Updated spatial data on under 12 m fishing vessel activities for marine spatial planning off the south coast of Ireland

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Key Findings

- Building on 78 vessels surveyed in 2024, BIM surveyed a further 59 vessels in 2025 providing a total of 137 vessels surveyed off the south coast.

Waterford and Wexford

- In addition to 70 surveys conducted in 2024, BIM surveyed an additional 15 vessels from Waterford and Wexford ports in 2025.
- BIM surveyed a total of 85 out of 88 active under 12 m vessels providing an overall sampling rate of 97%.
- The resulting aggregated data are comprehensive and suitable for marine spatial planning purposes.
- The updated aggregated spatial data for these vessels are available at this link.
- The data collected from Waterford and Wexford vessels are suitable for planning of the ORE maritime areas.
- The data can also inform planning of proposed Waterford or Wexford landfall zones of offshore transmission cables from Tonn Nua.

Cork

- BIM surveyed an additional four vessels from East Cork ports. It was not possible, however, to ascertain the sampling rate so these data were removed from finalised maps and datasets to avoid potential misinterpretation and use of incomplete datasets for planning purposes.
- BIM surveyed 40 vessels in other Cork ports but lack of local consensus on survey participation and resource constraints precluded further progress.
- The aggregated data from Cork vessels are not comprehensive and are not suitable for planning of proposed offshore transmission cable landfall points in East Cork or other planning purposes.
- BIM can make individual's data available to them as required.

Recommendations

- The BIM participatory mapping approach may be of benefit in enabling inshore fishers provide spatial data on their activities in relation to planning of other ORE developments and MPAs under the new National DMAPs.
- Lessons learned to date suggest that a strong level of regional consensus, coordination and implementation, underpinned by appropriate resource planning and allocation would be needed to ensure successful application of this approach in other Irish coastal areas.

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Introduction

In 2024, BIM developed a participatory mapping tool to enable under 12 m vessels provide spatial data on their fishing activities for marine spatial planning (MSP) purposes (Tray et al., 2025) (link here). The project successfully generated data on < 12 m fishing activities in and around the four designated maritime areas for offshore renewable energy (ORE) off the south coast (Government of Ireland, 2024). The project results were presented at the Seafood-ORE Working Group and received positive feedback from the fishing and wind energy industries.

It is essential that any data on fishing activities used for these purposes are comprehensive to ensure inclusion of the relevant stakeholders and effective MSP. In 2024, BIM surveyed 70 out of 96 active fishing vessels operating from Waterford and Wexford ports providing a 73% sampling rate. Many of the outstanding 26 vessel owners were not available during survey work in 2024 and it was important to provide them with further opportunity to participate.

We also surveyed a further 11 vessels from the east Cork ports of Ballycotton and Youghal in 2024. The total number or active vessels was not available and it was not possible to estimate the sampling rate from these ports. East Cork is a key area for ORE development given that Eirgrid has identified a landfall zone where offshore transmission cables will come ashore from maritime area A – the other landfall location will be in Waterford or Wexford. Hence it was important to try and increase the sampling rate for vessels operating in east Cork. Data on under 12 m vessel activities are also needed for the rest of Cork to address data gaps in relation to development of Marine Protected Areas (MPAs) in the Celtic Sea (Marine Protected Area Advisory Group, 2024; Tray et al., 2025).

The objectives of the current study were as follows:

1. Update the spray-map application for improved functionality & data collection
2. Review active vessels and survey remaining vessels from Waterford and Wexford ports
3. Provide updated maps, spatial data and fisheries information restricted to Waterford and Wexford where comprehensive sampling was achieved
4. Identify active vessels and continue surveying remaining vessels from Cork ports
5. Provide recommendations on potential future work

Methods

We updated the spray-map application in collaboration with the developer, Professor Jonny Huck from Lune Geographic Ltd. BIM regional officers based in Wexford and Cork identified active vessels and those which had not yet been surveyed and arranged interviews with skippers. Prior to commencing further surveys in Cork, we met with the South West Regional Inshore Fisheries Forum which provided support for the project. BIM conducted the interviews mainly between June and August 2025. Detailed methodology on all aspects of this work is available in Tray et al. 2025 (link here). We restricted resulting fisheries outputs to Waterford and Wexford where comprehensive sampling was achieved. Incomplete spatial data were removed or excluded to avoid misinterpretation and use of incomplete data sets in MSP.

Results

Application Development & Improvements

We made minor improvements to the application and updated the user interface to improve overall mapping accuracy. We added a measure function, which enabled the interviewer to draw a line between two points on the admiralty chart using the mouse, automatically calculating the distance in miles. We also developed an "add more maps" option, which enabled interviewers to return to the mapping page if the survey was accidentally closed before completion. Additional laptop batteries were procured to enable extended sampling periods.

Updated outputs for Waterford & Wexford

The BIM regional officers identified 88 active vessels operating from Wexford and Waterford ports in 2025. This number was revised down from 96 in 2024 due to some vessels operating in other counties or becoming inactive. We surveyed an additional 15 vessels in 2025. This resulted in a total or 85 out of 88 active vessels surveyed providing a sampling rate of 97%. 82 skippers operated the 85 vessels. Updates to the maps and tables produced in Tray et al. (2025) are outlined below and the associated spatial data is available at this link. We excluded survey results from vessels operating from Cork ports due to lack of comprehensive data.

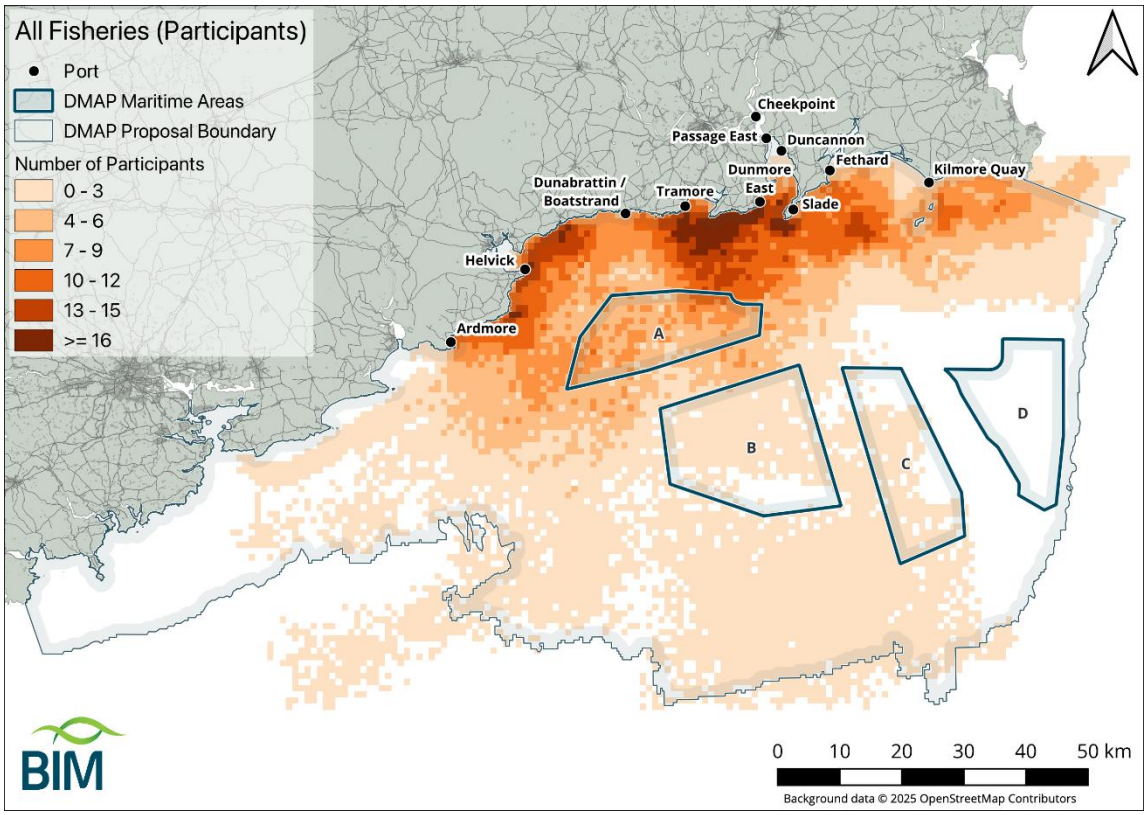

Figure 1. Updated map of combined fisheries by survey participants based in Waterford and Wexford ports in relation to ORE maritime areas

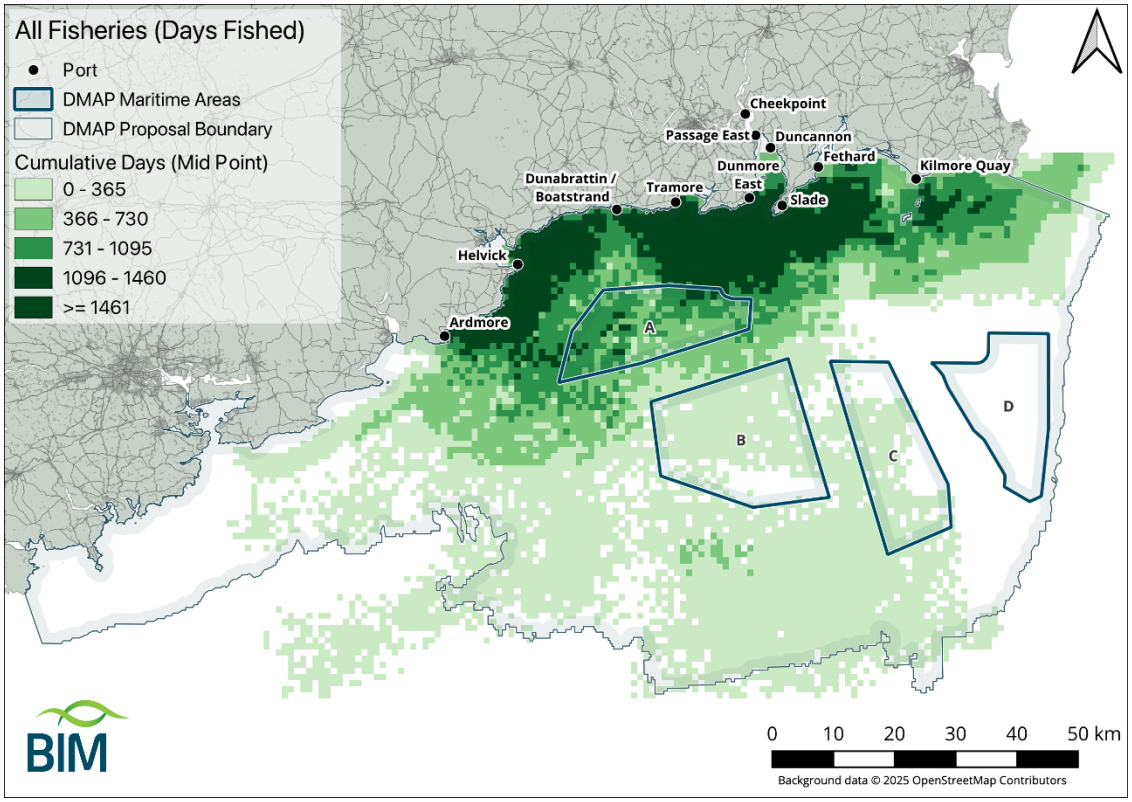

Figure 2. Updated map of combined fisheries by days fished for survey participants based in Waterford and Wexford ports in relation to ORE maritime areas

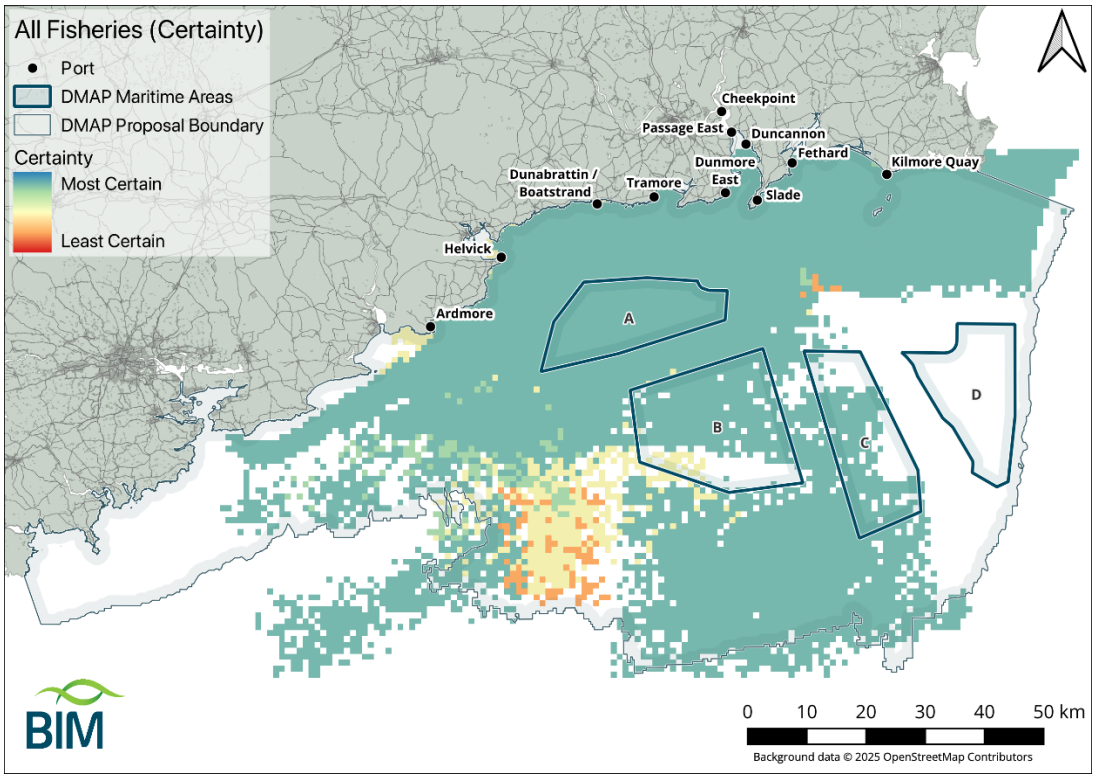

Figure 2. Updated map of statistical certainty for survey participants based in Waterford and Wexford ports in relation to ORE maritime areas

Table 1. Defined fisheries based on gear types and species

Fishery	Gear type	Species
Brown crab	pots	brown crab
Demersal trawl	single	haddock
		monkfish
		nephrops
		plaice
	twin-rig	nephrops
		plaice
Dredge	dredges	surf clam
Gillnets	gill nets	black pollack
		hake
		plaice
		pollack
		turbot
Hook & line	hook & line	mackerel
		pollack
Lobster	pots	lobster
Mid-water trawl	single	sprat
Other crab	pots	green crab
		spider crab
		velvet crab
Shrimp	pots	shrimp
Tangle nets	tangle nets	crayfish
		monkfish
		plaice
		spider crab
		turbot
Whelk	pots	whelk

Table 2. Vessel plotter and validation data

Characteristic	N	STDEV
Vessels with plotter (N)	57	
Vessels without plotter (N)	28	
Mean vessel size (m)	8.3	2.0
Mean vessel size with plotter (m)	9.3	1.6
Mean vessel size without plotter (m)	6.4	1.3
Fishing activities	234	
Validated fishing activities (N)	145	
Validated fishing activities (%)	62	
Mean validation score (%)	83	18.1

Table 3. Days fished in ORE maritime areas

Fishery	Total	A	B	C	D
Lobster	8550	275	0	0	0
Brown Crab	5625	1675	500	350	0
Shrimp	3000	0	0	0	0
Demersal Trawl	1225	1125	125	125	0
Whelk	1025	50	0	0	0
Other Crab	775	0	0	0	0
Gill Nets	600	175	225	100	0
Tangle Nets	600	50	25	0	0
Hook & Line	575	0	0	0	0
Mid Water Trawl	150	0	0	0	0
Dredge	125	0	0	0	0
Total	22250	3350	875	575	0

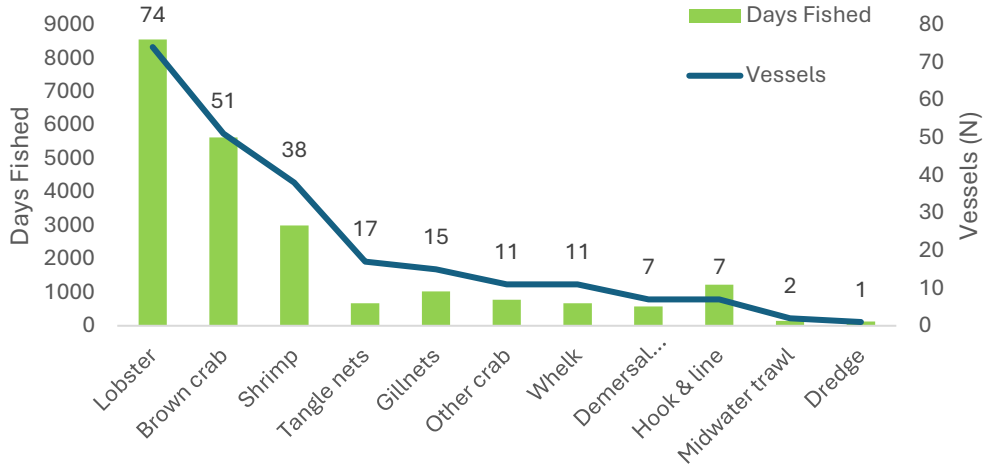

Figure 4. Cumulative days fished and number of vessels in each defined fishery

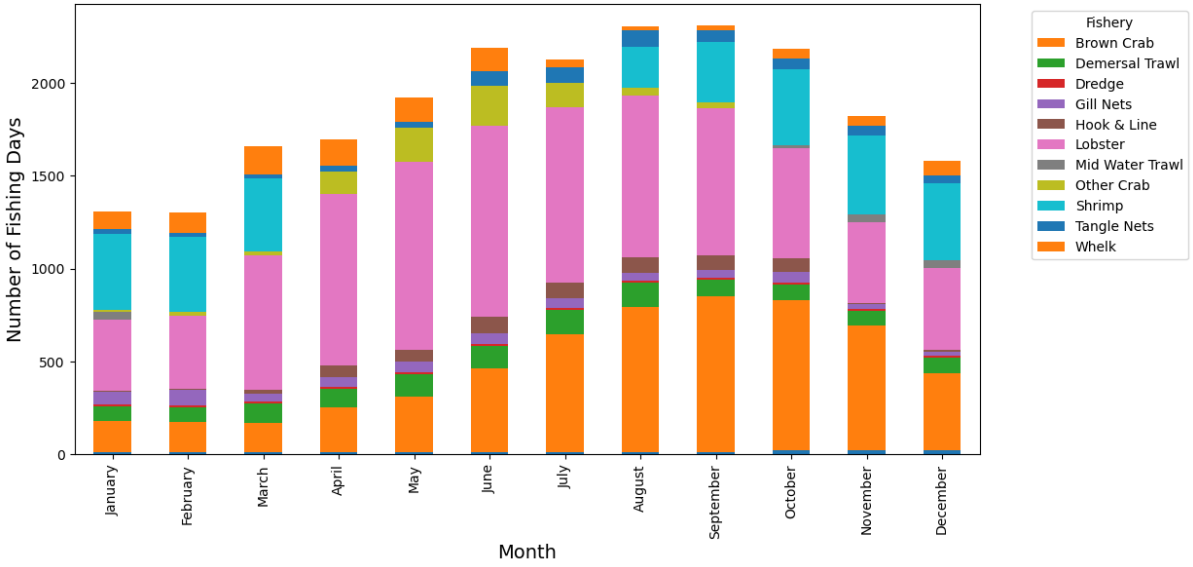

Figure 5. Number of fishing days for each fishery by month

Figure 6. Heat map of fisheries by month standardised by fishery

Surveys of vessels from Cork ports

There were over 300 vessels registered to Cork addresses in the 2025 fleet register, and many of these vessels could not be categorised as active or inactive nor could their home ports be identified. Hence, it was not possible to derive related sampling rates and no detailed outputs were provided for vessels from Cork ports due to lack of comprehensive data.

The Cork ports are widely dispersed over a large area. This raised logistical and resource issues and it was difficult for available BIM staff to make substantial progress on surveying vessels over such a wide area.

We did complete surveys for 44 vessels from Cork ports. Four of these came from the East Cork ports of Ballycotton, Youghal, and Knockadoon resulting in a total of 15 vessels surveyed from the area over two years.

We surveyed a further 40 active vessels across 10 more Cork ports further to the west. Concerns were raised by participants in some of these ports over potential use of the data for area-based fisheries management measures under Natura 2000. It was not possible for the project team to

provide assurance that the resulting aggregated data would not be used for these purposes and we decided to cease surveys in these areas due to lack of local consensus around participation.

Discussion

Building on 78 vessels surveyed in 2024, BIM surveyed a further 59 vessels in 2025 providing a total of 137 vessels surveyed off the south. This study has enabled skippers of under 12 m vessel in Waterford and Wexford ports to provide comprehensive spatial data on their fishing activities in relation to designated ORE maritime areas. We improved the sampling rate from 73% in 2024 to 97% in 2025 and gathered data for all skippers who were willing to participate. The updated aggregated spatial data for these vessels are available at this link.

It is essential that aggregated data generated using this approach have a high sampling rate and are as comprehensive as possible to avoid exclusion of key stakeholders from MSP. We are satisfied that the data from Waterford and Wexford vessels meet this requirement.

Building on work in 2024, we surveyed additional vessels in East Cork ports in 2025. However, the number of active vessels operating from these ports could not be ascertained so we could not derive a sampling rate or tell if the data were comprehensive. Hence, data from East Cork vessels were removed from outputs to avoid potential misinterpretation and use of incomplete datasets for planning purposes.

We also surveyed vessels operating from Cork ports further to the west but resource constraints and a lack of local consensus on survey participation precluded further progress. It is important to note that the data provided by vessels from Cork have been retained and individual's data can be made available to them as required. Subject to local needs and consensus, a regionally coordinated data collection programme would need to be implemented in Cork before aggregated fleet-level data could be made available for MSP purposes.

The data collected from Waterford and Wexford vessels are suitable for planning of the ORE maritime areas, particularly maritime area A 'Tonn Nua' which is first up for proposed development post 2030. The data can also inform planning of proposed Waterford or Wexford landfall zones of offshore transmission cables from Tonn Nua. However, our published data are not suitable for planning of proposed landfall points in East Cork.

Our developed participatory mapping approach may be of benefit in enabling inshore fishers provide spatial data on their activities in relation to planning of other ORE developments and MPAs under the new National DMAPs. Lessons learned to date suggest that a strong level of regional consensus, coordination and implementation, underpinned by appropriate resource planning and allocation would be needed to ensure successful application of this approach in other Irish coastal areas.

Acknowledgements

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Data Citation

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