

The commercial fisheries and shellfisheries ES chapter reports on the likely effects associated with the demolition and construction stage and operational stage of the proposed development.

Existing Conditions

A desk-based study was used to determine existing commercial fisheries and shellfisheries and fishing effort in the study area. Baseline conditions were determined from a review of past surveys/studies and data, including the following sources:

- Marine Life Information Network;
- The Centre for Environment, Fisheries and Aquaculture Science;
- Marine Management Organisation;
- Environment Agency National Fish Populations Database;
- Cornwall Inshore Fisheries and Conservation Authority; and
- Published literature.

The waters around the south-west of England provide an important variety of fishing areas and species for commercial fishing activity.

The study area comprises:

- Six ports within vicinity of the site that received fishery landings in 2023 with majority of vessels listing 'River Fal – Falmouth' as their home port which is located within the site boundary;
- The value of the fish landed into ports within vicinity of the site in 2023 was £988,942.37;
- The most valuable species landed into ports within vicinity of the site included scallops, lobsters, crabs, monks, anglers, pilchards, crawfish, mackerel and Ballan Wrasse;
- Between 2007 – 2020 the total weight of fish landed has increased continually. Covid-19 decreased fishing efforts and caused a temporary decrease in fish landed;
- The Fal Estuary is designated as a Shellfish Water with a number of zones classified for shellfish harvesting (including native oyster, blue mussel, and queen scallops). There are no classification zones for shellfish harvesting within the site, the closest being 1 km north-west of the site; and
- The fish wholesaler Falfish have a landings and processing plant within the site to the south-east of Western Wharf.

Ramboll

The following sensitive receptors were identified:

- Vessels less than 10 metres deploying traps, targeting lobsters, crabs and/or wrasse;
- Vessels less than 10 metres targeting native oyster, blue mussels, and queen scallops;
- Vessels more than 10 metres deploying dredges, targeting scallops;
- Vessels more than 10 metres deploying surrounding nets, targeting pilchards; and
- Any/all fishing vessels landing to Falfish.

Demolition and Construction

There may be the potential for the demolition and construction stage of the proposed development to result in impacts on commercially exploited fish and shellfish species. This in turn could indirectly affect the productivity of the fisheries that target them.

During the demolition and construction stage the following impacts and effects have been assessed:

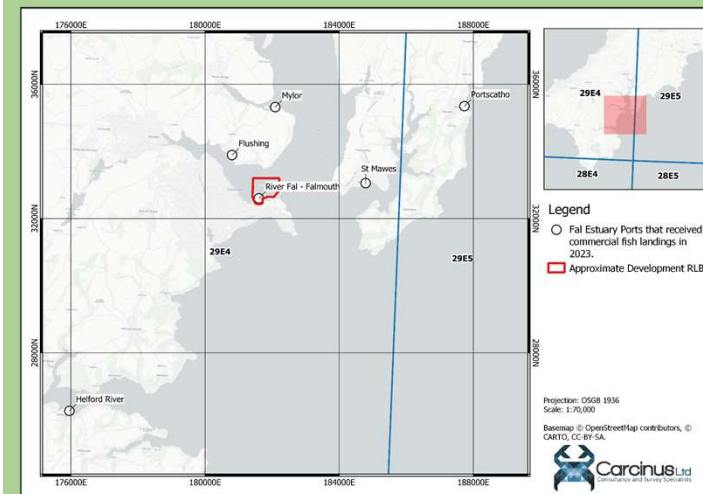
- Temporary exclusion of fishermen/fishing effort from fisheries/harvesting areas in the vicinity of the site which would result in not significant adverse effects ranging from negligible to minor in scale;
- Temporary and permanent displacement of stock away from the site which would result in a negligible adverse not significant effect; and
- Temporary and permanent depletion of stock which would result in a minor adverse not significant effect. Increased suspended sediment concentrations and deposition would not represent a significant change from ambient conditions and would be within natural variation levels outside of the site boundary. Any effect would also be away from known nearby fisheries, such as for lobster, crabs and other shellfish caught within the Fal and Helford Estuary.

Operation

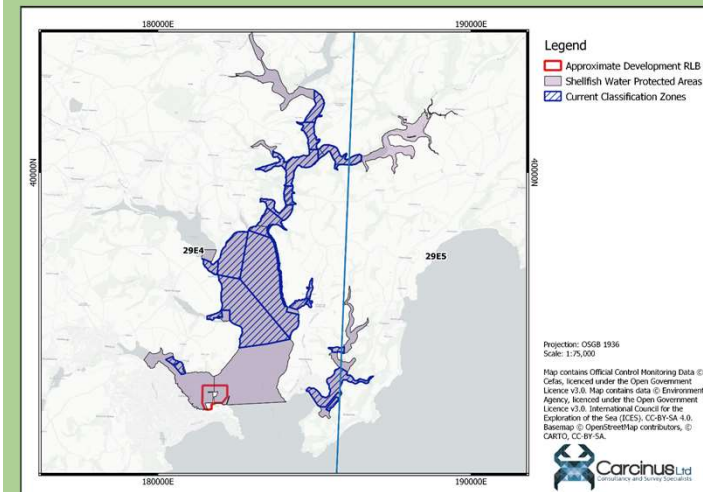
During operation the following impacts and effects have been assessed:

- No significant effect on the fish wholesaler within the site, Falfish; and
- Permanent displacement of fishing effort which would result in not significant negligible adverse effects.

10. Commercial Fisheries and Shellfisheries



Ports within the Fal Estuary and approaches that received commercial fisheries landings in 2023



Designated shellfish waters and classification zones within Fal Estuary

10 Commercial Fisheries and Shellfisheries

10.1 Introduction

- 10.1.1 This chapter reports on the likely commercial fisheries and shellfisheries effects associated with the demolition and construction stage and operational stage of the proposed development.
- 10.1.2 Impacts and effects on the marine ecology receptors; the fish and shellfish that make up the various fisheries and shellfisheries (including both commercial and non-commercial species) are reported on in the preceding chapter, ES Chapter 9: Marine Ecology. This chapter focusses on the impacts and effects on the fisheries and shellfisheries themselves, including effects on stocks of commercial species and/or fishing effort/activities. Cross references to ES Chapter 9 are made where relevant throughout this chapter.
- 10.1.3 There are no supporting technical appendices to this chapter.
- 10.1.4 The assessment has been informed by the following legislation, policies and published guidance:
- National Legislation and Policy:
 - National Policy Statement for Ports, 2012¹.
 - The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017².
 - Assimilated EU Law Regulation (EU) 2019/627³.
 - Regional Legislation and Policy:
 - South West Inshore Marine Plan, 2021⁴, in particular policies SW-FISH-1 – 3 and SW-EMP-1
 - Local Legislation and Policy:
 - Cornwall Local Plan, 2016⁵, in particular Policies 5: Business and Tourism and Policy 23: Natural Environment
 - Cornwall Maritime Strategy 2012 - 2030⁶
 - Fal Fishery Order 2016⁷
 - River and Estuarine Fishing Nets Byelaw 2017⁸
 - Falmouth Harbour Commissioners (FHC) Code of Practice for Deployment and Marking of Fishing Gear⁹
 - National guidance and industry standards:
 - Sea Fish Industry Authority and UK Fisheries Economic Network (UKFEN) (2012) Best practice guidance for fishing industry financial and economic impact assessments¹⁰

10.2 Consultation

- 10.2.1 Table 10-1 summarises the key EIA Scoping Opinion responses and any separate consultations that have been undertaken with respect to the Commercial Fisheries and Shellfisheries assessment.

¹ Department for Transport, 2012. National Policy Statement for Ports. The Stationery Office, London. Available [online] at: <https://assets.publishing.service.gov.uk/media/5a78c20ae5274a277e68f3b1/national-policy-statement-ports.pdf>.

² The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Available at: <https://www.legislation.gov.uk/uksi/2017/407/contents/made>

³ Assimilated EU Law Regulation (EU) 2019/627. Available at: <https://www.legislation.gov.uk/eur/2019/627/contents>.

⁴ Department for Environment, Food and Rural Affairs, 2021. South West Inshore and South West Offshore Marine Plan. Available at: https://assets.publishing.service.gov.uk/media/60f6f71ce90e0764cfc22a78/FINAL_South_West_Marine_Plan_1_.pdf

⁵ Cornwall Council, 2016. The Cornwall Local Plan 2016 – 2030. Available at: <https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/#localPlan>

⁶ Cornwall Council, 2012. A future for Maritime Cornwall: The Cornwall Maritime Strategy 2012 – 2030.

⁷ The Fal Fishery Order 2016. Available at: <https://www.legislation.gov.uk/uksi/2016/716/contents/made>.

⁸ Cornwall Inshore Fisheries and Conservation Authority, 2017. River and Estuarine Fishing Nets Byelaw 2017. Available [online] at: https://secure.toolkitfiles.co.uk/clients/17099/sitedata/Byelaws%20and%20orders/Cornwall_IFCA/RiverandEstuarineFishingNetsByelaw2017.pdf

⁹ Falmouth Harbour Commissioners 2022. Code of Practice for Deployment and Marking of Fishing Gear, Document Reference 30-210-01. Available at: <https://www.falmouthharbour.co.uk/wp-content/uploads/2022/01/30-210-01-Code-of-Practise-for-the-Deployment-and-Marking-of-Fishing-Gear.pdf>.

¹⁰ Sea Fish Industry Authority and UK Fisheries Economic Network (UKFEN) 2012. Best practice guidance for fishing industry financial and economic impact assessments. Available at: <https://www.seafish.org/document/?id=aa0cb236-1e2a-4d2a-9f86-49ceb2b6dd5e>.

Table 10-1: Summary of Consultation		
Consultee /Date of Consultation	Summary of Comments	Summary of Action Taken and Where in this Chapter Comments are Addressed
Cornwall Inshore Fisheries and Conservation Authority received 12 February 2024	Telephone discussion relating to potting within the Fal Estuary, particularly the Carrick Roads area around the Port. Advised that potting information is submitted in relation to ICES Sub Rectangles and port of landing, but no more precise geographic information is available. Advised that it is unlikely potting goes on around the Port / yacht moorings etc.	Information has been incorporated in Section 10.8.
Marine Management Organisation Scoping Opinion received 25 October 2023	Shellfish 4.7.1 Relevant data sources have been identified and have scoped in the relevant shellfisheries receptors. The MMO would expect impacts on shellfish receptors (non-commercial) to also be included.	Ecological impacts on commercial and non-commercial shellfish are reported on in ES Chapter 9: Marine Ecology. Impacts on the commercial shellfishery itself are reported on in this chapter.

10.3 Assessment Scope

- 10.3.1 This assessment has been undertaken through the interpretation of baseline data, literature reviews, relevant legislation and professional judgement in accordance with the guidance published by the Sea Fish Industry Authority (SIFA)¹¹. The principles and approach of the Sea Fish Industry Authority guidelines have been followed as far as possible; however standard EIA terms have been used, where appropriate, to provide consistency across the EIA and to accord with the general EIA approach set out in Chapter 2: EIA Process and Methodology.
- 10.3.2 The aims of the assessment have been to:
- identify the presence of commercial finfish and shellfish communities within the study area through consultation and desk-based research;
 - identify the extent of commercial fishing effort within the study area through consultation and desk-based research;
 - evaluate the sensitivity of the receptors by determining their importance combined with their sensitivity to individual impacts;
 - identify potential impacts and effects on the commercial finfish and shellfish communities as well as the fishing community itself; and
 - assess the residual effects taking into account the implementation of additional mitigation, if required.

Technical Scope

- 10.3.3 The technical scope of the assessment has considered the potential impacts and likely effects of the proposed development on commercial fisheries and shellfisheries.
- 10.3.4 The following potential impacts associated with the demolition and construction stage have been considered:
- temporary exclusion of fishermen/fishing effort from fishing/harvesting areas in the vicinity of the site (see paragraphs 10.3.7 - 10.3.11 for more detail of spatial scope);
 - temporary and permanent displacement of stock away from the site (i.e. potentially moving stock out of range of fishermen); and
 - temporary and permanent depletion of stock (i.e. population size of fish stock is lowered through mortality and/or disruption to spawning/reproductive success).

¹¹ Sea Fish Industry Authority and UK Fisheries Economic Network (UKFEN) 2012. Best practice guidance for fishing industry financial and economic impact assessments. Available at: <https://www.seafish.org/document/?id=aa0cb236-1e2a-4d2a-9f86-49ceb2b6dd5e>.

- 10.3.5 The following potential impacts associated with the operational stage have been considered:
- permanent displacement of fishing effort.
- 10.3.6 The Navigational Risk Assessment (NRA) (Volume 2: Technical Appendix 2.9) considers the risk associated with the potential for collision between various marine traffic, including commercial fishing vessels, and the increased level of vessel traffic around the port during firstly the demolition and construction stage and secondly the operational development stage. In both cases the risk was assessed to be As Low As Reasonably Practicable (ALARP) and so this impact pathway has not been considered further within this chapter.
- Spatial Scope**
- 10.3.7 The standard methodology for defining the spatial scope of a commercial fisheries assessment is to relate the site to the relevant International Council for the Exploration of the Sea (ICES) Ecoregion, and statistical rectangle (the unit with which fisheries data and information are collected and analysed) as well as consideration of the localised fishing activity and likely zone of influence of the proposed development.
- 10.3.8 The proposed development is located within ICES Ecoregion XI (Celtic Seas) and sits near the border between ICES rectangle 29E4 and 29E5 (shown in Figure 10.1) which covers the western tip of Cornwall and Looe Bay respectively.

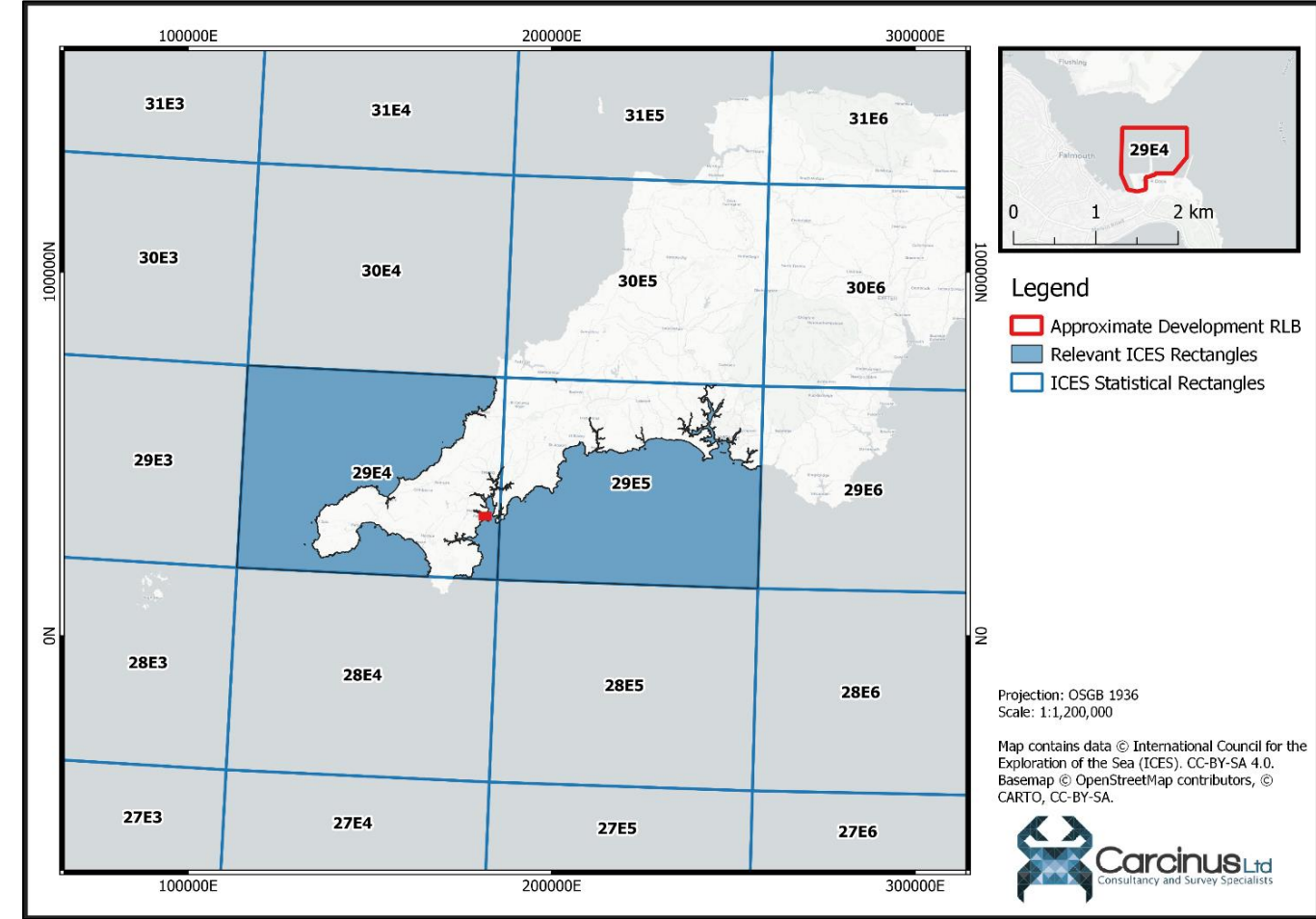


Figure 10.1: Proposed development location in relation to ICES Statistical Rectangles.

- 10.3.9 These rectangles cover both inshore and offshore waters, and extend beyond the zone of influence of the proposed development, but do provide some useful context and data on fishing activity in the wider area.

- 10.3.10 More applicable to the site is the local fishing area and its location within the Fal Estuary, near the mouth of the Penryn River. This area is subject to a different type of fishing effort than that of the offshore waters of the rest of the ICES rectangles.
- 10.3.11 This chapter therefore focusses on the localised fishing activity within the Fal Estuary and the site as shown in Figure 10.2, but considers the wider context of the ICES rectangles where appropriate. The study area (Figure 10.2) incorporates the Fal Estuary, starting at the upstream tidal limit at Tresillian and extending out into Falmouth Bay. This study area is considered appropriate to adequately account for the nature of commercial fisheries and shellfisheries that have the potential to be impacted by the proposed development.

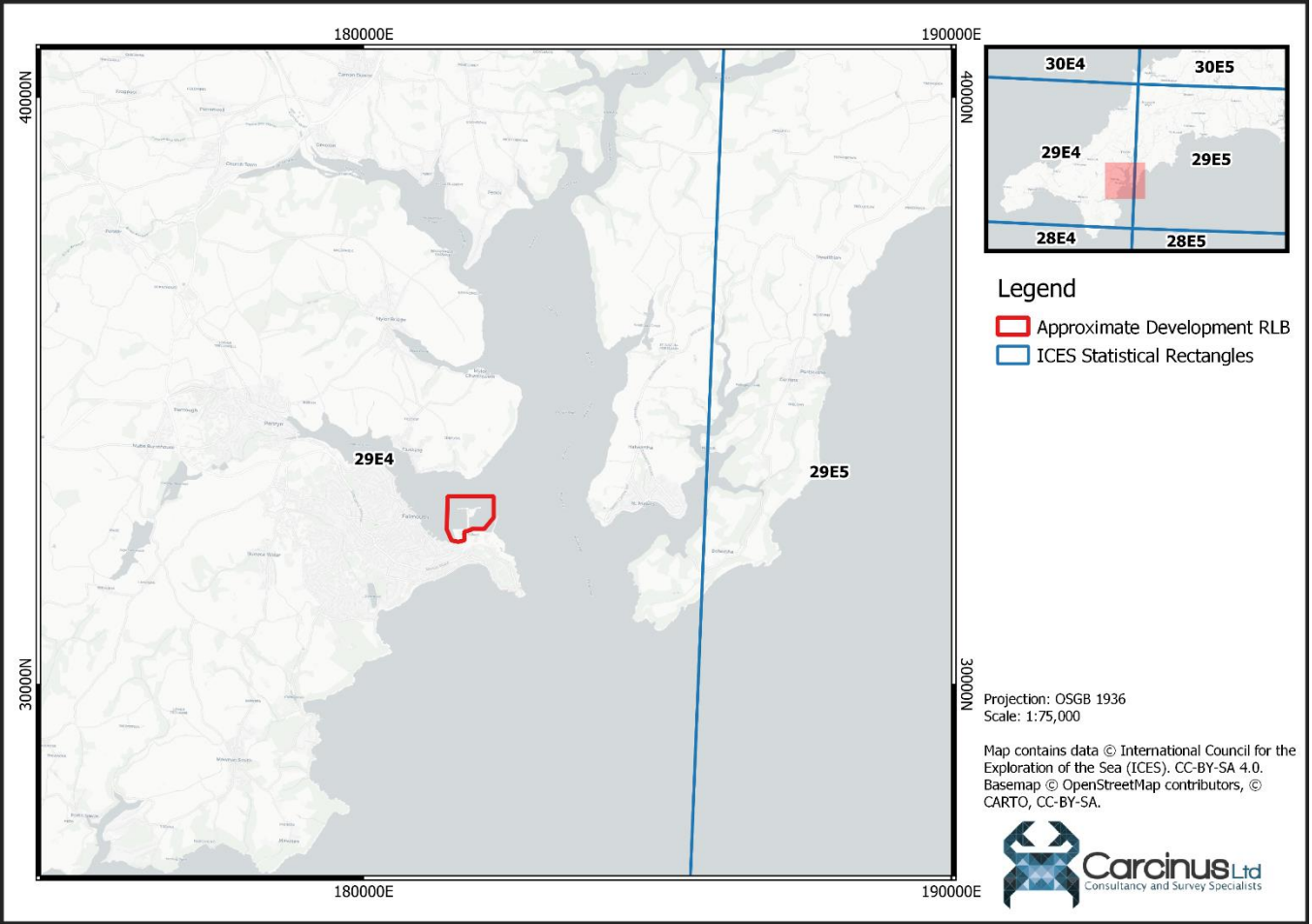


Figure 10.2: Study area in relation to Commercial Fisheries and Shellfisheries.

Temporal Scope and Assessment Scenarios

- 10.3.12 The assessment has considered impacts arising during the demolition and construction stage which would be expected to be temporary and short-term (up to 5 years years) in nature and from the operational stage which would be expected to be permanent and long-term in nature (i.e. more than 10 years).
- 10.3.13 The works anticipated to potentially impact commercial fisheries and shellfisheries are all works within the marine environment, including demolition / construction of wharf structures and piling.
- 10.3.14 Impacts have been assessed against the existing baseline, using existing survey data from 2007 to 2023. This is considered to robustly reflect the current baseline.

10.4 Baseline Characterisation Method

Desk Study

- 10.4.1 Baseline information with respect to fishing effort taking place at the site was obtained through collection and review of past surveys/studies at the site and within the study area. Baseline

characterisation was collated through a thorough desk-based study of extant data. The datasets and associated sources comprise:

- Marine Life Information Network (MarLIN) (2024)¹²;
- Data from the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), including the Fisheries Data Archive Centre (FishDAC) (2024)¹³ and Shellfish Official Control Monitoring datahub (2024)¹⁴;
- Marine Management Organisation (MMO) data, including vessel numbers, fleet landings etc. (2007 – 2023);
- Data from the EA National Fish Populations Database (NFPD) for Transitional and Coastal (TraC) Waters (1992 – 2023)¹⁵;
- Reporting published by Cornwall Inshore Fisheries and Conservation Authority (C-IFCA) (2023)¹⁶; and
- Published literature.

10.4.2 Chapter 9: Marine Ecology of this Environmental Statement provides reference sources for establishing the ecological baseline for finfish and shellfish communities within the study area (i.e., the fish and shellfish themselves), which include those mentioned above but also include other relevant published and grey literature.

Field Study

10.4.3 No specific fisheries field study was undertaken as there is considered to be data of sufficient spatial and temporal scale and resolution to reliably inform the assessment.

10.5 Assessment Method

10.5.1 This assessment has been completed with reference to the SIFA guidance on fishing industry assessments, which have been adapted to the generic and best practice EIA methodology of using a matrix approach to determine the likely significant effects.

Methodology

- 10.5.2 The assessment methodology for both the demolition and construction stage and the operational stage comprised the following steps:
- The fisheries and shellfisheries baseline was defined; i.e., an assessment of the site and surrounding study area, its current status and condition in terms of commercial fishing and shellfishing resource was made;
 - The potential effects from the proposed development (direct and indirect) and sources of impact on the identified receptors were defined and where possible, quantified;
 - Potential effects resulting from the proposed development at the site were considered for both the demolition and construction, and operational stages;
 - Consideration was given to avoidance, mitigation and enhancement measures (the ‘mitigation hierarchy’) integral to the proposed development; and
 - Once measures to avoid and mitigate effects were finalised, the significance of the residual effect (after mitigation) on commercial fisheries and shellfisheries were assessed.
- 10.5.3 In addition, consideration has been given to inter-cumulative effects.
- 10.5.4 As previously mentioned, ES Chapter 9: Marine Ecology is also of relevance to this chapter and is cross-reference where required.

¹² Marine Biological Association, 2024. Marine Life Information Network. Available [online] at: <https://www.marlin.ac.uk/>.
¹³ Centre for Environment, Fisheries and Aquaculture Science, 2024. Fisheries Data Archive Centre (FishDAC). Available [online] at: <https://www.cefasc.co.uk/data-and-publications/fishdac/>.
¹⁴ Centre for Environment, Fisheries and Aquaculture Science, 2024. Shellfish Classification and Microbiological Monitoring. Available [online] at: <https://www.cefasc.co.uk/data-and-publications/shellfish-classification-and-microbiological-monitoring/england-and-wales/>.
¹⁵ Environment Agency, 2024. Transitional and Coastal Water Fish Surveys (NFPD). Available [online] at: <https://www.data.gov.uk/dataset/b8aa438b-338a-4bb1-8ff1-9e904e1687fb/transitional-coastal-water-fish-surveys-nfpd>.
¹⁶ <https://www.cornwall-ifca.gov.uk/>

10.6 Assessment Criteria

10.6.1 The general criteria used to assess if an effect is significant or not, is set out in Chapter 2: EIA Process and Methodology further details are provided herein. This is determined by consideration of the sensitivity of the receptor, magnitude of impact and scale of the effect. In considering the significance of an effect, consideration has been given to the duration of the effect, the geographical extent of the effect and the application of professional judgement.

Receptor Sensitivity Criteria

10.6.2 The sensitivity of receptors has been classified as negligible, low, medium or high, in accordance with the criteria set out in Table 10-2.

Table 10-2: Receptor Sensitivity Criteria	
Sensitivity	Criteria
Negligible	Extensive operational range and very high method versatility in terms of gear types. Vessels are able to exploit a large 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.
Medium	Medium extent of operational range and / or ability to deploy a number of gear types. Dependence on a limited number of fishing grounds.
High	Limited operational range and ability to deploy only one gear type. High dependence on a single fishing ground.

Receptor Value Criteria

10.6.3 In addition, an economic value component is also considered when assessing commercial fishing receptors, since more weighting is placed on high-value receptors that may receive significant effects as a result of the proposed development than low-value receptors. Table 10-3 defines the economic values of a given fisheries receptor.

Table 10-3: Receptor Value Criteria	
Value	Criteria
Negligible	Very low economic value (contributes a very low / zero proportion of the overall landings in the study area).
Low	Low economic value (contributes a low proportion of the overall landings in the study area).
Medium	Medium economic value (contributes a moderate proportion of the overall landings in the study area).
High	High economic value (contributes a major proportion of the overall landings in the study area).

Impact Magnitude Criteria

- 10.6.4 The magnitude of impact has been classified as very low, low, medium or high, in accordance with the criteria set out in Table 10-4.
- 10.6.5 The magnitude of an effect is considered for each predicted impact on an individual fleet basis and is defined taking account of the spatial and temporal extent of the impact. This is considered in the context of the relative level of importance to each fleet of the area affected by the impact (i.e., the level of fishing in the area with reference to the extent of alternative grounds the fleet is available to exploit).
- 10.6.6 With reference to the duration of potential impacts, those which relate to demolition and construction are considered to be short- term. Impacts associated with the operational stage are considered to be permanent.

Table 10-4: Impact Magnitude Criteria

Magnitude of Impact	Criteria
Very Low	The area affected by the impact sustains low or negligible activity by the fleet and covers a small or negligible extent of its grounds; and / or the effect is short term.
Low	The area effected by the impact sustains low or moderate levels of activity by the fleet and covers a small extent of its grounds; and / or the effect is short or medium term.
Medium	The area affected by the impact sustains moderate or high levels of activity by the fleet and covers a small or moderate extent of its grounds; and / or the effect is medium or long term.
High	The area affected by the impact sustains high levels of activity by the fleet and covers a large or moderate extent of its grounds; and/or the effect is permanent.

Scale of Effect Criteria

10.6.7 Impacts have been assessed on the basis of the value/sensitivity of receptors against the magnitude of impact to determine the scale of effect as presented in Table 10-5.

Table 10-5 Scale of Effect Criteria				
Sensitivity/Value of Receptor	Magnitude of Change (impact)			
	Very Low	Low	Medium	High
Negligible	Negligible	Negligible	Negligible	Minor
Low	Negligible	Negligible	Minor	Minor
Medium	Negligible	Minor	Moderate	Major
High	Minor	Minor	Major	Major

- 10.6.8 Only those effects considered to be **Moderate** or **Major** are considered to be **significant** effects in EIA terms.
- 10.6.9 In determining the significance of reported effects, consideration has been given to the type of effect i.e. direct, indirect or secondary, the geographical extent of the effect and the duration of the effect i.e. temporary which is considered to be either short-term (up to 5 years) or medium-term (5-10 years) or long-term (10 years or more).

Nature of Effect Criteria

- 10.6.10 The nature of the effect is in accordance with Chapter 2: EIA Process and Methodology and has been described as either adverse, neutral or beneficial, with the following definitions:
- Adverse: detrimental or negative effect to a resource or receptor;
 - Beneficial: advantageous or positive effect to a resource of receptor; and
 - Neutral: neither detrimental or advantageous.

10.7 Assumptions and Limitations

- 10.7.1 The assessment has relied on various datasets published by the UK Government or its subsidiary organisations (such as the MMO, Cefas etc). The data contained within them is assumed to be accurate and has been taken at face value, with no further verification of the data undertaken.
- 10.7.2 The datasets for UK Fishing Landings by ICES Rectangle¹⁷ and by UK Port¹⁸ cover the period 2007 – 2020. No more recent data were available, but this timeseries is considered to give adequate temporal context of the fishing activity within the study area. The datapoints for 2020 do indicate a drop off in fishing activity for that year, coinciding with the Covid-19 pandemic. No data at the same spatial scale

are available for 2021 – 2023 but the provisional dataset for fish and shellfish landings into Ports in the Fal Estuary in 2023¹⁹ provide additional detail where needed.

- 10.7.3 There are considered to be no further material gaps or uncertainties relating to the assessment that would compromise the ability to undertake a robust assessment of impacts.

10.8 Baseline Conditions

- 10.8.1 The waters around the south-west of England provide an important variety of fishing areas and species for commercial activity. These waters are targeted by both large (>10 m) offshore and small (<10 m) fishing vessels, as well as hand gatherers operating from the shore of the coast/estuaries itself. It is not possible to reliably quantify the extent of hand gathering, though it is considered to be negligible in comparison to vessel-based activity. Therefore, hand gathering is not considered further within this assessment.
- 10.8.2 The following paragraphs provide information on the current status of the fishing industry, first briefly considering fisheries within the wider regional context (relevant ICES rectangles) before considering the fishery within the Fal Estuary in more detail.

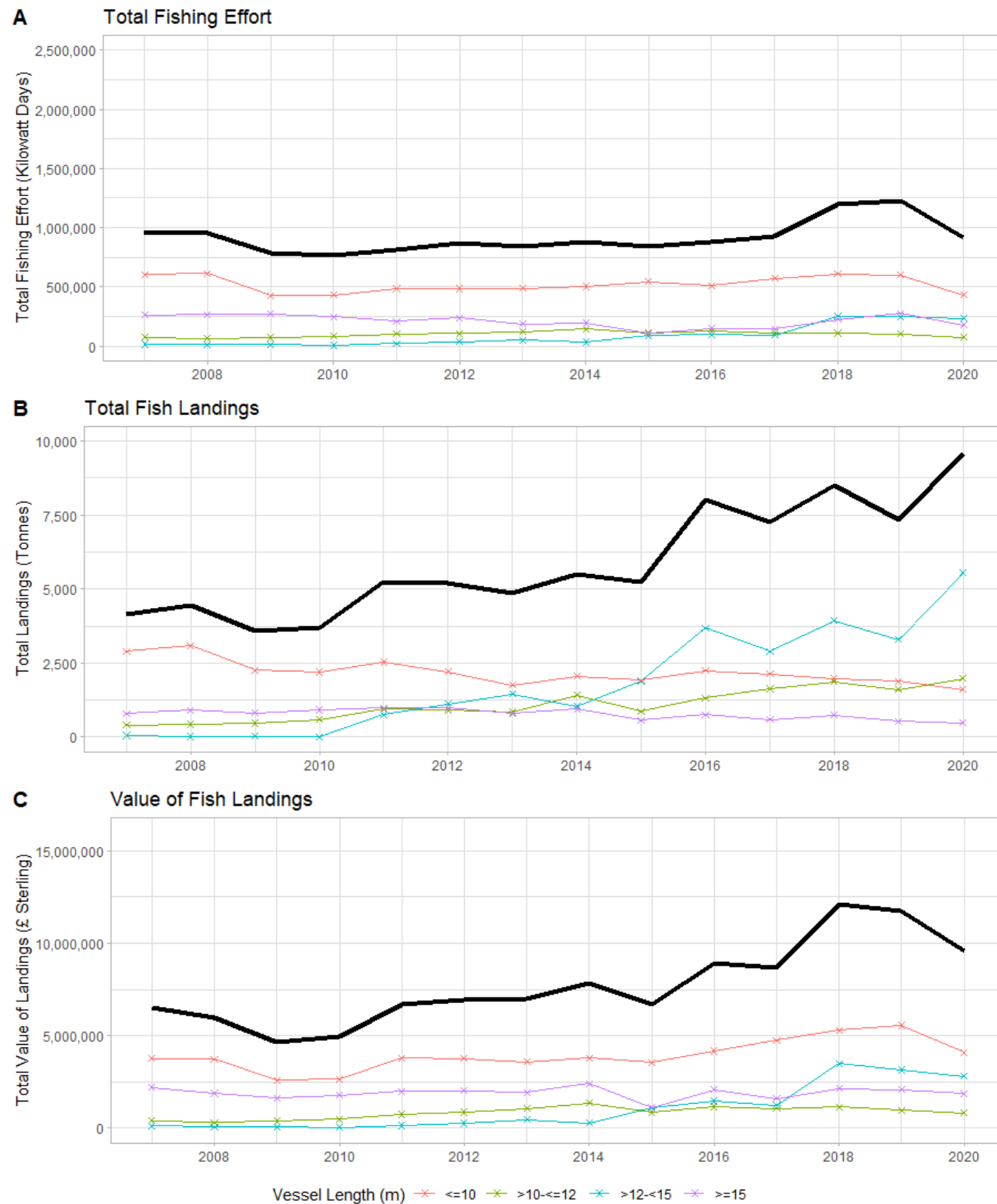
Regional context

- 10.8.3 The site falls near to the boundary of ICES Rectangles 29E4 and 29E5 (Figure 10.1). Figure 10.3 and Figure 10.4 provide the temporal trend in fishing activity within ICES Rectangles 29E4 and 29E5 respectively between 2007 and 2020, broken down by the length of fishing vessel. The data indicate that in terms of fishing effort and value of landings, small fishing vessels (<10 m) dominate in the region. The data also shows that whilst ICES Rectangle 29E4 saw a larger total catch (in terms of tonnes of landed fish), 29E5 saw more fishing effort (in terms of kilowatt days (NB: kilowatt days are calculated by multiplying the number of days at sea by the kW engine power of the vessel)) but slightly less value in terms of fishing landings. In 2020 fish landings in 29E4 were worth £9,577,069 compared to £7,779,966 in 29E5.

¹⁷ MMO, 2024. United Kingdom Fish Landings by ICES rectangle (by vessel length) 2007 – 2020. Available at: <https://environment.data.gov.uk/dataset/4b586362-8130-4c48-bba0-bf9e752f30e1>.

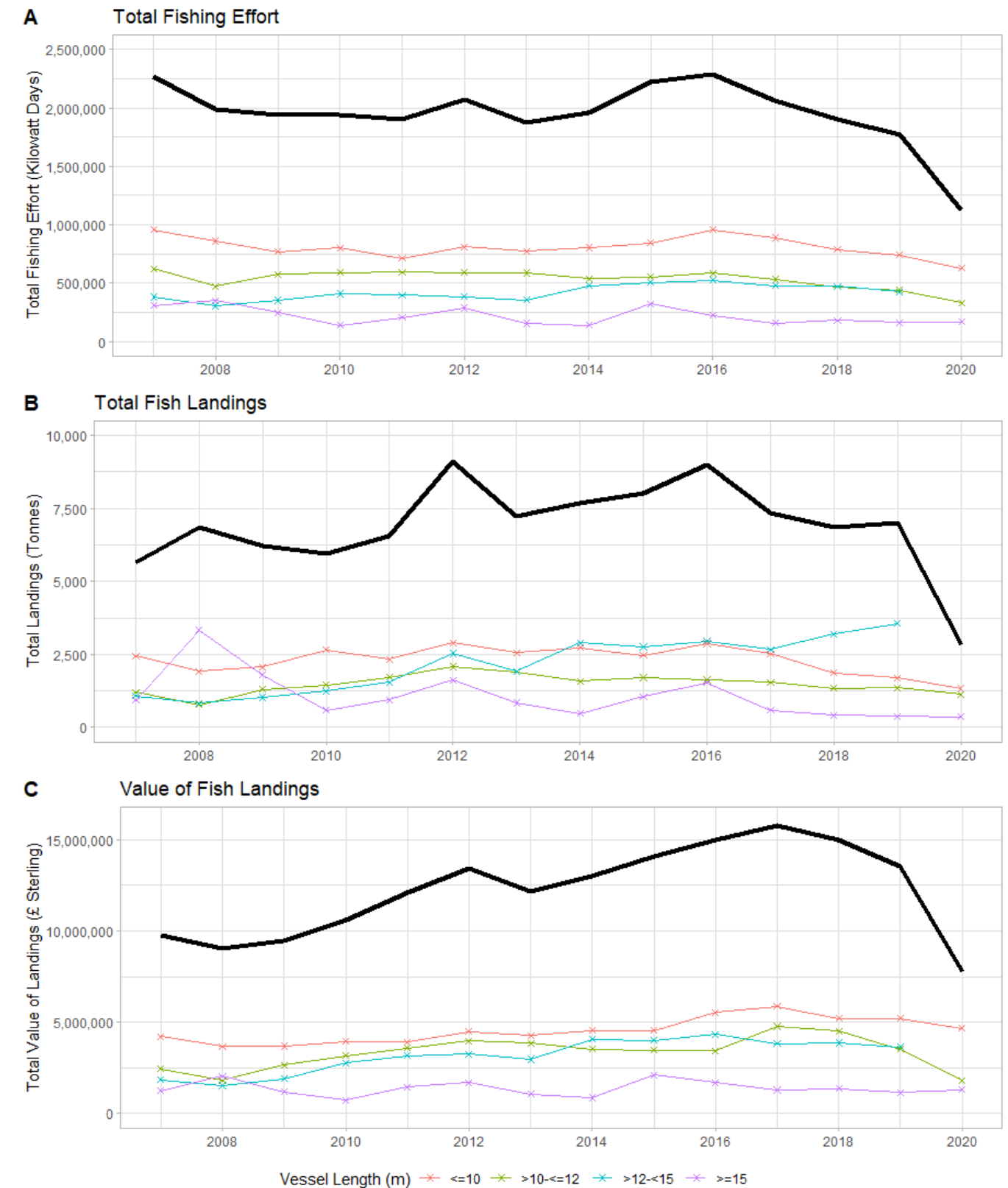
¹⁸ MMO, 2024. Fish Landings to United Kingdom Ports 2007 – 2020. Available at: <https://environment.data.gov.uk/dataset/2815c177-5982-46cc-8308-0401d7a15e14>.

¹⁹ MMO, 2024. 2023 UK and foreign vessels landings by UK port and UK vessel landings abroad: provisional data. Available at: <https://www.gov.uk/government/publications/2023-uk-and-foreign-vessels-landings-by-uk-port-and-uk-vessel-landings-abroad-provisional-data>.



UK Fish Landings in ICES Rectangle 29E4. Data © MMO 2023, licenced under the Open Government Licence v3.0.

Figure 10.3: Fishing activity in ICES Rectangle 29E4 from 2007 - 2020



UK Fish Landings in ICES Rectangle 29E5. Data © MMO 2023, licenced under the Open Government Licence v3.0.

Figure 10.4: Fishing activity in ICES Rectangle 29E5 from 2007 - 2020

- 10.8.4 The data presented in Figure 10.3 and Figure 10.4 show that that fishing activity in 29E4 generally increased from 2007 – 2020, whereas the fishing activity in 29E5 remained more stable. The data from both ICES rectangles shows a decline in activity in 2020 coinciding with the Covid-19. The drop-off in fishing activity in 29E5 is more pronounced than the activity in 29E4.

Local Context

10.8.5 From MMO landings data, there are six ports within the study area that received fishery landings in 2023.²⁰ These are Flushing, Helford River, Mylor, Portscatho, River Fal – Falmouth (within the site boundary) and St Mawes. A summary of the fishing vessels that list these ports as their ‘home port’ as of February 2024 is provided in Table 10-6 and the approximate geographical position of each port is shown in Figure 10.5. No vessels list Portscatho or Flushing as their home port, with the majority of vessels listing River Fal – Falmouth as their home port, which is within the site boundary. All of these vessels list Newlyn (approximately 35 km west of the site) as their ‘administrative port’. No further details of the fleet can be provided to avoid sharing private/personal information.

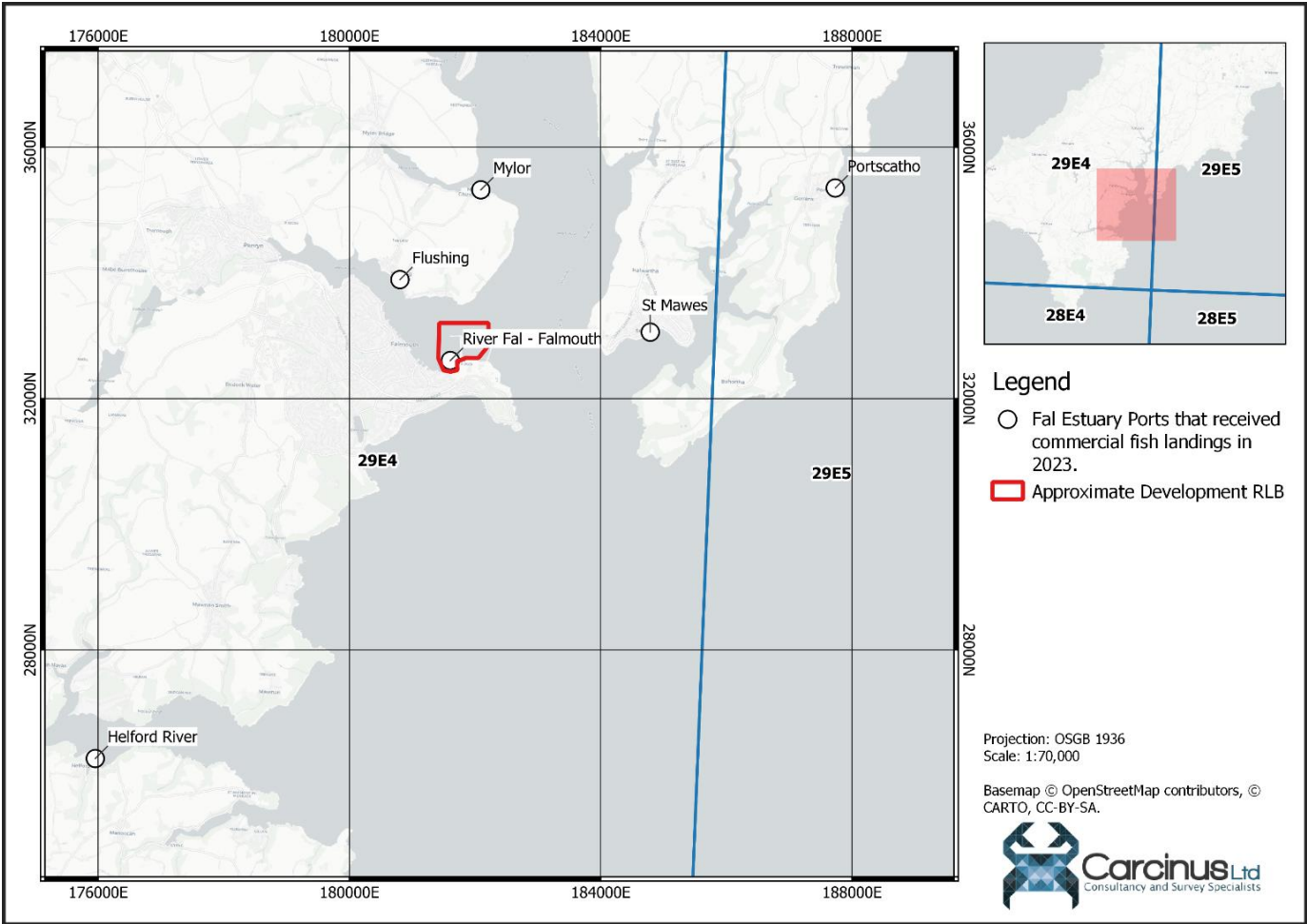


Figure 10.5: Ports within the Fal Estuary and approaches that received commercial fisheries landings in 2023.

Table 10-6: Number of fishing vessels registered to ports in the vicinity of the proposed development.			
Port	Number of Vessels <10 m	Number of Vessels >10 m	Total
Helford River	9	0	9
Mylor	1	0	1
River Fal – Falmouth	28	2	30
St Mawes	3	0	3

²⁰ MMO, 2024. 2023 UK and foreign vessels landings by UK port and UK vessel landings abroad: provisional data. Available at: <https://www.gov.uk/government/publications/2023-uk-and-foreign-vessels-landings-by-uk-port-and-uk-vessel-landings-abroad-provisional-data>.

Table 10-6: Number of fishing vessels registered to ports in the vicinity of the proposed development.			
Total	41	2	43

10.8.6 Provisional landings data from 2023²¹ indicate that both pelagic and demersal fisheries are landed to ports within the Fal estuary. Table 10-7 provides summary data of the different types of fishing gear used to catch fish ultimately landed to ports in the vicinity of the proposed development, and the relative sizes of those fisheries in terms of weight and value in 2023. It shows that the dominant gear used by vessels >10 m in terms of weight is ‘surrounding nets’ (i.e. purse seine nets). The dominant gear used by vessels >10 m in terms of value is dredges, with landings worth more than £300,000 in 2023. The dominant gear used by vessels <10 m in terms of landings weight and monetary value is traps (i.e. shellfish pots), with more than 55 tonnes worth more than £300,000 landed in 2023.

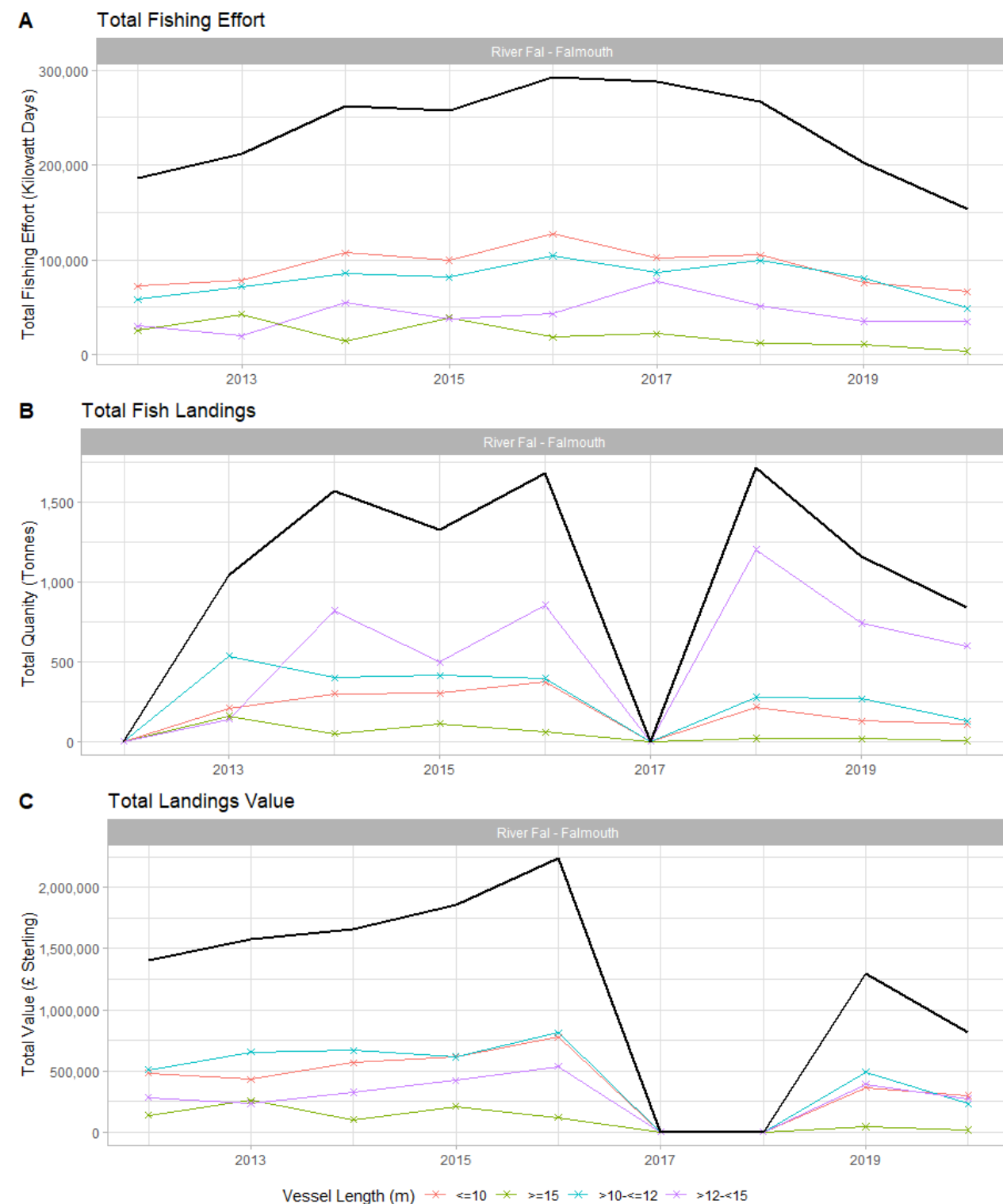
Table 10-7 Provisional landings data of fish landed into ports within the vicinity of the proposed development in 2023.				
Vessel Length	Gear category	Live Weight (tonnes)	Landed Weight (tonnes)	Value (£ Sterling)
<10 m	Dredges	0.17	0.17	£765.00
<10 m	Gill nets and entangling nets	45.13	30.12	£201,616.25
<10 m	Hooks and lines	17.35	17.17	£53,702.82
<10 m	Traps	55.30	55.26	£304,531.04
<10 m	Trawls	12.19	9.26	£37,670.59
>10 m	Dredges	117.36	116.22	£301,883.89
>10 m	Surrounding nets	166.14	166.10	£55,092.08
>10 m	Traps	0.08	0.08	£437.43
>10 m	Trawls	7.71	5.95	£33,243.27

10.8.7 The total value of fish landed into ports within the vicinity of the proposed development in 2023 (based on provisional data) was £988,942.37. This just over 10% of the value of fish caught within ICES Rectangle 29E4 in 2020, and just under 13% of the total value caught in ICES Rectangle 29E5 in the same period. There is no guarantee that fish landed to ports within Falmouth were caught within ICES Rectangle 29E4.

10.8.8 The most active port in terms of the fish landed there is the River Fal – Falmouth (within the site boundary), with £630,261.35 landed there in 2023. 49 different species were landed to this port in 2023, caught by six different methods of fishing gear. The highest value of landings came from dredges operated by vessels >10 m length, followed by traps operated by vessels <10 m.

10.8.9 Figure 10.6 shows the temporal trends in fishery activity in terms of fish landed to the River Fal – Falmouth Port between 2007 and 2020. The data show how the total weight of fish landed has increased continually, but again echoes the drop-off in fishing effort and landings value in 2020 caused by the Covid-19 pandemic. Figure 10.6 indicates there were no landings to the site in 2017. Based on a review of A&Ps data, there was normal landing activity on site in 2017 and this is a gap in the database.

²¹ MMO, 2024. 2023 UK and foreign vessels landings by UK port and UK vessel landings abroad: provisional data. Available at: <https://www.gov.uk/government/publications/2023-uk-and-foreign-vessels-landings-by-uk-port-and-uk-vessel-landings-abroad-provisional-data>.



UK Fish Landings into the River Fal - Falmouth Port. Data © MMO 2023, licenced under the Open Government Licence v3.0.

Figure 10.6: Fishing activity of vessels landing to the River Fal - Falmouth Port from 2007 - 2020

10.8.10 The fish wholesaler Falfish have a landings and processing plant within the site to the south-east of Western Wharf. Specific landings statistics are not available for the wholesaler, although it is very likely that landings to the River Fal - Falmouth Port, as recorded on the MMO database, are landings to

Falfish. The Falfish site has a custom designed processing facility for European Lobster and Brown Crab²² from local fishing boats.

Seasonal patterns

10.8.11 Figure 10.7 shows the variation in fishing landings (total value) to ports within the vicinity of the site per month in 2023²³. It demonstrates that the River Fal - Falmouth Port receives the highest value of landings, and also shows a greater seasonal variation in landings patterns. The peak months for landings are April to September, driven mainly by changes in the value of shellfish landed. The peak months for pelagic fisheries are September, November and December, whereas demersal fishing is more constant year-round.

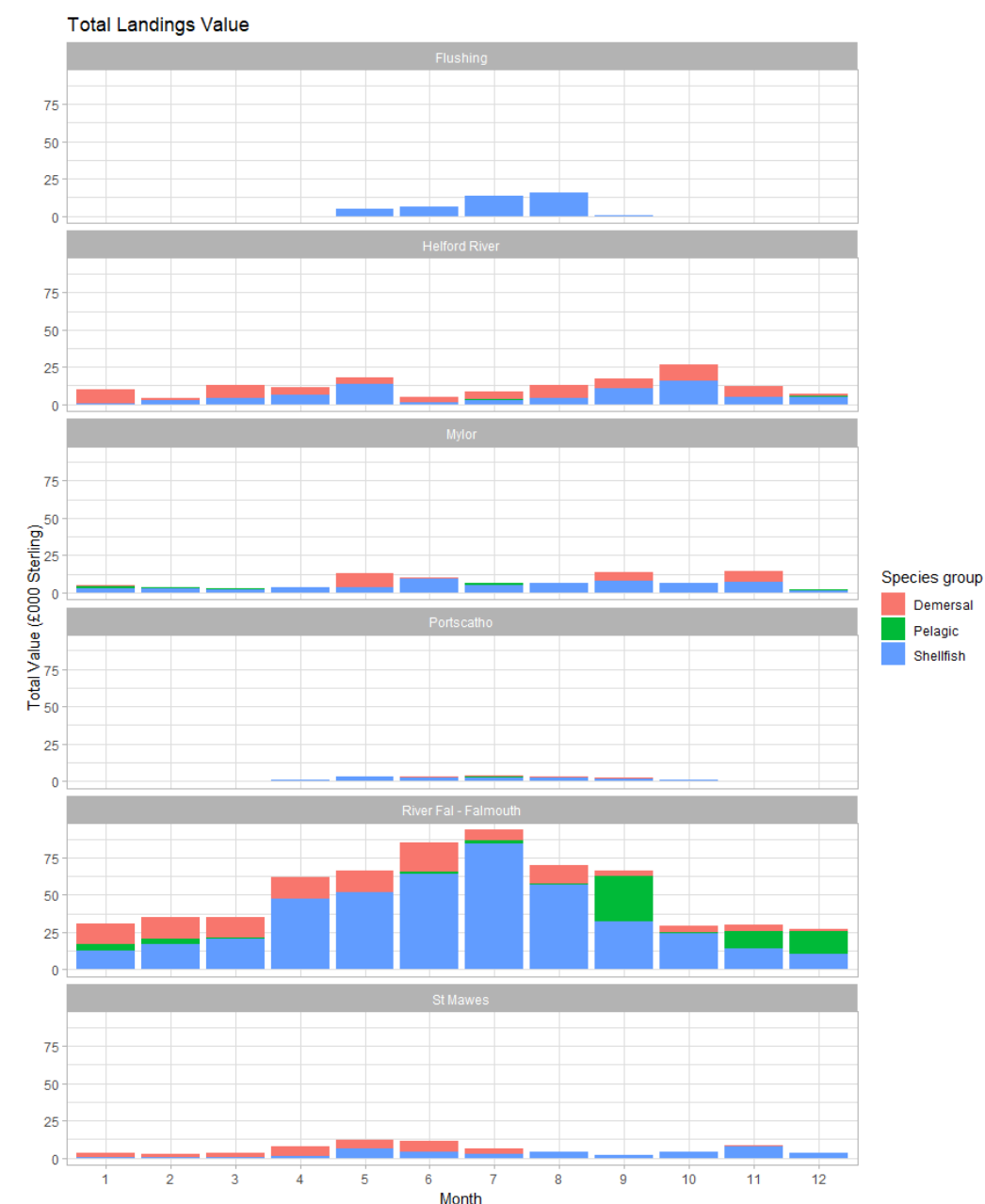


Figure 10.7: Landings value per month into ports in the vicinity of the site

²² Falfish.com, 2024. Falmouth Site. Available at: <https://falfish.com/crab-processing/>

²³ Marine Management Organisation, 2024. 2023 UK and foreign vessels landings by UK port and UK vessel landings abroad: provisional data. Available [online] at: <https://www.gov.uk/government/publications/2023-uk-and-foreign-vessels-landings-by-uk-port-and-uk-vessel-landings-abroad-provisional-data>. Accessed February 2024.

10.9 Spatial distribution of fishing effort

- 10.9.1 Figure 10.8 and Figure 10.9 present a summary of the vessel movements in the waters in the vicinity of the proposed development, based on AIS derived track lines from 2019. The data presented in the figures is based on type A and type B AIS data. AIS-A is carried by international voyaging ships with a gross tonnage of >300 tonnes, and all passenger ships regardless of size. AIS-B is carried by smaller vessels although it is not a legal requirement for smaller vessels to record this data. The data is based on seven-day periods of AIS-A and AIS-B data from the first seven days of each month, commencing in January, at two-month intervals. Due to the nature of the technology and mandatory recording requirements, AIS-B under-reports the actual density of shipping by small commercial craft, fishing vessels and recreational vessels. Nonetheless, the data provide a useful indication of the patterns of vessel movement in the vicinity of the proposed development.
- 10.9.2 The inset map presented in Figure 10.8 shows that the shipping traffic in the immediate vicinity of the site is restricted to port service craft, tankers and passenger craft, as well as some military/law enforcement vessels. Figure 10.9 shows that there are no AIS tracks associated with fishing vessels within the Fal estuary itself, the closest tracks are approximately 7 km out into the English Channel.

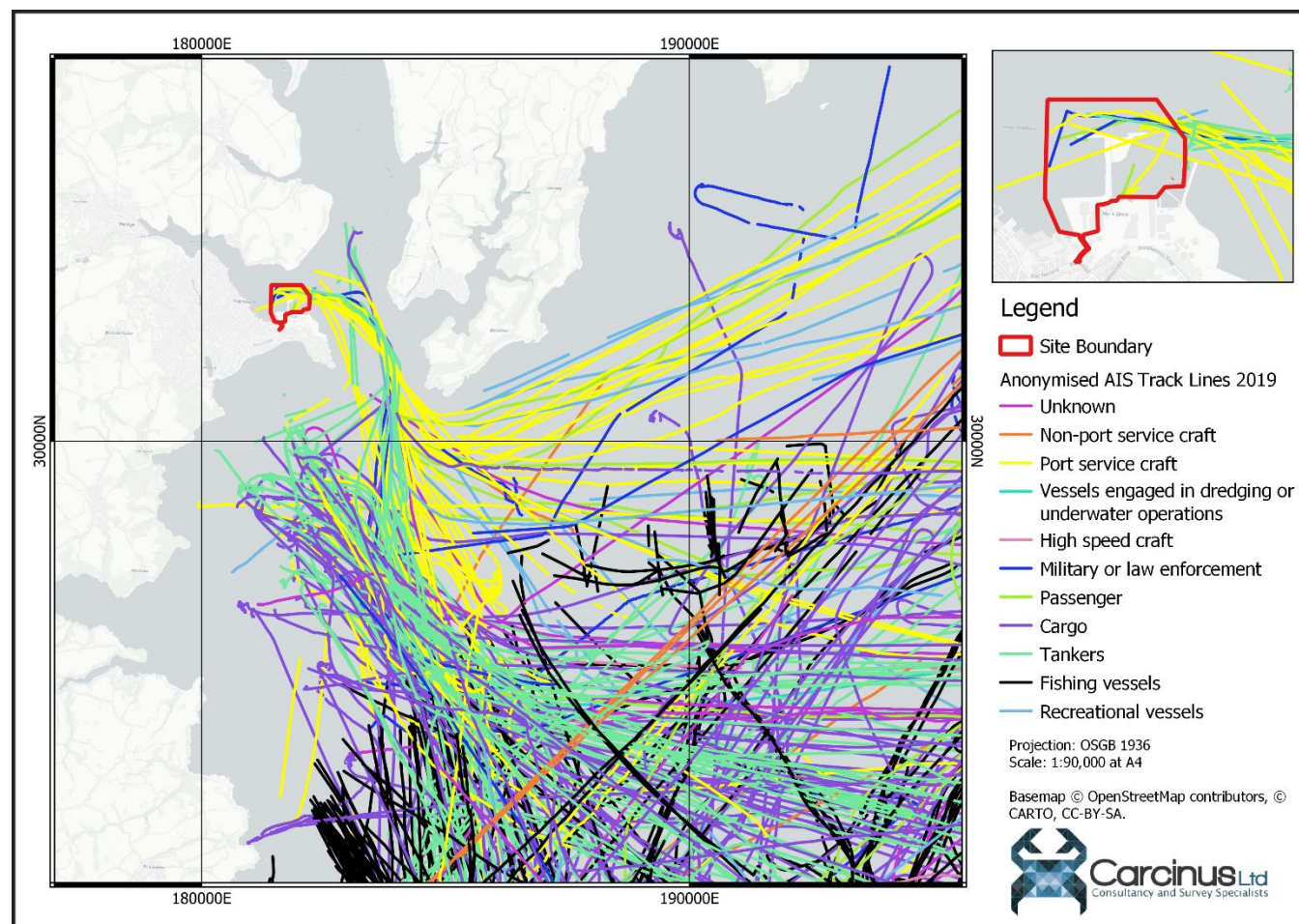


Figure 10.8: Types of vessel activity in the in the vicinity of the site, based on Anonymised AIS Derived Track Lines (2019 Data)²⁴

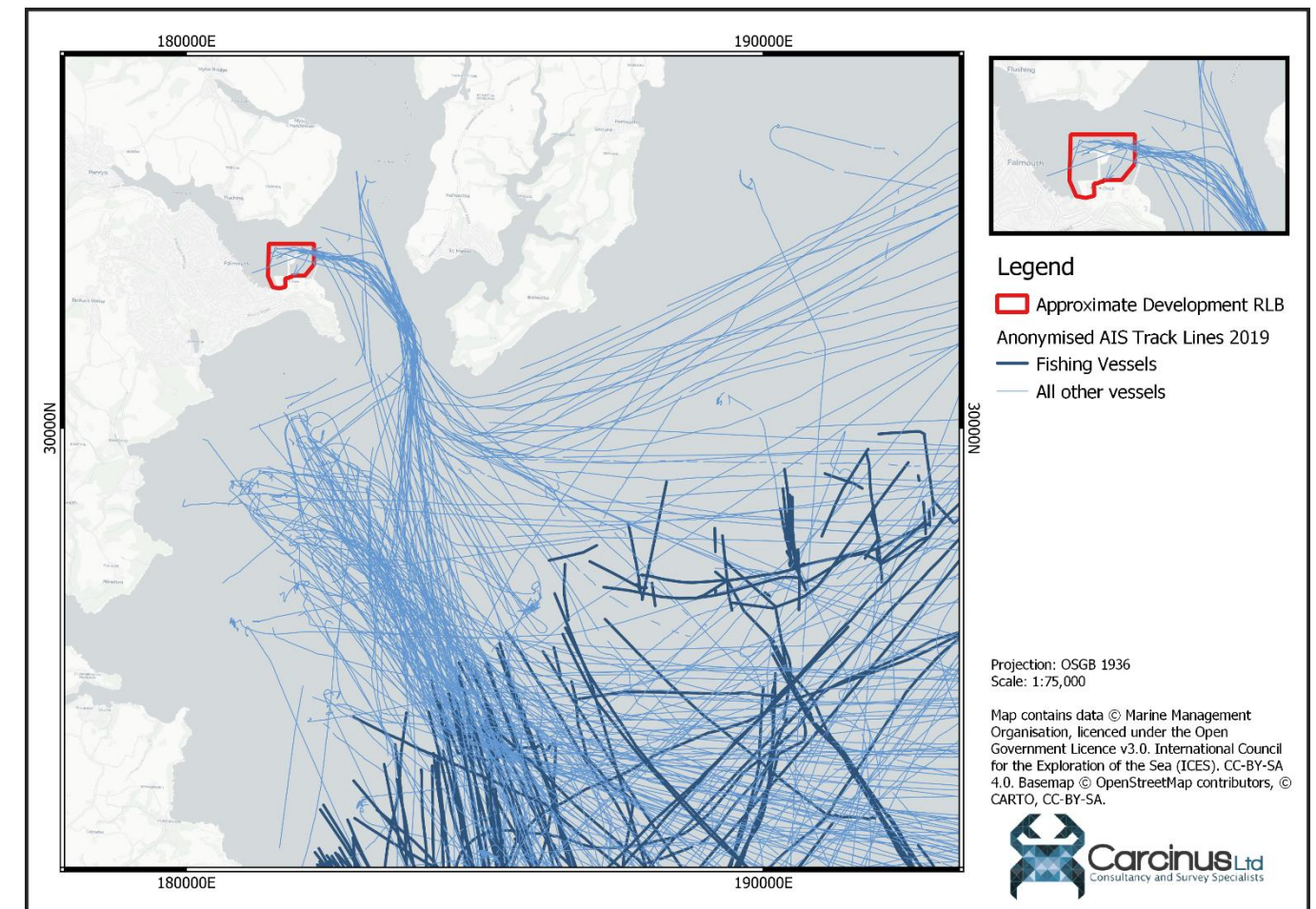


Figure 10.9: Locations of fishing vessel tracks (compared to other types of vessel) in the vicinity of the proposed development, based on Anonymised AIS derived track lines (2019 Data)²⁵

- 10.9.3 A&P Falmouth conducted a study of AIS movements of vessels within the FDEC Statutory Harbour Authority (SHA) between 14 August 2023 and 28 August 2023, as well as between 24 October 2023 and 07 November 2023²⁶. Both time periods indicated a single AIS track from a fishing vessel, in both instances transiting from the mouth Fal Estuary (near Pendennis Point), through the SHA and into the River Penryn (or *vice versa*, vessel heading cannot be determined from this AIS data).
- 10.9.4 The AIS tracks presented above under report the actual extent of fishing vessel activity within the Fal Estuary due to the mandatory recording requirements for AIS for smaller commercial vessels.
- 10.9.5 No location data of the precise areas fished within the Fal estuary are available, as fishermen do not have to declare the precise geographic coordinates of where fishing gear is deployed. The most fine-scale declaration is the ICES Rectangle the fish are landed in. However there are a number of byelaws and legislative arrangements in place that apply to the waters surrounding the site that give information as to where commercial fishing activity is likely to be taking place.

Key Commercial Fisheries

- 10.9.6 Table 10-8 shows which commercial fish species are the most valuable in the vicinity of the site, both in terms of weight of fish landed and landings value. Scallops caught by dredges operated by vessels >10 m are the most valuable, followed by lobsters and crabs, both caught in traps operated by vessels <10 m.

²⁴ Marine Management Organisation, 2019. Anonymised AIS derived track lines (2019 Data). Available at: <https://environment.data.gov.uk/dataset/ffb7d2d8-2e13-487c-a17f-7abc0f116d50>.

²⁵ Marine Management Organisation, 2019. Anonymised AIS derived track lines (2019 Data). Available at: <https://environment.data.gov.uk/dataset/ffb7d2d8-2e13-487c-a17f-7abc0f116d50>.

²⁶ A&P, 2024. FDEC Traffic Analysis Report (Falmouth) Revision: 1

- 10.9.7 Due to byelaws within the Fal and Helford estuary, the value of scallops landed by vessels >10 m at these ports is caught from predominantly outside of the estuary in the nearby coastal and offshore areas. However, Queen scallops *Aequipecten opercularis* and variegated scallop *Mimachlamys varia* are caught as bycatch from the Fal Oyster Fishery²⁷. It is thought that the variegated scallop is the primary target of the Fal fishery area²⁸. Scallop beds are located within the designated Classified Zones for shellfish in the estuary. These are focussed within the main meandering channel of Carrick Roads, near St Just Pool (at depths of 27 m) as well as north of Messack Buoy, and the southeast part of Mylor Pool and St Mawes Bank (at shallower depths of 0 to 5 m)²⁹.
- 10.9.8 Potting and trapping of lobsters and crabs is common within the Fal and Helford estuary and represents the second most valuable commercial fishing activity for ports in the vicinity of the proposed development. Combined landings of crabs and lobsters from traps and gill nets / entangling nets from vessels <10 m to nearby ports represents a total value of £265,761. Within the Fal Estuary a variety of crabs are known to be targeted, including velvet swimming crabs *Necora puber*, edible crabs *Cancer pagarus*, and common shore crabs *Carcinus maenus*. Velvet swimming crabs are targeted throughout the estuary, whilst edible crabs as well as lobsters are caught closer to the estuary mouth between Falmouth Harbour and St Mawes Harbour and into the coast. It is reported that releases of juvenile lobster also occurs within the estuary, which promotes the sustainability of this fishery.
- 10.9.9 In the 2022/2023 season, more than 20 tonnes of native oyster *O. edulis* were caught from within the Fal estuary³⁰. Although the commercial value of the Fal Estuary Oyster fishery is relatively low, it has a high level of local cultural importance. The landing of this species is rare within the UK, and in the estuary dredging for shellfish can only take place under sail or oar power (no mechanised operation) and in winter months only. The fishery is sustainable and in recent years has had a decrease in the number of landings, due to a decline in the French market and impacts of Covid³¹. Oyster beds are located on the western and eastern banks of Carrick Roads, as well within the River Fal (north of Turnaware Point), upstream of St Mawes Harbour, and close to the existing Falmouth Wharfs²⁸. These beds are captured within the shellfish Classification Zones for the estuary.
- 10.9.10 Harvesting of blue mussels *Mytilus edulis* also occurs within the Fal Estuary. This species is caught in the lower reaches of the River Fal and the lower reaches of Mylor Creek²⁸.

<10 m	Gill nets and entangling nets	Crawfish	1.09	1.09	£29,322.03
<10 m	Gill nets and entangling nets	Crabs (C.P.Mixed Sexes)	8.98	7.68	£24,787.95
<10 m	Traps	Crabs - Velvet (Swim)	7.97	7.97	£24,761.44
<10 m	Hooks and lines	Mackerel	13.70	13.70	£22,091.64
<10 m	Traps	Ballan Wrasse	0.17	0.17	£19,267.50

Byelaws

- 10.9.11 Cornwall IFCA impose and enforce a number of byelaws that regulate the fishing activity that goes on within their district. The River and Estuarine Fishing Nets Byelaw 2017³² prohibits the usage of fishing nets (including beach seine, ebb and seine nets) within estuaries and rivers in the C-IFCA District except in cases where a permit has been issued. The 'River Fal' as defined in the byelaw, is the area within tidal limits landward of a line between 50° 08.608'N, 005° 02.560'W and 50° 08.432'N, 005° 00.935'W (Figure 10.10).
- 10.9.12 Falmouth Harbour Commissioners (FHC) Code of Practice for Deployment and Marking of Fishing Gear³³ notes the wording of Byelaw 49: "No person shall cast or place any drift, trawl or other net or pot in such a position as to be likely to become an obstruction or danger to any property including in particular, but without prejudice to the generality of the foregoing, any vessel or mooring." The document goes on to advise that fishermen should avoid laying gear in the main buoyed channel in the Carrick Roads and approaches area, as well as avoiding charted ferry routes, small craft moorings and approaches to marinas or facilities. FHC byelaws do not apply within FDEC waters, but in practice, this means that it is very unlikely that large amounts of commercial fishing activity will take place within the site boundary or the surrounding waters (the main approach channel or the areas of moorings).

Length Group	Gear category	Species name	Live Weight (tonnes)	Landed Weight (tonnes)	Value (£ Sterling)
>10 m	Dredges	Scallops	114.61	114.61	£284,454.80
<10 m	Traps	Lobsters	6.74	6.74	£124,411.63
<10 m	Traps	Crabs (C.P.Mixed Sexes)	28.98	28.97	£91,691.79
<10 m	Gill nets and entangling nets	Monks or Anglers	19.10	6.64	£77,329.15
>10 m	Surrounding nets	Pilchards	164.84	164.84	£50,907.61

²⁷ Cornwall Wildlife Trust, 2025. Cornwall Food Seafood Guide, Queen Scallops. Available [online] at: <https://www.cornwallgoodseafoodguide.org.uk/fish-guide/queen-scallop.php>

²⁸ CIFCA, 2022. Fal Oyster Survey 2022. Final report for the 2022 Fal Oyster Survey (2022_CIFCA_SAC_FAL_FOS).

²⁹ Cefas, 2012. Classification of bivalve mollusc production areas in England and Wales. Sanitary Survey Report. Fal Estuary (Lower) and Percuil River (Cornwall). EC Regulation 854/2004.

³⁰ Sturgeon, S., Street, K., Trundle, C., Jenkin, A., and Daniels, C. 2023. Fal Fishery Summary Statistics Season 2022-2023. Cornwall Inshore Fisheries and Conservation Authority (Cornwall IFCA), Hayle.

³¹ Cornwall Wildlife Trust, 2025. Cornwall Food Seafood Guide, Native Oyster. Available [online] at: <https://www.cornwallgoodseafoodguide.org.uk/fish-guide/native-oyster.php>

³² Cornwall Inshore Fisheries and Conservation Authority, 2017. River and Estuarine Fishing Nets Byelaw 2017. Available [online] at: https://secure.toolkitfiles.co.uk/clients/17099/sitedata/Byelaws%20and%20orders/Cornwall_IFCA/RiverandEstuarineFishingNetsByelaw2017.pdf

³³ Falmouth Harbour Commissioners 2022. Code of Practice for Deployment and Marking of Fishing Gear, Document Reference 30-210-01. Available at: <https://www.falmouthharbour.co.uk/wp-content/uploads/2022/01/30-210-01-Code-of-Practise-for-the-Deployment-and-Marking-of-Fishing-Gear.pdf>.

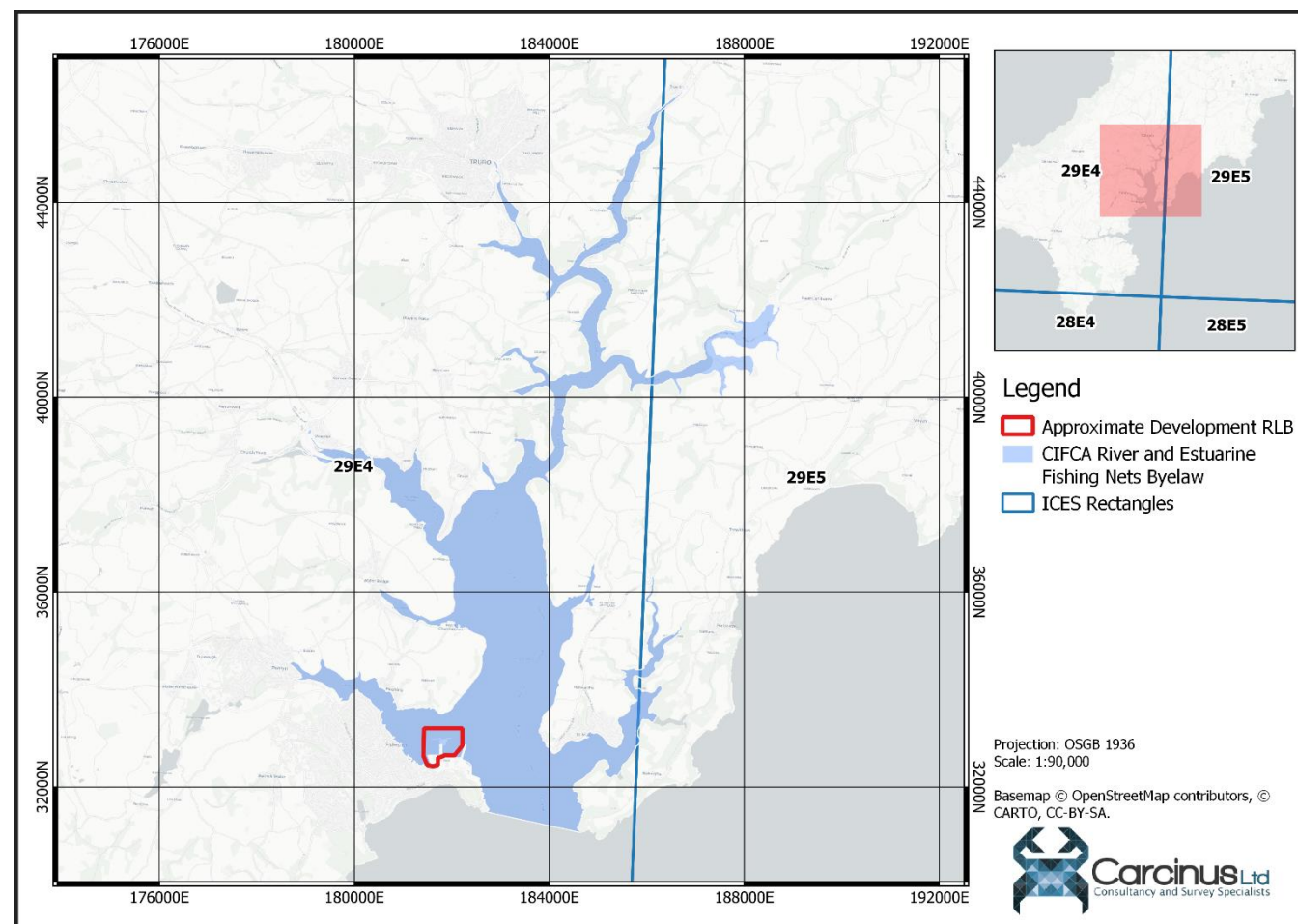


Figure 10.10: Boundary of the CIFCA River and Estuarine Fishing Nets Byelaw 2017 in relation to the development RLB.

10.9.13 The entire estuary is designated under the Fal Fishery Order 2016³⁴. Under this legislation, fishing of any bivalve or gastropod shellfish (including scallops) is prohibited by any vessel >11 m length and a vessel of any length using any mechanical methods. In effect, this means that all scallop fishing landed to ports in Falmouth will occur outside of the Fishery Order boundaries. The Fishery Order area extends to a line drawn between 50° 10'.330N, 005° 02'.740W and 50° 10'.372N, 005° 01'.376W. Whilst the Fishery Order area does not include the waters around the site, the nature of a scallop dredge vessel and the conditions surrounding the site means that it is very unlikely that there will be significant scallop dredge effort around the site due to the level of extant recreational shipping traffic and ongoing wharf operations (see Volume 2: Technical Appendix 2.9).

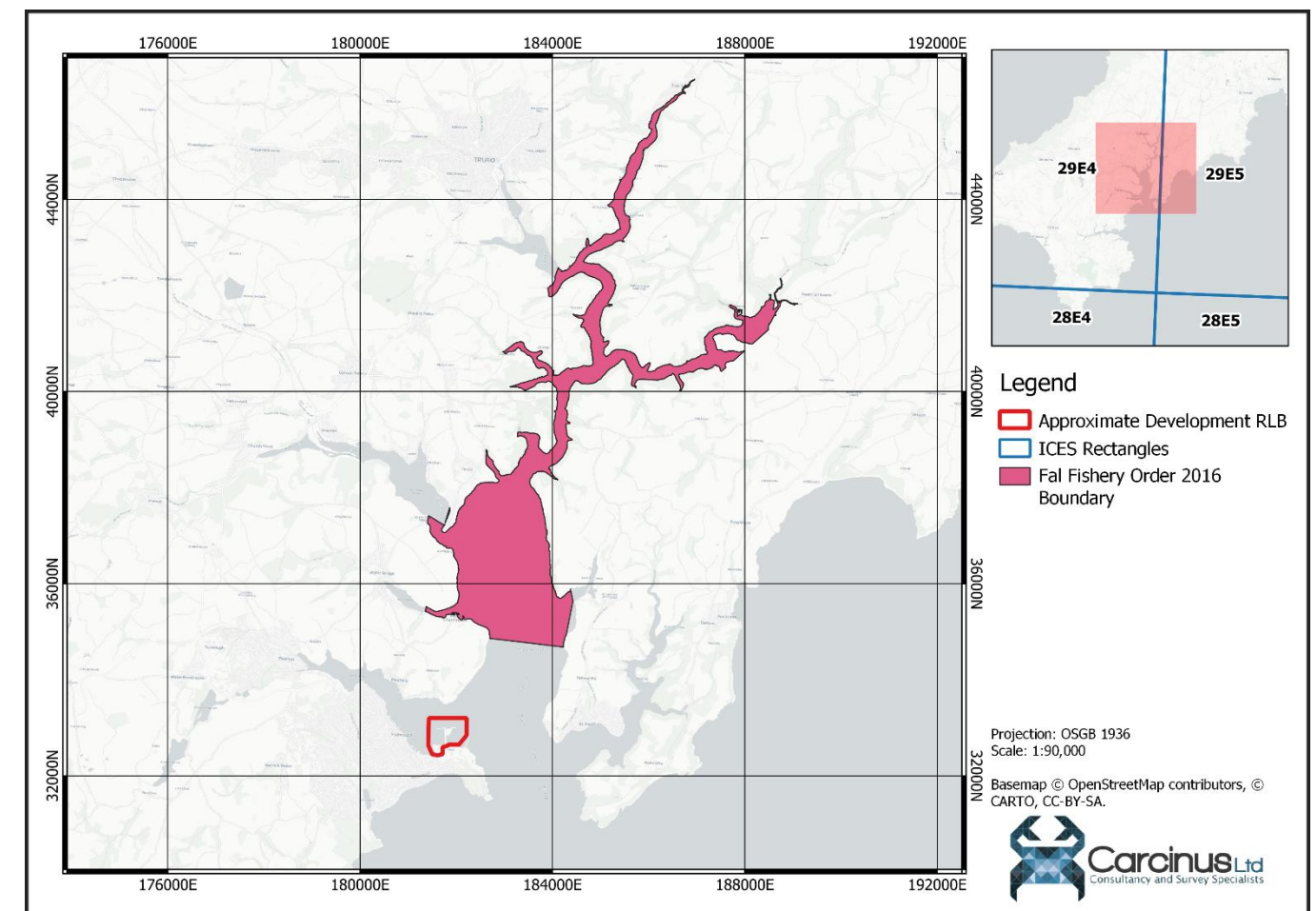


Figure 10.11: Boundary of the Fal Fishery Order 2016 in relation to the development RLB.

Shellfish Designations and Classification Zones

10.9.14 The Fal Estuary is designated as a Shellfish Water under The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017³⁵, and there are currently 35 different Classification Zones classified for shellfish harvesting under assimilated EU Law Regulation (EU) 2019/627³⁶. Figure 10.12 shows the distribution of these designated and classified areas within the study area. These Zones are classified for the harvest of Queen and variegated scallop *A. opercularis* and *M. varia*, native oysters *Ostrea edulis* and mussels *Mytilus* spp. There are no Classification Zones for shellfish harvesting within the site, the closest being 1 km north-west of the site, meaning that there will be no commercial shellfishing activity within the site or immediately surrounding waters.

³⁵ The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Available at: <https://www.legislation.gov.uk/uksi/2017/407/contents/made>

³⁶ Assimilated EU Law Regulation (EU) 2019/627. Available at: <https://www.legislation.gov.uk/eur/2019/627/contents>.

³⁴ The Fal Fishery Order 2016. Available at: <https://www.legislation.gov.uk/uksi/2016/716/contents/made>.

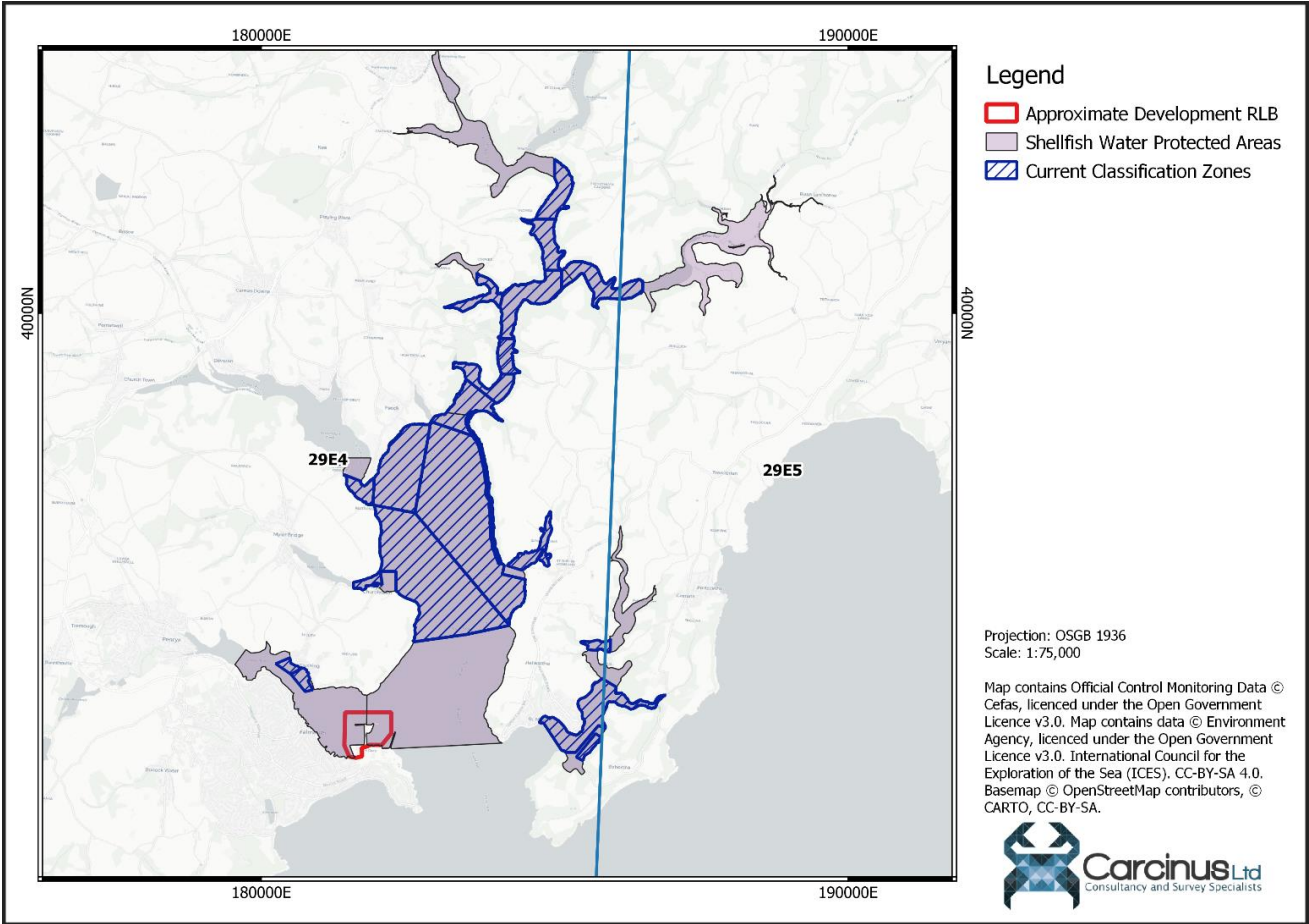


Figure 10.12: Designated Shellfish Waters and Classification Zones within the Fal Estuary

Summary of Commercial Fisheries and Shellfisheries Sensitive Receptors

10.9.15 The receptors identified as sensitive to the proposed development, and which have been ‘scoped-in’ to the assessment are summarised in Table 10-9. The receptors identified have been selected as those of the highest value in terms of landings to ports within the Fal estuary.

Table 10-9: Summary of Sensitive Receptors		
Receptor	Sensitivity /Value	Justification
<10 m vessels deploying traps, targeting lobsters, crabs and/or wrasse	Medium	Whilst these vessels have some spatial adaptability, this is limited as is their ability to deploy alternative gear types. This is the second most valuable fishery in the study area.
<10 m vessels targetting native oysters, blue mussels, and queen scallops	Medium	Whilst the value of these landings are low relative to others, they have a high local cultural importance.
>10 m vessels deploying dredges, targeting scallops	Low	Whilst it is the highest value fishery in the area, these vessels have a high spatial adaptability and are able to target other fishing grounds in the surrounding area.
>10 m vessels deploying surrounding nets, targeting pilchards	Low	These vessels have a high spatial adaptability and are able to target other fishing grounds in the surrounding area. Subject to a high amount of fishing effort despite low(er) landings value.
<10 m vessels deploying gill or surrounding nets, targeting monks/anglers, crawfish or crabs	Low	These vessels have a high spatial adaptability and are able to target other fishing grounds in the surrounding area.

Table 10-9: Summary of Sensitive Receptors		
Receptor	Sensitivity /Value	Justification
Any/all fishing vessels landing to Falfish	Medium	Fishing wholesaler whose landings facility is within the site. May receive landings from vessels/gear types not covered by other sensitive receptors.

10.9.16 A more comprehensive baseline of the commercial fishery species themselves (such as locations of spawning and nursery areas, and migratory species) is provided in Chapter 9: Marine Ecology. Migratory species (including trout and flounder) have been assessed as having international importance. Commercial species (including pollack, herring, sprat etc.) have been assessed as having national importance within Chapter 9: Marine Ecology. Effects on these receptors are considered within that chapter.

10.10 Assessment of Effects

10.10.1 The following assessment provides a summary of all impacts identified during scoping, and those which have been noted as the EIA has progressed. All impacts are not necessarily relevant to all stages of the project, and thus impacts and effects have been assessed with the stage of the project at which they will occur. These stages are demolition and construction and operational.

Demolition and Construction Effects

- 10.10.2 The potential impacts and likely effects on commercial fisheries receptors during the demolition and construction stage would be as follows:
- Temporary and permanent exclusion of fishermen/fishing effort from fisheries/harvesting areas in the vicinity of the site;
 - Temporary and permanent displacement of stock away from the site; and
 - Temporary and permanent depletion of stock.

Temporary Exclusion of Fishermen/Fishing Effort

- 10.10.3 Any displacement of fishermen/fishing effort would take place during the marine component of the works, which are anticipated to start in Q4 2025 and continue until Q1 2029 (42 months).
- 10.10.4 The exact phasing of construction activities and the locations of supporting construction vessels throughout this process would be confirmed once the chosen contractor is appointed. Temporary safety zones around marine construction areas would be implemented, with local vessel traffic notified via a Notice to Mariners (NTM). For the purposes of this assessment, it is assumed that access to all waters within the site would be restricted to vessels associated with construction activities, and that no external vessels would be able to access the affected wharfs.
- 10.10.5 Berthing lists from 2022 and 2023 show that no fishing vessels berth to the existing wharves, with Falfish using an area between the Western Wharf and dry docks to land their fish. The wharves are currently used by cargo, military ship repair (those that have come out of the dry dock), cruise and other vessels. The berthing lists show that at least one of the wharves is occupied for most weeks of the year, with vessels continually moving in-and-out of the area. There are also times at which all wharves within the site are occupied and so this is the situation assessed within this chapter. FHC Byelaw 49 places restrictions on the deployment of both static and mobile fishing gear in locations where it could pose a risk to navigation, vessels or moorings. With the volume of extant shipping activity in the waters around the site, large vessels (those >10 m) would avoid the site during demolition and construction for their fishing activity and would instead be targeting more offshore waters due to lack of room to manoeuvre.
- 10.10.6 The magnitude of impact on >10 m vessels deploying gill nets, surrounding nets and dredges is therefore considered to be **Very Low**. Combined with the **Low** value/sensitivity of these receptors, the effect on vessels >10 m deploying gill nets, surrounding nets or dredges would be **Negligible Adverse** and **not significant**.
- 10.10.7 The magnitude of impact on <10 m vessels targeting monks/anglers, crawfish or crabs is considered to be **Very Low** as main fishing grounds for these species will be in offshore areas, and therefore temporary exclusion from the site does not represent a loss in available fishing areas. Combined with

the **Low** value/sensitivity of these receptors (Table 10-9), the effect on vessels <10 m targeting monks/anglers, crawfish or crabs would be **Negligible Adverse** and therefore **not significant**.

- 10.10.8 During the May 2023 Marine Ecology survey of the site, no lobster/crab pots were observed in the vicinity. Despite this, the trap fishery operated by small (<10 m) vessels is the receptor most likely to conduct any fishing operations around the site. Monthly landings data from 2023 shows that the highest shellfish landings were from April to September and so any displacement would be during this period. However, these vessels are still subject to FHC Byelaw 49 to avoid deploying fishing gear in locations where it could pose a risk to navigation. Deployed lobster pots act as a significant snag risk for all types of vessels and it is considered highly unlikely that there would be significant potting in the site. This is also true of other shellfish landings (i.e. native oysters, blue mussels, and queen scallops), which take place in the classified shellfish take zones within the estuary (away from the proposed development). The magnitude of impact is therefore considered to be **Very Low**. This receptor was assessed to be of **Medium** value/sensitivity, but the overall effect on vessels <10 m targeting lobsters/crabs (as well as <10 m vessels targeting native oysters, blue mussels, and queen scallops) would be **Negligible Adverse** and **not significant**.
- 10.10.9 Given the location of the proposed works, the vessels to be used for the construction phase (particularly those associated with the proposed dredging) will not be present within the main navigational channel for any extended periods of time. Therefore, fishing vessels transiting to and from other nearby ports, would not be obstructed during the construction phase and could continue to the known commercial fishing areas. The magnitude of impact to fishing vessels transiting to fishing grounds outside of the immediate vicinity of the proposed development is therefore considered to be **Negligible**. This receptor was assessed to be of **Low** to **Medium** value/sensitivity, but the overall effect on transiting commercial fishing vessels as whole would be **Negligible Adverse** and **not significant**.

Temporary and permanent displacement of stock away from the site

- 10.10.10 There may be potential for the demolition and construction stage of the proposed development to result in impacts on commercially exploited fish and shellfish species. This in turn could indirectly affect the productivity of the fisheries that target them.
- 10.10.11 The potential impacts and effects of the proposed development during the demolition and construction stage on fish and shellfish species, including those of commercial importance are assessed fully in Chapter 9: Marine Ecology. Impact pathways for disturbance to fish and shellfish receptors (including commercial species) include:
- Noise and disturbance from vessel movement, piling and dredging.
- 10.10.12 Potential effects from underwater noise to fish could result in some temporary disturbance of individuals and therefore displacement of stock away from commercial fishing grounds. Underwater noise modelling shows that disturbance to fish would be limited to the Fal Estuary and any disturbance would be close to the construction works. Known commercial fisheries within the estuary do not comprise fin fish, which are mobile and have the potential to be affected by underwater noise. Invertebrate species (i.e. crabs, lobsters, oysters, scallops, mussels) are sedentary and unable to avoid exposure to underwater sound³⁷. Despite this, due to the physiology of these species, studies have shown that these species have a low sensitivity to noise and any potential effects will be limited to within a few metres of a sound source^{38,39}. The nearest classification zone for shellfish is over 1.5 km from the proposed development, whilst fishing of nearby crabs and lobsters occurs hundreds of metres away (closer to Carrick Roads and the main channel of the Fal Estuary). These fisheries are not considered to be disturbed by underwater noise produced during the construction phase, particularly given their low sensitivity to underwater sound.

- 10.10.13 Overall, impacts and effects on commercial fish and shellfish from noise and vibration due to impact piling during the demolition and construction stage are considered to result in **Negligible Adverse** and **not significant** effects.

Temporary and permanent depletion of stock

- 10.10.14 Impact pathways for permanent depletion of commercial fish and shellfish stock include:

- Permanent and temporary loss and disturbance to habitats as a result of piling and resulting from scour or subsequent sediment mobilisation;
- Elevated suspended sediment concentration; and
- Suspended sediment deposition.

- 10.10.15 A full assessment of the effects of the proposed development during the demolition and construction stage is presented in Chapter 9: Marine Ecology.
- 10.10.16 Any potential removal or disturbance to habitat would be limited to the red line boundary and footprint of the construction works. This is focussed on the proposed dredge pockets which are away from any known fishing grounds identified.
- 10.10.17 Suspended sediment concentrations (SSC) and subsequent deposition as a result of the proposed dredging could transport sediment to nearby shellfish fisheries. Sediment plume modelling showed that predicted peak increases in SSC would be elevated at the dredging locations and in the vicinity of the site up to 300 m west of the site and up to 900 m east of the site (worst-case), at which point the peak increases in concentrations fall below 1 mg/l. This would be short-term and would return to baseline levels following the dredging activities. Short-term increases in SSC outside of the site boundary would be comparable to natural variability, particularly compared to stormy conditions, where SSC can be elevated to above 100 mg/l.
- 10.10.18 Due to the dredging only occurring on an adjusted flood tide (late ebb tide and early flood tide), the rate of sediment released is roughly halved compared to other scenarios. Up to a few tens of centimetres of sediment deposition is predicted up to 150 m west of the site boundary and up to 50 mm of deposition (worst-case) is predicted in a localised area at the end of the eastern breakwater. Outside of these areas the predicted sediment deposition is of up to 5 mm, declining to less than 1 mm at distances of 370 m (west of the site), and 300 m (east of the site).
- 10.10.19 Species such as native oyster, blue mussel, and edible crab have a high tolerance of sediment concentration increases⁴⁰. Individuals within the estuary will experience regular changes in fine sediments due to natural variability, such as from tidal currents and storms. The distances over which sediment will be deposited will avoid the nearby shellfish classification zones, where native oysters, blue mussels, and scallops are targeted. These are over 1.5 km from the proposed development. There will be very limited deposition in the mouth of the Fal estuary, close to Pendennis Point, where crabs (velvet swimming and edible) and lobsters are known to be present and landed. However, due to the mobility of these species, meaning they can escape sediment deposition, changes of 1-2 mm are not considered to result in a significant effect on these species.

- 10.10.20 Overall, the impacts which could result in the depletion of stock during the demolition and construction stage will result in a **Minor Adverse** and **not significant** effect.

Operational Effects

- 10.10.21 The potential impacts and likely effects of the operational development on commercial fisheries receptors would be as follows:
- Permanent displacement of fishing effort

Permanent displacement of fishing effort.

- 10.10.22 There is potential for displacement of fishing effort as a result of the operational development.

- 10.10.23 The current port operations already result in a substantial amount of vessel movements. ES Chapter 4: Proposed Development Description provides details of the existing operational vessel numbers in 2023,

³⁷ Solan, M., Hanton, C., Godbold, J., Wood, C., Leighton, T. and White, P. (2016). Anthropogenic sources of underwater sound can modify how sediment dwelling invertebrates mediate ecosystem properties. [online] Available at: <https://www.nature.com/articles/srep20540>

³⁸ Spiga, I., Cheesman, S., Hawkins, A., Perez-Dominguez, R., Roberts, L., Hughes, D., . . . Bentley, M., 2012. Understanding the Scale and Impacts of Anthropogenic Noise upon Fish and Invertebrates in the Marine Environment. SoundWaves Consortium Technical Review, ME5205.

³⁹ Wale, M., Simpson, S. and Radford, A., 2013. Size dependent physiological responses of shore crabs to single and repeated playback of ship noise. Biology Letters, 2.

and the likely vessel movements as a result of the proposed development. Increases in vessel movements are predicted in relation to cruise, FLOW and freight. Approximately 11 additional excellence class vessels are predicted per year as a result of the proposed development. In terms of FLOW, tugboats would pull FLOW devices into the site's western basin. The proposed development would have capacity for two FLOW devices, which would berth alongside Duchy Wharf and the FLOW Deck respectively. Therefore the proposed development will result in an increase in vessel traffic to and from the site, albeit in an already busy harbour.

- 10.10.24 FHC Byelaw 49 places restrictions on the deployment of both static and mobile fishing gear in locations where it could pose a risk to navigation, vessels or moorings. With the volume of extant shipping activity in the waters around the site, large vessels (those >10 m) would avoid the site for their fishing activity and would instead be targeting more offshore waters due to lack of room to manoeuvre. The magnitude of impact on >10 m vessels deploying gill nets, surrounding nets and dredges is therefore considered to be Very Low. Combined with the Low value/sensitivity of these receptors, the effect on vessels >10 m deploying gill nets, surrounding nets or dredges would be **Negligible Adverse** and therefore **not significant**.
- 10.10.25 The magnitude of impact on <10 m vessels targeting monks/anglers, crawfish or crabs is considered to be Very Low as main fishing grounds for these species will be in offshore areas, and therefore temporary exclusion from the site does not represent a loss in available fishing areas. Combined with the Low value/sensitivity of these receptors (Table 10-9), the effect on vessels <10 m targeting monks/anglers, crawfish or crabs would be **Negligible Adverse** and therefore **not significant**.
- 10.10.26 During the May 2023 Marine Ecology survey of the site, no lobster/crab pots were observed in the vicinity. Despite this, the trap fishery operated by small (<10 m) vessels is the receptor most likely to conduct any fishing operations around the site. However, these vessels are still subject to FHC Byelaw 49 to avoid deploying fishing gear in locations where it could pose a risk to navigation. Deployed lobster pots act as a significant snag risk for all types of vessels and it is considered highly unlikely that there will be significant potting within the site. This has been identified as taking place within the main channel of the Fal estuary. This is also true of other shellfish landings (i.e. native oysters, blue mussels, and queen scallops), which take place in the classified shellfish take zones within the estuary. The location of the proposed development also means that it would not obstruct vessels moving to these nearby fishing grounds. The magnitude of impact is therefore considered to be **Very Low**. This receptor was assessed to be of **Medium** value/sensitivity (on vessels <10 m targeting lobsters/crabs and native oysters, scallops, and blue mussels) would be **Negligible Adverse** and **not significant**.
- 10.10.27 The fishing wholesaler Falfish operate a landings facility within the site and this would continue to operate during the operational phase of the proposed development, ensuring **no significant** effect on Falfish landing operations.

10.11 Additional Mitigation

Demolition and Construction Stage

- 10.11.1 No significant adverse effects are predicted and consequently no additional mitigation is required.

Operational Stage

- 10.11.2 No significant adverse effects are predicted and consequently no additional mitigation is required.

10.12 Enhancement Measures

- 10.12.1 No enhancement measures are proposed or required in respect of Commercial Fisheries and Shellfisheries.

10.13 Demolition and Construction Residual Effects

- 10.13.1 As no additional mitigation would be required, the residual operational effects remain as reported in the Assessment of Effects section.

10.14 Operational Residual Effects

- 10.14.1 As no additional mitigation would be required, the residual operational effects remain as reported in the Assessment of Effects section.

10.15 Summary of Significant Effects

- 10.15.1 Table 10-10 provides a tabulated summary of the outcomes of the commercial fisheries and shellfisheries assessment of the proposed development. With mitigation in place, no significant effects on commercial fisheries or shellfisheries receptors were identified in the assessment presented in this chapter during either the demolition and construction or operational development stages.

Table 10-10: Summary of Commercial Fisheries and Shellfisheries Effects								
Receptor	Description of Effect	Pre-Additional Mitigation Effect: Scale/ Nature/ Significance*	Additional Mitigation	Post-Additional Mitigation Effect: Scale/ Nature/ Significance*	Details of Residual Effect			
					Direct/ Indirect	Permanent/ Temporary	Reversible/ Irreversible	Short-term/ Medium-term/ Long-term
Demolition and Construction								
Vessels >10 m deploying gill nets, surrounding nets or dredges	Temporary and Permanent Exclusion of Fishermen/Fishing Effort	Minor / Adverse / Not Significant	Not required	Minor / Adverse / Not Significant	Indirect	Temporary	Irreversible	Short-Term
Vessels <10 m targeting lobsters/crabs	Temporary and Permanent Exclusion of Fishermen/Fishing Effort	Negligible / Adverse / Not Significant	Not required	Minor / Adverse / Not Significant	Indirect	Temporary	Irreversible	Short-Term
Fishing wholesaler within the site	Temporary Exclusion of Fishermen/Fishing Effort	Minor / Adverse / Not Significant	Not required	Minor / Adverse / Not Significant	Indirect	Temporary	Irreversible	Short-Term
Commercially exploited fish and shellfish species	Temporary and permanent displacement of stock away from the site	Negligible / Adverse / Not Significant	Not required	Negligible / Adverse/ Not Significant	Indirect	Temporary	Irreversible	Short-Term
Commercially exploited fish and shellfish species	Temporary and permanent depletion of stock	Minor / Adverse / Not Significant	Not required	Minor / Adverse/ Not Significant	Indirect	Temporary	Irreversible	Short-Term
Operational								
Vessels >10 m deploying gill nets	Permanent displacement of fishing effort	Negligible / Adverse / Not Significant	Not required	Minor / Adverse / Not Significant	Indirect	Permanent	Irreversible	Long-term
Vessels <10 m targeting monks/anglers, crawfish or crabs	Permanent displacement of fishing effort	Negligible / Adverse / Not Significant	Not required	Minor / Adverse / Not Significant	Indirect	Permanent	Irreversible	Long-term
Vessels <10 m targeting lobsters/crabs	Permanent displacement of fishing effort	Negligible / Adverse / Not Significant	Not required	Minor / Adverse / Not Significant	Indirect	Permanent	Irreversible	Long-term
Fishing wholesaler within the site	No effect	N/A	Not required	N/A	Indirect	Permanent	Irreversible	Long-term
Notes (refer to Chapter 2, section 2.8 for definitions): * Negligible/Minor/Moderate/Major, Adverse/Beneficial, Significant/Not Significant								

10.16 Cumulative Effects

Intra-Project Effects

10.16.1 As explained in Chapter 2: EIA Process and Methodology, intra-project cumulative effects are discussed in Chapter 20: Cumulative Effects.

Inter-Project Effects

10.16.2 No development projects have been identified as likely to have inter-project cumulative effects.