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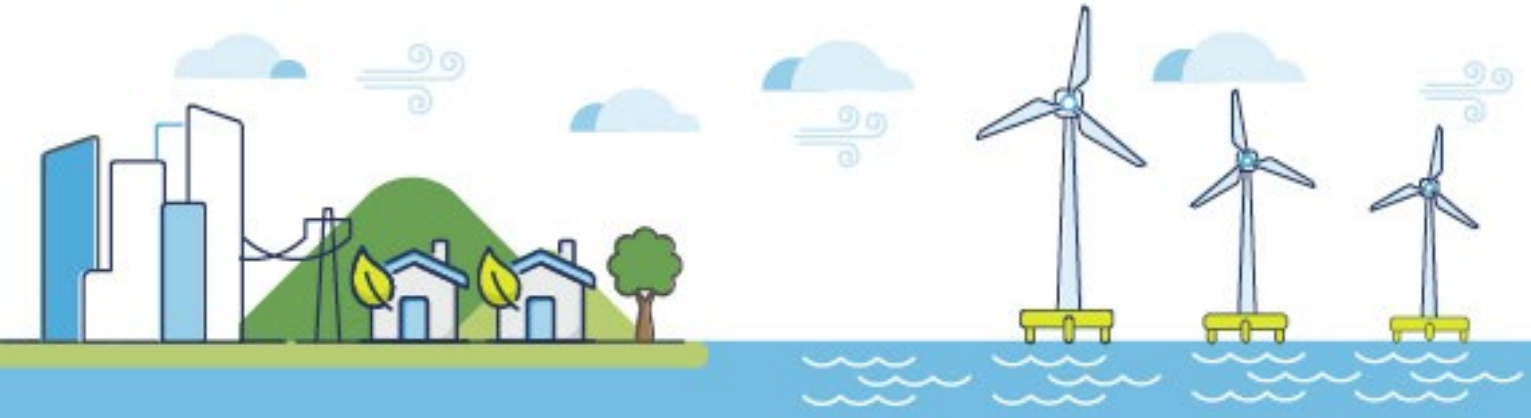
White Cross Offshore Windfarm Environmental Statement

Chapter 14: Commercial Fisheries



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Glossary of Acronyms

Acronym	Definition
AfL	Agreement for Lease
AIS	Automatic Identification System
BEIS	Department for Business, Energy and Industrial Strategy
CEA	Cumulative Effects Assessment
Cefas	Centre for the Environment and Fisheries and Aquaculture Science
CEMP	Construction Environmental Management Plan
CFLO	Company Fisheries Liaison Officer
CPA	Coast Protection Act
Defra	Department for Environment, Food and Rural Affairs
DTI	Department of Trade and Industry
ECC	Export Cable Corridor
EEZ	Economic Exclusion Zone
EIA	Environmental Impact Assessment
ES	Environmental Statement
EU	European Union
FEPA	Food and Environment Protection Act
FIR	Fishing Industry Representative
FLCP	Fisheries Stakeholders for the Duration of the Construction Phase
FLO	Fisheries Liaison Officer
FLOWW	The Fishing Liaison with Offshore Wind and Wet Renewables Group
ha	Hectare
ICES	International Council for the Exploration of the Sea
ILVO	Flanders Research Institute Agricultural, Fisheries and Food Research
IMARES	Institute for Marine Resources and Ecosystem Studies
IPC	Infrastructure Planning Commission
ISA	Immediate Study Area
km	Kilometre
Km^2	Square kilometre
m	Metre
MCA	Maritime and Coastguard Agency
MCEU	Marine Consents and Environment Unit
MCZ	Marine Conservation Zone
MMO	Marine Management Organisation
NGC	National Grid Company
NPS	National Policy Statement
OSP	Offshore Substation Platform
OWL	Offshore Wind Ltd

Acronym	Definition
STECF	Scientific, Economic and Technical Committee on Fishing
TCE	The Crown Estate
UK	United Kingdom
UXO	Unexploded Ordnance
VMS	Vessel Monitoring Systems
WSA	Wider Study Area
WTG	Wind Turbine Generator

Glossary of Terminology

Defined Term	Description
Agreement for Lease	An Agreement for Lease (AfL) is a non-binding agreement between a landlord and prospective tenant to grant and/or to accept a lease in the future. The AfL only gives the option to investigate a site for potential development. There is no obligation on the developer to execute a lease if they do not wish to.
Applicant	Offshore Wind Limited
Cumulative effects	The effect of the Project taken together with similar effects from a number of different projects, on the same single receptor/resource. Cumulative impacts are those that result from changes caused by other past, present or reasonably foreseeable actions together with the Project.
Department for Business, Energy and Industrial Strategy (BEIS)	Government department that is responsible for business, industrial strategy, science and innovation and energy and climate change policy and consent under Section 36 of the Electricity Act.
Environmental Impact Assessment (EIA)	Assessment of the potential impact of the proposed Project on the physical, biological and human environment during construction, operation, maintenance, and decommissioning.
Export Cable Corridor	The area in which the export cables will be laid, either from the Offshore Substation or the inter-array cable junction box (if no offshore substation), to the NGC Onshore Substation comprising both the Offshore Export Cable Corridor and Onshore Export Cable Corridor.
Landfall	Where the offshore export cables come ashore (up to MHWS)
Mean high water springs	The average tidal height throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest.
Mean low water springs	The average tidal height throughout a year of two successive low waters during those periods of 24 hours when the range of the tide is at its greatest.
Mitigation	Mitigation measures have been proposed where the assessment identifies that an aspect of the development is likely to give rise to significant environmental impacts, and discussed with the relevant authorities and stakeholders in order to avoid, prevent or reduce impacts to acceptable levels. For the purposes of the EIA, two types of mitigation are defined: • Embedded mitigation: consisting of mitigation measures that are identified and adopted as part of the evolution of the project design, and form part of the project design that is assessed in the EIA

Defined Term	Description
	• Additional mitigation: consisting of mitigation measures that are identified during the EIA process specifically to reduce or eliminate any predicted significant impacts. Additional mitigation is therefore subsequently adopted by OWL as the EIA process progresses.
NGC Onshore Substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of the electrical transformers.
NGC Grid Connection	The point at which the White Cross Offshore Windfarm connects into the distribution network at East Yelland substation and the distributed electricity network. From East Yelland substation electricity is transmitted to Alverdiscott where it enters the national transmission network.
Offshore Development Area	The Windfarm Site (including wind turbine generators, substructures, mooring lines, seabed anchors, inter-array cables and Offshore Substation Platform (as applicable)) and Offshore Export Cable Corridor to MHWS at the Landfall. This encompasses the part of the project that is the focus of this application and Environmental Statement and the parts of the project consented under Section 36 of the Electricity Act and the Marine and Coastal Access Act 2009
Offshore Export Cable Corridor	The proposed offshore area in which the export cables will be laid, from Offshore Substation Platform or the inter-array cable junction box to the Landfall (up to MHWS).
Offshore Infrastructure	All of the offshore infrastructure including wind turbine generators, substructures, mooring lines, seabed anchors, Offshore Substation Platform and all cable types (export and inter-array). This encompasses the infrastructure that is the focus of this application and Environmental Statement and the parts of the project consented under Section 36 of the Electricity Act and the Marine and Coastal Access Act 2009
the Offshore Project	The Offshore Project for the offshore Section 36 and Marine Licence application includes all components offshore of MHWS. This includes the infrastructure within the Windfarm Site (e.g., wind turbine generators, substructures, mooring lines, seabed anchors, inter-array cables and Offshore Substation Platform (as applicable)) and all infrastructure associated with the export cable route and landfall (up to MHWS) including the cables and associated cable protection (if required).
Offshore Substation Platform	A fixed structure located within the Windfarm Site, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore
Offshore Wind Limited	Offshore Wind Ltd (OWL) is a joint venture between Cobra Instalaciones Servicios, S.A., and Flotation Energy Ltd
The Project	The Project is a proposed floating offshore windfarm called White Cross located in the Celtic Sea with a capacity of up to 100MW. It encompasses the project as a whole i.e., all onshore and offshore infrastructure and activities associated with the Project

Defined Term	Description
Project Design Envelope	A description of the range of possible components that make up the Project design options under consideration. The Project Design Envelope, or 'Rochdale Envelope' is used to define the Project for Environmental Impact Assessment (EIA) purposes when the exact parameters are not yet known but a bounded range of parameters are known for each key project aspect.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the foundations as a result of the flow of water
White Cross Offshore Windfarm	100MW capacity offshore windfarm including associated onshore and offshore infrastructure
Wind Turbine Generators (WTG)	The wind turbine generators convert wind energy into electrical power. Key components include the rotor blades, nacelle (housing for electrical generator and other electrical and control equipment) and tower. The final selection of project wind turbine model will be made post-consent application
Windfarm Site	The area within which the wind turbines, Offshore Substation Platform and inter-array cables will be present
Works completion date	Date at which construction works are deemed to be complete and the windfarm is handed to the operations team. In reality, this may take place over a period of time.

14. Commercial Fisheries

14.1 Introduction

1. This chapter of the Environmental Statement (ES) evaluates the potential impacts of the White Cross Offshore Windfarm (the Offshore Project) on Commercial Fisheries. Specifically, it considers the potential impact of the Project seaward of Mean High-Water Springs (MHWS) during its construction, operation and maintenance, and decommissioning phases.

2. The ES has been finalised with due consideration of pre-application consultation to date (see **Chapter 7: Consultation**) and the ES will accompany the application to the Marine Management Organisation (MMO) on behalf of the Secretary of State for Business for the Department for Business, Energy and Industrial Strategy (BEIS) for Section 36 Consent and relevant Marine Licences under Marine and Coastal Access Act (2009).

3. This ES chapter:

   - Presents the existing environmental baseline established from desk studies, and consultation
   - Presents the potential environmental effects on Commercial Fisheries arising from the Offshore Project, based on the information gathered and the analysis and assessments undertaken
   - Identifies any assumptions and limitations encountered in compiling the environmental information
   - Highlights any necessary monitoring and/or mitigation measures which could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

14.2 Policy, Legislation and Guidance

4. **Chapter 3: Policy and Legislative Content** describes the wider policy and legislative context for the Offshore Project. The principal policy and legislation used to inform the assessment of potential impacts on Commercial Fisheries for the Offshore Project are outlined in this section.

14.2.1 National Policy Statement

5. The specific assessment requirements for Commercial Fisheries are set out within the overarching National Policy Statement (NPS) for Energy (EN-1) and NPS for Renewable Energy Infrastructure (EN-3) and summarised in **Table 14.1**. NPSs are

statutory documents which set out the government's policy on specific types of Nationally Significant Infrastructure Projects (NSIPs) and are published in accordance with the Planning Act 2008. Although the Offshore Project is not an NSIP, it is recognised that due to its size of 100MW and its location in English waters, certain NPS are considered relevant to the Offshore Project and decision-making and are referred to in this ES.

Table 14.1 Summary of NPS EN-1 and EN-3 provisions relevant to Commercial Fisheries

Summary	How and where this is considered in the ES
"Early consultation should be undertaken with statutory advisors and with representatives of the fishing industry which could include discussion of impact assessment methodologies. Where any part of a proposal involves a grid connection to shore, appropriate inshore fisheries groups should also be consulted." - **EN-3, Section 2.6.127**	**Section 14.3.8** describes stakeholder consultation which has been undertaken to inform this chapter. This includes consultation with local (inshore) fleets amongst other stakeholders.
"The assessment by the applicant should include detailed surveys of the effects on fish stocks of commercial interest and any potential reduction in such stocks, as well as any likely constraints on fishing activity within the project's boundaries. Robust baseline data should have been collected and studies conducted as part of the assessment." - **EN-3, Section 2.6.129**	A detailed assessment of the impacts of the Offshore Project on fish and shellfish receptors is provided in **Chapter 11: Fish and Shellfish Ecology**. The likely constraints on fishing associated with the Offshore Project are considered in this chapter (**Section 14.3.3)**.
"Where there is a possibility that safety zones will be sought around offshore infrastructure, potential effects should be included in the assessment on commercial fishing." - **EN-3, 2.6.130**	Potential effects from the inclusion of safety zones are considered within **Section 14.3.3**.
"Where the precise extents of potential safety zones are unknown, a realistic worst-case scenario should be assessed. Applicants should consult the Maritime and Coastguard Agency (MCA). Exclusion of certain types of fishing may make an area more productive for other types of fishing. The assessment by the applicant should include detailed surveys of the effects on fish stocks of commercial interest and the potential reduction or increase in such stocks that will result from the presence of the wind farm development	Consideration has been given to the implementation of safety zones for definition of the worst-case scenario (**Table 14.5**) and for assessment of potential impacts on commercial fisheries (**Section 14.3.3**). Consideration is given in this chapter to the potential impact on commercial fisheries resulting from impacts associated with the Offshore Project on commercially exploited fish and shellfish species. A detailed assessment of the impacts of the Offshore Project on fish and shellfish species, including those of commercial importance, is provided in **Chapter 11: Fish and Shellfish Ecology**.

Summary	How and where this is considered in the ES
and of any safety zones." - **EN-3, Section 2.6.131**	
"The IPC should be satisfied that the site selection process has been undertaken in a way that reasonably minimises adverse effects on fish stocks, including during peak spawning periods and the activity of fishing itself. This will include siting in relation to the location of prime fishing grounds. The IPC should consider the extent to which the proposed development occupies any recognised important fishing grounds and whether the project would prevent or significantly impede protection of sustainable commercial fisheries or fishing activities. Where the IPC considers the wind farm would significantly impede protection of sustainable fisheries or fishing activity at recognised important fishing grounds, this should be attributed correspondingly significant weight." - **EN-3, Section 2.6.132**	Assessment of the location of important fishing grounds and the selection processes incorporated to avoid them are detailed in **Chapter 4: Site Selection and Assessment of Alternatives** and **Chapter 5: Project Description.**
"The IPC should be satisfied that the applicant has sought to design the proposal having consulted representatives of the fishing industry with the intention of minimising the loss of fishing opportunity considering effects on other marine interests. Guidance has been jointly agreed by the renewables and fishing industries on how they should liaise with the intention of allowing the two industries to successfully co-exist." - **EN-3. Section 2.6.133**	Details of consultation with representatives of the fishing industry and efforts undertaken to minimise losses of fishing opportunities are discussed in **Section 14.3.8** and **Chapter 6: EIA Methodology**.
"Any mitigation proposals should result from the applicant having detailed consultation with relevant representatives of the fishing industry." - **EN-3, Section 2.6.134**	Details of consultation with relevant representatives and subsequent mitigation proposals are discussed in **Sections 0** and **14.3.8**.

6. In addition to the NPS guidance, the following guidance documents have been used to inform the assessment of potential impacts on commercial fisheries:

   - Guidelines for data acquisition (Cefas, 2012)
   - Marine And Coastal Access Act (2009)
   - Guidance notes for Environmental Impact Assessment (Cefas, 2004)
   - Cumulative impact assessment guidelines (RenewableUK, 2013)

- Best practise guidance for fishing industry financial and economic impact assessments (UKFEN, 2012)
- Options and opportunities for marine fisheries mitigation associated with wind farms (Blyth-Skyrme, R.E, 2010)
- Best Practice Guidance for Offshore Renewables Developments (FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison, 2014)
- Best Practice Guidance for Offshore Renewables Developments (FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds, 2015)
- Fishing and Submarine Cables (International Cable Protection Committee, 2009).

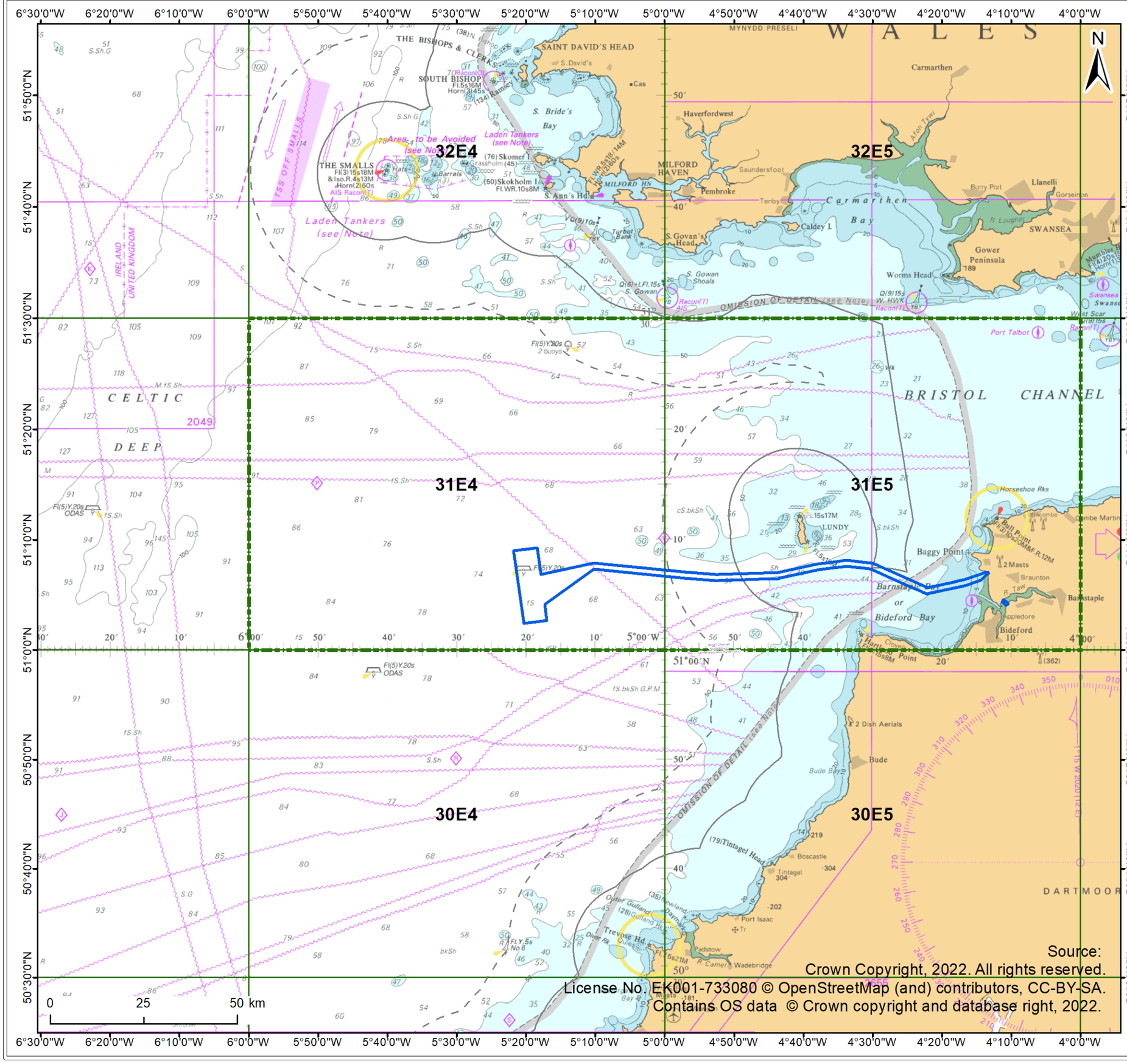
14.3 Assessment Methodology

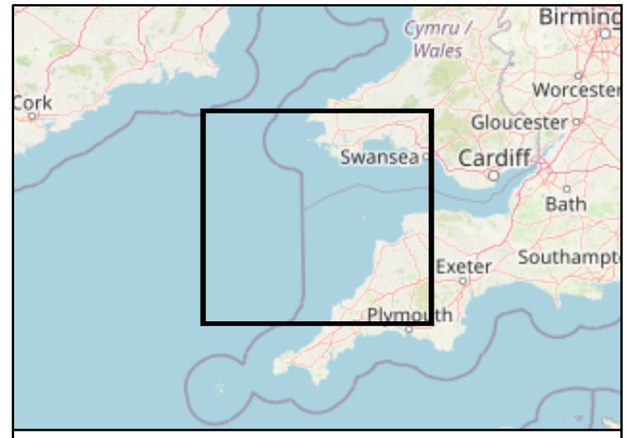
14.3.1 Study Area

7. Details of the location of the Offshore Project and the offshore infrastructure are set out within **Chapter 5: Project Description.**

8. For the purposes of this report the Commercial Fisheries Study Area has been defined with reference to the International Council for the Exploration of the Seas (ICES) rectangles in which the offshore Project Area is located. These are ICES rectangle 31E5, in which the majority of the Offshore Export Cable Corridor (ECC) is located, and 31E4, in which the Windfarm Site and a small section of the Offshore Export Cable Corridor is located.

9. In order to provide context however, data and information have been provided for a wider area as illustrated in **Figure 14.1.**





Legend:

- Study Area
- Offshore Development Area
- 6 NM Limit
- 12 NM Limit
- ICES Rectangles

Source:
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Client: Offshore Wind Ltd.	Project: White Cross Offshore Windfarm

Title: White Cross Study Area

Figure: 14-1 | Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	MK	RM	A3	1:1,000,000

Co-ordinate system: WGS 1984 World Mercator

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14.3.2 Approach to Assessment

10. The assessment methodology for Commercial Fisheries is consistent with that presented in **Chapter 6: EIA Methodology**.

11. In line with the guidance cited above, the potential impacts specific to commercial fisheries to be assessed below are:

    - Reduction in access to, or exclusion from established fishing grounds
    - Displacement leading to gear conflicts and increased fishing pressure on adjacent grounds
    - Increased steaming distances and times to fishing grounds
    - Interference with fishing activities
    - Obstructions on the seabed
    - Adverse impacts on commercially exploited species

12. Potential impacts on commercially exploited fish and shellfish species are addressed in **Chapter 11: Fish and Shellfish Ecology.**

13. Where relevant in the assessments of the above impacts, associated safety issues for fishing vessels are cited whilst the navigational safety issues of fishing vessels are considered in **Chapter 15.A: Navigation Risk Assessment.**

14. The definitions of the magnitude of an effect and receptor sensitivity are outlined in Table 14.2 and Table 14.3.

Table 14.2 Definition of terms relating to magnitude of an effect

Source	Summary
High	The Project area sustains high levels of activity by the fleet and covers a large or moderate extent of its grounds; and/or the effect is permanent.
Medium	The Project area sustains moderate/high levels of activity by the fleet and covers a small/moderate extent of its grounds; and/or The effect is long term.
Low	The Project area sustains low/moderate levels of activity by the fleet and covers a small extent of its grounds; and/or the effect is short to medium term.
Negligible	The Project area sustains low/ negligible activity by the fleet and covers a small/negligible extent of its grounds; and/or the effect is short term.

Table 14.3 Definition of terms relating to receptor sensitivity

Source	Summary
High	Limited operational range and ability to deploy only one gear type. High dependence upon a single fishing ground.
Medium	Moderate extent of operational range and / or ability to deploy an alternative gear type. Dependence upon a limited number of fishing grounds.
Low	Extensive operational range and / or ability to deploy a number of gear types or modify gears. Ability to fish a number of fishing grounds.
Negligible	Extensive operational range and/or very high method versatility in terms of gear types. Vessels are able to exploit a large number of fishing grounds.

15. The significance of the effect upon Commercial Fisheries is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is presented in **Table 14.4**.

Table 14.4 Significance of an impact resulting from each combination of receptor sensitivity and the magnitude of the effect upon it

		Negative Magnitude				Beneficial Magnitude			
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

14.3.3 Worst-Case Scenario

16. In accordance with the assessment approach to the Project Design Envelope, or 'Rochdale Envelope', set out in **Chapter 6: EIA Methodology**, the impact assessment for Commercial Fisheries has been undertaken based on realistic worst-case scenarios of predicted impacts. The Project Design Envelope for the Offshore Project is detailed in **Chapter 5: Project Description**.

17. **Table 14.5** presents the realistic worst-case scenarios considered as the start point for the assessment of Commercial Fisheries impacts prior to the assumption of any mitigating effects.

Table 14.5 Definition of realistic worst-case scenario details relevant to the assessment of impacts in relation to Commercial Fisheries

Impact Construction	Realistic worst-case scenario	Rationale
Impact 1: Reduction in access to, or exclusion from established fishing grounds	Maximum temporary fishing area lost to commercial fisheries as a result of: • Installation of up to eight wind turbine generators (WTGs) and up to one Offshore Substation Platform (OSP) (maximum area of the Windfarm Site is 49.4km^2). • Installation of up to 29.76km of inter-array cables. • Installation of up to two offshore export cables up to 187.2km in total length. • Rolling 500m safety zones advised around construction zones. • 50m safety zones around installed or partially installed infrastructure. 500m advisory safety zones along any exposed sections of cable. This would lead to a theoretical worst-case scenario under which all commercial fishing activity would be excluded from the entirety of the Windfarm Site and the Offshore Export Cable Corridor towards the latter stages of construction.	Until construction scheduling is finalised and in view of unpredictable variables, for safety reasons it has to be assumed that the worst-case scenario is that all fishing activities would have to be excluded from the Windfarm Site and Offshore Export Cable Corridor until the post construction activities and associated inspections have been completed.
Impact 2: Displacement leading to gear conflicts and increased fishing pressure on adjacent grounds	Potential for vessels with static gears deployed within the Windfarm Site and Offshore Export Cable Corridor to relocate them into the fishing grounds of other vessels.	As shown by **Figure 14.4** the location of local vessel fishing grounds suggests a potential for displacement effects to occur.
Impact 3: Increased steaming distances and times	Vessels having to divert around the Windfarm Site when steaming to fishing grounds.	Due to the presence of construction vessels and partially installed infrastructure and mooring lines, it

Impact	Realistic worst-case scenario	Rationale
		would not be safe for vessels to transit through the Windfarm Site for the duration of the construction phase.
Impact 4: Interference to fishing activities	Maximum of 30 construction vessels simultaneously operating on site Maximum number of vessel trips during the construction phase: 30 Assumes that construction vessel transit routes overlap with fishing grounds Approximate maximum duration of offshore construction activity of 24 months.	The maximum number of vessels transits and the maximum duration of the construction programme would result in the greatest potential for conflict/interaction between construction vessels and fishing vessels and their gears.
Impact 5: Obstacles on the seabed	Risk of fishing gears being damaged or lost or fishing vessels stability compromised due to fastening on seabed obstacles within the Offshore Export Cable Corridor.	Spoil, berms or displaced boulders from offshore works such as cable burial or relocated boulders could constitute a risk to fishing gears and vessels stability if not removed or if skippers are not sufficiently aware of their nature and location. The same would apply to unguarded partially installed infra structure.
Impact 6: Potential impacts on commercially exploited fish and shellfish species	Worst case scenario parameters in respect of fish and shellfish species during construction, including those of commercial importance, are provided in **Chapter 11: Fish and Shellfish Ecology**.	
Operation		
Impact 1: Reduction in access to, or exclusion from established fishing grounds.	All fishing vessels unable to undertake fishing operations within the operational Windfarm Site. Area lost is a result of: • Installation of up to 8 WTGs and one OSP (the maximum area of the Windfarm Site is 49.4km^2). • Installation of up to 29.76km of inter-array cables.	This represents the greatest extent of potential fishing exclusion throughout the operation phase. Due to the safety risks associated with interactions with turbine mooring lines and dynamic cabling the worst-case scenario assumption is that all fishing operations cannot take place within the operational Windfarm Site.

Impact	Realistic worst-case scenario	Rationale
	• Installation of up to two offshore export cables up to 187.20km in total length. Cables will be buried to a minimum of 0.5m where possible and protected where burial is not possible. The total length of protected offshore export cable (for two cables) is estimated at 34.08km. This is 18% of the total export cable length. The total length of protected inter-array cable (cable crossings, entry to substation/turbine and unburied due to soil uncertainties) is estimated at 3.2km.	However, with the completion of all offshore export cable installation works, and inspections and notifications, it is assumed that fishing operations can resume within it.
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Continuation of the construction displacement impact in respect of the Windfarm Site for the lifetime of the Offshore Project.	The Offshore Project lifetime exclusion of fishing activity from the Windfarm Site would similarly extend the duration of the displacement impact. This would not however be the case with the Offshore Export Cable Corridor.
Impact 3: Increased steaming distances and times	Vessels have to divert around the Windfarm Site when steaming to fishing grounds.	Due to the presence of construction mooring lines and dynamic cabling, it would not be safe for vessels to transit through the Windfarm Site for the lifetime of the Offshore Project.

Impact	Realistic worst-case scenario	Rationale
Impact 4: Interference to fishing activities	Maximum number of 2,400 crew transfer and O&M vessels transiting to and from the Windfarm Site during lifetime of the Project.	Greatest potential for crew transfer and other O&M vessels to interact/conflict with fishing vessels and their gears fishing vessels.
Impact 5: Obstacles on the seabed	Risk of fishing gears being damaged or lost or fishing vessels stability compromised due to fastening on seabed obstacles within the Offshore Export Cable Corridor.	Spoil, berms or displaced boulders from offshore works such as cable burial or relocated boulders could constitute a risk to fishing gears and vessels stability if not removed or if skippers are not sufficiently aware of their nature and location.
Impact 6: Potential impacts on commercially exploited fish and shellfish species	Worst case scenario parameters in respect of fish and shellfish species during construction, including those of commercial importance, are provided in **Chapter 11: Fish and Shellfish Ecology**.	
Decommissioning		
Decommissioning is expected to include removal of all of the wind turbine components and associated infrastructure). Scour protection and cable protection would likely be left in-situ along with the export cables. The worst-case scenarios for the decommissioning phase are not expected to be greater than those described above for the construction phase.		

14.3.4 Summary of Mitigation

14.3.4.1 Embedded Mitigation

18. This section outlines the embedded mitigation relevant to the Commercial Fisheries assessment, which has been incorporated into the design of the Offshore Project (**Table 14.6**). Where other mitigation measures are proposed, these are detailed in the impact assessment.

Table 14.6 Embedded mitigation measures relevant to the Commercial Fisheries assessment

Component/Activity	Mitigation embedded into the design of the Offshore Project
CEMP	A CEMP, including an Emergency Spill Response Plan, Waste Management Plan, Marine Mammal Protection Plan, Fisheries Liaison and Co-existence Plan and Fisheries Management and Mitigation Strategy will be developed prior to commencement of works. An Outline CEMP is provided in **Appendix 5.A**.
Fisheries Liaison Officer	A Fisheries Liaison Officer (FLO) will be appointed for the Construction Phase and as required during the Operation Phase (including maintenance and repair) Phase. The Requirements for Decommissioning Phase will be determined following economic and environmental appraisals. Adherence to good practice guidance on the approach to fisheries liaison and mitigation (e.g., FLOWW, 2014; 2015).
Fisheries Liaison and Coexistence Plan	The Fisheries Liaison and Coexistence Plan will detail the scheduling, approach and stakeholders with whom liaison will be conducted and the content and formats of information to be provided and the process of recording and acting upon feedback from stakeholders.
Notifications	Notice(s) to Mariners' (including Kingfisher) will be issued a week prior to works, Radio Navigational Warnings, NAVTEX and/or broadcast warnings will also be issued a week prior to the commencement of installation works along with direct liaison with relevant stakeholders.
Claims for loss of/damage to fishing gears	Development of a standard procedure for the claim of loss of/or damage to fishing gear.
Code of Practice	Development of a procedure for the claim of loss of/or damage to fishing gear.
Offshore Export Cable Burial	Minimum cable burial depth of 0.5m, with a maximum cable burial depth of 3m. The use of cable burial will also prevent snagging with fishing gear.

Component/Activity	Mitigation embedded into the design of the Offshore Project
Cable protection	The use of cable protection will be limited to areas where cables cannot be buried to a sufficient depth and at crossings with 3rd party infrastructure.
Cable protection charting and dissemination of information	Information on the areas where cable protection is installed will be distributed to relevant representative organisations and stakeholders in appropriate formats for inclusion in charts and information bulletins.
Rock placement	Where rock placement is used for cable protection this will be designed to minimise potential snagging risks such as use of graded rock and 1:3 berm profiles. A vessel able to undertake a targeted placement method will be used.
Cable Exposures	In the event that cable exposures are identified during the operational phase, the location of these will be published via the standard notices with additional liaison to be undertaken with fisheries stakeholders. Where appropriate, additional temporary measures would also be put in place (e.g., surface marker buoys, use of guard vessels, etc).
24-hour cable installation	Installation will normally be a 24-hour operation where viable, minimising overall installation time and, maximising use of fair-weather windows, and to take advantage of vessel and equipment availability.
Post-lay and cable burial inspection	Undertaking of post-lay and cable burial inspection to confirm the burial status of the cables, identify potential seabed hazards associated with installation, and, where appropriate and practicable, undertaking of rectification works.

19. In addition to the embedded mitigation measures as outlined above, the Applicant has also committed to the following additional mitigation measures summarised in **Table 14.7**.

Table 14.7 Additional mitigation measures relevant to the Commercial Fisheries assessment

Component/Activity/Impact	Additional Mitigation
Export cable pre-installation and installation works requiring the removal of static fishing gears from parts or all of the Offshore Export Cable Corridor	In line with FLOWW Guidance, appropriate evidence-based cooperation agreements will be sought with those vessels' owners for the removal of their static gears from the Offshore Export Cable Corridor. Such agreements would include provisions aimed at to preventing displacement impacts on other vessels.
Project vessels transits	In order to minimise conflicts between project vessels and deployed static fishing gears, project vessel transit routes would, as far as

Component/Activity/Impact	Additional Mitigation
	practicable, be designed to avoid important areas of static gear deployment. Project vessel crews would also be briefed on the types and locations of static gears within the vicinity of the Offshore Project.
Boulder relocation	Consultation would be undertaken with fisheries stakeholders prior to the commencement of boulder relocation/removal works. The locations of relocated boulders as specified by the MMO would be provided to stakeholders in the appropriate formats including electronically for installation in vessel GPS plotters.
Unexploded Ordnance (UXO) Clearance	If UXO clearance is required, the locations of any removal or destruction works will be provided to stakeholders in the appropriate formats.
Fishing Industry Representative (FIR)	Engagement of a locally experienced FIR to assist the Company Fisheries Liaison Officer.
Obstructions on the seabed	The Offshore Project will have agreed policies with construction contractors aimed at preventing objects being dropped overboard from their vessels as well as ensuring procedures are in place for the recording, notification and recovery of any accidentally lost objects.

14.3.5 Baseline Data Sources

14.3.5.1 Desktop Study

20. A desk study was undertaken to obtain information on Commercial Fisheries. Data were acquired within the study area through a detailed desktop review of existing studies and datasets. Agreement was reached with consultees that the data collected, and the sources used to define the baseline characterisation for Commercial Fisheries are fit for the purpose of the EIA.

21. The sources of information presented in **Table 14.8** were consulted to inform the Commercial Fisheries assessment.

Table 14.8 Data sources used to inform the Commercial Fisheries assessment

Source	Summary
Marine Management Organisation (MMO) (2011 – 2020)	Surveillance sightings in UK Exclusive Economic Zone (EEZ) waters are recorded by fishery protection aircraft and surface craft in order to police fisheries legislation. This

Source	Summary
	dataset provides information on fishing vessels observed within UK waters, regardless of vessel size, nationality and fishing activity.
MMO (2016 – 2020)	Provides information on landings of UK registered vessels by species and method as an annual average. The dataset includes UK fishing vessels of all sizes. The data is an average from 2016 to 2020.
European Commission's (EC) Scientific, Economic and Technical Committee on Fishing (STECF) (2010-2014)	Belgian landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all vessels of ten metres and over.
European Commission's (EC) Scientific, Economic and Technical Committee on Fishing (STECF) (2012-2016)	French landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all registered vessels 10m and over and from monthly declaration forms for fishing effort and catches per species by dates, locations and gears. For all registered vessels under ten metres – logbooks are not mandatory for these vessels, but they are covered by monthly declarative forms.
European Commission's (EC) Scientific, Economic and Technical Committee on Fishing (STECF) (2017-2021)	Dutch landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all registered vessels ten metres and over and from monthly declaration forms for fishing effort and catches per species by dates, locations and gears.
Marine Institute (2015-2019)	Irish landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all vessels of ten metres and over.
EMODnet	Publicly available AIS records of fishing vessels, plotted to illustrate the combined tracks of fishing vessels of all nationalities.
MMO (2016 -2020)	The dataset provides summaries of fishing activity for UK commercial fishing vessels of 15m and over in length that are deemed to have been fishing over a specified time period. The data is provided using a grid based on 0.05-degree sub-rectangles. The data included in this report is presented in terms of fishing value (£).
Flanders Research Institute Agricultural, Fisheries and Food Research (ILVO) (2010 -2014)	Belgian VMS data combined with logbook data presented at 1/16th of an ICES rectangle scale, therefore the data is of a lesser resolution than the UK VMS.

Source	Summary
	Includes information for Belgian registered vessels of 12m and over in length. The data included in this report is presented as an annual average in terms of fishing value (€). Recent VMS data for Belgian vessels is not publicly available. The data presented in this report is part of Brown & May's (BMM) in-house historic fisheries data sets for Belgian vessels, obtained via data request to Flanders Research Institute for Agricultural, Fisheries and Food Research (ILVO). Following recent communications with ILVO, an update of this data set is expected to be provided to BMM in November 2022.
Institute for Marine Resources and Ecosystem Studies (IMARES), Wageningen University and Research (2017-2021)	Dutch VMS data combined with logbook data presented at 1/16th of an ICES rectangle scale, therefore this data is of a lesser resolution than the UK VMS. Includes information for Dutch registered vessels of 12m and over in length. The data included in this report is presented as an annual average in terms of fishing value (€).
Marine Institute (2014 -2018)	Irish VMS data combined with logbook data presented by using a km^2 grid. Includes information on Irish vessels over 12m in length. The data included in this report is presented in terms of value (€) as an annual average for the last five years for which data has been made available by the Marine Institute.

14.3.6 Data Limitations

22. The key data limitations with the baseline data and their ability to materially influence the outcome of the EIA are as follows:

- The MMO surveillance data provides a good indication of the relative distribution of activity by fishing method and nationality. However, it does not give an absolute quantification of effort, as surveillance sea patrols and flights are not always undertaken at regular intervals over a given area or time period.
- The MMO UK landings data includes data for the year 2020 which may have been impacted by the effects of COVID. Data is provided at a spatial scale of ICES rectangles. As fishing activity is not evenly distributed across the area of

a given rectangle, the information provided at this scale may not fully represent the spatial distribution of activity across the study area.

- The Belgian landings data is only publicly available up to 2014.
- French landings data is not currently available beyond 2016. The only landings data available for French vessels was weight, therefore this has been used instead of value.
- AIS data for all nationalities includes vessels both steaming and actively engaged in fishing as it is not able to differentiate by speed. It should also be noted that fishing vessels often turn off the AIS transmitting function when actively fishing.
- VMS data for all nationalities does not currently encompass fishing activity for commercial fishing vessels of less than 15m, and therefore does not capture activity by the majority of the inshore commercial fishing fleet.
- Landings values for UK vessels is presented in GBP (£), however for European Countries it is in Euros (€). Therefore, they are not directly comparable.

14.3.7 Scope

23. Upon consideration of the baseline environment, the project description outlined in **Chapter 5: Project Description**, the Scoping Opinion (Case reference: EIA/2022/00002) and the views obtained from stakeholders, none of the recognised potential impacts upon Commercial Fisheries have been scoped out. The following issues presented in **Table 14.9** have been scoped in to the assessment.

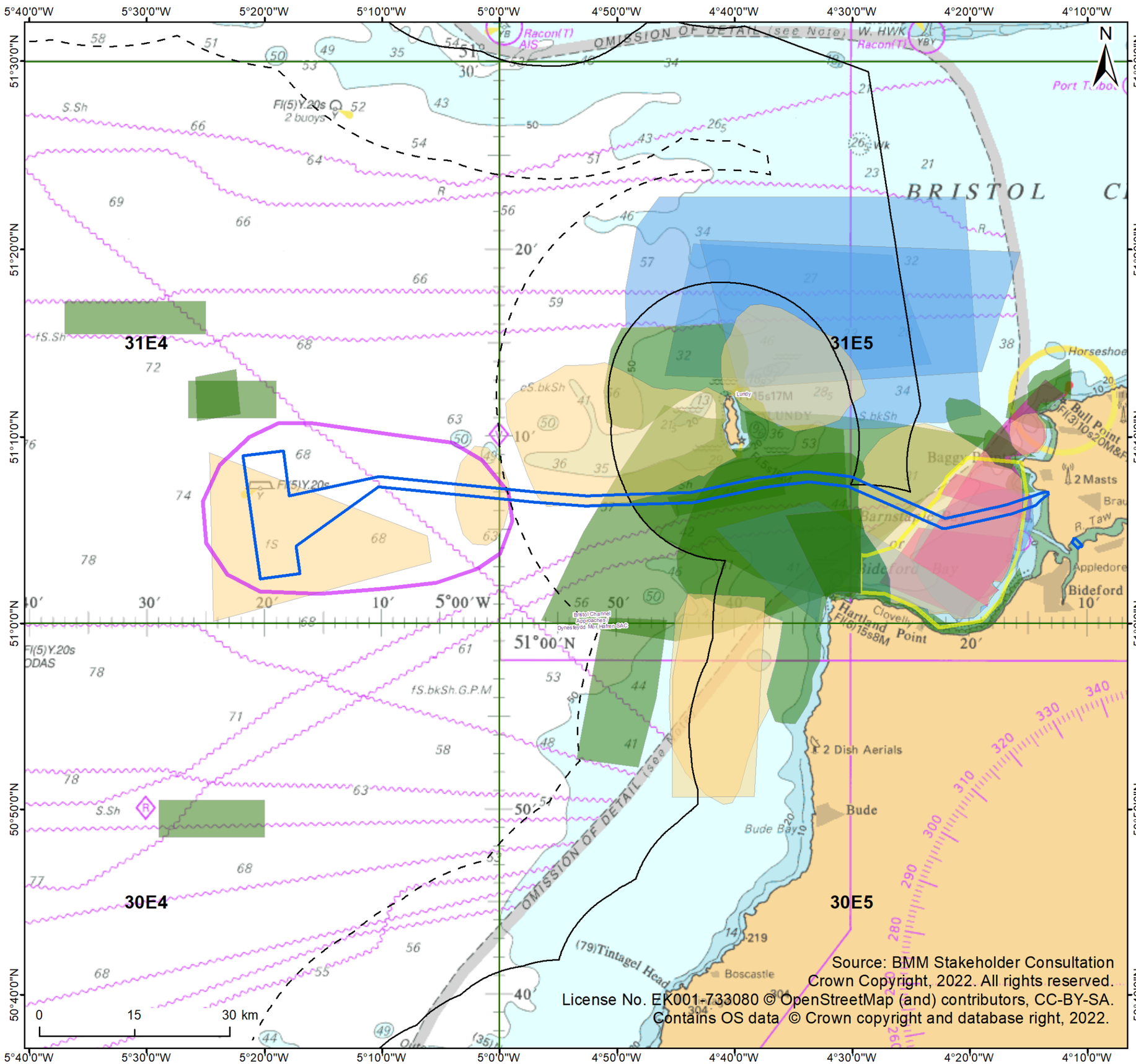
Table 14.9 Summary of impacts scoped in relating to Commercial Fisheries

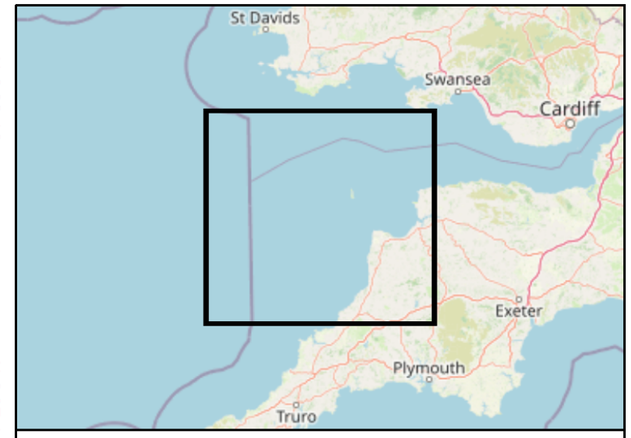
Potential Impact	Justification
Reduction in access to, or exclusion from established fishing grounds	Installation activities and physical presence of constructed infrastructure may lead to reduction in access to, or exclusion from established fishing grounds. There is potential for some loss of fishing opportunities over the construction period, though any effect is expected to be localised, and the operational range of relevant fleets will not typically be limited to the Offshore Development Area.
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Fishing activity may be displaced from the Offshore Development Area, leading to gear conflict and increased fishing pressure on adjacent grounds. There is potential for displacement of fishing activity, though any effect is expected to be localised, and the operational range of relevant fleets will not typically be limited to the Offshore Development Area.

Potential Impact	Justification
Increased steaming distances and times	The construction and presence of the Offshore Project may affect the transit route of vessels. This effect will be confined to the Windfarm Site therefore limited deviations to steaming routes are expected for certain vessels.
Interference with fishing activities	Increased vessel traffic associated with the Offshore Project may interfere with commercial fishing activities.
Obstacles on the seabed	Standard industry practice and protocol (e.g., seabed infrastructure will be buried where practicable and/or marked on nautical charts) will minimise the risk of gear snagging, but it remains likely to be an area of industry concern.
Impacts on commercially exploited species	Construction activities may lead to adverse impacts on commercially exploited species with the potential for a knock-on impact on commercial fisheries.
Cumulative impacts	There is the potential for other activities occurring in the region surrounding the Offshore Project to create cumulative effects. These could include aggregate dredging, oil and gas activity and infrastructure, subsea cabling and conservation measures the key cumulative effects are expected to result from loss or restricted access to established fishing grounds and displacement of fishing activity.
Transboundary impacts	Due to non-UK vessels having access rights and quotas to fish the area under consideration, the potential exists for transboundary impacts to occur.

14.3.8 Consultation

24. Consultation has been a key part of the development of the Offshore Project. Consultation regarding commercial fisheries has been conducted throughout the EIA. An overview of the project consultation process is presented within **Chapter 7: Consultation**. A summary of the key issues raised during consultation specific to Commercial Fisheries are summarised below in **Table 14.10**. As shown, the majority of stakeholder concerns were associated with the potential reduction in access to, or exclusion from established fishing grounds and displacement effects. The main fishing grounds as provided by local stakeholders are illustrated in **Figure 14.2**.





Legend:

- Offshore Development Area
- 6 NM Limit
- 12 NM Limit
- Potting
- Trawling and Netting

Fishing Method

- Potting
- Trawling
- Netting, Potting and Trawling
- Netting
- Whelk

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: Anonymised Fishing Grounds

Figure: 14-2 | Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	MK	RM	A3	1:600,000

Co-ordinate system: WGS 1984 World Mercator

Source: BMM Stakeholder Consultation
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Table 14.10 Consultation responses

Consultee	Date, Document, Forum	Comment	Where addressed in the ES?
NDFA	20/09/2022 Face to face stakeholder meeting in Ilfracombe	Concerns about the effects of the Project's cabling and electromagnetic frequency (EMFs) on lobster larvae and crab migratory routes, as well as general concerns around EMFs relating to the cable.	**Chapter 11: Fish and Shellfish Ecology**
NDFA	20/09/2022 Face to face stakeholder meeting in Ilfracombe	Concerns over the displacement of fishers from closed Windfarm Site.	**Section 14.5.2**
NDFA	20/09/2022 Face to face stakeholder meeting in Ilfracombe	Concerns about potential interaction with cables when trawling, the cable burial depth and unburied cable. Require more information on areas with buried cable and those that will be surface laid.	**Section 14.5.5 and 14.6.5**
NDFA	20/09/2022 Face to face stakeholder meeting in Ilfracombe	Concerns raised about mooring line safety, cable protection measures and the configuration of the mooring lines.	**Section 14.5.5 and 14.6.5** **Chapter 15.A: Navigational Risk Assessment**
NDFA	21/09/2022 Face to face stakeholder meeting in Appledore	Concerns about construction disruption, timescales and displacement of fishing vessels.	**Section 14.5.2**
NDFA	21/09/2022 Face to face stakeholder meeting in Appledore	Stakeholder suggests that the maximum area (including maximum movement from the mooring lines) taken up by the turbine structures and information should be updated on KIS-ORCA, Kingfisher Bulletin, etc.	**Chapter 6: EIA Methodology**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholder commented there are strong tidal currents and sand waves on the seafloor in the area. From the eastern edge of the Project to approximately 3nm south of Lundy Island there are moving sand waves. Stakeholders expressed concerns over cable burial depth and suggest cables should be buried as deep as possible.	**Chapter 6: EIA Methodology**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholders expressed concerns regarding the displacement of other fishers, increased competition for fishing grounds and existing grounds being overfished.	**Section 14.5.4**

Consultee	Date, Document, Forum	Comment	Where addressed in the ES?
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholders commented the strong tidal conditions and severe weather could impact the mooring lines and anchoring system.	**Chapter 5: Project Description**
CFPO	29/09/2022 Face to face meeting in Padstow	The stakeholders raised concerns relating to the safety and maintenance programme, and the robustness of the anchoring system.	**Chapter 5: Project Description**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholder commented there is a lot of static gear in the water off the north and south coastal stretches of Devon and Cornwall, both inside and beyond the 12nm limit. The stakeholder raised concerns relating to disturbance of vessel transit and movement of equipment e.g., turbine structures, and their impact on static fishing gear, potential loss of gear, damage or entanglement and associated loss of income for fishers.	**Sections 14.5.4 and 14.5.5**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	All windfarm developers should use the same transit route to minimise disruption on fishing activities.	**Chapter 15.A: Navigational Risk Assessment**
	29/09/2022 Face to face meeting in Padstow	See above comment.	**Chapter 15.A: Navigational Risk Assessment**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholders commented that potters from Port Issac are working in the proposed Windfarm Site with fixed gear. Concerns raised over displacement of potters in the Windfarm Site.	**Section 14.5.2**

Consultee	Date, Document, Forum	Comment	Where addressed in the ES?
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concerns over the displacement of transboundary fleets, such as Belgian trawlers that operate in the area.	**Section 14.5.2**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholder commented that the AIS and VMS data may be inaccurate, and that some fishermen only use certain grounds for specific seasons. Also, transboundary fleet data is likely very inaccurate.	**Section 14.3.6** and **6.2.2**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concerns raised regarding cable burial depth and disruption to commercial fisheries. The stakeholder also states that once the cable is buried and fishermen can continue towing gear over it, it is less of a concern.	**Chapter 6: EIA Methodology**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concerns raised over the impacts of EMFs from unburied cables and cables between the seabed and turbines.	**Chapter 11: Fish and Shellfish Ecology**
	29/09/2022 Face to face meeting in Padstow	See above comment.	**Chapter 11: Fish and Shellfish Ecology**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concerns raised about potential damage to the seabed from mooring lines and the impact from scour on the benthic environment and ecology.	**Chapter 10: Benthic Ecology**
	29/09/2022 Face to face meeting in Padstow	See above comment.	**Chapter 10: Benthic Ecology**

Consultee	Date, Document, Forum	Comment	Where addressed in the ES?
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concerns raised over reduced fishing crews as people may choose to work in the offshore windfarm industry, creating a potential employment competition.	Opportunities for coexistence with the fisheries industry and potential benefits will be explored post-submission.
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholder raised concerns about the displacement of fishing from the wider proposed floating offshore windfarm industry in the Celtic Sea area following the Crown Estate leasing.	**Section 14.8**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concern over the turbine layout inside the Windfarm Site, and stakeholders suggested turbines need to be as close together as possible to reduce the size of the Windfarm Site and potential area lost to fishing activity.	**Chapter 6: EIA Methodology**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concern raised over the use of static and mobile gear inside the Windfarm Site and proximity to the turbines. The stakeholders would like to know more about exclusion zones and access for fishing vessels.	**Section 14.5.1** and **14.6.1**
CFPO	29/09/2022 Face to face meeting in Padstow	Concerns raised over the cumulative displacement of UK and transboundary fleets from future windfarms in the Celtic Sea.	**Sections 14.5.2** and **14.6.2**
CFPO	29/09/2022 Face to face meeting in Padstow	Stakeholder concerns regarding the loss of fishing grounds to the Windfarm Site (e.g., no-go section).	**Section 14.5.1**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Concern over EMFs impact on fish and whale migration, and the surrounding ecology of the area.	**Chapter 11: Fish and Shellfish Ecology**
CFPO	28/09/2022 Face to face stakeholder meeting in Newlyn	Stakeholders commented they would like improved fisheries data / research / collection of data to support the fishing industry, and which would be accepted by the regulatory bodies. They would also like baseline ecology surveys prior, during and post construction.	Opportunities to collaborate with the fishing industry will be explored post-submission.

Consultee	Date, Document, Forum	Comment	Where addressed in the ES?
WFPO	27/09/2022 Face to face meeting in Brixham	Stakeholders raised concerns over cable burial depth and recommend deeper burial in order to reduce the risk of snagging.	**Chapter 6: EIA Methodology**
WFPO	27/09/2022 Face to face meeting in Brixham	Concern over cumulative effects from other renewable projects in the Celtic Sea and how fishers may be displaced from the area.	**Section 14.8**
WFA	29/09/2022 Online meeting	Concerns over the effects of EMFs and cables under the turbine structures.	**Chapter 11: Fish and Shellfish Ecology**
WFA	29/09/2022 Online meeting	Concerns over cumulative displacement arising from other renewable projects in the area and the subsequent spatial squeeze for fishers.	**Section 14.8**
WFA	29/09/2022 Online meeting	Concerns over the impact of mooring line scours on the seabed. Also concerned about the potential release of heavy metals from the disturbed seabed.	**Chapter 8: Marine and Coastal Processes** and **Chapter 9: Marine Water and Sediment Quality**
WFA	29/09/2022 Online meeting	Concerns raised over the effects of noise created during construction.	**Chapter 11: Fish and Shellfish Ecology**
WFA	29/09/2022 Online meeting	Concerns over potential alteration to hydrography arising from the Project construction.	**Chapter 8: Marine and Coastal Physical Processes**
WFA	29/09/2022 Online meeting	Concerns regarding lack of data on the migratory patterns of fish and how they are impacted by the construction of floating offshore windfarms.	**Chapter 11: Fish and Shellfish Ecology**
NFFO	26/09/2022 Online meeting	Concerns over the spatial squeeze in the Celtic Sea, and the cumulative effect of windfarms in the area leading to exclusion of fishing.	**Section 14.8**
NFFO	26/09/2022 Online meeting	Concerns over more limited access to fishing grounds with floating offshore windfarms.	**Section 14.6.1**

Consultee	Date, Document, Forum	Comment	Where addressed in the ES?
Rederscentrale	29/09/2022 Online meeting	The recent Celtic Sea developments are a major concern for the large Belgian fleet. Stakeholder commented that 2020 date shows that the area is even more heavily fished than compared to 2014 data. The 30 vessels of the Belgian larger fleet focus on Dover sole etc in the Celtic Sea, 80% of this activity is beam trawling. These vessels land into Ireland and often don't return to Belgium for 6 months.	**Section 14.8**

14.4 Existing Environment

25. This section describes the existing environment in relation to Commercial Fisheries associated with the Offshore Project study area. It has been informed by a review of the sources listed in **Table 14.8**.

14.4.1 Current baseline

14.4.1.1 Surveillance sightings

26. An overview of the principal fishing fleets and methods operating in the study area is given in **Figure 14.3** to **Figure 14.8** based on analysis of MMO surveillance sightings from 2011 to 2020 by method and nationality.

27. Surveillance sightings of UK vessels within the Immediate Study Area (ISA) were mostly recorded between the 6nm and 12nm limits. The majority of the vessels were trawlers and potters, with lower numbers of scallop dredgers and drift netters. In comparison to other ICES rectangles in the Wider Study Area (WSA) (ICES rectangles 32E3, 32E4, 32E5, 31E3, 31E4, 31E5, 30E3, 30E4, 30E5, 29E3 and 29E4 as outlined in **Appendix 14 A**), sightings of UK vessels in the ISA are low.

28. The majority of Belgian surveillance sightings within the ISA are in ICES rectangle 31E4, with some sightings recorded between the 6nm and 12nm limit in rectangle 31E5. The majority of Belgian vessels recorded within the ISA are beam trawlers, with sightings of other Belgian vessels being minimal in the area.

29. The majority of surveillance sightings of French vessels are a considerable distance from the Windfarm Site and Offshore Export Cable Corridor. The limited number of sightings which were recorded within the ISA are concentrated in ICES rectangle 31E4, in which the Windfarm Site is located.

30. Negligible surveillance sightings of Irish vessels have been recorded within the rectangles comprising the ISA. The majority of Irish surveillance sightings are concentrated just outside the ISA, in rectangle 31E3.

Table 14.11 Summary of surveillance sightings of different nationalities in the Immediate Study Area (Source: MMO, 2011-2020)

Nationality	Method	No. of Sightings within the ISA	% of Total Sightings within the ISA
Belgium	Beam Trawler	152	42.46%
	Trawler (All)	17	4.75%

Nationality	Method	No. of Sightings within the ISA	% of Total Sightings within the ISA
	Potter/Whelker	0	0.00%
	Stern Trawler (Pelagic/Demersal)	5	1.40%
	Demersal Stern Trawler	0	0.00%
	Unknown	5	1.40%
	Null	0	0.00%
	Gill Netter	0	0.00%
	Scallop Dredger (French/Newhaven)	0	0.00%
	Belgium total	179	50.00%
UK	Beam Trawler	5	1.40%
	Trawler (All)	41	11.45%
	Potter/Whelker	38	10.61%
	Stern Trawler (Pelagic/Demersal)	3	0.84%
	Demersal Stern Trawler	12	3.35%
	Unknown	5	1.40%
	Null	6	1.68%
	Gill Netter	5	1.40%
	Scallop Dredger (French/Newhaven)	5	1.40%
	UK total	120	33.52%
France	All Fishing Vessels	31	8.66%
Ireland	All Fishing Vessels	28	7.82%

14.4.1.2 UK landings data and spatial distribution

31. In the ISA, the highest landings by UK vessels are recorded in ICES rectangle 31E5, with approximately three-quarters of the activity being potting targeting whelks (*Buccinum undatum*), edible crabs (*Cancer pagarus*) and lobsters (*Nephropidae*). There is also a greater proportion of bottom otter trawling in rectangle 31E5 compared to rectangle 31E4, with vessels targeting demersal fish such as sole (*Solea solea*), monkfish (*Lophius budegassa*) and anglerfish (*Lophius piscatorius*). Gillnets, beam trawls and boat dredges also contribute to the landings recorded within rectangle 31E5.

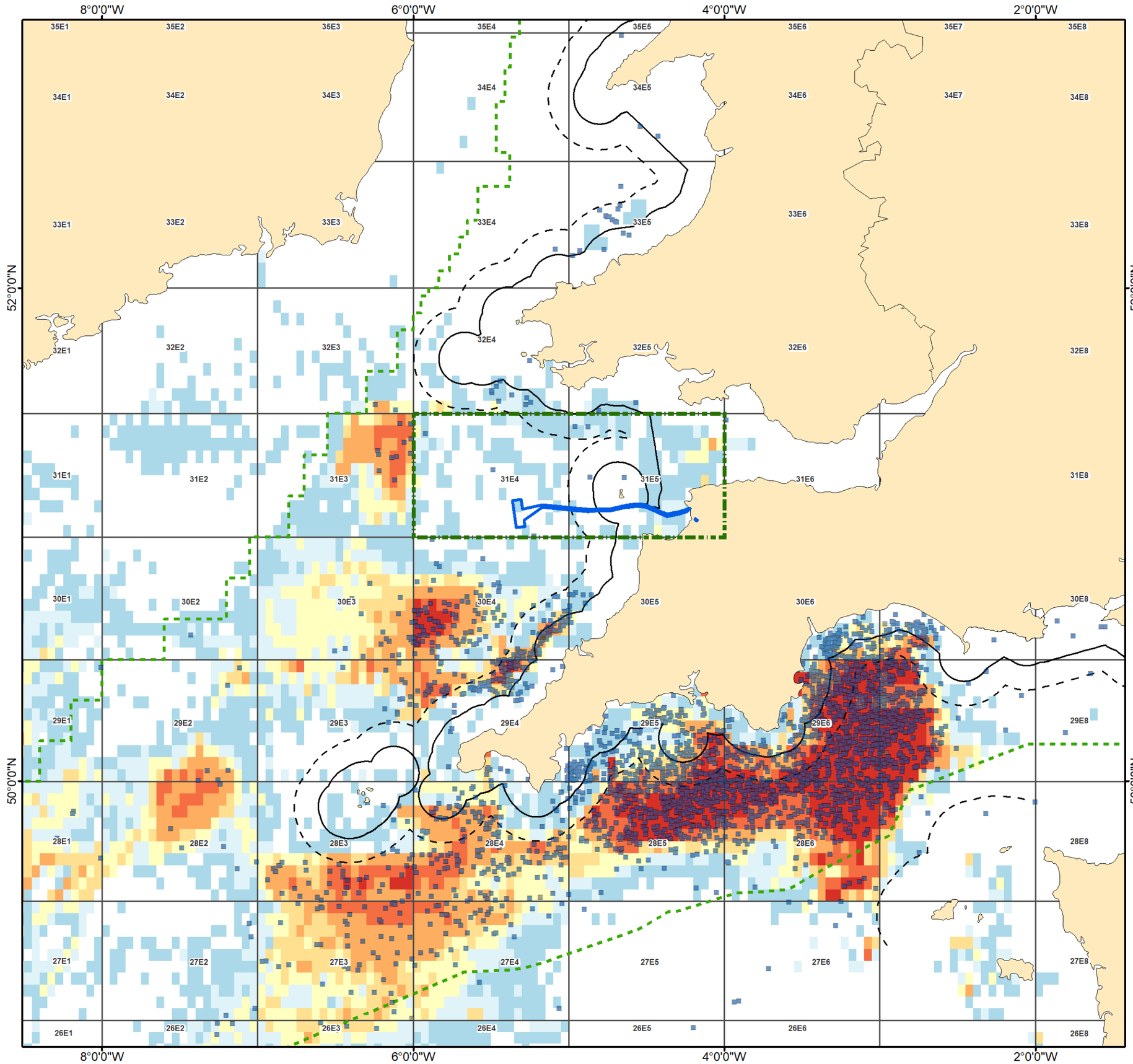
32. The vessel lengths recorded differ between rectangles 31E4 and 31E5. The greatest proportion of landings values in rectangle 31E5 are from vessels of under 15m in length, approximately half of which were under ten metres. In contrast, as would be expected due to being further offshore, a higher proportion of the vessels recorded in rectangle 31E4 are over 15m.

33. The methods deployed in rectangles 31E4 and 31E5 are similar, with the majority of landings being from potting, followed by bottom otter trawling. The predominant target species in rectangle 31E5 is whelks and to a lesser extent lobsters. In rectangle 31E4 the species that contribute the most to total landings are lobsters and edible crabs.

34. The VMS data corroborates the landings data, and illustrates that there is minimal trawling by UK vessels occurring in the ISA. There is, however, moderate amounts of potting activity across the ISA, with some isolated areas of higher values occurring within the proposed site.

35. From direct consultation with skippers and vessel owners, it is understood that the majority of vessels operating from local ports operate for the most part within the 12nm limit and are predominantly potters and netters of under ten metres, and therefore not currently captured by VMS data.

36. Information on fishing grounds gathered during consultation with local fisheries stakeholders indicates that the varying methods tend to have specific areas of operation, with degrees of overlap. Potting targeting crab and lobster occurs mostly to the south and southwest of Lundy Island. In addition, there are three distinct potting areas located beyond the 12nm limit to the west of Lundy Island, where vessels over ten metres primarily target crab, operating all year-round. Potters targeting whelks occurs mostly northeast of Lundy Island. Trawling was stated to mainly occur in Bideford Bay, with small discreet areas further offshore. A small number of local vessels engage in netting inside the 6nm limit, primarily in Bideford Bay in the vicinity of the proposed cable route corridor.



Legend:

- Offshore Development Area
- Study Area
- UK EEZ
- 6 NM Limit
- 12 NM Limit

UK Surveillance Sightings by Fishing Method, 2011-2020[1]

- Demersal Trawlers/ Seiners
- Other

Average UK VMS values for Demersal trawls/seines, 2016-2020[1]

- Less than £1,000
- £1,000 - £3,000
- £3,000 - £6,000
- £6,000 - £10,000
- £10,000 - £20,000
- £20,000 - £35,000
- More than £35,000

[1] MMO (2021)

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: UK Demersal Trawl/Seine Surveillance Sightings (2011-2020) & VMS Value (£) (Average 2016-2020)

Figure: 14-3 | Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	MK	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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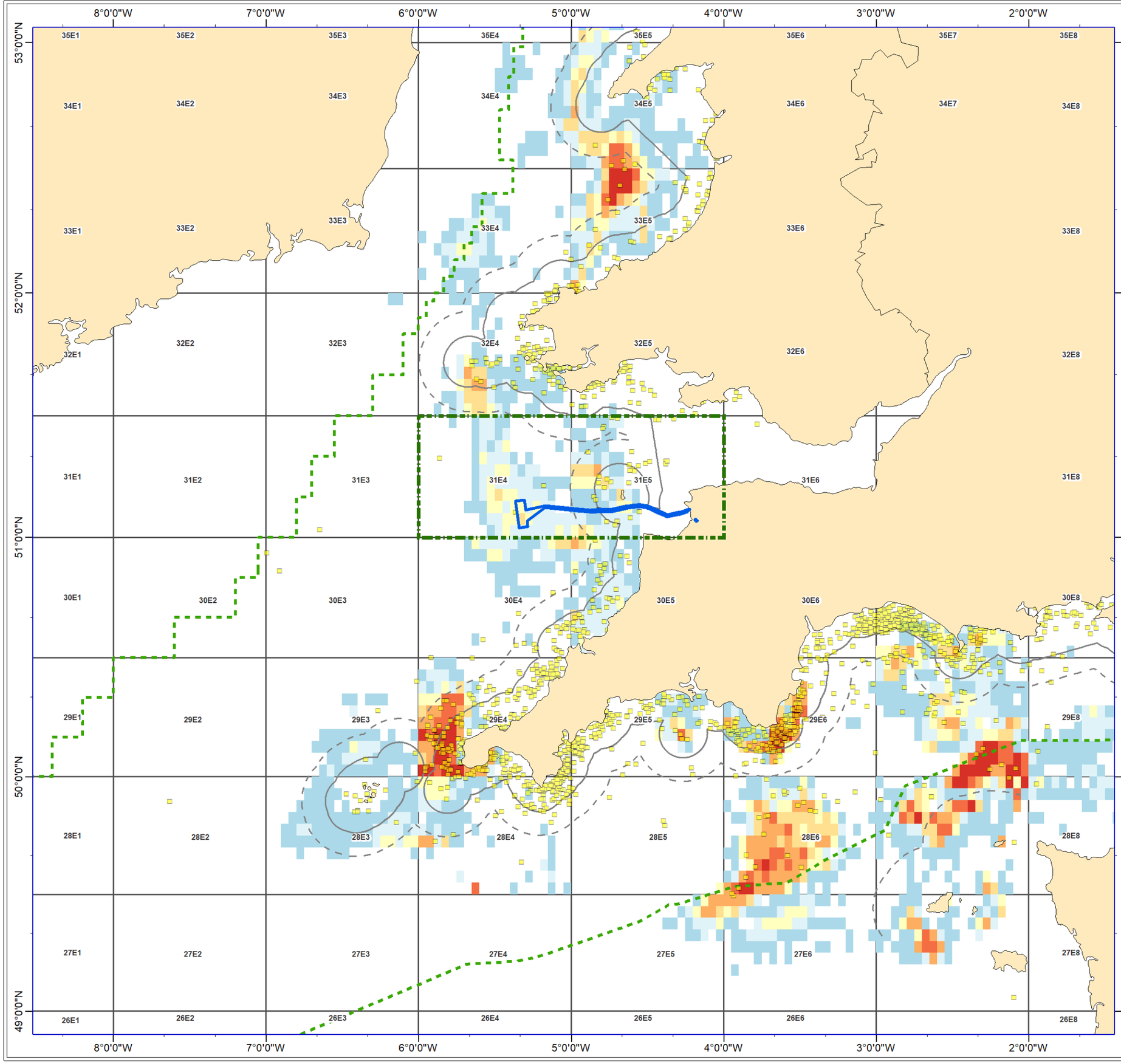

Legend:

- Offshore Development Area
- Study Area
- 6 NM Limit
- 12 NM Limit
- UK EEZ

UK Surveillance Sightings by Fishing Method, 2011-2020[1]

- Potter/ Whelker

Average UK VMS values for Pots or Traps, 2016-2020[1]

- Less than £1,000
- £1,000 - £3,000
- £3,000 - £6,000
- £6,000 - £10,000
- £10,000 - £20,000
- £20,000 - £35,000
- More than £35,000

[1]MMO (2021)

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: UK Pots or Traps Surveillance Sightings (2011-2020) & VMS Value (£) (Average 2016-2020)

Figure:	Drawing No:
14-4	PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	JW	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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14.4.1.3 Belgian landings data and spatial distribution

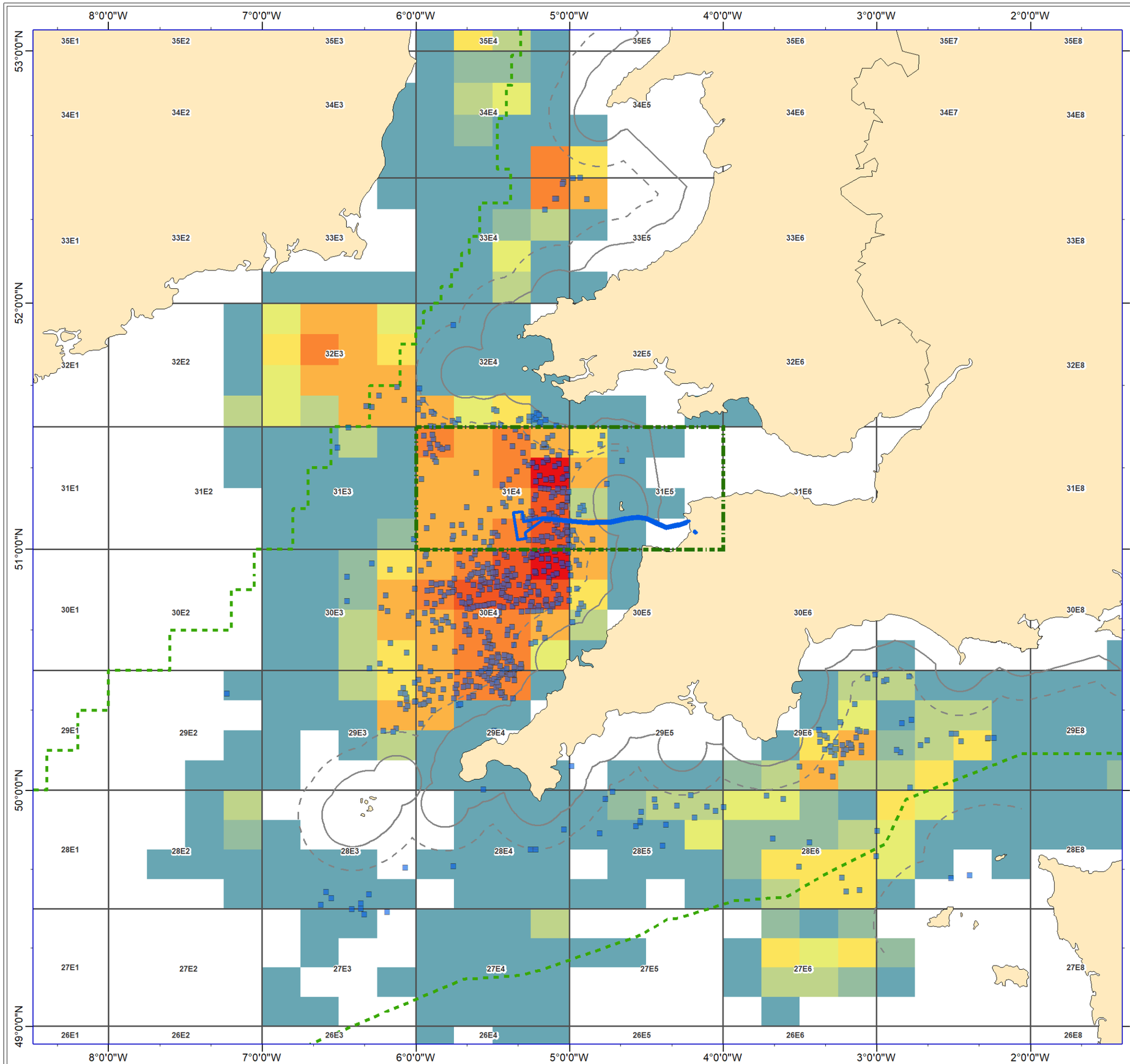
37. Landings data for ICES rectangles 31E4 and 31E5 indicate that beam trawling is the predominant fishing method in the ISA, followed by a small amount of bottom otter trawling, with the proportion of landings from bottom otter trawling being higher in rectangle 31E5 than in 31E4.

38. The species targeted in both rectangles are similar, with Dover sole being the species with the highest landings values in the ISA. In rectangle 31E5 the second highest landings are of skates and rays, whereas in 31E4 monkfish are the second most targeted species.

39. The VMS data suggests that the eastern sector of rectangle 31E4 includes relatively high value fishing grounds for beam trawling. In contrast, rectangle 31E5, in which the eastern section of the Offshore Export Cable Corridor is located, has recorded only moderate Belgian beam trawling values. Similarly high landings values are also recorded in the rectangle 30E4, immediately to the south of the ISA.

40. The surveillance data shows negligible Belgian activity within the 12nm limit despite Belgian vessels having historic rights to fish between the 6nmand 12nm limits. This suggests that the Belgian beam trawlers fishing the general area are the larger class of beam trawlers, as under existing EU and UK regulations, only beam trawlers with main engines of less than 300 HP can fish between the 6nm and 12nm limits of the UK and other member states. Demersal trawls have also been recorded in the ISA, but at more moderate values.

41. The Belgian Celtic Sea fleet consists of about 33 active vessels, and in 2021 was the source of 23% of Belgian landings. The majority (89%) of the vessels are larger than 24m, with the remainder being between 18m and 24m. Data and information gathered during consultation confirmed the Belgian fleet uses predominantly beam trawls, targeting rays, plaice, sole, and anglerfish.



Legend:

- Offshore Development Area
- Study Area
- 6 NM Limit
- 12 NM Limit
- UK EEZ

UK Surveillance Sightings by Fishing Method, 2011-2020[1]

- Beam Trawlers

Average Belgian VMS values for Beam Trawl, 2010-2014[2]

- Less than €5,000
- €5,000 to €10,000
- €10,000 to €25,000
- €25,000 to €50,000
- €50,000 to €100,000
- €100,000 to €250,000
- €250,000 to €500,000
- €500,000 to €750,000
- Over €750,000

[1] MMO (2021)
[2] IVLO (2015)

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title:
Belgian Beam Trawl
Surveillance Sightings (2011-2020)
& VMS Value (€) (Average 2010-2014)

Figure:	Drawing No:
14-5	PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	28/02/2023	JW	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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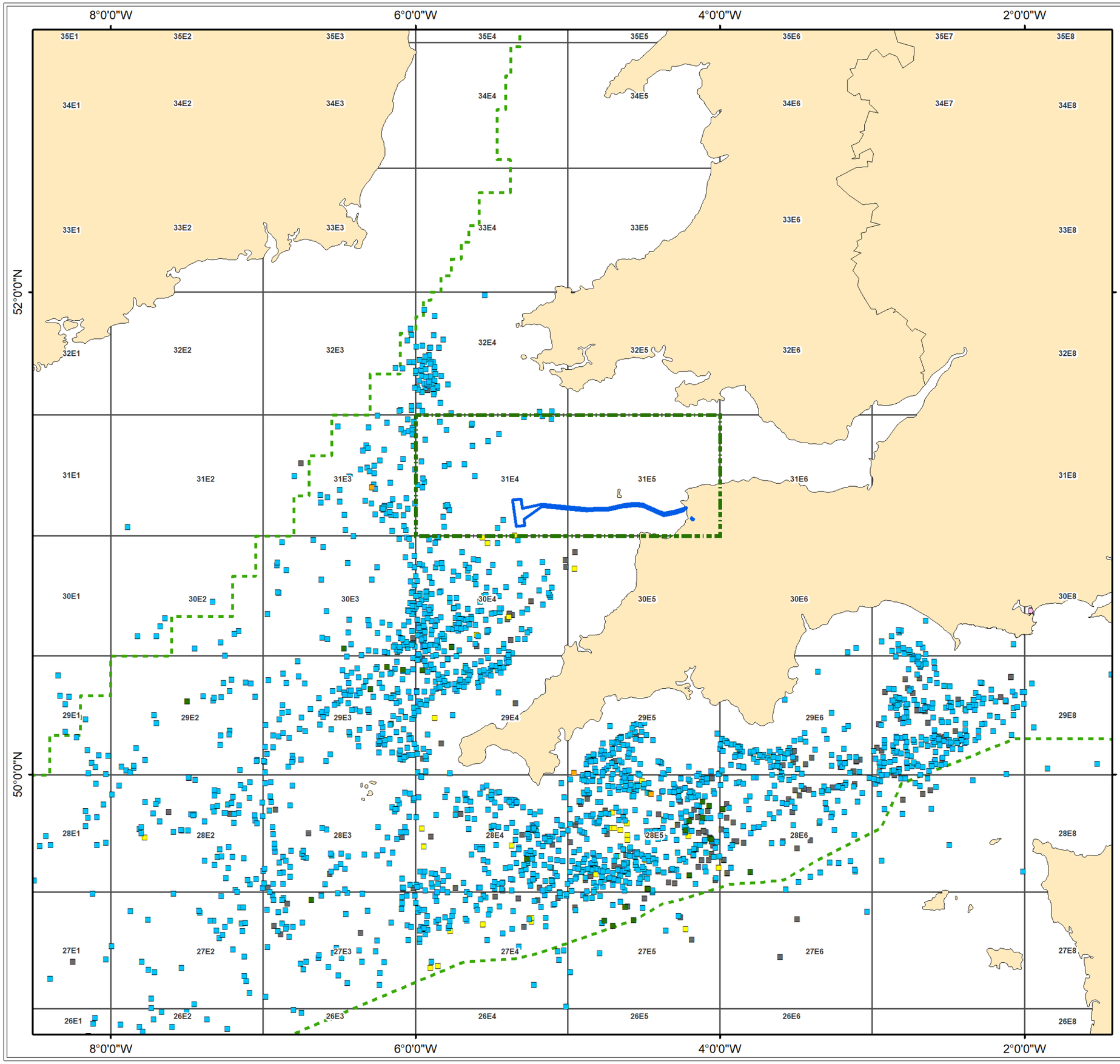
14.4.1.4 French landings data and spatial distribution

42. The predominant fishing method deployed by French vessels in the WSA is otter trawling, although in both rectangles that comprise the ISA there is also a small amount of potting. However, in the wider context of the WSA, rectangle 31E4 only records relatively low landings.

43. In both rectangles 31E4 and 31E5, rays and skates and haddock (*Melanogrammus aeglefinus*) are the main species caught.

44. The French offshore fishery in the Celtic Sea (divisions VIIg and VIIh) is composed of approximately 350 bottom trawlers between 18 and 35m in length. These vessels target gadoids, Nephrops or anglerfish, megrim (*Lepidorhombus whiffiagonis*), and rays, with less than ten vessels using Danish seine. In addition, two large pelagic trawlers target herring (*Clupea harengus)* and mackerel (*Scombridae*), and one is also involved in the blue whiting (*Micromesistius poutassou*) fishery.



Legend:

- Offshore Development Area
- Study Area
- UK EEZ
- 6 NM Limit
- 12 NM Limit

French Surveillance Sightings by Fishing Method, 2011-2020[1]

- Potter/ Whelker
- Trawlers (All)
- Scallop dredger (French/ Newhaven)
- Gill netter
- Rod and line
- Other

[1] MMO (2021)

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: French Surveillance Sightings Gear Type (2011-2020)

Figure: 14-6 | Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	MK	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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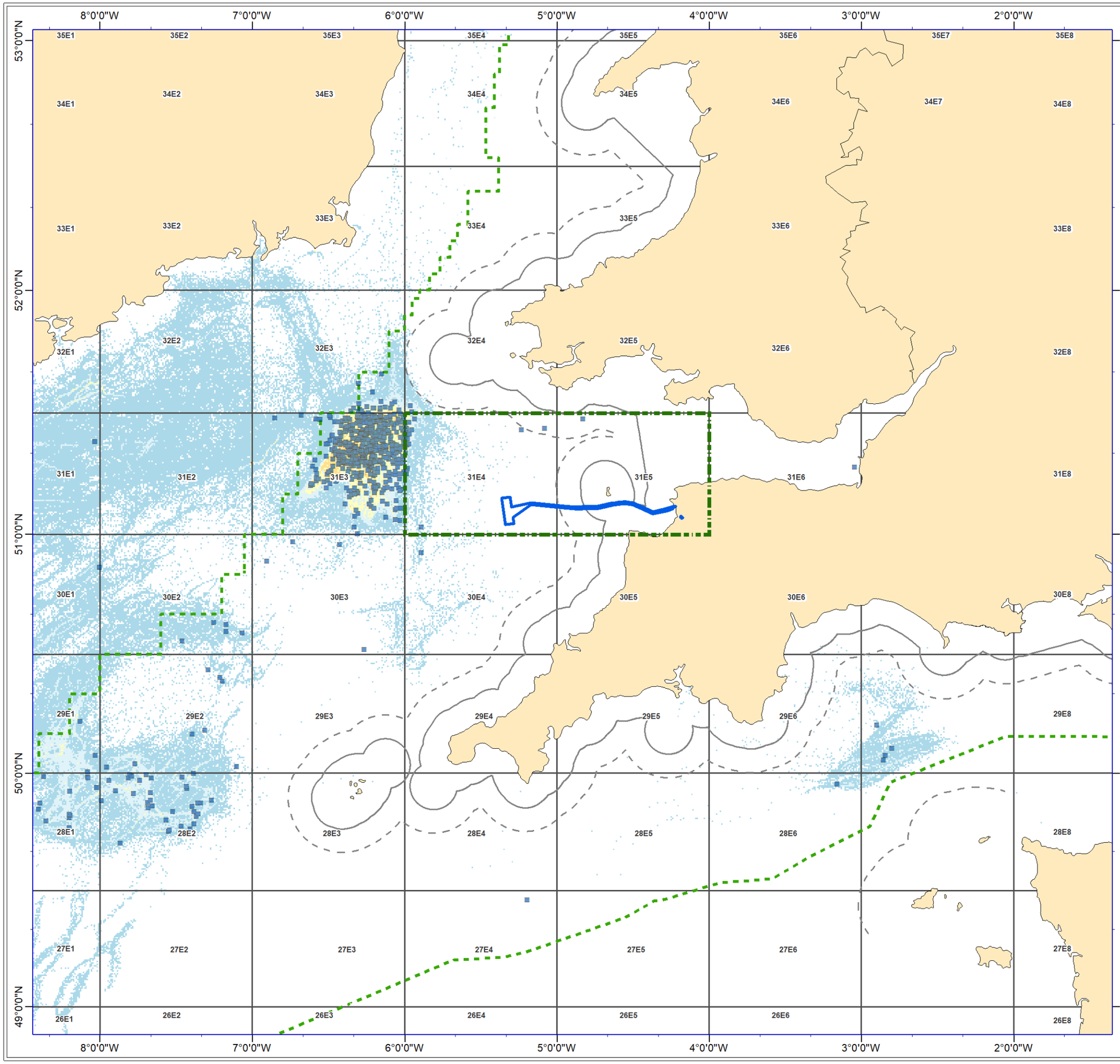
14.4.1.5 Irish landings data and spatial distribution

45. Rectangle 31E4 contains a much higher volume of landings from Irish vessels than 31E5. However, this value is negligible when compared to the other rectangles that comprise the WSA.

46. The predominant fishing method within the ISA is bottom otter trawls, followed by pelagic trawls. The presence of pelagic trawling is reflected by the relatively high amounts of herring landed within the WSA.

47. Analysis of data from Irish bottom otter trawls indicates that, while some activity does occur within the ISA in ICES rectangle 31E4, the area with the highest intensity of fishing occurs just outside of the ISA, in rectangle 31E3.

48. VMS data for Irish beam trawls suggests a similar pattern to the surveillance data, with all activity directed well to the west of the ISA



Legend:

- Offshore Development Area
- Study Area
- 6 NM Limit
- 12 NM Limit
- UK EEZ

UK Surveillance Sightings by Fishing Method, 2011-2020[1]

- Trawlers (All)

Average Irish VMS values for Bottom otter trawls, 2014-2018[2]

- Less than 1,000€
- 1,000€ - 3,000€
- 3,000€ - 6,000€
- 6,000€ - 10,000€
- 10,000€ - 20,000€
- More than 35,000€

[1] MMO (2021)

[2] Marine Institute (2019)

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: Irish Trawling Surveillance Sightings (2011-2020) & VMS Value (€) - Bottom Otter Trawls (Average 2014-2018)

Figure: 14-7 | Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	JW	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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14.4.1.6 Dutch landings data and spatial distribution

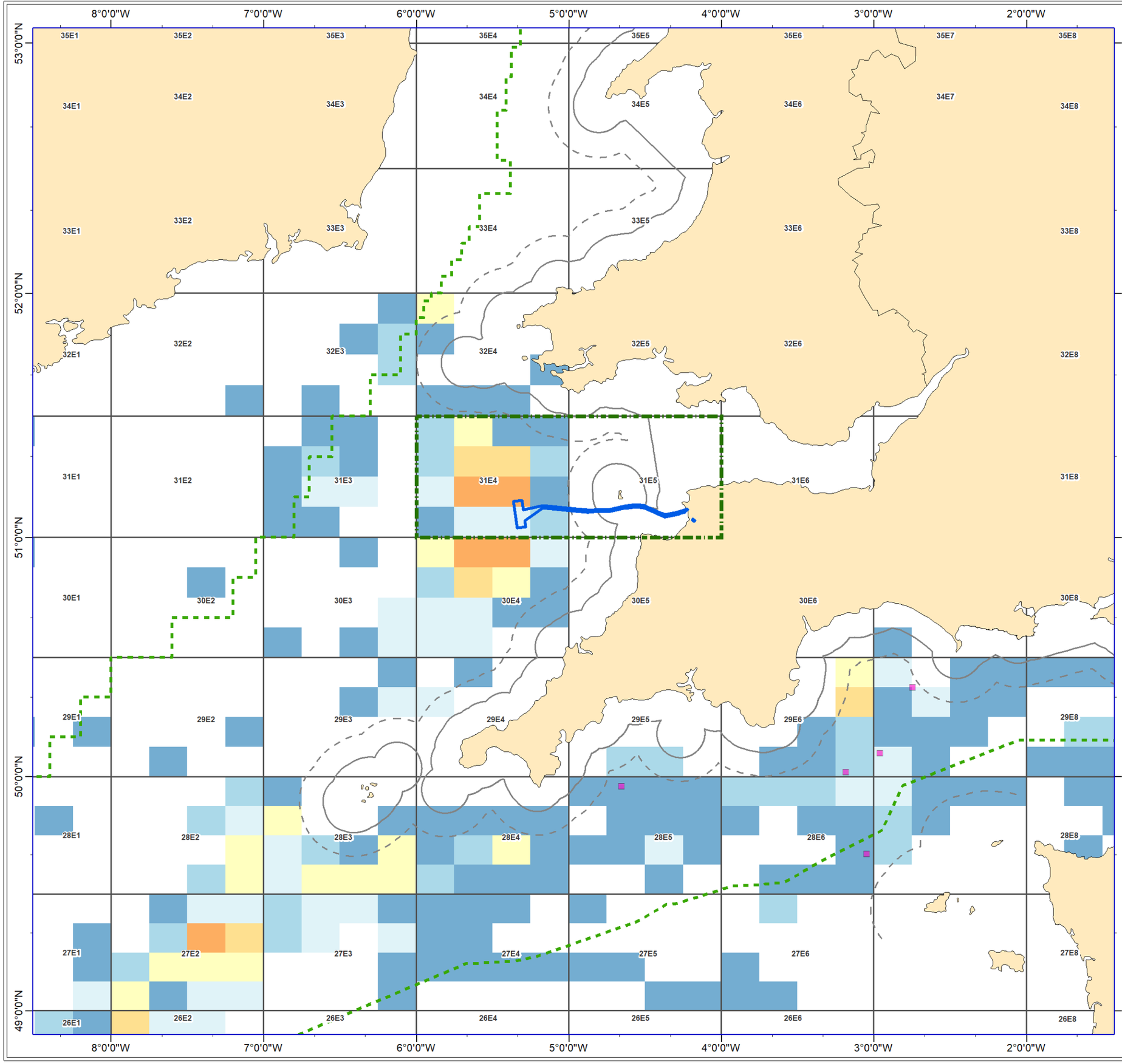
49. Dutch vessels have only been recorded in one of the ICES rectangles that comprise the ISA; 31E4. This is likely due to the fact that rectangle 31E5 consists predominantly of waters that are in the UK's 12nm limit. Dutch fishers do not have historic access rights to waters within the 12nm limit. The only method of fishing by Dutch vessels recorded by landings data within the ISA is midwater trawls. It is not evident which fish are being targeted by these vessels, however it is likely that they are targeting pelagic fish such as mackerel or herring.

50. Dutch fishing activity appear to be focussed predominantly in the English Channel.

51. Only an average of approximately €50,000 worth of landings are derived from rectangle 31E4 annually, likely a negligible amount to the Dutch fleet.

52. Analysis of VMS data for Dutch midwater trawls confirm that Dutch vessels are only present in rectangle 31E4.

53. Seine netting has been recorded in the WSA, but VMS data indicates that none occurs in the ISA.



Legend:

- Offshore Development Area
- Study Area
- 6 NM Limit
- 12 NM Limit
- UK EEZ

UK Surveillance Sightings by Fishing Method, 2011-2020[1]

- Pelagic Trawlers

Average Dutch VMS values for Midwater Trawls, 2017-2021[2]

- Less than 5,000€
- 5,000€ - 10,000€
- 10,000€ - 25,000€
- 25,000€ - 50,000€
- 50,000€ - 100,000€
- 100,000€ - 250,000€

[1] MMO (2021)
[2] Wageningen University and Research (2022)

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm

Title: Dutch Midwater Trawling Surveillance Sightings (2011-2020) & VMS Value (€) (Average 2017-2021)

Figure: 14-8 | Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	JW	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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14.4.2 Do Nothing Scenario

54. The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) require that "an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge" is included within the ES (EIA Regulations, Schedule 4, Paragraph 3). From the point of assessment, over the course of the development and operational lifetime of the Offshore Project (operational lifetime anticipated to be a minimum of 25 years), long-term trends mean that the condition of the baseline environment is expected to evolve. This section provides a qualitative description of the evolution of the baseline environment, on the assumption that the Offshore Project is not constructed, using available information and scientific knowledge of Commercial Fisheries.

55. The levels, values and types of commercial fishing occurring within regional, national and international sea areas are subject to a wide range of factors. These include variations in the conditions of the stocks of target species, changes in the quotas of pressure stock species, the imposition of conservation measures such as Marine Conservation Zones (MCZs), various other spatial restrictions, local byelaws, effort limits and vessel and gear regulations. Economic effects as well as national and international politics have also significantly determined the future of commercial fishing. Similarly, advances in the design of fishing vessels, and their gears and electronics have also resulted in significant changes in the structures of the UK and European fishing fleets, including those operating in the area under consideration. It is also to be expected that the progressive effects of climate change and increasing sea temperatures will result in significant changes in the commercial fishing. Therefore, regardless of whether the Offshore Project is developed, it is to be expected that over the projected lifespan, commercial fishing will change, possibly significantly.

56. The pattern of regulation, the condition of certain stocks and increasing focus on sustainability and conservation, suggest that an overall reduction in effort over the next 25 years in UK waters may be a more likely scenario than an increase. It is also probable that increasing fuel costs and growing international concern about the environmental damage caused by beam trawlers, may result in the current beam trawlers operating in the area not being replaced. This pattern is already taking place in Holland where a new round of decommissioning is providing funds for the buying out and scrapping of a significant proportion of the larger beam trawlers in the Dutch fleet. It is also to be expected that other fleet restricting will occur over

time leading possibly to fewer, more fuel-efficient vessels utilising lighter seabed contact and more selective gears.

14.5 Potential impacts during construction

57. The following assessments of potential impacts on commercial fishing have been undertaken for each of the vessel categories summarised above. These categories are described in more detail in the supporting Technical Report (**Appendix 14 A**).

14.5.1 Impact 1: Reduction in access to, or exclusion from established fishing grounds

58. Taking the worst-case scenario, due to safety reasons, for the duration of the construction phase which is anticipated to last 12-24 months, all non-construction vessels would be excluded from the Windfarm Site in areas where works are ongoing or where the cable is not buried or protected.

59. Similarly for the duration of the offshore export cable installation works which is projected to last no longer than 12 months, both mobile and static gear fishing vessels would have to avoid deploying their gears within it.

60. It is of note that a substantial proportion of the fisheries stakeholders consulted (see **Table 14.10**) cited the direct and indirect impacts associated with potential loss of fishing area and displacement effects as their main concerns.

14.5.1.1 UK fishing vessels

14.5.1.1.1 Magnitude of impact

61. The spatial extent of the temporary loss of or restricted access to the identified fishing grounds for the UK local inshore fleet during the installation phase would, as shown by the above referenced figures, be largely restricted to the area of the Offshore Export Cable Corridor. It is however recognised that a limited number of vessels may also target grounds within the Windfarm Site and would therefore sustain similar loss of fishing area during its construction phase.

62. By comparison, as discussed in **Appendix 14 A**, activity by the larger class of UK trawlers in the area under consideration is at best low whilst in comparison to the local vessels, their operational ranges are extensive.

63. Taking the relatively small spatial extent of the Offshore Project area in the context of the grounds available, for both the local and wider ranging fleets overall, the magnitude of the impact is assessed to be low. It is however recognised, that for some individual local vessels the magnitude of the impact could be **medium.**

14.5.1.1.2 Sensitivity of the receptor

64. The majority of UK fishing vessels operating within the vicinity of the Offshore Project are engaged in potting and to a lesser extent demersal trawling. ICES rectangle 31E5, in which the larger proportion of the Offshore Export Cable Corridor is located, identified a concentration of inshore potting and trawling grounds for the local vessels, the majority of which will be under 10m in length (**Figure 14.3** and **Figure 14.4** above and **Figure 6.7** and **Figure 6.19** in **Appendix 14 A**). Whilst a number of the vessels are multi-purpose being able to deploy pots, trawls and nets, due to range and weather limitations their sensitivity is considered to be medium.

65. Due to their wider operating ranges and weather capabilities, the sensitivity of the larger class (over 15.0 metres) of UK trawlers are, however, considered to be **low**.

14.5.1.1.3 Significance of effect

66. Considering the medium and low sensitivities of the receptors and the, for the most part, low magnitude of the effect and the temporary nature of the impact, the impact significance for the majority of the UK fleet is expected to be **Minor adverse**. As stated above however, the magnitude of the effect on certain local inshore vessels could be medium resulting in a **Moderate adverse** impact.

14.5.1.1.4 Further Mitigation

67. For those local vessels which could sustain a moderate impact due to the requirement for their fishing activities to be temporarily relocated from the Offshore Export Cable Corridor during cable installation works, appropriate evidence-based agreements as cited in the FLOWW Guidelines (FLOWW 2014; 2015) will be sought. With the implementation of such agreements, the residual effect on the local inshore vessels would be reduced to **Minor adverse,** which is **Not Significant** in EIA terms**.**

14.5.1.2 Belgian Fishing Vessels

14.5.1.2.1 Magnitude of impact

68. As illustrated by the surveillance, landings and VMS data presented in Appendix 14, it appears that the Windfarm Site overlaps only a small part of a large area of concentrated activity by Belgian beam trawlers (**Figure 14.5**). In view of this, the magnitude of the effect is ascribed as low.

14.5.1.2.2 Sensitivity of the receptor

69. Whilst the Belgian vessels in question have substantial weather and range capabilities, given their high operating costs and ability to deploy only one gear type,

namely beam trawls designed for the capture of demersal flatfish, they have been ascribed a medium sensitivity.

14.5.1.2.3 Significance of effect

70. Due to the medium receptor sensitivity and the low magnitude of effect, the potential impact on Belgian vessels is considered to be **Minor adverse** and therefore **Not Significant** in EIA terms**.**

14.5.1.2.4 Further mitigation

71. No Further Mitigation is required.

14.5.1.3 French fishing vessels

14.5.1.3.1 Magnitude of impact

72. As discussed in **Appendix 14 A**, it is apparent that French fishing activity in the vicinity of the Offshore Project area is low, with the majority of it being concentrated in the areas well to the south of the Offshore Project area. In view of this and the proportionally very small area of the Windfarm Site compared to the spatial extent of French fishing activity (**Figure 14.6**), the magnitude of the effect is considered to be low.

14.5.1.3.2 Sensitivity of the receptor

73. The majority of French fishing vessels operating in the Windfarm Site are demersal otter trawlers of over 15m in length. The vessels in question have substantial operating ranges and weather capabilities, and a degree of gear versatility allowing for the targeting of a range of species. Taking these factors into account their sensitivity is considered to be low.

14.5.1.3.3 Significance of effect

74. Taking the above into account the potential impact on French fishing vessels is expected to be **Minor adverse** and therefore **Not Significant** in EIA terms.

14.5.1.3.4 Further mitigation

75. No Further Mitigation is required.

14.5.1.4 Irish fishing vessels

14.5.1.4.1 Magnitude of impact

76. The data presented in **Appendix 14 A** and **Figure 14.7** suggests that Irish fishing vessel activity in the vicinity of the Offshore Project is minimal leading to a negligible magnitude.

14.5.1.4.2 Sensitivity of the receptor

77. The majority of Irish vessels operating within the wider a study area are pelagic trawlers and bottom otter trawlers. These vessels have relatively extensive operational ranges and target a number of species. As such, their sensitivity to loss of fishing grounds would be low.

14.5.1.4.3 Significance of effect

78. As a consequence of low receptor sensitivity and negligible magnitude of effect a **Negligible Adverse** impact is predicted, which is **Not Significant** in EIA terms.

14.5.1.4.4 Further mitigation

79. No Further Mitigation is required.

14.5.1.5 Dutch Fishing vessels

14.5.1.5.1 Magnitude of impact

80. From **Figure 14.8** above, it is apparent that the Windfarm Site represents a negligible proportion of the overall fishing area of the Dutch pelagic fleet. The magnitude of the effect on the Dutch fleet is therefore also considered to be negligible.

14.5.1.5.2 Sensitivity of the receptor

81. The data given in **Appendix 14 A** identifies the Dutch vessels operating in the general area of the Windfarm Site as pelagic trawlers.

82. These vessels have extensive fishing grounds, the majority of which have the capacity to process and freeze their catches onboard. The sensitivity of such vessels is therefore considered to be low.

14.5.1.5.3 Significance of effect

83. Due to the low receptor sensitivity combined with a negligible magnitude, the resultant impact is expected also to be **Negligible Adverse,** which is **Not Significant** in EIA terms**.**

14.5.1.5.4 Further mitigation

84. No Further Mitigation is required.

14.5.2 Impact 2: Displacement leading to gear conflicts and increased fishing pressure on adjacent grounds

14.5.2.1 UK Static gear vessels

14.5.2.1.1 Magnitude of impact

85. There is the potential for static gears displaced from construction areas to increase pressure and thereby cause conflicts in adjacent grounds. As stated, above, it

appears that during the construction phase, a certain number of local inshore vessel's static gears may have to be relocated from the Offshore Export Cable Corridor and possibly the Windfarm Site. Taking the relatively small spatial extent of the Offshore Project area in the context of the grounds available, for both the local and wider ranging fleets overall, the magnitude of the impact is assessed to be low. It is however recognised, that for some individual local vessels the magnitude of the impact could be **medium**.

14.5.2.1.2 Sensitivity of the receptor

86. Due to their limited operational ranges, the sensitivity of UK static gear vessels to the impact is considered to be **medium**.

14.5.2.1.3 Significance of effect

87. Due to the medium receptor sensitivity combined with a medium magnitude, the resultant impact is expected also to be **Moderate Adverse**.

14.5.2.1.4 Further mitigation

88. Cooperation agreements with the relevant vessel owners will be reached. As part of such agreements, the required liaison with the local fisheries communities would be undertaken in order to agree either at sea or onshore gear storage locations with the objective of mitigating the displacement impact. With the cooperation agreements and liaison outlined above implemented, the residual effect of displacement on UK static gear fishers will be **Negligible adverse** and is therefore **Not Significant** in terms of the EIA.

14.5.2.2 UK Trawlers

14.5.2.2.1 Magnitude of impact

89. Due to the relatively small spatial extent of the Offshore Project in the context of the grounds available, the magnitude of the impact is assessed to be low.

14.5.2.2.2 Sensitivity of the receptor

90. Whilst in theory trawlers having to avoid construction areas could come into conflict with potting gears, it is common practice amongst local fishing communities for there to be understandings between trawling and potting skippers whereby trawlers avoid important potting areas. Therefore, the sensitivity has been ascribed as low.

14.5.2.2.3 Significance of effect

91. As discussed above, an objective of cooperation agreements with static gear vessel owners, would be the selection of relocated static gear storage areas away from known trawling grounds. In conjunction with this approach, the relatively small areas of the Windfarm Site and the Offshore Export Cable Corridor and the comparatively low levels of trawling activity in the areas concerned, the impact in

respect of UK trawlers is also expected to be **minor adverse** and is therefore **Not Significant** in terms of the EIA.

14.5.2.3 Belgian vessels

14.5.2.3.1 Magnitude of impact

92. In theory there could be potential for displacement of Belgian vessels from the Windfarm Site and the short offshore section of the Offshore Export Cable Corridor causing conflicts between themselves and trawlers of other nationalities. However, the combined areas of the Windfarm Site and the offshore cable corridor relative to the size of the available alternative grounds, suggest that the magnitude of the displacement effect would be negligible.

14.5.2.3.2 Sensitivity of the receptor

93. As discussed in **Appendix 14 A**, the highest proportion of activity in areas relevant to the proposed Windfarm Site and the offshore section of the Offshore Export Cable Corridor beyond the 12nm limit is predominantly by Belgian beam trawlers. Due to their main engine powers and gear sizes, the majority of these vessels are not permitted to fish within the UK's 12nm limit. As a consequence, they are unlikely to conflict with the local inshore static gears as result of being prevented from fishing within the Windfarm Site and the offshore section of the Offshore Export Cable Corridor. Therefore, their sensitivity has been assessed as low.

14.5.2.3.3 Significance of effect

94. Due to the negligible magnitude and low sensitivity, the impact with regard to Belgian vessels has been ascribed as **negligible adverse** and is therefore **Not Significant** in terms of the EIA.

14.5.2.3.4 Further mitigation

95. No Further Mitigation is required.

14.5.2.4 French, Irish and Dutch vessels

14.5.2.4.1 Magnitude of impact

96. Due to the relatively small spatial extent of the Offshore Project in the context of the grounds available, as well as the extremely low levels of activity recorded by Irish, French and Dutch vessels within the Windfarm Site and offshore capable corridor, the potential for displacement to occur is minimal, therefore the magnitude has been assessed to be negligible.

14.5.2.4.2 Sensitivity of the receptor

97. French, Irish and Dutch vessels operating within the area have an extensive operational range, therefore the sensitivity has been ascribed as low.

14.5.2.4.3 Significance of effect

98. Given the negligible magnitude and low sensitivity of the receptor, the significance of the impact has been ascribed as **negligible adverse** and is therefore **Not Significant** in terms of the EIA.

14.5.2.4.4 Further mitigation

99. No Further Mitigation is required

14.5.3 Impact 3: Increased steaming distances and times

100. With regards to the following assessment, it should be noted that **Chapter 15.A: Navigation Risk Assessment** has included fishing vessels in its assessments.

101. Whilst there will be 500m metre safety zones around cable installation vessels, during the construction phase vessels will not be prevented from steaming over the Offshore Export Cable Corridor, it is therefore only the restriction on non-Project vessels from steaming through the Windfarm Site that could result in in increased steaming distances and times for fishing vessels.

14.5.3.1 UK vessels

14.5.3.1.1 Magnitude of impact

102. Due to the relatively small spatial extent of the Offshore Project, the magnitude of the impact with regard to increased steaming distances is assessed to be **low**.

14.5.3.1.2 Sensitivity of the receptor

103. The fishing grounds provided by local fisheries stakeholders during consultation meetings (**Figure 14.2**) are all inshore of the Windfarm Site. As such it is not expected that in order to reach their fishing grounds, the local inshore vessels will have to divert around the Windfarm Site.

104. In the case of the larger, wider ranging UK trawlers, the extent of their fishing grounds relative to the size and alignment of the Windfarm Site suggest that any increases in steaming distances and times would, for the most part, be occasional and small. Therefore, the sensitivity has been assessed to be **low**.

14.5.3.1.3 Significance of effect

105. Due to the low magnitude of the impact and low sensitivity of the receptor, the significance has been ascribed as **Minor adverse,** which is **Not Significant** in terms of the EIA.

14.5.3.1.4 Further mitigation

106. No Further Mitigation is required.

14.5.3.2 Belgian, French, Irish and Dutch vessels

14.5.3.2.1 Magnitude of impact

107. Due to the relatively small spatial extent of the Offshore Project, the magnitude of the impact with regard to increased steaming distances is assessed to be low.

14.5.3.2.2 Sensitivity of receptor

108. As with the larger class of UK trawlers, the extent of the fishing grounds of the Belgian, French, Irish and Dutch vessels relative to the size and alignment of the Windfarm Site also suggest that the sensitivity of the receptor would be low.

14.5.3.2.3 Significance of effect

109. Due to the low magnitude of the impact and low sensitivity of the receptor, the significance has been ascribed as **Minor adverse**, which is **Not Significant** in terms of the EIA.

14.5.3.3 Further mitigation

110. No Further Mitigation is required.

14.5.4 Impact 4: Interference with fishing activities

111. During construction activities, there is the potential for transiting Project vessels to interfere with fishing activities. With regards to vessels operating static gears, interference would mainly result from the fouling of static gear surface markers by Project vessels. The majority of the surface markers used by fishermen operating static gears such as pots and nets are not generally visible in all conditions. Past experience during the construction of offshore wind farms in the UK has shown that with the appropriate mitigation measures the risks of interference with static gears can be minimised.

112. Such measures that have proved successful in the past and will be implemented by the Offshore Project are listed below and discussed in more detail in **Table 14.6**:

- The engagement of a locally experienced Fishing Industry Representative (FIR) to assist the Company Fisheries Liaison Officer (CFLO)
- Maintaining on-going pro-active communication with the relevant fisheries stakeholders for the duration of the construction phase (FLCP)
- Undertaking the required liaison and surveys to record and plot static gear locations
- To provide the Offshore Project marine coordinator and the deck officers of Project vessels with descriptions and the positions of identified static gears in order for them to as far as is practically possible to plan their passages to avoid contact with static gears

- In the case of trawlers, with the required adherence to the COLREGs hierarchy and safe navigation practice, conflicts between trawlers and project vessels should not occur.

14.5.4.1 Magnitude of impact

113. With the implementation of the above, the magnitude of the effect for the local static gear fleet is considered to be **low**.

14.5.4.2 Sensitivity of the receptor

114. As stated above, the majority of gear markers used by fishermen operating gear within 12nm of the coast are unlit, without radar reflectors and are often simple markers such as plastic bottles. Thus, these markers are not visible in all conditions. With this in mind and taking account of the non-mobile nature of the gear used by the local static gear fleet the sensitivity to interference of UK vessels operating static gear is considered medium.

115. In the case of fleets operating towed gears, taking account of their mobility, the sensitivity to interference is considered to be **low**.

14.5.4.3 Significance of effect

116. With the implementation of the above mitigating measures and compliance with safe navigation practice and effective communications by both Project vessels and fishing vessels, the potential impact of interference with fishing activities should be **Minor Adverse**.

14.5.5 Impact 5: Obstructions on the seabed

117. During the construction of Offshore Wind Farms, obstructions on the seabed can cause damage or loss of fishing gears or in the worst cases compromise vessels stability with the obvious safety implications. Such incidents are more frequently associated with demersal towed gears, such as trawls and shellfish dredges. In certain circumstances, potting and netting gears can also be vulnerable to damage and even loss if caught fast on seabed obstacles.

118. From the experience of the past construction of Offshore wind farms and the installation of sub-sea cables, the seabed obstacles most frequently cited as causing loss or damage to fishing gears, and on rare occasions causing concerns with the stability of fishing vessel are:

- Boulders relocated prior to turbine and inter-array and Offshore Export Cable Corridor.

- Objects dropped from contractors' vessels.
- Partially installed infrastructure.

119. In order for fishing vessel skippers to avoid damage to their gears, it is normal practice for them to record the positions of seabed fasteners such as boulders on their GPS plotters. This is particularly the case with trawling where a skipper's library of the positions of fasteners is essential for the safe operation of his vessel.

120. The usual policy of the MMO has been to specify that boulders requiring relocation should be moved the minimum distance from their original location. This however means that skippers may no longer have fully accurate positions of the boulders. During the recent construction of an offshore wind farm in UK waters, local fishermen made representations for the policy to be changed to the boulders being relocated to a single spoil site (Confidential pers com, 2022).

121. As summarised in **Table 14.10**, the required liaison and information distribution will be undertaken in order to provide skippers with the coordinates of relocated boulders. As part of the construction phase planning process, the views of local stakeholders in respect of the boulder relocation program will be sought and communicated to the MMO.

122. It is taken that the Offshore Project will have agreed policies with construction contractors aimed at preventing objects being dropped overboard from their vessels as well as ensuring procedures are in place for the recording, notification and recovery of any accidentally lost objects.

123. Partially installed subsea infrastructure could in theory constitute a fastening risk to fishing gears. In the case of the Windfarm Site, assuming total exclusion of all non-Project vessels for the duration of the construction phase from the site, this risk should not materialise.

124. In the case of the installation of the export cable, should there be any periods when sections of cable are temporarily exposed, the required safety zones would be maintained with the appropriate notices and guarding procedures put in place.

125. With the implementation of the measures discussed above, the impact of obstructions on the seabed on commercial fishing should be mitigated and therefore **Within Acceptable Limits.**

14.5.6 Impact 6: Potential impacts on commercially exploited fish and shellfish species

126. There may be potential for the construction of the Offshore Project to result in impacts on commercially exploited fish and shellfish species. The potential effects of the Offshore Project on fish and shellfish species are:

- Temporary habitat loss or physical disturbance
- Temporary increased suspended sediment and sediment deposition
- Underwater noise and vibration
- Barrier effects

127. The impacts listed above could impact the fitness of affected fish stocks, which could in turn indirectly affect the productivity of the fisheries that target them.

14.5.6.1 Magnitude of impact

128. The potential impacts of the Offshore Project on fish and shellfish species, including those of commercial importance are assessed in **Chapter 11: Fish and Shellfish Ecology.** The magnitude for the impacts assessed in this chapter on commercially exploited fish and shellfish species range from **negligible to low**.

14.5.6.2 Sensitivity of the receptor

129. The sensitivity of the receptors assessed in Chapter 11: Fish and Shellfish Ecology range from negligible to low.

14.5.6.3 Significance of effect

130. Any impacts associated with commercially exploited fish and shellfish species are not expected to exceed **minor adverse significance.**

14.5.6.4 Further mitigation

131. No Further Mitigation required.

14.6 Potential impacts during operation

14.6.1 Impact 1: Reduction in access to, or exclusion from established fishing grounds.

132. For the operation phase, the same realistic worst-case scenario as discussed for the construction phase has been assumed where due to navigational safety risks, the exclusion from the Windfarm Site of all non-Project vessels would be extended for the life of the Offshore Project.

133. In the case of the Offshore Export Cable Corridor however, once cable installation, burial and protection works are successfully completed and surveyed, the corridor will effectively cease to exist, and normal fishing activities should be able to resume over it.

134. As discussed above for the construction phase, the main concern of fisheries stakeholders related to the direct and indirect impacts is associated with potential loss of fishing area and associated displacement effects.

14.6.1.1 UK fishing vessels

14.6.1.1.1 Magnitude of effect

135. As discussed above and illustrated in **Appendix 14 A**. the highest proportion of activity by UK vessels occurs in within the 12nm limit as recorded by MMO statistics and illustrated by the fishing grounds provided during consultation (**Figure 14.2**) with local stakeholders thereby indicating that the majority of activity by local vessels is inshore of the Windfarm Site. In the case of the larger class of UK vessels, the MMO statistics and VMS indicated only low levels of activity in the vicinity of the Windfarm Site.

136. Due to the reinstatement of the Offshore Export Cable Corridor, the small area of the Windfarm Site relative to the overall areas of the grounds available, for both the local and wider ranging vessels, overall, the magnitude of the impact is assessed to be **low**.

14.6.1.1.2 Sensitivity of receptors

137. The overall sensitivity of the UK fishing vessels remains as given for the construction phase, namely **medium** for the inshore vessels and **low** for the larger class of wider ranging vessels.

14.6.1.1.3 Significance of impact

138. Taking the medium and low sensitivities of the receptors and the low magnitude of the effect, the impact is expected to be **Minor Adverse** and therefore **Not Significant** in terms of the EIA.

14.6.1.1.4 Further mitigation

139. No Further Mitigation is required.

14.6.1.2 Belgian fishing vessels

14.6.1.2.1 Magnitude of effect

140. Similarly, whilst it is apparent that some Belgian activity occurs within the footprint of the Windfarm Site, in comparison the overall fishing areas exploited by Belgian vessels, the area of the Windfarm Site is very small. As a consequence, it is

considered that the vessels concerned would be able to compensate for such a small loss of area when fishing alternative areas, particularly when targeting species such as Dover sole whose catches are limited by quotas. In view of these factors the magnitude of the loss of fishing area associated with exclusion from the Windfarm Site is **low**.

14.6.1.2.2 Sensitivity of Receptors

141. As previously stated, the sensitivity of the Belgian fishing vessels has been determined as **medium**.

14.6.1.2.3 Significance of impact

142. Due to the medium receptor sensitivity and the low magnitude of effect, the impact on Belgian vessels is predicted to be **Minor Adverse** and therefore **Not Significant** in EIA terms.

14.6.1.3 French, Irish and Dutch fishing vessels

14.6.1.3.1 Magnitude of effect

143. Similarly, as previously discussed due to the extent of their fishing grounds and the very low to minimal levels of activity in the vicinity of the Windfarm Site, the magnitude of the effect on three nationalities is considered to be **low** to **negligible.**

14.6.1.3.2 Sensitivity of Receptors

144. As discussed for the construction phase, the sensitivities of the French, Irish and Dutch vessels is ascribed as **low.**

14.6.1.3.3 Significance of effect

145. Considering the low to negligible magnitude of effect and the low sensitivity of the receptor, the significance of the effect on French, Irish and Dutch vessels has been ascribed as **Minor Adverse.**

14.6.1.3.4 Further mitigation

146. No Further Mitigation required.

14.6.2 Impact 2: Displacement leading to gear conflicts and increased fishing pressure on adjacent grounds

14.6.2.1 UK Static gear vessels

14.6.2.1.1 Magnitude of impact

147. As discussed above, the main cause of displacement effects was considered to be the temporary relocation of static gears out of the cable corridor during the period of the export cable installation. With the completion of such works and the commencement of the operational phase, the need for such relocation no longer

exists and with it the cause of the displacement effects. For this reason, the magnitude has been assessed to be **low**.

14.6.2.1.2 Sensitivity of the receptor

148. As discussed in **Section 14.5.2.1.2**, the sensitivity of UK static gear vessels to displacement is considered to be **medium**.

14.6.2.1.3 Significance of effect

149. Considering the low magnitude of impact and medium sensitivity of the receptor, the significance of displacement on UK static gear vessels is considered to be **Minor Adverse** and therefore **Not Significant** in EIA terms.

14.6.2.1.4 Further mitigation

150. No Further Mitigation required.

14.6.2.2 UK Trawlers

14.6.2.2.1 Magnitude of impact

151. With the completion of the export cable installation works and the ending of exclusion from the cable corridor of static gears the potential for conflicts associated with the Offshore Project between UK trawlers and static gears should be substantially reduced.

152. In the case of trawlers, due to the very low proportional effort within the Windfarm Site and with the adherence to the safety obligations cited above, there should not be a significant potential for conflicts between trawlers for the duration of the operation phase. Therefore, the magnitude of the impact has been ascribed as **low**.

14.6.2.2.2 Sensitivity of the receptor

153. As discussed in Section 14.5.2.2.2, the sensitivity of UK trawlers to displacement is **low**.

14.6.2.2.3 Significance of effect

154. Due to the low magnitude of impact and low sensitivity of the receptor, the significance has been assessed to be **Minor Adverse** and therefore **Not Significant** in EIA terms.

14.6.2.2.4 Further mitigation

155. No Further Mitigation required.

14.6.2.3 Belgian vessels

14.6.2.3.1 Magnitude of impact

156. As previously discussed, the majority of the Belgian vessels are not permitted to fish within the UK's 12nm limit. They are therefore unlikely to conflict with the local inshore static gears for the duration of the operational phase.

157. Furthermore, in respect of the potential for conflicts between themselves and other nationalities, the magnitude of the displacement effect would be **low.**

14.6.2.3.2 Sensitivity of the receptor

158. As discussed in Section **14.5.2.3.2**, the sensitivity of Belgian vessels to displacement is **low**.

14.6.2.3.3 Significance of effect

159. The low magnitude of impact and low sensitivity of the receptor results in a **Minor Adverse** impact.

14.6.2.4 French, Irish and Belgian vessels

14.6.2.4.1 Magnitude of impact

160. In the case of French, Irish and Dutch vessels, the levels of activity recorded by these vessels in the vicinity of the Windfarm Site is negligible, therefore the magnitude of the impact is **negligible**.

14.6.2.4.2 Sensitivity of the receptor

161. As discussed in **Section 14.5.2.4.2**, the sensitivity of French, Irish and Belgian vessels to displacement is **low**.

14.6.2.4.3 Significance of effect

162. Due to the negligible magnitude of impact and low sensitivity of the receptor, the significance of the effect has been ascribed as **Negligible Adverse**.

14.6.3 Impact 3: Increased steaming distances and times.

163. With completion of the export cables works there will no longer be installation vessels with 500m safety zones present thereby ending the requirement for fishing vessels to divert around them. In all other aspects, the factors resulting in the prediction of, at worst a minor impact on all the vessels categories remain as discussed above for the construction phase with a predicted impact of, at worst **minor.**

14.6.4 Impact 4: Interference with fishing activities

164. As discussed in **Chapter 15.A: Navigational Risk Assessment** following the completion of construction works the numbers of vessels transiting to the Offshore Project will be reduced, being predominantly crew transfer O&M vessels. With adherence of the same measures and compliance with safe navigation practices discussed above for construction vessels, the potential impact of interference with fishing activities should be **negligible.**

14.6.5 Impact 5: Obstacles on the seabed

165. Should additional export cable protection measures be required, those selected would be in line with industry standards, such as graded rock placement of 1:3 slope gradient rock placement which have proven to be over-trawlable and not a significant risk to static gears.

166. With completion of the construction phase and the post construction surveys, the only source of additional obstructions on the seabed attributable to the Offshore Project should therefore be objects accidentally dropped overboard from O&M vessels. With compliance to the policies covering such incidents, the impact should be **negligible.**

14.6.6 Impact 6: Impacts on commercially exploited fish and shellfish species.

167. The potential impacts of the Offshore Project on fish and shellfish species, including those of commercial importance are assessed in **Chapter 11: Fish and Shellfish Ecology** and are not expected to exceed **minor adverse** significance. Consequently, any impacts associated with this on the commercial fisheries that target them are also not expected to exceed **minor adverse**.

168. The potential impacts on fish and shellfish species during operation are listed below:

- Permanent habitat loss or physical disturbance
- Permanent increased suspended sediment and sediment deposition
- Underwater noise and vibration
- Barrier effects

14.7 Potential impacts during decommissioning

169. No decision has been made regarding the final decommissioning policy for the Offshore Project as it is recognised that industry best practice, rules and legislation change over time. The decommissioning methodology would be finalised nearer to the end of the lifetime of the Offshore Project to be in line with current guidance, policy and legalisation at that point. Any such methodology would be agreed with

the relevant authorities and statutory consultees. The decommissioning works are likely to be subject to a separate licencing and consenting approach.

170. The anticipated decommissioning activities are outlined in **Section 5.10** of **Chapter 5: Project Description**. The potential impacts of the decommissioning of the Offshore Project have been assessed for commercial fisheries on the assumption that decommissioning methods will be similar or of a lesser scale than those deployed for construction. The types of impact would be comparable to those identified for the construction phase:

- Impact 1: Reduction in access to, or exclusion from established fishing grounds
- Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds
- Impact 3: Increased steaming distances and times
- Impact 4: Interference with fishing activities
- Impact 5: Obstacles on the seabed
- Impact 6: Impacts on commercially exploited fish and shellfish species

171. In relation to decommissioning, impacts on commercially exploited fish species from the removal of the Windfarm Site are possible if there were reef or safe haven effects. Specifically sections of the inter-array cables close to the offshore structures, as well as sections of the offshore export cables.

172. **Chapter 11: Fish and Shellfish Ecology** states that structures provide an increase in habitat complexity by increasing opportunities for shelter and increasing microhabitat diversity. Fish aggregation effects have been observed in multiple offshore industries, including monopile foundation WTG arrays. However, floating windfarms generally have a reduced extent of physical structures that extend throughout the water column, limited to the offshore substation, anchoring/mooring chains, and transmission cables. As such, the scale of fish aggregation effects will be reduced compared to other subsea industries.

173. This suggests that while the presence of the Offshore Project may lead to fish aggregation and a subsequent small-scale increase in fish stocks, the floating nature of the Offshore Project means this effect will likely be **negligible**.

14.8 Potential cumulative effects

174. The approach to cumulative effect assessment (CEA) is set out in **Chapter 6: EIA Methodology**. Only projects which are reasonably well described and sufficiently advanced to provide information on which to base a meaningful and robust assessment have been included in the CEA. In view of their proximity to the Offshore

Project and the current focus on the need to develop more renewable energy generation and the fact that they were raised as a concern during consultation with fisheries stakeholders, the latest Crown Estate (TCE) Celtic Sea Areas Floating Offshore Wind Areas of Search have been included in the following assessment. The following assessment for Commercial Fisheries was undertaken in two stages. The first stage considers which impacts should be considered by virtue of: a) whether they have the potential to contribute to specific cumulative effects (see) and b) if so, the contribution to the significance of the specific impacts.

175. The boundaries of the Study Area defined and **Figure 14.2** have been selected in order to adequately illustrate the local and regional features potentially relevant to the cumulative effect. In terms of the national and international contexts, the full extent of the fishing grounds of the various stakeholder categories are illustrated in **Figure 14.3** to **Figure 14.8**.

Table 14.12 Potential cumulative effects considered for Commercial Fisheries

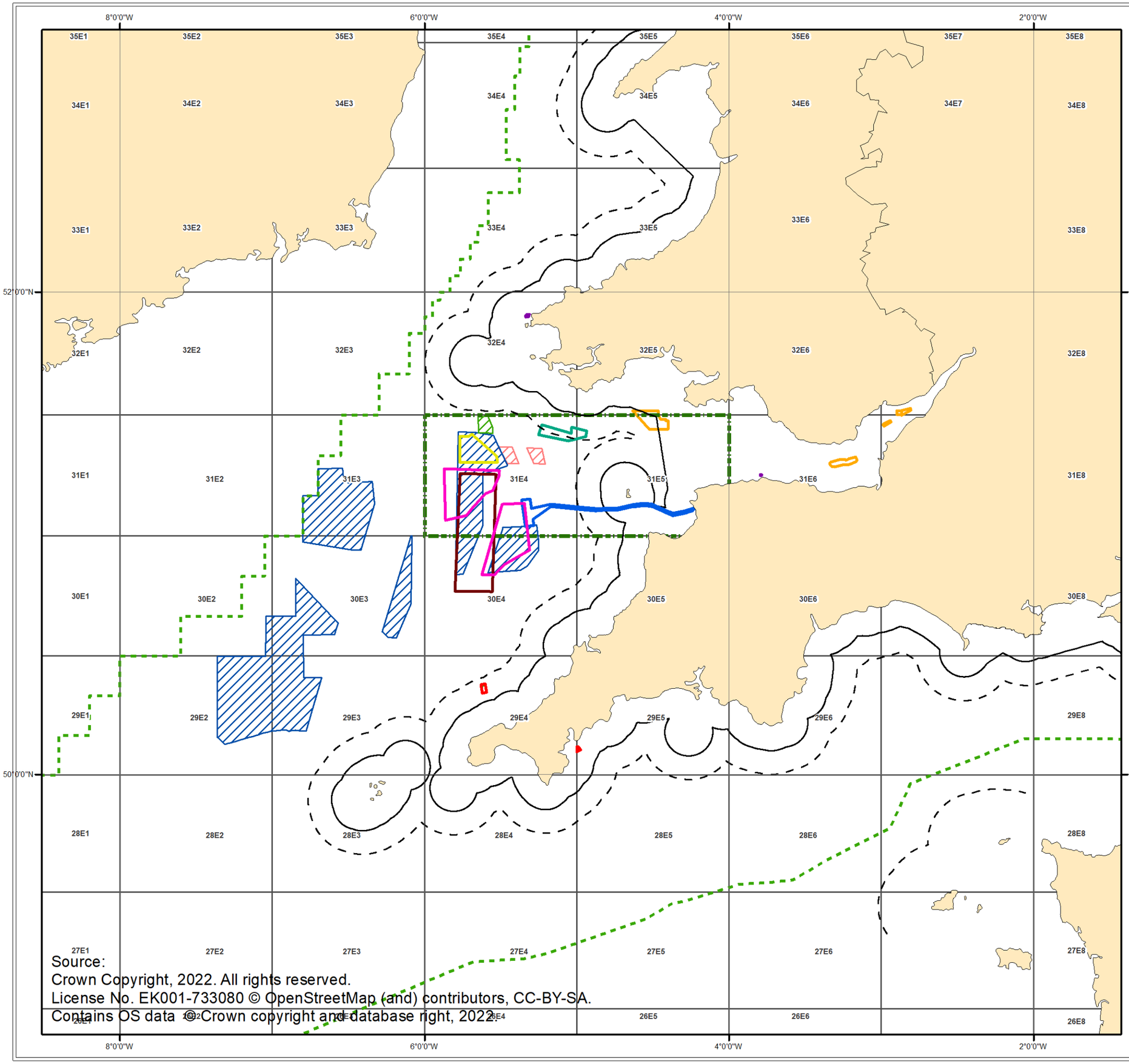
Impact	Potential for cumulative effects	Rationale
Impact 1: Reduction in access to, or exclusion from established fishing grounds.	Yes	If the fishing grounds of a category of fishing vessels overlap the boundaries of more than one development measure.
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Yes	As above.
Impact 3: Increased steaming distances and times	Yes	As above.
Impact 4: Interference with fishing activities	No	Assumption that other developments have the required policies and controls in place to prevent their construction and O&M vessels conflicting with fishing activities.
Impact 5: Objects on the seabed.	No	Assumption that other developments or licensed activities have the required policies and controls in place to prevent them being responsible for objects on the seabed constituting a hazard to fishing.

Impact	Potential for cumulative effects	Rationale
Impact 6: Impacts on commercially exploited species.	Yes	Discussed in **Chapter 11: Fish and Shellfish Ecology.**

176. The second stage of the CEA is to evaluate the projects considered for the CEA to determine whether a cumulative effect is likely to arise. The list of considered projects (identified in **Chapter 6: EIA Methodology Section 6.6.1**) and their anticipated potential for cumulative effects are summarised in **Table 14.13.**

Table 14.13 Projects scoped into the cumulative effect assessment on Commercial Fisheries

Project	Distance from Windfarm Site (km)	Industry
Erebus Floating Wind Demonstrator Project	33.26	Floating offshore wind
The Llyr projects	16.58	Floating offshore wind
South Pembrokeshire Demonstration Zone	29.77	Tidal energy
Wave Hub	75.60	Tidal energy
NOBEL banks	61.99	Aggregate extraction
Culver extension	138.29	Aggregate extraction
North Bristol Deep	165.87	Aggregate extraction
North Middle Ground	172.22	Aggregate extraction
Crown Estate Celtic Sea Areas of Search	Borders the Windfarm Site	Offshore floating wind
Valorous	20.74	Offshore floating wind
St. David's head tidal	82.84	Tidal energy
Lynmouth tidal	106.24	Tidal energy



Legend:

- Llywelyn and Petroc Proposed Offshore Windfarm
- Gwynt Glas Proposed Offshore Windfarm
- Offshore Development Area
- UK EEZ
- 6 NM Limit
- 12 NM Limit
- Study Area
- Wave Hub & Falmouth Bay
- South Pembrokeshire Demo Zone
- Tidal: St. David's Head & Lynmouth
- Aggregate: Culver, NOBEL, North Bristol Deep, North Middle Deep
- Erebus
- Valorous
- Floating OWF Areas of Search
- Llyr 1 & 2

Client: Offshore Wind Ltd.	Project: White Cross Offshore Windfarm

Title: Cumulative Effects: Offshore Wind, Floating Offshore Wind & Aggregates Projects

Figure: 14-9 | Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	MK	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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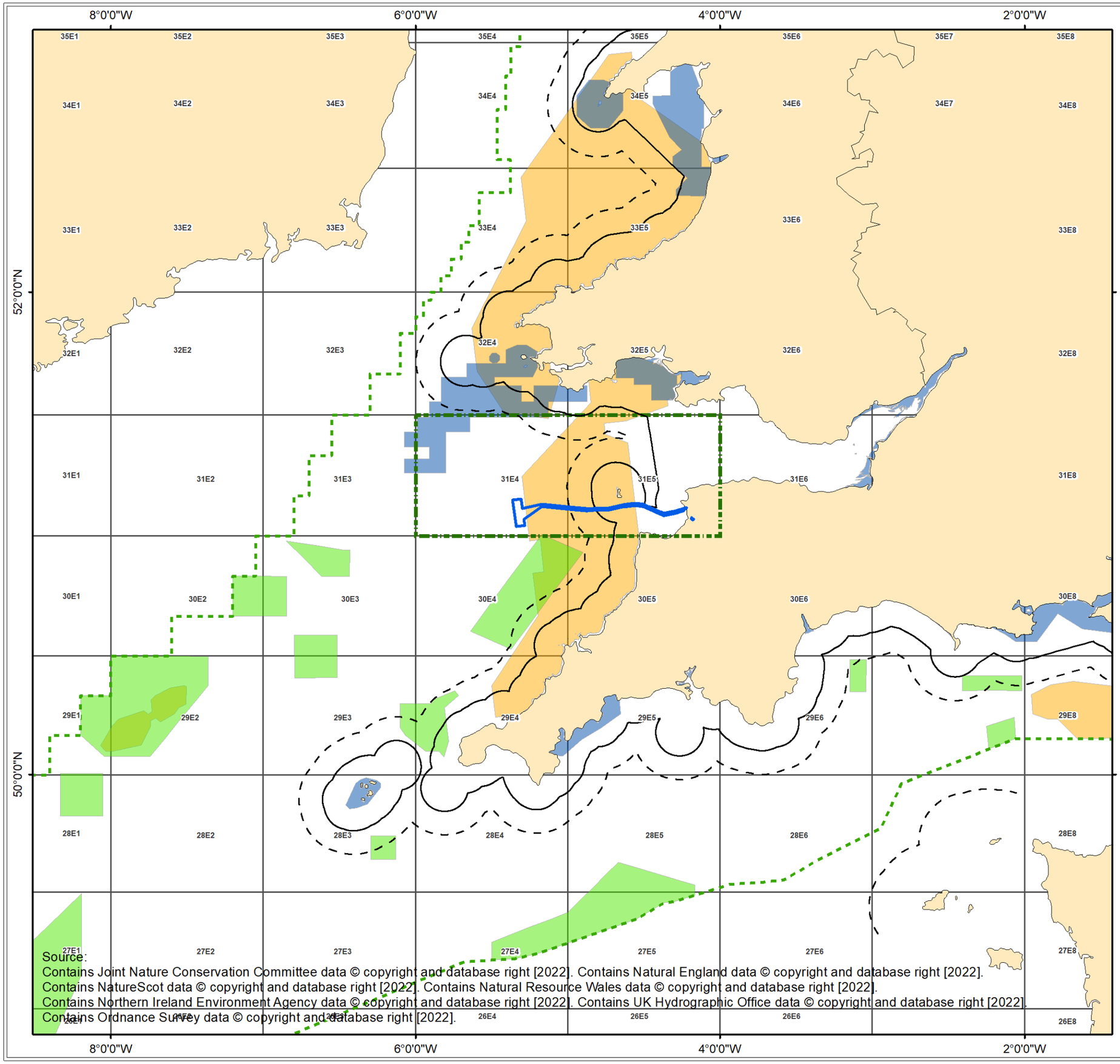

Legend:

- Offshore Development Area
- Study Area
- UK EEZ
- 6 NM Limit
- 12 NM Limit
- SPAs
- MCZs
- SACs

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Client: Offshore Wind Ltd.	Project: White Cross Offshore Windfarm

Title: Cumulative Effects: Marine Protected Areas

Figure:	Drawing No:
14-10	PC2978-RHD-ZZ-XX-DR-Z-0248

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	MK	RM	A3	1:2,720,000

Co-ordinate system: WGS 1984 World Mercator

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177. **Figure 14.9** and **Figure 14.10** illustrate the location and size of the Offshore Project relative to other existing and potential developments and conservation measures. For the Windfarm Site its contribution to the cumulative effect on the fishing industry would be for the duration of the construction, operation, maintenance, and decommissioning phases, whilst for the majority of the Offshore Export Cable Corridor only the construction and possibly the decommissioning phases would be relevant. Furthermore, having the potential to contribute to the cumulative loss of fishing area, the Offshore Project also has the potential to contribute to cumulative displacement impact.

178. With regards to the conservation measures illustrated in **Figure 14.10** full details of the various currently in-place conservation measures are given in **Appendix 14 B**, including descriptions of their current management status. These state that at present none of them prohibit commercial fishing activities from occurring within their defined boundaries, with the exception of Lundy MCZ, which includes a small no-take zone. Whilst progressive management of the measures in question may at some time in the future restrict or prohibit commercial fishing within them, at present this is not the case for the majority. The measures illustrated in **Figure 14.10** have therefore not been considered further in this assessment.

179. With regards to a contribution to a cumulative effect on increased steaming times, under the WCS, whereby no vessels other than Project vessels could transit through the Windfarm Site, the Offshore Project therefore has the potential to contribute to the cumulative effect.

180. In the case of the objects on the seabed and interference of with fishing activities, it is assumed that other developments would also have the required policies and controls in place to prevent these becoming significant adverse impacts on fisheries and by doing so, preventing them contributing to cumulative effects.

14.8.1 Cumulative Impact 1: Reduction in access to, or exclusion from established fishing grounds.

181. **Figure 14.9** shows the size and location of the Offshore Project relative to other potential developments and planned development areas. It should, however, be noted that it is possible that not all of the published TCE's Celtic Sea Floating Offshore Wind Areas of Search will be developed. It is understood that the results of consultation with fisheries stakeholders was a consideration in respect of the recently published Areas of Search.

182. A significant feature is that the area of the Windfarm Site is small in comparison to the areas of the majority of other OWF arrays constructed in UK waters. Similarly, it is probable that future OWF's to be developed in the Celtic Sea will occupy considerably larger sea areas than the Offshore Project.

14.8.1.1 UK fishing vessels

183. As discussed for the Offshore Project specific assessment, the majority of local UK vessels active in the vicinity of the White Cross offshore development area are of under 10m in length and primarily exploit grounds within the 12nm limit and mostly within the 6nm limit. Largely as a consequence of this, it has been assessed that these vessels will not sustain significant loss of fishing area impacts during the construction, operation, maintenance, or decommissioning phases of the White Cross Project.

184. Due to the very low levels of activity by the larger class of wider ranging UK vessels that occurs within the White Cross wind farm site, the loss of fishing area impact during all phases of the Offshore Project has been assessed as of **minor** significance.

185. In view of the above, it is considered that the contribution of the White Cross Project to the cumulative loss of fishing area for UK fishing vessels will be at worst **minor**.

14.8.1.2 Belgian vessels

186. As discussed above and in **Appendix 14.A: Navigation Risk Assessment**, there is some incidence of Belgian beam trawling occurring in the White Cross Windfarm Site. In relation to the overall fishing areas of the Belgian fleet however (**Figure 14.5**) it constitutes only a very small proportion of the overall fishing grounds which has led to an ascribing of a loss of fishing area impact of **minor** significance for all stages of the Offshore Project, which in turn gives a **minor** contribution to the cumulative effect.

14.8.1.3 French, Irish and Dutch vessels

187. As previously discussed, across all phases of the Offshore Project, the loss of fishing area impacts on French, Irish and Dutch fishing vessels was considered to be minor to negligible, and as such its contribution to the potential cumulative effect on French, Irish and Dutch vessels would similarly be **negligible**.

14.8.2 Cumulative Impact 2: Displacement leading to gear conflicts and increased fishing pressure on adjacent grounds

14.8.2.1 UK fishing vessels

188. In the case of the UK local inshore vessels due to their activity being concentrated within the 12nm limit, inshore of the Windfarm Site, as previously discussed there is little scope for a significant displacement effect associated with the Windfarm Site. Similarly, for the comparatively short export cable installation phase, the location of the vessels fishing grounds are expected to result in a **negligible** cumulative effect contribution.

14.8.2.2 Belgian fishing vessels

189. Whilst there will be some displacement of Belgian fishing effort from the Windfarm Site for all phases of the White Cross Project, as previously discussed in view of its scale and the extent of alternative fishing grounds the project specific impact was assessed as minor and as a consequence the contribution of the Offshore Project to the cumulative effect cannot be greater than a **minor** impact.

14.8.2.3 French, Irish and Dutch vessels

190. In view of the negligible loss of fishing area impacts expected across all of the Offshore Project's phases, it is taken that the displacement impact on French, Irish and Dutch fishing vessels will also be **negligible**.

14.8.3 Cumulative Impact 3: Increased steaming distances and times.

191. Due to its size and location relative to the fishing areas of the six nationalities of fishing vessels assessed above along with its orientation, it has been concluded that the Windfarm Site would have only a minor to negligible impact on fishing vessel steaming distances and times. From **Figure 14.9,** it would also appear that if a significant proportion of the TCE's Areas of Search are developed as Floating wind farm projects, any White Cross contributions to the cumulative effect would be also negligible by comparison. It is therefore considered that the contribution of the Offshore Project to the cumulative effect on fishing vessel steaming distances and times will be **negligible.**

14.8.4 Cumulative Impact 6: Impacts on commercially exploited species.

192. There may be potential for the construction of the Offshore Project in conjunction with other projects, conservation measures and various other offshore activities to result in cumulative effect on fish and shellfish populations. This could subsequently affect the productivity of the fisheries that target them. The potential cumulative

effect of construction of the Offshore Project on fish and shellfish species are assessed in **Chapter 11: Fish and Shellfish Ecology** and are not expected to exceed **minor** adverse. Consequently, any cumulative effect on the commercial fisheries that target them are also not expected to exceed **minor** adverse significance.

14.9 Potential transboundary impacts

193. This commercial fisheries chapter has assessed the potential impacts incurred by non-UK registered vessels operating within UK waters. This includes the potential effects on Belgian, French, Irish and Dutch commercial fishing fleets across all impact categories assessed, including exclusion from the Windfarm Site and displacement effects. Transboundary impacts within UK waters have therefore been intrinsically considered throughout the commercial fisheries EIA process and are consistent with those presented in **Sections 14.5, 14.6, 14.7** and **14.8**.

14.10 Inter-relationships

194. Inter-relationship impacts are covered as part of the assessment and consider impacts from the construction, operation, maintenance, or decommissioning of the Offshore Project on the same receptor (or group). A description of the process to identify and assess these effects is presented in **Chapter 6: EIA Methodology**. The potential inter-relationship effects that could arise in relation to Commercial Fisheries include both:

- **Project lifetime effects**: Effects arising throughout more than one phase of the Offshore Project (construction, operation, maintenance, and decommissioning) to interact to potentially create a more significant effect on a receptor than if just one phase were assessed in isolation
- **Receptor led effects**: Assessment of the scope for all relevant effects to interact, spatially and temporally, to create inter-related effects on a receptor (or group). Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

195. Table 14.14 serves as a sign-posting for inter-relationships.

Table 14.14 Commercial Fisheries Inter-relationships

Topic and description	Related chapter	Where addressed in this Chapter	Rationale
Potential impacts on commercially exploited fish and shellfish populations.	**Chapter 11: Fish and Shellfish Ecology**	**Section 14.5.6** and **Section 14.6.6**	Impacts on commercially important fish and shellfish species could indirectly affect the fisheries that target them.
Increased steaming distances	**Chapter 15.A: Navigation Risk Assessment**	**Section 14.5.3** and **Section 14.6.3**	Potential increases in steaming distances and times to fishing grounds may occur due to fishing vessels having to divert around the Windfarm Site and the Offshore Export Cable Corridor (ECC).
Increased vessel traffic associated with the Offshore Project within fishing grounds leading to interference with fishing activity	**Chapter 15.A: Navigation Risk Assessment**	**Section 14.5.4** and **14.6.4**	Increases in vessel activity and presence in the area due to the Offshore Project may interfere with commercial fishing activity.

14.11 Interactions

196. The impacts identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic impacts as a result of that interaction. The areas of interaction between impacts are presented in **Table 14.15**, **Table 14.16,** and **Table 14.17**, along with an indication as to whether the interaction may give rise to synergistic impacts. This provides a screening tool for which impacts have the potential to interact.

197. **Table 14.18** then provides an assessment for each receptor (or receptor group) related to these impacts in two ways. Firstly, the impacts are considered within a development phase (i.e., construction, operation, maintenance or decommissioning) to see if, for example, multiple construction impacts could combine. Secondly, a lifetime assessment is undertaken which considers the potential for impacts to affect receptors across development phases. The significance of each individual impact is determined by the sensitivity of the receptor and the magnitude of effect; the sensitivity is constant whereas the magnitude may differ. Therefore, when considering the potential for impacts to be additive it is the magnitude of effect

which is important – the magnitudes of the different effects are combined upon the same sensitivity receptor. If minor impact and minor impact were added this would effectively double count the sensitivity.

Table 14.15 Interaction between impacts during construction

Construction	Impact 1: Reduction in access to, or exclusion from established fishing grounds.	Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Impact 3: Increased steaming distances and times.
Impact 1: Reduction in access to, or exclusion from established fishing grounds.		Yes	Yes
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Yes		No
Impact 3: Increased steaming distances and times.	Yes	Yes	

Table 14.16 Interaction between impacts during operation and maintenance

Operation	Impact 1: Reduction in access to, or exclusion from established fishing grounds.	Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Impact 3: Increased steaming distances and times.
Impact 1: Reduction in access to, or exclusion from established fishing grounds.		Yes	No
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Yes		No
Impact 3: Increased steaming distances and times.	No	No	

Table 14.17 Interaction between impacts during decommissioning

Decommissioning	Impact 1: Reduction in access to, or exclusion from established fishing grounds.	Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Impact 3: Increased steaming distances and times.
Impact 1: Reduction in access to, or exclusion from established fishing grounds.		Yes	Yes
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Yes		No
Impact 3: Increased steaming distances and times.	Yes	Yes	

Table 14.18 Potential interactions between impacts on Commercial Fisheries

Highest level significance					
Receptor	**Construction**	**Operation and Maintenance**	**Decommissioning**	**Phase Assessment**	**Lifetime Assessment**
UK Static Gear Vessels **UK Fishing Vessels** **Belgian Fishing Vessels** **French Fishing Vessels** **Irish Fishing Vessels** **Dutch Fishing Vessels**	Minor	Minor	Minor	**Impact is of no greater significance than individually assessed impact.** The impacts are considered to be of minor significance on the individual receptors. Considering this, and that each impact will be managed with standard and best practice methodologies, it is considered that there would either be: • No interactions. • Interaction would not result in greater impact than assessed individually.	**Impact is of no greater significance than individually assessed impact.** The impacts are considered to be of minor significance on the individual receptors. Considering this, and that each impact will be managed with standard and best practice methodologies, it is considered that there would either be: • No interactions. • Interaction would not result in greater impact than assessed individually.

Highest level significance					
Commercially Exploited Fish and Shellfish Species	Minor	Minor	Minor	**Impact is of no greater significance than individually assessed impact.** The impacts are considered to be of minor significance on the individual receptors. Considering this, and that each impact will be managed with standard and best practice methodologies, it is considered that there would either be: • No interactions • Interaction would not result in greater impact than assessed individually	**Impact is of no greater significance than individually assessed impact.** The impacts are considered to be of minor significance on the individual receptors. Considering this, and that each impact will be managed with standard and best practice methodologies, it is considered that there would either be: • No interactions • Interaction would not result in greater impact than assessed individually

14.12 Summary

198. This chapter has investigated the potential effects on commercial fisheries receptors arising from the Offshore Project. The range of potential impacts and associated effects considered has been informed by the Scoping Opinion, consultation, and agreed through ETG Meetings, as well as reference to existing policy and guidance. The impacts considered include those brought about directly as well as indirectly.

199. The evidence utilised and the consultation undertaken with stakeholders indicates that, overall, the Offshore Project is located in an area sustaining low levels of fishing activity in comparison to other areas in the regional, national and international contexts.

200. Of the activity which does occur within the immediate Project vicinity, the greatest proportion is recorded by Belgian vessels, almost entirely beam trawlers, followed by UK vessels. Activity by other nationalities (France, Ireland and Holland) in the Offshore Project area, as indicated by available data, appears to be minimal.

201. With regards to UK vessels, as shown in the Baseline Report, the highest levels of activity relevant to the Offshore Project is by under 10m local vessels deploying a number of gears, the highest values of landings being from potting. From direct consultation with local stakeholders, it is understood that the majority on the grounds of these vessels are within the UK's 12-mile limit and therefore inshore of the offshore Windfarm Site and part of the Offshore Export Cable Corridor.

202. During consultation with local fisheries stakeholders, the main focus of their concerns were potential loss of fishing area and associated displacement effects.

203. **Table 14.19** presents a summary of the impacts assessed within this ES chapter. As shown, due to location and small size of the Offshore Project relative to the locations and extent of fishing grounds, it has been assessed that, at national fleet level, none of the potential impacts would be at levels of significance that would require direct mitigation. At the local level however, it is considered that a limited number of local vessels whose static gears would require relocation from the Offshore Export Cable Corridor during the installation phases of the export cable would require direct mitigation. In the case of these vessels, the appropriate evidence-based cooperation agreements, in line with FLOWW Guidance would be sought with the relevant vessels owners in order to appropriately mitigate the potential impact.

204. As discussed, the contribution of the Offshore Project to cumulative effects is directly related to project specific impacts, and as such, the Offshore Project will not have a significant impact on the overall cumulative effect.

Table 14.19 Summary of potential impacts for Commercial Fisheries during construction, operation, maintenance and decommissioning of the Offshore Project

Potential impact	Receptor	Sensitivity	Magnitude	Significance	Potential mitigation measure	Residual impact
Construction						
Impact 1: Reduction in access to, or exclusion from established fishing grounds	UK fishing vessels	Medium / low	Medium / low	Moderate / minor	Appropriate evidence-based agreements as cited in the FLOWW Guidelines	Minor
	Belgian fishing vessels	Medium	Low	Minor	N/A	N/A
	French fishing vessels	Low	Low	Minor	N/A	N/A
	Irish fishing vessels	Low	Negligible	Negligible	N/A	N/A
	Dutch fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	UK static gear vessels	Medium	Medium	Moderate	Appropriate evidence-based agreements as cited in the FLOWW Guidelines	Negligible
	UK trawlers	Low	Low	Minor	N/A	N/A
	Belgian vessels	Low	Negligible	Negligible	N/A	N/A
	French, Irish and Dutch vessels	Low	Negligible	Negligible	N/A	N/A
Impact 3: Increased	UK vessels	Low	Low	Minor	N/A	N/A

Potential impact	Receptor	Sensitivity	Magnitude	Significance	Potential mitigation measure	Residual impact
steaming distances and times	Belgian, French, Irish and Dutch vessels	Low	Low	Minor	N/A	N/A
Impact 4: Interference with fishing activities	All fishing vessels	Medium	Medium	Moderate	The engagement of a locally experienced Fishing Industry Representative (FIR) to assist the Company Fisheries Liaison Officer. Maintaining on-going pro-active communication with the relevant fisheries stakeholders for the duration of the construction phase (FLCP). Undertaking the required liaison and surveys to record and plot static gear locations. To provide the Offshore Project marine coordinator and the deck officers of Project vessels with descriptions and the positions of identified static gears in order for them to as far as is practically possible to plan their passages to avoid contact with static gears.	Low
Impact 5: Obstacles on the seabed	All fishing vessels	Medium	Medium	Moderate	Liaison and information distribution to skippers.	Within acceptable limits

Potential impact	Receptor	Sensitivity	Magnitude	Significance	Potential mitigation measure	Residual impact
					Views of local stakeholders in respect of the boulder relocation program will be sought and communicated to the MMO. The Offshore Project will have agreed policies with construction contractors aimed at preventing objects being dropped overboard from their vessels as well as ensuring procedures are in place for the recording, notification and recovery of any accidentally lost objects. Should there be any periods when sections of cable are temporarily exposed, the required safety zones would be maintained with the appropriate notices and guarding procedures put in place.	
Impact 6: Impacts on commercially exploited fish and shellfish species	All fish species	Low	Low	Minor	N/A	N/A
Operation and Maintenance						

Potential impact	Receptor	Sensitivity	Magnitude	Significance	Potential mitigation measure	Residual impact
Impact 1: Reduction in access to, or exclusion from established fishing grounds	UK fishing vessels	Medium / Low	Low	Minor	N/A	N/A
	Belgian fishing vessels	Medium	Low	Minor	N/A	N/A
	French, Irish and Dutch fishing vessels	Low	Low	Minor	N/A	N/A
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	UK static gear vessels	Medium	Low	Minor	N/A	N/A
	UK trawlers	Low	Low	Minor	N/A	N/A
	Belgian vessels	Low	Low	Minor	N/A	N/A
	French Irish and Dutch Vessels	Low	Negligible	Minor	N/A	N/A
Impact 3: Increased steaming distances and times	All fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 4: Interference with fishing activities	All fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 5: Obstacles on the seabed	All fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 6: Impacts on	All fish species	Low	Low	Minor	N/A	N/A

Potential impact	Receptor	Sensitivity	Magnitude	Significance	Potential mitigation measure	Residual impact
commercially exploited fish and shellfish species						
Decommissioning						
Impact 1: Reduction in access to, or exclusion from established fishing grounds.	UK fishing vessels	Low	Low	Low	N/A	N/A
	Belgian fishing vessels	Medium	Low	Low	N/A	N/A
	French, Irish and Dutch fishing vessels	Low	Low	Low/Negligible	N/A	N/A
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	UK static gear vessels	Low	Negligible	Negligible	N/A	N/A
	UK trawlers	Low	Low	Minor	N/A	N/A
	Belgian vessels	Low	Negligible	Negligible	N/A	N/A
	French Irish and Dutch Vessels	Low	Negligible	Negligible	N/A	N/A
Impact 3: Increased steaming distances and times	All fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 4: Interference with fishing activities	All fishing vessels	Low	Negligible	Negligible	N/A	N/A

Potential impact	Receptor	Sensitivity	Magnitude	Significance	Potential mitigation measure	Residual impact
Impact 5: Objects on the seabed.	All fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 6: Impacts on commercially exploited species.	All fish species	Low	Low	Minor	N/A	N/A
Cumulative						
Impact 1: Reduction in access to, or exclusion from established fishing grounds.	UK fishing vessels	Low	Low	Minor	N/A	N/A
	Belgian fishing vessels	Low	Low	Minor	N/A	N/A
	Dutch fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 2: Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	UK fishing vessels	Low	Negligible	Negligible	N/A	N/A
	Belgian fishing vessels	Low	Low	Minor	N/A	N/A
	French, Irish and Dutch fishing vessels	Negligible	Negligible	Negligible	N/A	N/A
Impact 3: Increased steaming distances and times	All fishing vessels	Low	Negligible	Negligible	N/A	N/A
Impact 6: Impacts on	All fish species	Low	Low	Minor	N/A	N/A

Potential impact	Receptor	Sensitivity	Magnitude	Significance	Potential mitigation measure	Residual impact
commercially exploited species.						

14.13 References

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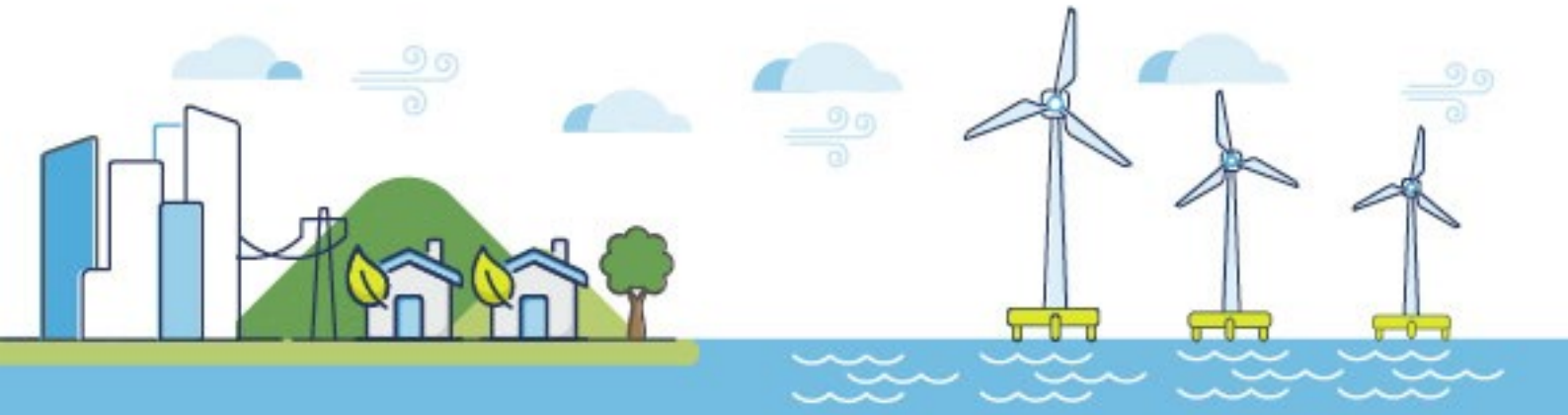
WHITE CROSS

White Cross Offshore Windfarm Environmental Statement

Appendix 14.A: Commercial Fisheries Technical Report



White Cross:
Commercial Fisheries Technical Report

October 2022

Brown & May Marine Ltd.

White Cross

Commercial Fisheries Technical Report

Undertaken by

Brown & May Marine Limited

Ref	Rev.	Date	Author	Checked	Approved
201900248	00	xxx.2022	RM	RC	SJA

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Abbreviations

Abbreviation	Description
AIS	Automatic Identification System
BMM	Brown and May Marine Limited
CFP	Common Fisheries Policy
EC	European Commission
EEZ	Exclusive Economic Zone
EU	European Union
ECC	Export Cable Corridor
ICES	International Council for the Exploration of the Seas
IFCA	Inshore Fisheries and Conservation Authority
ILVO	Flanders Research Institute Agricultural, Fisheries and Food Research
ISA	Immediate Study Area
D&SIFCA	Devon and Severn Inshore Fisheries and Conservation Authority
MMO	Marine Management Organisation
nm	Nautical Mile
PO	Producer Organisations
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
TCA	Trade and Cooperation Agreement
UK	United Kingdom
VMS	Vessel Monitoring System
WSA	Wider Study Area
WUR	Wageningen University & Research

Terminology

Terminology	Description
Agreement for Lease	An Agreement for Lease (AfL) is a non-binding agreement between a landlord and prospective tenant to grant and/or to accept a lease in the future. The AfL only gives the option to investigate a site for potential development. There is no obligation on the developer to execute a lease if they do not wish to.
Applicant	Offshore Wind Limited
Beam trawl	A trawl net whose lateral spread during trawling is maintained by a beam across its mouth.
Benthic	Relating to or occurring at the sea bottom.
Cumulative effects	The effect of the Project taken together with similar effects from a number of different projects, on the same single receptor/resource. Cumulative impacts are those that result from changes caused by other past, present or reasonably foreseeable actions together with the Project.
Demersal fish	Fish that live near or on the seabed.
Demersal trawl	A trawl net that is towed across the seabed rather than through the mid-water. A single-rig trawler tows a single net, whilst a twin-rig trawler tows two nets behind the vessel. Also referred to as a (bottom) otter trawl.
Department for Business, Energy and Industrial Strategy (BEIS)	Government department that is responsible for business, industrial strategy, science and innovation and energy and climate change policy and consent under Section 36 of the Electricity Act.
Driftnets	A driftnet is a fishing method where a net is suspended in the water just below the surface and allowed to drift in the water column.
Engineer, Procure, Construct and Install	A common form of contracting for offshore construction. The contractor takes responsibility for a wide scope and delivers via own and subcontract resources.
Environmental Impact Assessment (EIA)	Assessment of the potential impact of the proposed Project on the physical, biological and human environment during construction, operation and decommissioning.
Export Cable Corridor	The area in which the export cables will be laid, either from the Offshore Substation or the inter-array cable junction box (if no offshore substation), to the WPD Onshore Substation comprising both the Offshore Export Cable Corridor and Onshore Export Cable Corridor.
Fleet	A number of vessels having a shared origin, purpose or area of operation.
Fleet of pots	A number of pots shot in strings, where pots are attached to one long rope and laid on the seabed, with a buoy to mark the location of each end of the fleet.
Front end engineering and design	Front-end engineering and design (FEED) studies address areas of windfarm system design and develop the concept of the windfarm in advance of procurement, contracting and construction.

Terminology	Description
Gadoid	A soft-finned fish of the family Gadidae, such as cod and haddock.
Generation Assets	The infrastructure of the Project related to the generation of electricity within the windfarm site, including wind turbine generators, substructures, mooring lines, seabed anchors and inter-array cables
Gillnet	A gillnet is a static fishing method with a single wall of netting anchored on the seabed.
High Voltage Alternating Current	High voltage alternating current is the bulk transmission of electricity by alternating current (AC), whereby the flow of electric charge periodically reverses direction.
High Voltage Direct Current	High voltage direct current is the bulk transmission of electricity by direct current (DC), whereby the flow of electric charge is in one direction.
ICES rectangles	Fisheries data are recorded and collated by International Council for the Exploration of the Sea (ICES) statistical rectangles. ICES rectangles provide a grid covering the area between 36°N and 85°30'N and 44°W and 68°30'E.
Immediate Study Area	ICES rectangles 31E4 and 31E5.
In-combination effects	In-combination effects are those effects that may arise from the development proposed in combination with other plans and projects proposed/consented but not yet built and operational.
Inter-array cables	Cables which link the wind turbines to each other and the Offshore Substation Platform, or at the inter-array cables junction box (if no offshore substation)
Jointing bay	Underground structures constructed at regular intervals along the Onshore Export Cable Corridor to join sections of cable and facilitate installation of the cables into the buried ducts
Landfall	Where the offshore export cables come ashore
Link boxes	Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links
Longlines	A longline consists of a long length of line, with multiple branch lines with baited hooks on attached at regular intervals. This can be set either on the seabed to target demersal species or in the water column to target pelagic species.
Mean high water springs	The average tidal height throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest.
Mean low water springs	The average tidal height throughout a year of two successive low waters during those periods of 24 hours when the range of the tide is at its greatest.
Mean sea level	The average tidal height over a long period of time.
Mitigation	Mitigation measures have been proposed where the assessment identifies that an aspect of the development is likely to give rise to significant environmental impacts and discussed with the relevant authorities and stakeholders in order to avoid, prevent or reduce impacts to acceptable levels.

Terminology	Description
	For the purposes of the EIA, two types of mitigation are defined: • Embedded mitigation: consisting of mitigation measures that are identified and adopted as part of the evolution of the project design, and form part of the project design that is assessed in the EIA • Additional mitigation: consisting of mitigation measures that are identified during the EIA process specifically to reduce or eliminate any predicted significant impacts. Additional mitigation is therefore subsequently adopted by OWL as the EIA process progresses.
Mobile gear	Any form of fishing gear that operates by being towed or moved through the water (i.e. demersal/otter trawls, midwater trawls, pelagic trawls, beam trawls, scallop dredgers).
NG Onshore Substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of the electrical transformers.
NG Grid Connection	The point at which the White Cross Offshore Windfarm connects into the distribution network at East Yelland substation and the distributed electricity network. From East Yelland substation electricity is transmitted to Alverdiscott where it enters the national transmission network.
Offshore Development Area	The Windfarm Site (including wind turbine generators, substructures, mooring lines, seabed anchors, inter-array cables and Offshore Substation Platform (as applicable)) and Offshore Export Cable Corridor to MHWS at the Landfall. This encompasses the part of the project that is the focus of this application and Environmental Statement and the parts of the project consented under Section 36 of the Electricity Act and the Marine and Coastal Access Act 2009
Offshore Export Cables	The cables which bring electricity from the Offshore Substation Platform or the inter-array cables junction box to the Landfall
Offshore Export Cable Corridor	The proposed offshore area in which the export cables will be laid, from Offshore Substation Platform or the inter-array cable junction box to the Landfall
Offshore Infrastructure	All of the offshore infrastructure including wind turbine generators, substructures, mooring lines, seabed anchors, Offshore Substation Platform and all cable types (export and inter-array). This encompasses the infrastructure that is the focus of this application and Environmental Statement and the parts of the project consented under Section 36 of the Electricity Act and the Marine and Coastal Access Act 2009
Offshore Substation Platform	A fixed structure located within the Windfarm Site, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore

Terminology	Description
Offshore Transmission Assets	The aspects of the project related to the transmission of electricity from the generation assets including the Offshore Substation Platform (as applicable)) or offshore junction box, Offshore Cable Corridor to MHWS at the landfall
Offshore Transmission Owner	An OFTO, appointed in UK by Ofgem (Office of Gas and Electricity Markets), has ownership and responsibility for the transmission assets of an offshore windfarm.
Onshore Development Area	The onshore area above MLWS including the underground onshore export cables connecting to the White Cross Onshore Substation and onward to the WPD grid connection at East Yelland. The onshore development area will form part of a separate Planning application to the Local Planning Authority (LPA) under the Town and Country Planning Act 1990
Onshore Export Cables	The cables which bring electricity from MLWS at the Landfall to the White Cross Onshore Substation and onward to the WPD grid connection at East Yelland
Onshore Export Cable Corridor	The proposed onshore area in which the export cables will be laid, from MLWS at the Landfall to the White Cross Onshore Substation and onward to the WPD grid connection at East Yelland
Onshore Infrastructure	The combined name for all infrastructure associated with the Project from MLWS at the Landfall to the WPD grid connection point at East Yelland. The onshore infrastructure will form part of a separate Planning application to the Local Planning Authority (LPA) under the Town and Country Planning Act 1990
Onshore Transmission Assets	The aspects of the project related to the transmission of electricity from MLWS at the Landfall to the WPD grid connection at East Yelland including the Onshore Export Cable, the White Cross Onshore Substation and onward connection to the WPD grid connection at East Yelland
Otter trawl	A trawl net fitted with two 'otter' boards which maintain the horizontal opening of the net.
Pelagic	Living in the water column.
Pelagic trawl	A pelagic trawl targets fish in the water column and is held open by a set of trawl doors. By altering the vessel speed and or changing the length of trawl warp between the vessel and the trawl doors, the position of the net in the water column can be altered to suit the depth where the shoal of fish are swimming at.
Project	The Project for the offshore Section 36 and Marine Licence application includes all elements offshore of MHWS. This includes the infrastructure within the windfarm site (e.g. wind turbine generators, substructures, mooring lines, seabed anchors, inter-array cables and Offshore Substation Platform (as applicable)) and all infrastructure associated with the export cable route and landfall (up to MHWS) including the cables and associated cable protection (if required).
Project Design Envelope	A description of the range of possible elements that make up the Project design options under consideration. The Project Design Envelope, or 'Rochdale Envelope' is used to define the Project for Environmental Impact

Terminology	Description
	Assessment (EIA) purposes when the exact parameters are not yet known but a bounded range of parameters are known for each key project aspect.
Safety zones	A marine zone outlined for the purposes of safety around a possibly hazardous installation or works / construction area
Scottish seine nets	A demersal trawl where the net, which forms a rounded triangle shape, is hauled in by a vessel using engine power to remain stationary.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the foundations as a result of the flow of water
Service operation vessel	A vessel that provides accommodation, workshops and equipment for the transfer of personnel to turbine during OMS. Vessels in service today are typically up to 85m long with accommodation for about 60 people.
Static gear	Any form of fishing gear that operates without being towed or moved through the water (i.e., crustaceans pots, long lines, set nets, traps).
The 'Immediate study area'	The area within ICES rectangles 31E4 and 31E5.
The Wider Study Area	The larger study area to give context.
Trammel net	Similar to a gillnet but made up of three layers of netting.
Transition bay	Underground structures at the Landfall that house the joints between the offshore export cables and the onshore export cables
Trevose Box	Seasonally closed fishing area (ICES rectangles 30E4, 31E4, 32E3) between 1st February and 31st March each year. Only inshore static nets fixed with stakes, scallop dredges, mussel dredges, hand-lines, mechanised jigging, draft nets and beach seines, pots and creels are to be used.
Quota	A fixed proportion of the total allowable catch allocated to each fishing nation.
Vessel Monitoring System (VMS)	A satellite-based monitoring system which at regular intervals provides data to the fisheries authorities on the location, course and speed of vessels.
White Cross Offshore Windfarm	100MW capacity offshore windfarm including associated onshore and offshore infrastructure
White Cross Onshore Substation	A new substation built specifically for the White Cross project. It is required to ensure electrical power produced by the offshore windfarm is compliant with WPD electrical requirements at the grid connection at East Yelland.
Windfarm Site	The area within which the wind turbines, Offshore Substation Platform and inter-array cables will be present
Works completion date	Date at which construction works are deemed to be complete and the windfarm is handed to the operations team. In reality, this may take place over a period of time.

Terminology	Description
6 nautical mile (nm) limit	Inshore fishing boundary.
12nm limit	Outer limit of the UK's territorial seas.

1.0 Introduction

The following Technical Report describes the commercial fisheries baseline in respect of the White Cross Offshore Windfarm (hereafter referred to as 'the Project'). The Project areas relevant to this baseline characterisation are:

- The boundary of the windfarm site encompassing the extent of the turbine mooring lines.
- The Offshore Export Cable Corridor (ECC).

Under the EU-UK Trade and Cooperation Agreement (TCA) signed on the 30th of December 2020, the principles of the EU's Common Fisheries Policy (CFP) continue after the end of the Brexit Transition Period. As a result, the fleets of a number of EU member states have access rights and quotas to fish in the Celtic Sea up to the UK's 12nm fisheries limit and, in some cases, up to the 6nm limit. Data and information currently available from several EU fisheries data centres has therefore been used to inform this baseline. It should however be noted that the levels of availability and the methods of data collation and presentation vary between the various national data centres.

2.0 Consultation

Consultation was carried out with the relevant national and regional representative associations and organisations (**Table 2.1, Table 2.2**) as well as with individual vessel owners and the local Inshore Fisheries and Conservation Authorities (IFCAs).

Table 2.1 Summary of consultation

Role/Organisation	Consultation Date	Meeting Type
Public Consultation Event	Tuesday 5th July 2022	Face to face event held in Barnstaple
Public Consultation Event	Wednesday 6th July 2022	Face to face event held in Instow
North Devon Fishermen's Association	Tuesday 20th September 2022	Face to face meeting held in Ilfracombe
North Devon Fishermen's Association	Wednesday 21st September 2022	Face to face meeting held in Appledore
Devon and Severn Inshore Fisheries & Conservation Authority	Thursday 22nd September 2022	Online
The National Federation of Fishermen's Organisations	Monday 26th September 2022	Online
The Western Fish Producers' Organisation	Tuesday 27th September 2022	Face to face meeting held in Brixham
The Cornish Fish Producers Organisation	Wednesday 28th September 2022	Face to face meeting held in Newlyn
The Cornish Fish Producers Organisation	Thursday 29th September 2022	Face to face meeting held in Padstow
Rederscentrale, Belgian Fish Producers Organisation	Thursday 29th September 2022	Online
Welsh Fishermen's Association	Thursday 29th September 2022	Online
Public Consultation Event	Thursday 20th October 2022	Face to face event held in Instow
Public Consultation Event	Friday 21st October 2022	Face to face event held in Braunton

Table 2.2: Organisations Consulted and Number of Member Vessels

Organisation	Member Vessels
The Cornish Fish Producers Organisation	170
North Devon Fishermen's Association	23[1]
The Western Fish Producers' Organisation	25

In addition, the following organisations were also contacted and made aware of the Project and consultation process and the opportunity to provide comments or feedback.

- Irish Fish Producers Organisation
- Irish South and East Fish Producers Organisation
- VisNed, Dutch Fisheries Association
- Comité Régional des Pêches Maritimes et des Elevages Marins de Bretagne, French Fisheries Association

The Cornish IFCA was also contacted but responded stating that as the Project is not located within their jurisdiction, they had no comments to make in respect of the fisheries baseline or the subsequent impact assessment.

3.0 Study Area

The principal spatial units used for the collation of fisheries data are International Council for the Exploration of the Sea (ICES) statistical rectangles. The Windfarm site and a small portion of the ECC fall within ICES rectangle 31E4 with the remainder of the ECC in 31E5. These two rectangles constitute the Immediate Study Area (ISA). In order to illustrate regional context, a Wider Study Area (WSA) has also been defined as shown by **Figure 3.1**.

The spatial allocation of pressure stocks quotas is an important factor influencing landings and incomes is by ICES area and sub-area. As shown by **Figure 3.2**, the Project falls within ICES Area VII and Sub-Areas VIIg and VIIf.

[1] Only data available for the NDFA was number of members, this may differ from number of member vessels.

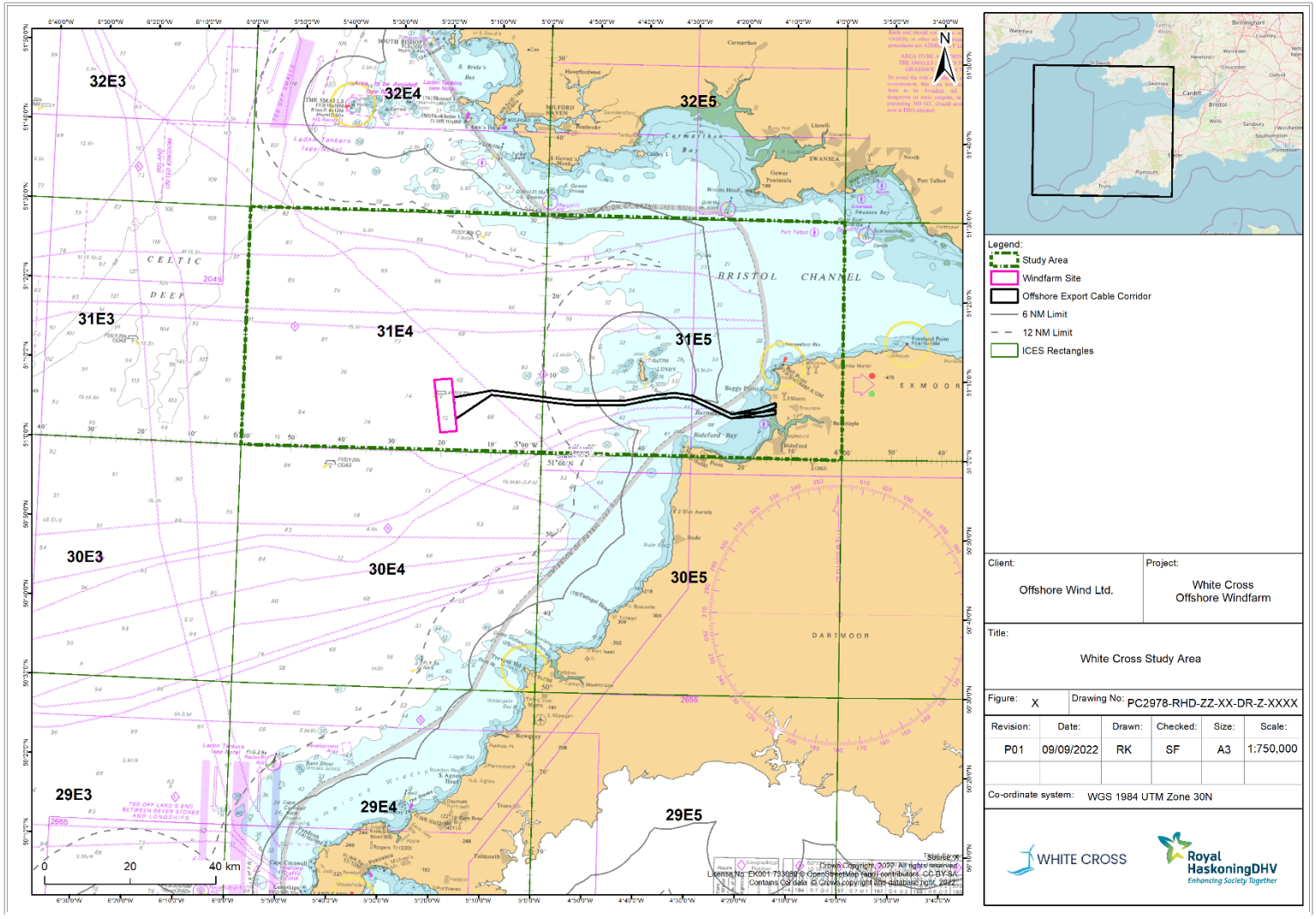


Figure 3.1 ISA (Outlined in Green) and WSA

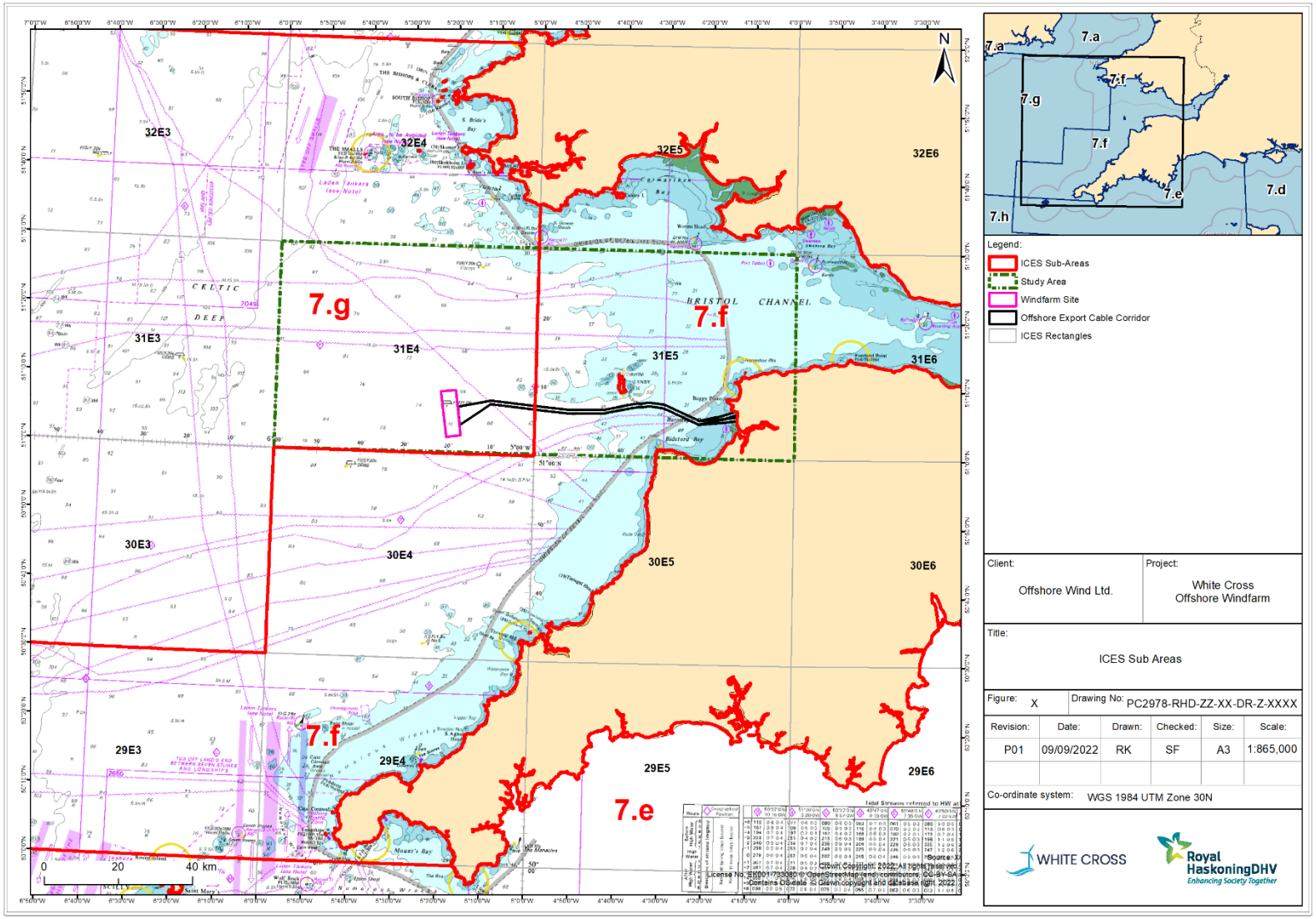


Figure 3.2: ICES Sub-areas used for Quota Allocations

4.0 Data and information sources

There is no single data set which fully defines the distribution, intensity, and values of fishing within small discrete sea areas such as that occupied by the Project. Given in **Table 4.1** are those used for this baseline along with a summary of their respective merits and sensitivities.

Table 4.1: Key Datasets Used to Inform the Baseline

Data and Information Source	Source (years)	Description
Surveillance sightings by nationality and fishing method	Marine Management Organisation (MMO) (2011 – 2020)	Surveillance sightings in UK Exclusive Economic Zone (EEZ) waters are recorded by fishery protection aircraft and surface craft in order to police fisheries legislation. This dataset provides information on fishing vessels observed within UK waters, regardless of vessel size, nationality and fishing activity. This data provides a good indication of the relative distribution of activity by fishing method and nationality. However, it does not give an absolute quantification of effort, as surveillance sea patrols and flights are not always undertaken at regular intervals over a given area or time period.
Landings Weights by ICES Rectangle	MMO (2016 – 2020)	Provides information on landings of UK registered vessels by species and method as an annual average. The dataset includes UK fishing vessels of all sizes. The data is an average from 2016 to 2020, however, the effects of COVID may have had an impact on the average landings in 2020. Data is provided at a spatial scale of ICES rectangles. As fishing activity is not evenly distributed across the area of a given rectangle, the information provided at this scale may not fully represent the spatial distribution of activity across the study area. This dataset does provide a good indication of the principal species targeted and fishing methods used.
	European Commission's (EC) Scientific, Economic and Technical Committee on Fishing (STECF) (2010-2014)	Belgian landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all vessels of ten metres and over. More up-to-date data has been requested but has not yet been received.
	European Commission's (EC) Scientific, Economic and Technical Committee on Fishing (STECF) (2012-2016)	French landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all registered vessels 10m and over and from monthly declaration forms for fishing effort and catches per species by dates, locations and gears. For all registered vessels under ten metres – logbooks are not mandatory for these

Data and Information Source	Source (years)	Description
		vessels but they are covered by monthly declarative forms. This data is not currently available beyond 2016. The only landings data available for French vessels was weight, therefore this has been used instead of value.
	European Commission's (EC) Scientific, Economic and Technical Committee on Fishing (STECF) (2017-2021)	Dutch landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all registered vessels ten metres and over and from monthly declaration forms for fishing effort and catches per species by dates, locations and gears.
	Marine Institute (2015-2019)	Irish landings by weight (tonnes) per ICES rectangle. This data is derived from official logbook databases for all vessels of ten metres and over.
Vessel tracks recorded by Automatic Identification System (AIS)	EMODnet	Publicly available AIS records of fishing vessels, plotted to illustrate the combined tracks of fishing vessels of all nationalities. It should be noted that the data includes vessels both steaming and actively engaged in fishing.
VMS records integrated with landings values	MMO (2016 -2020)	The dataset provides summaries of fishing activity for UK commercial fishing vessels of 15m and over in length that are deemed to have been fishing over a specified time period. The data is provided using a grid based on 0.05-degree sub-rectangles. The data included in this report is presented in terms of fishing value (£). This data does not currently encompass fishing activity for commercial fishing vessels of less than 15m, and therefore does not capture activity by the majority of the inshore commercial fishing fleet.
	Flanders Research Institute Agricultural, Fisheries and Food Research (ILVO) (2010 -2014)	Belgian VMS data combined with logbook data presented at 1/16th of an ICES rectangle scale, therefore the data is of a lesser resolution than the UK VMS. Includes information for Belgian registered vessels of 12m and over in length. The data included in this report is presented as an annual average in terms of fishing value (€). Recent VMS data for Belgian vessels is not publicly available. The data presented in this report is part of Brown & May's (BMM) in-house historic fisheries data sets for Belgian vessels, obtained via data request to Flanders Research Institute for Agricultural, Fisheries and Food Research (ILVO). Following recent communications with ILVO, an update of this data set has been requested, but has not yet been received.

Data and Information Source	Source (years)	Description
	Institute for Marine Resources and Ecosystem Studies (IMARES), Wageningen University and Research (2017-2021)	Dutch VMS data combined with logbook data presented at 1/16th of an ICES rectangle scale, therefore this data is of a lesser resolution than the UK VMS. Includes information for Dutch registered vessels of 12m and over in length. The data included in this report is presented as an annual average in terms of fishing value (€).
	Marine Institute (2014 -2018)	Irish VMS data combined with logbook data presented by using a km^2 grid. Includes information on Irish vessels over 12m in length. The data included in this report is presented in terms of value (€) as an annual average for the last five years for which data has been made available by the Marine Institute.

5.0 Fisheries management and restrictions

Commercial fishing is subject to a wide range of policy and management measures with controls and regulations at local, regional, and national levels, some of which are implemented at relatively short notice.

The Marine Management Organisation (MMO) is responsible for fisheries management in the seas around England and Wales.

Quotas for pressure stocks species as derived from Total Allowable Catches (TACs) are allocated annually between the four UK administrations (Scotland, England, Wales and Northern Ireland) and are the maximum annual tonnages of each pressure stock species that may be caught by UK registered fishing vessels. Sectoral groups and Producer Organisations (POs) decide how best to allocate quotas to their members, through monthly catch limits or annual vessel or company quotas. For vessels that are not PO members, quotas are managed directly by the MMO[2]. Graphs showing combined quota allocations for common species in ICES Sub-Areas VIIf and VIIg are shown in **Figure 5.1** and **Figure 5.2.**

As shown, fishing quotas in these areas appear to be decreasing over time. Fishing quotas are set annually for most fish stocks and are based on scientific advice on the stock status from advisory bodies. A reduction in annual quotas may indicate that in order for the fishing levels to remain sustainable, pressure on certain species must be reduced. Furthermore, due to Brexit, EU fishing opportunities in the North-East Atlantic are being gradually reduced.

In addition to the restrictions imposed by TACs and quotas, fisheries are also restricted by other conservation measures.

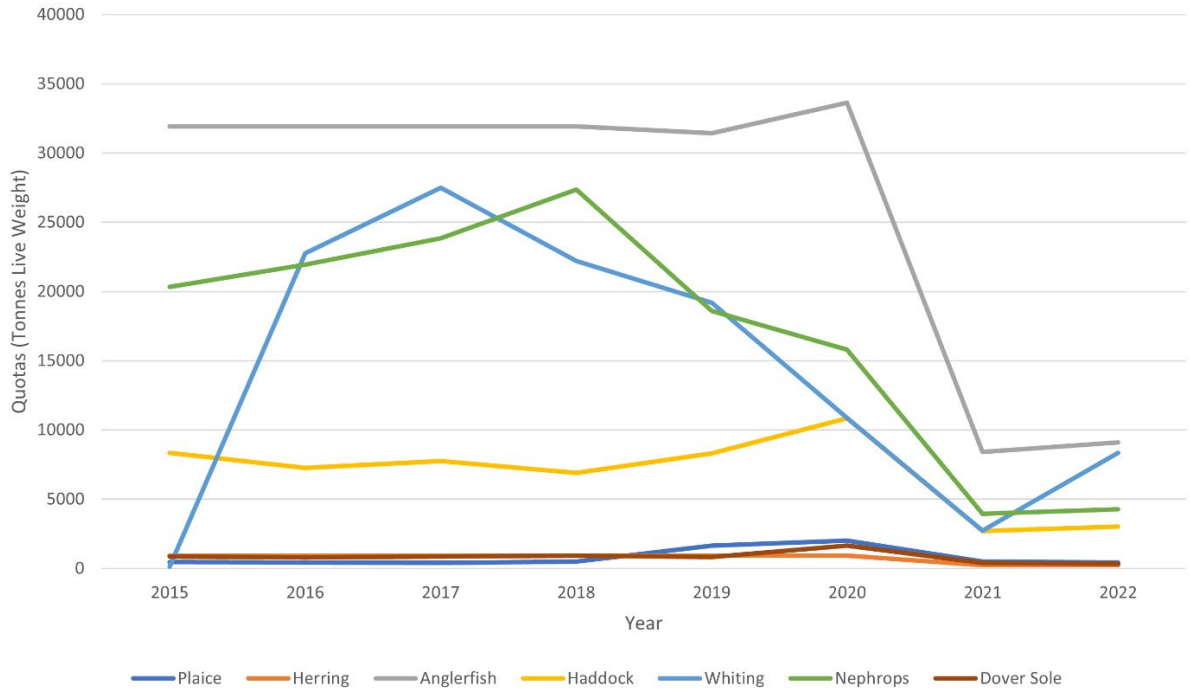


Figure 5.1: Combined National Quotas for the Top 7 Species in Sub-Area VIIf (Excluding Mackerel)

[2] England and the Crown dependencies: Quota management rules for 2021

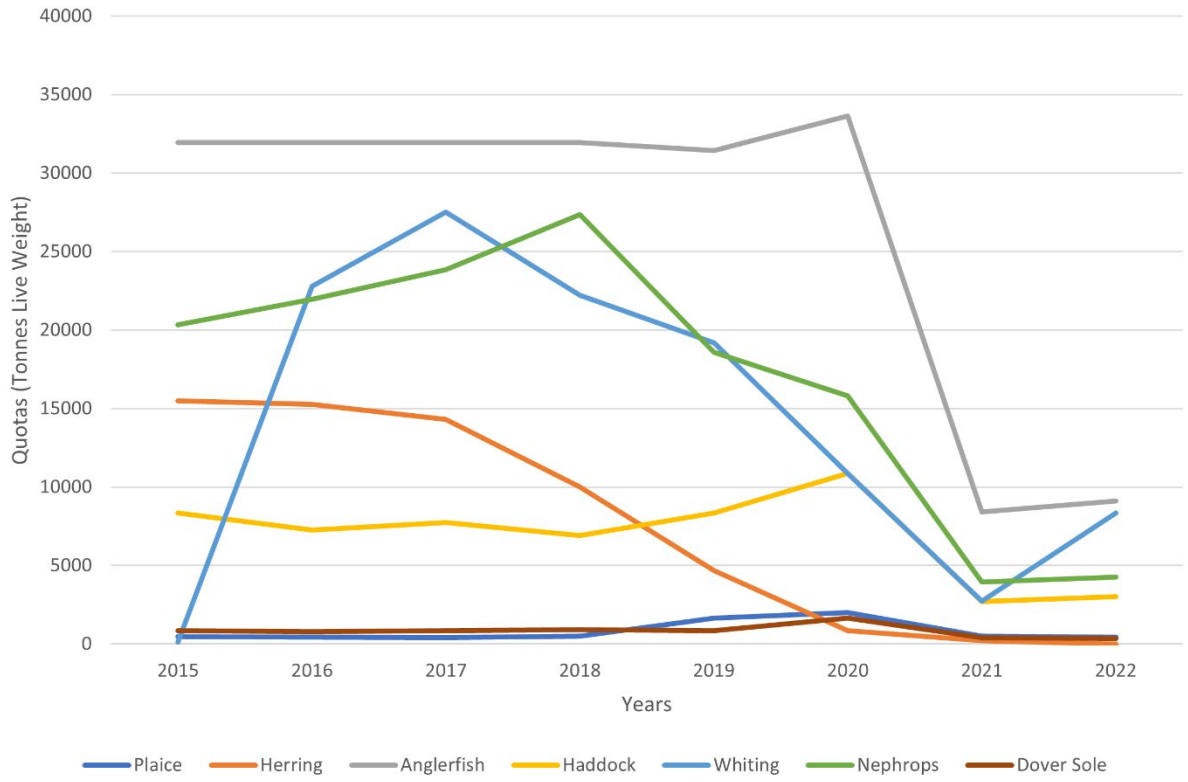


Figure 5.2: Combined National Quotas for the Top 7 Species in Sub-Area VIIg (Excluding Mackerel)

5.1 Regional and local restrictions

Within the 6nm limit, fisheries are managed by Regional IFCAs. IFCAs are either committees or collaborative (joint) committees of the local authorities that fall within a given IFCA district. They are primarily tasked with the sustainable management of inshore fisheries resources in their district. In addition to fisheries management, IFCAs have other roles including marine conservation and management of protected areas implemented through a range of measures, including local bylaws.

The IFCA relevant to the Project is the Devon and Severn IFCA (D&S IFCA) as a section of the cable corridor lies within its district.

Since its formation the D&S IFCA has introduced activity-based permit byelaws[3], such as:

- Mobile Fishing Permits.
- Potting Permits.
- Netting Permits.
- Diving Permits.

A summary of the byelaws enforced by the D&S IFCA can be found in Annex 4.

5.2 Brexit

Under the Trade and Cooperation Agreement, 25% of the overall EU quotas in UK waters existing at its signing will be progressively transferred to the UK over a five-and-a-half-year period to 30 June 2026, with specific percentages of annual TACs agreed for each stock. Mutual access to each other's waters will continue to be through a licencing system for fishing vessels. After 2026, negotiations on

[3] Devon and Severn Inshore Fisheries and Conservation Authority Byelaw Booklet

access and the share of stocks will take place on an annual basis, although provisions exist for multiannual agreements[4].

6.0 Commercial fisheries baseline

6.1 Principal fleets active in the Study Area

The surveillance sightings illustrated in **Figure 6.1** suggest varying degrees of activity by Belgian, UK, French, and Irish fishing vessels within the ISA. The proportion of sightings of different nationalities are as follows:

- UK vessels accounted for 33.52% of the total sightings, concentrated around the 6nm limit in ICES rectangle 31E5.
- Belgian vessels accounted for 50% of total surveillance sightings, predominantly in ICES rectangle 31E4.
- French vessels represented 8.66% of surveillance sightings.
- Irish vessels accounted for 7.82% of surveillance sightings.

Higher densities of sightings in the WSA were recorded outside of the ISA, with concentrations of Irish and French vessels occurring to the west and southwest of the ISA.

Figure 6.2 illustrates that the majority of vessels recorded within the ISA were trawlers, and to a lesser extent potters and scallop dredgers. A more detailed description of surveillance sightings by nationality and method is given in **Table 6.1**.

The vessel tracks derived from AIS for all nationalities combined in 2020 are shown in **Figure 6.3**. As mentioned in **Section 4.0**, the available data includes tracks of vessels at all speeds and therefore, does not differentiate between those that are steaming and those engaged in fishing. The pattern of this data broadly reflects the surveillance data, with the majority of tracks within the ISA occurring in ICES rectangle 31E4.

Figure 6.4 illustrates the historic fishing rights of French and Belgian vessels to fish between the UK's 6nm and 12nm fishing limits.

Whilst there have been no recorded sightings of Dutch registered vessels in the ISA, as discussed below, Dutch statistics indicate low levels within it by Dutch registered vessels. Data on Irish and Dutch surveillance sightings, landings and VMS have been included for completeness, however, due to the negligible fishing activity undertaken by these nations in the ISA and WSA, specifications of their vessels, gears and operating patterns have not been included.

[4] Secretary of State determination of fishing opportunities for British fishing boats 2021

Table 6.1: Surveillance Sightings in the ISA (ICES Rectangles 31E4 &31E5) by Nationality and Method (2011 – 2020) (Source: MMO, 2021)

Nationality	Method	No. of Sightings within the ISA	% of Total Sightings within the ISA
Belgium	Beam Trawler	152	42.46%
	Trawler (All)	17	4.75%
	Potter/Whelker	0	0.00%
	Stern Trawler (Pelagic/Demersal)	5	1.40%
	Demersal Stern Trawler	0	0.00%
	Unknown	5	1.40%
	Null	0	0.00%
	Gill Netter	0	0.00%
	Scallop Dredger (French/Newhaven)	0	0.00%
	Belgium total	179	50.00%
UK	Beam Trawler	5	1.40%
	Trawler (All)	41	11.45%
	Potter/Whelker	38	10.61%
	Stern Trawler (Pelagic/Demersal)	3	0.84%
	Demersal Stern Trawler	12	3.35%
	Unknown	5	1.40%
	Null	6	1.68%
	Gill Netter	5	1.40%
	Scallop Dredger (French/Newhaven)	5	1.40%
	UK total	120	33.52%
France	All Fishing Vessels	31	8.66%
Ireland	All Fishing Vessels	28	7.82%

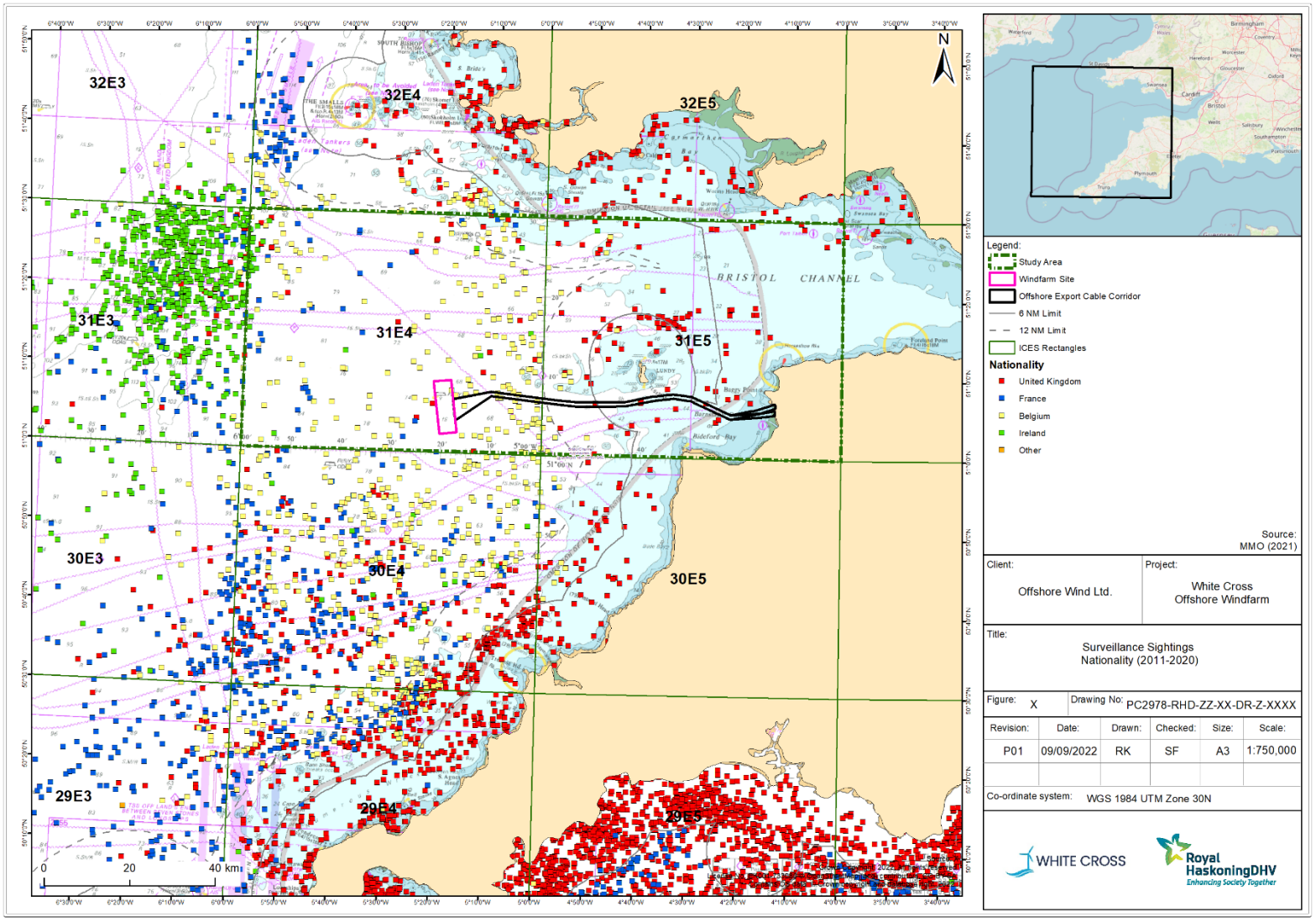


Figure 6.1: Surveillance Sightings by Nationality (2011 – 2020) (Source: MMO, 2021)

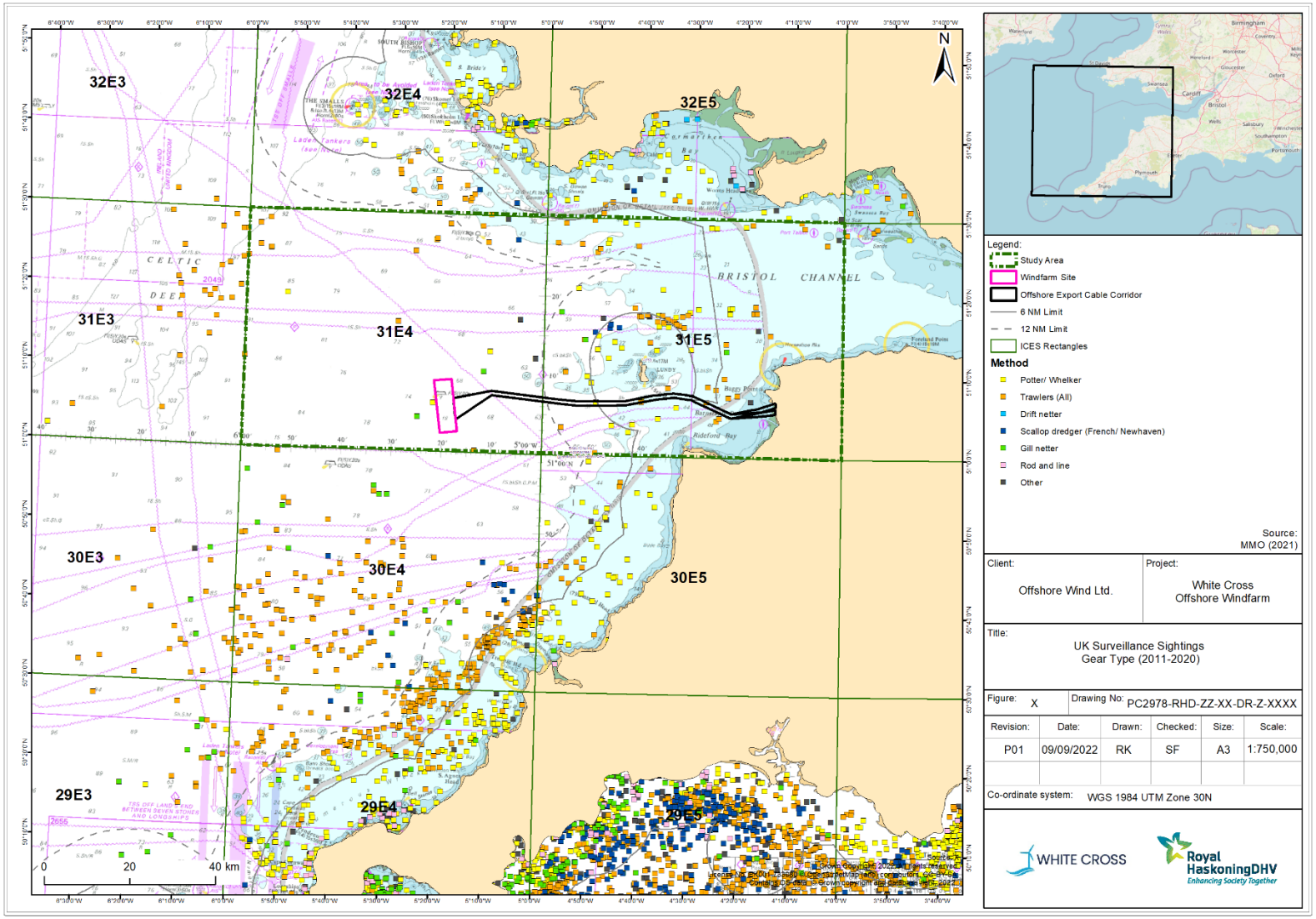


Figure 6.2: Surveillance Sightings by Method (2011 – 2020) (Source: MMO, 2021)

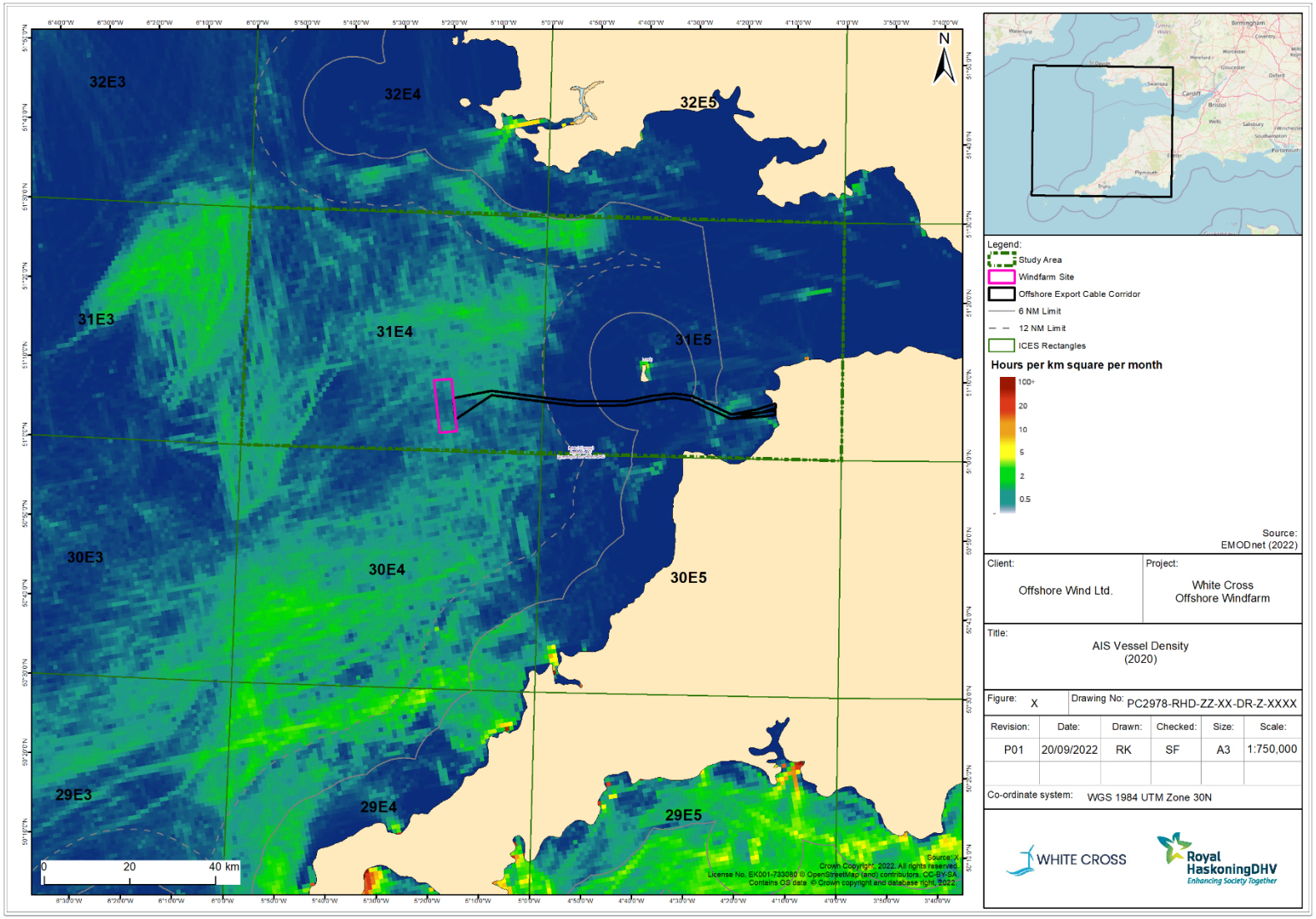


Figure 6.3: AIS Vessel Density (All Nationalities Combined) (2020) (Source: EMODnet)

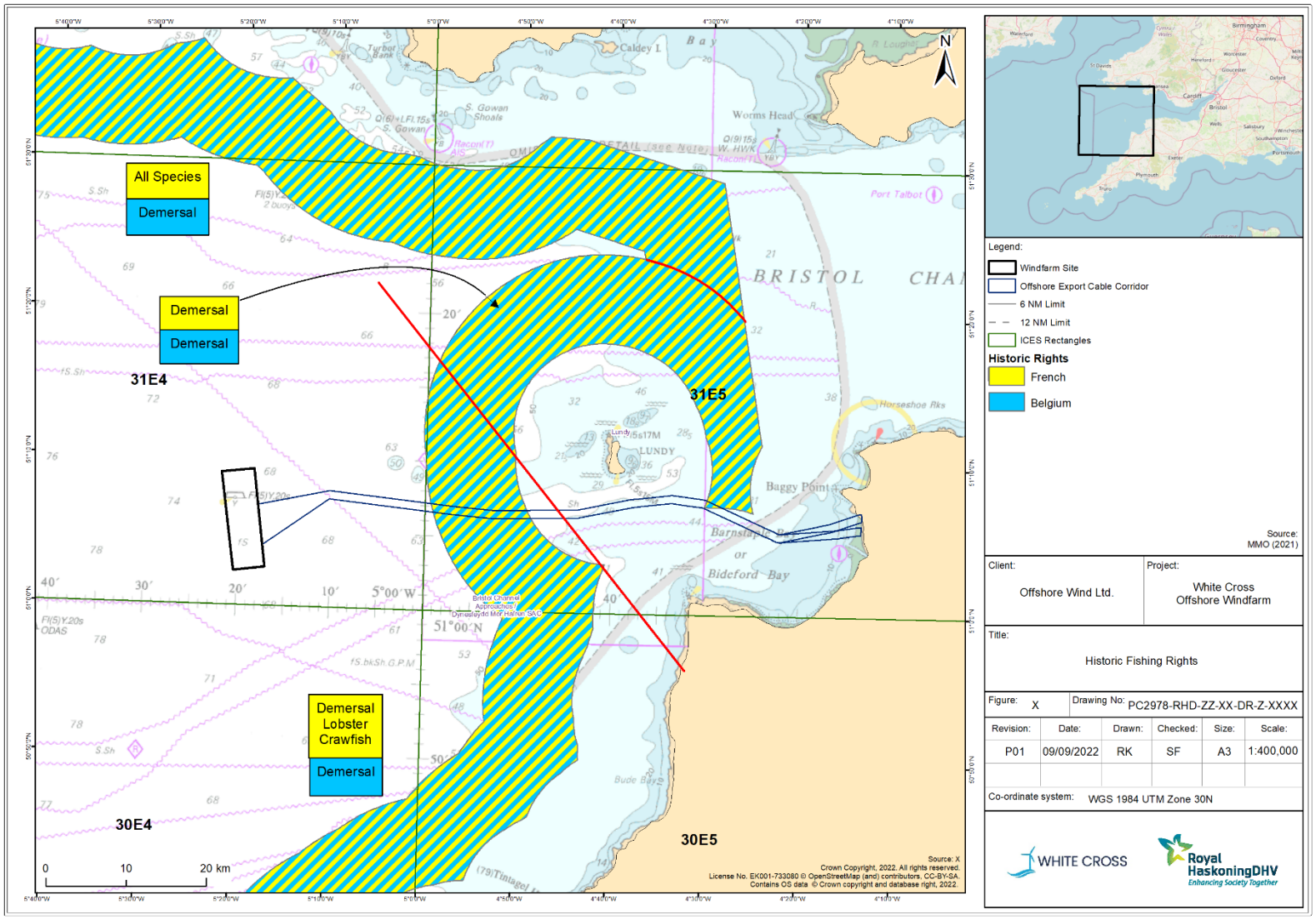


Figure 6.4: Fishing Rights Between the UK's 6nm & 12nm limits.

6.2 UK fleet

6.2.1 Surveillance sightings of UK vessels

As shown in **Figure 6.5**, the majority of UK vessels recorded in the LSA were trawlers and potters, with lower numbers of scallop dredgers and drift netters.

The spatial distribution of surveillance sightings of UK fishing vessels by method is given in **Figure 6.6.** As shown, the sightings of UK vessels within the ISA were mostly recorded between the 6nm and 12nm limits. In comparison to other ICES rectangles in the WSA, sightings of UK vessels in the ISA are low.

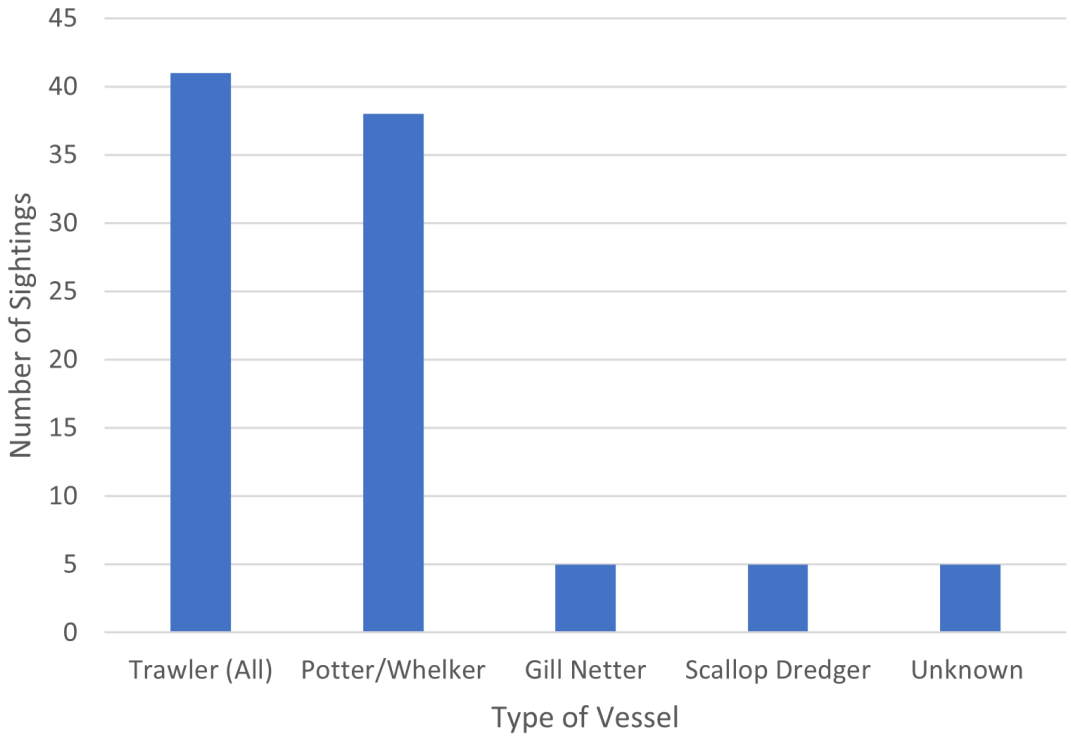


Figure 6.5: Number of Sightings of UK Vessels in the ISA by Method (2011 – 2020) (Source: MMO)

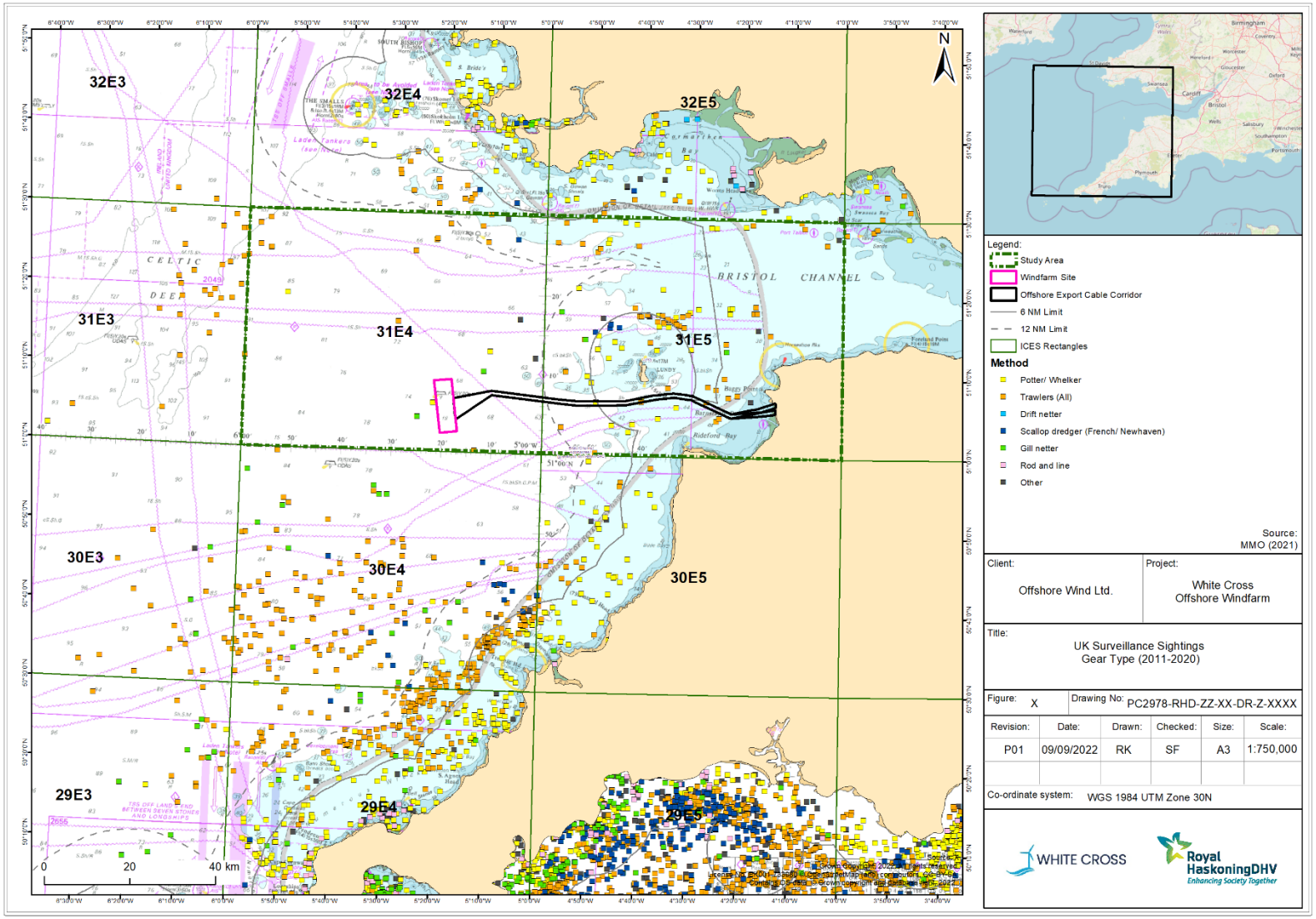


Figure 6.6: UK Surveillance Sightings by Method (2011 – 2020) (Source: MMO, 2021)

6.2.2 UK landings values by species and method

An indication of the value of commercial fishing activities within the WSA by UK vessels is given in **Figure 6.7** to **Figure 6.11**, showing landing values (£) by method, species, and vessel length by ICES rectangle. Data is presented as annual averages for the period 2016 – 2020.

From **Figure 6.7** it is apparent that the pattern of recorded landings values for the ICES rectangles within the ISA generally align with the surveillance data, being low when compared to other rectangles within the WSA, such as ICES rectangles 29E4 and 29E5.

In the ISA, the highest landings by UK vessels are recorded in ICES rectangle 31E5 with approximately three-quarters of the activity being potting (**Figure 6.7**, **Figure 6.10**), targeting whelks (*Buccinum undatum*), edible crabs (*Cancer pagarus*) and lobsters (*Nephropidae*) (**Figure 6.8**). There is also a greater proportion of bottom otter trawling in rectangle 31E5 compared to rectangle 31E4, with vessels targeting demersal fish such as sole (*Solea solea*), monkfish (*Lophius budegassa*) and anglerfish (*Lophius piscatorius*). Gillnets, beam trawls and boat dredges also contribute to the landings recorded within rectangle 31E5 (**Figure 6.11**).

The vessel lengths recorded also differ between the two rectangles. As shown, the greatest proportion of landings values in rectangle 31E5 are from vessels of under 15m in length, approximately half of which were under ten metres (**Figure 6.9**). In contrast, as would be expected due to being further offshore, a higher proportion of the vessels recorded in rectangle 31E4 are over 15m.

The methods deployed in rectangles 31E4 and 31E5 are similar, with the majority of landings being from potting, followed by bottom otter trawling (**Figure 6.7**). The predominant target species in rectangle 31E5 is whelks and to a lesser extent lobsters. In rectangle 31E4 the species that contribute the most to total landings are lobsters and edible crabs (**Figure 6.8**).

An indication of the seasonality of the main species targeted in the ISA is given in **Figure 6.12** and **Figure 6.13**. In the case of finfish species, landings of sole and blonde ray (*Raja brachyura*) appear to be high year-round, with peak landings being in June and April respectively. Thornback ray (*Raja clavata*) landings are also fairly consistent year-round. Landings of bass reach a peak in April and May, before declining into the Winter months.

For species caught using pots, landings of whelks peak from March to June (**Figure 6.13**) before reaching their lowest levels in September. Landings of lobsters peak from June to September, and are at their lowest during the winter months, whilst landings of edible crabs, which are comparatively lower, peak in October.

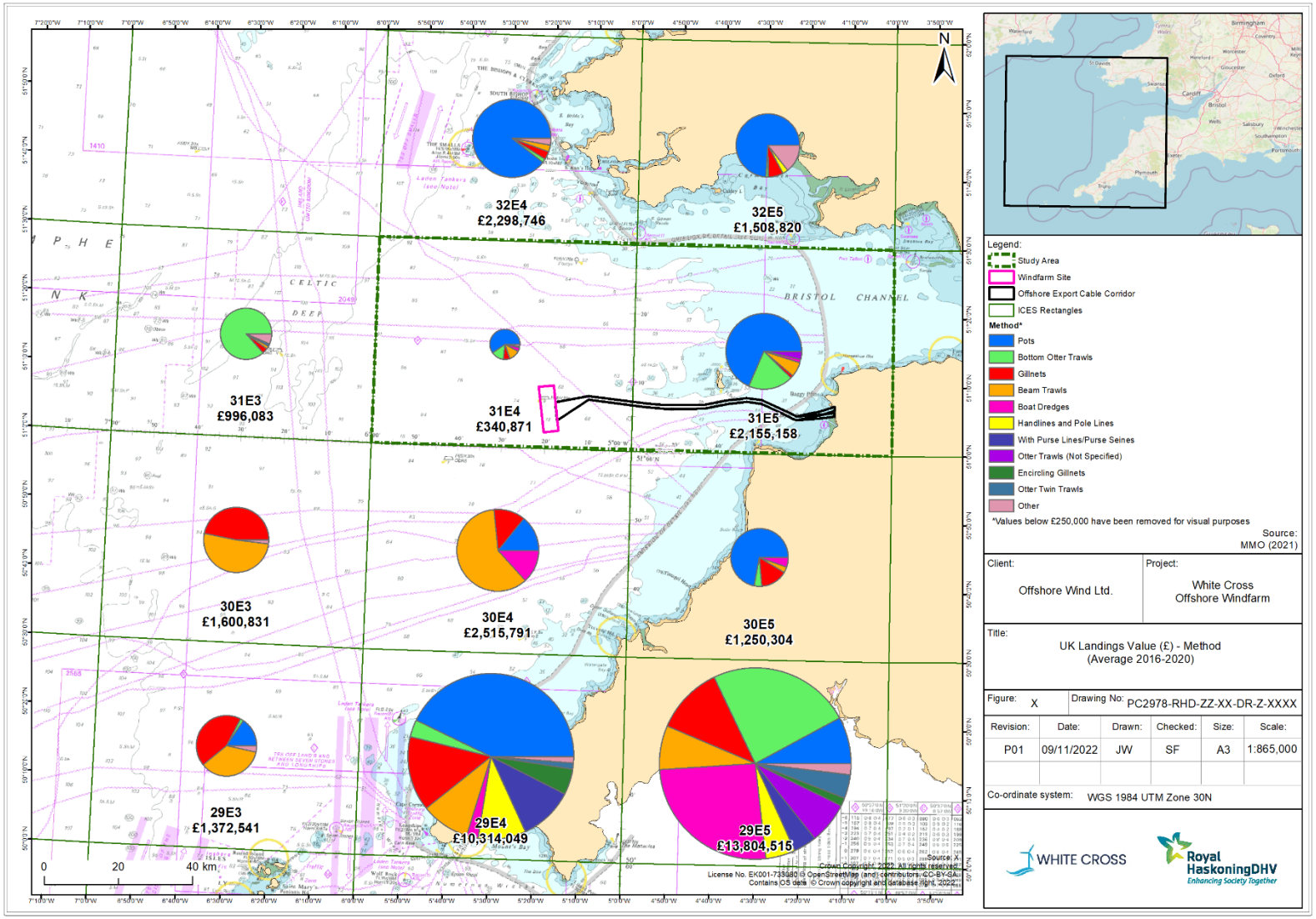


Figure 6.7: UK Landings (£) by Method (Average 2016 – 2020) (Source: MMO, 2021)

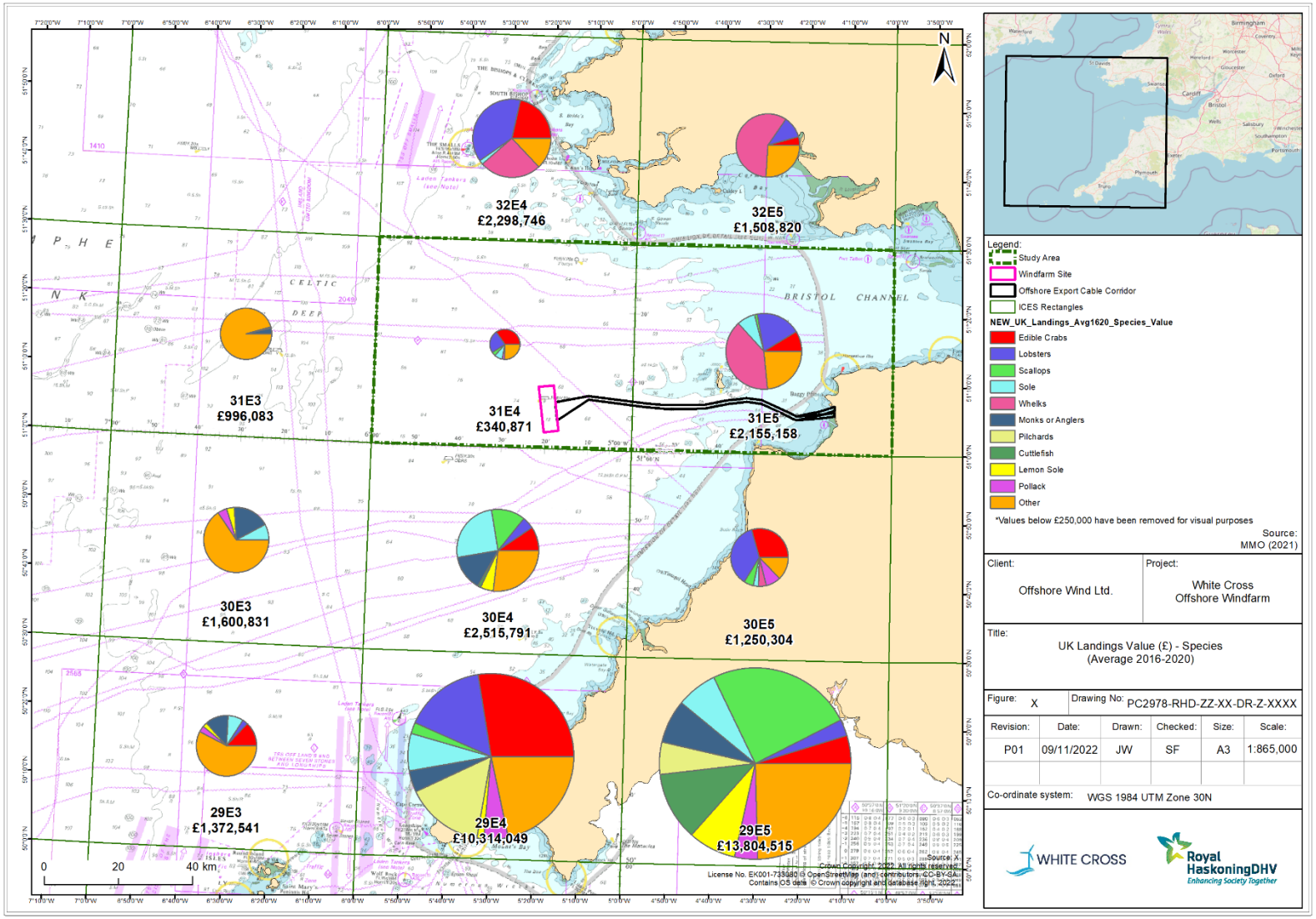


Figure 6.8: UK Landings (£) by Species (Average 2016 – 2020) (Source: MMO, 2021)

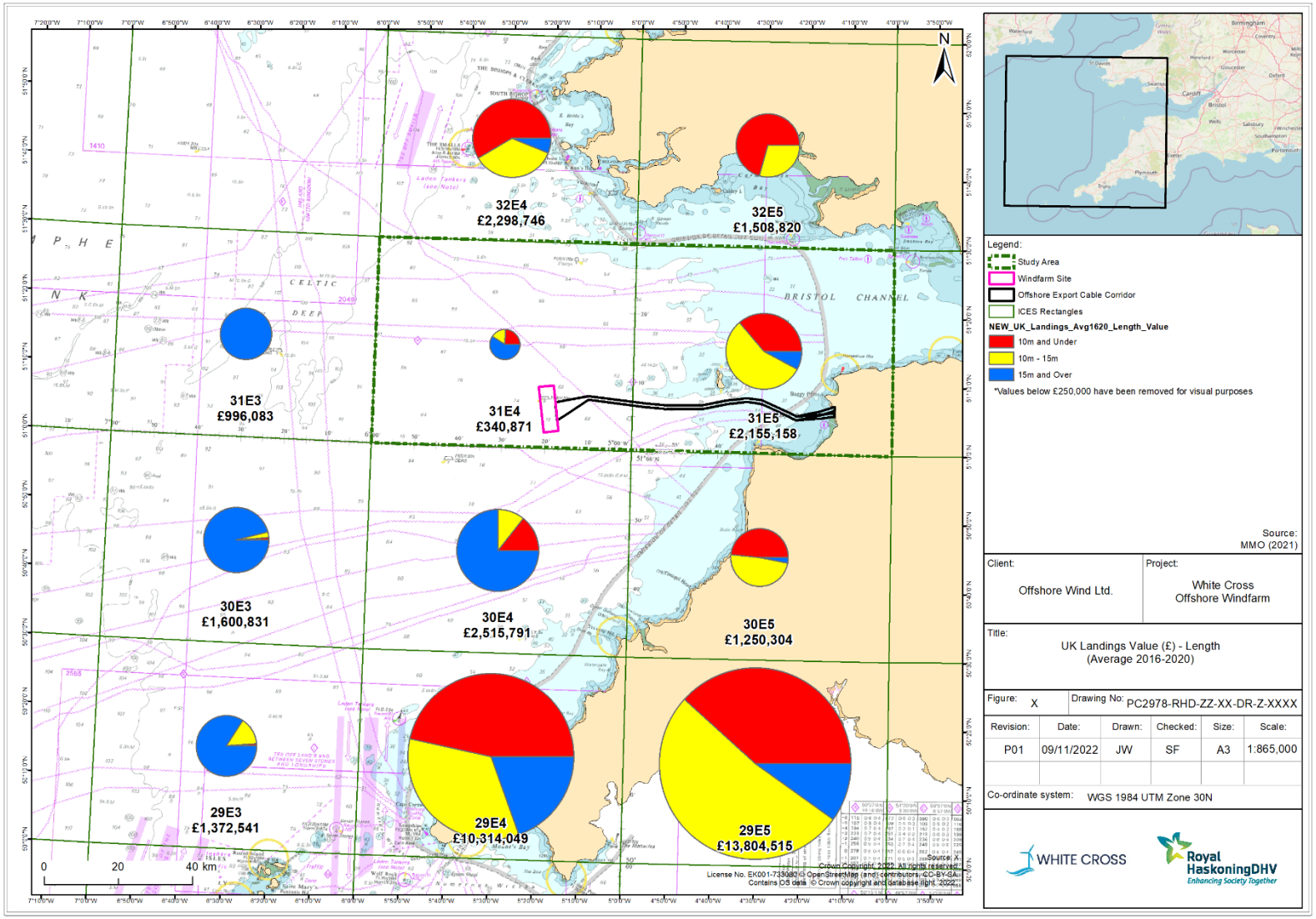
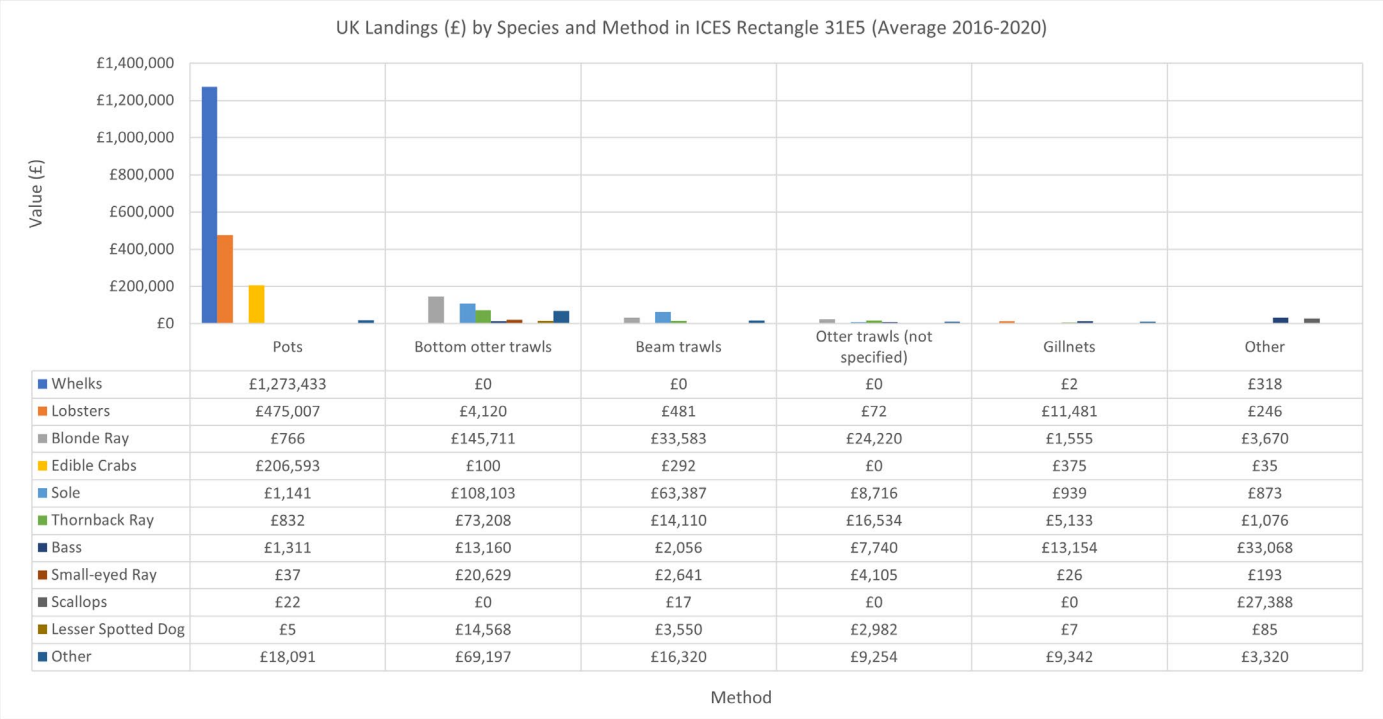
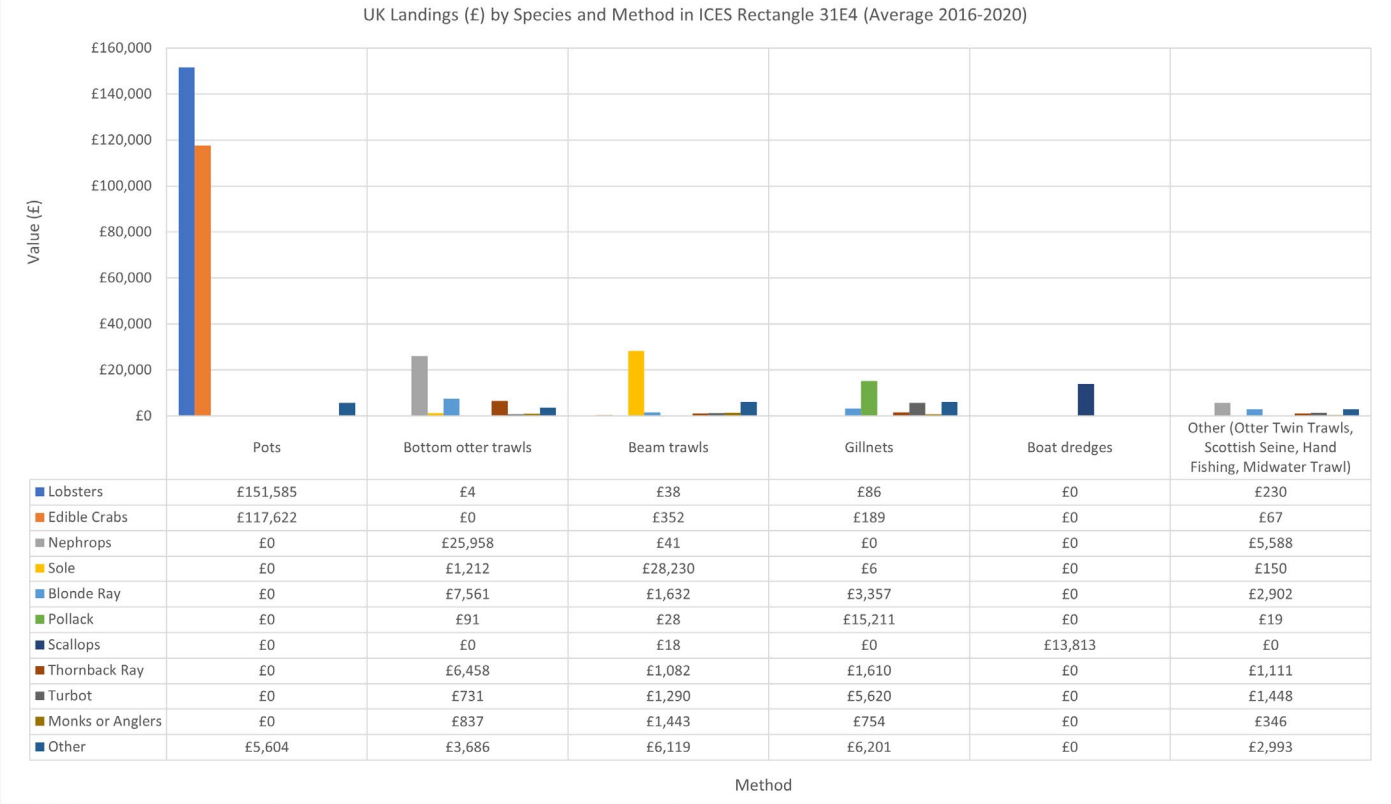


Figure 6.9 UK Landings (£) by Vessel Length (Average 2016 – 2020) (Source: MMO, 2021)



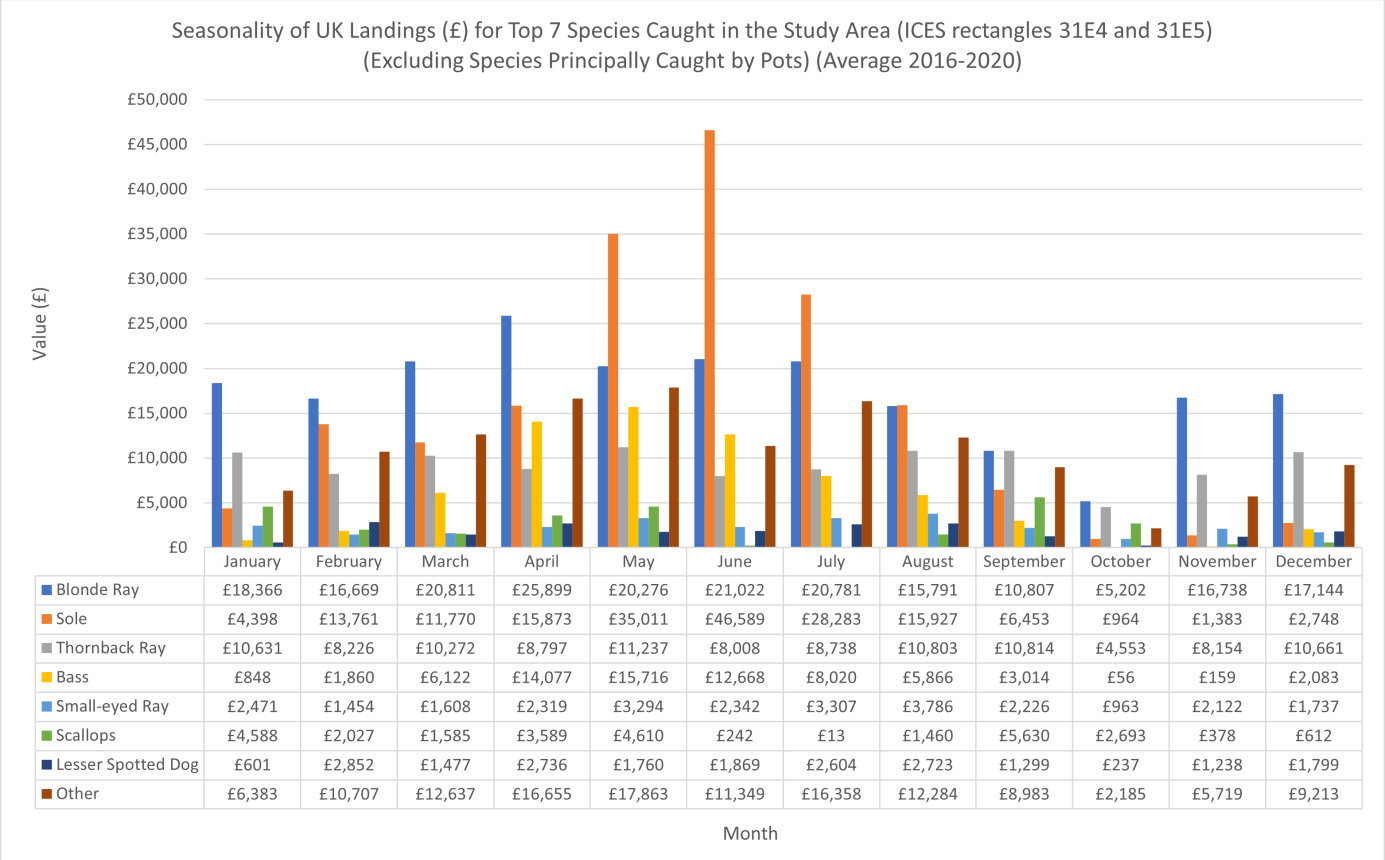
	Pots	Bottom otter trawls	Beam trawls	Otter trawls (not specified)	Gillnets	Other
Whelks	£1,273,433	£0	£0	£0	£2	£318
Lobsters	£475,007	£4,120	£481	£72	£11,481	£246
Blonde Ray	£766	£145,711	£33,583	£24,220	£1,555	£3,670
Edible Crabs	£206,593	£100	£292	£0	£375	£35
Sole	£1,141	£108,103	£63,387	£8,716	£939	£873
Thornback Ray	£832	£73,208	£14,110	£16,534	£5,133	£1,076
Bass	£1,311	£13,160	£2,056	£7,740	£13,154	£33,068
Small-eyed Ray	£37	£20,629	£2,641	£4,105	£26	£193
Scallops	£22	£0	£17	£0	£0	£27,388
Lesser Spotted Dog	£5	£14,568	£3,550	£2,982	£7	£85
Other	£18,091	£69,197	£16,320	£9,254	£9,342	£3,320

Figure 6.10 UK Landings (£) Species by Method in ICES Rectangle 31E5 (Average 2016 – 2020) (Source: MMO, 2021)



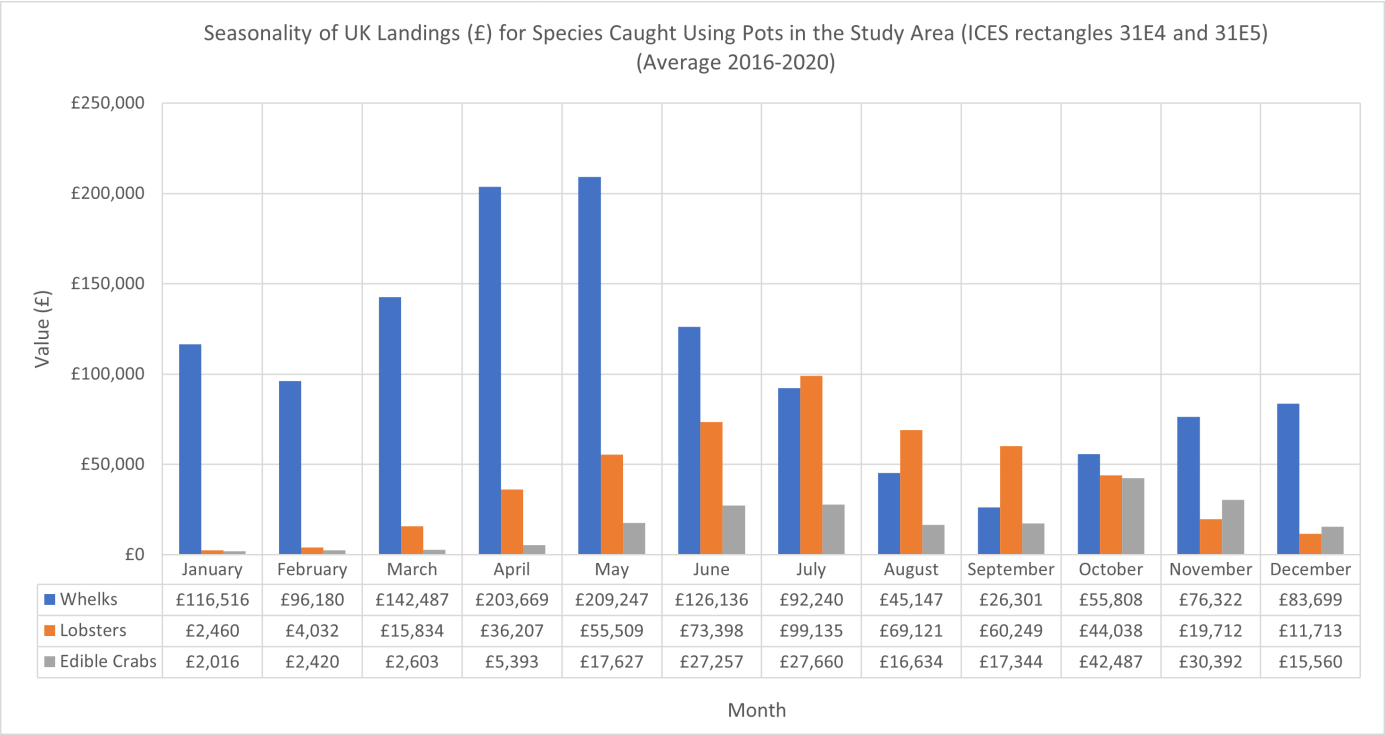
	Pots	Bottom otter trawls	Beam trawls	Gillnets	Boat dredges	Other (Otter Twin Trawls, Scottish Seine, Hand Fishing, Midwater Trawl)
Lobsters	£151,585	£4	£38	£86	£0	£230
Edible Crabs	£117,622	£0	£352	£189	£0	£67
Nephrops	£0	£25,958	£41	£0	£0	£5,588
Sole	£0	£1,212	£28,230	£6	£0	£150
Blonde Ray	£0	£7,561	£1,632	£3,357	£0	£2,902
Pollack	£0	£91	£28	£15,211	£0	£19
Scallops	£0	£0	£18	£0	£13,813	£0
Thornback Ray	£0	£6,458	£1,082	£1,610	£0	£1,111
Turbot	£0	£731	£1,290	£5,620	£0	£1,448
Monks or Anglers	£0	£837	£1,443	£754	£0	£346
Other	£5,604	£3,686	£6,119	£6,201	£0	£2,993

Figure 6.11 UK Landings (£) Species by Method in ICES Rectangle 31E4 (Average 2016 – 2020) (Source: MMO, 2021)



	January	February	March	April	May	June	July	August	September	October	November	December
Blonde Ray	£18,366	£16,669	£20,811	£25,899	£20,276	£21,022	£20,781	£15,791	£10,807	£5,202	£16,738	£17,144
Sole	£4,398	£13,761	£11,770	£15,873	£35,011	£46,589	£28,283	£15,927	£6,453	£964	£1,383	£2,748
Thornback Ray	£10,631	£8,226	£10,272	£8,797	£11,237	£8,008	£8,738	£10,803	£10,814	£4,553	£8,154	£10,661
Bass	£848	£1,860	£6,122	£14,077	£15,716	£12,668	£8,020	£5,866	£3,014	£56	£159	£2,083
Small-eyed Ray	£2,471	£1,454	£1,608	£2,319	£3,294	£2,342	£3,307	£3,786	£2,226	£963	£2,122	£1,737
Scallops	£4,588	£2,027	£1,585	£3,589	£4,610	£242	£13	£1,460	£5,630	£2,693	£378	£612
Lesser Spotted Dog	£601	£2,852	£1,477	£2,736	£1,760	£1,869	£2,604	£2,723	£1,299	£237	£1,238	£1,799
Other	£6,383	£10,707	£12,637	£16,655	£17,863	£11,349	£16,358	£12,284	£8,983	£2,185	£5,719	£9,213

Figure 6.12: Seasonality of Top 10 Species (£) in the Immediate Study Area (excluding species caught by pots) (Average 2016 -2020) (Source: MMO, 2021)



	January	February	March	April	May	June	July	August	September	October	November	December
Whelks	£116,516	£96,180	£142,487	£203,669	£209,247	£126,136	£92,240	£45,147	£26,301	£55,808	£76,322	£83,699
Lobsters	£2,460	£4,032	£15,834	£36,207	£55,509	£73,398	£99,135	£69,121	£60,249	£44,038	£19,712	£11,713
Edible Crabs	£2,016	£2,420	£2,603	£5,393	£17,627	£27,257	£27,660	£16,634	£17,344	£42,487	£30,392	£15,560

Figure 6.13: Seasonality of Landings (£) for Species Caught Using Pots in the Study Area (Average 2016 – 2020) (Source: MMO, 2021)

6.2.2.1 Landings by port

The principal ports for UK landings from the two ICES rectangles comprising the ISA are summarised in **Table 6.2** and **Table 6.3**. These show five-year averages from 2016 – 2020.

The highest average annual landings recorded from rectangle 31E5 are into:

- Ilfracombe at £1,135,500.
- Saundersfoot at £820,582.
- Bideford £245,679.

The landings from 31E5 into Ilfracombe represent 41.32% of the total landings from this rectangle annually, with Saundersfoot and Bideford representing 29.86% and 8.94% respectively.

The highest average landings recorded from rectangle 31E4 are into:

- Milford Haven at £186,148.
- Padstow at £115,735.
- Newlyn at £67,068.

The landings from 31E4 into Milford Haven represent 43.97% of the average annual total landings from this rectangle with Padstow and Newlyn representing 27.34% and 15.84% respectively.

Table 6.2: Top 10 Ports by Average Annual Landings (2016 – 2020) from ICES Rectangle 31E5 by UK Vessels (Source: MMO, 2021)

Port	Average Value (2016-2020) in 31E5	% of Annual Value in 31E5 (2016-2020)
Ilfracombe	£1,135,500.298	41.32%
Saundersfoot	£820,582.422	29.86%
Bideford	£245,679.688	8.94%
Padstow	£177,974.224	6.48%
Milford Haven	£123,619.252	4.50%
Swansea	£90,944.078	3.31%
Appledore	£43,302.66	1.58%
Penzance	£37,222.868	1.35%
Newlyn	£28,462.106	1.04%
Plymouth	£13,222.314	0.48%

Table 6.3: Top 10 Ports by Average Annual Landings (2016 – 2020) from ICES Rectangle 31E4 by UK Vessels (Source: MMO, 2021)

Port	Average Value (2016-2020) in 31E4	% of Annual Value in 31E4 (2016-2020)
Milford Haven	£186,148.38	43.97%
Padstow	£115,735.76	27.34%
Newlyn	£67,068.27	15.84%
Kilkeel	£15,425.57	3.64%
Ilfracombe	£14,739.02	3.48%
Dunmore East	£7,695.93	1.82%
Penzance	£4,502.03	1.06%
Aberystwyth	£4,266.68	1.01%
Brixham	£3,521.15	0.83%
Holyhead	£1,972.83	0.47%

6.2.3 Spatial distribution of UK activity

As stated previously, the current VMS data provided by the MMO only relates to vessels over 15m length. The MMO defines four categories of bottom trawling for its VMS data collation:

- Beam trawl (**Figure 6.15**).
- Bottom Otter Trawl (**Figure 6.16**).
- Demersal Trawl/Seine (**Figure 6.17**).
- Otter Twin Trawl (**Figure 6.18**).

Whilst there are differences in the dimensions, designs and rigging configurations of the gears, each of these methods involves the towing of one or more funnel shaped nets in close contact with the seabed.

The VMS data presented in the following figures illustrates that there is minimal trawling by UK vessels occurring in the ISA. There is, however, moderate amounts of potting activity across the ISA (**Figure 6.14**), with some isolated areas of higher values occurring within the proposed site.

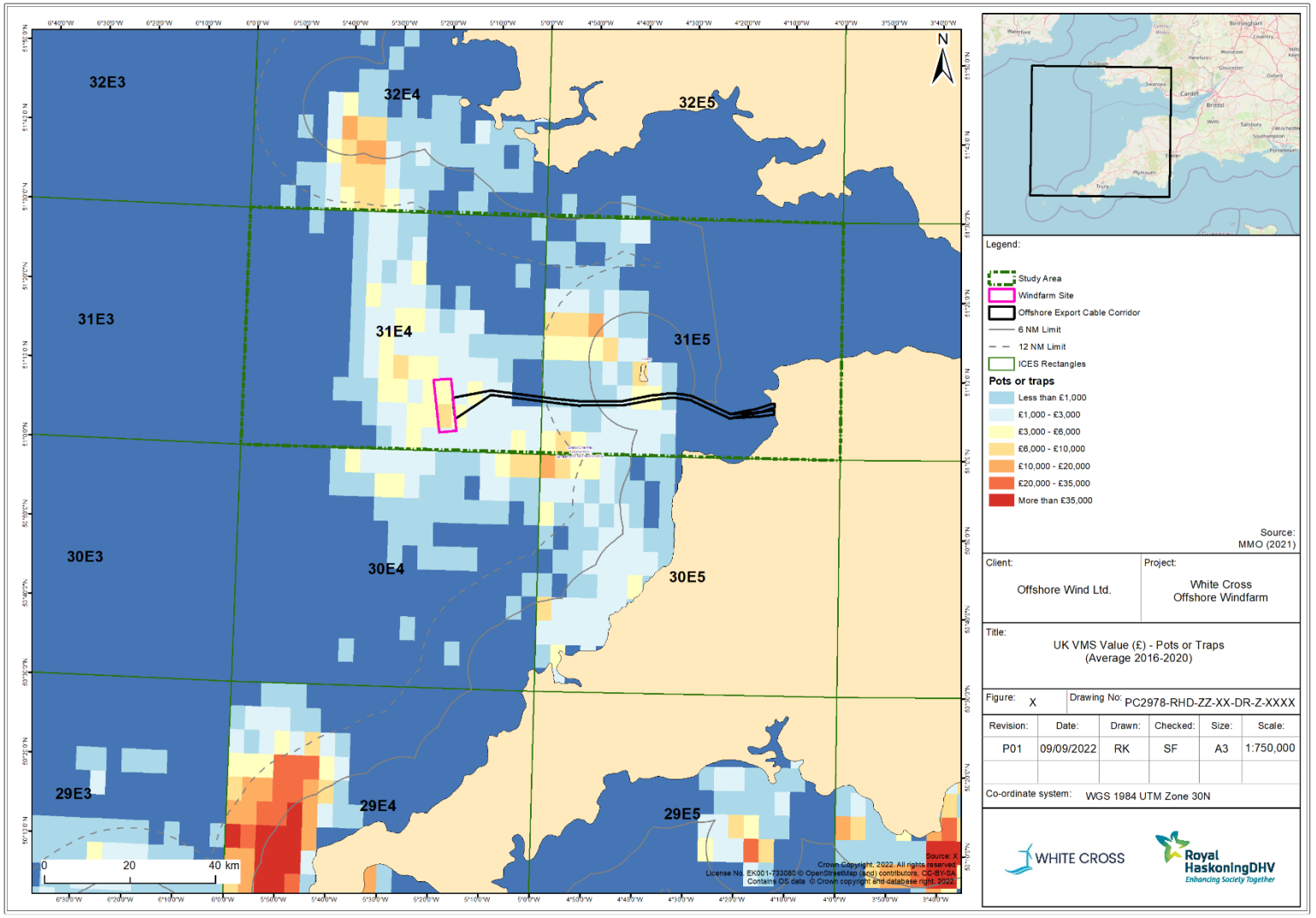


Figure 6.14 UK VMS (£) Pots or Traps (Average 2016 – 2020) (Source, MMO, 2021)

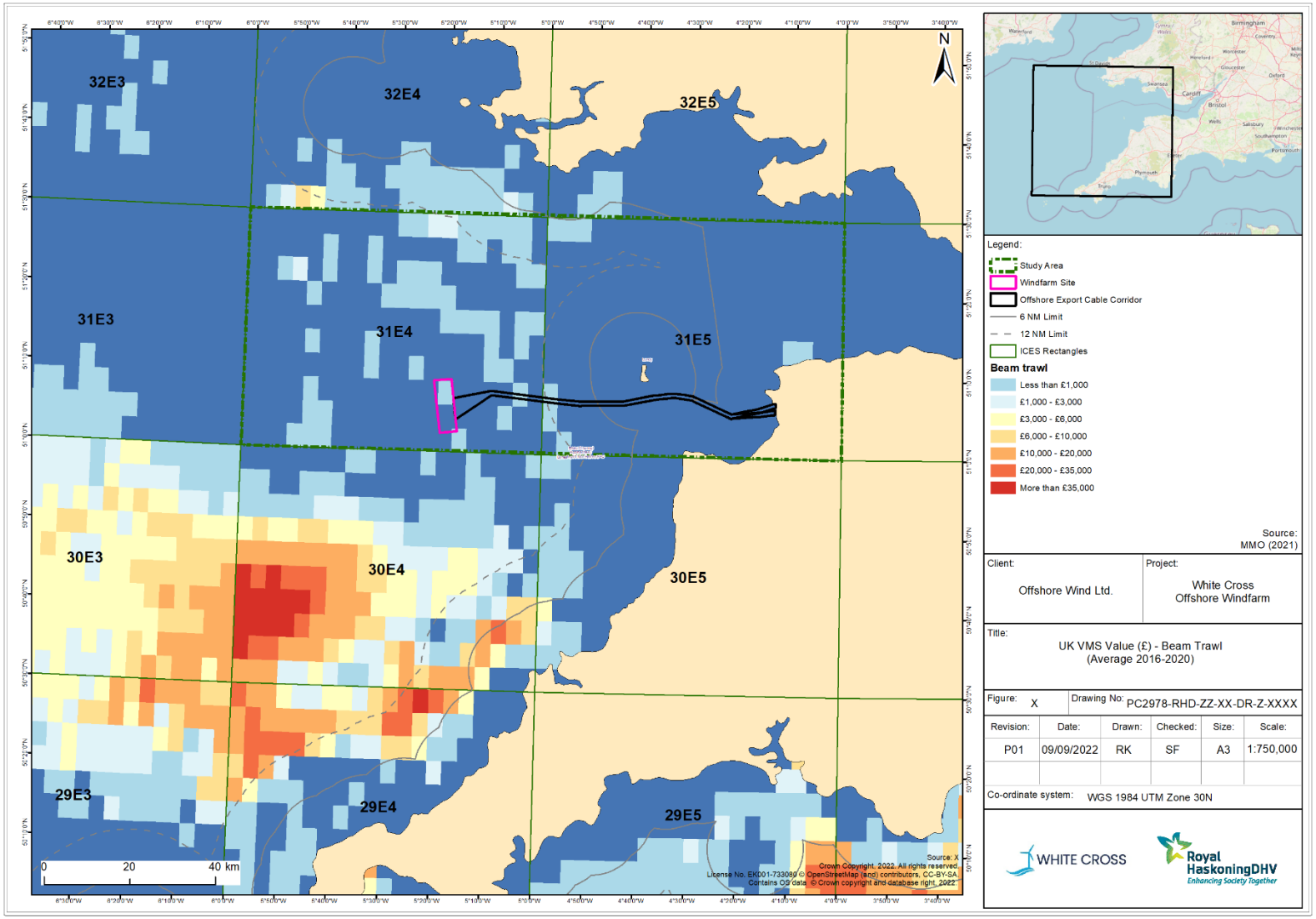


Figure 6.15 UK VMS (£) Beam Trawls (Average 2016 – 2020) (Source: MMO, 2021)

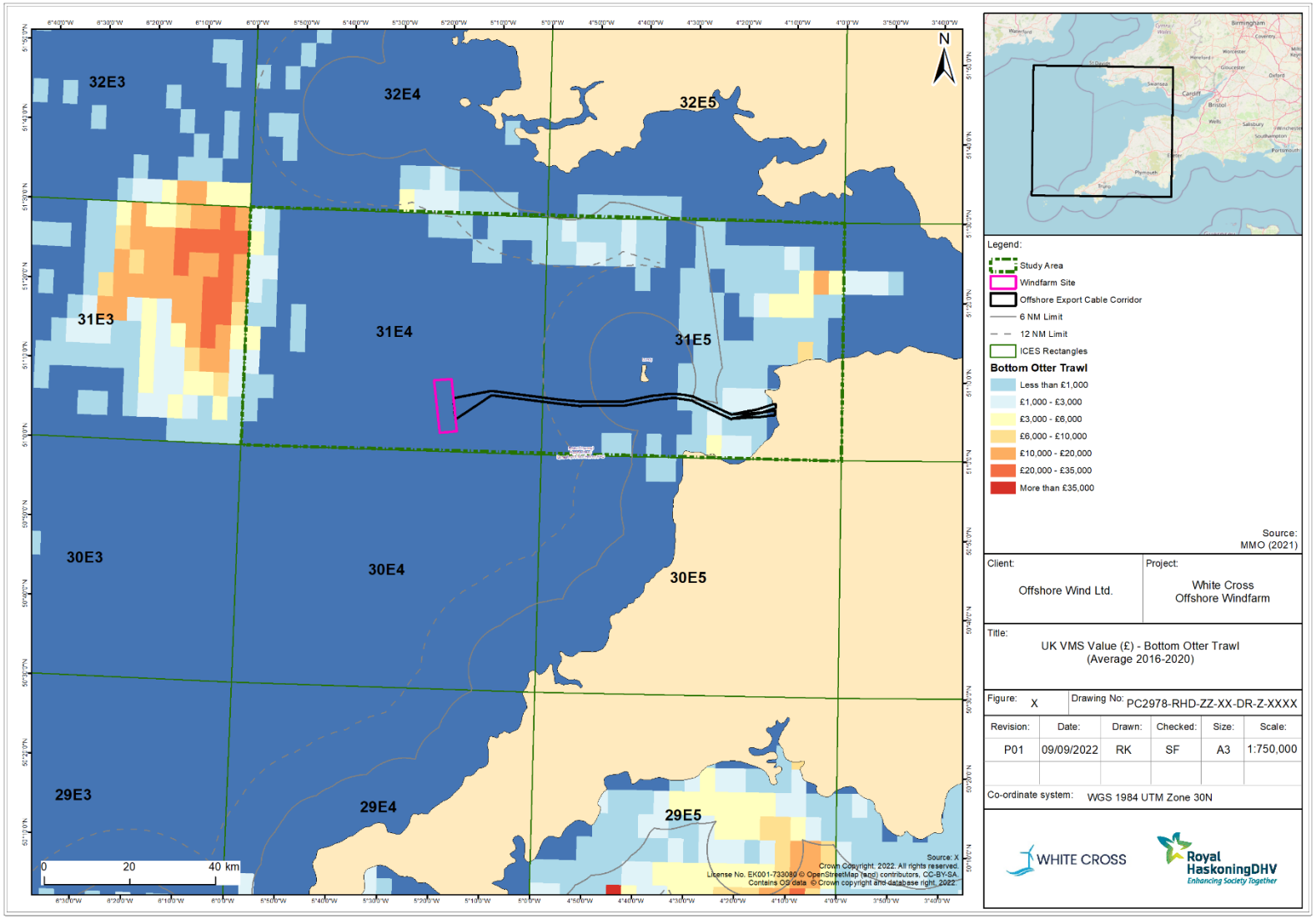


Figure 6.16 UK VMS (£) Bottom Otter Trawls (Average 2016 – 2020) (Source: MMO, 2021)

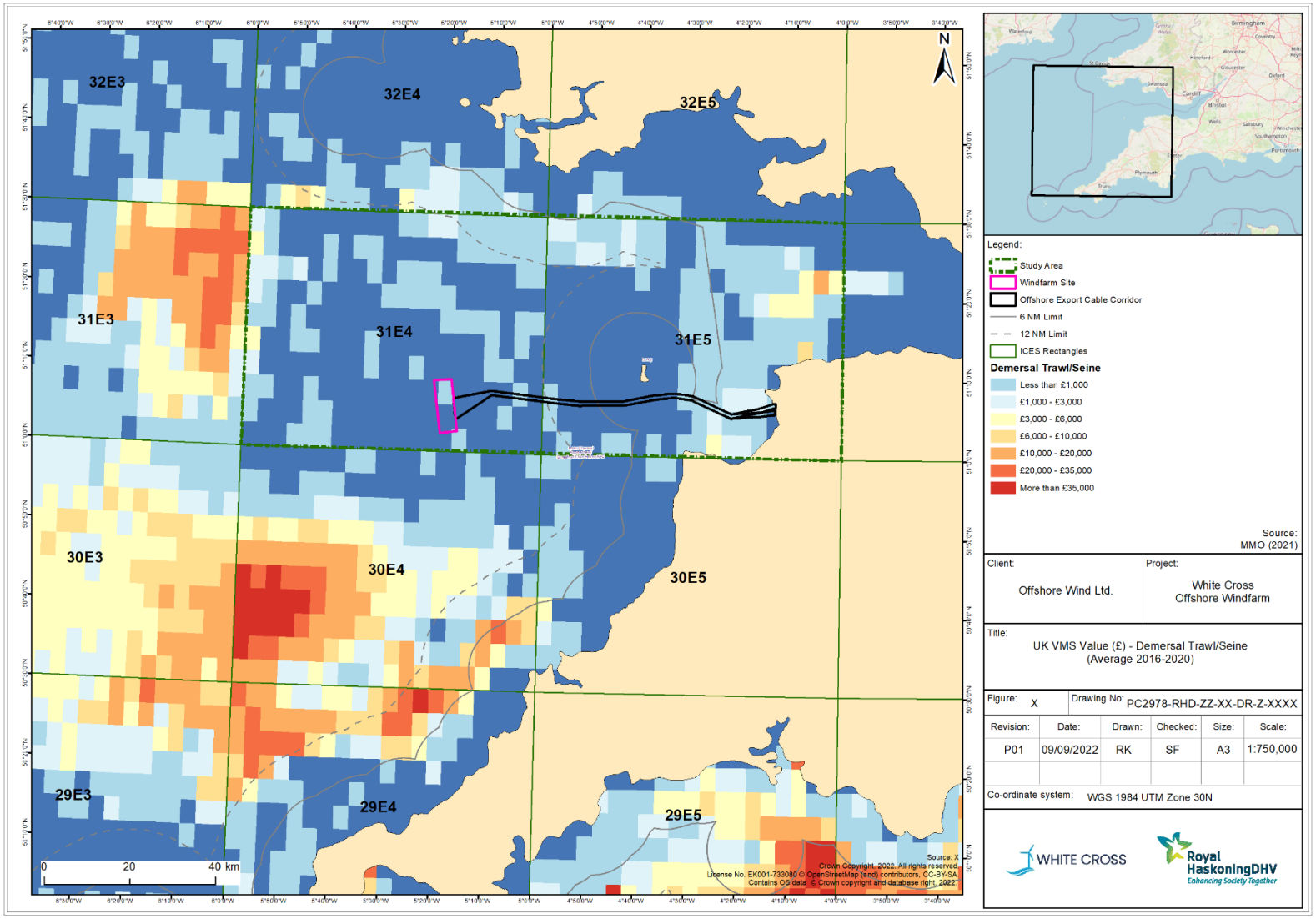


Figure 6.17 UK VMS (£) Demersal Trawl/Seine (Average 2016 – 2020) (Source: MMO, 2021)

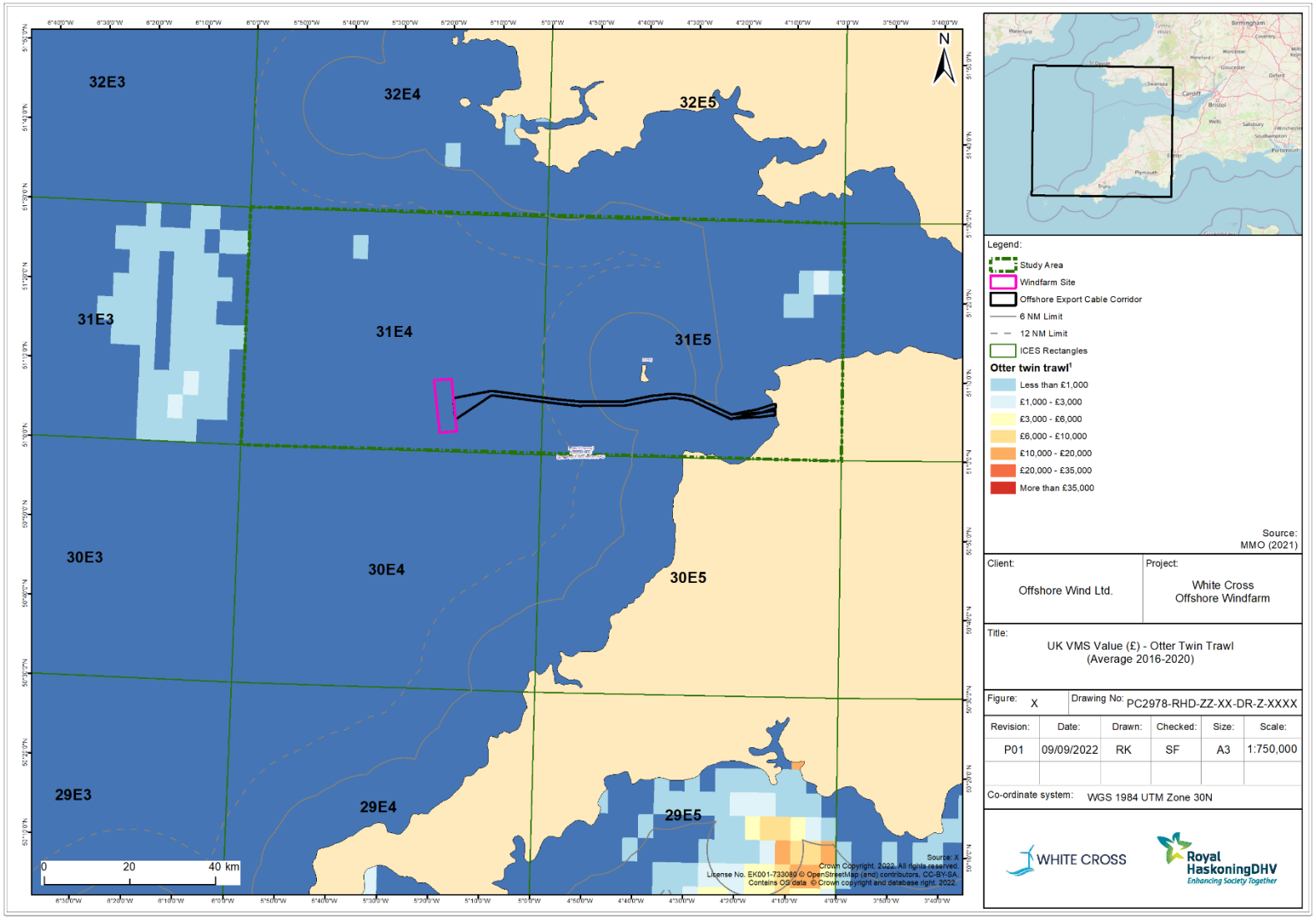


Figure 6.18: UK VMS (£) Otter Twin Trawl (Average 2016 – 2020) (Source: MMO, 2021)

6.2.4 Vessels, gears and operating patterns

Information obtained from consultation

From direct consultation with skippers and vessel owners, it is understood that the majority of vessels operating from local ports operate for the most part within the 12nm limit and are predominantly potters and netters of under ten metres, and therefore not currently captured by VMS data.

Information on fishing grounds gathered during consultation with local fisheries stakeholders is illustrated in **Figure 6.19** and shows that the varying methods tend to have specific areas of operation but with degrees of overlap. Potting targeting crab and lobster occurs mostly to the south and southwest of Lundy Island. In addition, there are three distinct potting areas located beyond the 12nm limit to the west of Lundy Island, where vessels over ten metres primarily target crab, operating all year round. Potters targeting whelks occurs mostly northeast of Lundy Island. Trawling was stated to mainly occur in Bideford Bay, with small discreet areas further offshore. A small number of local vessels engage in netting inside the 6nm limit, primarily in Bideford Bay in the vicinity of the proposed cable route corridor.

With regard to potting, the data presented in **Figure 6.19** deviates from the VMS data shown in **Figure 6.14**. Where the information obtained from consultation suggests that potting occurs predominantly in the Bristol Channel, removed from the Project, the VMS data shows potting occurs within the Windfarm site. With regard to trawling, the information obtained from consultation appears to corroborate the VMS data, showing that some trawling occurs within the Windfarm site.

Table 6.4 to **Table 6.6** summarise the vessels and gear information provided by individual fisheries stakeholders during consultation.

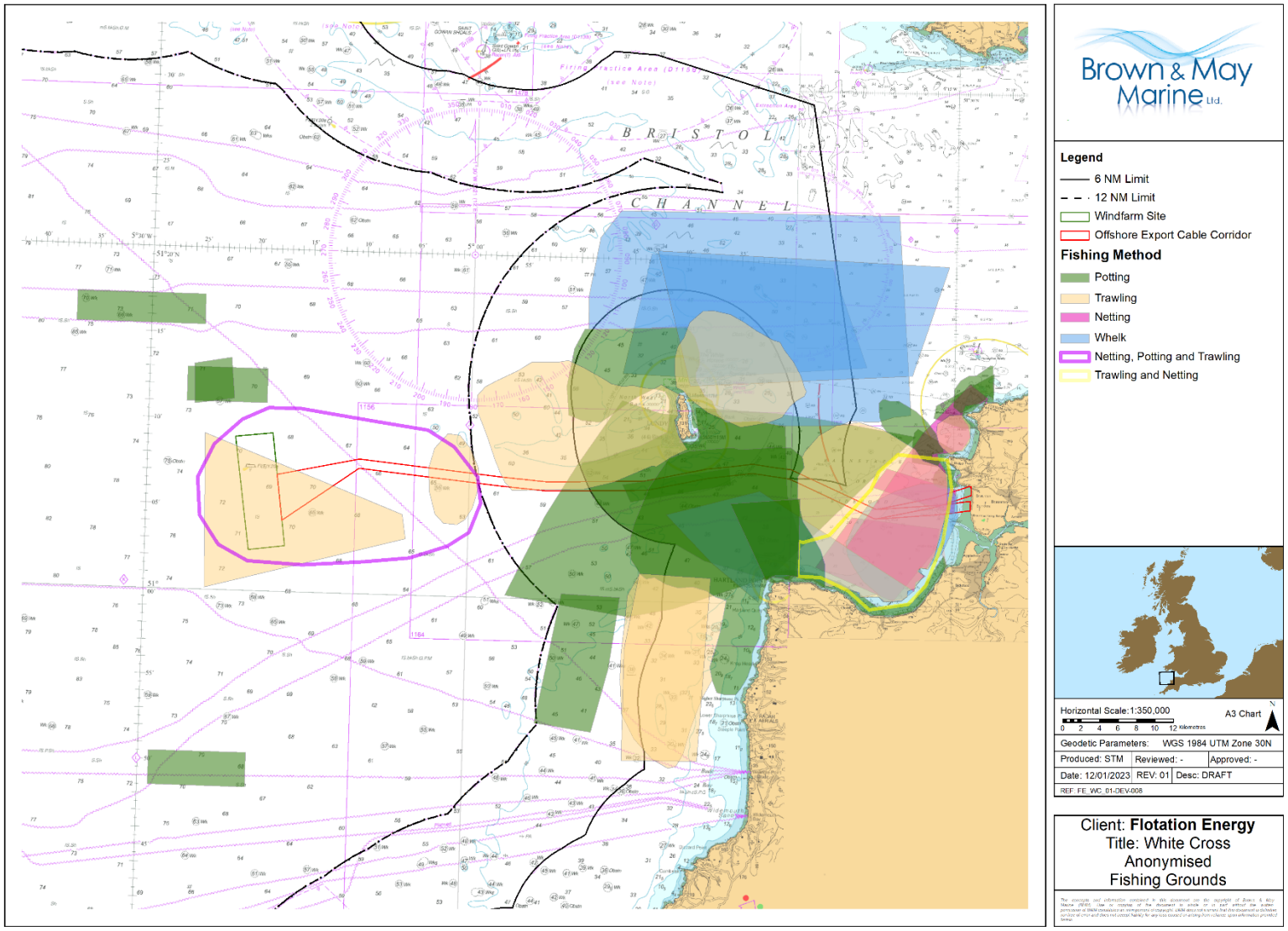


Figure 6.19: Fishing Grounds Identified Through Consultation with Local Fisheries Stakeholders

Table 6.4: Vessel and Gear Specifications for Potting vessels

Potting		
Fishing vessel and gear details	**Whelks**	**Lobster/crab**
Type of pot	Whelk	Parlour
Total Number of pots deployed	300-600	1,000-2,000
Number of fleets	10-15	20-45
Number of pots per fleet	15-50	40-100
Distance between each pot (metres)	15-20m	15-25m
Fleet length (metres)	800-900m	550-1,850m
Typical depths fished	10-55m	35-75m
Typical soak time (hours)	24-96hrs	24-96hrs
Vessel lengths (metres)	7-12m	8-15m
Vessel main engines (horsepower)	60-500HP	60-500HP
Typical distances steamed (nautical miles)	0-40nm	0-80nm

Table 6.5: Vessel and Gear Specifications for Beam Trawlers

Beam Trawling	
Fishing vessel and gear details	
Towing warp pay-out relative to depth	4-6 times the depth of the water
Approximate distance between beam trawl ends when towed (metres)	20-31m
Average tow duration (hours) and typical speed (knots)	4-5 knots up to 2 hours
Ground line type	Rubber foot rope, wire
Type of beam trawl gear	Chain mat
Vessel length (metres)	24-38m
Vessel main engine (horsepower)	300-1200HP
Typical distance steamed (nautical miles)	20-40nm
Typical Operating Depths	Up to 100m (has capability to fish deeper waters if required)

Table 6.6: Vessel and Gear Specifications for Local Inshore Demersal Otter Trawlers

Local Inshore Demersal Otter Trawling	
Fishing vessel and gear details	
Towing warp pay-out relative to depth	4-6 times the depth of the water
Approximate distance between trawl doors when towed (metres)	24-28m
Average tow duration (hours) and typical speed (knots)	2-3 knots 2.5-5 hours
Ground line type	Rubber foot rope
Type of trawl gear	Single net
Vessel length (metres)	8-10m
Vessel main engine (horsepower)	100-500HP
Typical distance steamed (nautical miles)	20-40nm
Typical Operating Depth	Up to 100m

A significant number of vessels over 15m were observed in the ports of Brixham and Newlyn during consultation, the majority of which were beam trawlers and demersal otter trawlers, as shown in **Table 6.7**. During consultation several vessel owners and skippers stated that they carry out beam trawling in and around the windfarm site, outside of the 6nm limit. The consensus was that that mobile fishing in the area is seasonal and to an extent nomadic, depending upon species targeted.

Table 6.7: Information Gathered from Consultation with Relevant Stakeholders

Port	Number of vessels observed during consultation (all sizes)	MMO official fishing vessel list		Method	Area fished/ location	Seasonality
		<10m	>10m			
Appledore	4	3	0	Potting, netting, trawling	Mostly nearshore and the proposed offshore ECC	Trawling in the area usually takes place in the same areas all year round. The fisheries stakeholders using nets generally target areas nearshore (**Annex 3** - Fishing Grounds from Consultation with ray nets generally being used from September to April, and gillnets used in the Spring and Autumn months. Whelk potting occurs all year round in the area (**Annex 3** - Fishing Grounds from Consultation), with a particular focus on whelk potting in the winter months. Potting for lobster and crab occurs all year round. However, in winter months the pots are moved further offshore (around the south-west of Lundy Island), with some stakeholders choosing to bring all or some of their pots ashore.
Brixham	>25	66	58	Trawling, netting	In the proximity of the windfarm site, lower levels within the 12nm limit	Trawling all year round, except inside the Trevose Box[5] between 1st February – 31st March. Larger beam trawlers primarily target flatfish (e.g. turbot, sole, bream) after the 31st March and the subsequent reopening of the Trevose Box.
Clovelly	3	2	0	Potting	Mostly nearshore and	Pots and trawls occur in the nearshore area, with some or all of the lobster and crab pots brought ashore during the winter months.

[5] https://www.gov.uk/government/collections/closed-fishing-areas-in-english-waters

Port	Number of vessels observed during consultation (all sizes)	MMO official fishing vessel list		Method	Area fished/ location	Seasonality
					the proposed offshore ECC	
Ilfracombe	5	5	3	Potting, netting, trawling	Mostly nearshore and the proposed offshore ECC	Whelk fishing occurs all year round mostly northeast of Lundy Island, with crab and lobster fishing south of Lundy Island and in the nearshore area, as indicated on the annotated charts in **Annex 3** - Fishing Grounds from Consultation. The trawlers in the area generally fish in the same areas all year round (**Annex 3** - Fishing Grounds from Consultation) mostly targeting flatfish species.
Milford Haven	14	36	16	Potting, trawling	Trawling out to the windfarm site	Some static gear fishing occurs in the Lundy area but limited or no trawling activity.
Newquay	18	18	0	Potting, netting	Higher levels of potting activity within the 6nm and 12nm limit	A number of <10m local vessels with potting and netting gear present in the harbour. Potting targeting crab and lobster takes place all year round.
Newlyn	>25	126	52	Trawling, netting	In the proximity of the windfarm site	Trawling occurs all year round, except inside the Trevose Box between 1st February – 31st March. Larger beam trawlers primarily target flat fish (e.g. sole, plaice, ray) after the 31st March and the subsequent reopening of the Trevose Box.
Padstow	12	21	3	Potting, netting, trawling	In the proximity of the windfarm site. Higher levels of potting activity within	Potting targeting crab and lobster takes place all year round. Some potting activity changes seasonally with grounds outside of the 12nm limit targeted between May - November, and grounds inside the 12nm limit targeted between December – April.

Port	Number of vessels observed during consultation (all sizes)	MMO official fishing vessel list		Method	Area fished/ location	Seasonality
					the 6nm and 12nm limit	Trawling activity can occur all year round, except inside the Trevose Box between 1st February – 31st March.
Plymouth	>25	88	28	Potting, netting, trawling	Trawling in the proximity of the windfarm site	Trawling in or around the windfarm site can occur all year round, except inside the Trevose Box between 1st February – 31st March.

Typical examples of local UK fishing vessels operating in areas relevant to the Project are given in **Figure 6.20** to **Figure 6.22**. Examples of the gears used by these vessels are shown in **Figure 6.23** to **Figure 6.25**.

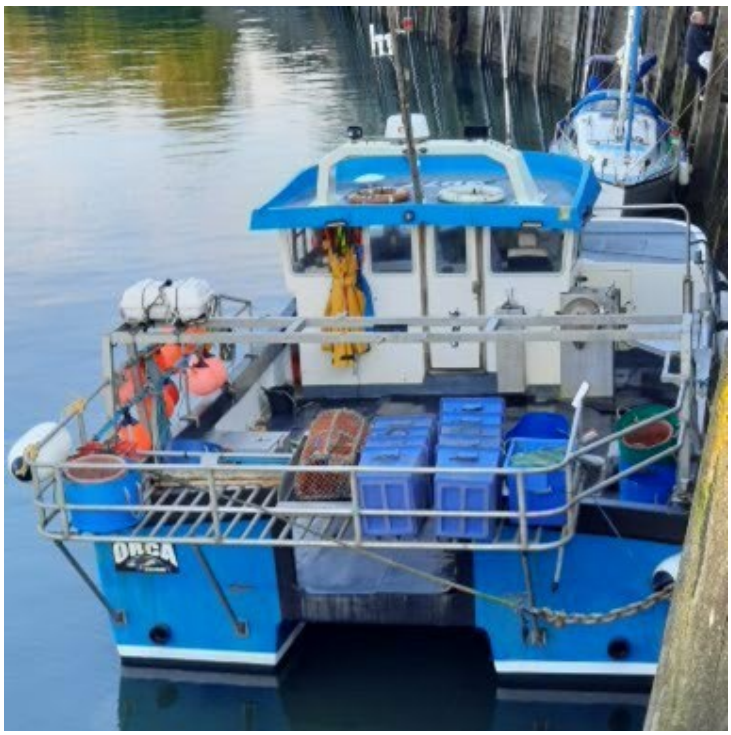


Figure 6.20: Potting Catamaran (Ilfracombe) (BMM, 2022)

Figure 6.21: Multi-purpose Potter and Trawler (Appledore) (BMM, 2022)

Figure 6.22: Netting Boat (Appledore) (BMM, 2022)

Figure 6.23: Lobster and Crab Pots (Boscastle) (BMM, 2022)

Figure 6.24: Rockhopper Trawl Gear (Ilfracombe) (BMM, 2022)

Figure 6.25: Whelk Pots (Ilfracombe) (BMM, 2022)

6.3 Belgian fleet

6.3.1 Surveillance sightings of Belgian vessels

As shown in **Figure 6.26**, the majority of Belgian vessels recorded within the ISA were beam trawlers.

The spatial distribution of surveillance sightings of Belgian vessels is shown in **Figure 6.27.** As illustrated, the majority of Belgian surveillance sightings within the ISA are in ICES rectangle 31E4, with some sightings recorded between the 6nm and 12nm limit in rectangle 31E5. The majority of Belgian vessels recorded within the ISA are beam trawlers, with sightings of other Belgian vessels being minimal in the area.

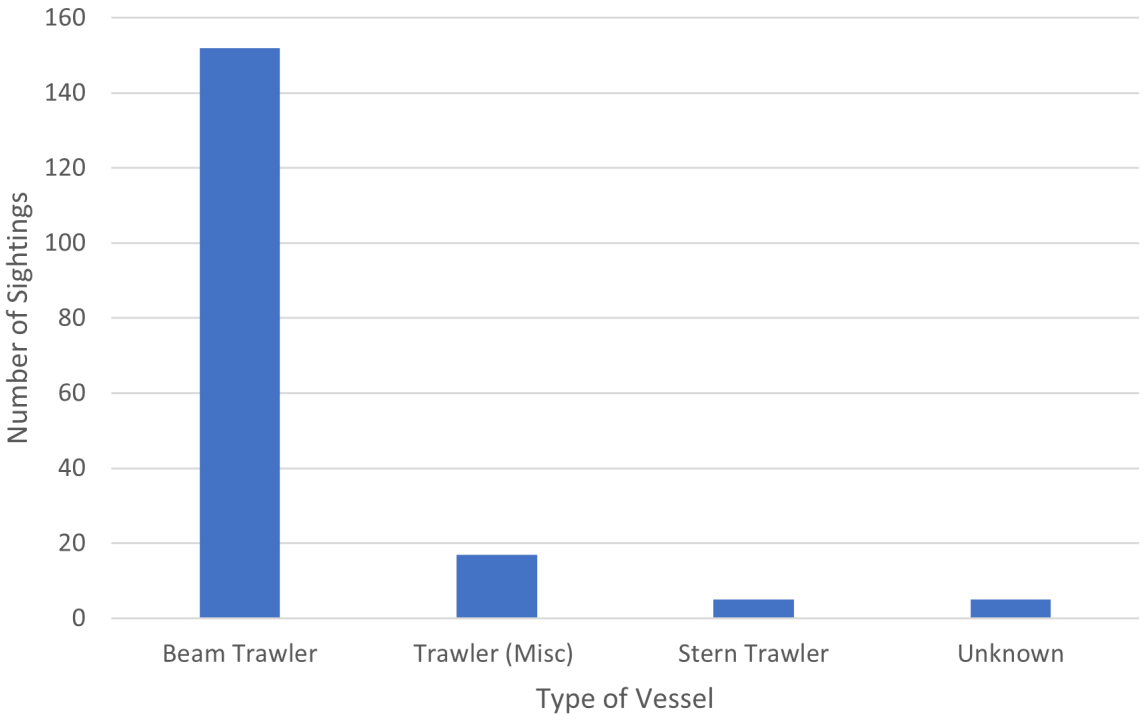


Figure 6.26: Number of Sightings of UK Vessels in the ISA by Method (2011 – 2020) (Source: MMO)

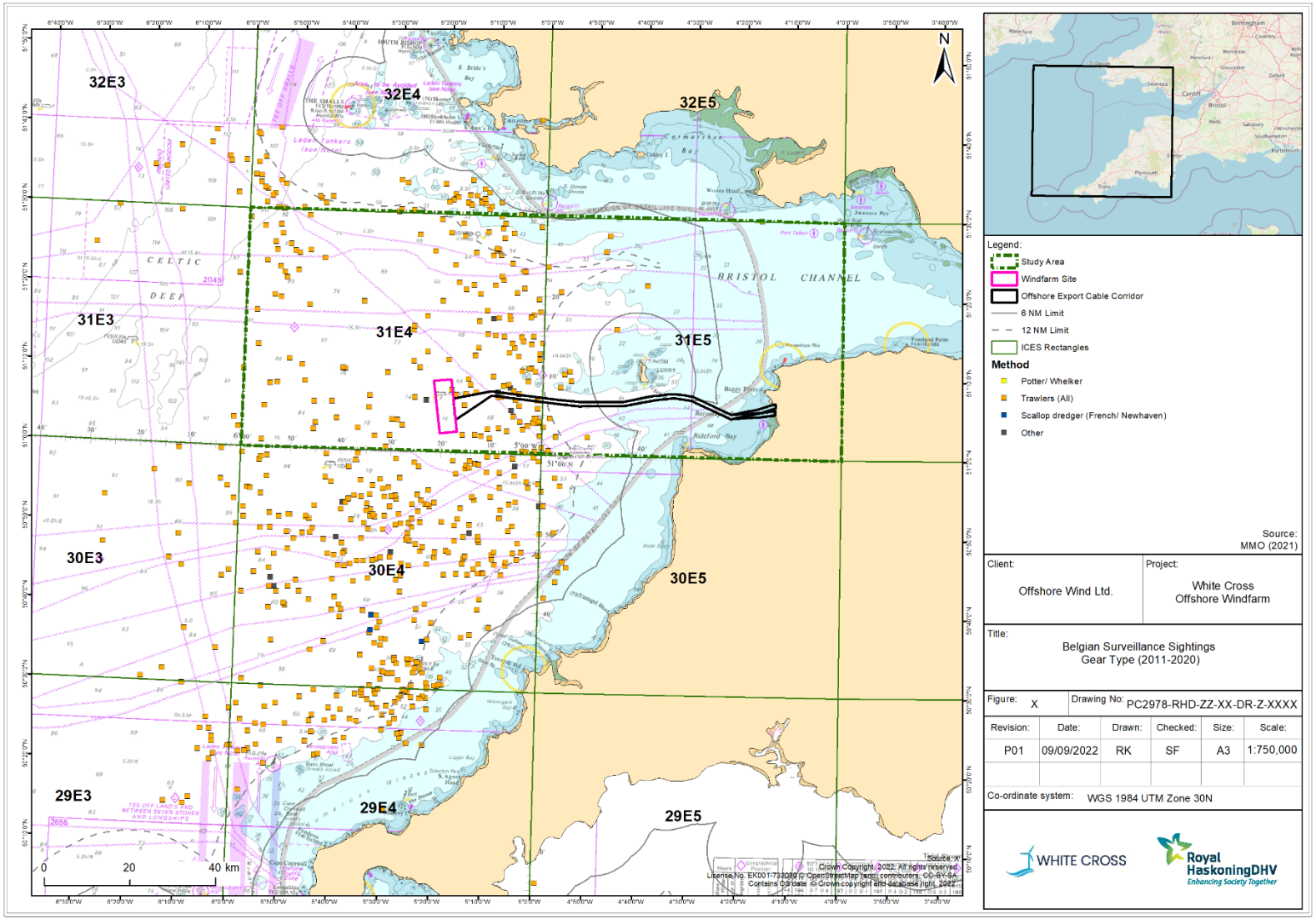


Figure 6.27: Belgian Surveillance Sightings (2011 – 2020) (Source: MMO, 2021)

6.3.2 Landings data

An indication of the value of commercial fishing activities performed in the WSA by Belgian vessels is provided in **Figure 6.28** and **Figure 6.29**, based on analysis of Belgian landing values (€) by method and species by ICES rectangle. Data is presented as an annual average for the period 2010-2014, which as stated above, despite numerous requests, 2014 data currently is the most up to date made available by the Belgian statistics agency.

The landings data appears to concur with the surveillance data, indicating that relatively high landings are derived from ICES rectangle 31E4, with landings weights from rectangle 31E5 being considerably lower.

As illustrated in **Figure 6.28**, for both ICES rectangles that comprise the ISA, beam trawling is the predominant fishing method, followed by a small amount of bottom otter trawling, with the proportion of landings from bottom otter trawling being higher in rectangle 31E5 than 31E4.

The species targeted in both rectangles are similar, with Dover sole being the species with the highest landings in the ISA. In rectangle 31E5 the second highest landings are of skates and rays, whereas in 31E4 monkfish are the second most targeted species.

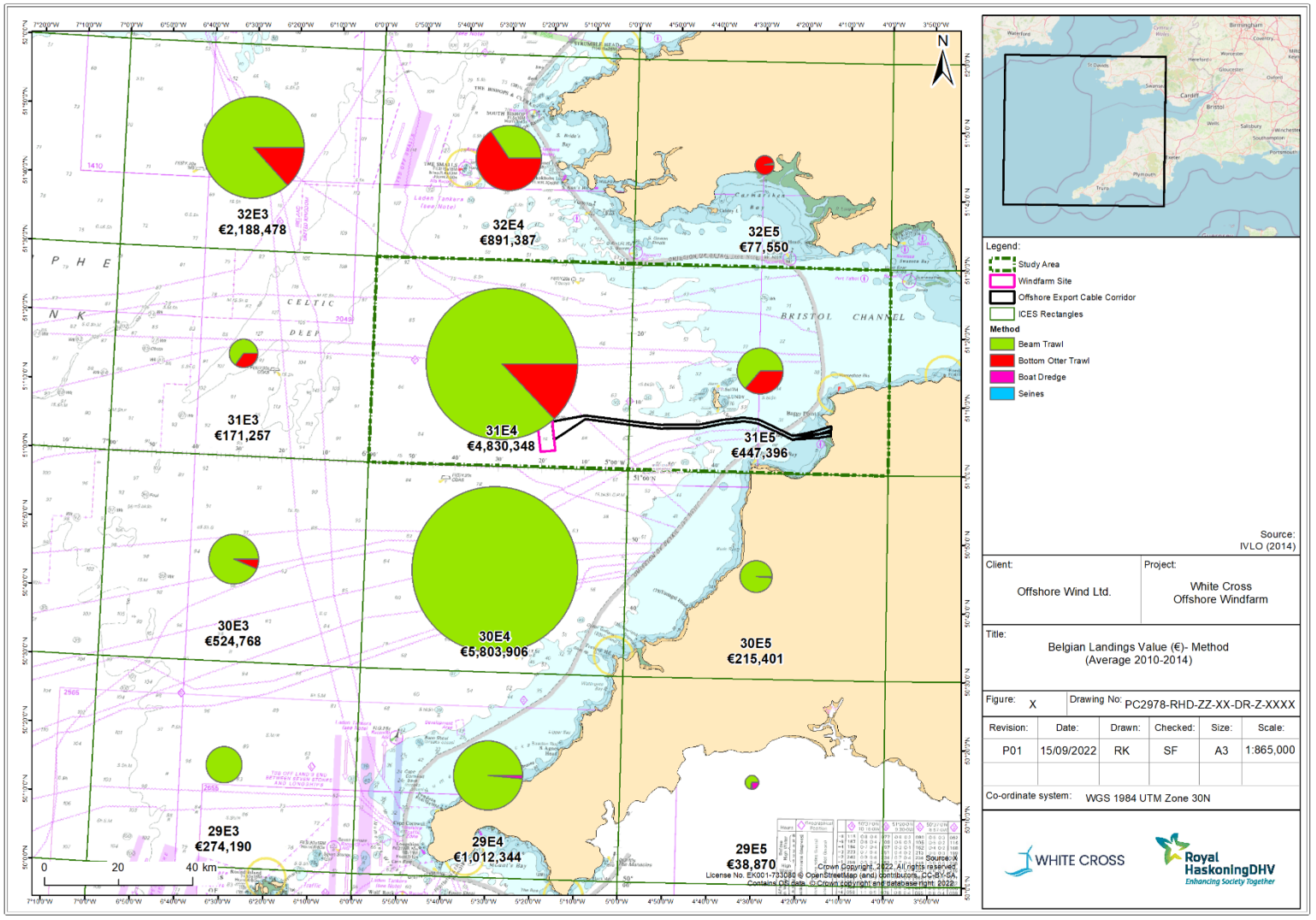


Figure 6.28 Belgian Landings (tonnes) by Method (Average 2010 – 2014) (Source: STECF, 2017)

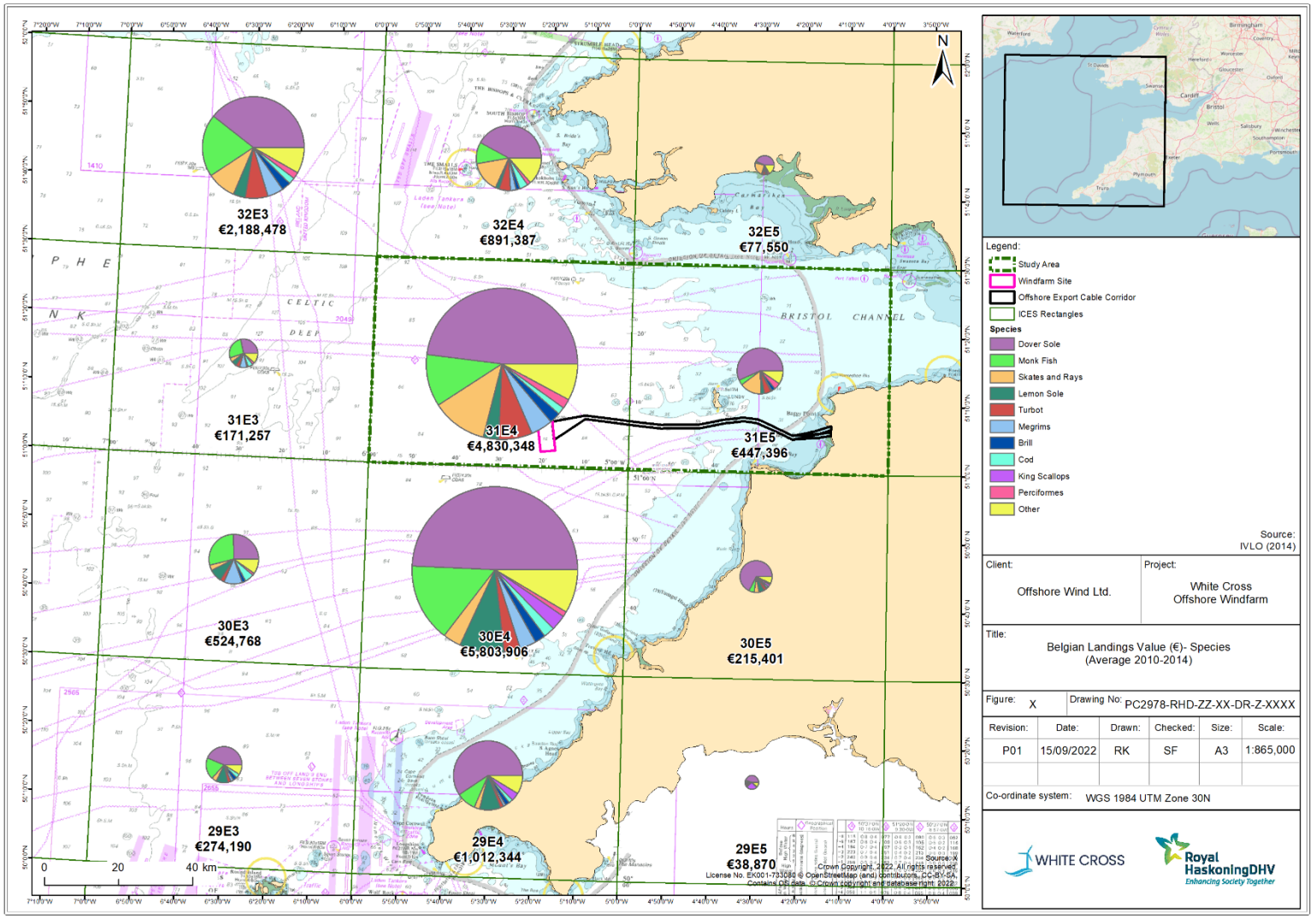


Figure 6.29 Belgian Landings (tonnes) by Species (Average 2010 – 2014) (Source: STECF, 2017)

6.3.3 Spatial distribution of Belgian fishing activity

The VMS data (**Figure 6.30**) suggests that the eastern sector of the rectangle (31E4) covering the windfarm site and part of the offshore ECC includes relatively high value fishing grounds for beam trawling. The western sector of this rectangle also appears to be a relatively valuable area for Belgian beam trawlers. In contrast, rectangle 31E5, in which the eastern section of the offshore ECC is located, has recorded only moderate Belgian beam trawling values. Similarly high landings values are also recorded in the rectangle (30E4) immediately to the south of the ISA.

The surveillance data given in **Figure 6.26** shows negligible Belgian activity within the 12nm limit despite Belgian vessels having historic rights to fish between the 6nm and 12nm limits. This suggests that the Belgian beam trawlers fishing the general area are the larger class of beam trawlers, as under existing EU and UK regulations, only beam trawlers with main engines of less than 300 HP can fish between the 6nm and 12nm limits of the UK and other member states. Demersal trawls have also been recorded in the ISA, but at more moderate values (**Figure 6.31**).

When considering the Belgian VMS data presented in **Figure 15.5** of **Chapter 14: Commercial Fisheries**, it is apparent that while the LSA represents an area of relatively high value for Belgian fishers in the context of the WSA, there are more high value areas in the Celtic Sea far removed from the Project that the Belgian fleet has access to.

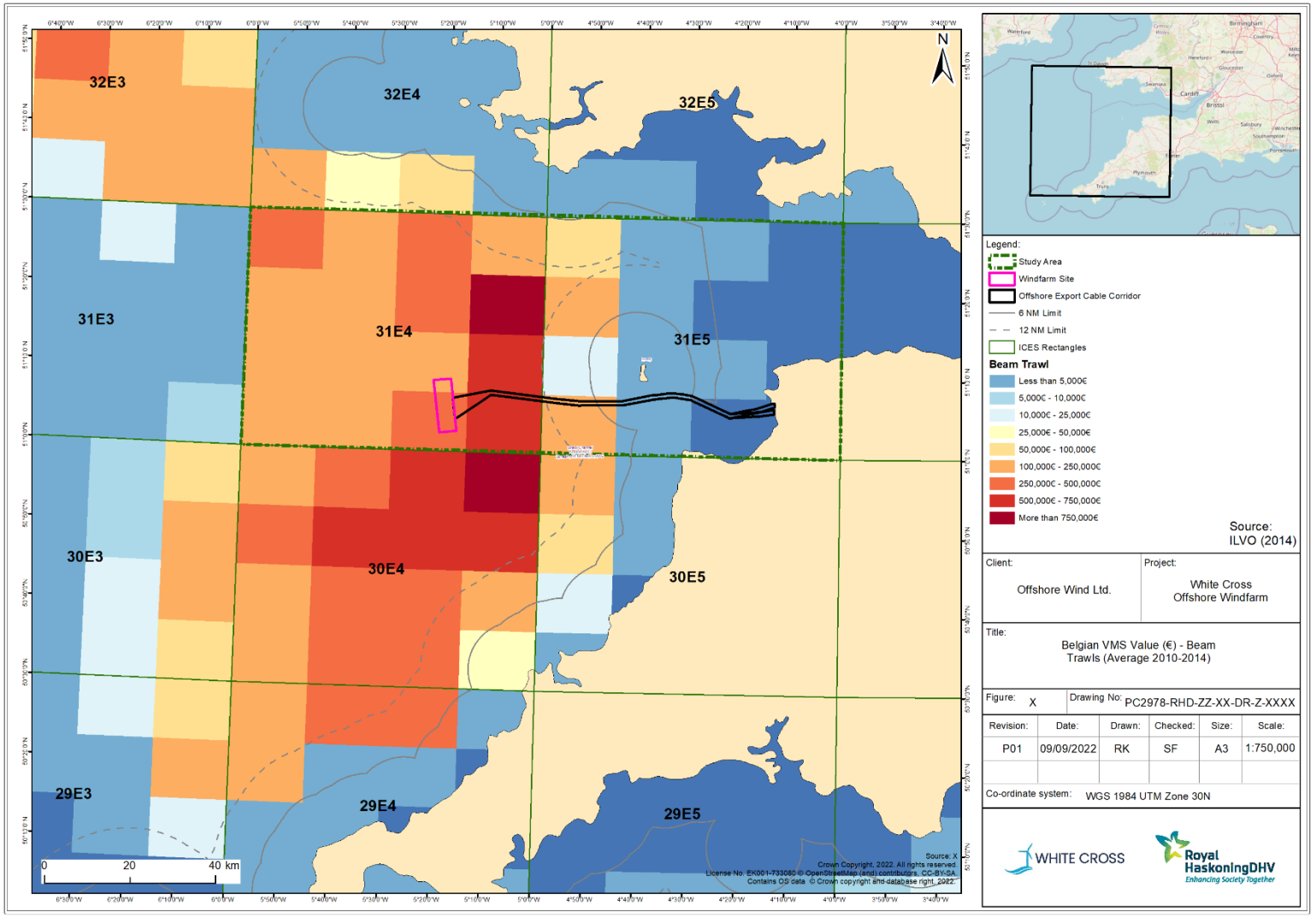


Figure 6.30 Belgian VMS (€) Beam Trawls (Average 2010 – 2014) (Source: ILVO, 2015)

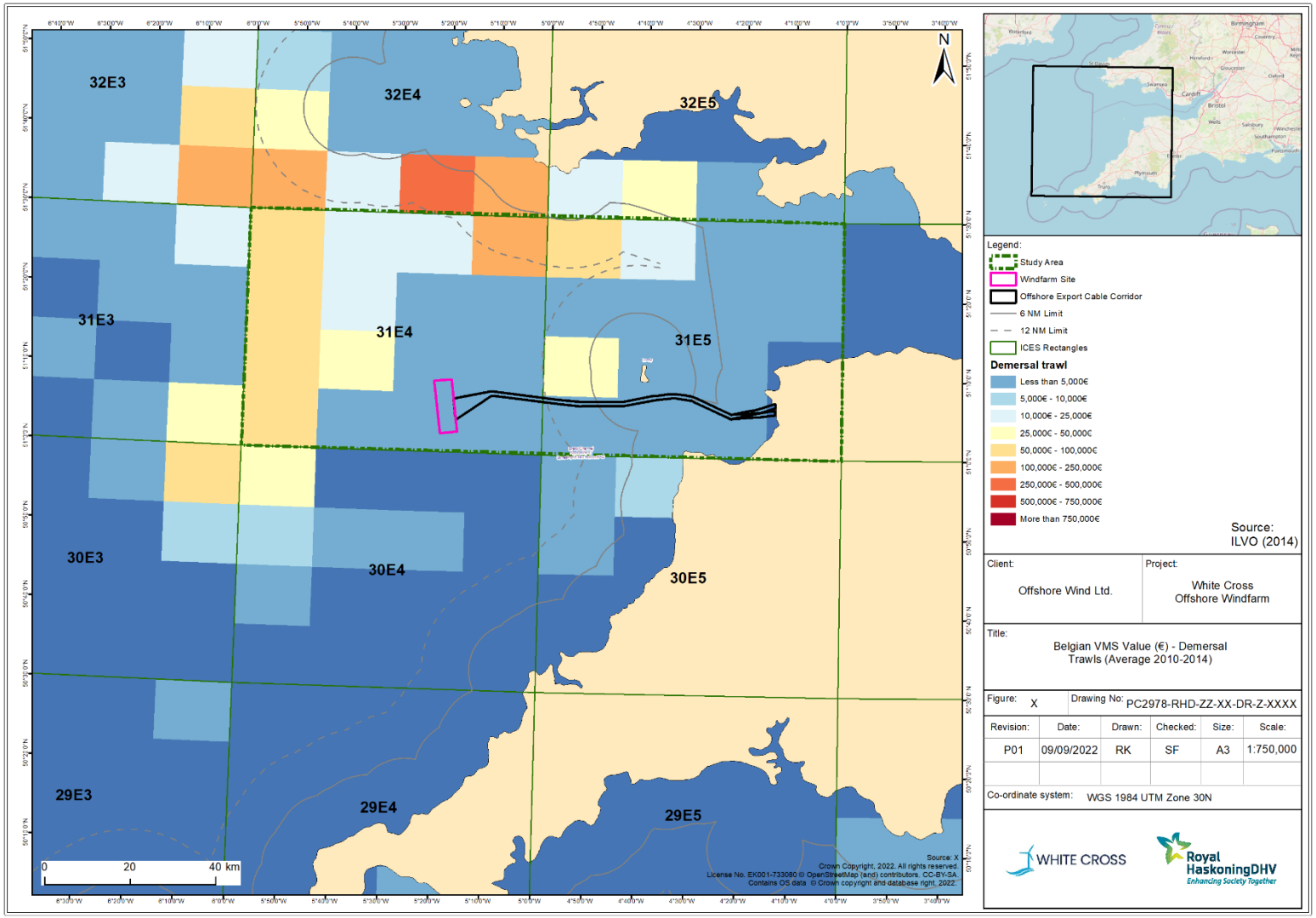


Figure 6.31 Belgian VMS (€) Demersal Trawls (Average 2010 – 2014) (Source: ILVO)

6.3.4 Vessels, gears and operating patterns

In areas relevant to the offshore project area, fishing activity by Belgian vessels is predominantly by beam trawlers and to a lesser extent bottom otter trawlers.

The majority of the Belgian fishing fleet activity is concentrated in the southern North Sea and English Channel, with approximately 65 active vessels (ICES, 2021). Sole is the dominant species in terms of value, while plaice is the dominant species in volume.

The Belgian Celtic Sea fleet consists of about 33 active vessels, and in 2021 was the source of 23% of Belgian landings[6]. The majority (89%) of the vessels are larger than 24m, with the remainder being between 18m and 24m. Data and information gathered during consultation confirmed the Belgian fleet uses predominantly beam trawls, targeting rays, plaice, sole, and anglerfish[7]. An example of a typical Belgian Trawler is shown in **Figure 6.32**.

Table 6.8 summarises the vessel specifications and gear details of a typical Belgian beam trawler[8].

Table 6.8: Vessel and Gear Specifications of a Typical Belgian Beam Trawler

Beam Trawling	
Fishing vessel and gear details	
Towing warp pay-out relative to depth	2.5-4m
Approximate distance between beam trawl ends when towed (metres)	26-30m
Average tow duration (hours) and typical speed (knots)	4-5 knots up to 2hours
Ground line type	Rubber foot rope, wire
Type of beam trawl gear	Chain mat
Vessel length (metres)	30–37.95m
Vessel main engine (horsepower)	800-1400HP
Typical distance steamed (nautical miles)	Wide ranging
Typical Operating Depths	Up to 100m (but has capability to fish deeper waters if required)

[6] ANNUAL FLEET REPORT 2020 – Belgium, Article 22 of Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy

[7] ICES (2021). Celtic Sea Ecoregion – Fisheries Overview. Available at: https://figshare.com/articles/report/Celtic_Sea_Fisheries_overview/18639791/1. Accessed 22/09/2022.

[8] STECF (2016) https://stecf.jrc.ec.europa.eu/documents/43805/1489224/2016_AER_5_NC_BELGIUM.pdf

Figure 6.32: Belgian Trawler (BMM, 2020)

6.4 French fleet

6.4.1 Surveillance sightings

Surveillance sightings for French vessels are illustrated in **Figure 6.33**. As shown, the majority of the sightings are a considerable distance from the windfarm site and offshore ECC. The limited number of sightings which were recorded within the ISA are concentrated in ICES rectangle 31E4, in which the windfarm site is located.

Also, as shown, the vessels recorded in the ISA were all demersal trawlers.

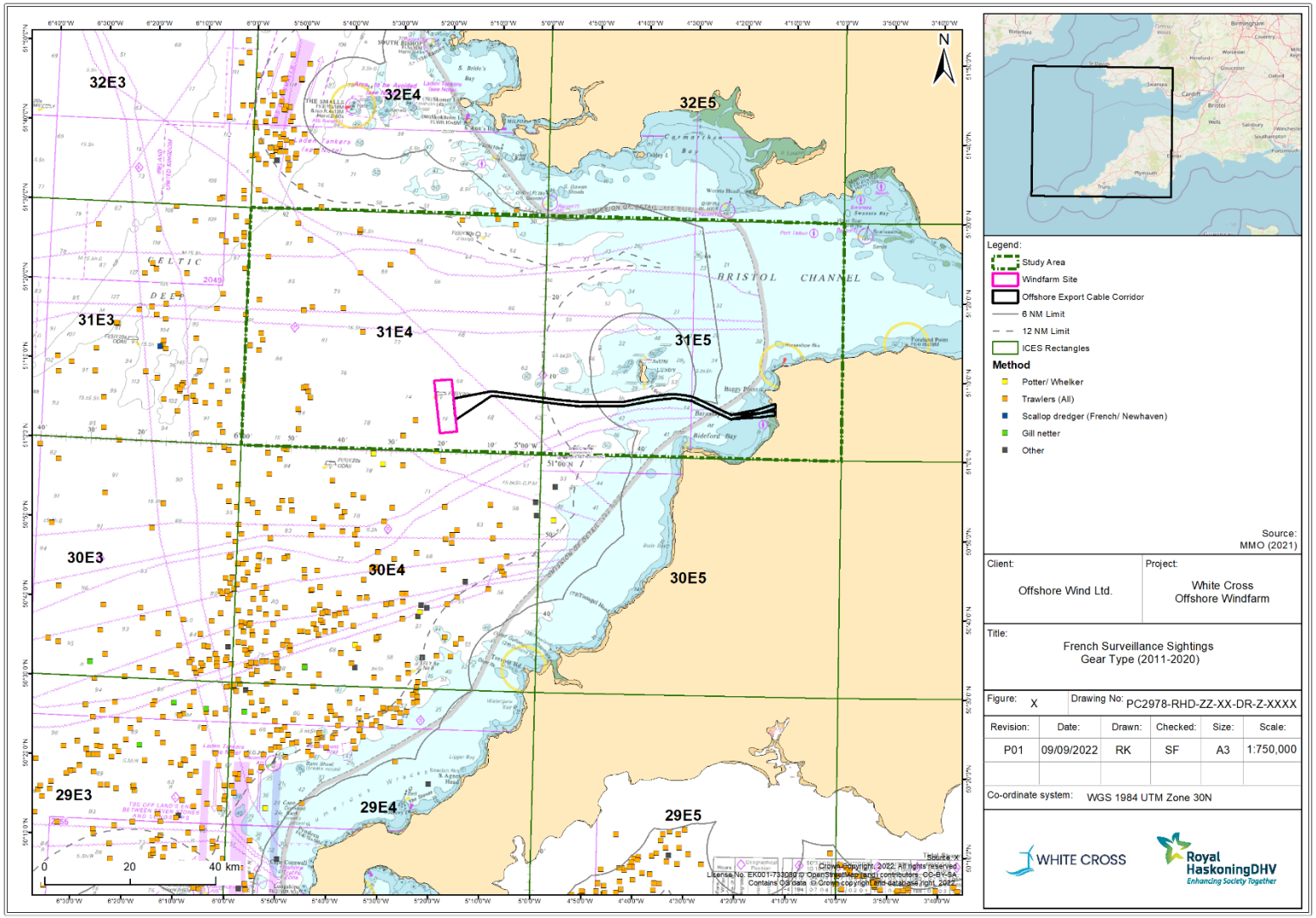


Figure 6.33 French Surveillance Sightings by Method (2011 -2020) (Source: MMO, 2021)

6.4.2 Landings

An indication of the activity in the WSA by French vessels is provided in **Figure 6.34** to **Figure 6.36**, based on landing weights by method and species by ICES rectangle. Data is presented as an annual average for the period 2012 – 2016.

The data generally corroborates the surveillance data (**Figure 6.33**), indicating that French activity is lower in the rectangles comprising the ISA than elsewhere in the WSA.

As illustrated in **Figure 6.34**, the predominant fishing method deployed by French vessels in the WSA is otter trawling, although in both rectangles that comprise the ISA there is also a small amount of potting. However, in the wider context of the WSA, rectangle 31E4 only records relatively low landings.

In both rectangles that comprise the ISA, rays and skates and haddock (*Melanogrammus aeglefinus*) are the main species caught.

Figure 6.36 indicates that all of the landings by French fishing boats are by vessels of over 15m in length.

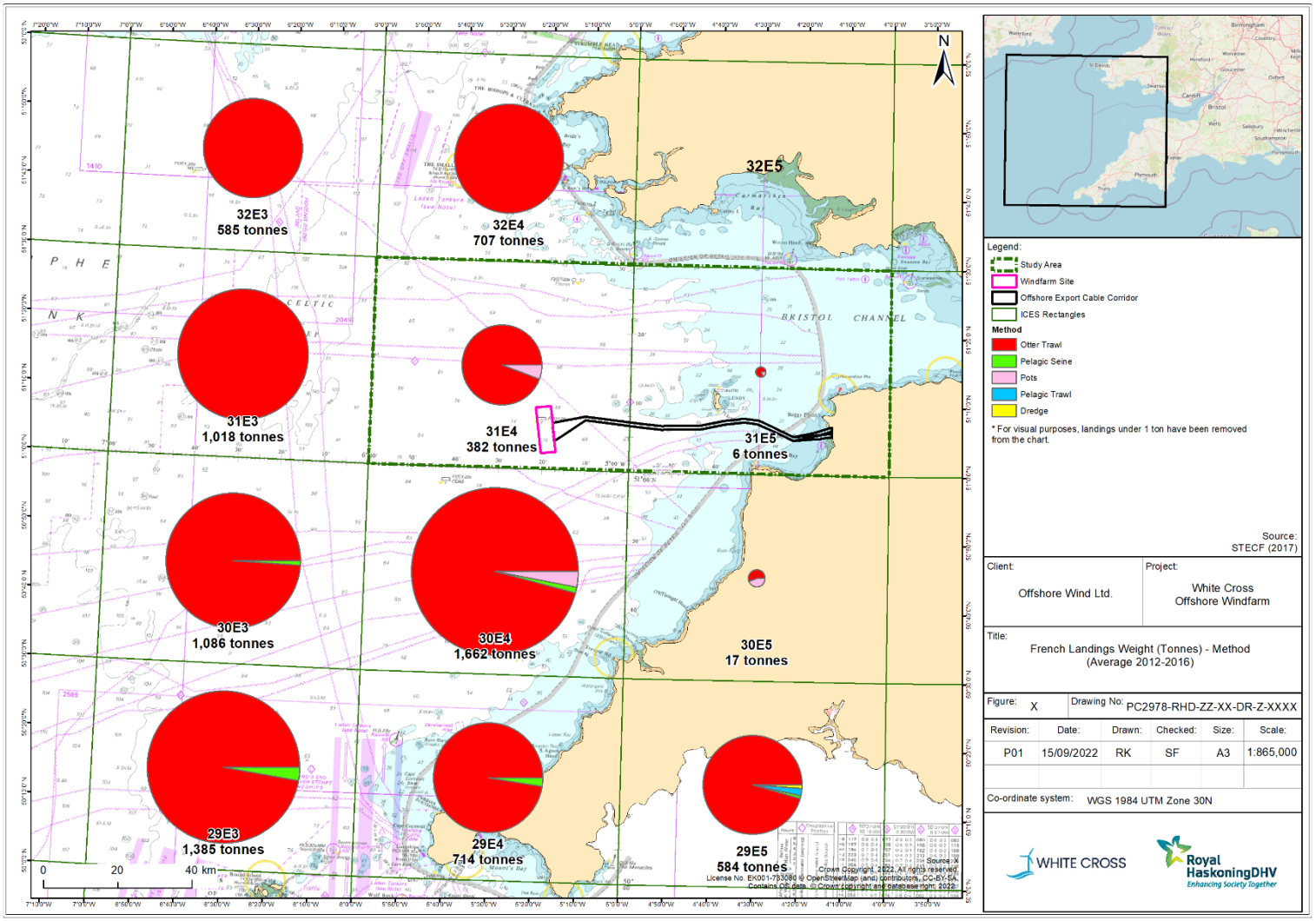


Figure 6.34 French Landings (tonnes) by Method (Annual Average 2012 – 2016) (Source: STECF, 2017)

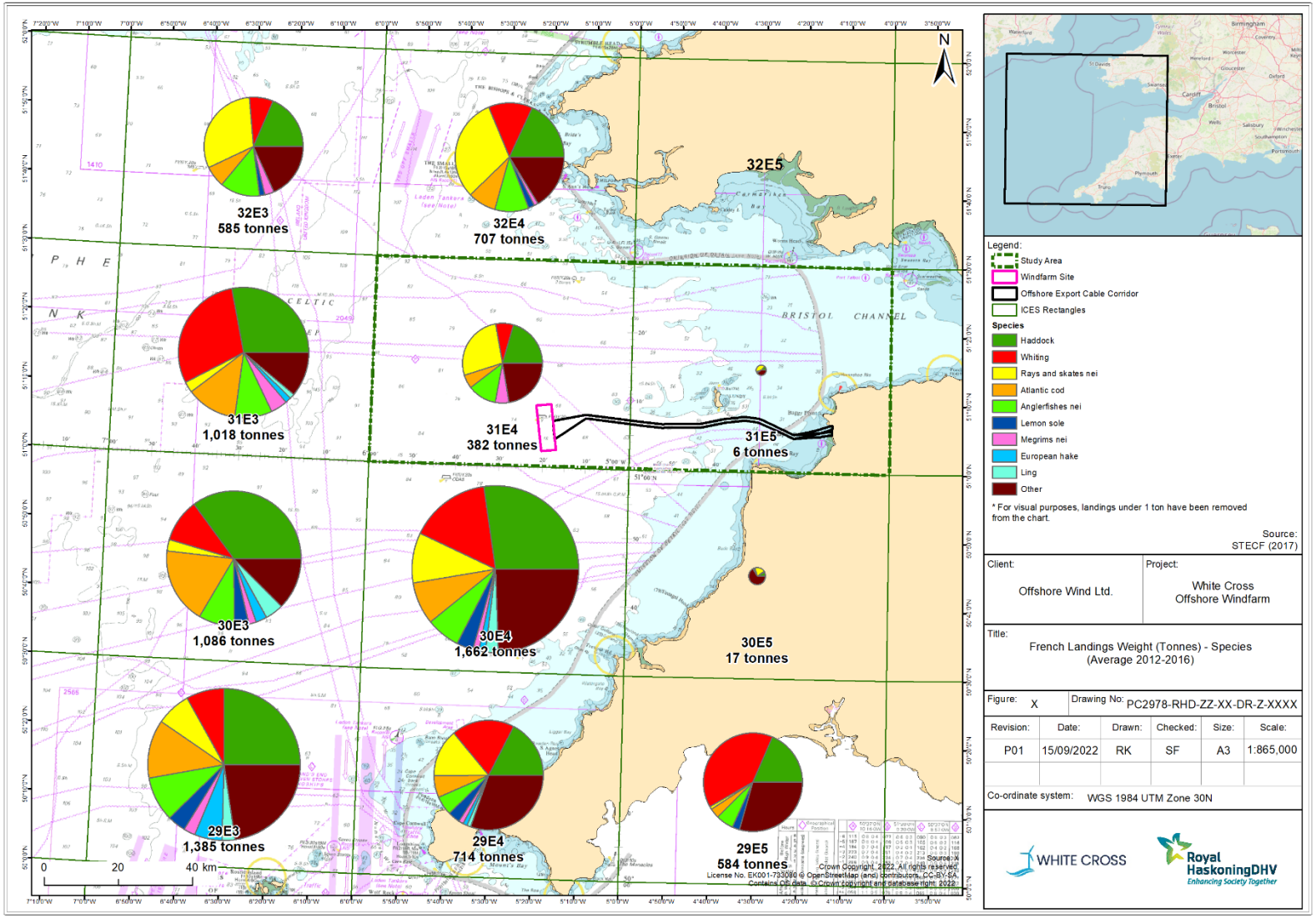


Figure 6.35 French Landings (tonnes) by Species (Annual Average 2012 – 2016) (Source: STECF, 2017)

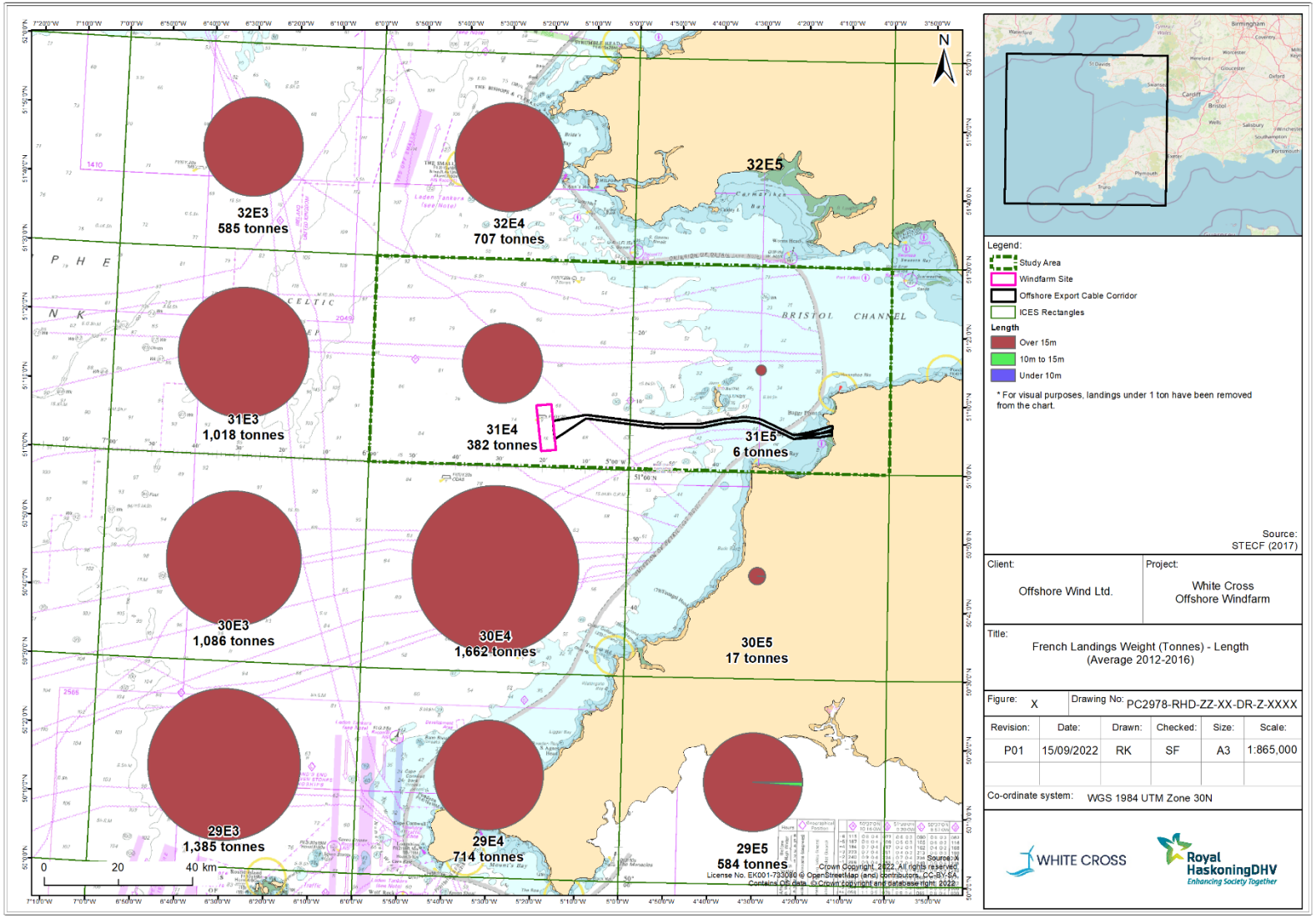


Figure 6.36: French Landings (tonnes) by Vessel Length (Annual Average 2012 – 2016) (Source: STECF, 2017)

6.4.3 Vessels, gears and operating patterns

As illustrated in **Figure 6.36**, all of the French vessels recorded in the ISA, and the majority recorded in the Celtic Sea, are over 15m in length.

The French offshore fishery in the Celtic Sea (divisions VIIg and VIIh) is composed of approximately 350 bottom trawlers between 18–35m in length. These vessels target gadoids, Nephrops or anglerfish, megrim (*Lepidorhombus whiffiagonis)*, and rays, with less than ten vessels using Danish seine. In addition, two large pelagic trawlers target herring (*Clupea harengus*) and mackerel (*Scombridae*), and one is also involved in the blue whiting (*Micromesistius poutassou*) fishery[9]. An example of a typical French trawler is shown in

Figure 6.37.

Table 6.9 summarises the vessel specifications and gear details of a typical French demersal otter trawler.

Table 6.9: Summary of Vessel and Gear Specifications for French Demersal Otter Trawlers

Local Inshore Demersal Otter Trawling	
Fishing vessel and gear details	
Towing warp pay-out relative to depth	3-5 times the depth of the water
Approximate distance between trawl doors when towed (metres)	25-80m
Average tow duration (hours) and typical speed (knots)	2-4 knots 2-4 hours
Ground line type	Rubber foot rope
Type of trawl gear	Single net
Vessel length (metres)	18–26m
Vessel main engine (horsepower)	400–800HP
Typical distance steamed (nautical miles)	Wide ranging
Trawl gear potential movement from vessel's route/wake	Up to 200m
Typical Operating Depths	Up to 300m

[9] ICES Advice 2021 – https://doi.org/10.17895/ices.advice.9098

Figure 6.37: French Trawler

6.5 Irish Fleet

6.5.1 Surveillance sightings of Irish vessels

Surveillance sightings for the Irish fleet are illustrated in **Figure 6.38**. As shown, negligible sightings have been recorded within the rectangles comprising the ISA. The majority of Irish surveillance sightings are concentrated just outside the ISA, in rectangle 31E3.

The majority of Irish vessels recorded are trawlers, with a small number of gill netters and scallop dredges also recorded in the WSA.

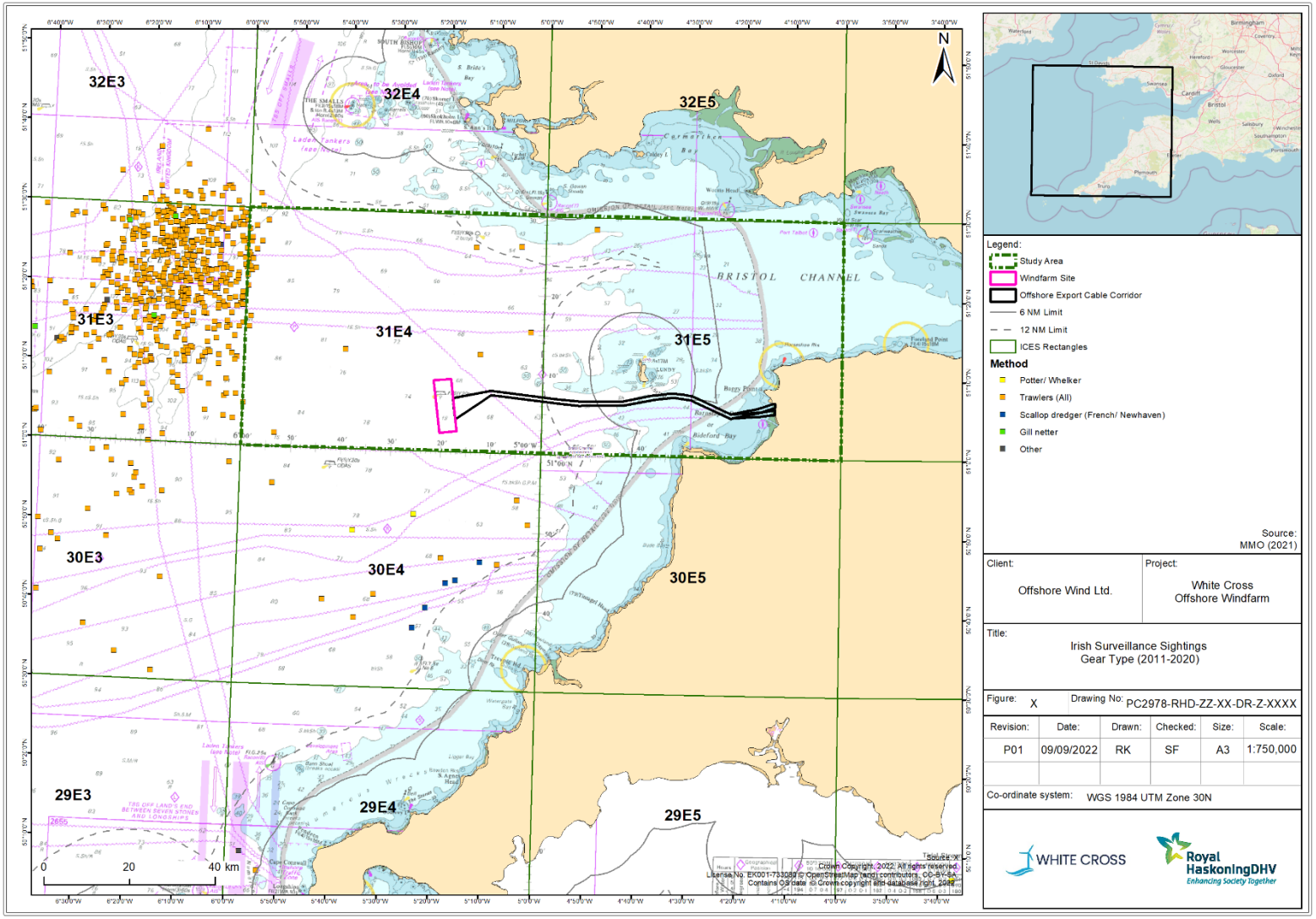


Figure 6.38: Irish Surveillance Sightings by Method (2011 -2020) (Source: MMO, 2021)

6.5.2 Landings data

An indication of the value of commercial fishing activities performed in the WSA by Irish vessels is provided in **Figure 6.39** and **Figure 6.40**, based on analysis of Irish landing values (£) by method and species by ICES rectangle. Data is presented as an annual average for the period 2015-2019.

As illustrated in the Figures below, the Irish landings data correlates with the surveillance data. Within the ISA, rectangle 31E4 contains a much higher volume of landings. However, this value is negligible when compared to other rectangles in the WSA.

The predominant fishing method within the ISA is bottom otter trawls, followed by pelagic trawls. The presence of pelagic trawling is reflected by the relatively high amounts of herring landed within the WSA (**Figure 6.40**).

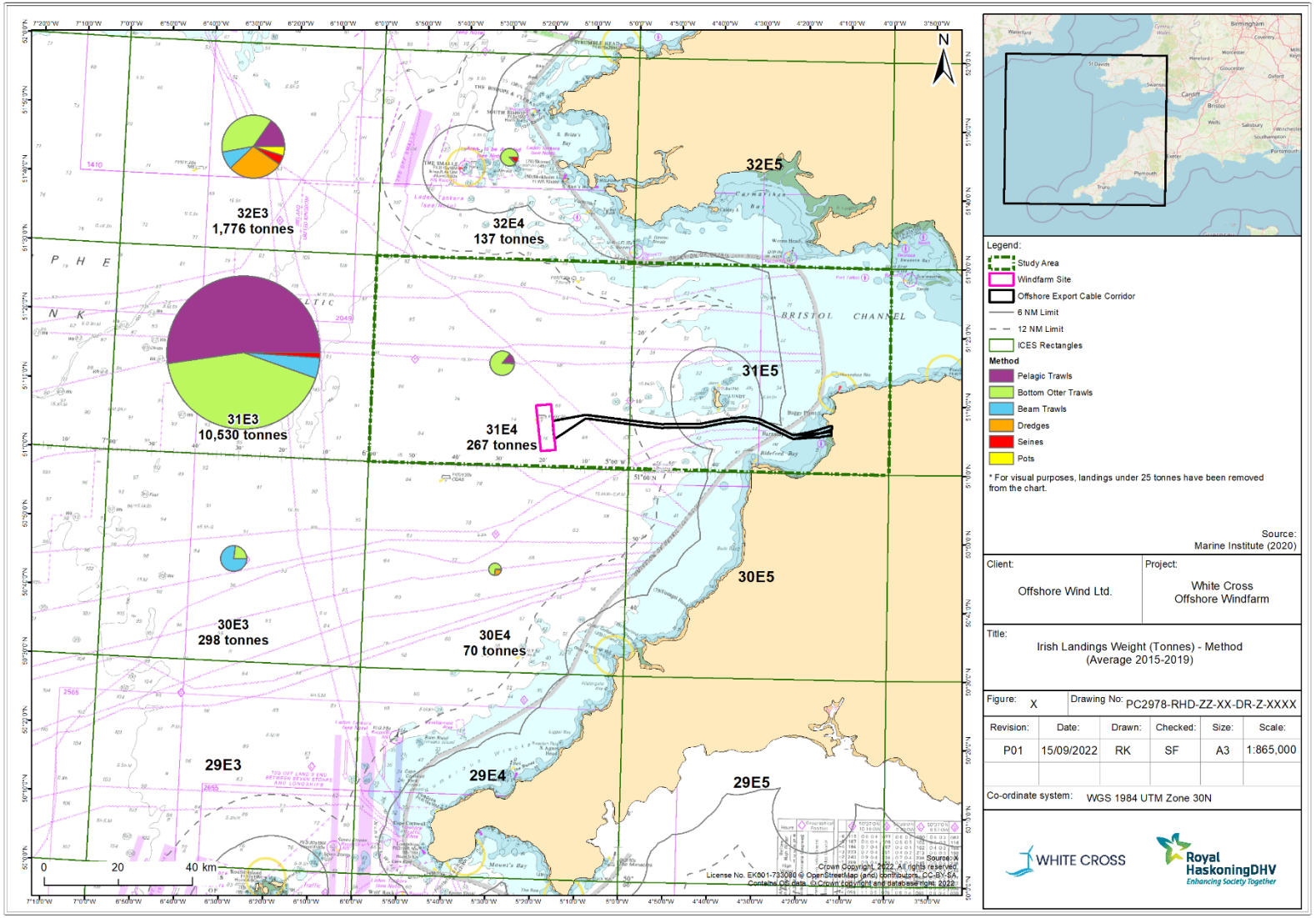


Figure 6.39: Irish Landings (tonnes) by Method (Annual Average 2015-2019) (Source: Marine Institute, 2019)

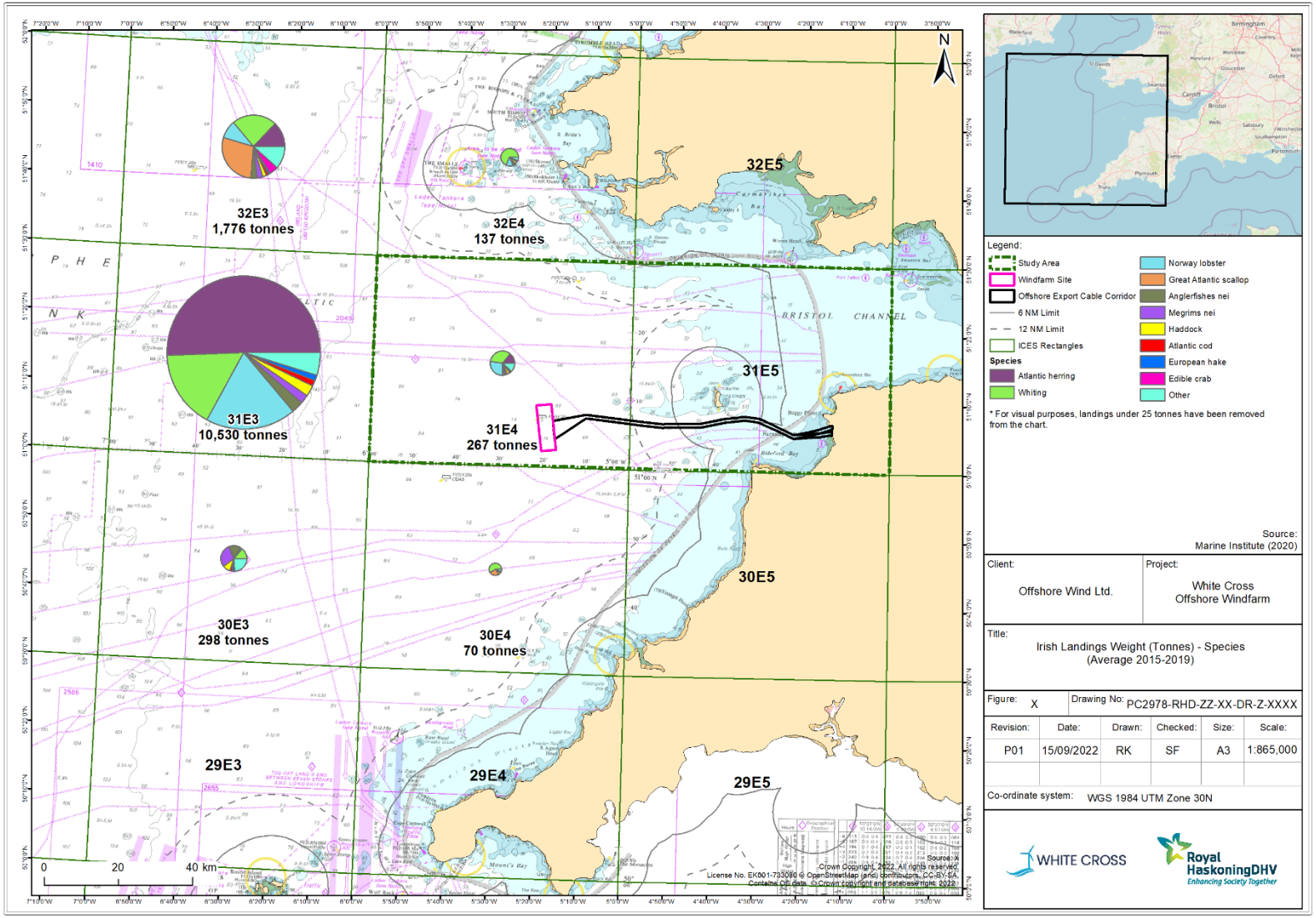


Figure 6.40: Irish Landings (tonnes) by Species (Annual Average 2015-2019) (Source: Marine Institute, 2019)

6.5.3 Spatial distribution of Irish vessels

Analysis of data from Irish bottom otter trawls indicates that, while some activity does occur within the ISA in ICES rectangle 31E4, the area with the highest intensity of fishing occurs just outside of the ISA, in rectangle 31E3 (**Figure 6.41**).

VMS data for Irish beam trawls suggests a similar pattern to the surveillance data, with all of the activity directed well to the west of the ISA (**Figure 6.42**).

Scallop dredging, as shown by **Figure 6.43**, occurs far to the south of the ISA, with none recorded within it.

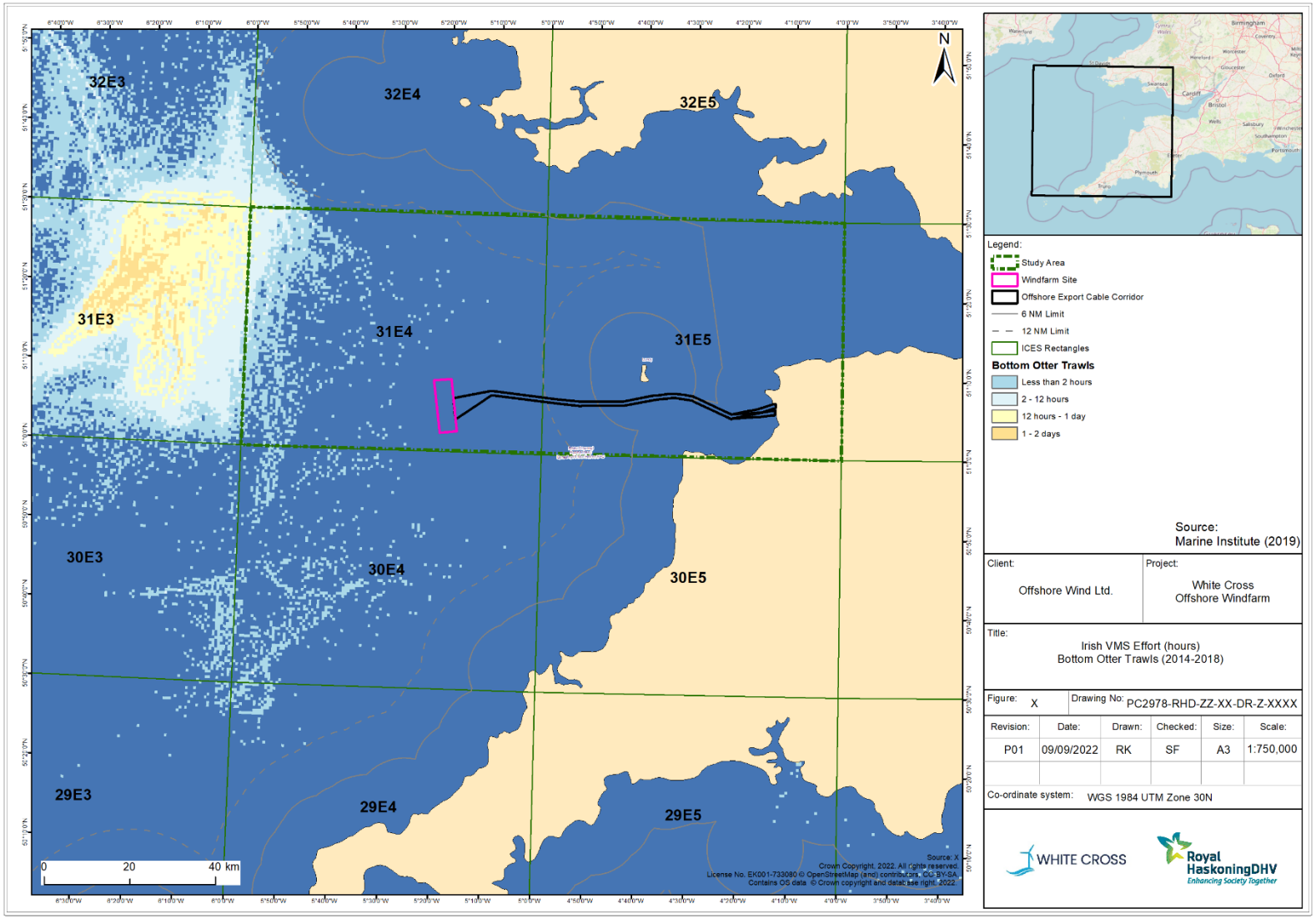


Figure 6.41: Irish VMS Effort (hours) Bottom Otter Trawls (2014-2018) (Source: Marine Institute, 2019)

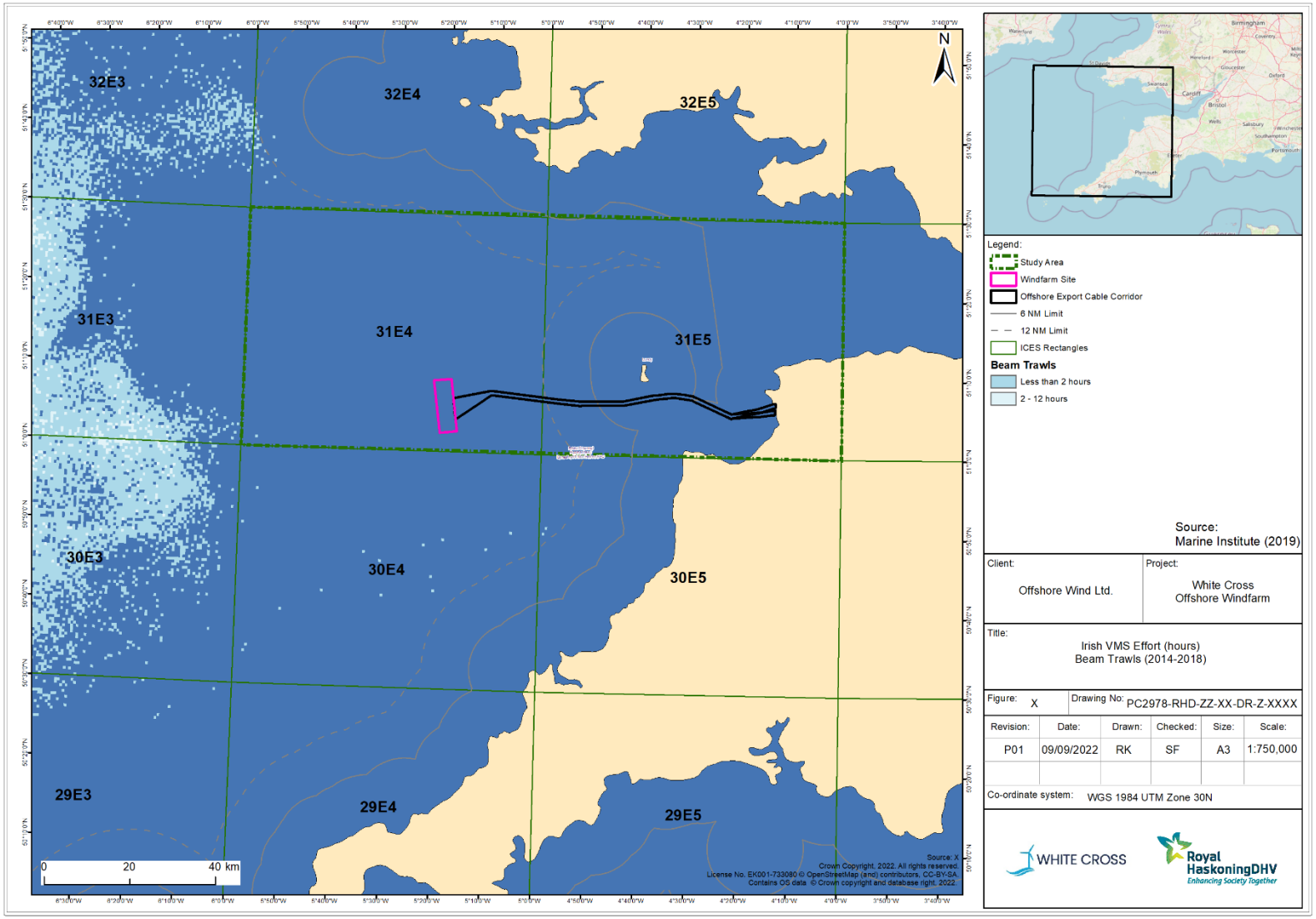


Figure 6.42: Irish VMS Effort (hours) Beam Trawls (2014-2018) (Source: Marine Institute, 2019)

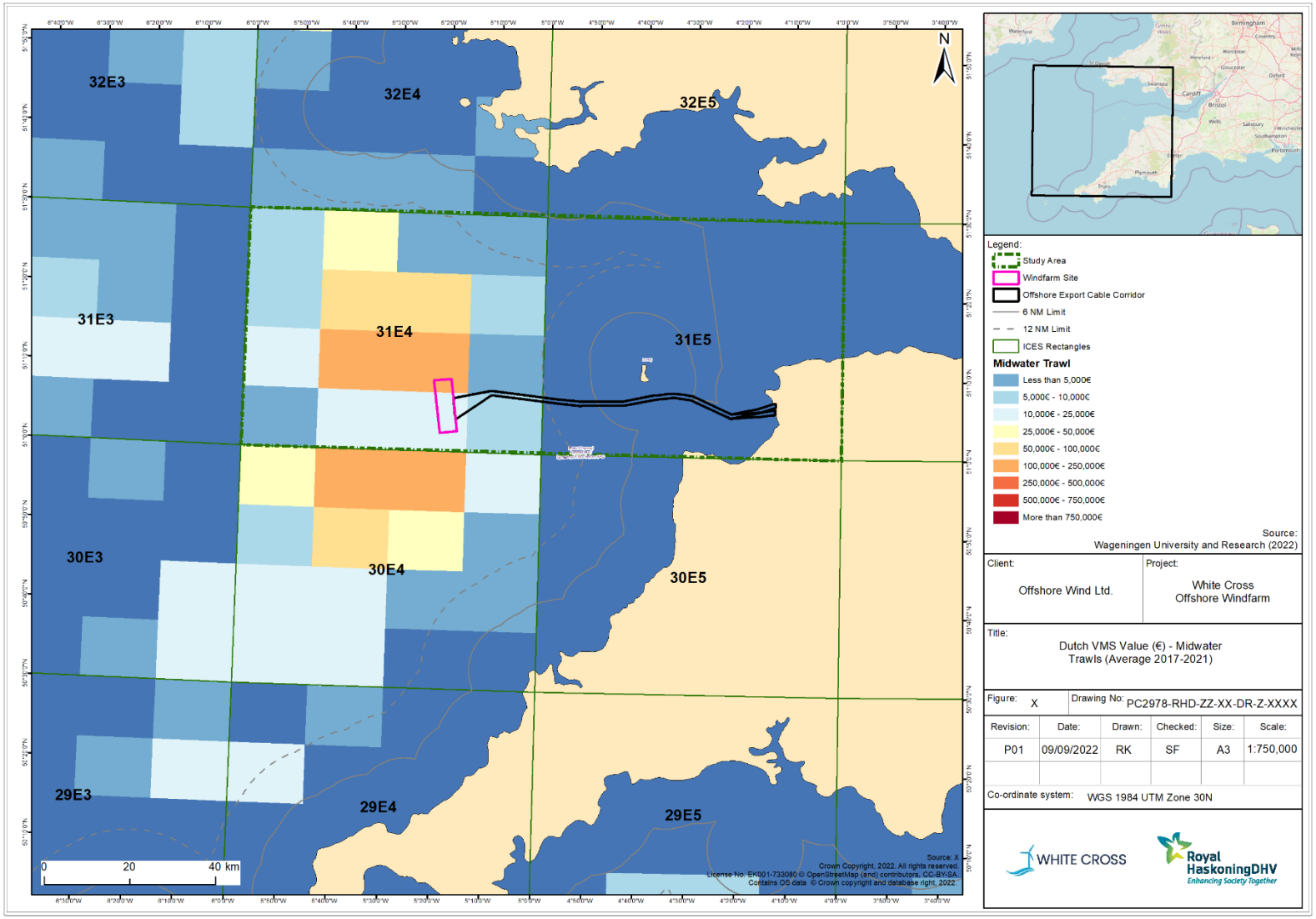


Figure 6.43: Irish VMS Effort (hours) Dredges (2014-2018) (Source: Marine Institute, 2019)

6.6 Dutch fleet

6.6.1 Landings data

The available MMO surveillance data does not include any records of Dutch registered fishing vessels within the WSA. As such, a chart of surveillance sighting of Dutch vessels has not been included.

An indication of the value of commercial fishing activities performed in the WSA by Dutch vessels is provided in **Figure 6.44** and **Figure 6.45**, based on analysis of Dutch landing values (€) by method and species by ICES rectangle. Data is presented as an annual average for the period 2017 – 2021.

Dutch vessels have only been recorded in one of the ICES rectangles that comprise the ISA; 31E4. This is likely due to the fact that rectangle 31E5 consists predominantly of waters that are in the UK's 12nm limit. The only method of fishing by Dutch vessels observed within the ISA is midwater trawls. It is not evident which fish are being targeted by these vessels. However, it is likely that they are targeting pelagic fish such as mackerel or herring[10].

From the landings data it appears that, in the context of the WSA, rectangle 31E4 represents an area of relatively high value landings for Dutch vessels. However, when considering the values presented in **Figure 6.44** it appears that only an average of approximately €50,000 worth of landings are derived from this rectangle annually, likely a negligible amount to the Dutch fleet.

[10] Shephard, S., Fung, T., Houle, J.E., Farnsworth, K.D., Reid, D.G. and Rossberg, A.G., 2012. Size-selective fishing drives species composition in the Celtic Sea. ICES Journal of Marine Science, 69(2), pp.223-234.

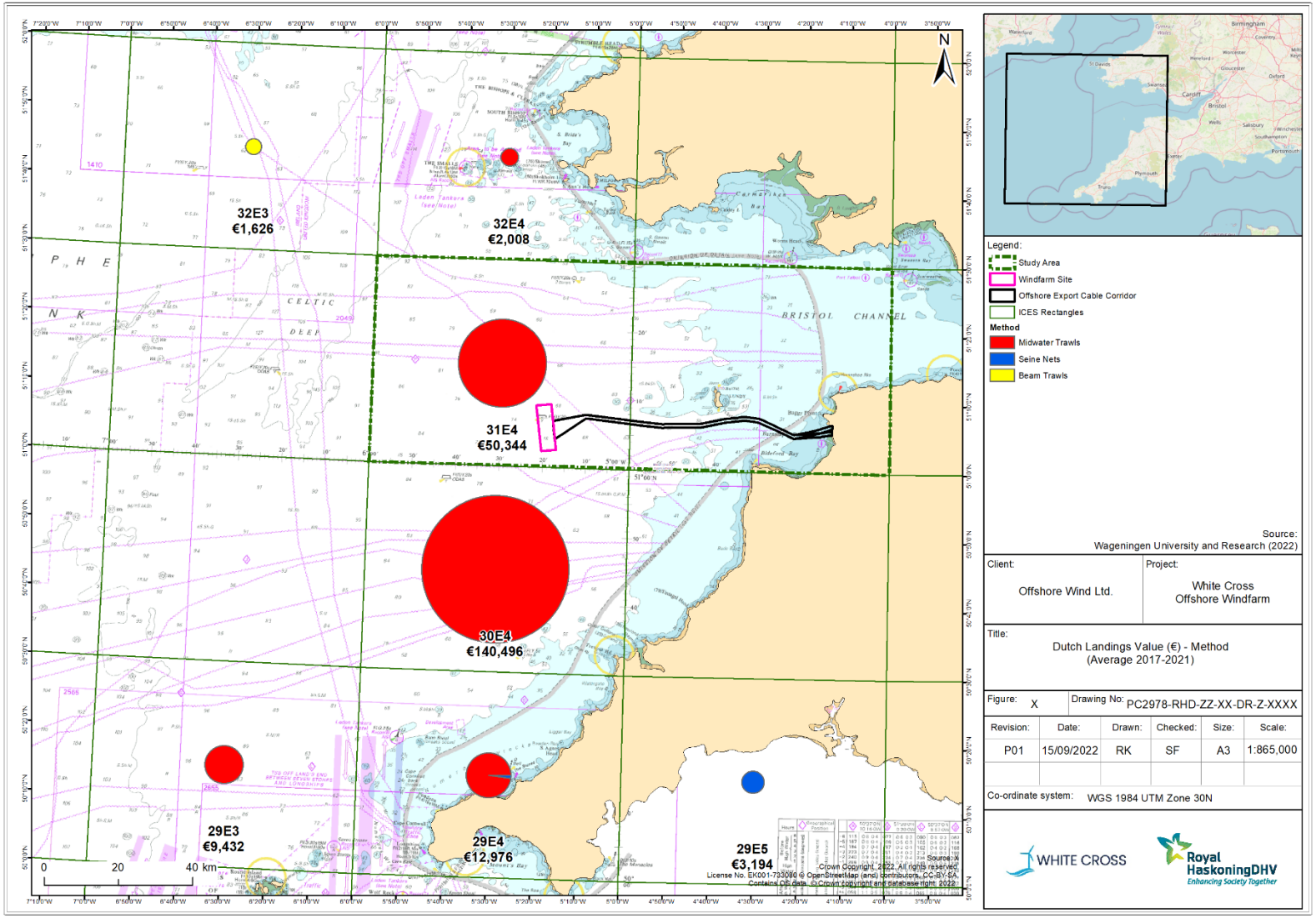


Figure 6.44 Dutch Landings (€) by Method (Average 2017 – 2021) (Wageningen University & Research (WUR), 2022)

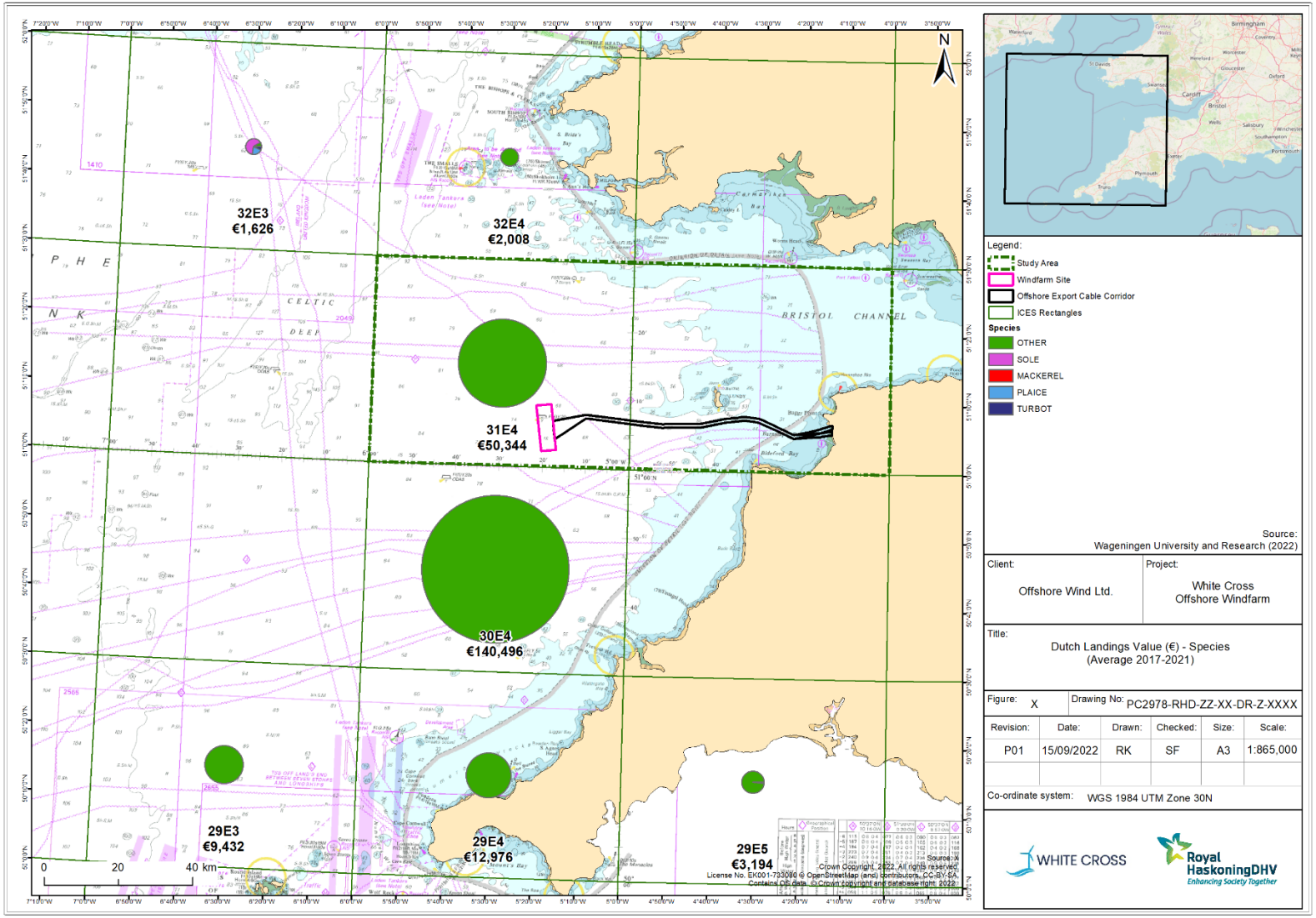


Figure 6.45 Dutch Landings (€) by Species (Average 2017 – 2021) (Source: WUR, 2022)

6.6.2 Spatial Distribution of Dutch Fishing Activity

The VMS data supports the landings data, indicating that the rectangles with the highest activity are 31E4 (in which the windfarm site is located) and 30E4, just to the south of it.

Analysis of VMS data for Dutch midwater trawls indicates that Dutch vessels are only present in one of the two ICES rectangles that comprise the ISA: rectangle 31E4 (**Figure 6.46**). In the context of the WSA, this rectangle appears to represent a relatively high value fishing ground for Dutch vessels. However, while this rectangle appears to be where the highest landings in the WSA are derived by Dutch vessels, fishing intensity appears moderate.

With regards to seine netting, it is apparent from **Figure 6.47** that activity in the Celtic Sea is low, and that no landings from seine nets are derived from the two ICES rectangles that comprise the ISA.

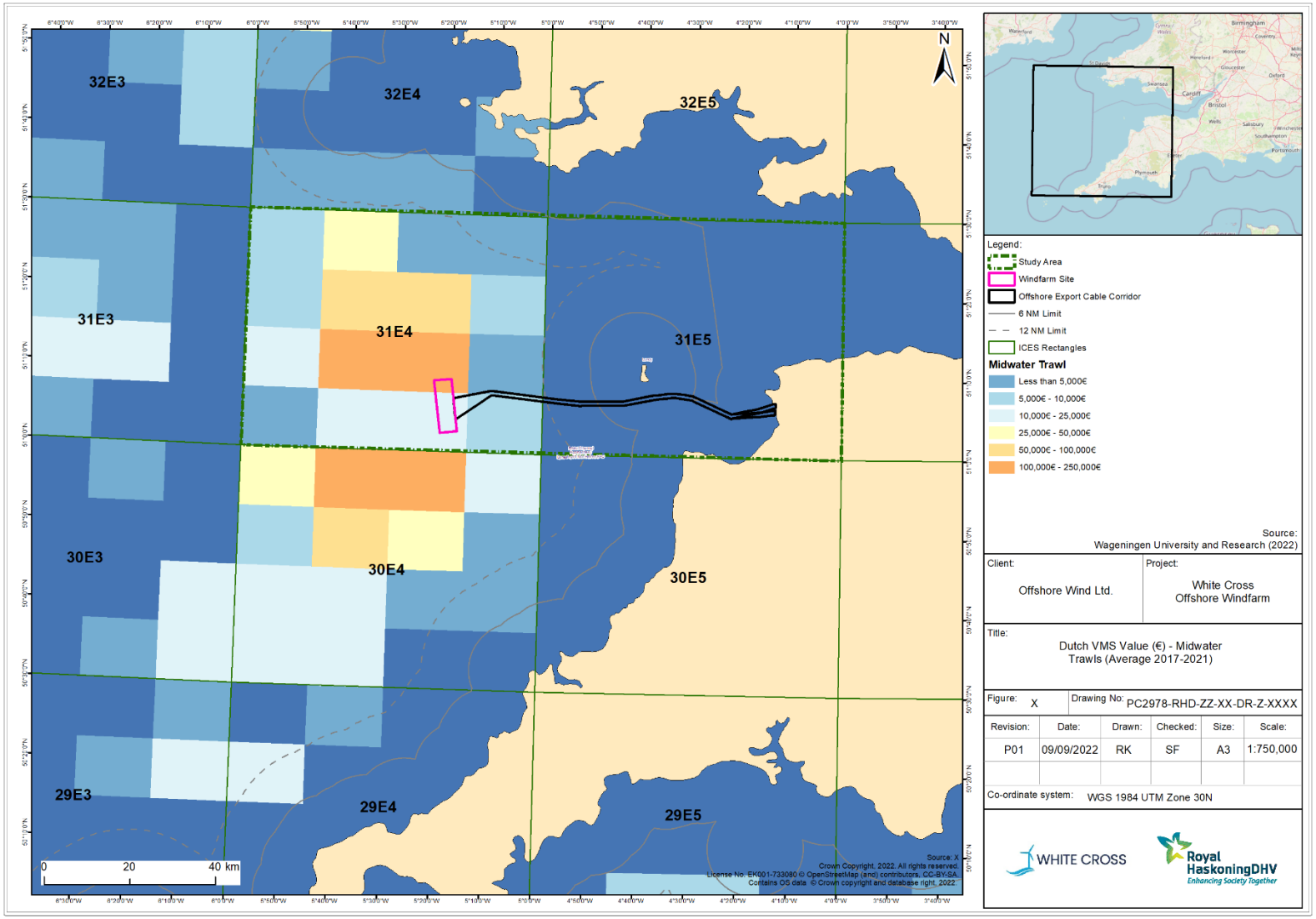


Figure 6.46 Dutch VMS (€) Midwater Trawls (Average 2017 – 2021) (Source: WUR, 2022)

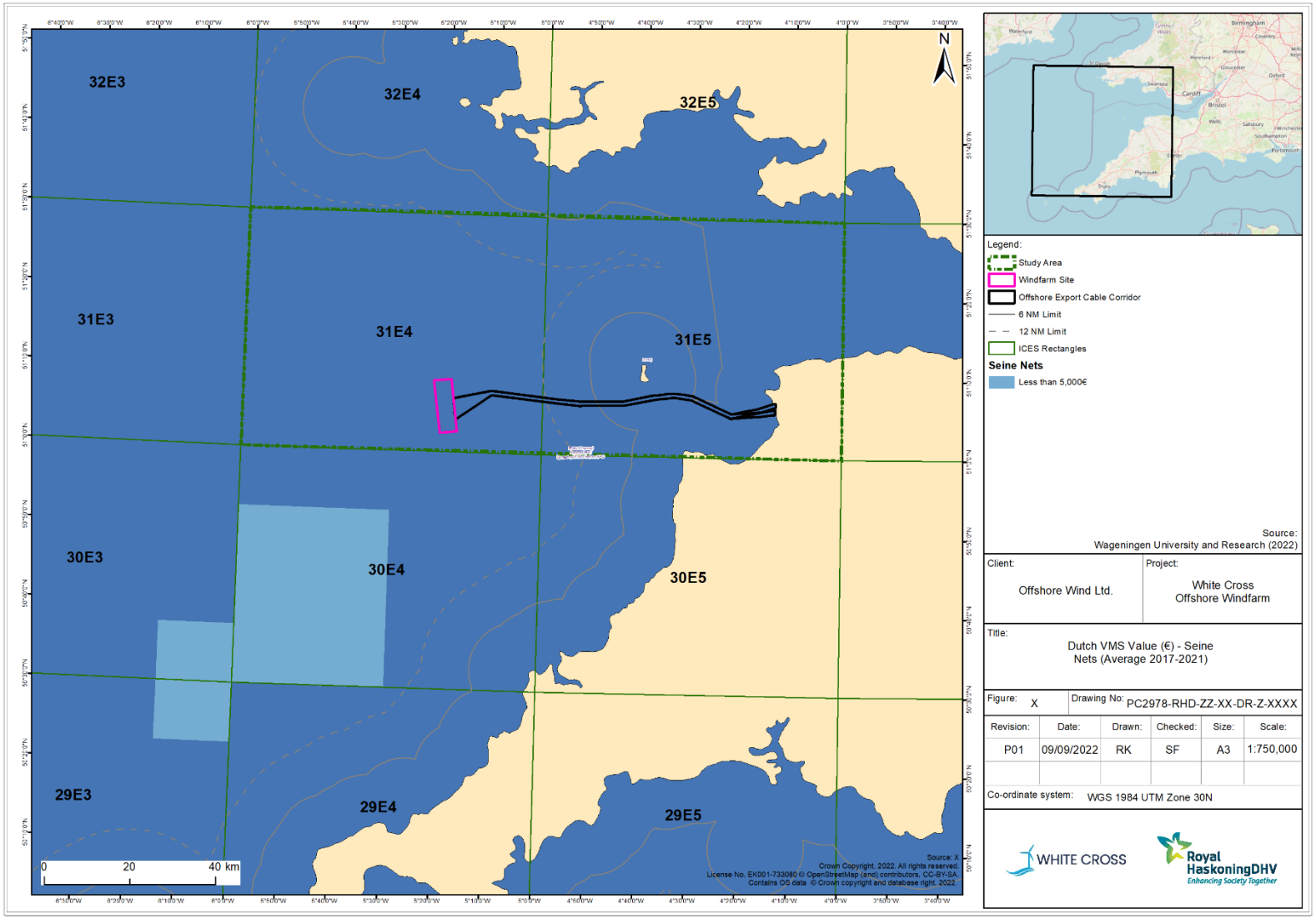


Figure 6.47 Dutch VMS (€) Seine Nets (Average 2017 – 2021) (Source: WUR, 2022)

7.0 Summary

As is apparent from the surveillance, value of landings by ICES rectangle and VMS data and from information obtained from direct consultation with fishers and their representatives, the windfarm site site, and a significant proportion of the offshore ECC sustain overall only low to minimal levels of fishing activity.

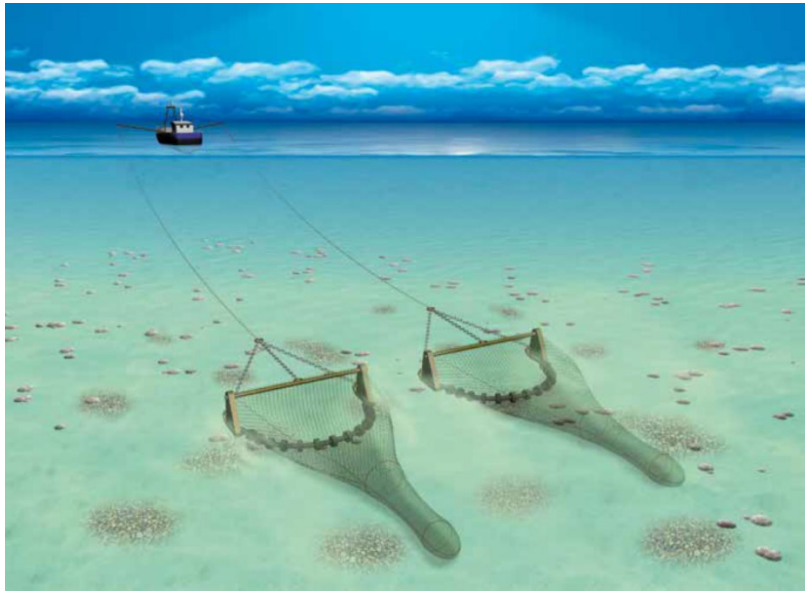
Vessels of the UK and four EU fleets, Belgium, France, Ireland, and the Netherlands have been identified as having a history of fishing the ISA. Of these, the highest values of activity are by Belgian vessels, predominantly beam trawlers targeting high value demersal species such as Dover sole, monkfish and skates and rays. The second most active category are UK vessels engaged in potting and trawling and to a lesser extent netting, with a number of the vessels being multi-purpose with the capacity to deploy more than one gear type. A notable proportion of the fishing grounds of the UK vessels are located within the 12nm limit, with a number overlaying the ECC.

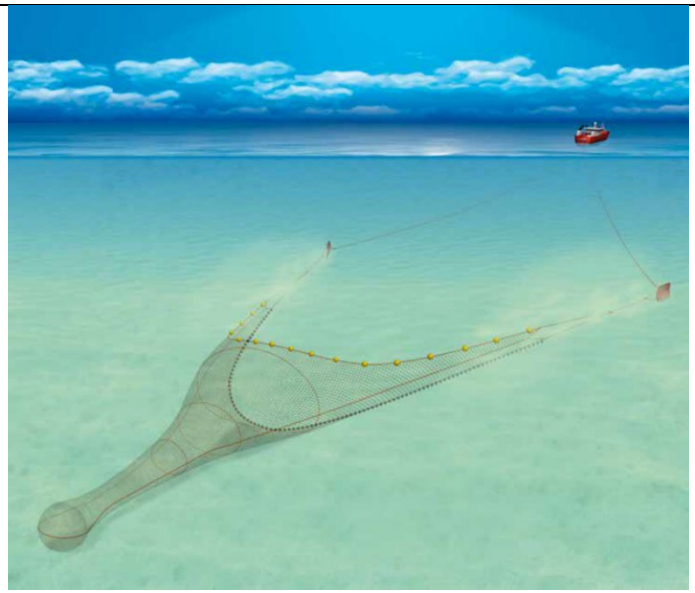
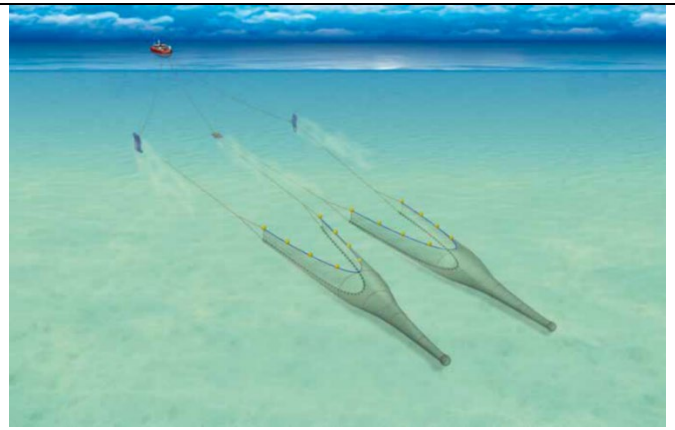
With regards to the seasonality of UK effort, for gears other than pots, the peak period in terms of value of landings is from May to July, with Dover sole being the principal target species. For potting, the peak period for targeting whelks is April and May, whereas for lobsters it is June to August.

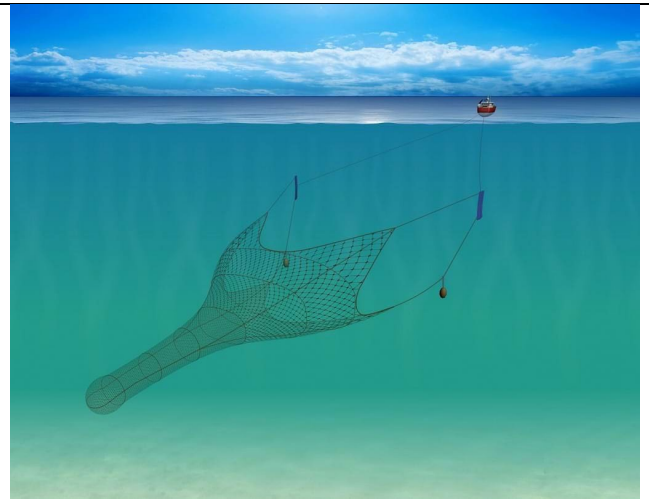
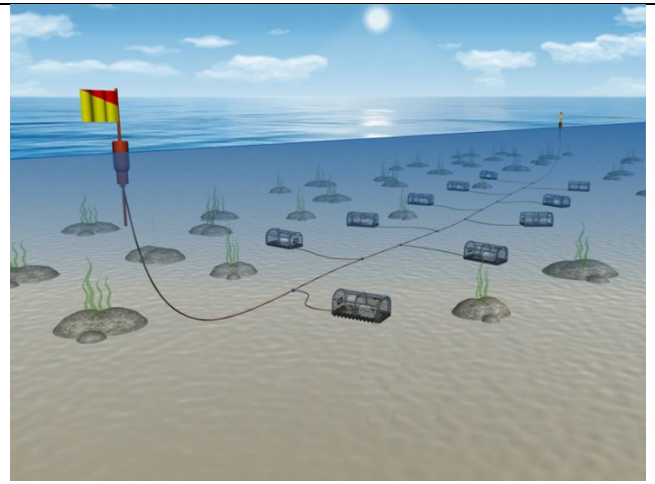
Activity by French registered vessels within the vicinity of the windfarm site and offshore ECC is similarly low in comparison to that in adjacent areas, with the activity being almost entirely by over 15 metre demersal trawlers, with Haddock and skates and rays being the most prominent species caught.

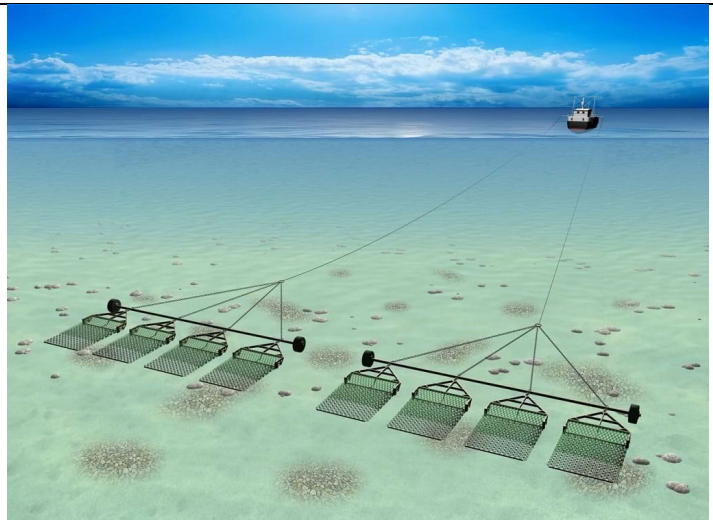
The two other nationalities recorded as fishing in the WSA were Irish and Dutch vessels. However, as shown by the data presented above, the activity by these vessels within the ISA is at negligible levels.

Annex 1 – Fishing Methods

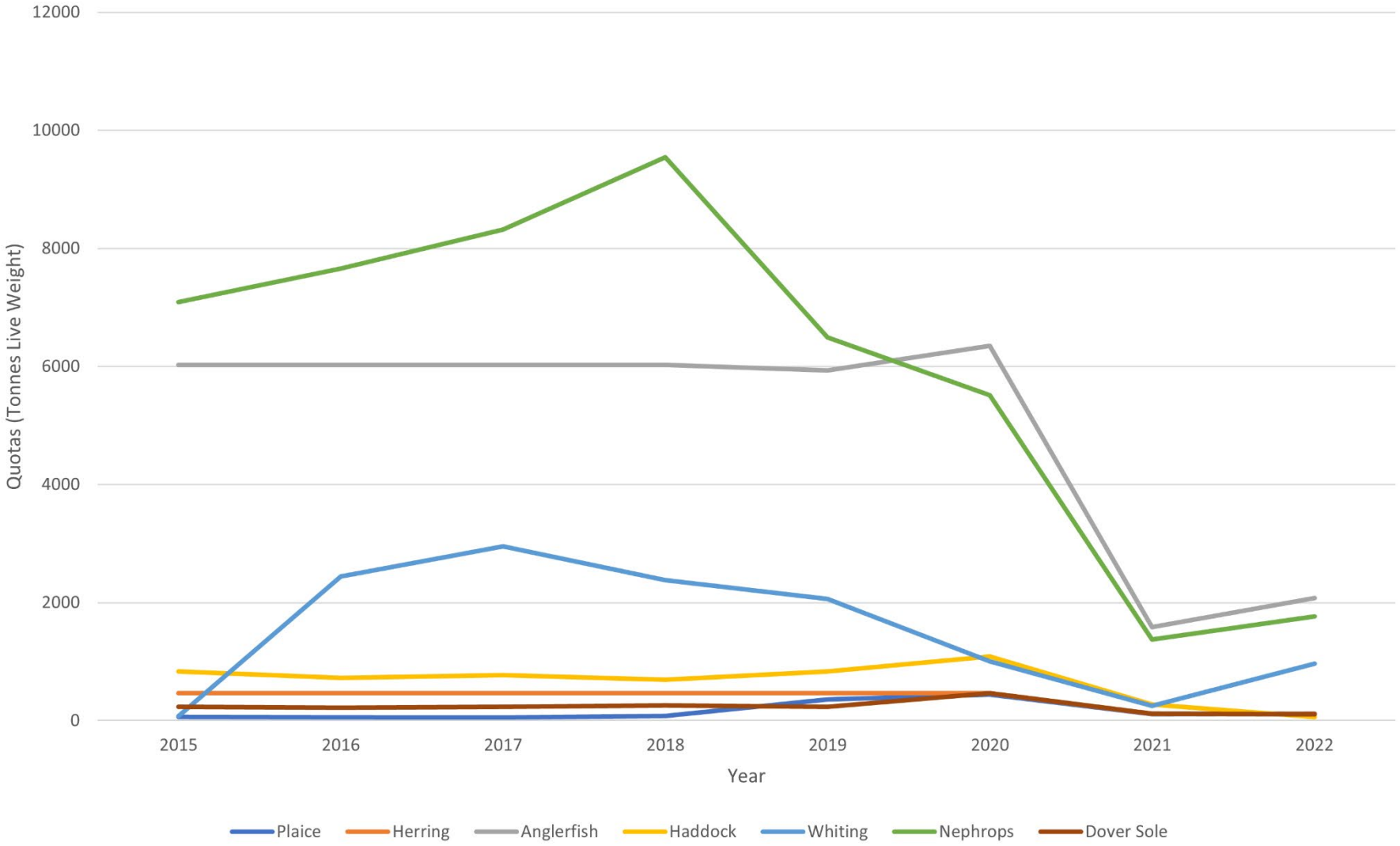
Fishing Method	Description	
Beam Trawling	Traditional beam trawls comprise a steel beam held above the seabed to a height of up to 50cm by shoes at each end, onto which a net is attached. The beam is towed using chain bridles that attach to each of the shoes and gear and is towed from the vessel's outrigger booms on either side of the vessel. Tickler chains strung between the shoes ahead of the net ground line are used to disturb fish to rise from the seabed substrate into the path of the mouth of the net. When operating in areas of hard, rocky substrate, chain mats are used comprising a lattice of chains attached to the beam to hang down across the mouth of the net. Beam trawls can range in length from 4-12m. Fully rigged weights of beam trawls can vary from four to six tonnes, although there has been a move to reduce weights and therefore drag in light of increasing fuel costs. Towing directions are influenced by a number of factors such as seabed contours, tidal flow direction, weather and avoidance of obstacles on the seabed.	 (Source: Seafish, 2015)

Demersal Otter Trawling (Single Rig)	A funnel shaped net towed over the seabed, with the fish being retained within the cod end. The horizontal opening of the net is achieved by a combination of the hydrodynamic and ground sheer forces acting on the trawl doors. The vertical opening of the net is maintained by a series of floats along the net headline and the base of the net is kept on the seabed by the weighted ground line, which for fishing over rough ground can be fitted with a series of rubber disks known as “rock hoppers”. The effective gear width of demersal otter trawls is the distance between the trawl doors which can range from 25m for smaller vessels and up to 65m for larger vessels. Towing speeds are between 2.5 and 3.5 knots, depending on tidal state, seabed conditions and weather.	 (Source: Seafish, 2015)
Demersal Otter Trawling (Twin Rig)	A more common type of demersal trawling is twin-rig trawling whereby two nets are towed side by side with trawl doors attached via sweep lines to the outer wing ends of each net. The inner wing ends of the net are attached to a central clump weight which is normally towed from a third towing warp. The advantage of twin-rig trawling is the increased area of seabed trawled. Towing speeds are generally the same as for single net trawling although the effective gear width can be as much as 110m.	

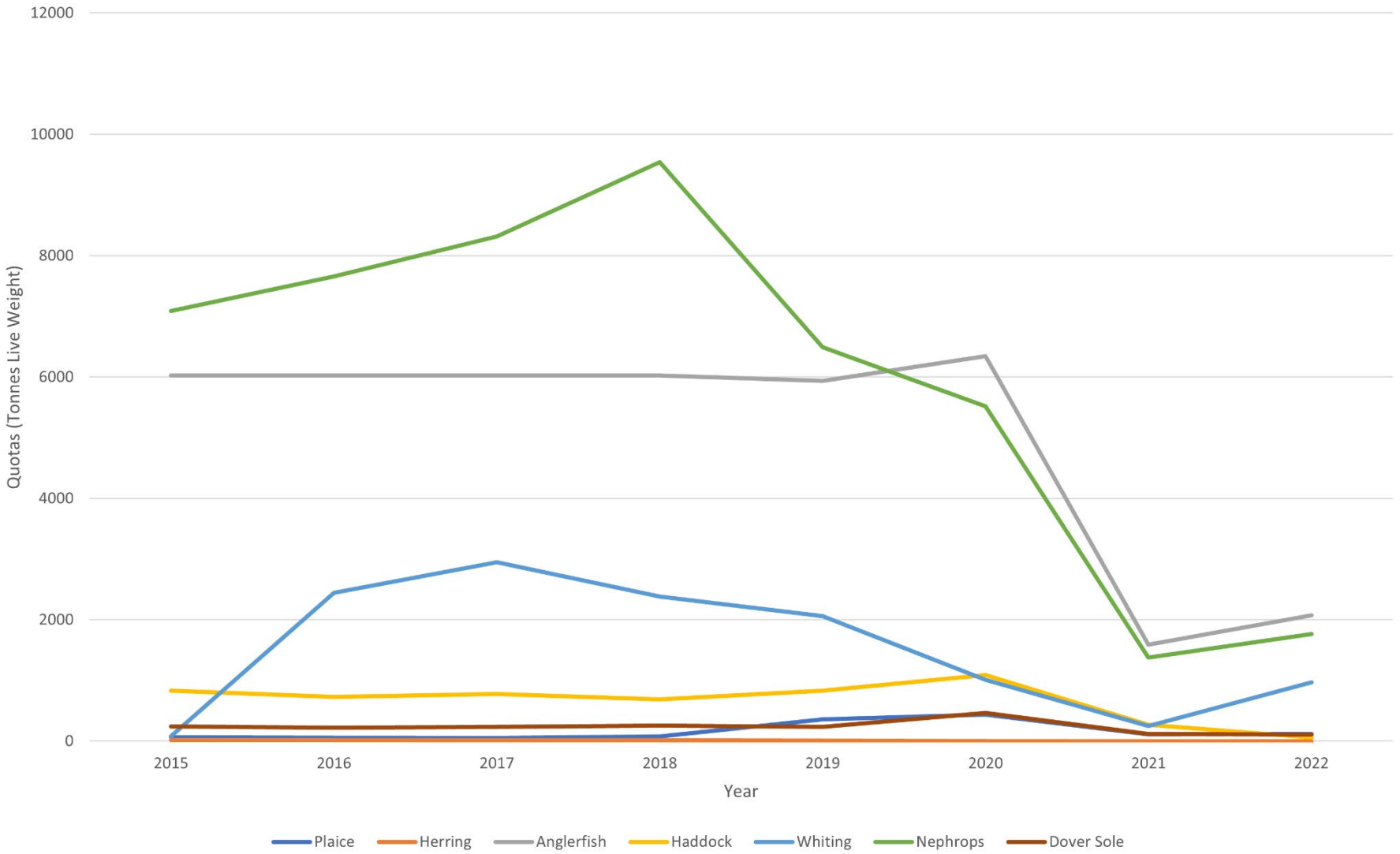
		(Source: Seafish, 2015)
Pelagic / Midwater Trawling	Pelagic trawling primarily targets shoaling species such as mackerel, sprats, and herring. Danish pelagic trawlers also occasionally catch sandeel. The location of the shoals is determined by sonar or vertical sounder echoes detected by the vessels. Pelagic trawls typically have a larger opening than demersal trawls, of up to 160m deep and 240m wide, and usually are made using four panels to help them achieve a greater height than demersal trawls.	 (Source: Seafish, 2015)
Potting	Crab and lobster pots usually have one or more "funnel" shaped entrances. Pot designs can however vary depending on region and target species. Pots can be rigged in fleets of between 10 to 50 pots per fleet, depending upon vessel size and the area to be fished. The lengths of fleets of pots may range from 100 to 500m, secured at each end with either anchors or weights. A variety of surface markers are used including flagged dhans (marker flags), buoys and cans. Soak times (the time between baiting and deployment to emptying and harvesting) generally varies from approximately 12 hours to two days, although this can be longer during periods of adverse weather.	 (Source: Seafish, 2015)

Scallop dredging	Dredges are rigid structures that are towed along the seabed to target various species of shellfish. Each dredge is designed specifically to suit the fishery and target species. Scallop dredges consist of a triangular frame, about 750mm wide, with a toothed bar at the front to flip the scallops out of the seabed and into a collecting bag behind it. This bag is made of chain links forming a chain mesh on the bottom, and chain or netting on the top. Several of these dredges are towed behind a heavy spreading bar, usually one bar from each side of the vessel. The length of bar and number of dredges is dictated by the power of the vessel and its length of side deck to work the dredges over. The number can vary from three or four on a small 10 metre boat, up to 18 - 20 on a 30-metre vessel.	 (Source: Seafish, 2015)

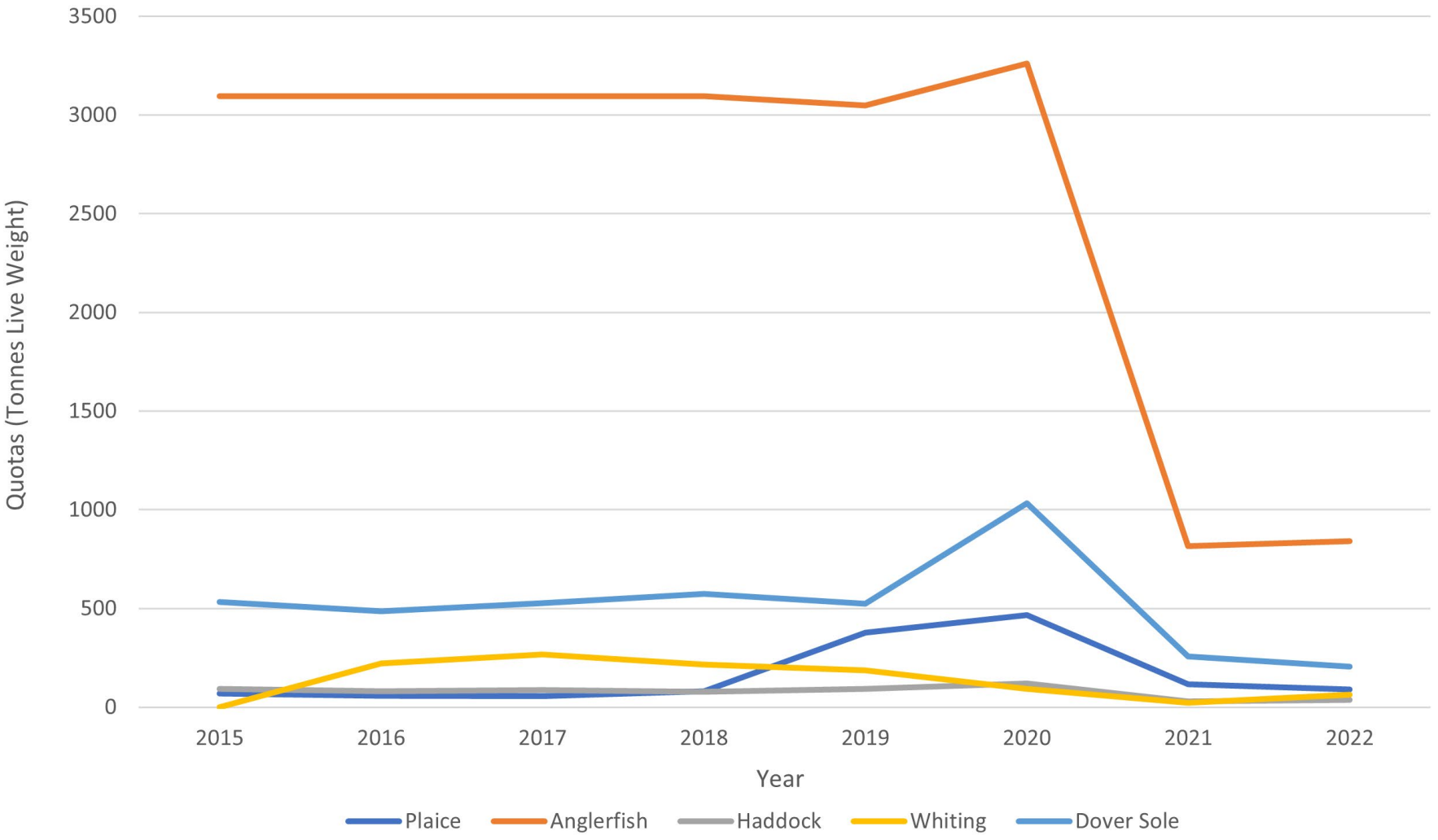
Annex 2 – Fishing Quotas



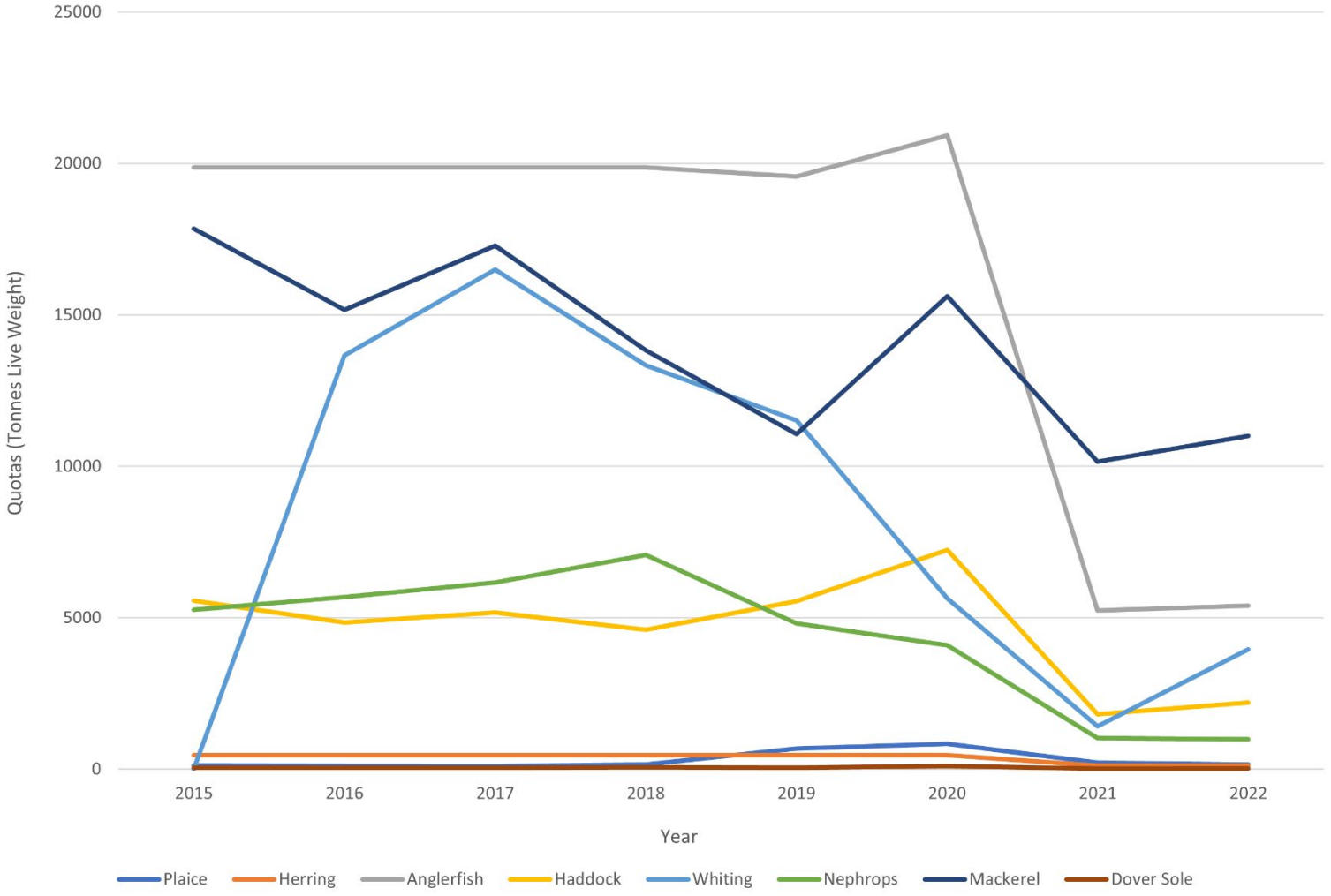
UK Fishing Quotas 2015 – 2022 in Sub-area VIIf (Excluding Mackerel) (Source: EU Council Regulation)



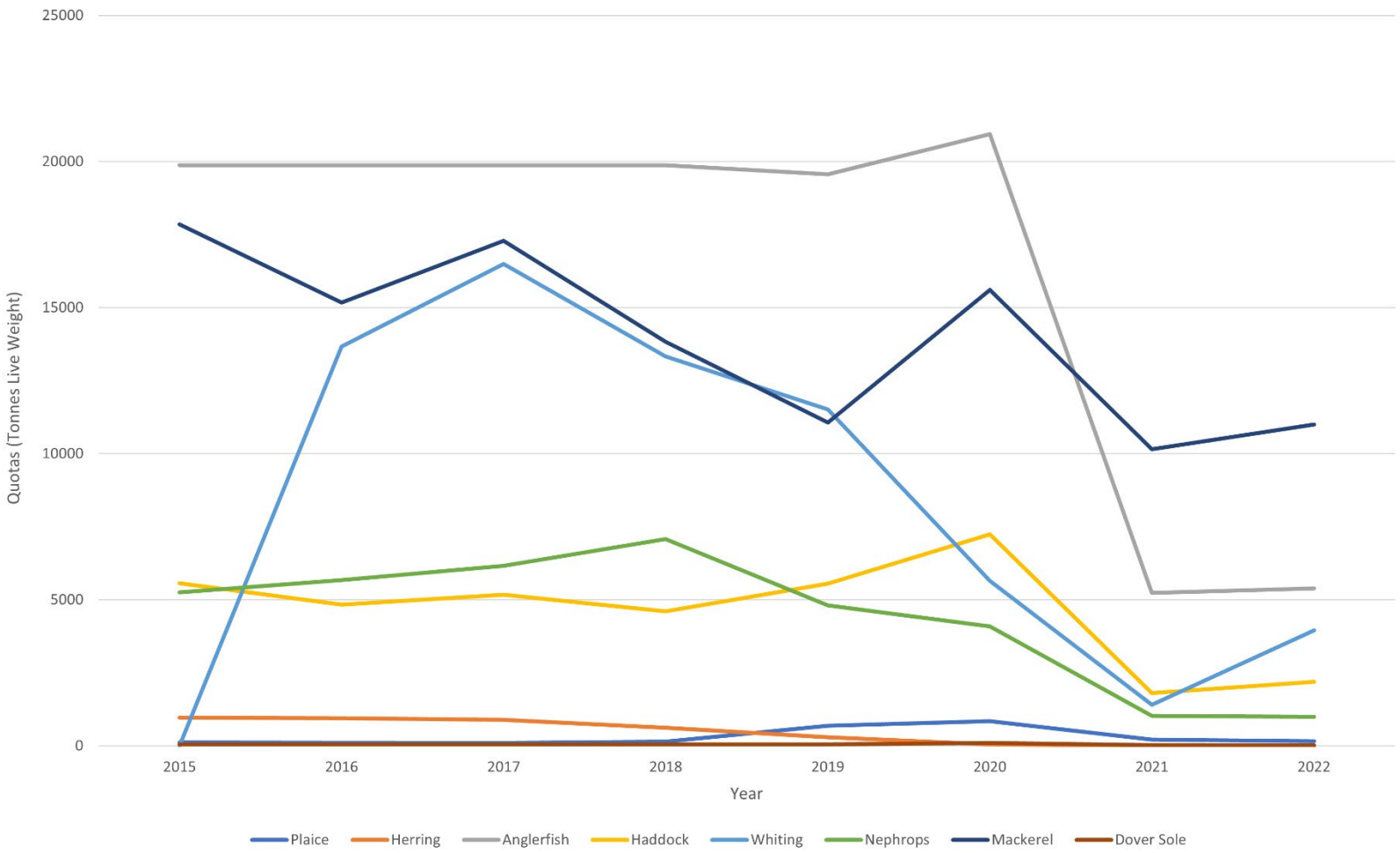
UK Fishing Quotas 2015 – 2022 in Sub-area VIIg (Excluding Mackerel) (Source: EU Council Regulation)



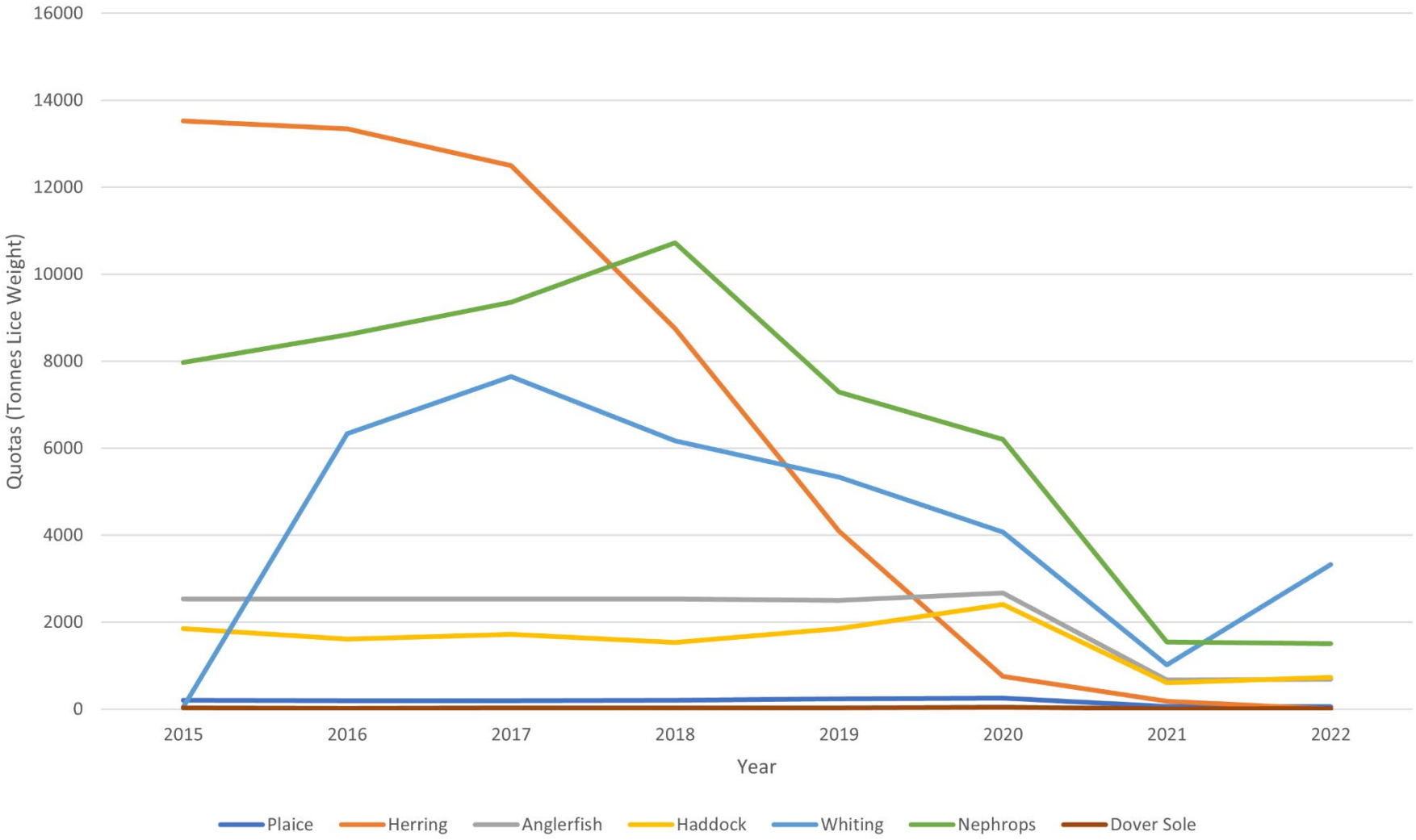
Belgian Fishing Quotas in Sub-areas VIIf and VIIg 2015 – 2022 (Source: EU Council Regulation)



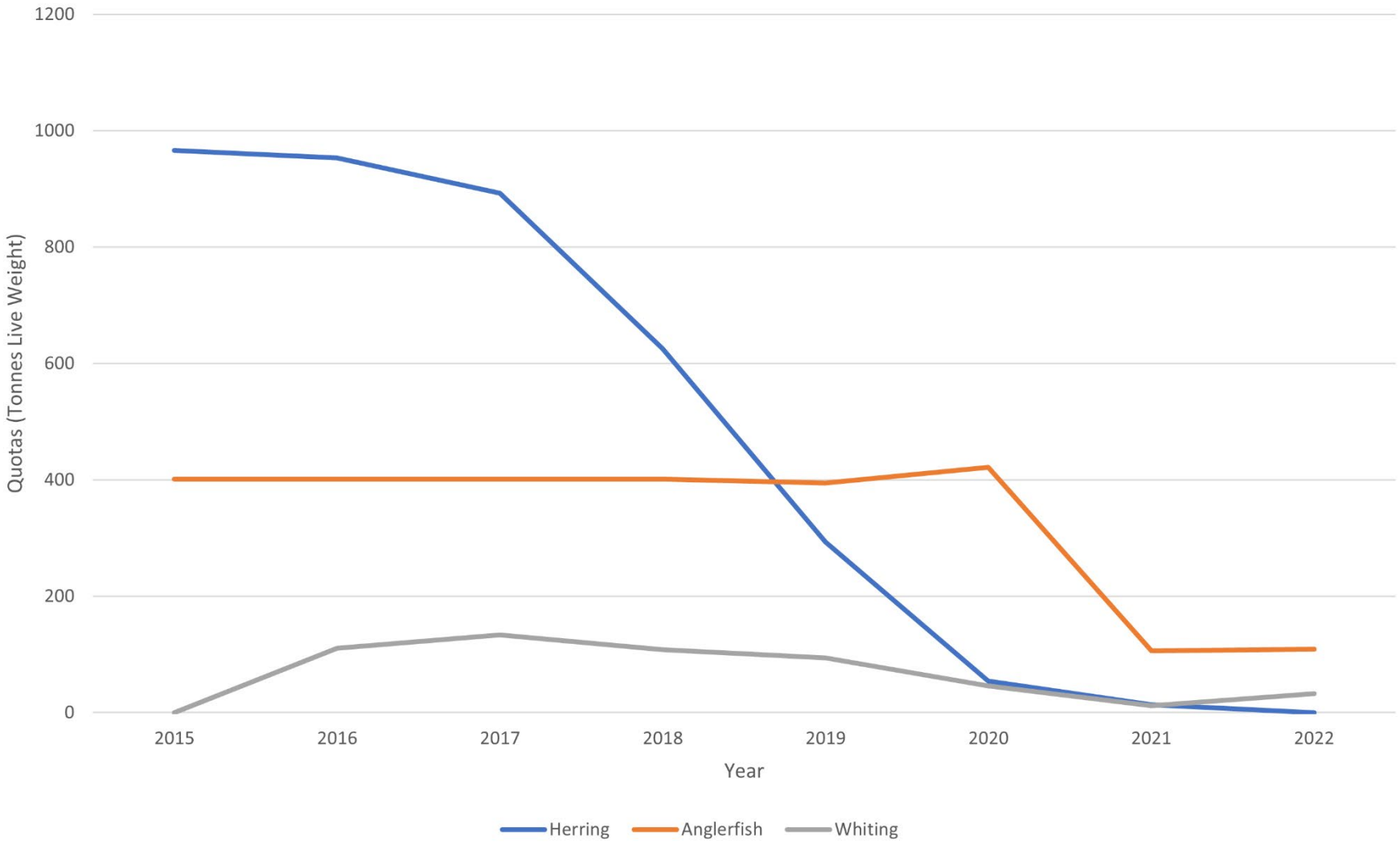
French Fishing Quotas in Sub-area VIIf 2015 – 2022 (Source: EU Council Regulation)



French Fishing Quotas in Sub-area VIIg 2015 – 2022 (Source: EU Council Regulation)

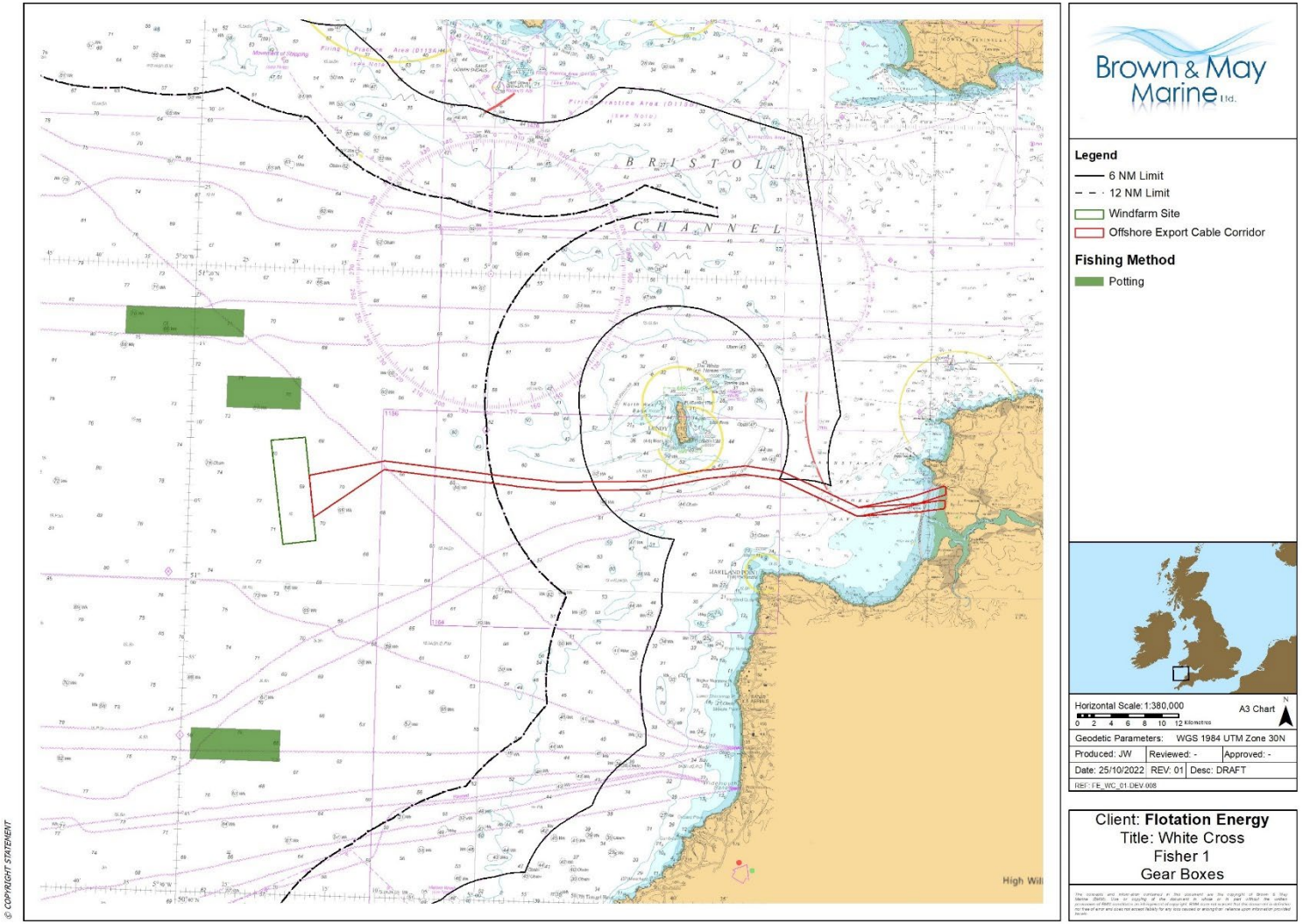


Irish Fishing Quotas in Sub-areas VIIf and VIIg 2015-2022 (Source: EU Council Regulation)

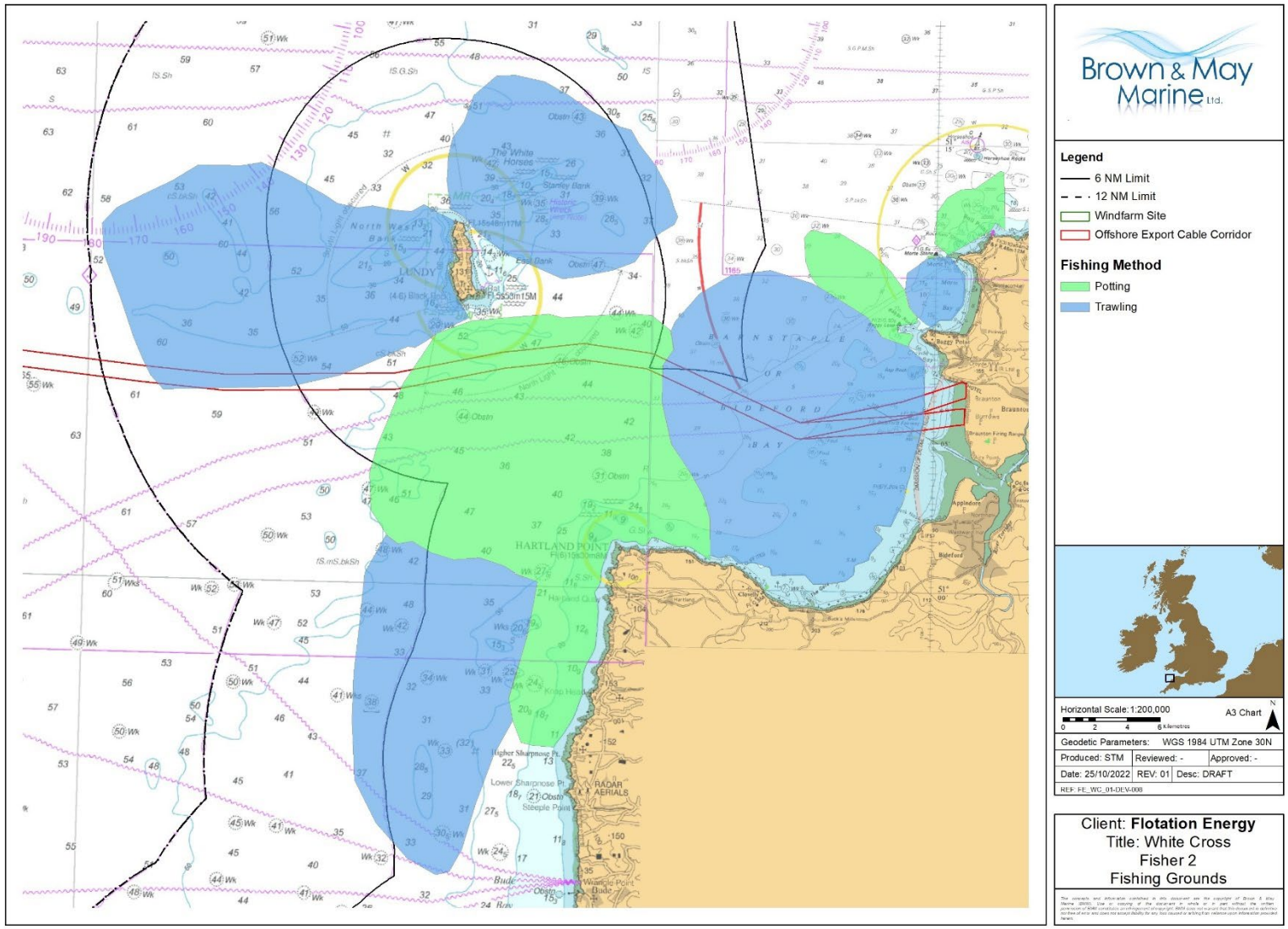


Dutch Fishing Quotas in Sub-areas VIIf and VIIg 2015-2022 (Source: EU Council Regulation)

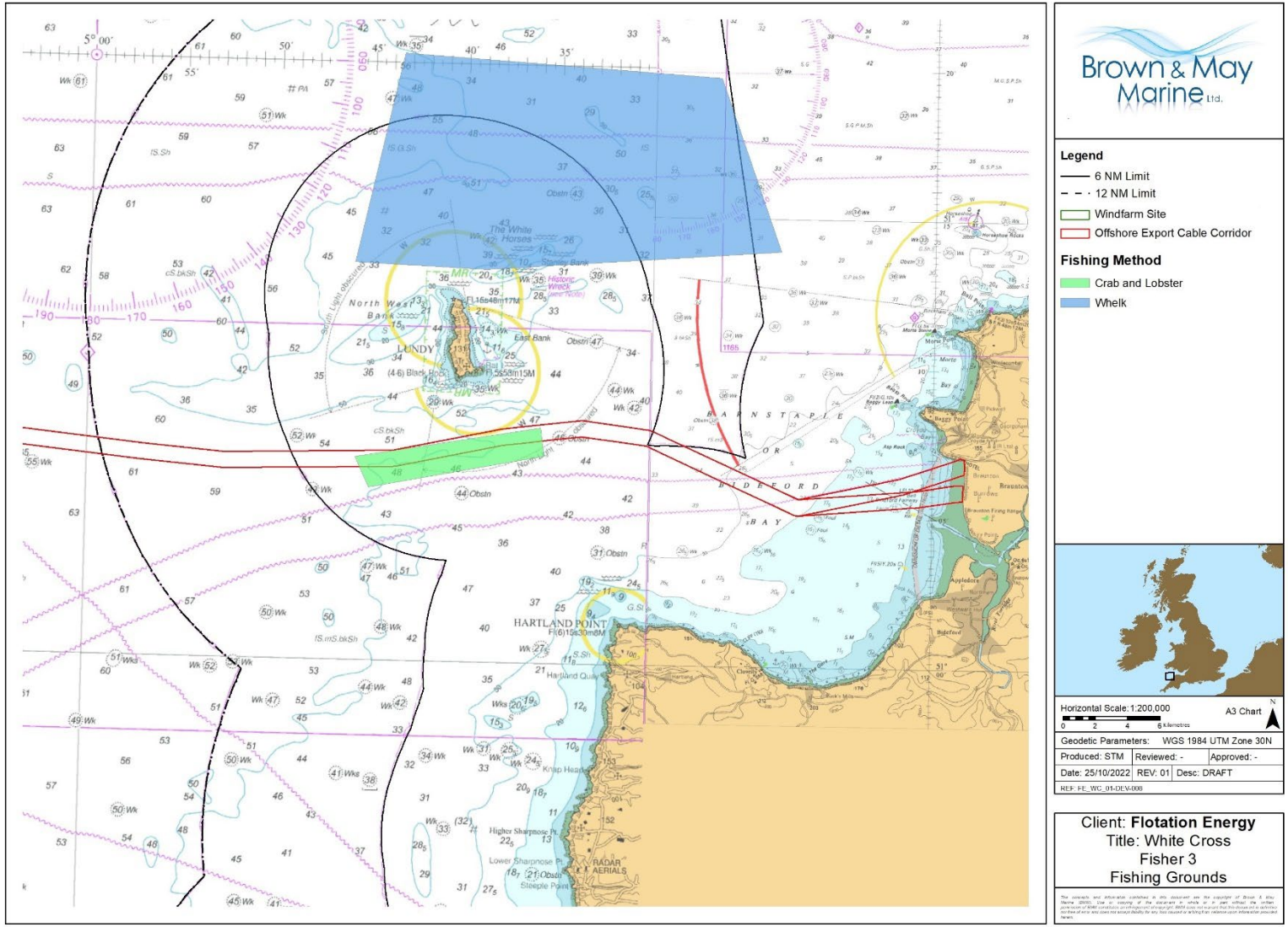
Annex 3 - Fishing Grounds from Consultation



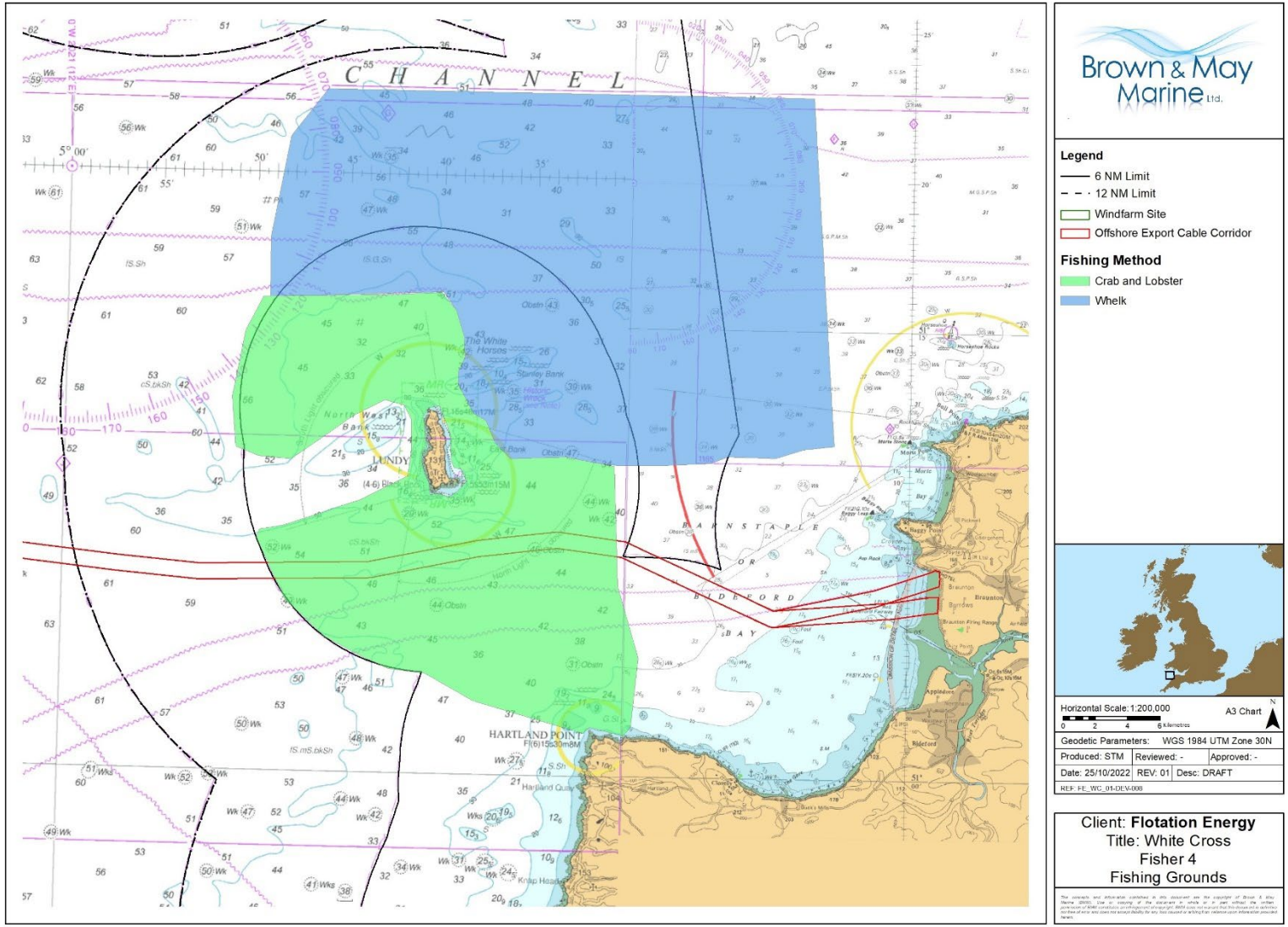
Potting Locations for Fisher 1



Potting and Trawling Grounds for Fisher 2



Potting and Whelking Grounds for Fisher 3



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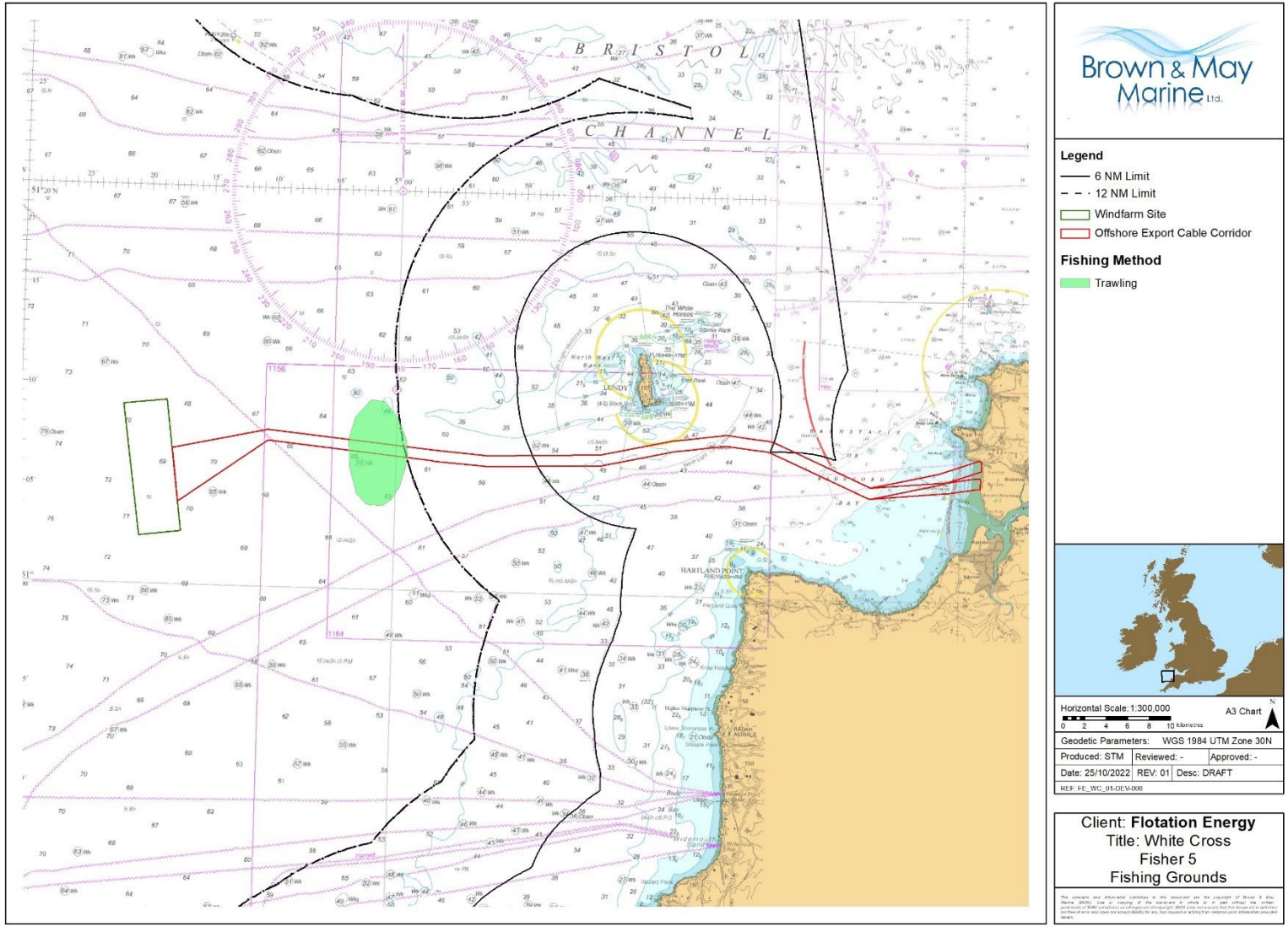
Potting and Whelking Locations for Fisher 4



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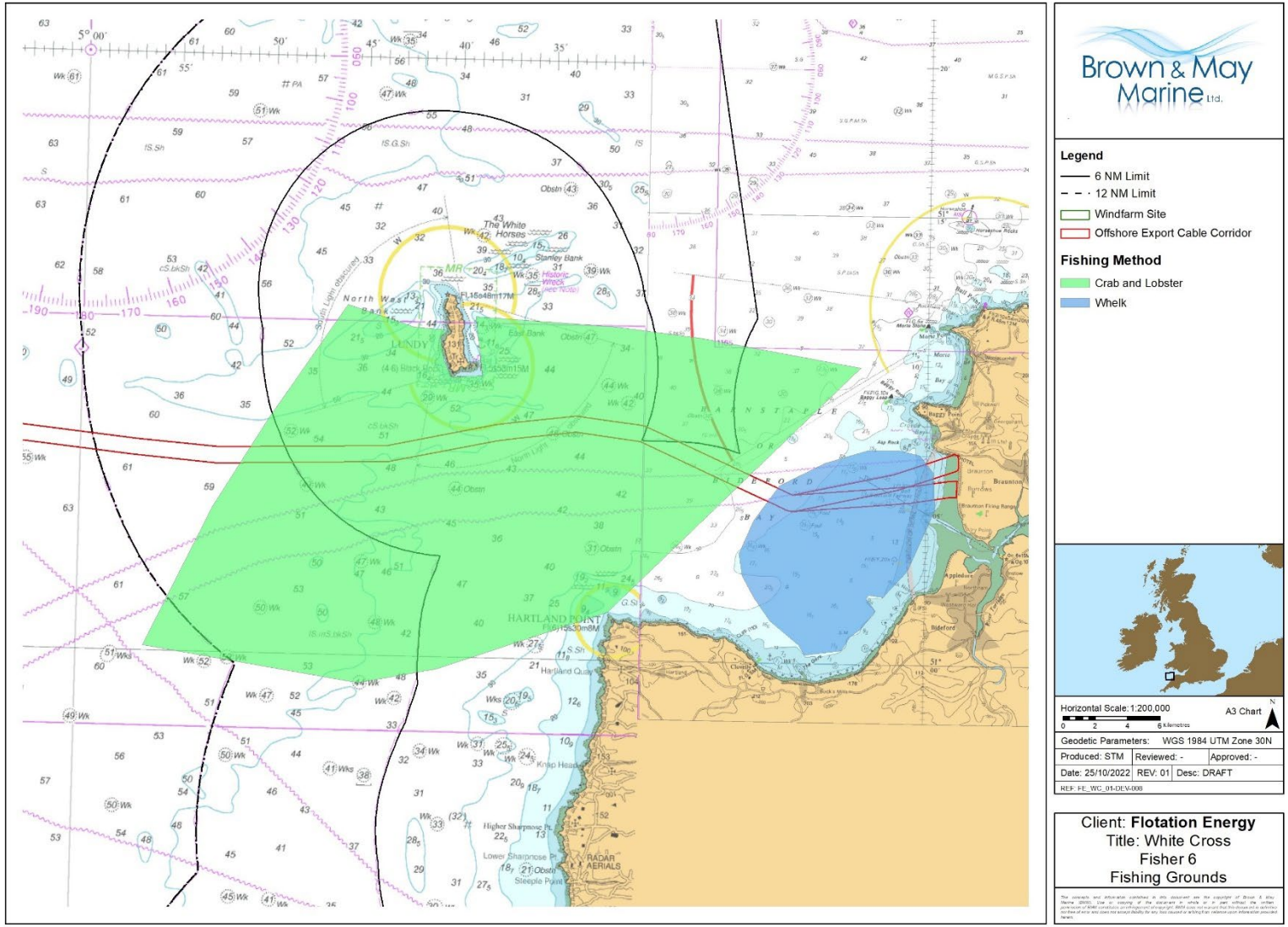
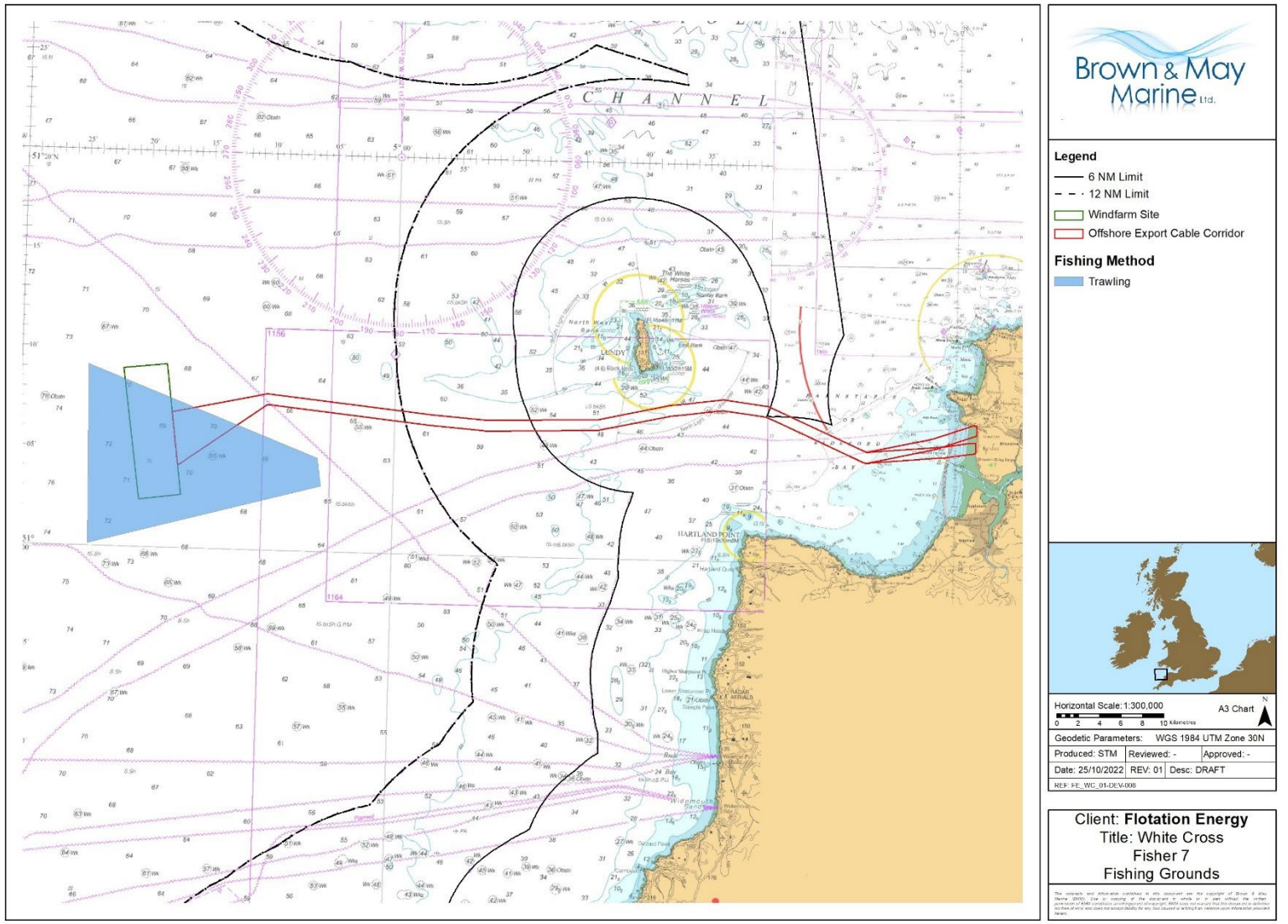
Trawling Grounds for Fisher 5



Potting and Whelking Grounds for Fisher 6



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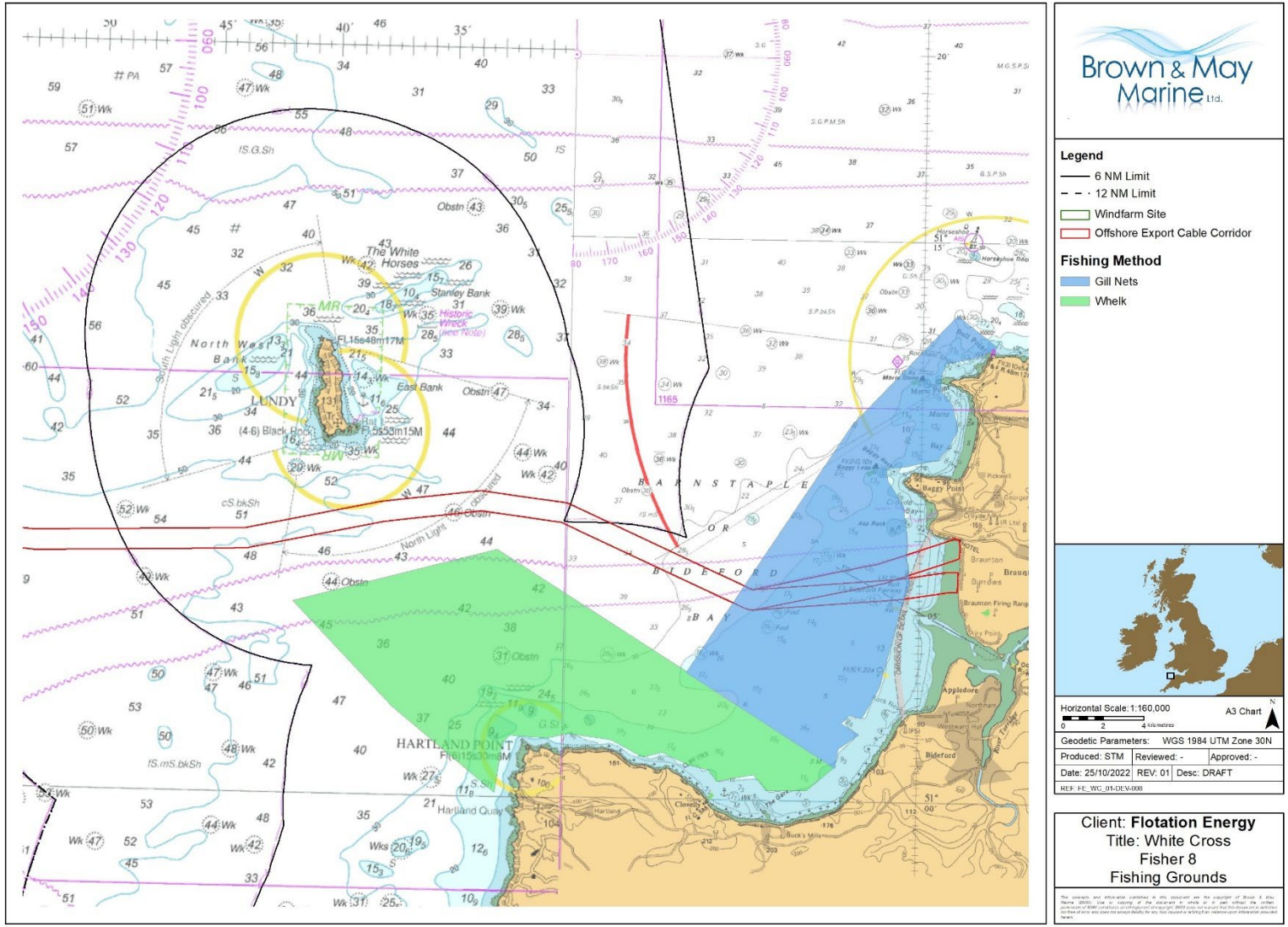
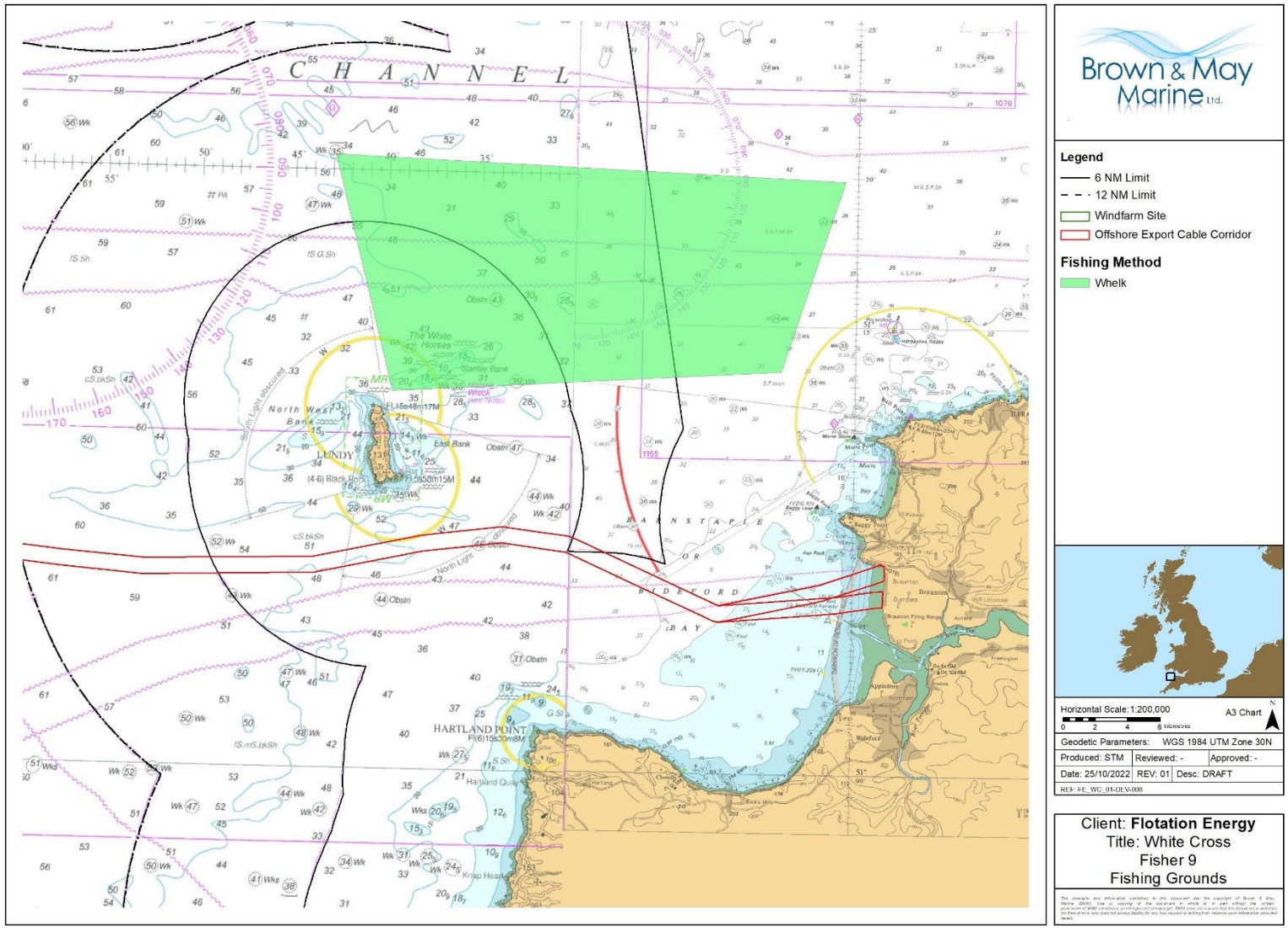
Trawling Grounds for Fisher 7



Gill-netting and Whelking Grounds for Fisher 8



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Whelking Grounds for Fisher 9

Annex 4 – Summary of Byelaws Enforced by the Devon and Severn IFCA

- That no person shall carry or operate any vessel using mobile fishing gear except in accordance with a permit; or a vessel less than 7 metres in overall length and is using a net with a mesh size of less than 31mm to fish for sand eels.

- Around Lundy Island, a permit holder or named representative is not authorised to use demersal mobile fishing gear, remove any spiny lobster, or remove any resources from the no-take zone.

- No mobile gear can be used in the River Taw/Torridge. Furthermore, a permit holder or named representative is not authorised to use any net other than a seine net and providing that; a) the net measures no longer than 20 metres in length; b) all species caught other than sand eels are returned immediately to the water. Byelaws also prohibit the use of any pot for the purposes of fishing, with an entrance at its narrowest point of 85mm or less in width unless the entrance to the pot at its narrowest point is fitted.

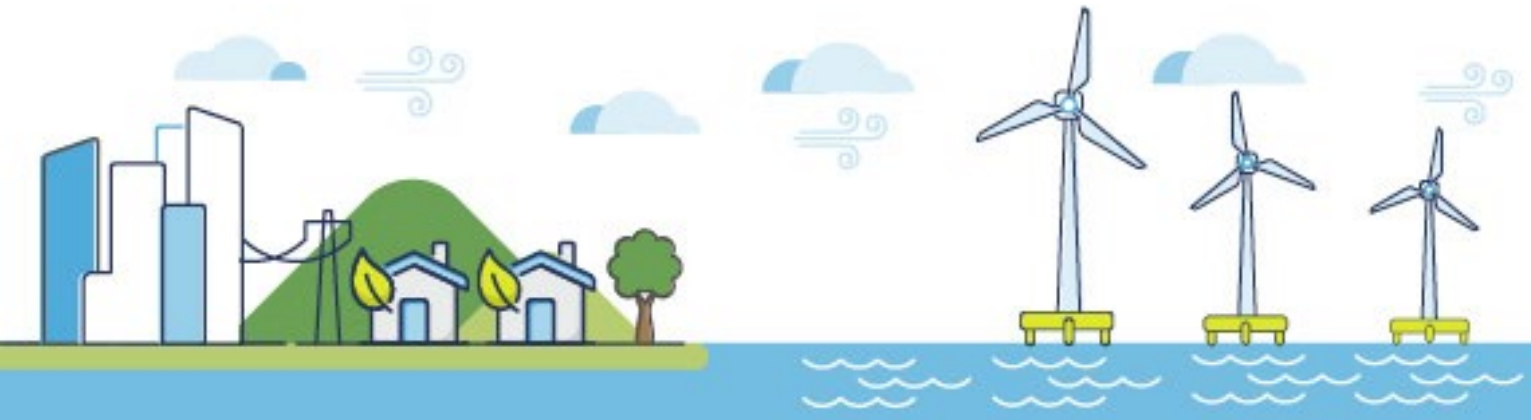
- No person is to fish for, take or kill scallops in Welsh waters during the period 1 May to 31 October inclusive in each year by any means, including diving. No British fishing boat is permitted, at any time, to fish for, take or kill scallops using a scallop dredge in Welsh waters, unless that boat's engine has a power output not exceeding 221 kilowatts.

- From 1 February to 31 March each year, it shall be prohibited to conduct any fishing activity in the following ICES statistical rectangles: 30E4, 31E4, 32E3. It shall be permitted to conduct fishing activities using pots and creels within the specified area.

WHITE CROSS

White Cross Offshore Windfarm Environmental Statement

Appendix 14.B: Conservation measures considered in the CEA



Appendix 14.B: Conservation measures considered in the CEA

	Monitoring	Management Status
South-West Deeps (East) MCZ	No monitoring occurs at this site yet.	To be assessed
North-West of Jones Bank MCZ	Vessel monitoring data indicates that bottom trawling, pelagic fishing and the use of static gear types occur within the site which is potentially damaging to the habitats present at North-West of Jones Bank MCZ.	Progressing towards being well managed. The vulnerability assessment conducted for this site suggests it is unlikely to be moving towards its conservation objectives but directed site condition monitoring data are needed to improve our confidence in this assessment. Progress is ongoing with regards to the recommendation of a fisheries management proposal.
Haig Fras and Greater Haig Fras (MCZ and SAC with Marine Components)	There is evidence of demersal fishing effort by both UK and non-UK registered vessels within the Greater Haig Fras MCZ. Mobile and static demersal fishing gear are used within the Greater Haig Fras site. Static gear is more commonly used over the reef itself. Pelagic hook-lining and fish netting also take place.	Progressing towards being well managed.
North-East of Haig Fras MCZ	No monitoring occurs at this site yet.	To be assessed.
East of Haig Fras MCZ	There is evidence of mobile and static demersal effort within the MCZ. UK and non-UK registered vessels have been active in the area.	Progressing towards being well managed. The vulnerability assessment conducted for this site suggests it is unlikely to be moving towards its conservation objectives but directed site condition monitoring data are required in improve our confidence in this assessment. Licensable activities are being managed and progress is ongoing with regards to the

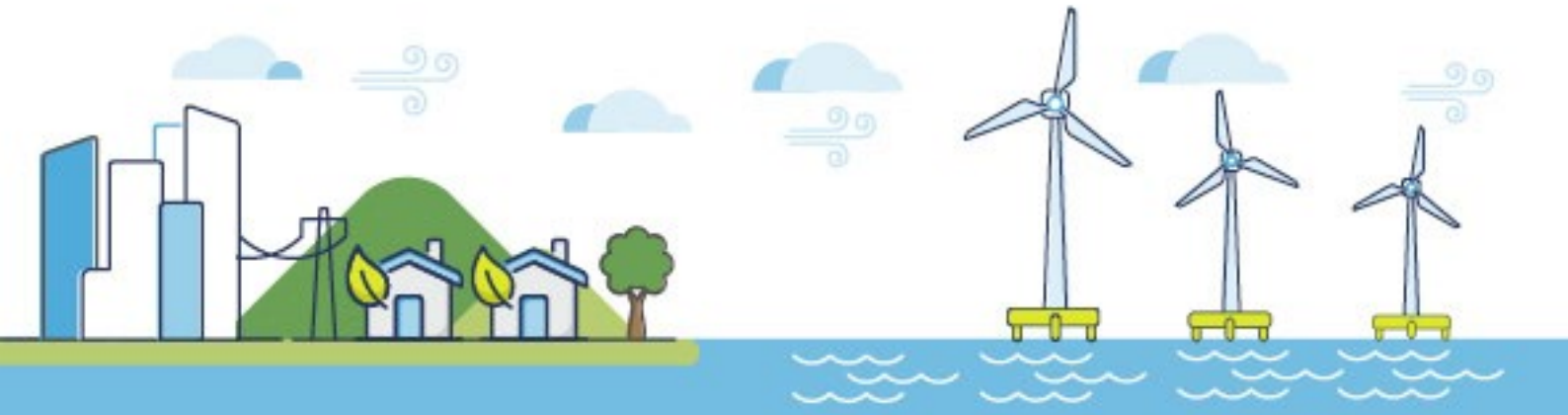
	Monitoring	Management Status
		recommendation of fisheries management proposals.
South of the Isles of Scilly MCZ	No monitoring occurs at this site yet.	To be assessed.
Western Channel MCZ	Vessel monitoring data indicate that there is mobile demersal gear and potting activity occurring within the MCZ.	Management is in development. The vulnerability assessment conducted for this site suggests it is unlikely to be moving towards its conservation objectives but directed site condition monitoring data are needed to improve our confidence in this assessment. Fisheries management is under discussion between the Marine Management Organisation, Defra and JNCC.
West of Wright-Barfleur MCZ	No monitoring occurs at this site yet.	To be assessed.
Wright-Barfleur Barrier Reef SAC	Both mobile and static gears are used in the site. UK and non-UK registered vessels have been active in the area, mainly using pots/traps and pelagic trawls, respectively.	Progressing towards being well managed. The vulnerability assessment conducted for this site suggests it is unlikely to be moving towards its conservation objectives but directed site condition monitoring data are required in improve our confidence in this assessment. Licensable activities are being managed and progress is ongoing with regards to the recommendation of fisheries management proposals.
South Dorset MCZ	Vessel monitoring data indicate that towing of mobile demersal gear and some pelagic trawling also occur within the MCZ. As this site straddles the 6–12 nm limit, advice on fishing impacts is the joint responsibility of Natural	Progressing towards being well managed. The vulnerability assessment conducted for this site suggests it is unlikely to be moving towards its conservation objectives but directed site condition monitoring data are required

	Monitoring	Management Status
	England and JNCC, and fisheries are subject to regulation through the Fisheries Act 2020.	in improve our confidence in this assessment. Licensable activities are being managed and progress is ongoing with regards to the recommendation of fisheries management proposals.
East of Start Point MCZ	No monitoring occurs at this site yet.	To be assessed.
Cape bank and Lands End Cape Bank MCZ and SAC	No monitoring occurs at this site yet.	To be assessed.
Bristol Channel Approaches SAC	No monitoring occurs at this site yet.	To be assessed.
South-West Approaches to the Bristol Channel MPA	No monitoring occurs at this site yet.	To be assessed.
South of Celtic Deep MCZ	No monitoring occurs at this site yet.	To be assessed.
Skomer, Skokholm and the Seas off Pembrokeshire SPA	No site-specific fisheries management measures are currently proposed for this site. A review of the management of fisheries in Welsh waters to ensure compliance with Article 6 of the Habitats Directive is to be carried out by the Welsh Government. Further information will be provided here as it becomes available. Fishing with static demersal gears (gillnets, and pots and traps) occurs within the site, in addition to mobile demersal and mobile pelagic gear.	Progressing towards being well managed. Monitoring currently implemented includes compliance with licence conditions, fishing vessel monitoring and condition monitoring of protected features.
West Wales Marine SAC	No monitoring occurs at this site yet.	To be assessed.
North Cardigan Bay	No monitoring occurs at this site yet.	To be assessed.

WHITE CROSS

White Cross Offshore Windfarm Environmental Statement

Appendix 14.C: Outline Fisheries Liaison and Coexistence Plan



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Approved by Client :	AP	*Electronic Signature*

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0	For issue	17/01/2023

Contents

1 Introduction

1.1 Project Background

White Cross Offshore Windfarm ("The Offshore Project") is a planned up to 100MW floating offshore wind farm that is owned by Offshore Wind Ltd (OWL), a joint venture between Cobra and Flotation Energy ltd ("The Applicant"). It will have up to 8 turbines located approximately 50 kilometres from the Devon/Cornwall coast, sitting outside of the UK's 12 nautical mile limit (Figure 1-1). In July 2021, The Crown Estate selected The Offshore Project, as well as two other floating offshore wind demonstration projects, through its leasing opportunity for early commercial-scale floating wind projects in the Celtic Sea.

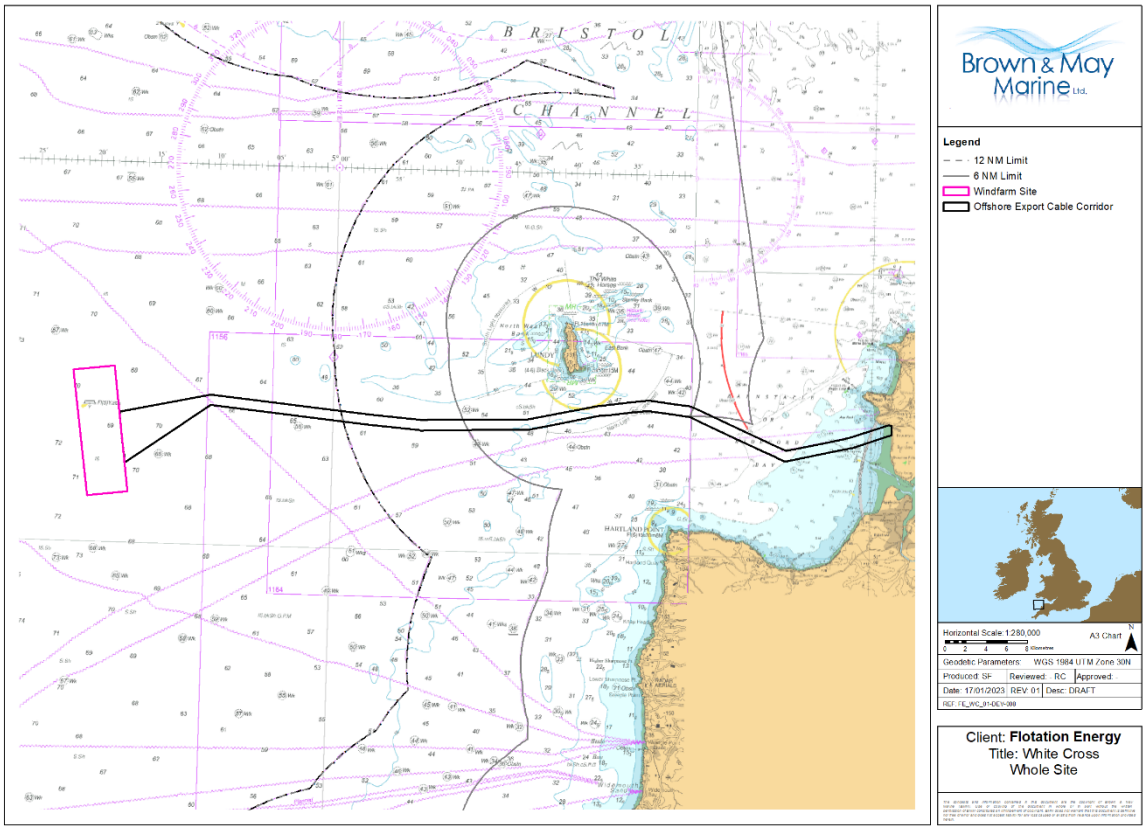

Figure 1-1 White Cross Offshore Windfarm Site Boundary

1.2 Purpose of this Document

This document provides a high-level outline of The Applicant's Fisheries Liaison and Coexistence Plan (FLCP). It sets out The Applicant's strategy to facilitate coexistence between White Cross Offshore Windfarm and the commercial fisheries industry and provides an outline of the approach to fisheries liaison during surveying, pre-construction, construction, operation and maintenance, and decommissioning phases of The Offshore Project.

The aim of this outline FLCP is to provide an overview of sections that will be included in the FLCP such as details on roles and responsibilities, legislation, fisheries liaison, consultation, coexistence and mitigation strategies. The FLCP will be produced post-consent based on this outline document and further developed and updated throughout the lifetime of The Offshore Project through consultation with fisheries stakeholders. This process helps document consultation and engagement

with commercial fisheries stakeholders to form an audit trail. It is likely that the FLCP will evolve as The Offshore Project progresses based on this ongoing consultation.

1.3 Guidelines and Regulations

The FLCP will be written with reference to the guidelines given and information collected from:

- Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) Best Practice Guidance for Offshore Renewables Developments. Recommendations for Fisheries Liaison. FLOWW 2014;
- FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds. FLOWW 2015;
- Direct consultation with fishers organisations (UK and foreign, individuals fishers and other fisheries stakeholders); and
- Consultation with the Marine Management Organisation (MMO), National Federation of Fishermen's Organisation (NFFO) and Devon and Severn Inshore Fisheries and Conservation Authority (IFCA).

2 Fisheries Liaison

2.1 Roles and Responsibilities

The Applicant has appointed a Fisheries Liaison Officer (FLO) to facilitate liaison with the fishing industry in order to maintain an open and clear relationship, and a Fishing Industry Representative (FIR) will be appointed (Table 2-1). Additional fisheries liaison roles may include an Offshore Fisheries Liaison Officer (OFLO) during offshore works.

Role	Responsibility
Fisheries Liaison Officer (FLO)	The FLO is the main point of contact for fisheries stakeholders. The FLO should establish a strong working relationship and maintain clear and accurate communications between White Cross Offshore Windfarm, any contractors or sub-contractors and fisheries stakeholders. They should also ensure compliance with the best practice guidelines. Other duties include: ▪ To provide The Applicant with details of the fishing activities, vessels and gear types that may be working within the vicinity of The Offshore Project; ▪ To monitor fishing activities within and around The Offshore Project ▪ To maintain a fisheries stakeholder database and communication log ▪ To maintain regular liaison with fisheries stakeholders and to distribute to fisheries stakeholders any necessary information and notices of activities about The Offshore Project ▪ To organise minuted meetings with fisheries stakeholders ▪ To obtain and transmit to OWL all relevant fishermen's concerns and sensitivities in respect of the various activities associated with The Offshore Project.
Onshore Fishing Industry Representative (FIR)	The FIR is a third-party contracted by The Offshore Project who has a background in commercial fishing and a strong connection to the local fishing industry in order to provide a balanced fishing industry opinion. The FIR will be the day-to-day contact for the fishers passing on fishing activity, relevant information and any communications to the FLO. The FIR will ensure the timely provision to fishers of information regarding the movement of project vessels, distribution of the Notice to Mariners (NtM), and urgent notice in the event of any potential marine hazards. They will also aim to identify any potential issues or conflicts as early as possible and suggest mitigation measures to the FLO.
Offshore Fisheries Liaison Officer (OFLO)	When deemed necessary, an OFLO may be onboard survey and construction vessels to assist with offshore communications with fishing vessels. This includes broadcasting vessel locations, safety zones and Health and Safety requirements. They will also contact any fishing vessels observed within the vicinity of project vessels to provide sufficient information and notice so that The Offshore Project and the fishing industry can coexist. They ensure survey operations and / or construction activity can run smoothly by providing effective communication and advice when fishing gear is sighted in the survey / construction area. The OFLO will keep the FLO informed of any activity offshore.

Table 2-1 Roles and Responsibilities

The commercial fisheries liaison activities to date have been and will continue to be the following:

- To identify and engage with all commercial fisheries stakeholders, statutory and non-statutory bodies and organisations relevant to The Offshore Project;
- Consultation, project updates and regular liaison with individual fishing stakeholders through port visits, meetings, emails, letters and calls;
- Notice to Mariners (NtM), Kingfisher Bulletins and other navigational warnings of the position and nature of the works issued to the fishing industry;
- To address the concerns of the commercial fisheries stakeholders and review mitigation strategies;
- To provide an FLO as the main point of contact for fishers and an FIR for day-to-day contact.

Fisheries stakeholders will be provided with the positions of offshore activities and infrastructure, submarine cable routes, areas of cable protection (if required) and vessel movements associated with The Offshore Project such as during surveys, construction, operations and maintenance and decommissioning.
Information will be distributed to all parties as early as possible and effective lines of communication will be maintained throughout The Offshore Project. Table 2-2 provides an outline schedule for the distribution of information to fisheries stakeholders to allow for sufficient prior notice and planning for those stakeholders. This will be updated and modified throughout the lifetime of The Offshore Project.

Activity	Timing
Construction Plan	Notices and information distribution not less than 2 weeks prior to the commencement of offshore construction activities.
Pre and post construction surveys	Notices and information distribution not less than 2 weeks prior to the commencement of offshore survey activities.
Operation and Maintenance activities	Notices and information distribution not less than 2 weeks prior to the commencement of offshore maintenance construction activities.
Meetings	Consultation meetings as required throughout project development.
Unscheduled Liaison	Additional unscheduled liaison and consultation will be undertaken by either the FLO or the FIR as required to address issues or fishers concerns as they arise.

Table 2-2 Timeframes for the Distribution of Project Information

2.2 Co-existence and Mitigation Procedures

The Applicant views co-existence as the wind and fishing industries working together within The Offshore Project and believes this can be achieved with a proactive approach to project planning and open and transparent communication from all stakeholders. The most sustainable form of coexistence

is avoiding and reducing impacts to both industries, as recommended in the Fishing Liaison with Offshore Wind and Wet Renewables Groups (FLOWW) guidelines.

Suitable procedures to facilitate coexistence will evolve through consultation with fisheries stakeholders, but following the precedence of similar developments it is expected that these measures will be utilised:

- Regular and routine communications to provide suitable notice to enable decisions around operating practices to be made (See Table 2-2)
- Minimising fishing clearance zones during surveys/construction where safe and practicable in order to reduce the size of the impact to the fishing industry
- Consideration of the use of guard vessels to assist with offshore works in order to help search for fishing gear ahead of survey/construction vessels and to liaise with fishing vessels in close proximity
- Development of a Standard Operation Procedure (SOP) for The Offshore Project's vessels and contracted vessels on how to reduce interactions with fishing activity and communicate proactively with the fishing industry during surveys, construction, and maintenance work
- Provision of guidance in the event of lost or snagged fishing gear
- Development of a claim's procedure for damaged or lost fishing gear during pre and post construction surveys, construction, and maintenance work
- Early provision of construction and cable laying plans, including location and methods for cable protection, if required.

Fisheries clearance zones will be provided to the fishing industry prior to surveys and construction, and individual fishermen that may be affected by the works will be contacted directly to assess their need for further mitigation or where appropriate, assess their eligibility for compensation using an evidence-based approach to form a Cooperation Agreement.

FLOWW guidance states (FLOWW, 2014): "*Commercial compensation should only be used as a last resort when there are significant residual impacts that cannot otherwise be mitigated. Compensation should only be paid on the basis of factually accurate and justifiable claims. There is therefore an obligation upon Farm affected fishermen to provide evidence (such as three years' worth of catch records and VMS data) to corroborate any such claims*".

2.3 Consultation

BMM have engaged with fishing industry representatives from statutory and non-statutory bodies since May 2022 when they were appointed FLO. The engagement to date has been in the form of face-to-face meetings, electronic communication, and telephone conversations.

Notice to Mariners and survey information was distributed to the North Devon's Fishermen's Association before a geophysical Survey in May 2022. Initially, fisheries clearance was not requested but during the survey, cooperation agreements were offered to several fishers in the Export Cable Corridor whose gear was on the route and determined by the OFLO and survey manager to be at risk of entanglement. The fishers relocated their gear and the survey coexisted with the industry until its completion.

The first consultation meetings with national and regional representative fisheries associations as well as individual fishers occurred in September 2022 to inform the Environmental Impact Assessment Commercial Fisheries Technical Report. Numerous associations and individual fishermen along the Cornish, Devonshire and South Welsh coast were met to inform them further of project plans, gain understanding of their fishing activity and take on board their feedback and concerns.

Further consultation and public meetings were held in October 2022 and will continue to be held throughout the planning process.

2.4 Conclusion

The Applicant believes that the strategies detailed in this outline FLCP will create positive coexistence between The Offshore Project and the fishing industry. The Applicant will continue to engage with the local fishing industry throughout all stages of The Offshore Project and manage any concerns that are raised by fishers.

3 References

FLOWW (Fisheries Liaison with Offshore Wind and Wet Renewables Group) Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison: FLOWW (2014).

FLOWW (Fisheries Liaison with Offshore Wind and Wet Renewables Group) Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds: FLOWW (2015).