Preliminary Seed Mussel Survey Report for the Southeast Coast – May / June 2021

Methodology: Acoustic data collection using 400 kHz side scan sonar, data processing on SonarWiz 7 and ground truthing of acoustic targets with a 1 meter dredge (Van Lancker et al., 2007; van Overmeeren et al., 2009).

Area surveyed:

- Long Bank: Between the North Long and the West Long buoy on the west side of the Long Bank and channel between the east side of the Long Bank and the Lucifer Bank.
- Blackwater: the middle west side of the Blackwater Bank near the West Blackwater channel buoy and the area corresponding to the 2013 seed mussel settlement location.
- Cahore Point: Along the shore from south of Cahore Point to Morriscastle.
- South Wicklow: From the south tip of the Horseshoe Bank to the north end of Brittas Bay.

Survey summary:

Long Bank (see map): Side scan sonar data was collected on the west side of the Long Bank in the same area where the half-grown mussels were found in 2020. Four acoustic features were marked at the location and investigated using the dredge. No seed or spat was found, only a few empty shells were observed in one tow. The dredges mainly contained old oyster shells.

Further acoustic surveys were carried out between the Long Bank and the Lucifer Bank, investigating 12 further acoustic targets. Again, no seed or spat was found at the location, the dredges containing mainly old bivalve' shells, dead man's finger *Alcyonidium digitatum* and mixed bryozoans.

Blackwater (see map): The acoustic survey covered two areas that presented some settlement in the past. The first area was comprised between the West Blackwater Buoy and the No.1 Rusk channel buoy along the bank. The second area corresponded to the 2013 seed mussel settlement and comprised of two survey blocks. There were 13 acoustic targets logged and investigated with the dredge. A further 7 tows were carried out across both areas following the observation of scattered newly settled spat on stones in the area corresponding to the 2013 settlement.

Clump of new seed mussel from the Blackwater area

All tows from TB8 to TB13 presented various quantities of young seed on stones. The spat size is currently under 10 mm and no samples were taken. No trace of spat was found along the bank. Tows mainly contained old bivalve shells (oysters, clams) and mixed bryozoans/ hydroids.

Cahore Point (see map): The acoustic survey was carried out along the shore south of Cahore point, covering an area corresponding to various historical seed mussel settlement. There were 13 acoustic targets investigated with the dredge and only traces of spat were found on stones in tow TR29. Most tows contained stones, mixed bryozoans and coarse sediments mainly concentrated in the north of the surveyed area.

South Wicklow (see map): A number of tows were launched on the 6th of May and there were small amounts of mussels found in TW1. At the time of the survey, the mussels collected appeared to be ready for spawning (Chipperfield, 1953). At the start of June, an acoustic survey was carried out along the shore, from the Horseshoe Reef to Brittas Bay. Eight marks were investigated but no seed mussel was found. The dredges contained mainly stones and few starfish.

Meat assessment of the mussels from Wicklow

Recommendations:

Water temperature in the water column throughout the survey period (from 7/05 to 28/05) ranged from 10.1C to 11.7C which is similar to previous year's measurement at the same period, however the water temperature in Wexford Harbour is slightly lower and are similar to the ones recorded in 2018 (BIM, 2019). Although, no significant quantities of half grown or newly settled seed mussel was found, this could indicate possible later settlement. Further surveys will be carried out in these areas later in the session to confirm the current observations.

BIM Aquaculture Technical Section
Seafood Technology Services Unit

References

BIM. (2019). *2018 Spring Mussel Larvae Monitoring, Aquaculture Technical Report*. Retrieved from http://ispp.ie/wp-content/uploads/2019/03/2018-Spring-Mussel-Larvae-Monitoring-min.pdf

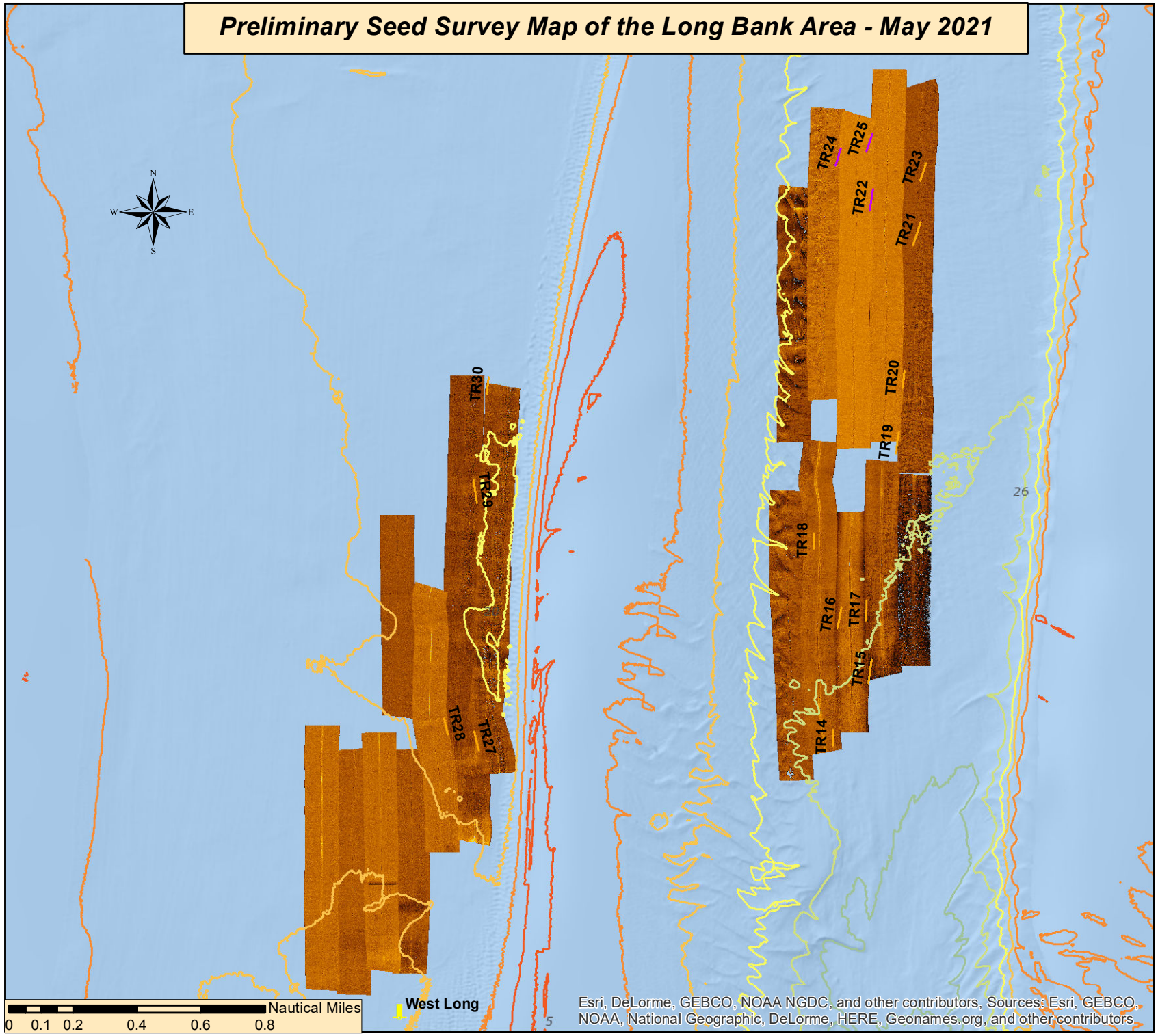
Chipperfield, P. N. J. (1953). Observations on the breeding and settlement of mytilus edulis (L.) in British waters. *Journal of the Marine Biological Association of the United Kingdom*, *32*(2), 449–476. https://doi.org/10.1017/S002531540001465X

Van Lancker, V., Du Four, I., Papili, S., Verfaillie, E., Schelfout, K., Rabout, M., & Degraer, S. (2007). Habitat signature catalogue, Belgian Part of the North Sea.

van Overmeeren, R., Craeymeersch, J., van Dalfsen, J., Fey, F., van Heteren, S., & 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*(3), 437–448.

https://doi.org/10.1016/j.ecss.2009.07.016

Preliminary Seed Survey Map of the Long Bank Area - May 2021



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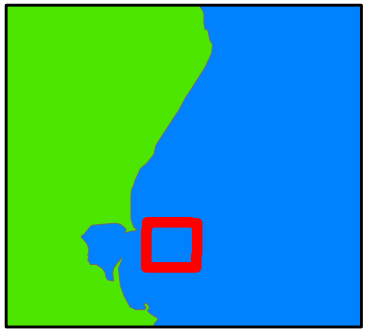

Legend

- buoysMFAWgs

Tows Category

- other_species
- seed
- shells_stones
- signs
- side_scan_sonar_track

INFOMAR_bathylines_5m

- -40
- -35
- -30
- -25
- -20
- -15
- -10
- -5
- 0

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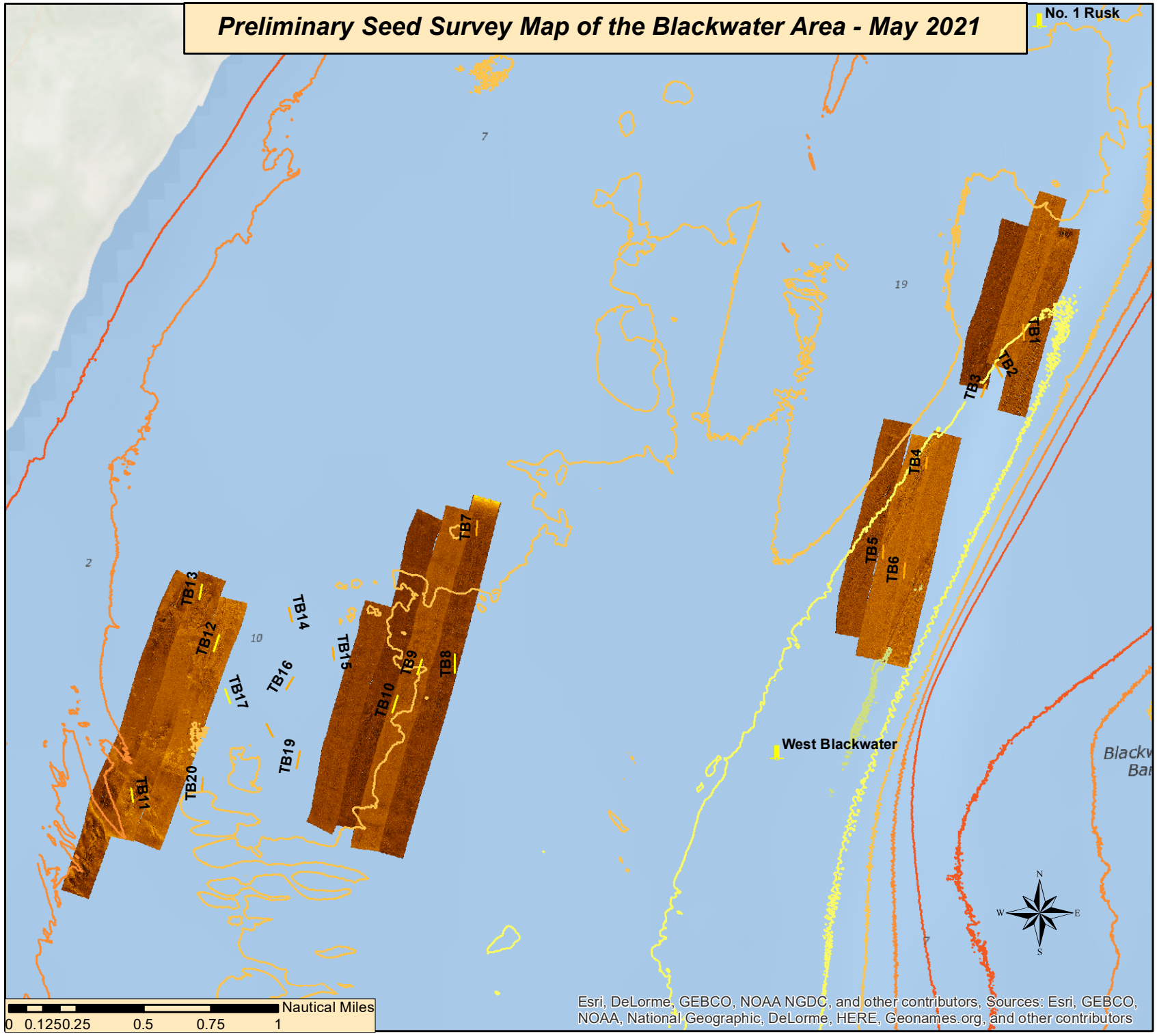
Preliminary Seed Survey Map of the Blackwater Area - May 2021



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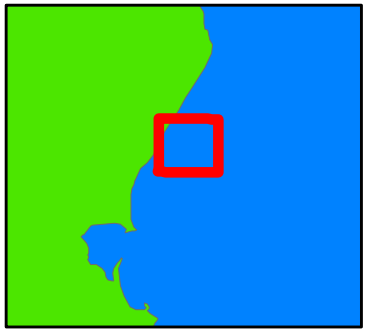

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- -15
- -10
- -5
- 0

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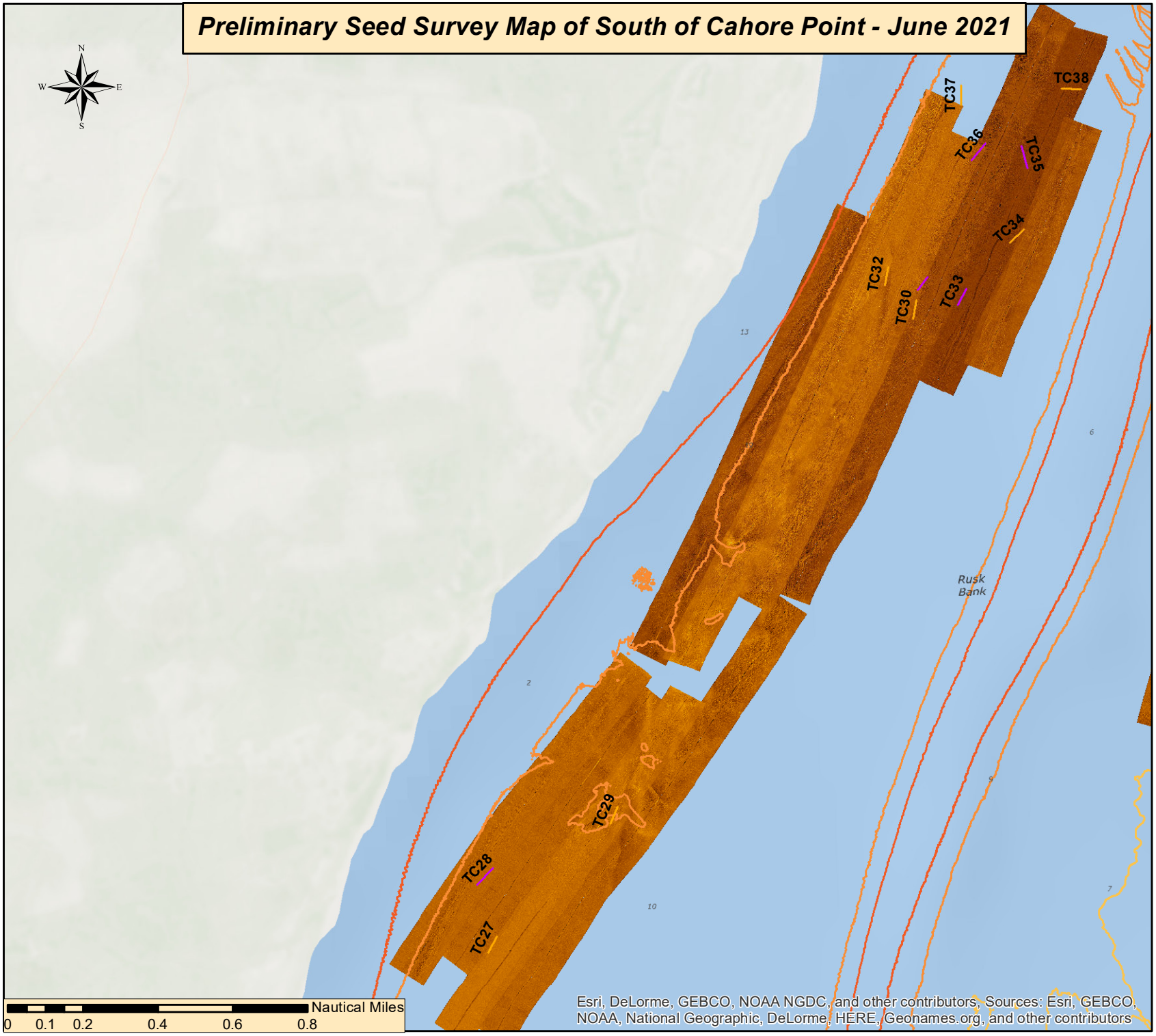
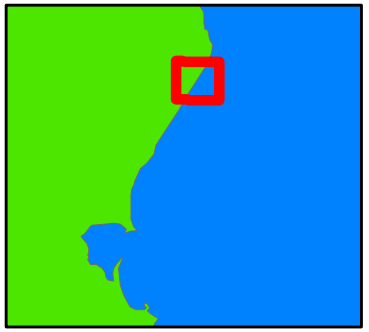
Preliminary Seed Survey Map of South of Cahore Point - June 2021





Legend

buoysMFAWgs

Category

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- signs
- side_scan_sonar_track

INFOMAR_bathylines_5m

- -40
- -35
- -30
- -25
- -20
- -15
- -10
- -5
- 0

Nautical Miles
0 0.1 0.2 0.4 0.6 0.8

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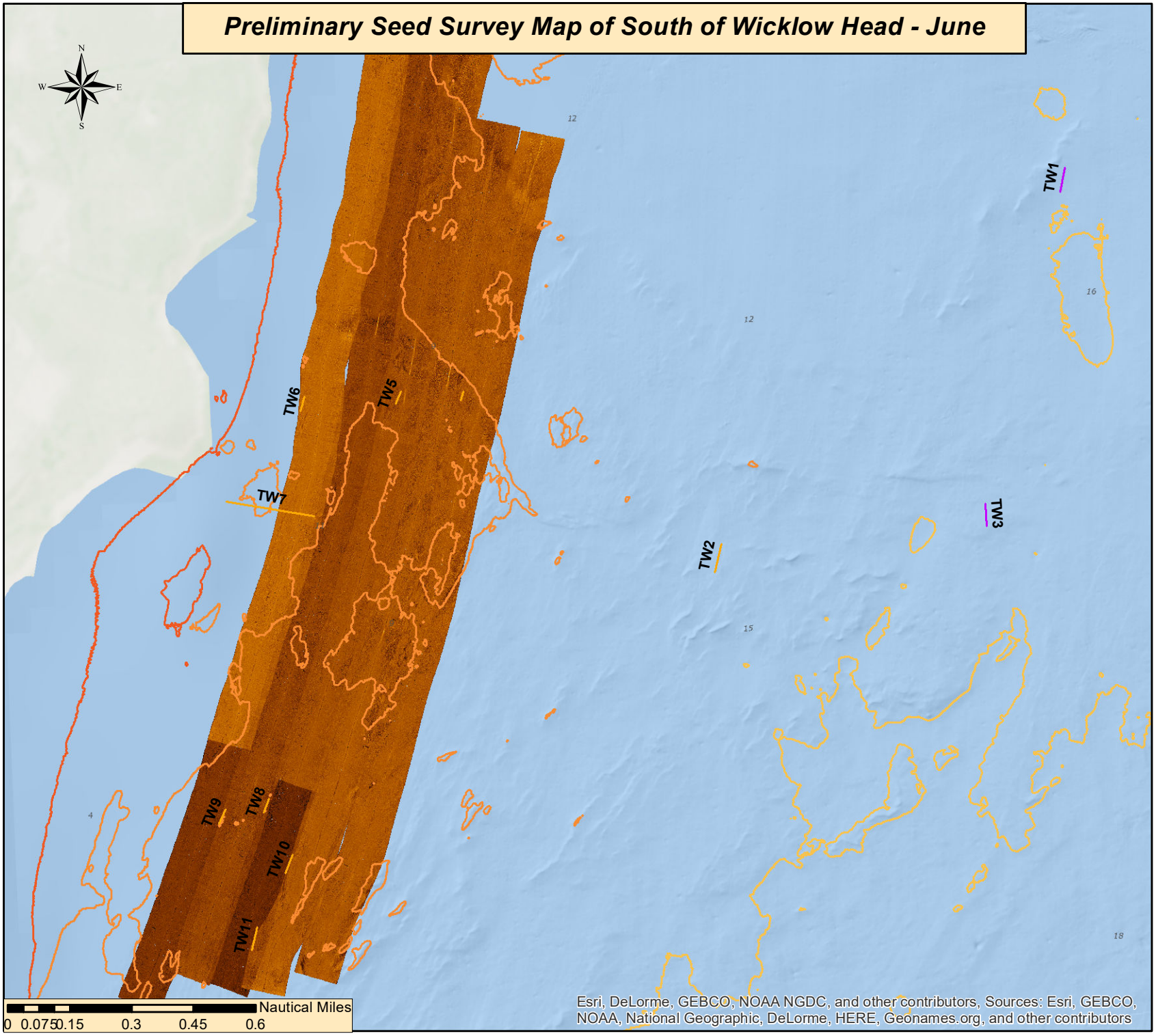
Not to be used for Navigation

Preliminary Seed Survey Map of South of Wicklow Head - June



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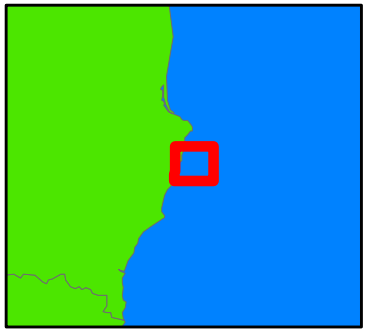

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buoysMFAWgs

Category

- other_species
- seed
- shells_stones
- signs
- side_scan_sonar_track

INFOMAR_bathylines_5m

Contour

- -40
- -35
- -30
- -25
- -20
- -15
- -10
- -5
- 0

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