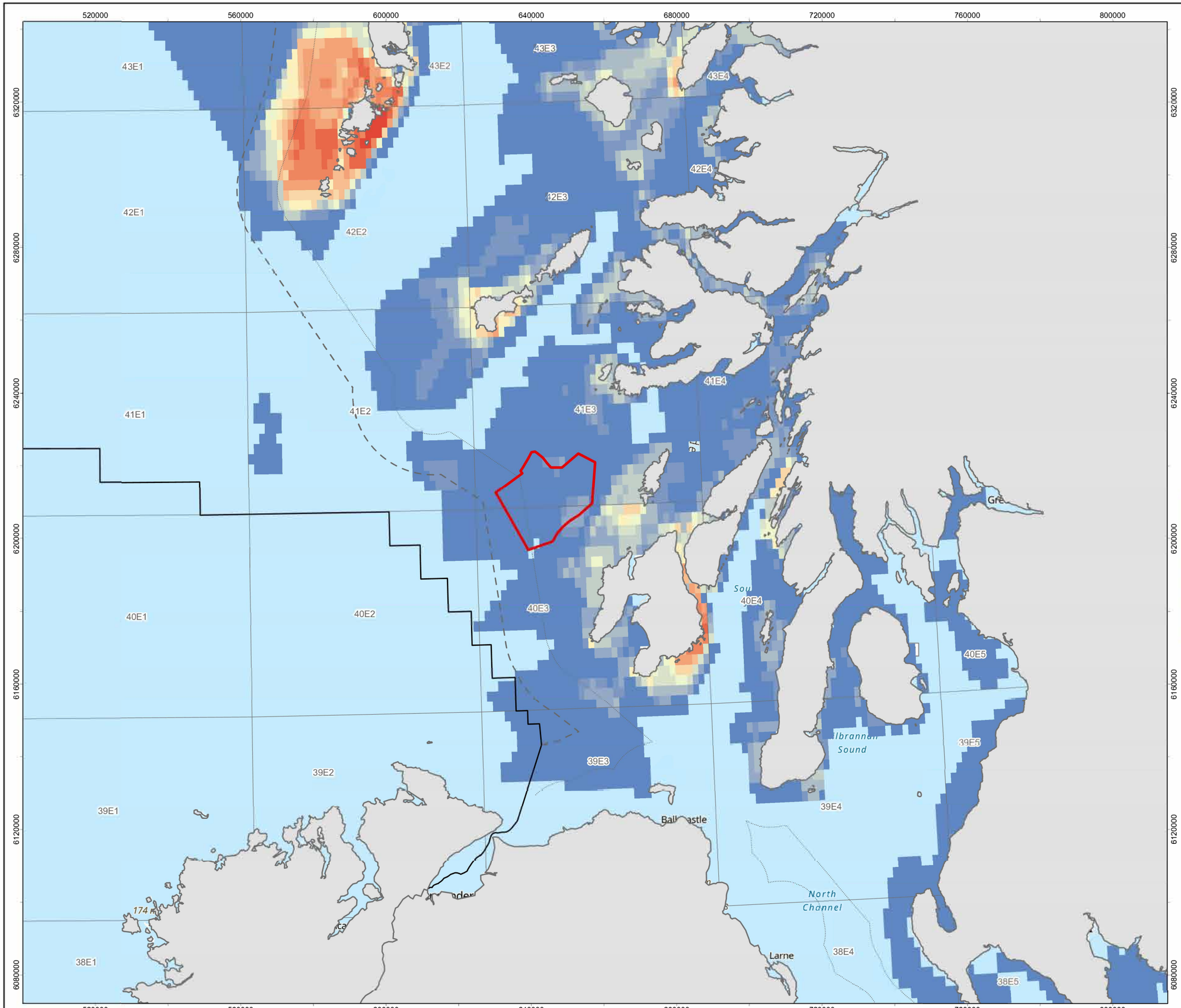
DRAWING TITLE: **Figure 7.5**
Crab and Lobster Pots Monetary Value (ScotMap, 2013)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area
ICES statistical rectangles
12 NM Territorial Sea Boundary
UK-Ireland EEZ
6 nm Boundary

Crab and Lobster Pots (ScotMap, 2013)

Number of Vessels

- 4 or less
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14 - 15
- 16 - 17
- 18 - 21
- 22 - 45

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000038		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		

DRAWING TITLE

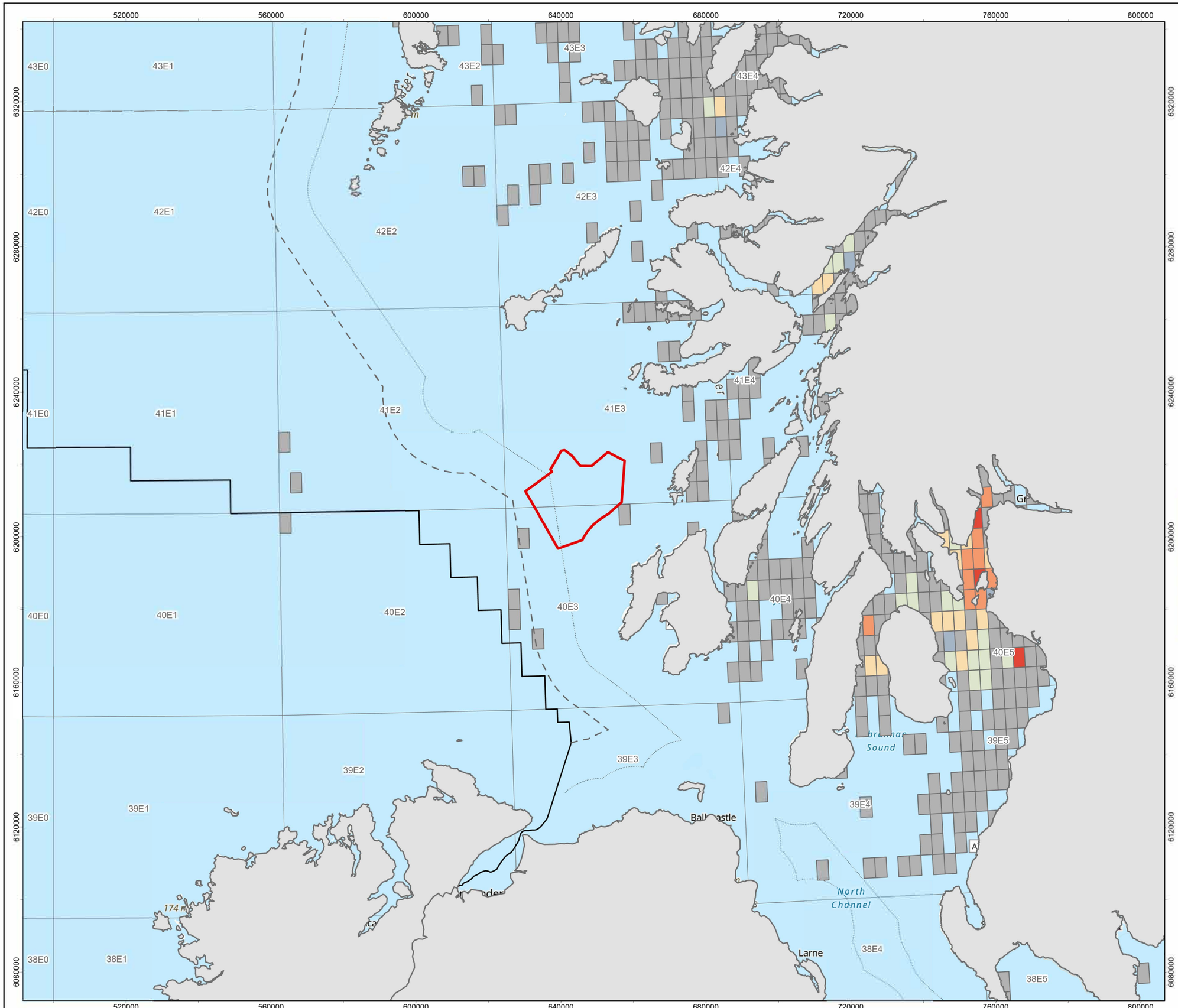
Figure 7.6
Number of Crab and Lobster Potting Vessels (ScotMap, 2013)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Demersal otter trawl under 12m, 2017-2021

Annual average value

- Under 5 vessels
- £0.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £20,000.00
- £20,000.01 - £50,000.00
- Greater than £50,000

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000039
DATUM	ETRS89
PROJECTION	UTM Zone 29N
SCALE	1:1,000,000
PAGE SIZE	A3
PROJECT TITLE	MachairWind

DRAWING TITLE

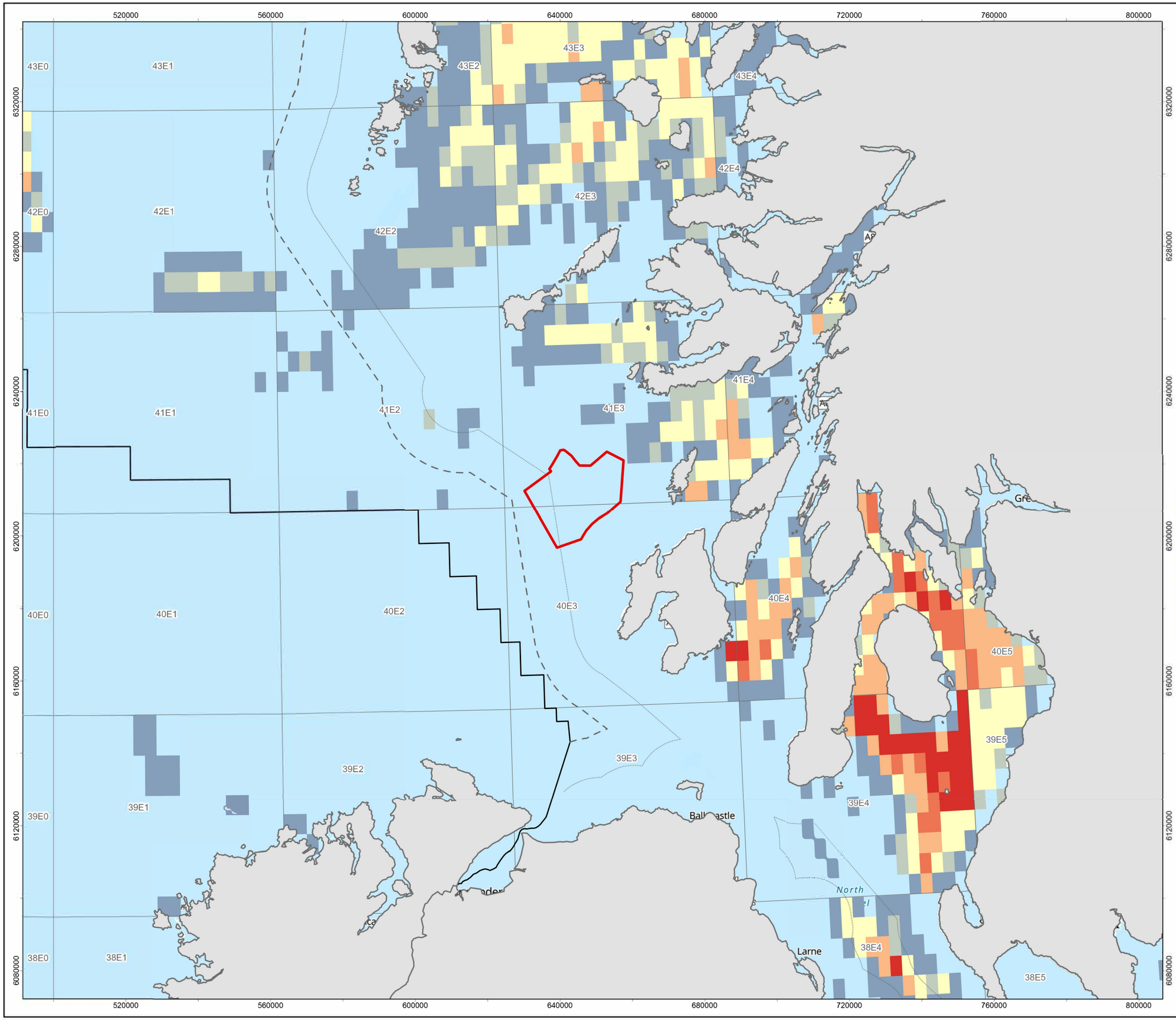
Figure 7.7
Demersal Otter Trawl Average Annual Value Scottish Under 12 m Vessels (Data from 2017-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Demersal Otter Trawl 2020 (UK vessels ≥15m)

First Sales Value

Total value, £

- £0.02 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £595,000.00

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000040

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

DRAWING TITLE

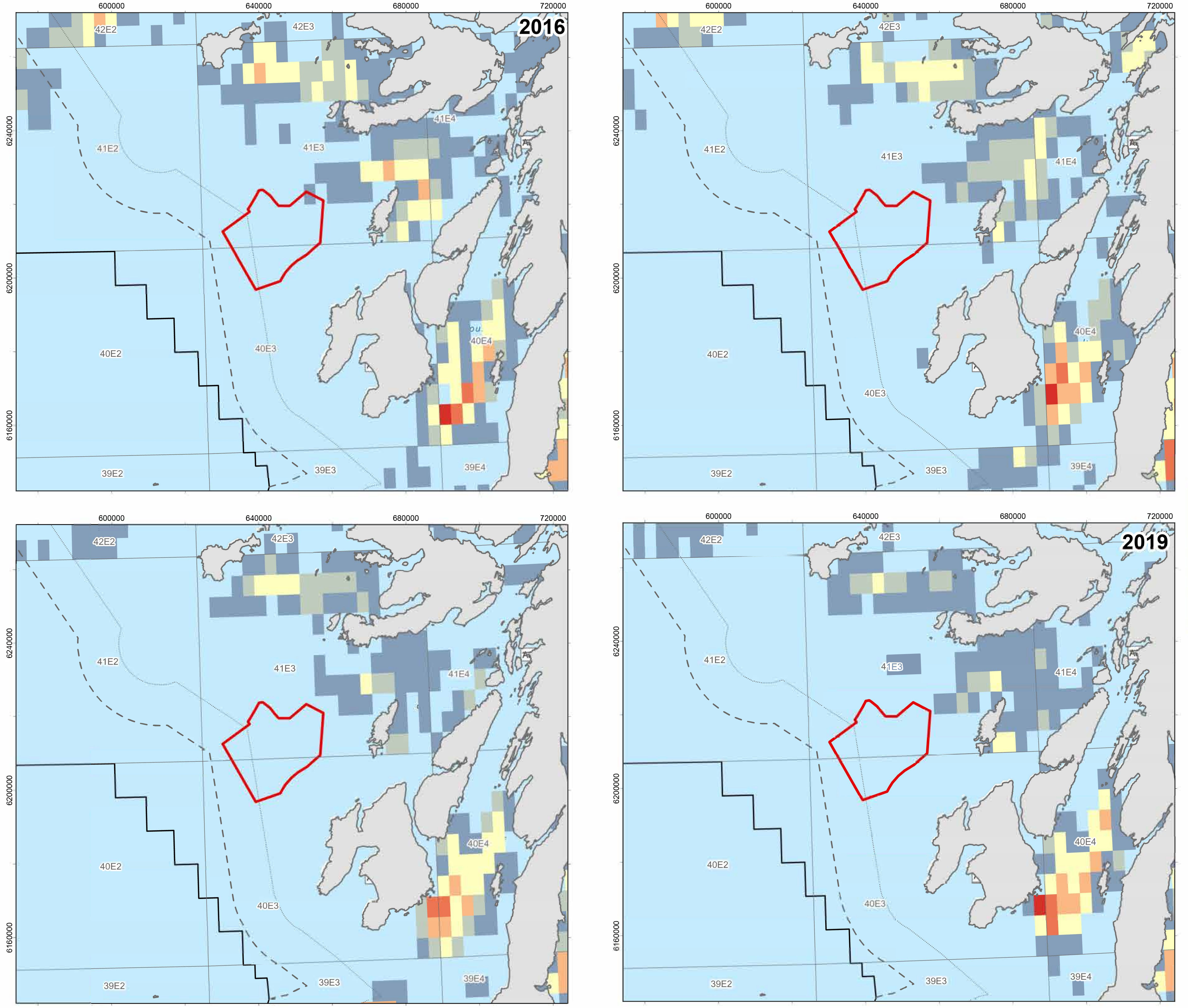
Figure 7.8
Demersal Otter Trawl
Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2020

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



1	12/11/2025	FN	SM	CC	CG
REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000041		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		

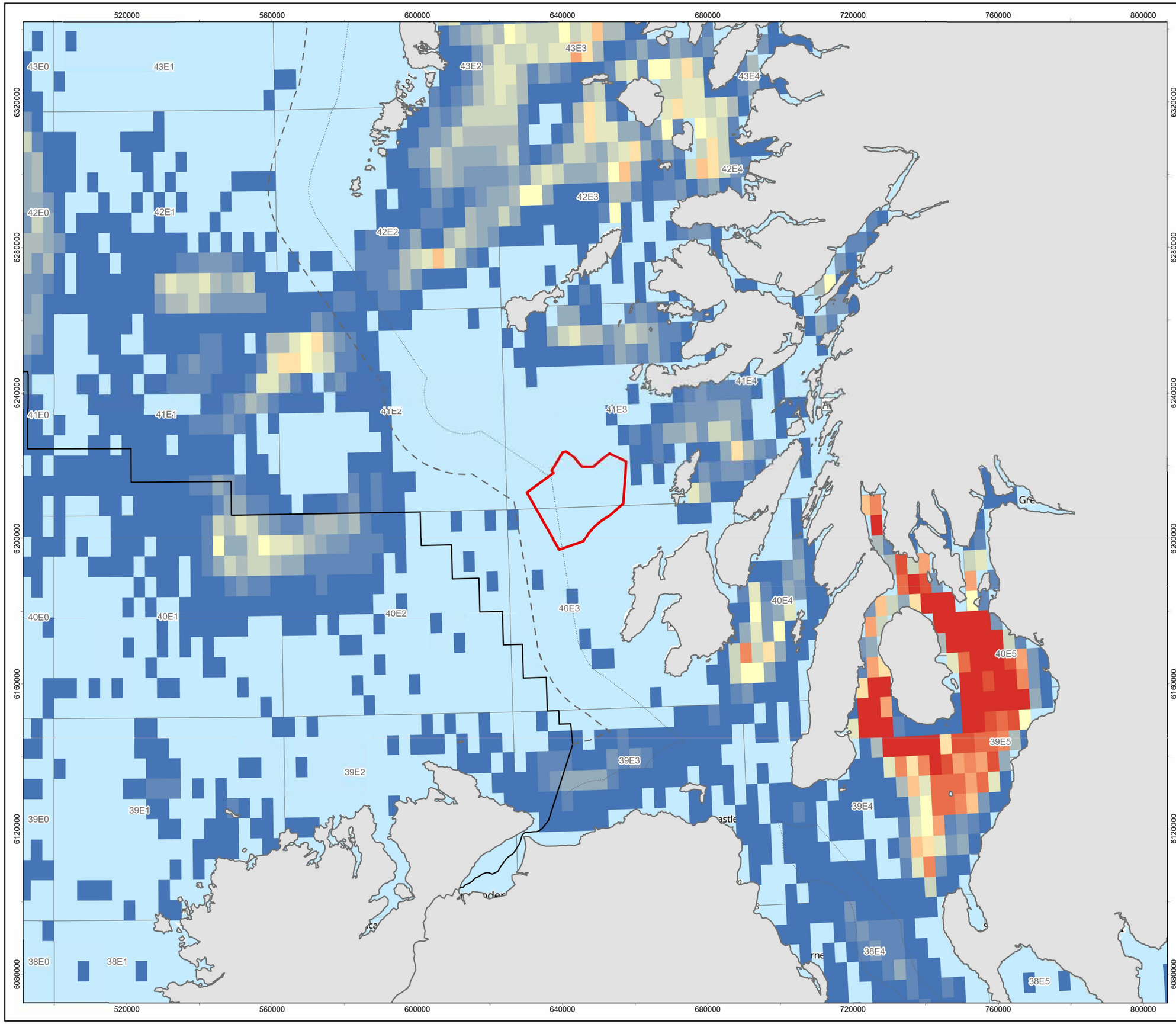
DRAWING TITLE

Figure 7.9
Demersal Otter Trawl
Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2016 to 2019

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Demersal Otter Trawl (EU and UK vessels ≥12m)

Average Annual Surface Swept Area Ratio (2016-2020)

- 0.0 - 0.6
- 0.7 - 1.3
- 1.4 - 1.9
- 2.0 - 2.6
- 2.7 - 3.2
- 3.3 - 3.9
- 4.0 - 4.5
- 4.6 - 5.1
- 5.2 - 5.8
- 5.9 - 6.4
- 6.5 - 7.1
- 7.2 - 7.7
- 7.8 - 8.4
- 8.5 - 9.0
- 9.1 - 23.2

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000042

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

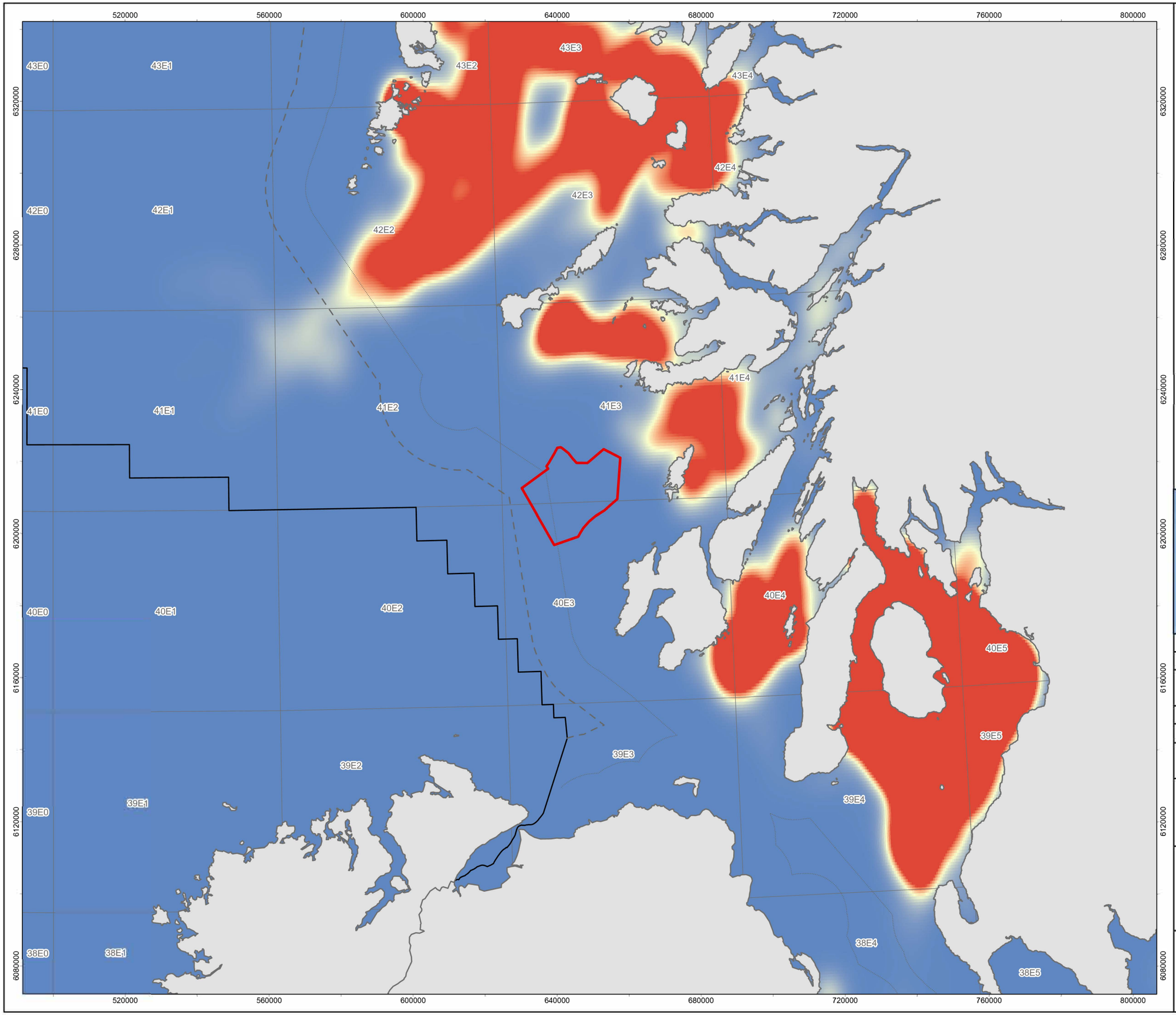
DRAWING TITLE **Figure 7.10 Demersal Otter Trawl Average Annual Surface Swept Area Ratio for EU and UK vessels ≥ 12 m, 2016-2020**

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Nephrops Mobile 2009-2013
Amalgamated VMS Intensity

Value

High : 0.617172

Low : 0

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

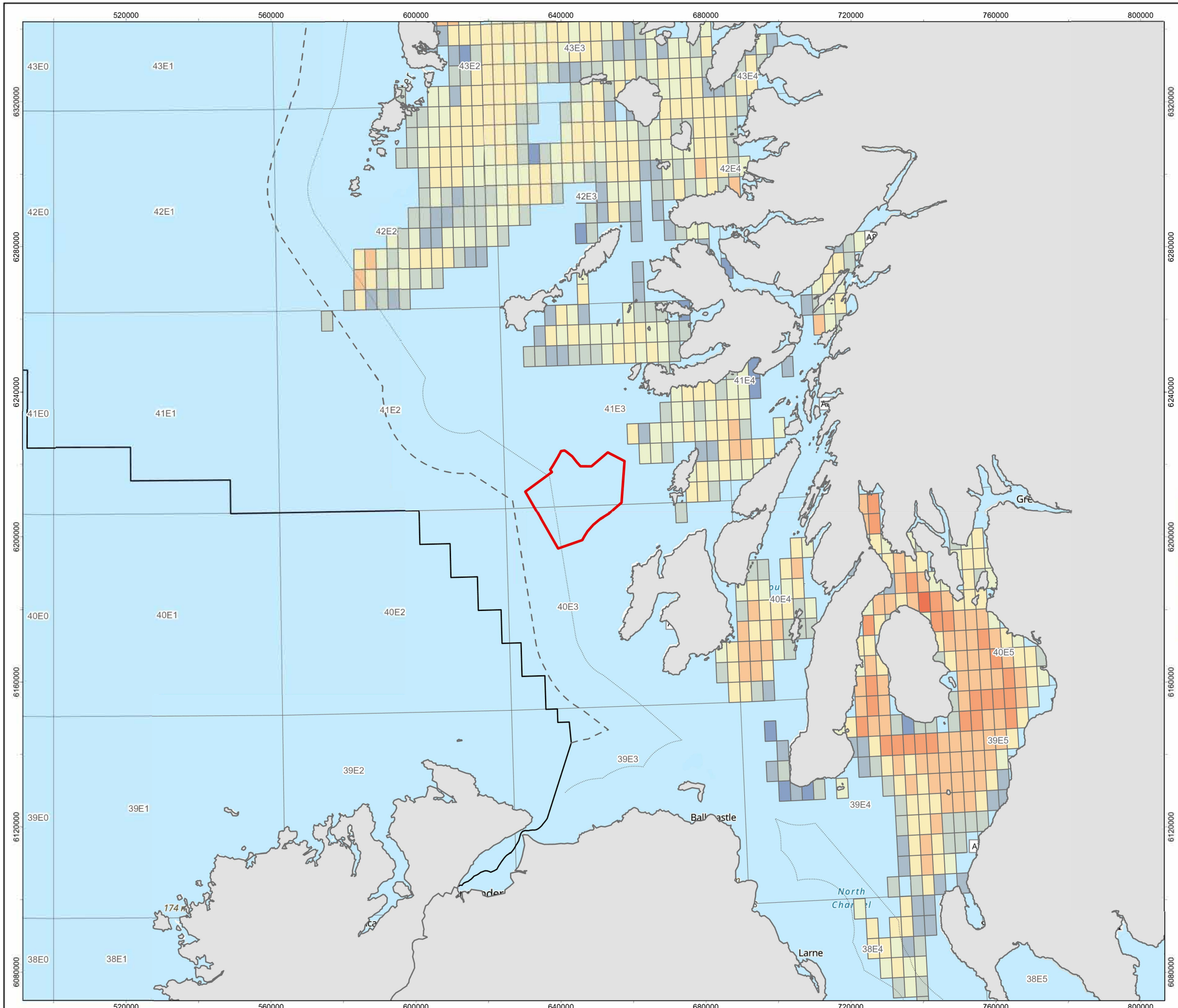
DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000043		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		
DRAWING TITLE	**Figure 7.11** **Nephrops Fishery Amalgamated VMS Intensity, 2009 to 2013**		

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Demersal Trawl and Seine (UK Vessels ≥12m; 12nm)

Aggregated value (2016-2020)

- £0.01 - £1,000.00
- £1,000.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £100,000.00
- £100,000.01 - £180,000.00

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000044

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

DRAWING TITLE

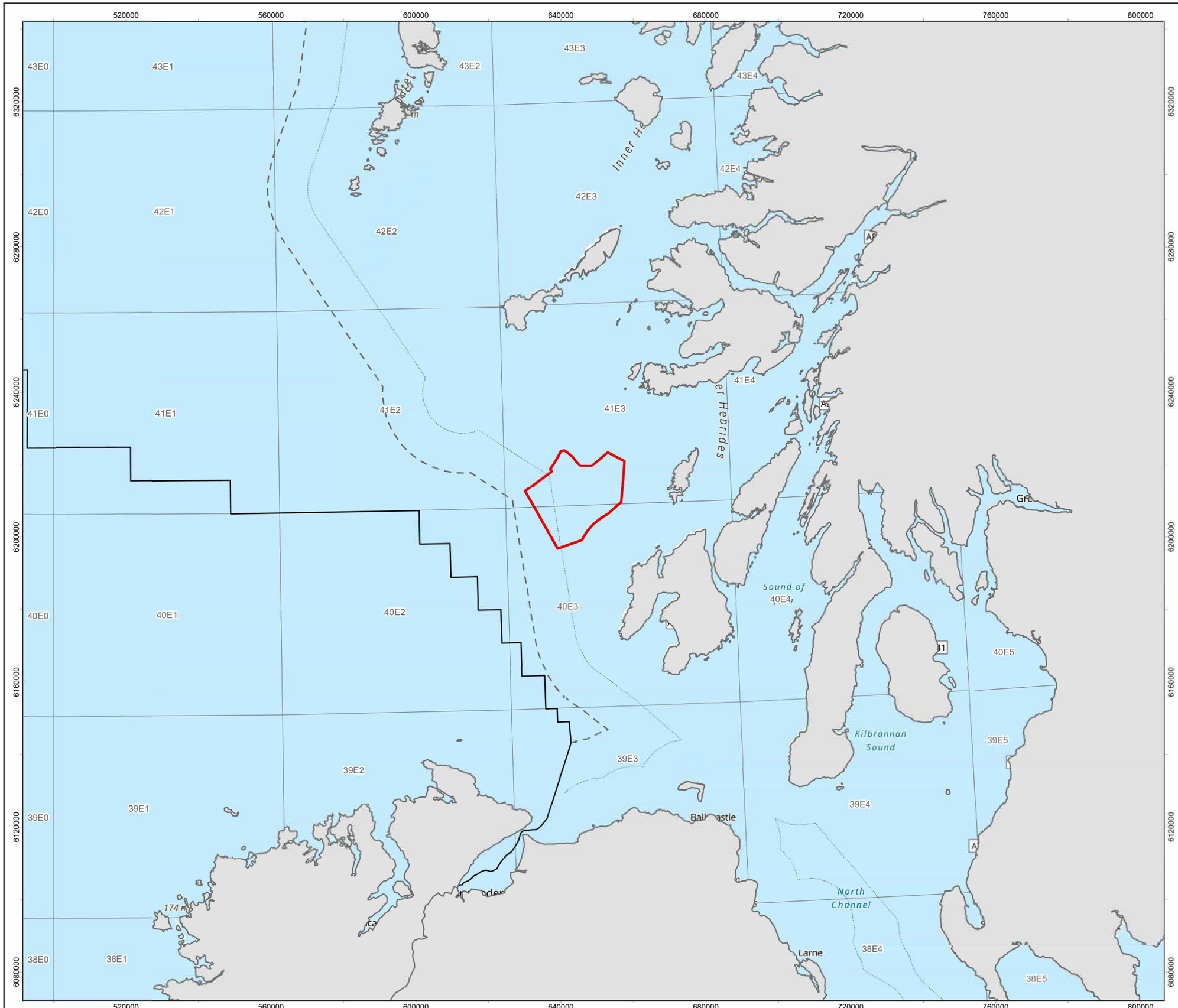
Figure 7.12
Demersal Trawl and Demersal Seine Aggregated Value (2016-2020) for UK Vessels ≥12m; Inside 12nm

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Demersal Seine (UK Vessels ≥15m)

First Sales Value

Total Value, £

- £0.02 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £80,001.43

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000045

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

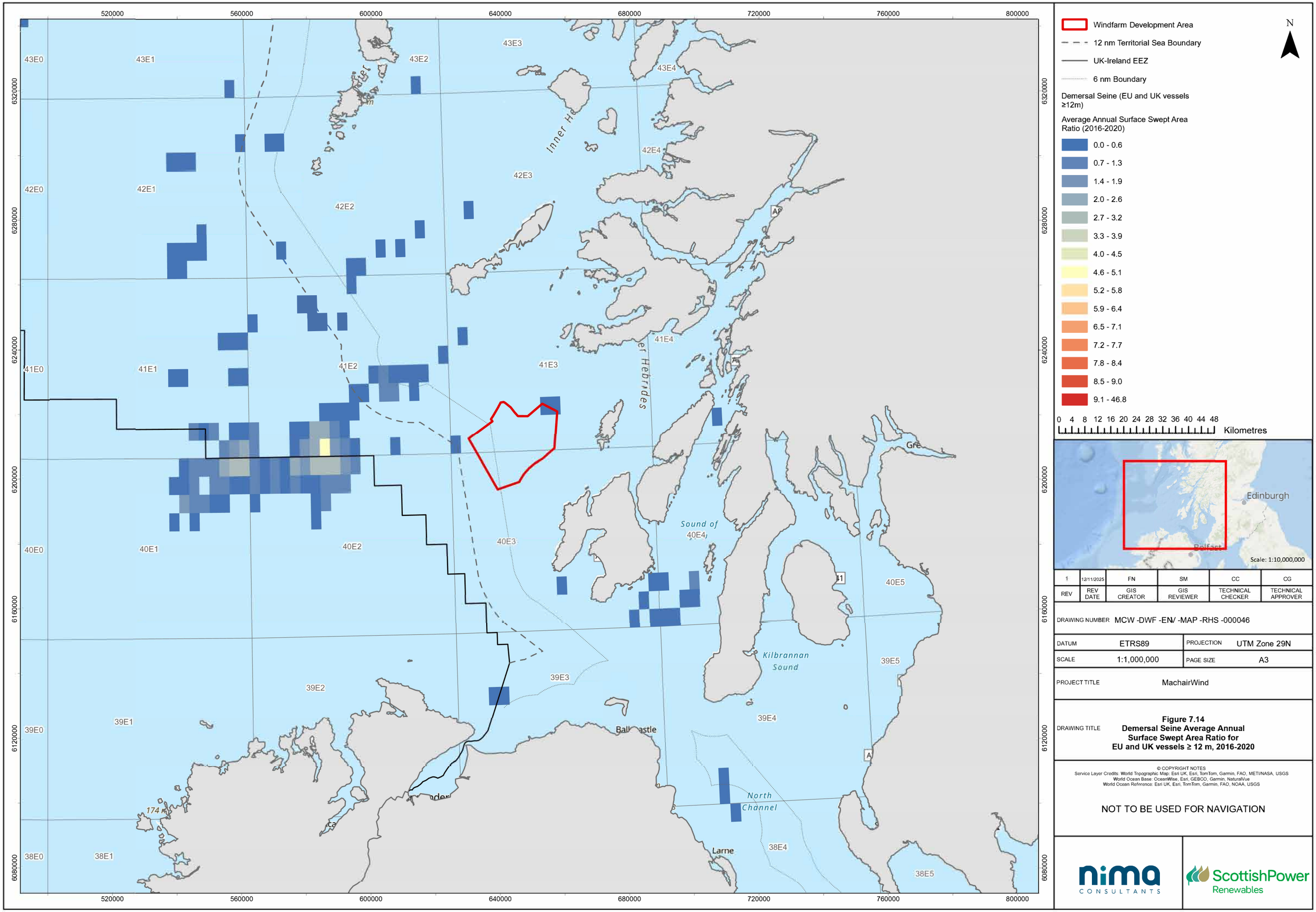
Figure 7.13
Demersal Seine
Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2016-2020

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW -DWF -EN/ -MAP -RHS -000046

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

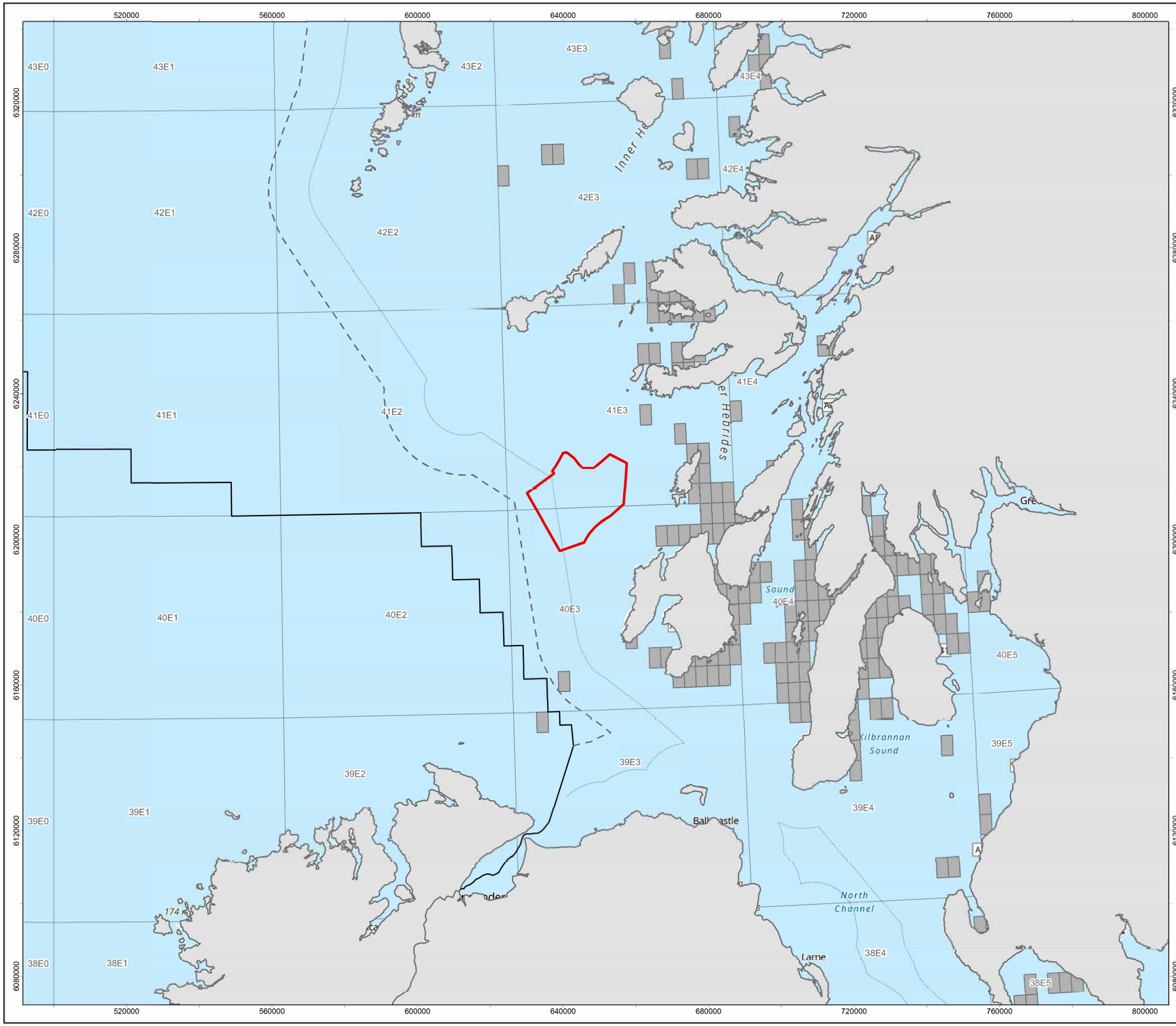
DRAWING TITLE: **Figure 7.14**
Demersal Seine Average Annual Surface Swept Area Ratio for EU and UK vessels ≥ 12 m, 2016-2020

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Dredge Under12m 2017-2021

Annual average value

- Under 5 vessels
- £0.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £20,000.00
- £20,000.01 - £50,000.00
- Greater than £50,000

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000047

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

DRAWING TITLE:

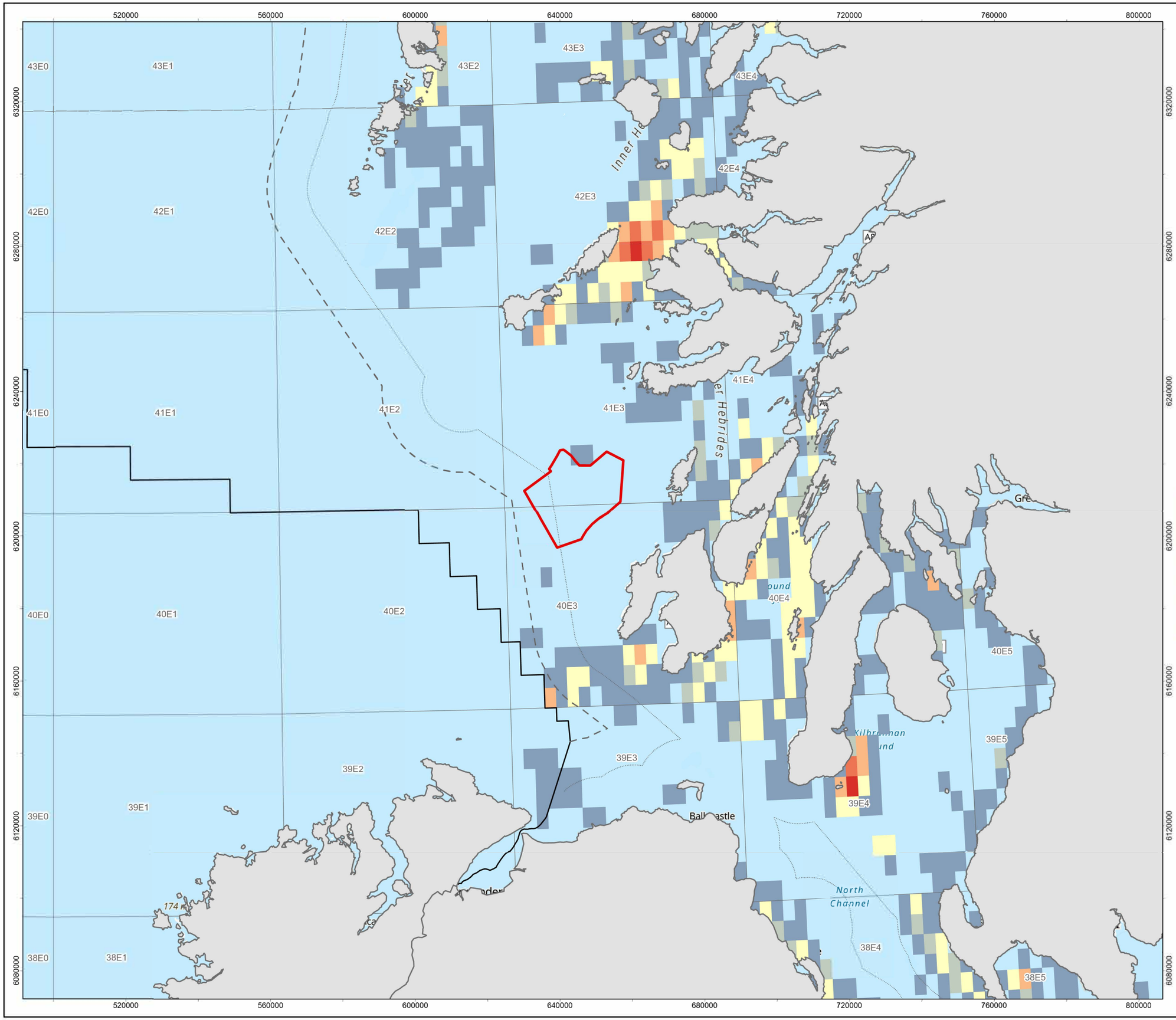
Figure 7.15
Dredge
Annual Value Scottish Under 12 m Vessels
(Data from 2017-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Dredge 2020 (UK vessels ≥15m)

First Sales Value

Total value, £

- £0.02 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £232,000.00

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000048

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

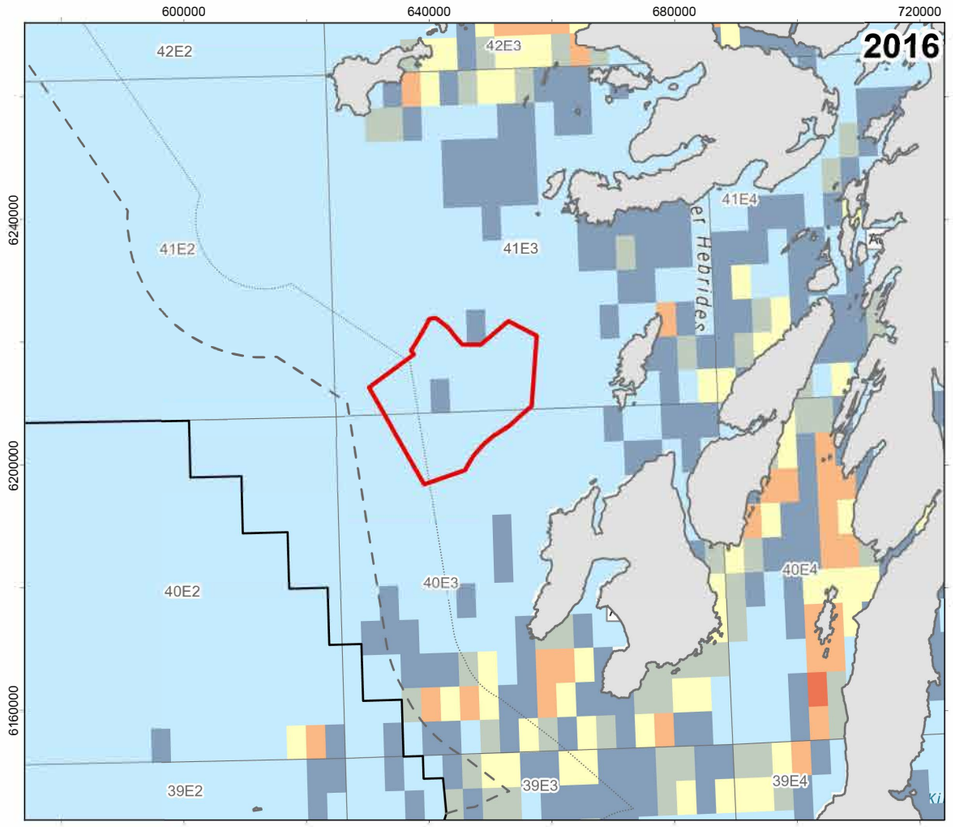
Figure 7.16
Dredge
Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2020

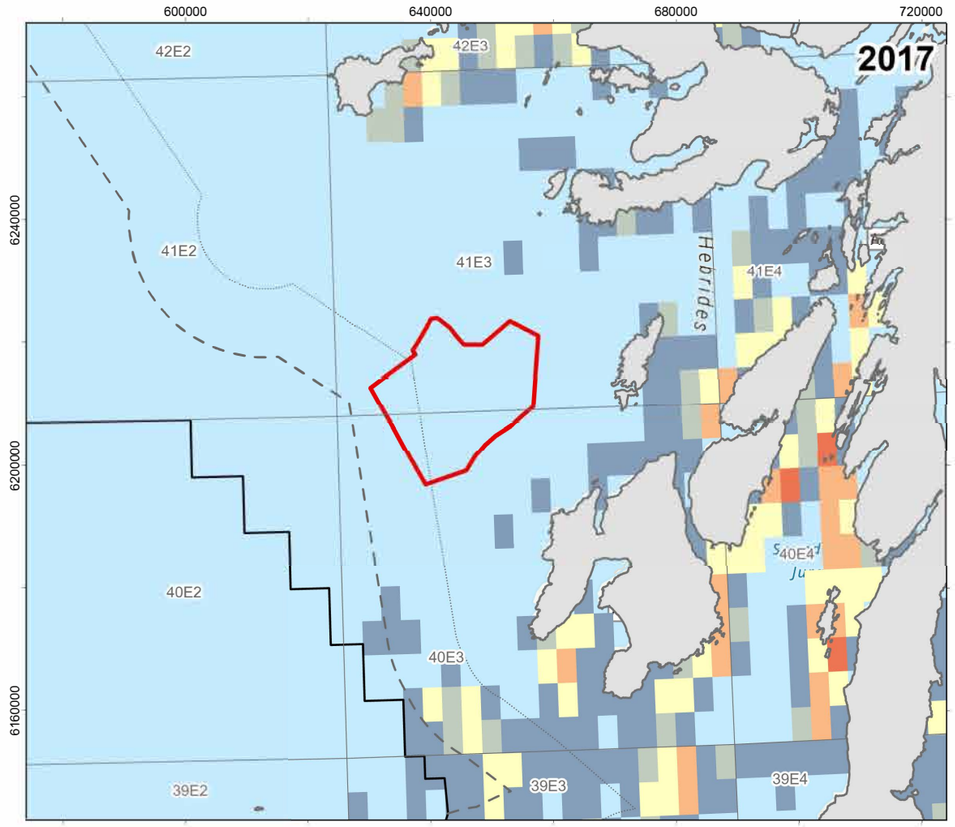
NOT TO BE USED FOR NAVIGATION

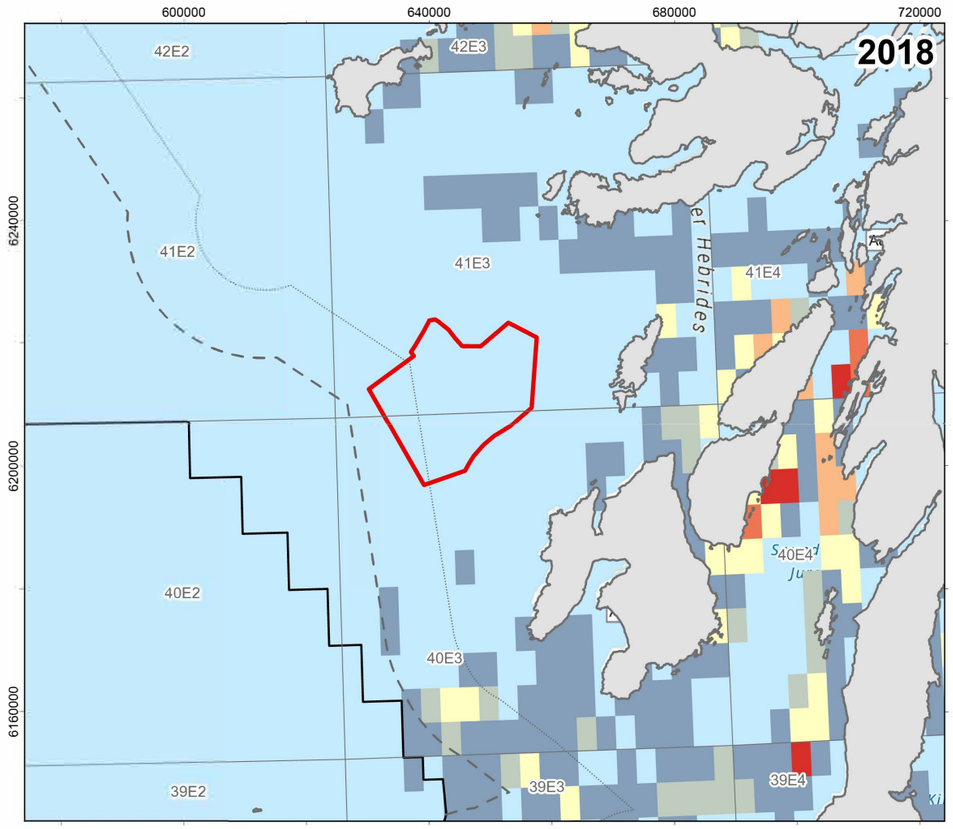
nima CONSULTANTS

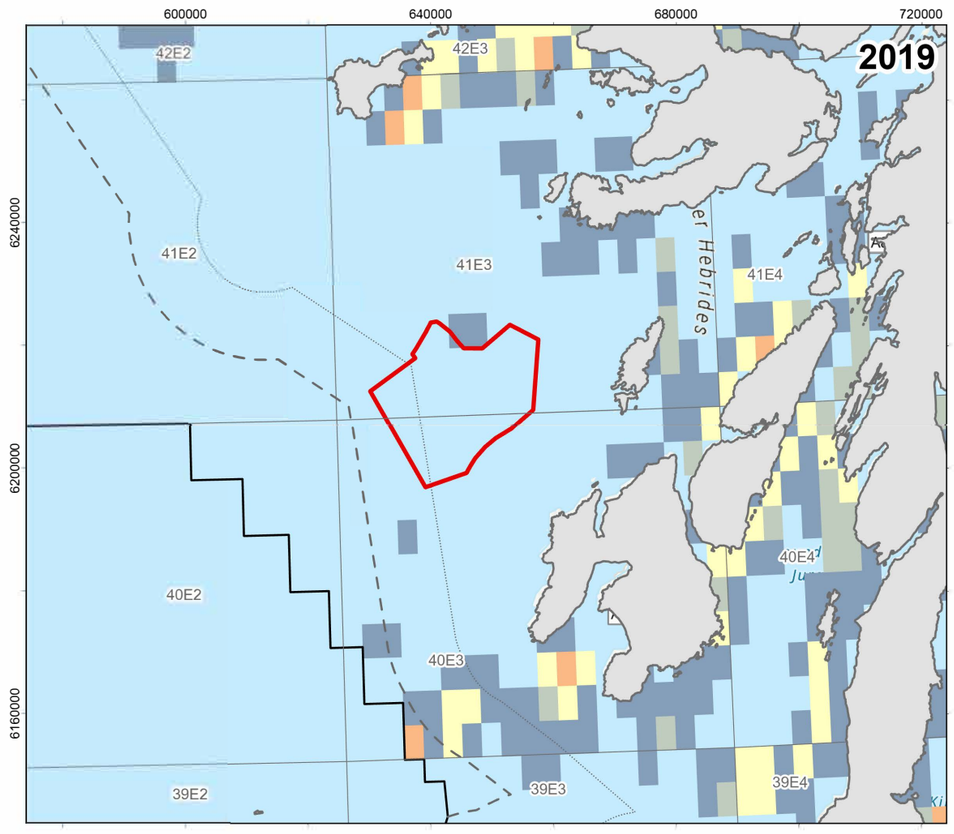
ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description









Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Dredge (UK vessels ≥15m)

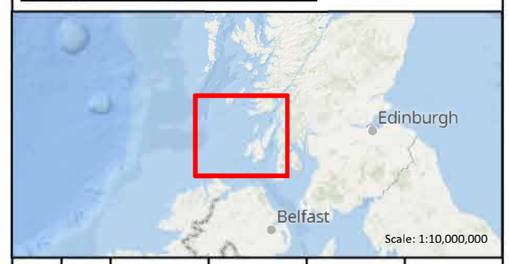
First Sales Value

Total value, £

- £0.91 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £280,000.00

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000049

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

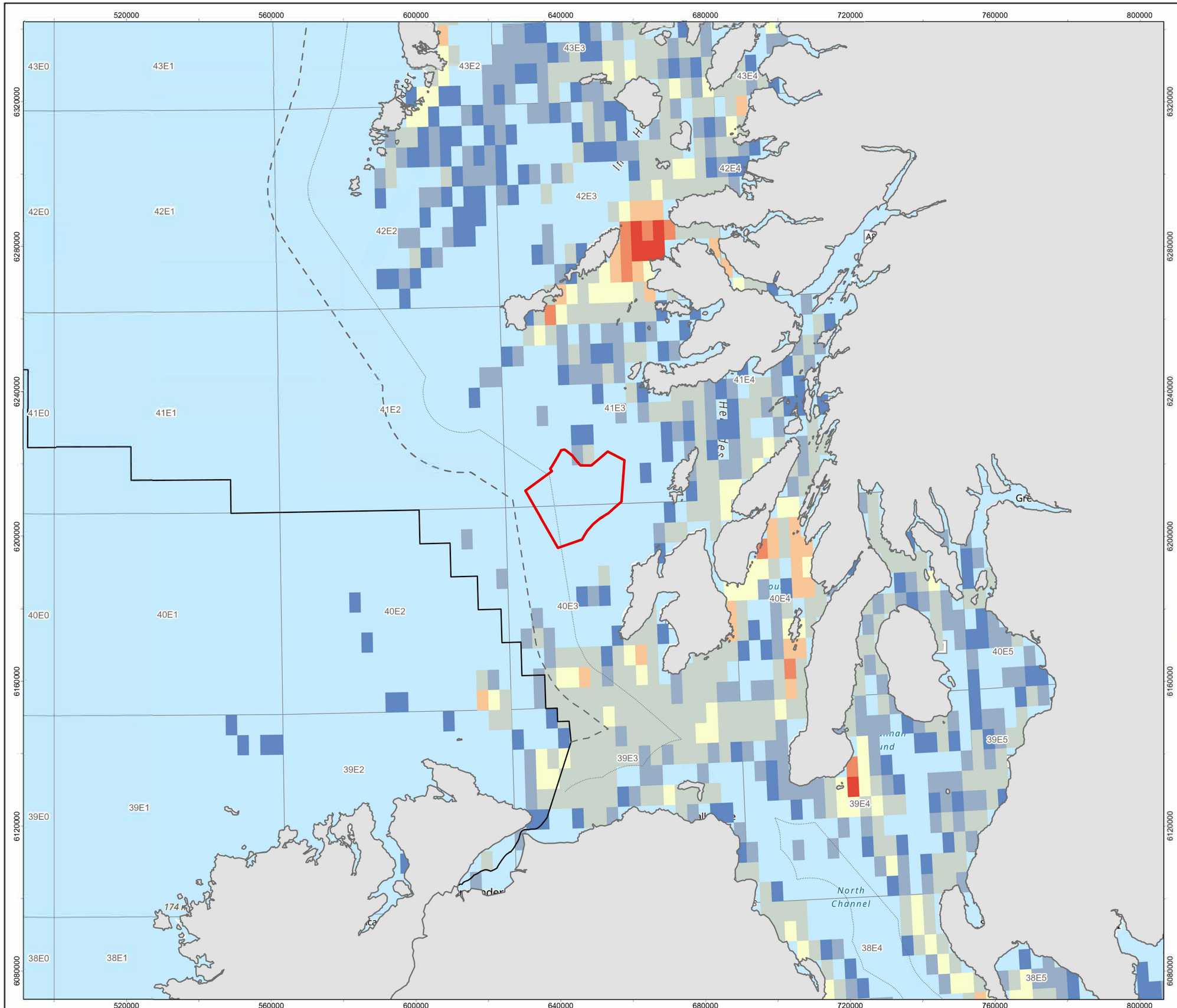
Figure 7.17
Dredge
Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2016 to 2019

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Dredge (EU and UK vessels ≥12m)

Average Annual Surface Swept Area Ratio (2016-2020)

- 0.0 - 0.0
- 0.1 - 0.0
- 0.1 - 0.2
- 0.3 - 0.4
- 0.5 - 0.6
- 0.7 - 0.8
- 0.9 - 3.8

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000050		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		

DRAWING TITLE

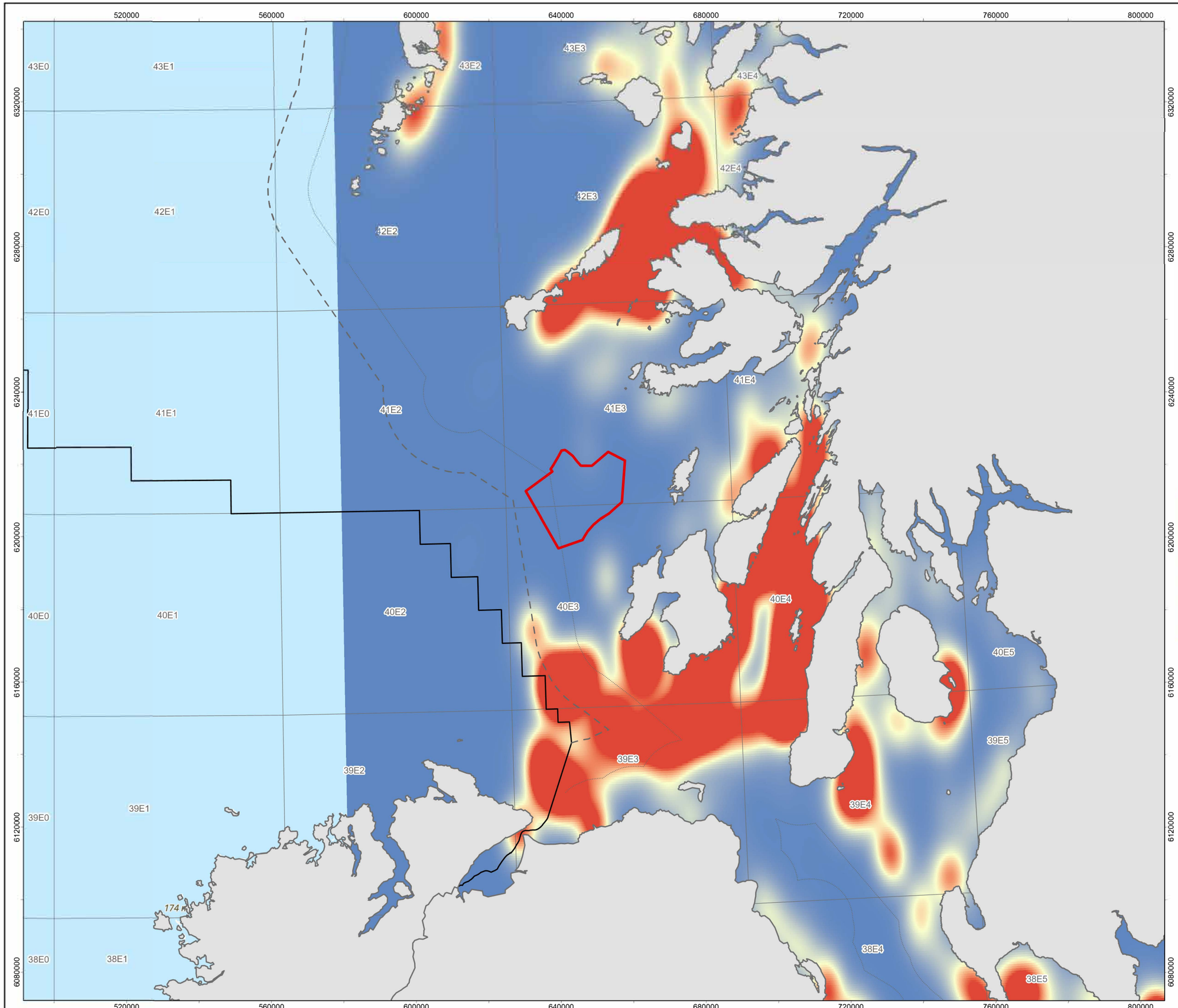
Figure 7.18
Dredge Average Annual Surface Swept Area Ratio for EU and UK vessels ≥ 12 m, 2016-2020

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

ICES statistical rectangles

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Scallop 2009-2013 Amalgamated VMS Intensity

Value

High : 0.805605

Low : 0

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000051

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

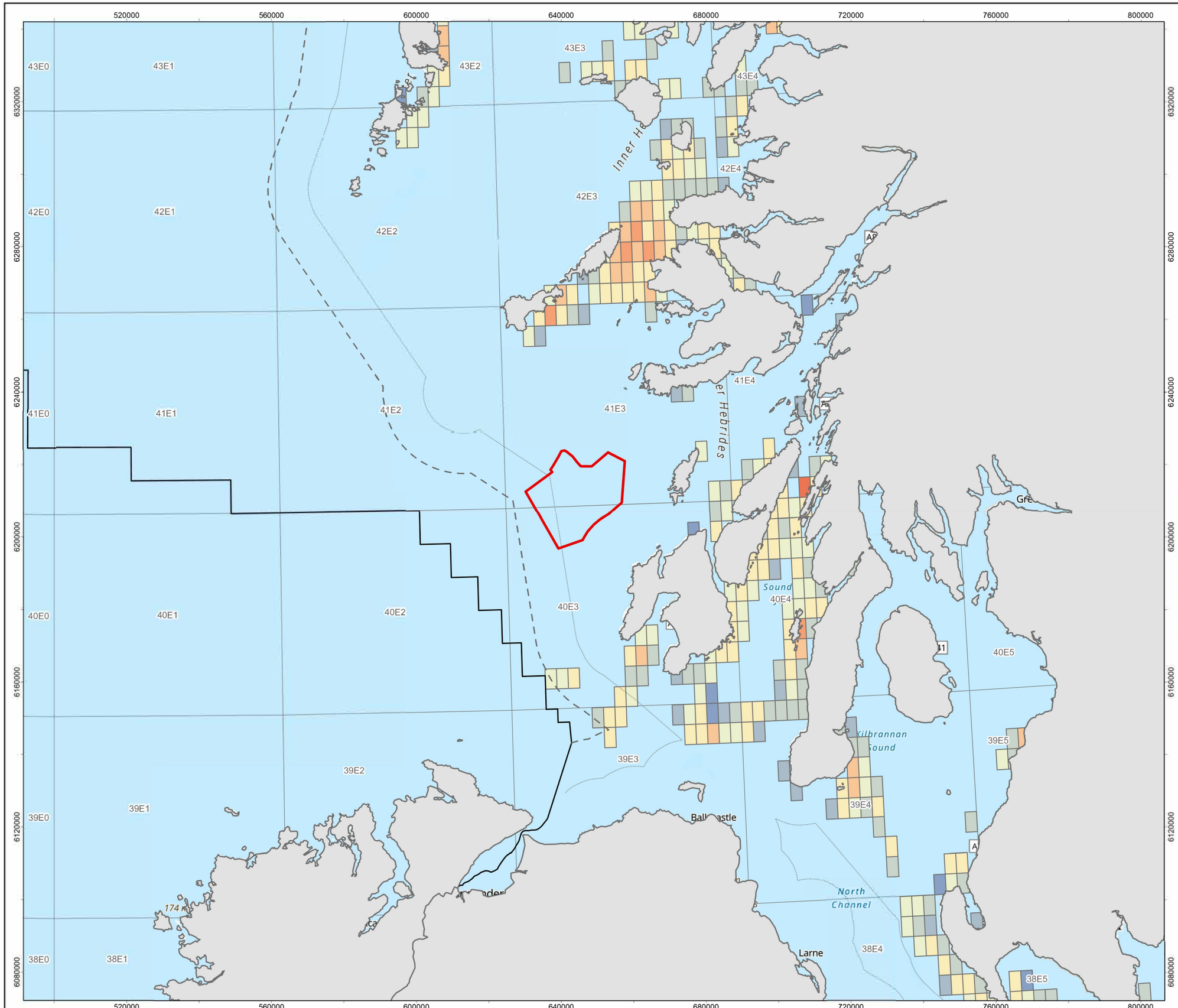
DRAWING TITLE **Figure 7.19**
Scallop Fishery Amalgamated VMS Intensity, 2009 to 2013

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Dredge (UK vessels ≥12m; inside 12NM)

Aggregated value (2016-2020)

- £0.01 - £1,000.00
- £1,000.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £100,000.00
- £100,000.01 - £180,000.00

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000052

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

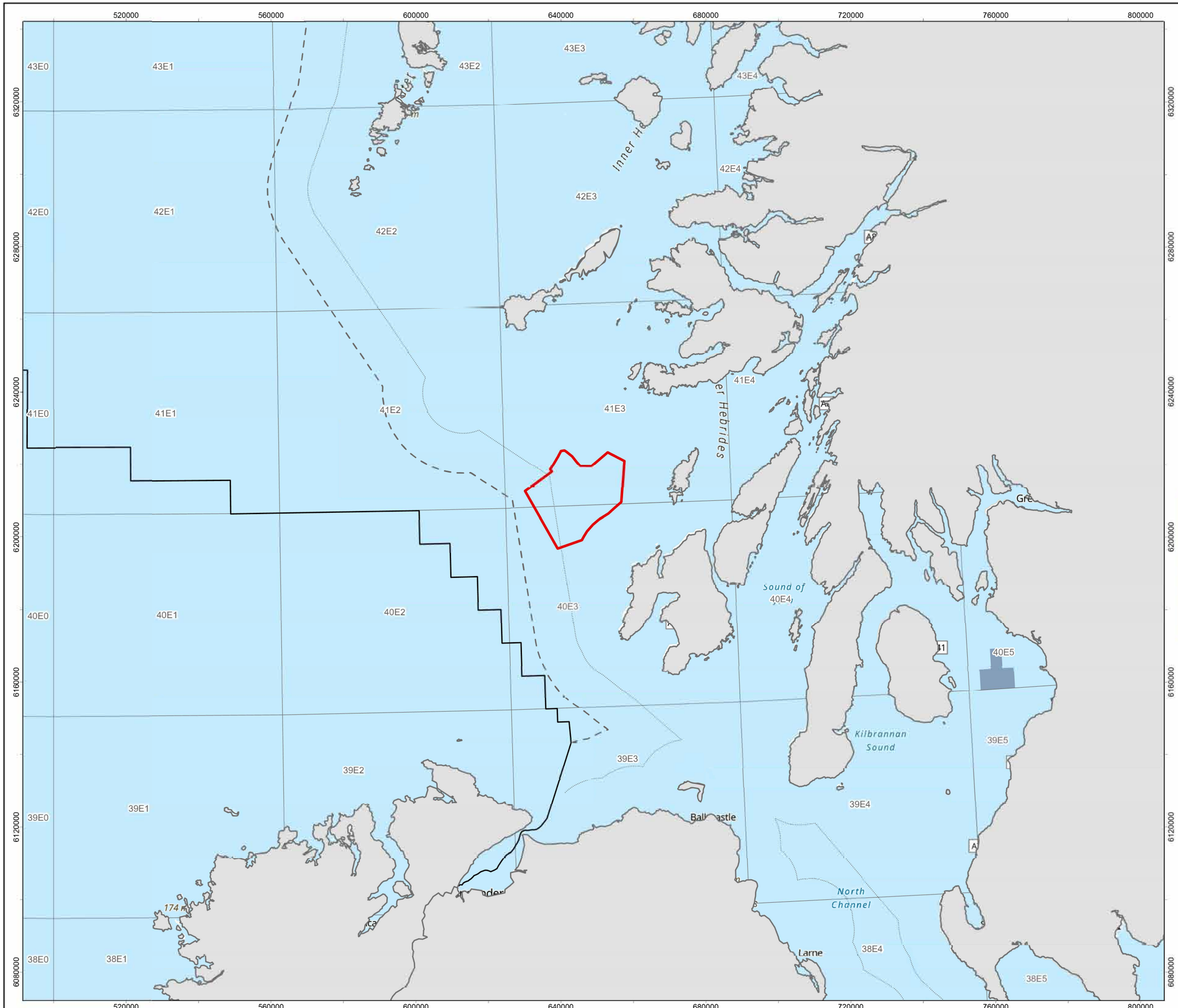
Figure 7.20
Dredge
Aggregated Value (2016-2020)
for UK Vessels ≥12m; Inside 12nm

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



N

Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Beam Trawl (UK vessels ≥15m)

First Sales Value

Total value, £

£1 - £5,000.00

£5,000.01 - £10,000.00

£10,000.01 - £25,000.00

£25,000.01 - £50,000.00

£50,000.01 - £75,000.00

>£75,000.01

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000053

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

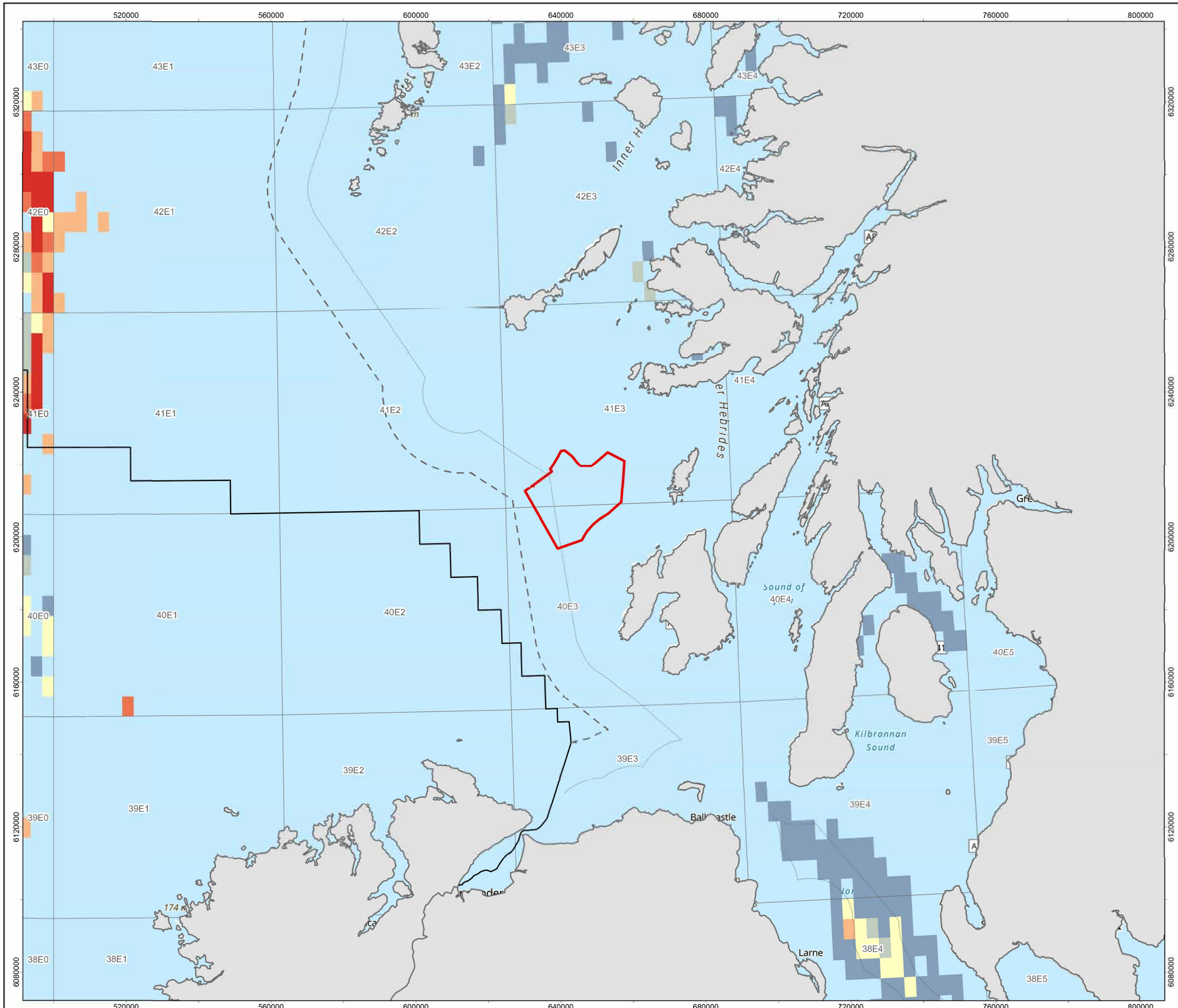
Figure 7.21
Beam Trawl
Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2016-2020

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Pelagic Trawl (UK vessels ≥15m)

First Sales Value

Total value, £

- £0.02 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £242,000.00

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000054

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

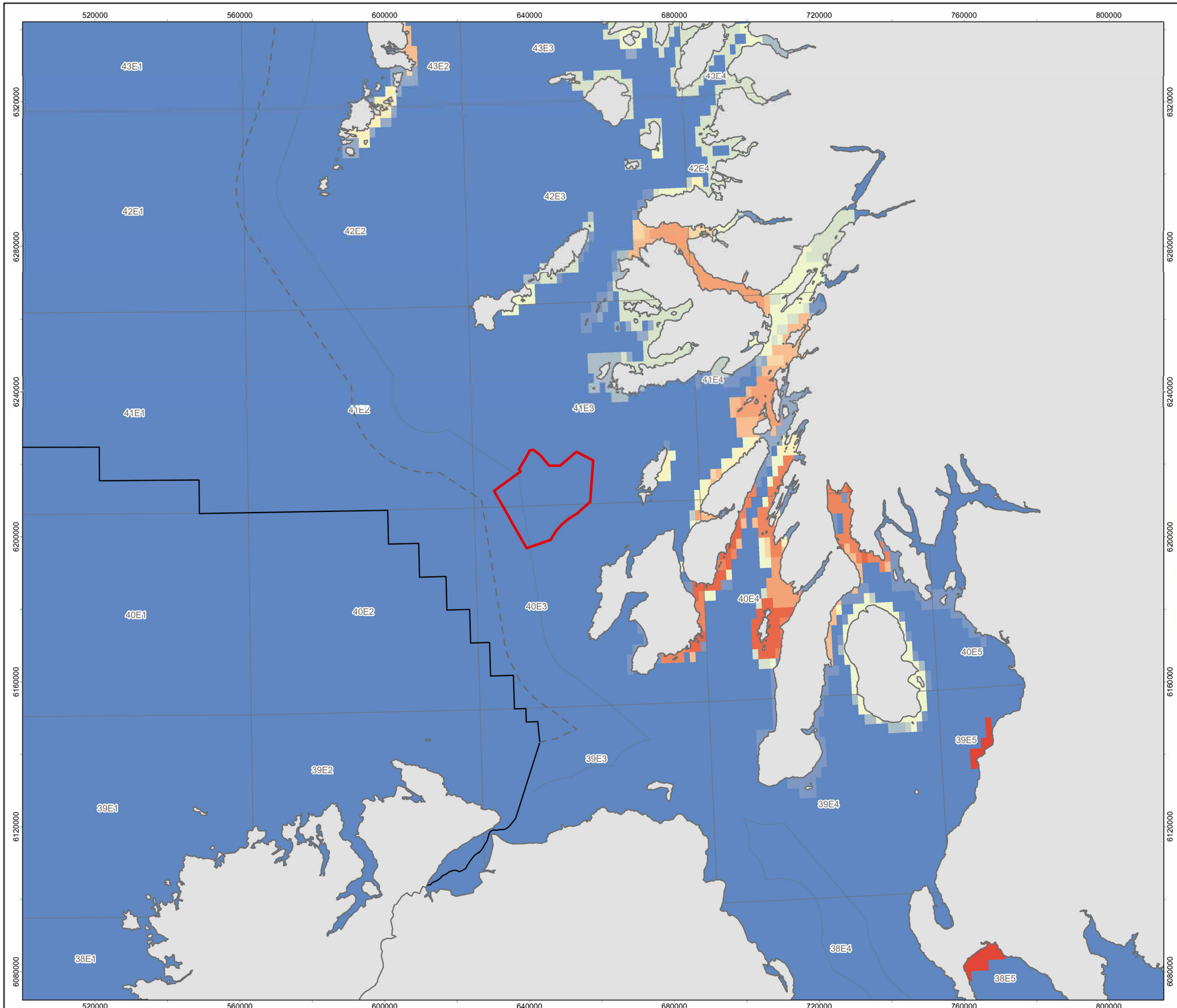
Figure 7.22
Pelagic Trawl
Vessel Monitoring System
Data for UK vessels ≥ 15 m, 2016-2020

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area
ICES statistical rectangles
12 NM Territorial Sea Boundary
UK-Ireland EEZ
6 nm Boundary

Scallop Divers (ScotMap, 2013)
Monetary Value (£)

- 1 - 75
- 76 - 112
- 113 - 149
- 150 - 186
- 187 - 224
- 225 - 298
- 299 - 447
- 448 - 552
- 553 - 745
- 746 - 1,155
- 1,156 - 1,565
- 1,566 - 1,975
- 1,976 - 3,652
- 3,653 - 9,503

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW - DWF - ENV - MAP - RHS - 000055		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		

DRAWING TITLE

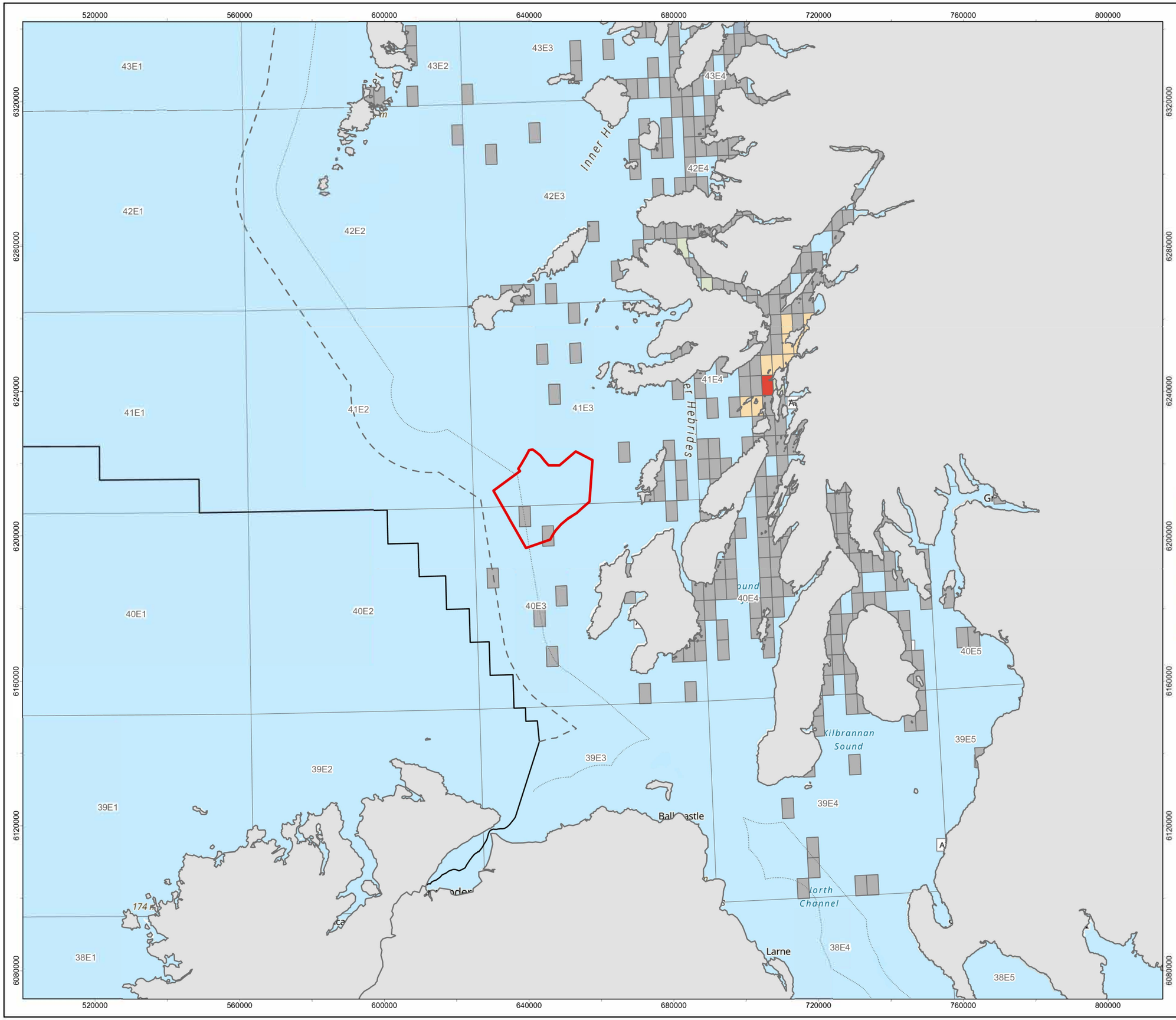
Figure 7.23
Scallop Divers Monetary Value
(ScotMap, 2013)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

ICES statistical rectangles

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Diving Under12m 2017-2021

- Under 5 vessels
- £0.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £20,000.00
- £20,000.01 - £50,000.00
- Greater than £50,000

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000056

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

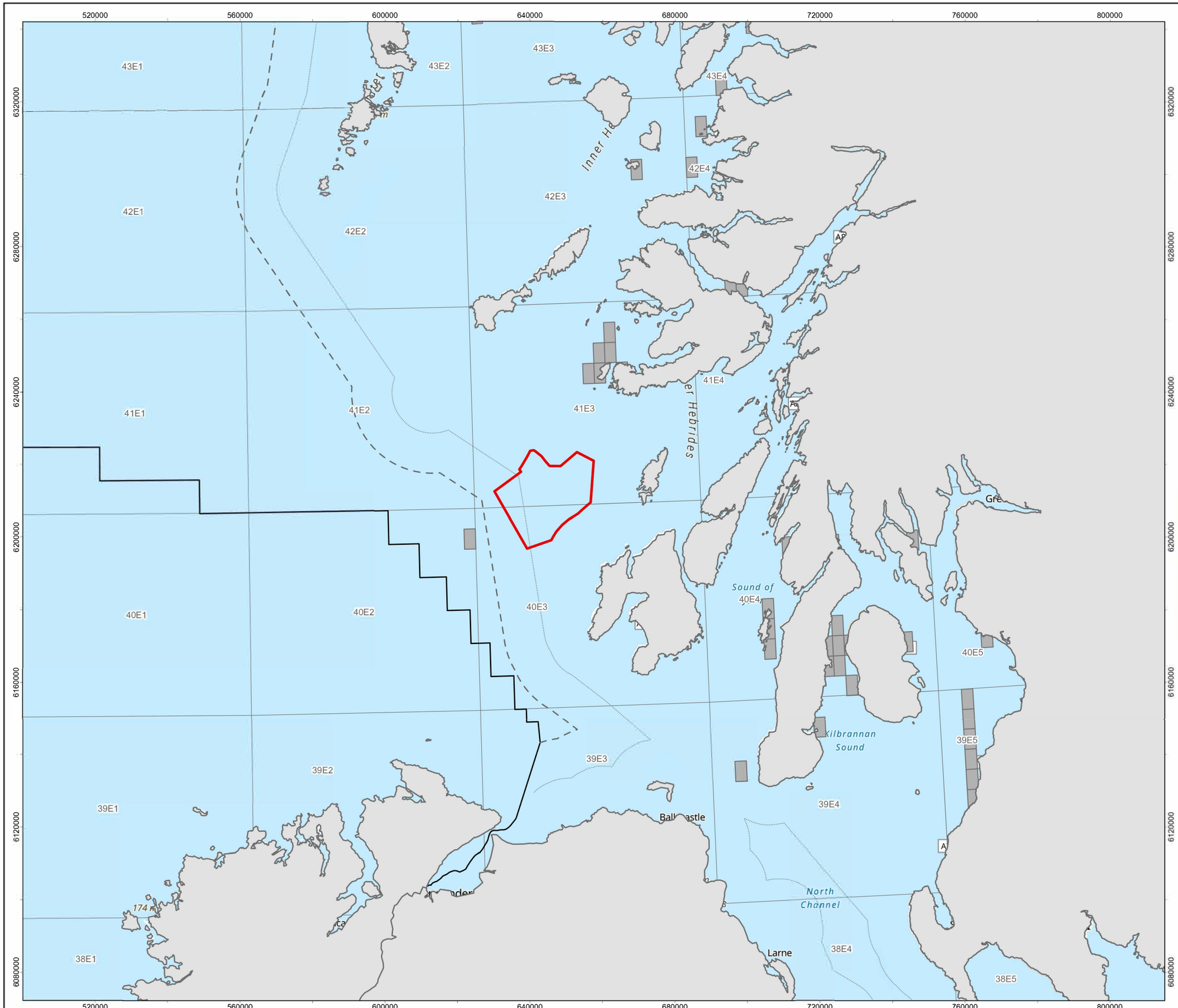
Figure 7.24
Diving Average Annual Value
Scottish Under 12 m Vessels (Data from 2017-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

ICES statistical rectangles

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Rods and Lines Under 12m, 2017-2021

Annual Average Value

- Under 5 vessels
- £0.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £20,000.00
- £20,000.01 - £50,000.00
- Greater than £50,000

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000057

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

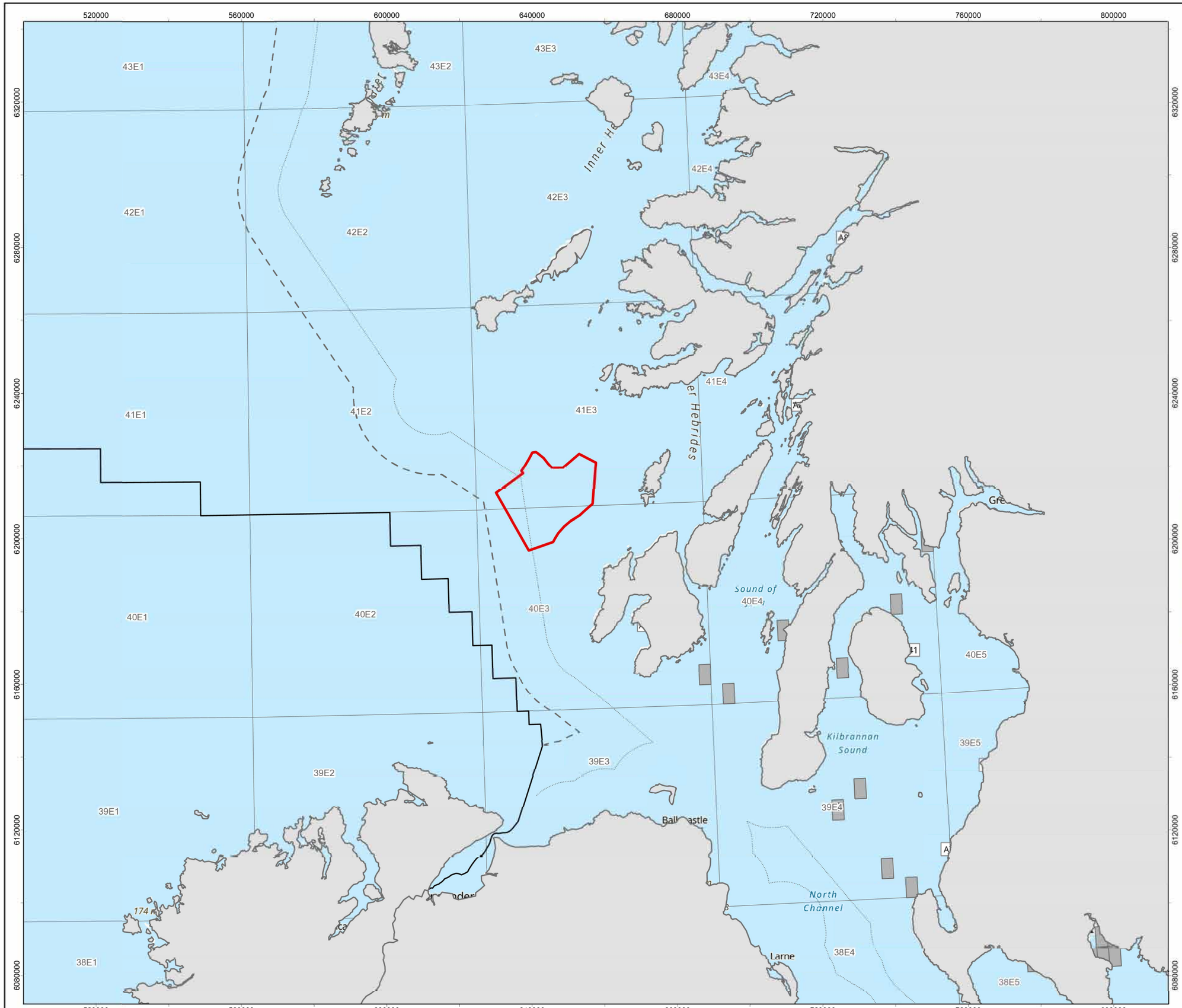
DRAWING TITLE **Figure 7.25**
Rod and Line Average Annual Value
Scottish Under 12 m Vessels (Data from 2017-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

ICES statistical rectangles

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Set Nets Under12m 2017-2021

Annual Average Value

- Under 5 vessels
- £0.01 - £2,000.00
- £2,000.01 - £5,000.00
- £5,000.01 - £20,000.00
- £20,000.01 - £50,000.00
- Greater than £50,000

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

Scale: 1:10,000,000

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000058

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE **Figure 7.26**
Set Nets Average Annual Value
Scottish Under 12 m Vessels (Data from 2017-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description

520000 560000 600000 640000 680000 720000 760000 800000

6320000 6280000 6240000 6200000 6160000 6120000 6080000

43E1 43E2 43E3 43E4
42E1 42E2 42E3 42E4
41E1 41E2 41E3 41E4
40E1 40E2 40E3 40E4 40E5
39E1 39E2 39E3 39E4 39E5
38E1 38E4 38E5

Windfarm Development Area
ICES statistical rectangles
12 nm Territorial Sea Boundary
UK-Ireland EEZ
6 nm Boundary

Fishing Vessel Route Density (2023)
(Routes per Square km per Year)

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- 251 - 16,363

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000059

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

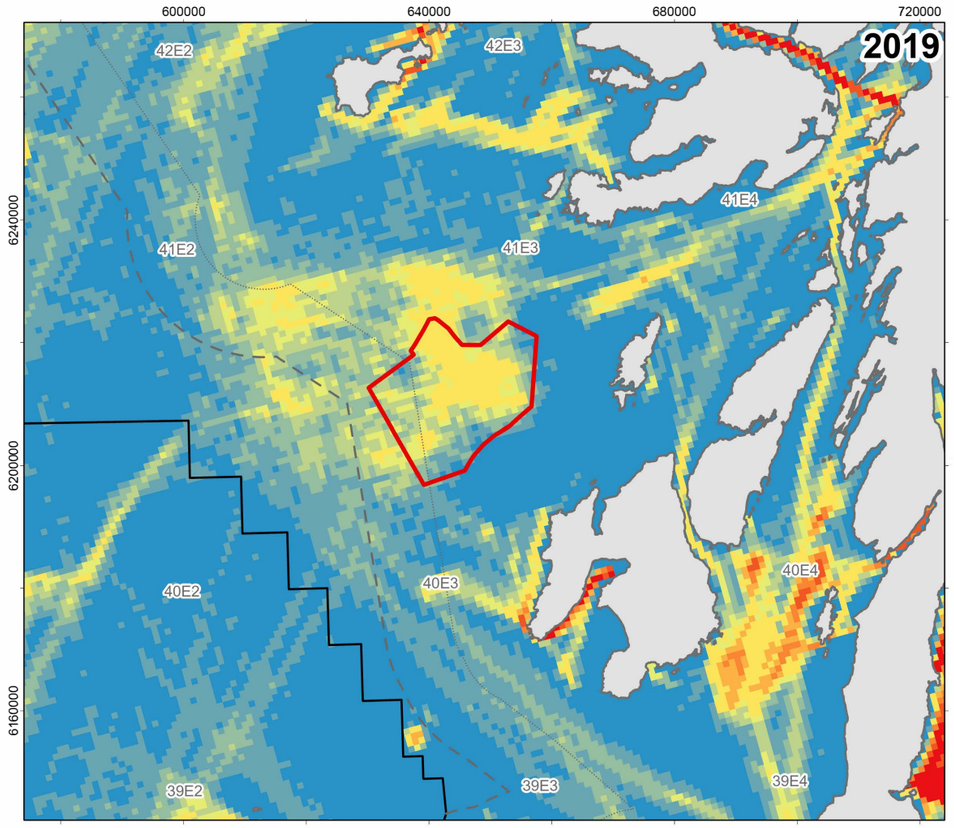
DRAWING TITLE
Figure 7.27
Automatic Identification System Data
Fishing Vessel Route Density
Routes per km² per Year, 2023

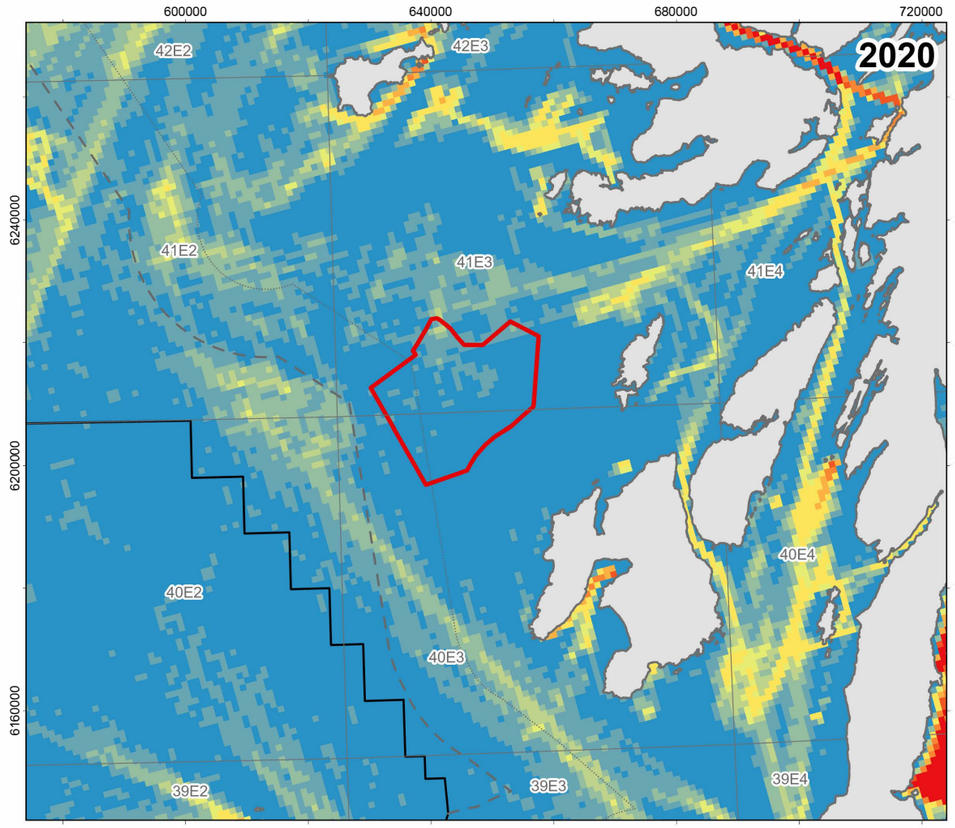
NOT TO BE USED FOR NAVIGATION

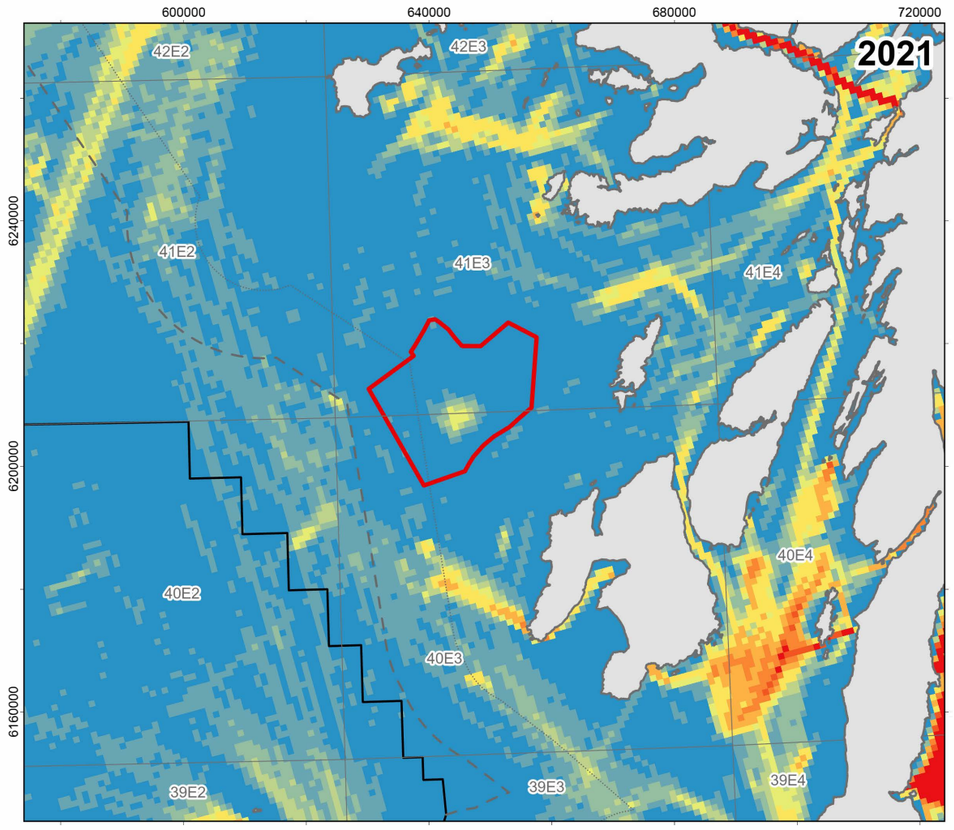
nima CONSULTANTS

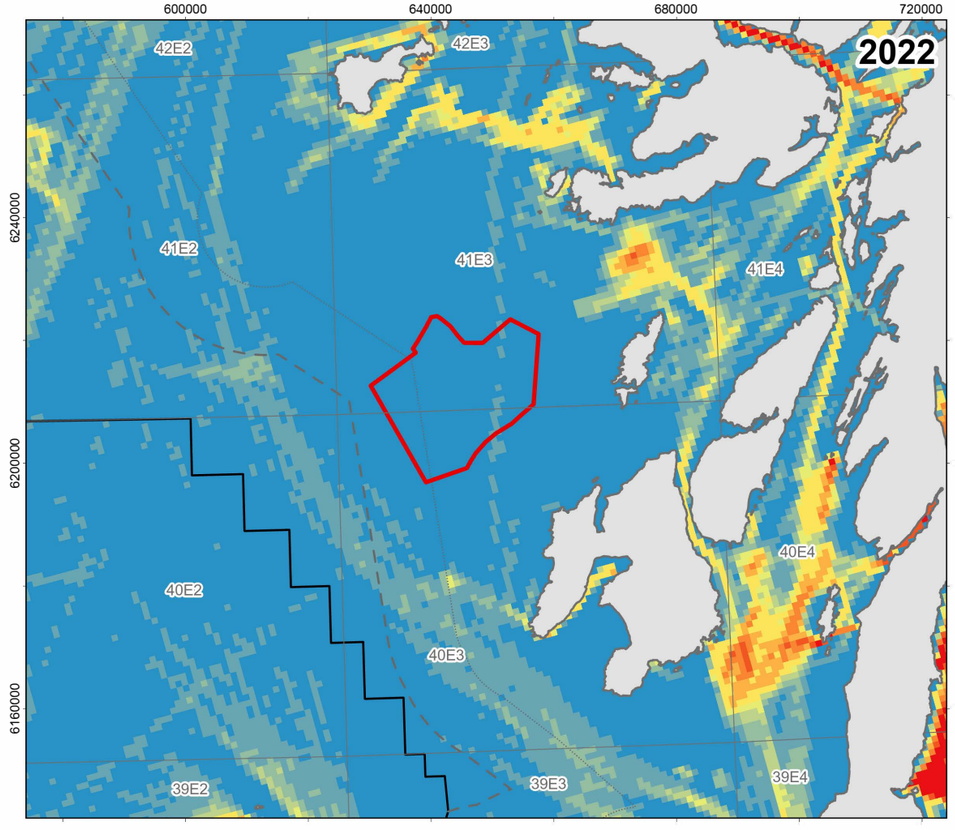
ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description









Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

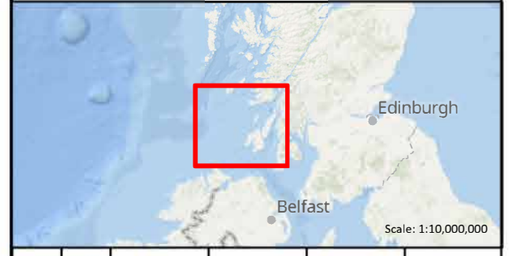
Fishing Vessel Route Density

(Routes per Square km per year)

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- 251 - 15,661

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000060

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

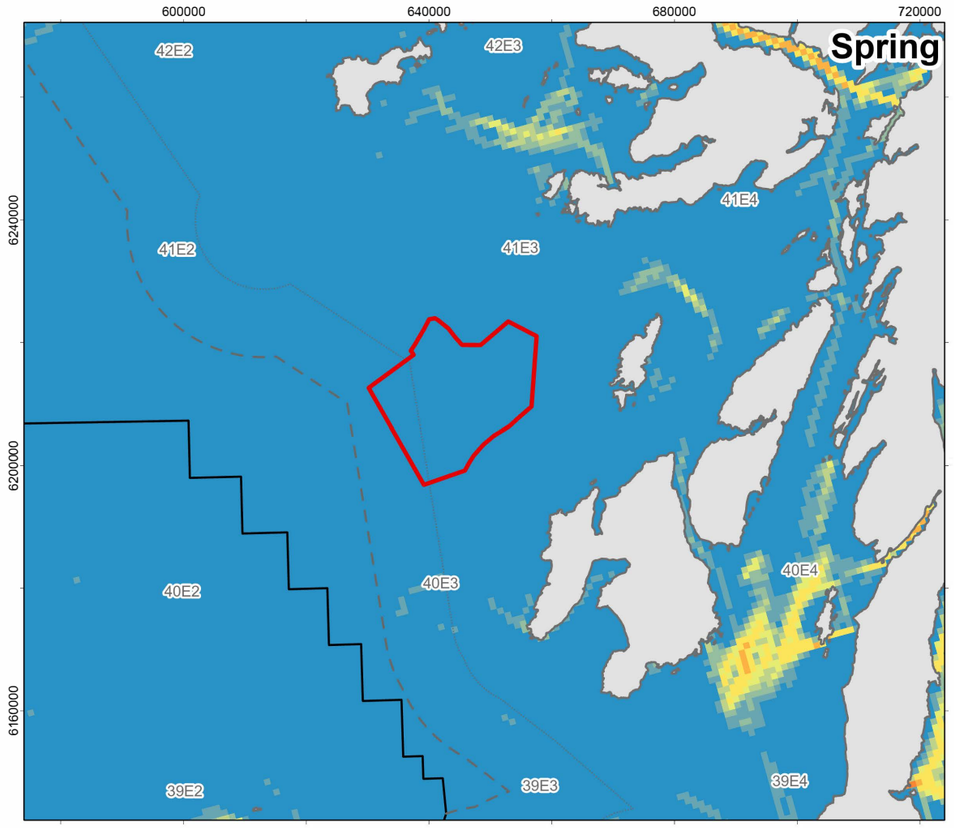
Figure 7.28
Automatic Identification System Data
Fishing Vessel Route Density
Routes per km² per Year, 2019-2022

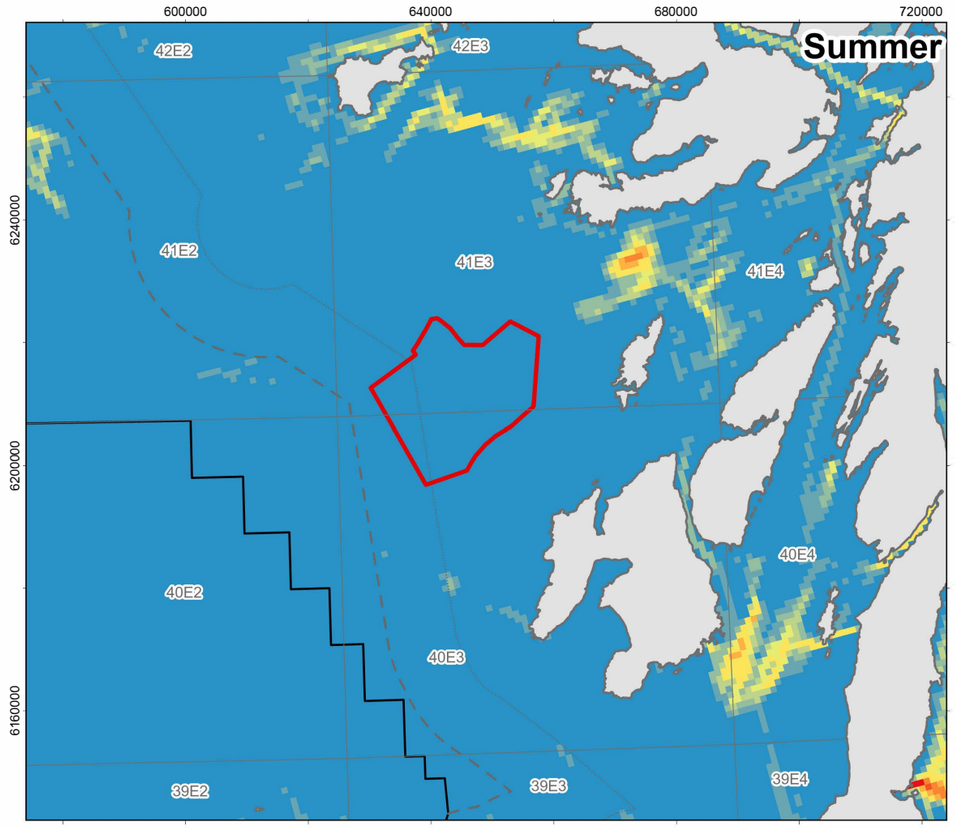
NOT TO BE USED FOR NAVIGATION

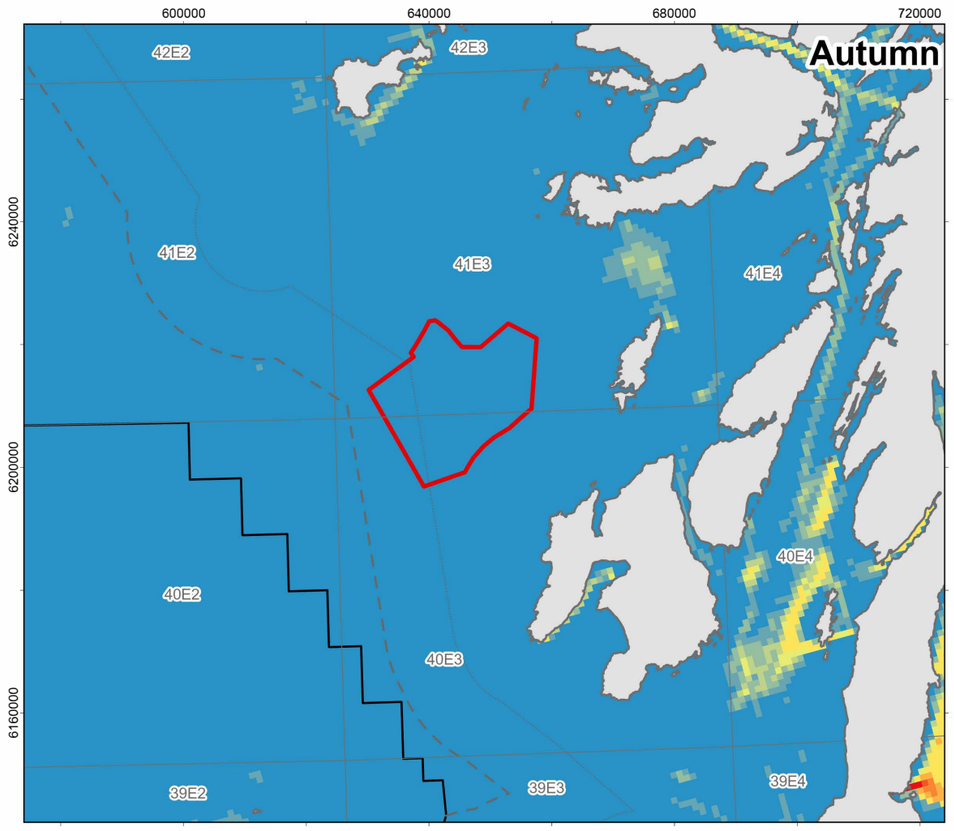
nima CONSULTANTS

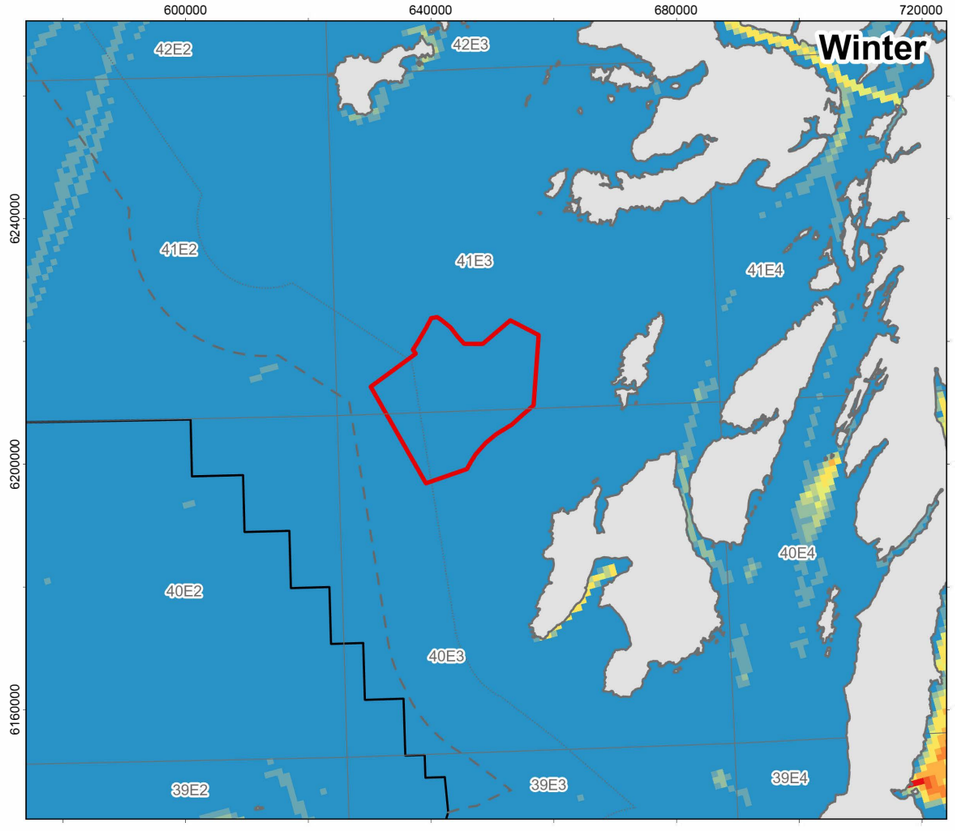
ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description









Windfarm Development Area

12 NM Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

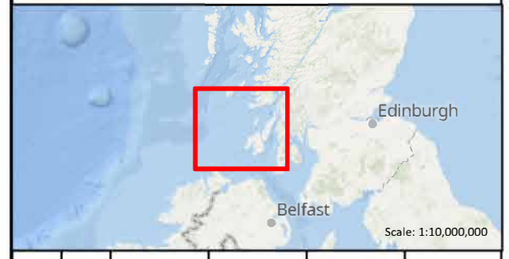
Fishing Vessel Route Density

(Routes per Square km per year)

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- 251 - 16,363

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000061		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		

DRAWING TITLE

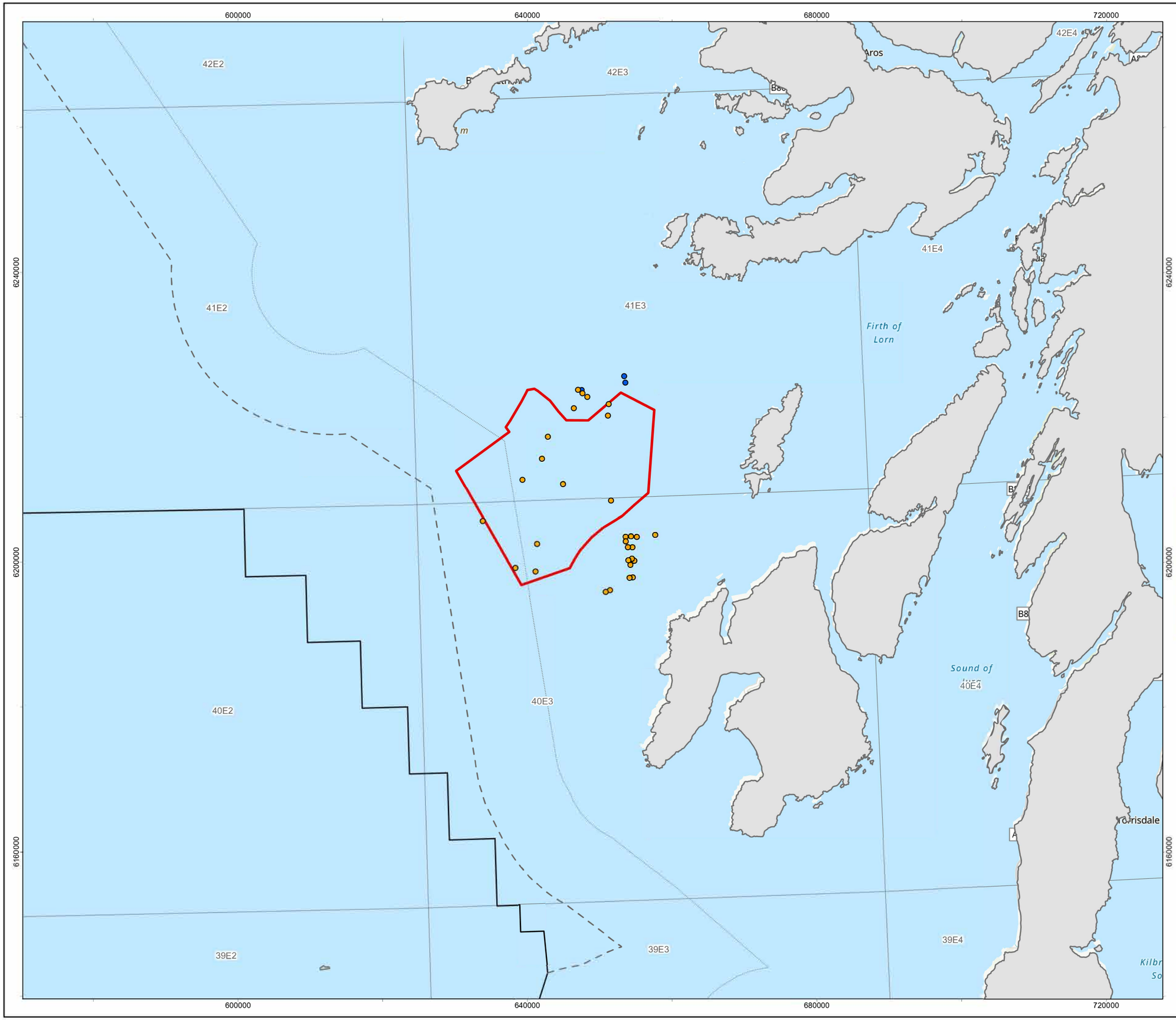
Figure 7.29
Automatic Identification System Data
Fishing Vessel Route Density
Routes per km² per Season, 2022

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

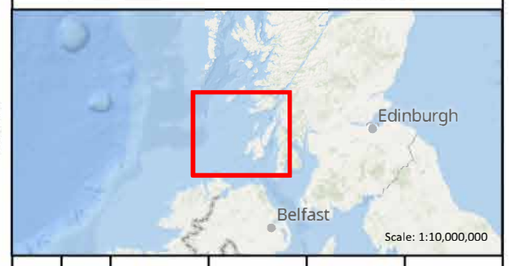
Scouting Survey Observations

Fishing Vessel

Static Gear

N

0 4 8 12 16 20 24 Kilometres



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000062

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:500,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

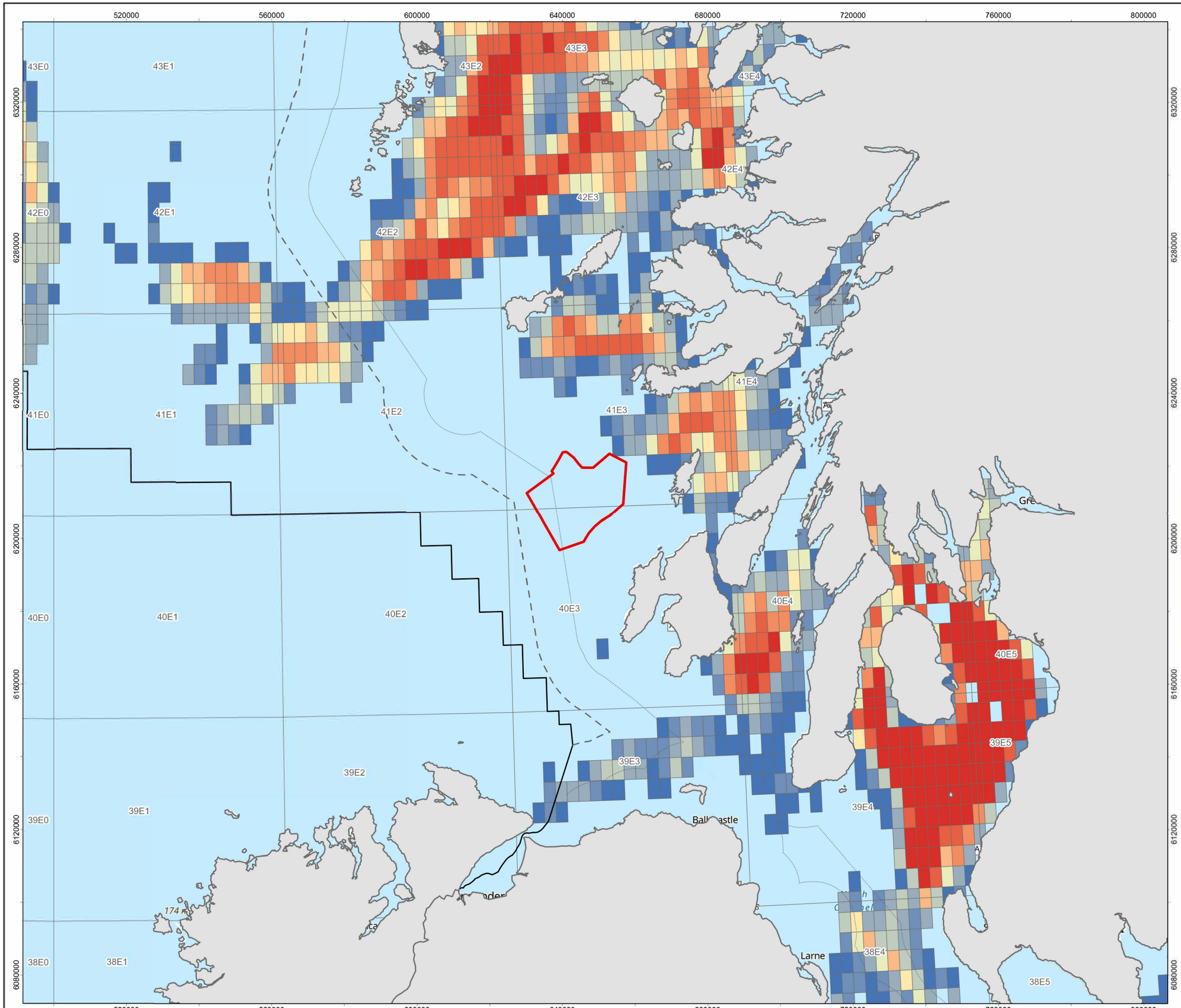
DRAWING TITLE: **Figure 7.30**
Location of Static Gear and/or Vessels Recorded During Scouting Surveys

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

N

Demersal Trawl Fishing Effort

Fishing hours (2012-2021)

- 1.3 - 5.0
- 5.1 - 10.0
- 10.1 - 25.0
- 25.1 - 50.0
- 50.1 - 75.0
- 75.1 - 100.0
- 100.1 - 150.0
- 150.1 - 250.0
- 250.1 - 500.0
- 500.1 - 1,852.0

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000063

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

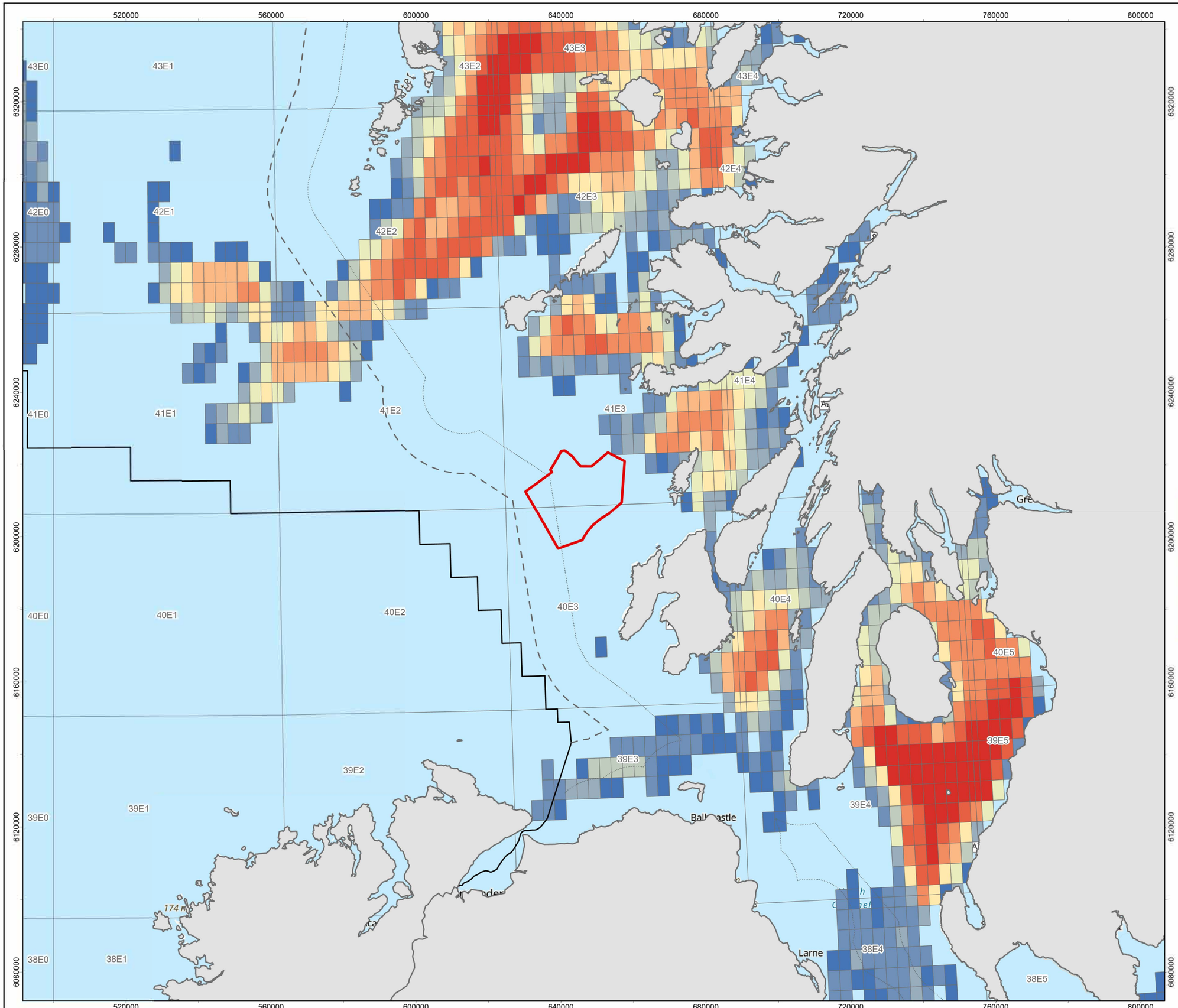
DRAWING TITLE: **Figure 7.31**
Demersal Trawl Fishing Effort (Hours) Based on FiSMaDiM Data (Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

N

Demersal Trawl

Number of Vessels

- 4 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 75
- 76 - 100
- 101 - 141

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

Scale: 1:10,000,000

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000064

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

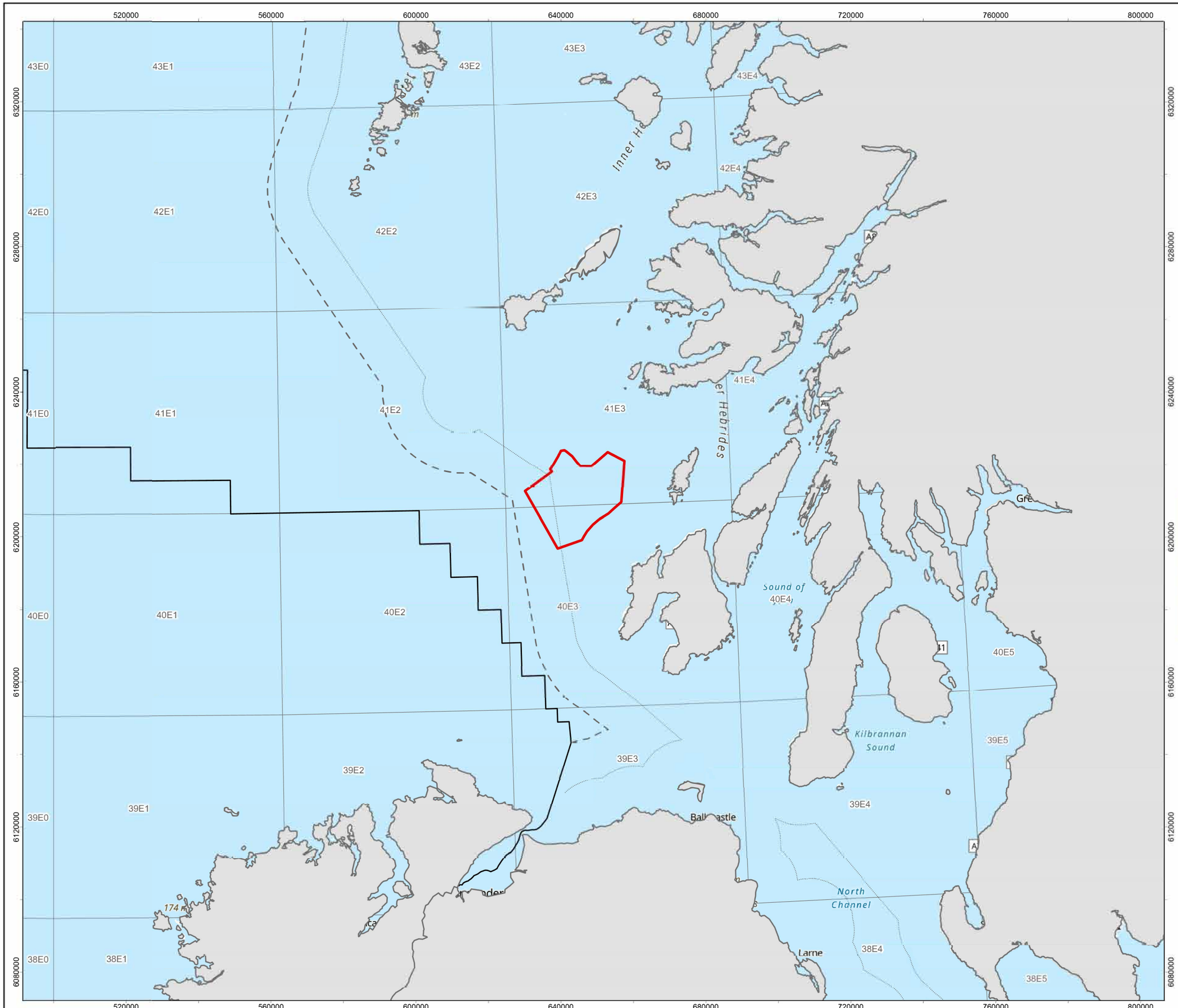
DRAWING TITLE **Figure 7.32**
Number of Demersal Otter Trawl Vessels Based on FiSMaDiM Data (Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

N

Demersal Seine Fishing Effort

Fishing hours (2012-2021)

- 1.3 - 10.0
- 10.1 - 25.0
- 25.1 - 50.0
- 50.1 - 100.0
- 100.1 - 150.0
- 150.1 - 250.0
- 250.1 - 500.0
- 500.1 - 750.0
- 750.1 - 1,000.0
- 1,000.1 - 1,408

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000065

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

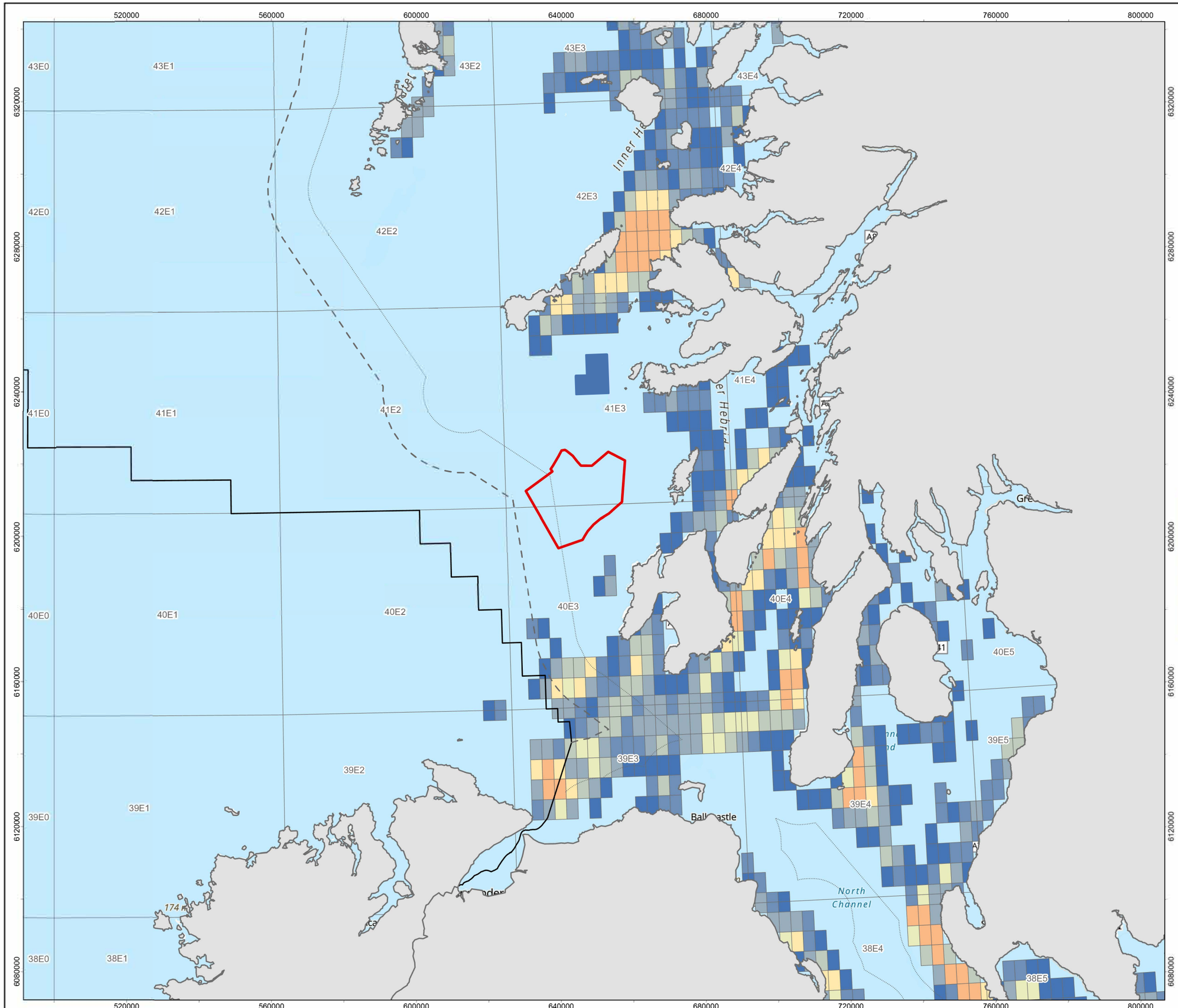
DRAWING TITLE **Figure 7.33**
Demersal Seine Fishing Effort (Hours)
Based on FiSMaDiM Data
(Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Dredge Fishing Effort

Fishing hours (2012-2021)

- 1.3 - 10.0
- 10.1 - 25.0
- 25.1 - 50.0
- 50.1 - 75.0
- 75.1 - 100.0
- 100.1 - 150.0
- 150.1 - 500.0
- 500.1 - 1,000.0
- 1,000.1 - 2,000.0
- 2,000.1 - 3,089.0

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

Scale: 1:10,000,000

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000066
DATUM	ETRS89
PROJECTION	UTM Zone 29N
SCALE	1:1,000,000
PAGE SIZE	A3
PROJECT TITLE	MachairWind

DRAWING TITLE

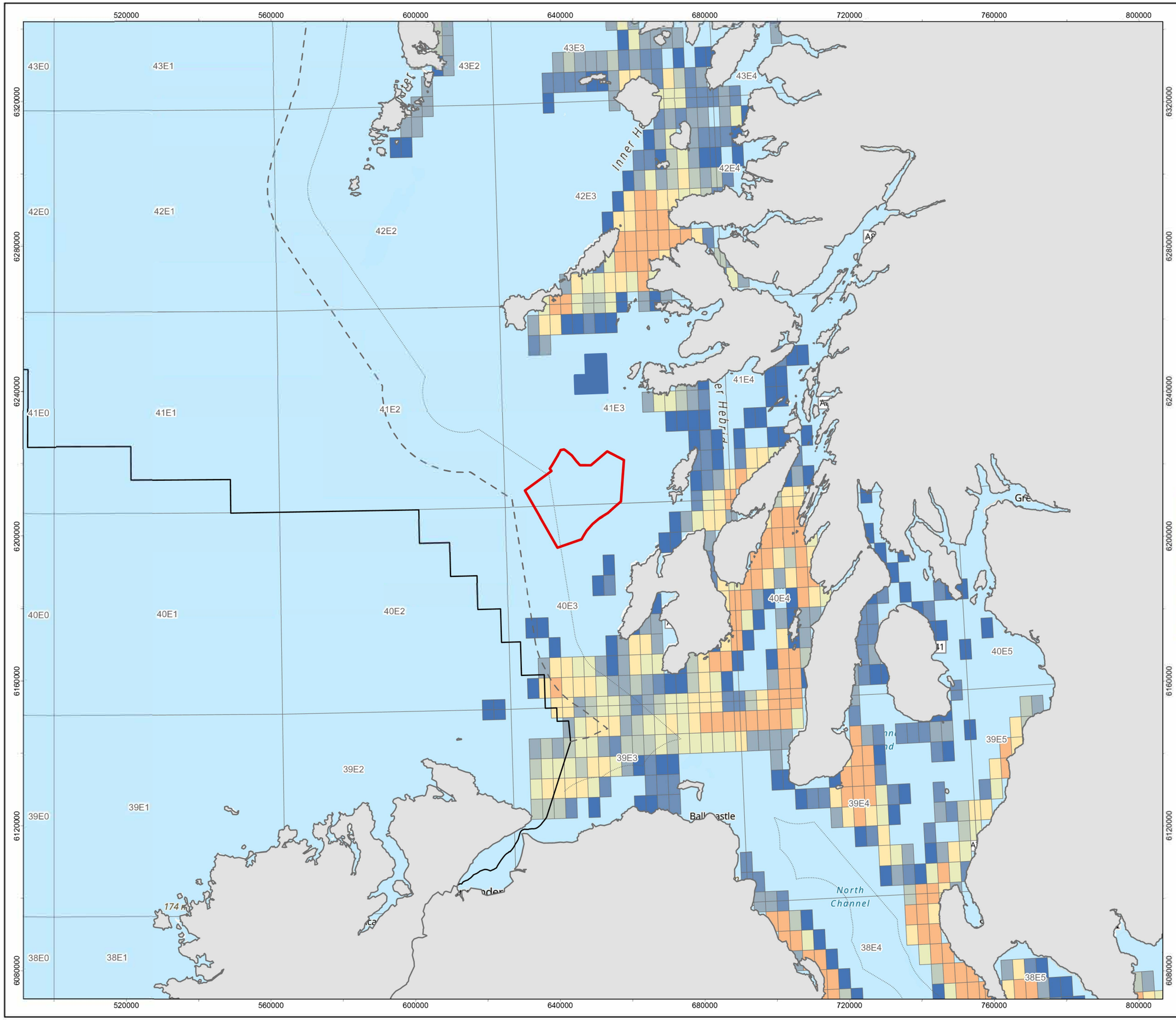
Figure 7.34
Dredge Fishing Effort (Hours)
Based on FiSMaDiM Data
(Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Dredge

Number of vessels

- 4 - 5
- 6 - 7
- 8 - 10
- 11 - 12
- 13 - 15
- 16 - 20
- 21 - 50
- 51 - 75
- 76 - 100
- 101 - 123

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000067

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

DRAWING TITLE

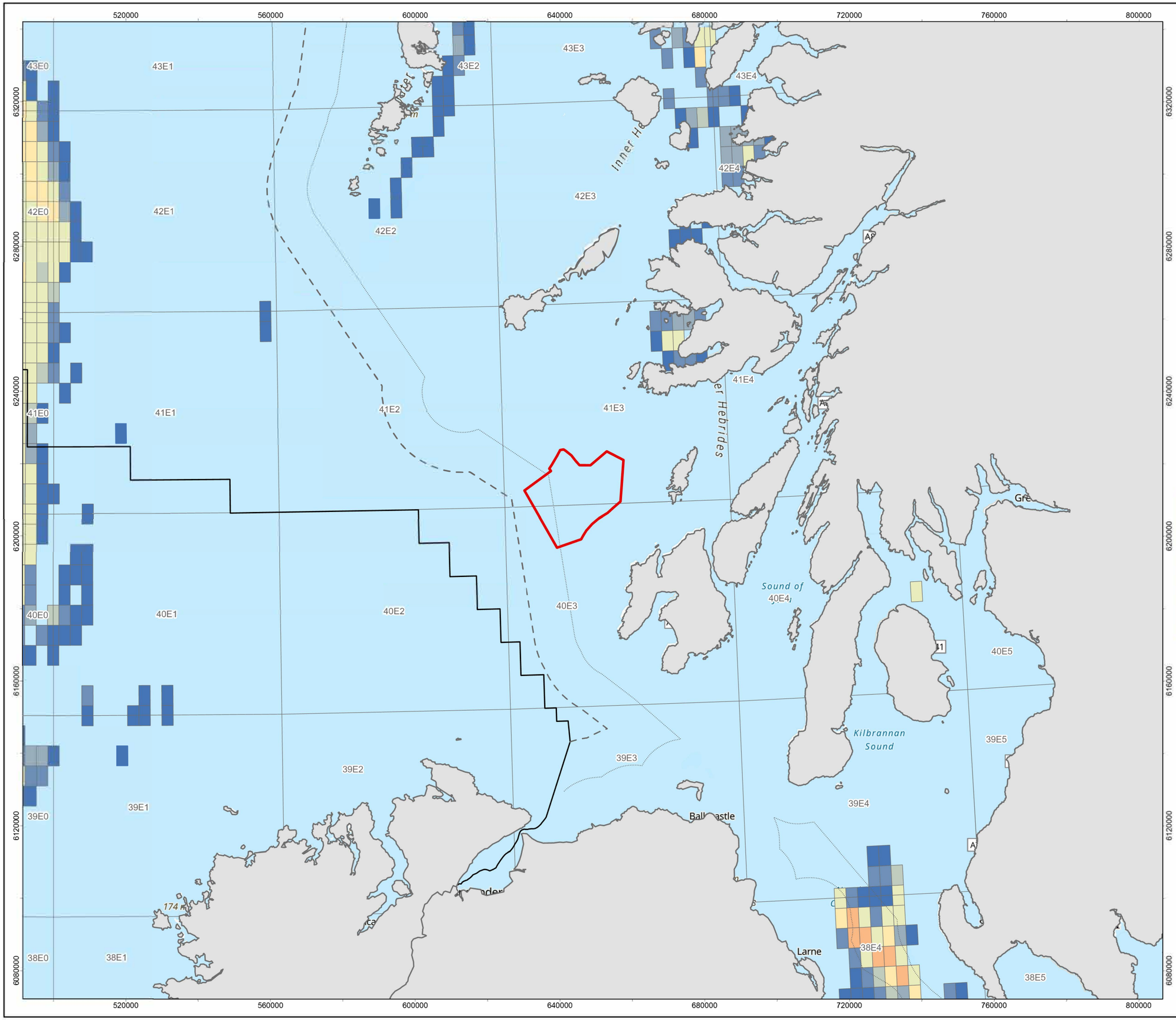
Figure 7.35
Number of Dredge Vessels Based on FiSMaDiM Data (Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Pelagic Trawl Fishing Effort

Fishing hours (2012-2021)

- 1.3 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 25.0
- 25.1 - 50.0
- 50.1 - 75.0
- 75.1 - 100.0
- 100.1 - 150.0
- 150.1 - 328.0

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

Scale: 1:10,000,000

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000068		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		

DRAWING TITLE

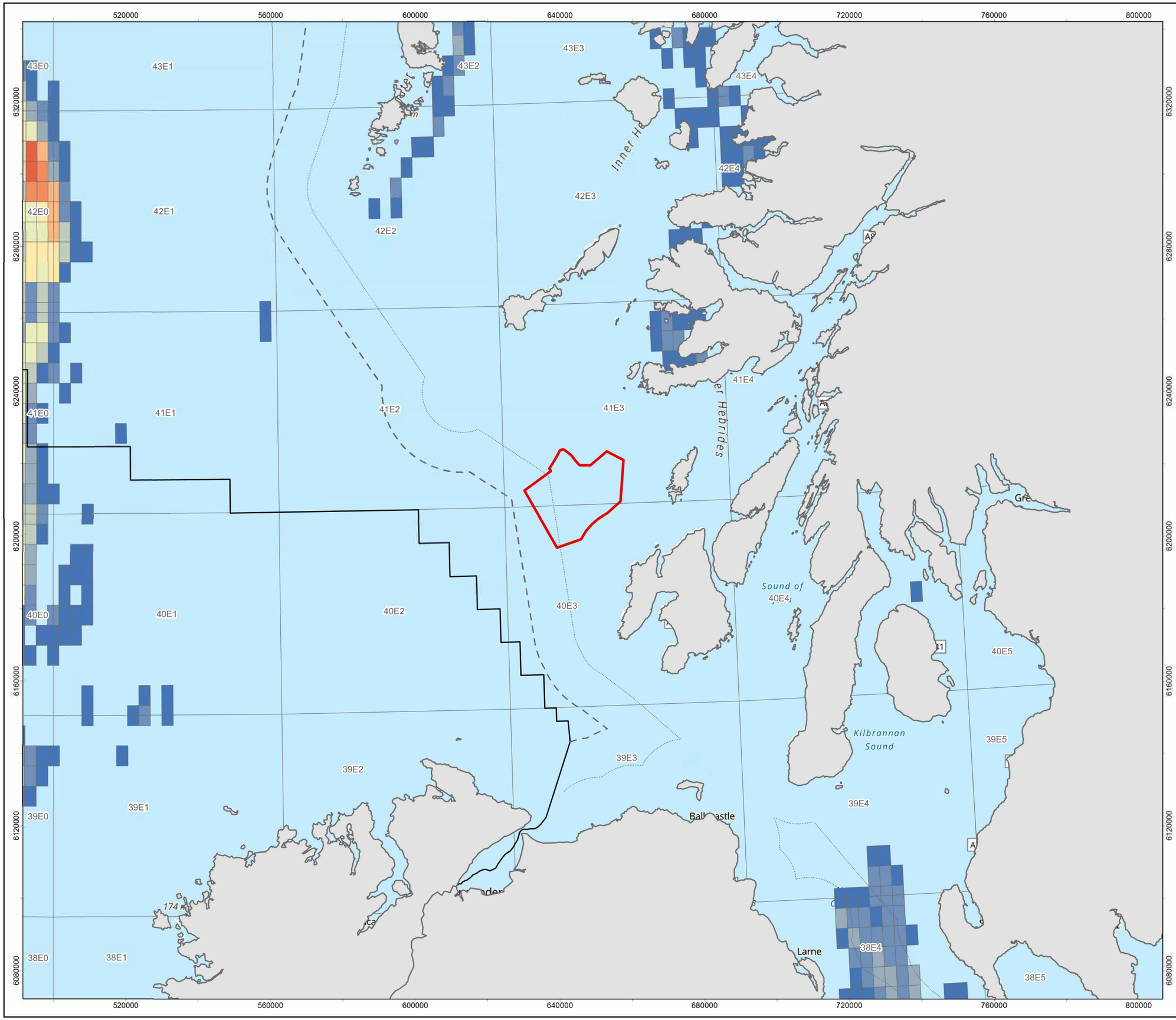
Figure 7.36
Pelagic Trawl Fishing Effort (Hours)
Based on FiSMaDiM Data
(Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Pelagic Trawl

Number of vessels

- 4 - 5
- 6 - 7
- 8 - 9
- 10 - 11
- 12 - 14
- 15 - 16
- 17 - 19
- 20 - 21
- 22 - 24
- 25 - 27

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER: MCW-DWF-ENV-MAP-RHS-000069

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE: MachairWind

DRAWING TITLE

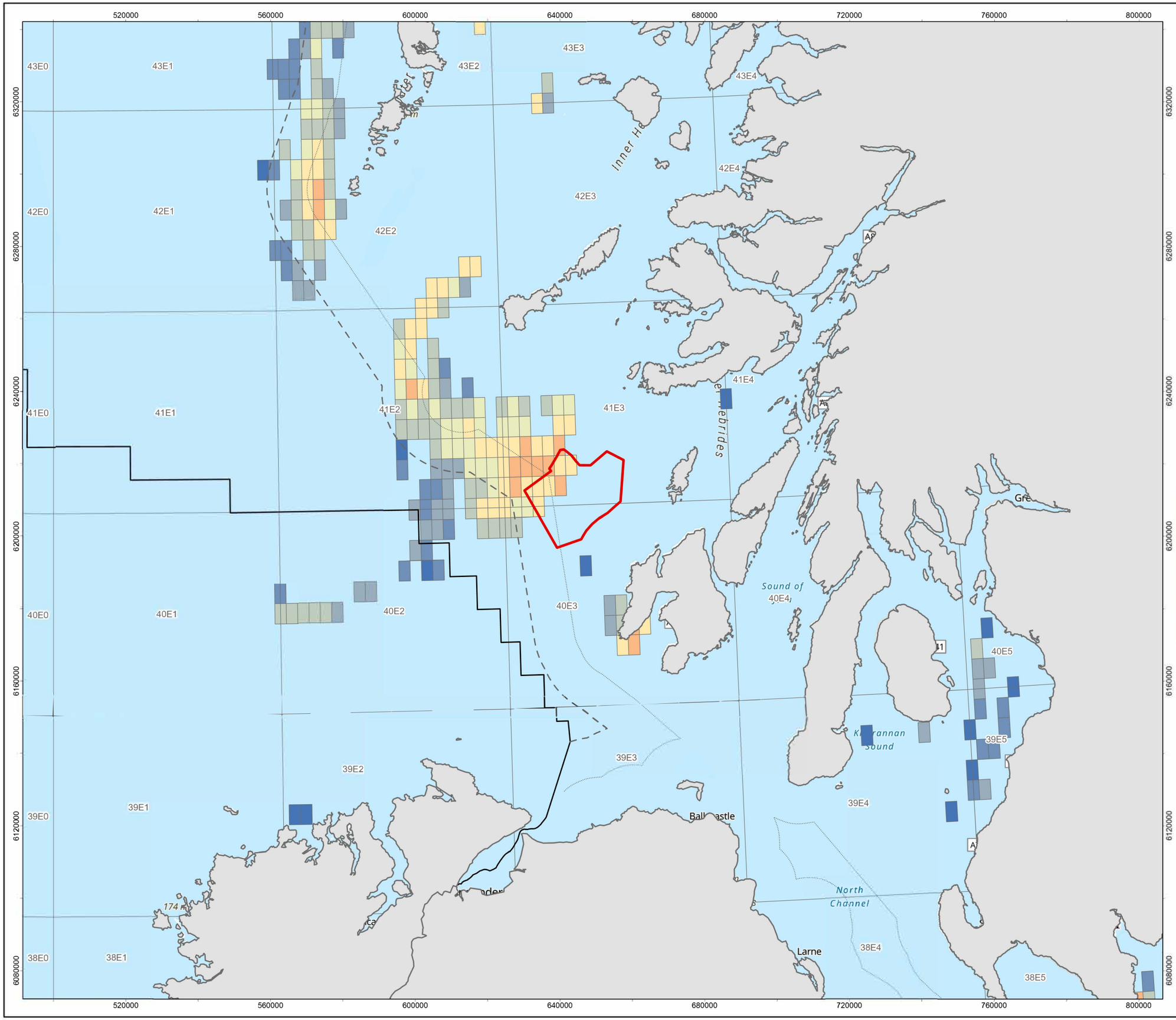
Figure 7.37
Number of Pelagic Trawl Vessels Based on FiSMaDiM Data (Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Potting Fishing Effort

Fishing hours (2012-2021)

- 1.3 - 10.0
- 10.1 - 25.0
- 25.1 - 50.0
- 50.1 - 100.0
- 100.1 - 150.0
- 150.1 - 250.0
- 250.1 - 500.0
- 500.1 - 750.0
- 750.1 - 1500.0
- 1500.1 - 3311.7

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

Scale: 1:10,000,000

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000070

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE

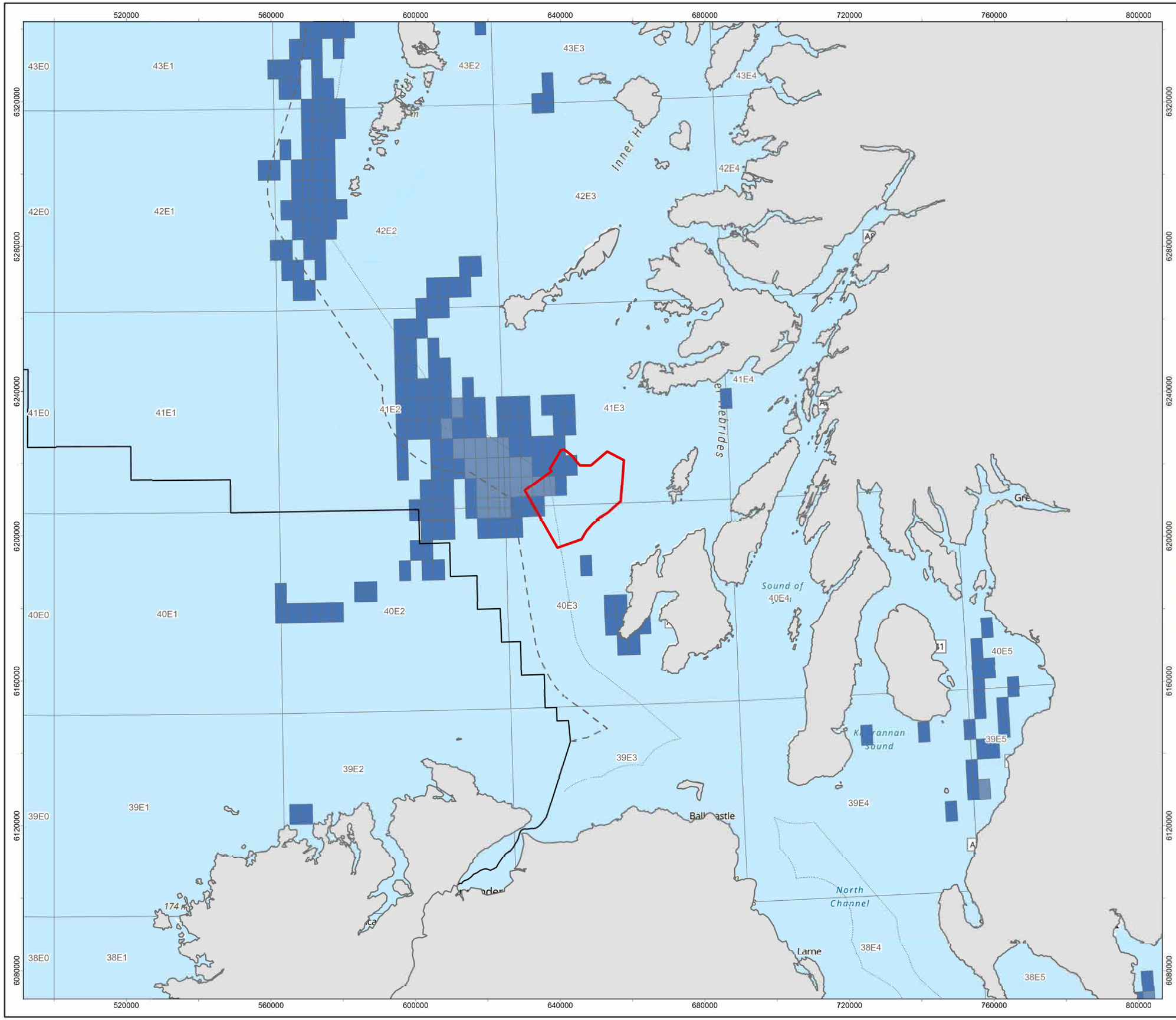
Figure 7.38
Potting Fishing Effort (Hours)
Based on FiSMaDiM Data
(Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER	MCW-DWF-ENV-MAP-RHS-000071		
DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3
PROJECT TITLE	MachairWind		

DRAWING TITLE

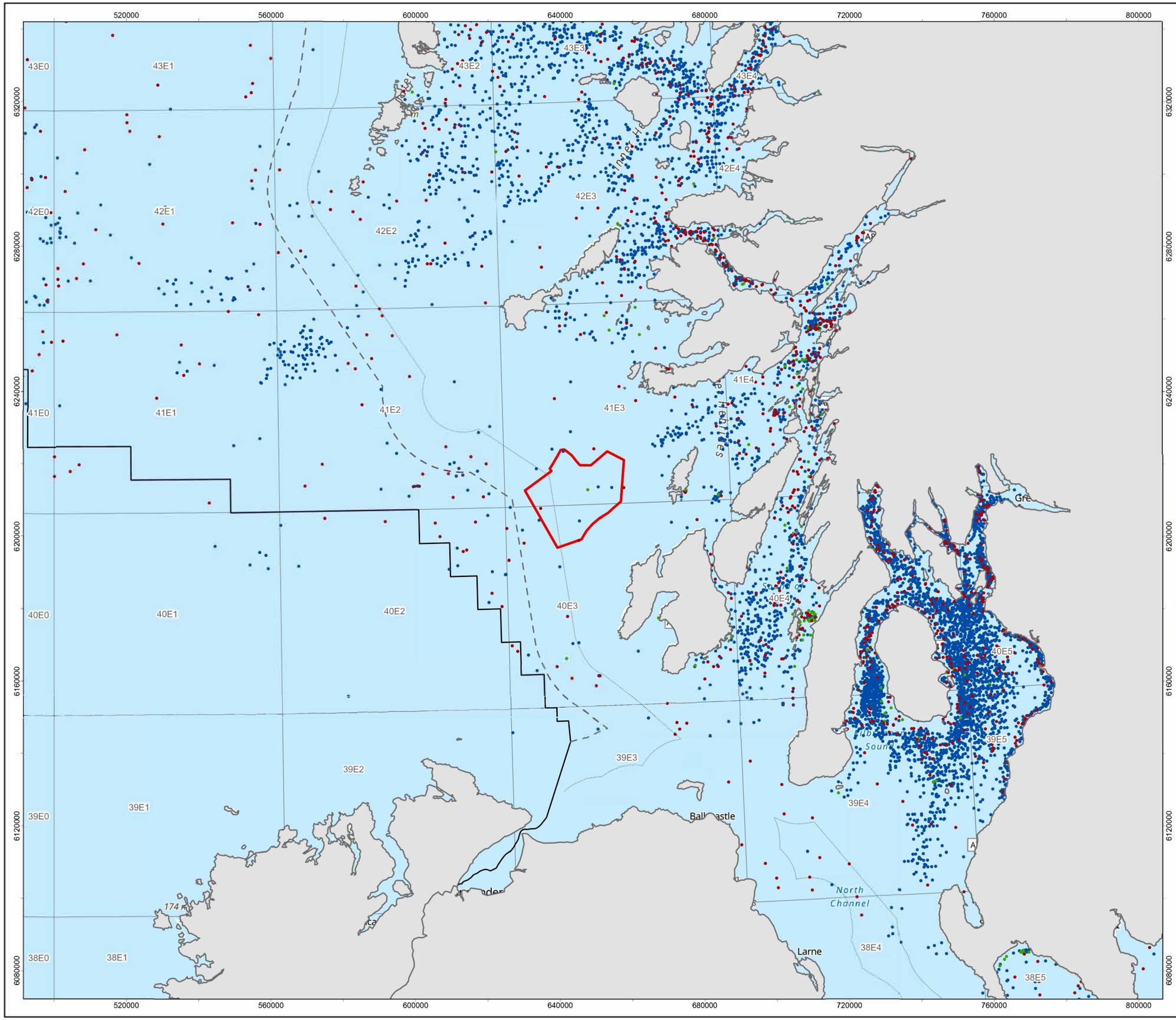
Figure 7.39
Number of Potting Vessels Based on FiSMaDiM Data (Cumulative 2012-2021)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Activity

Fishing

Laid Stationary

Steaming

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000150

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

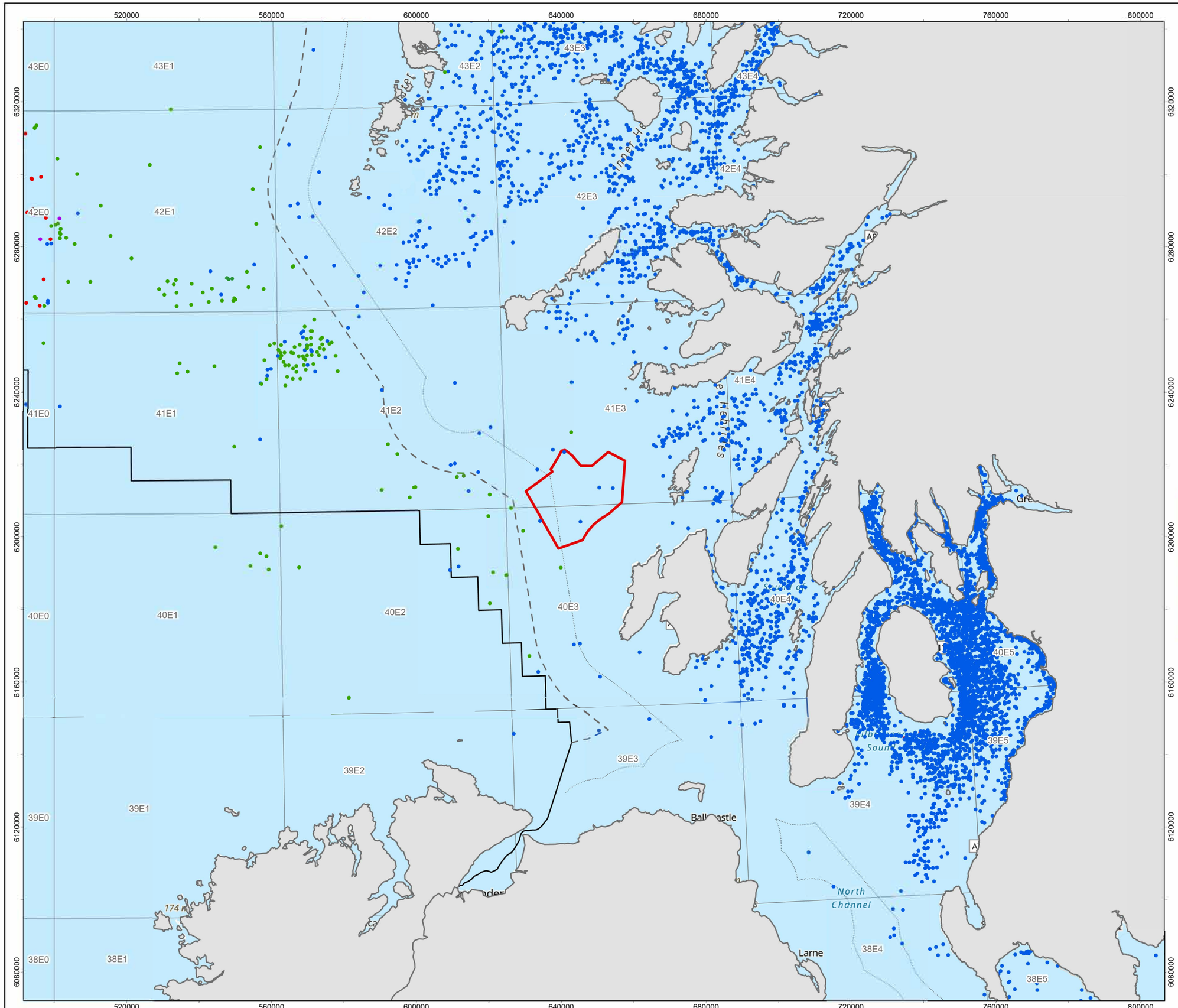
DRAWING TITLE **Figure 7.40**
Fishing Vessel Surveillance Sightings Indicating Type of Activity (Cumulative 2016-2024)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area

12 nm Territorial Sea Boundary

UK-Ireland EEZ

6 nm Boundary

Activity by Nationality

- France
- UK
- Ireland
- Norway

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000151

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

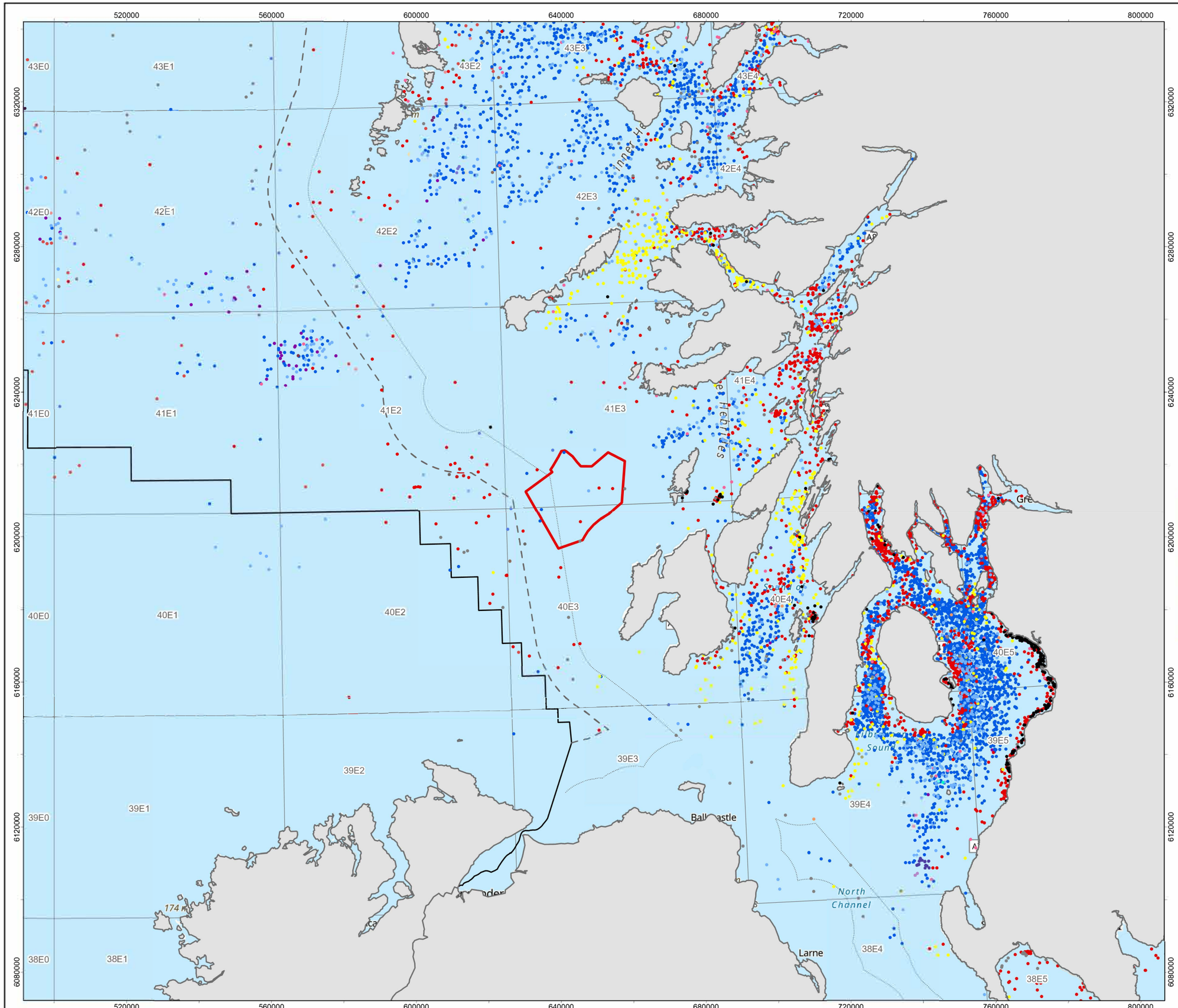
DRAWING TITLE **Figure 7.41**
Fishing Vessel Surveillance Sightings Indicating Vessel Nationality (Cumulative 2016-2024)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description



Windfarm Development Area
12 nm Territorial Sea Boundary
UK-Ireland EEZ
6 nm Boundary

Gear Type

- A - PELAGIC SIDE TRAWLER
- B - PELAGIC STERN TRAWLER
- BDF - STERN TRAWLER (PELAGIC/DEMERSAL)
- E - DEMERSAL SIDE TRAWLER
- F - DEMERSAL STERN TRAWLER
- G - BEAM TRAWLER
- H - LONG LINER
- I - PURSE SEINER
- J - BOTTOM SEINER (ANCHOR/DANISH/FLY/ SCOTS)
- K - GILL NETTER
- L - POTTER/WHELKER
- M - DRIFT NETTER
- N - SCALLOP DREDGER (FRENCH/NEWHAVEN)
- NULL
- O - ROD AND LINE
- P - SHRIMPER
- Q - KLONDYKER
- R - INDUSTRIAL TRAWLER (SANDEELER)
- S - FREEZER TRAWLER (PELAGIC/DEMERSAL)
- T - TRAWLER (ALL)
- U - TRIO TRAWLER (ALL)
- V - PAIR TRAWLER (ALL)
- W - SUCTION DREDGER
- X - UNKNOWN
- Y - OTHER DREDGES (INCLUDING MUSSEL)
- Z - HAND GATHERING/HAND LINING

N

0 4 8 12 16 20 24 28 32 36 40 44 48 Kilometres

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
1	12/11/2025	FN	SM	CC	CG

DRAWING NUMBER MCW-DWF-ENV-MAP-RHS-000152

DATUM	ETRS89	PROJECTION	UTM Zone 29N
SCALE	1:1,000,000	PAGE SIZE	A3

PROJECT TITLE MachairWind

DRAWING TITLE **Figure 7.42**
Fishing Vessel Surveillance Sightings Indicating Gear Type (Cumulative 2016-2024)

NOT TO BE USED FOR NAVIGATION

nima CONSULTANTS

ScottishPower Renewables

Name: MCW-GEN-GIS-MAP-XXX-XXXXXX_Description

8 FUTURE BASELINE

161. Commercial fisheries patterns change and fluctuate based on a range of natural and management-controlled factors. These factors include the following:

- Market demand: commercial fishing fleets respond to market demand, which is impacted by a range of factors, including the 2020 - 2021 COVID-19 pandemic;
- Market prices: commercial fishing fleets respond to market prices by focusing effort on higher value target species when prices are high, and markets are in demand;
- Stock abundance: fluctuation in the biomass of individual species stocks in response to the status of the stock, recruitment, natural disturbances (e.g. due to storms, sea temperature etc.), changes in fishing pressure etc.;
- Fisheries management: including new management for specific species where overexploitation has been identified, or changes in TACs leading to the relocation of effort, and/or an overall increase/decrease of effort and catches from specific areas;
- Environmental management: including the potential restriction of certain fisheries within protected areas;
- Improved efficiency and gear technology: with fishing fleets constantly evolving to reduce operational costs, e.g. by moving from beam trawl to demersal seine;
- Sustainability: with seafood buyers more frequently requesting certification of the sustainability of fish and shellfish products, such as the Marine Stewardship Council certification, industry is adapting to improve fisheries management and wider environmental impacts.

162. The variations and trends in commercial fisheries activity are an important aspect of the baseline assessment and form the principal reason for considering up to 5 years of key baseline data. Given the time periods assessed, the future baseline scenario would typically be reflected within the current baseline assessment undertaken.

163. The UK and the EU have agreed a Trade and Cooperation Agreement (TCA), which has applied on provisional basis since 01 January 2021. The TCA sets out fisheries rights and confirms that from 01 January 2021, and during a transition period until 30 June 2026, UK and EU vessels will continue to access respective EEZs (12 nm to 200 nm) to fish. In this period, EU vessels will also be able to fish in specified parts of UK waters between 6 nm to 12 nm.

164. The EU–UK agreement provides for the transfer of 25% of the EU's fisheries quota in UK waters to the UK over a five-year transition period. This process is now in its fourth year, with most of the quota already transferred and the remaining transfer expected to be completed before windfarm construction begins. After the 5 year transition (in 2026), there will be annual discussions on fisheries opportunities. Across the commercial fisheries regional study area, where UK fisheries primarily target non-quota shellfish species, it is expected that fleets are unlikely to be impacted by quota transfers. It is possible that UK vessels will seek to exploit additional quota-species opportunities, but vessels would need to access quota holdings.

165. Market changes have the potential to impact fishing activity in the commercial fisheries regional study area; some of the catch landed by UK vessels is exported to EU markets (e.g. brown crab) and potential tariff/non-tariff barriers could affect which species are targeted and to what extent.

9 SUMMARY

166. This Technical Appendix provides a comprehensive baseline characterisation of commercial fisheries activity within and surrounding the MachairWind WDA. The assessment covers a 13-year dataset (2011–2023) and integrates multiple sources of quantitative and qualitative information, including landings data, VMS and AIS analyses, fisheries mapping, and engagement with the fishing industry. Spatial mapping has covered a wide timeseries based on data availability including 2009 to 2013 data and activity mapping up to 2021. Given the range of datasets assessed and the comprehensive analysis undertaken, it is considered that this technical report is adequate for the purposes of an EIA.

167. The local study area (ICES rectangles 40E3 and 41E3) and the wider regional study area (12 ICES rectangles) were defined to ensure that both site-specific and contextual patterns of fishing effort could be fully assessed. The study confirms that the WDA lies within an area of active inshore fisheries, predominantly targeting shellfish species using static gear, with additional but more limited activity by mobile gears. Potting is the principal fishing method across the local study area, targeting brown crab, lobster and velvet crab, with brown crab representing the most valuable species by landed value. Other important species include king scallop, nephrops, lobster, and razor clam, each displaying distinct seasonal patterns in landings. In the wider regional context, nephrops and mackerel dominate by landed weight and value, reflecting the influence of the mixed demersal trawl and pelagic fleets operating across the West of Scotland. Overall, the inshore potting activity targeting brown crab, lobster and other crab species represents the predominant fishery across the WDA, with vessels operating principally from Scotland and from inshore local ports.

168. The key fleet métier groups operating across the commercial fisheries local and regional study areas include (in no particular order):

- Scottish and Northern Irish potting vessels targeting brown crab, lobster, velvet crab, green crab, whelk, and ballan wrasse;
- Scottish and Northern Irish demersal otter trawlers targeting nephrops, haddock, whiting, squid, and monkfish using TR1 (≥100 mm) and TR2 (70–99 mm) gear types;
- Scottish scallop dredgers targeting king scallop within inshore and nearshore grounds north of the WDA;
- UK pelagic trawlers targeting mackerel, herring, horse mackerel, and sprat, operating seasonally across the wider West of Scotland;
- Scottish diving vessels targeting razor clam (under licensed trial fishery) and king scallop;
- Scottish vessels using handlines or rod and line targeting mackerel and other small pelagic species on a seasonal basis; and
- Small-scale local fishers operating other passive gears (e.g. set nets) around Islay, Colonsay, and Mull, primarily for shellfish.

169. Landings from the local study area are primarily made at Oban (Mainland Argyll), followed by key island ports including Port Ellen and Port Askaig (Islay), Fionnphort (Mull), and Tiree, with smaller-scale activity recorded at ports such as Ulva Ferry (Mull), Bunessan (Mull), and Bowmore (Islay). These ports reflect the mixed inshore character of local fisheries and the strong island-based nature of the fishing economy in the region. Spatial mapping of VMS, AIS, and plotter data indicates that fishing intensity within the WDA is moderate for static gear and very low for mobile gear types. Scallop dredging activity is largely located to the north of the WDA, with low overlap. The FiSMaDiM dataset corroborates these findings, showing limited demersal trawl effort within the WDA and moderate potting activity by local inshore vessels.

170. The Project boundary has been refined since the scoping stage, with reductions in the south and east to maintain navigational safety and access routes between Colonsay and the WDA, and in the northeast to provide safe access to the Dubh Artach lighthouse. These refinements also provide secondary benefits for fisheries by maintaining access to traditional fishing grounds and avoiding discrete scallop areas. Overall, the MachairWind WDA overlaps with areas of mixed inshore fisheries, primarily potting by inshore vessels. The analysis provides a robust and comprehensive baseline to inform the EIA, ensuring that potential effects on commercial fisheries can be accurately assessed and that future mitigation and co-existence measures are grounded in current evidence and stakeholder input.

10 REFERENCES

Cefas. (2025). FiSMaDiM Public Web App. Available online at: FisMaDiM Public Web App

European Maritime Safety Agency (EMSA). (2023). Integrated Maritime Services Automatic identification system (AIS) data for EU fishing vessels from 2019 to 2022 indicating route density per km per annual period.

ICES (2024a). ICES Advice on fishing opportunities, catch, and effort for Norway lobster (Nephrops norvegicus) in Division 6.a, Functional Unit 11 (West of Scotland, North Minch)

ICES (2024b). ICES Advice on fishing opportunities, catch, and effort for Mackerel (Scomber scombrus) in subareas 1–8 and 14, and in Division 9.a (Northeast Atlantic and adjacent waters)

ICES (2024c). ICES Advice on fishing opportunities, catch, and effort for Herring (Clupea harengus) in Division 6.a (North), autumn spawners (West of Scotland)

ICES (2024d). ICES Advice on fishing opportunities, catch, and effort for Haddock (Melanogrammus aeglefinus) in Subarea 4, Division 6.a, and Subdivision 20 (North Sea, West of Scotland, Skagerrak)

ICES (2024e). ICES Advice on fishing opportunities, catch, and effort for Anglerfish (Lophius budegassa, Lophius piscatorius) in subareas 4 and 6, and in Division 3.a (North Sea,Rockall and West of Scotland, Skagerrak and Kattegat)

ICES (2024f). ICES Advice on fishing opportunities, catch, and effort for Whiting (Merlangius merlangus) in Division 6.a (West of Scotland)

International Council for the Exploration of the Sea (ICES). (2022). Spatial data layers of fishing intensity/pressure for EU vessels operating within ICES defined Celtic Seas Ecoregion and Greater North Sea Ecoregion.

Kafas, A., Jones, G., Watret, R., Davies, I., Scott, B., (2013). 2009 - 2013 amalgamated VMS intensity layers, GIS Data. Marine Scotland, Scottish Government. doi: 10.7489/1706-1

Kingfisher. (2024). UK Fishing Restrictions. Available online at: https://kingfisherrestrictions.org [Accessed April 2024].

Marchal, P. (2008). A comparative analysis of métiers and catch profiles for some French demersal and pelagic fleets. ICES Journal of Marine Science (1054-3139) (Oxford University Press), 2008-05, Vol. 65, N. 4, P. 674-686.

Marine Directorate (2023). Scottish Sea Fisheries Statistics 2022. https://www.gov.scot/publications/scottish-sea-fisheries-statistics-2022/pages/3/#:~:text=The%20real%20value%20of%20the,£617%20million%20in%202022 [Accessed 1 March 2025].

Marine Management Organisation (MMO). (2022a). UK sea fisheries annual statistics report 2021.

Marine Management Organisation (MMO). (2022b). Vessel Monitoring System data for non-UK registered vessels for 2016 to 2020 indicating hours fishing for mobile and static vessels to a resolution of 200th of an ICES rectangle.

Marine Management Organisation (MMO). (2024a). UK sea fisheries annual statistics report 2023: underlying datasets (Excel workbook).

Marine Management Organisation (MMO). (2024b). UK Sea Fisheries Statistics 2023. Marine Management Organisation, 5 December 2024. Available at:

https://assets.publishing.service.gov.uk/media/67506e9a9ef923a1bbc97abb/UK_Sea_Fisheries_Statistics_2023___.pdf [Accessed: 1 March 2025].

Marine Management Organisation (MMO). (2025a). UK sea fisheries annual statistics report 2024.

Marine Management Organisation (MMO). (2025b). Explore Marine Plans. GOV.UK. Available at: https://environment.data.gov.uk/marine-plans-explorer [Accessed: 1 March 2025].

Mendo, T.; Ransijn, J.; Durbach, I. Gibson, T.; James, M.; Swift, R.; Muench, A. (2024). Identifying the recent spatial distribution of fishing activities in the UK EEZ – a report on methods used. Report produced for The Crown Estate, OWEC funded project: FiSMaDiM, 11 pages. Doi: 10.14465/2024.OWEC.003

Mesquita, C., Ellis, A., Miethe, T. and Dobby, H. (2023). Crab and Lobster Fisheries in Scotland: Results of Stock Assessments 2016-2019. Scottish Marine and Freshwater Science Vol 14 No 05.

Scottish Pelagic Fishermen's Association (SPFA). (2024). VMS data for SPFA Scottish pelagic trawl member vessels for 2013 to 2021 indicating fishing and transiting activities.

Seafish. (2022). Basic Fishing methods. Available online at: https://www.seafish.org/document/?id=9f2fcd97-8bef-4c28-9185-b219b8eedf8a [Accessed: 1 March 2025].