

Preliminary Seed Mussel Survey Report for Blackwater, the Long Bank (West and East) and Rosslare – April and May 2024

Methodology: Acoustic data collection using 400 kHz side scan sonar, data processing on SonarWiz 6 and ground truthing of acoustic targets with a standard seed mussel fishing dredge meter dredge (Van Lancker *et al.*, 2007; van Overmeeren *et al.*, 2009; BIM, 2016).

Area surveyed: on the site of the 2023 small mussel settlement in Blackwater and along the Blackwater Bank, on the west side of the Long Bank and in the Bar buoy Area, between the Long Bank and the Lucifer Bank and in the South Shear outside Rosslare harbour.

Survey details:

Blackwater – 18 and 19/04/2024 : Side scan sonar data was collected in the area of the 2023 partial seed mussel settlement east of Blackwater Head. 12 acoustic targets were investigated using the dredge, included 6 within the boundaries of the 2023 settlement. No live mussels were found in the area, mainly empty shells (50 mm average length) and large quantities of large starfish. No trace of new seed settlement was found in the area. Two tows were carried out along the bank; however, no seed was found there either. Further investigation was restricted by static fishing gear in the area



Fig.1: Dredge content from Blackwater

West Long Bank and Bar buoy – 17/04/2024 : 6 acoustic targets between the two area were investigated following side scan sonar data collection. Typical mussel bed formation pattern was observed near TR1 (coordinates: **52 19.490 N / 006 17.900 W**) covering 500 m from the south-southeast to the north-northwest. A few large mussels (> 50 mm in length) were found in these tows with some traces of newly settled spat in very small quantities. No further investigation could take place due to the presence of static fishing gear at the location. No tows were done at the Bar buoy.

East Long Bank – 29/05/2024 : The area of the mussel settlement from 2022 was inspected with the side scan sonar and 11 acoustic targets were identified. Traces of spat (2 to 5 mm in length) were observed on few stones in TR 10 (coordinates: **52 20.689 N / 006 15.122 W**). There was no indication of spatfall in any other tows.



Fig.2: example of spat found between the Long Bank and the Lucifer Bank

Rosslare – 29/05/2024: The South Shear was surveyed with the side scan sonar and 4 potential targets were identified. Large mussel shells were found at the location, some traces of spat on stones (3 to 5 mm) were also observed in tows TR4 and TR6 (coordinates: **52 15.490 N /006 18.570 W** and **52 15.331 N/ 006 18.208 W**).

Summary:

It does not appear that seed mussel settled last year at Blackwater survived the winter due to starfish predation. No indication of late settlement in 2023 was observed in the areas surveyed. The traces of spat found in Rosslare and between the Banks indicate that some settlement happened about a month prior to the survey according to the average growth rate observed in the previous year as well as literature (Pérez-Camacho *et al.*, 1995; Gosling, 2022). Further survey will take place in the coming weeks, primarily to assess the potential survivability of the 2023 settlement south of Wicklow head found in September ([BIM - Aquaculture](#)).

References

- BIM. (n.d.). Seed Mussel Survey Reports. <http://www.bim.ie/our-publications/aquaculture/> (Accessed 18 December 2019).
- BIM. 2016. Side Scan Sonar Features Catalogue. https://www.researchgate.net/publication/358640202_Side_Scan_Sonar_Features_Catalogue_related_to_Aquaculture_and_Inshore_Fishing_Activities#fullTextFileContent.
- Gosling, E. 2022. Marine Mussels: Ecology, Physiology, Genetics and Culture. Wiley. 874 pp.
- Pérez-Camacho, A., Labarta, U., and Beiras, R. 1995. Growth of mussels (*Mytilus edulis galloprovincialis*) on cultivation rafts: influence of seed source. *Aquaculture*, 138: 349–362. <http://www.sciencedirect.com/science/article/pii/0044848695011390>.
- Van Lancker, V., Du Four, I., Papili, S., Verfaillie, E., Schelfout, K., Rabout, M., and Degraer, S. 2007. Habitat signature catalogue, Belgian Part of the North Sea.
- van Overmeeren, R., Craeymeersch, J., van Dalssen, J., Fey, F., van Heteren, S., and Meesters, E. 2009. Acoustic habitat and shellfish mapping and monitoring in shallow coastal water - Sidescan sonar experiences in The Netherlands. *Estuarine, Coastal and Shelf Science*, 85: 437–448. Elsevier Ltd. <http://dx.doi.org/10.1016/j.ecss.2009.07.016>.



Preliminary Seed Survey Map for the Blackwater Area - May 2024



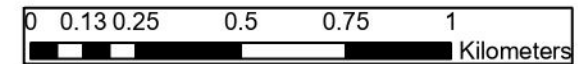
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS

Legend

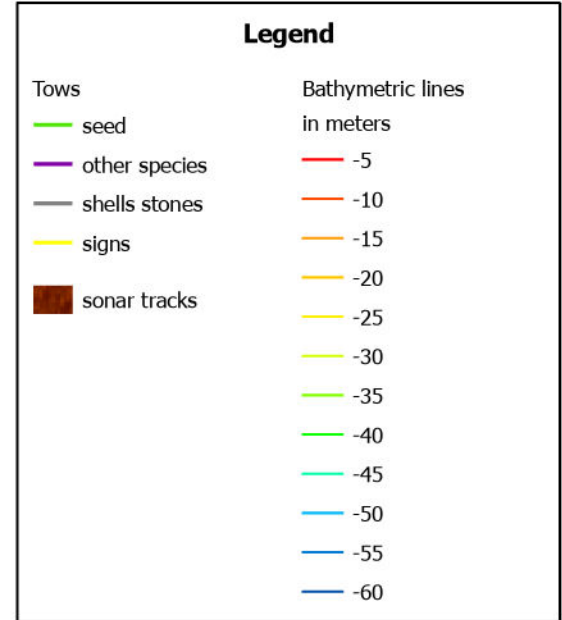
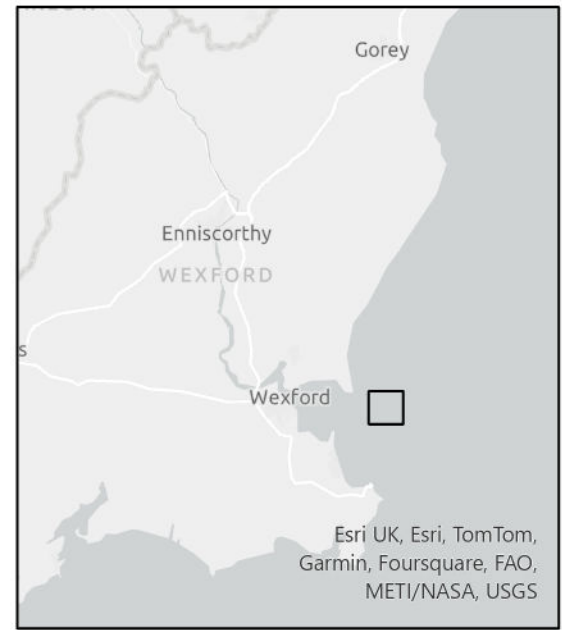
Tows	Bathymetric lines in meters
— seed	— -5
— other species	— -10
— shells stones	— -15
— signs	— -20
■ seed_beds23	— -25
■ Closed area	— -30
■ sonar tracks	— -35
	— -40
	— -45
	— -50
	— -55
	— -60

Do not use for navigation
 Map prepared by : Nicolas Chopin, BIM,
 4/06/2024
 Credits bathymetry data: INFOMAR 2023

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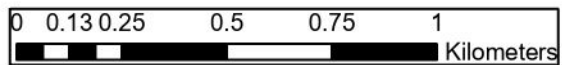


Preliminary Seed Survey Map for West Long Bank and Bar Buoys - May 2024

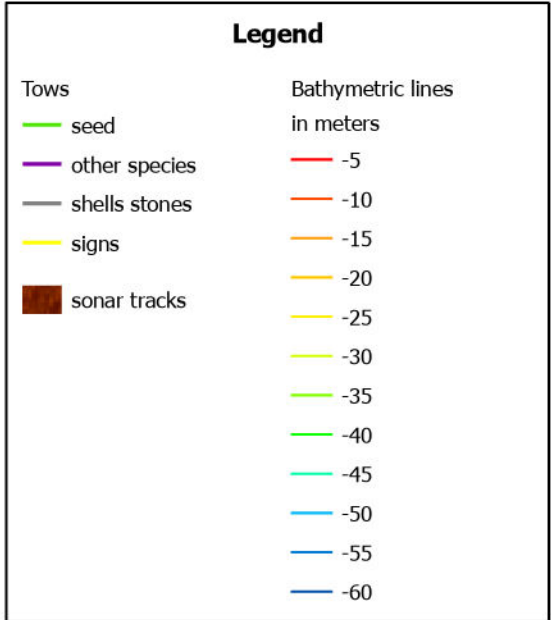
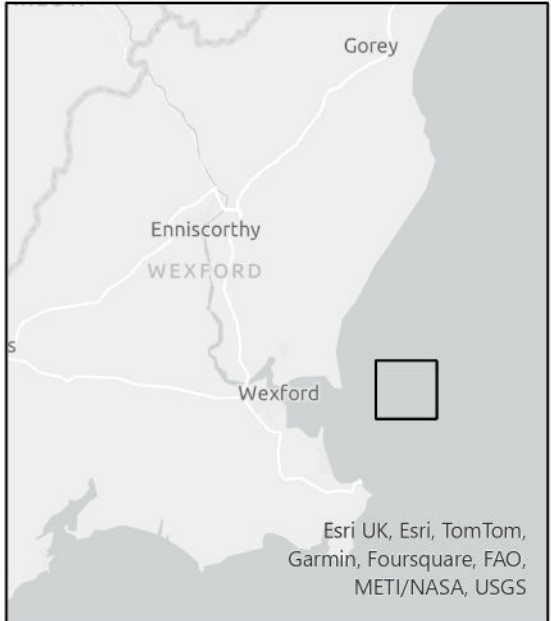
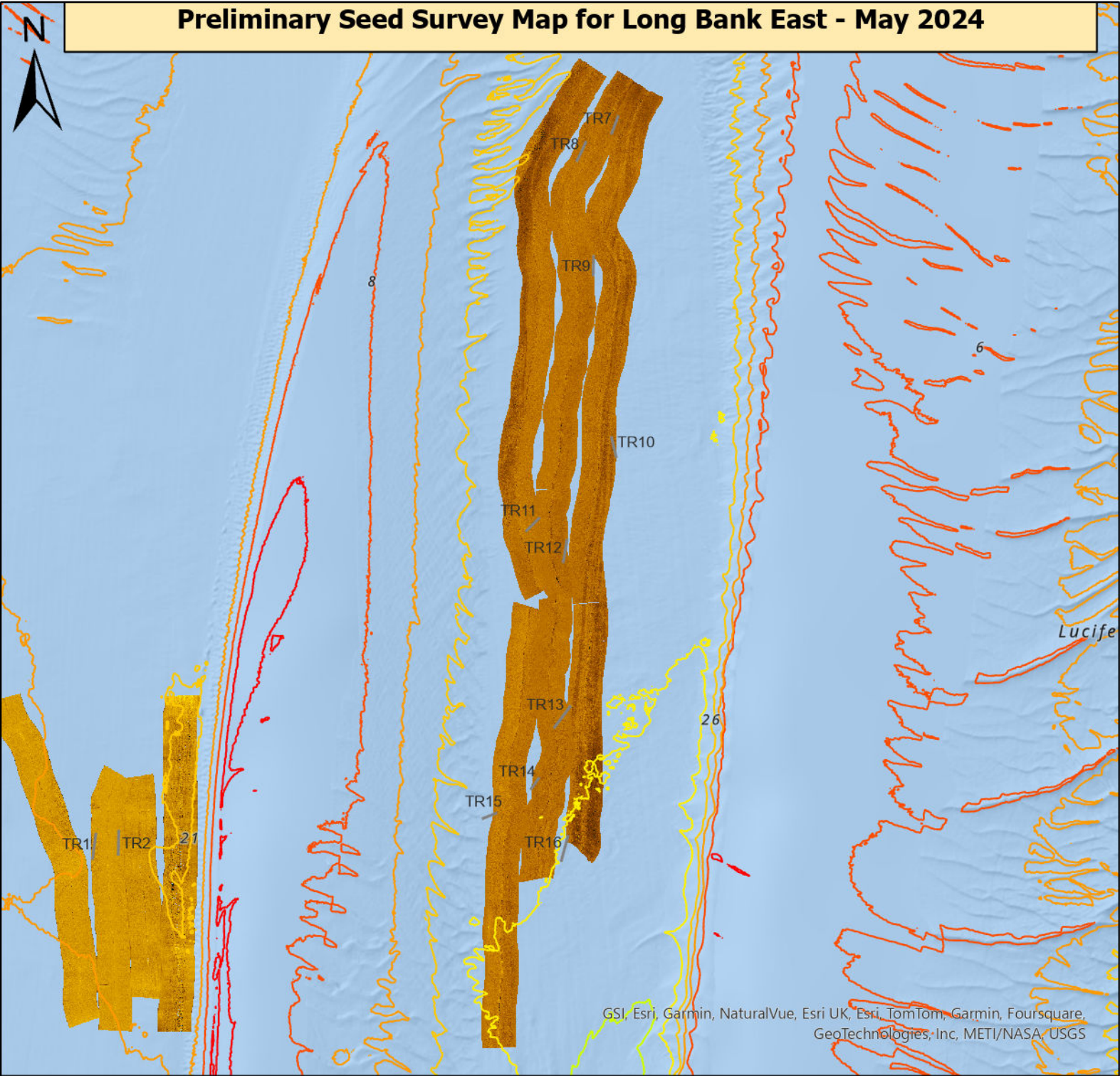


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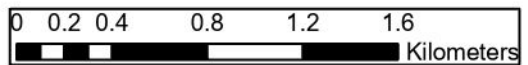
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Preliminary Seed Survey Map for Long Bank East - May 2024

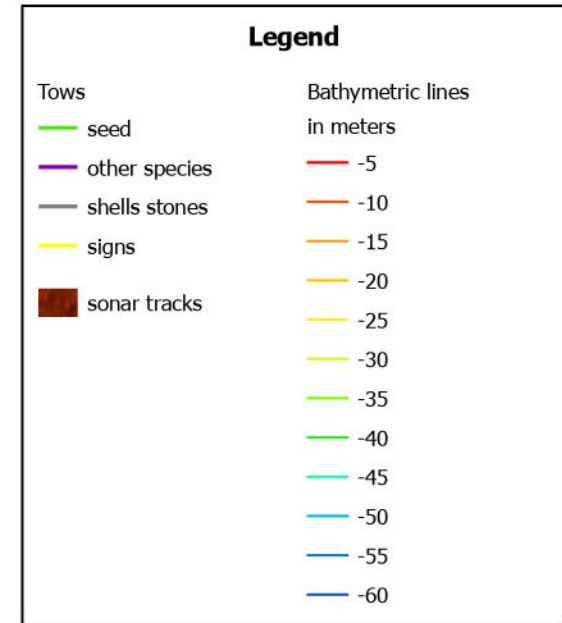
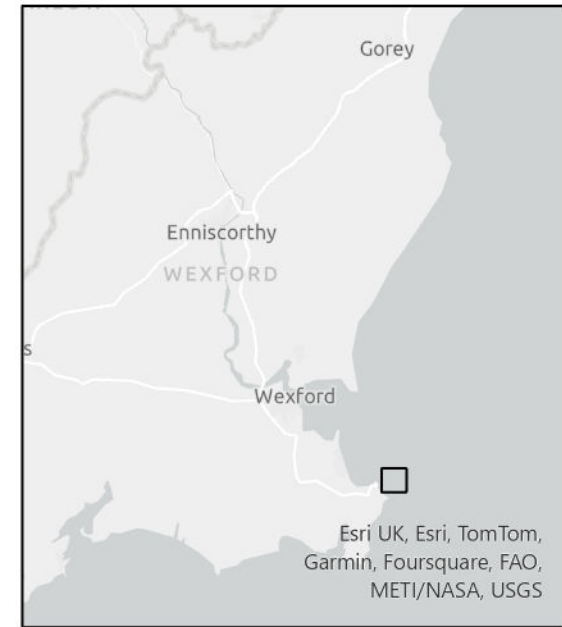
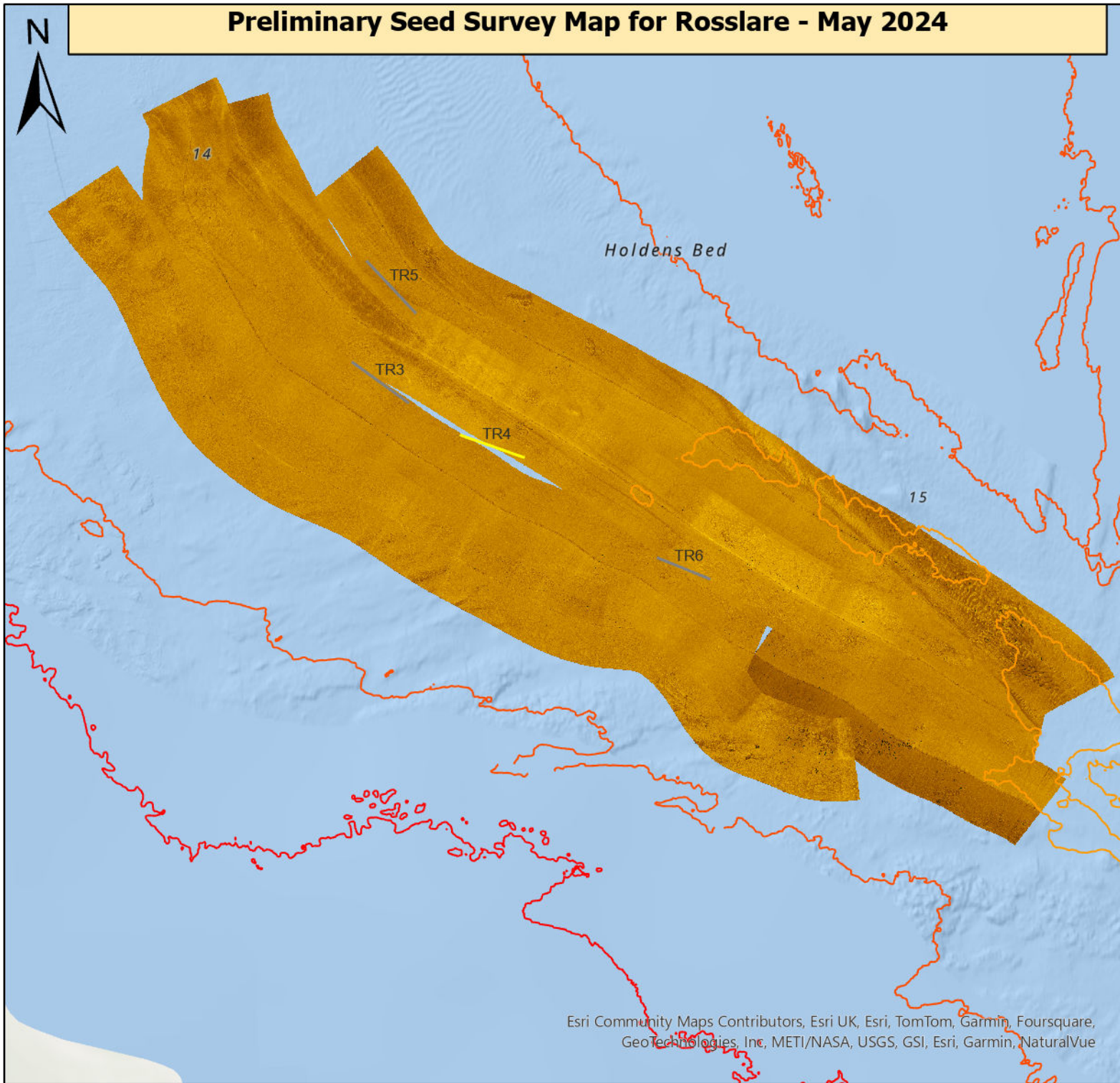


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Preliminary Seed Survey Map for Rosslare - May 2024



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