

Seed Mussel Survey Report for Cahore – 08/06 to 16/06/2022

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 (BIM, 2016; Van Lancker et al., 2007; van Overmeeren et al., 2009).

Area surveyed: along the shore from the 10 meter contour line toward the west side of the Rusk Bank

Survey summary:

Side scan sonar data was collected along the shore and multiple targets showing the typical mussel bed acoustic feature (“top-of-crumble”), were selected, mainly along the 10-meter contour line. Looking at the processed data, three distinctive areas were extracted. From south to north, the first area extends to **62 hectares** (Area 1 on the map) and nearly matches the footprint of the 2021 mussel bed at the same location. Moving further northeast along the shore, we found a small patch of **3.4 hectares** (Area 2 on the map) of similar mussel and finally moving again further northeast toward Cahore Point, another small area of **10 hectares** (Area 3 on the map) was also found.

Table 1: Areas coordinates (in Degrees, Decimal minutes and WGS84 projection)

Area 1 (62 ha)

Latitude	Longitude
52° 29.304' N	6° 14.729' W
52° 28.762' N	6° 15.050' W
52° 28.599' N	6° 15.745' W
52° 28.625' N	6° 16.116' W
52° 29.014' N	6° 15.647' W
52° 29.347' N	6° 15.003' W

Area 2 (3.4 ha)

Latitude	Longitude
52° 29.775' N	6° 14.605' W
52° 29.816' N	6° 14.646' W
52° 30.092' N	6° 14.370' W
52° 30.074' N	6° 14.292' W



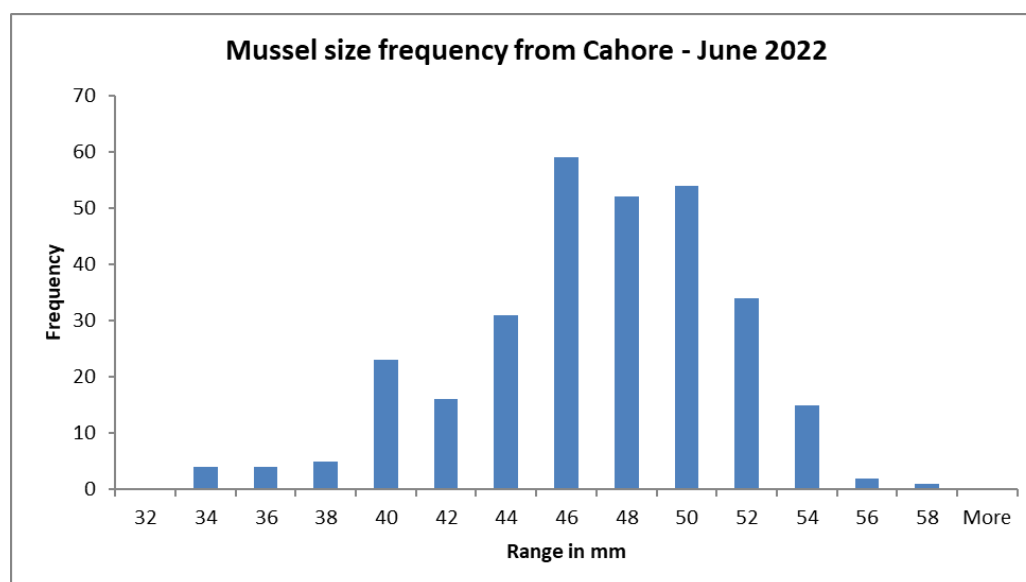
Area 3 (10 ha)

Latitude	Longitude
52° 30.601' N	6° 13.902' W
52° 30.854' N	6° 13.605' W
52° 30.813' N	6° 13.292' W
52° 30.703' N	6° 13.403' W
52° 30.712' N	6° 13.576' W
52° 30.561' N	6° 13.804' W

NOTE: The seed beds displayed on the attached map has been established following verification by ground- truthing of the side-scan sonar data. These coordinates represent the corners of a simplified polygon of the area of the possible settlement identified (green boxes around the beds on the map).

Significant quantity of mussel was found in each of the 10 tows carried out throughout those three patches (from 1/3 to full survey dredge).

The average size of the mussel found in Wicklow in May was **46 mm** (minimum: 32 mm, maximum: 56 mm). The largest size frequency was comprised between 44 and 50 mm, accounting for 55% of the mussel measured (n=300).



This would indicate that the mussel biomass along the shore in Cahore is mainly composed of overwintered seed from 2021. As for Wicklow, at the time of the survey, no recent recruitment was visible (no mussels below 20 mm in length).

The mussels appear to be in good condition and strongly attached. However, some predation was visible, mainly on the south side of Area 1, where a significant population of starfish was observed. Visual inspection of the flesh also indicated that this population was within spawning period with distinctive white and pink/brown flesh individuals (Chipperfield, 1953). Most are also covered by a layer of bryozoans, giving their shell a white colour.

The average waste through 3 samples was 16% of the sample weight (minimum: 8.5% maximum 22%), and it was mainly composed of stones, mix bryozoans and old shells/byssus (see below).



Fig.1: Survey dredge content from Cahore

Summary:

Despite report of major losses during storm Barra back in December 2021, it appears that there is a significant amount of mussel left from 2021 along the shore in Cahore. So far, over 75 hectares have been mapped and could be readily quantified. However, this population could become under pressure from predation (Wilcox & Jeffs, 2019). A full biomass and alien invasive species survey will be carried out in early July with detailed report to follow.

Aquaculture Technical Section
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BIM

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Preliminary Seed Mussel Survey Map for Cahore/Rusk Channel - June 2022



Legend

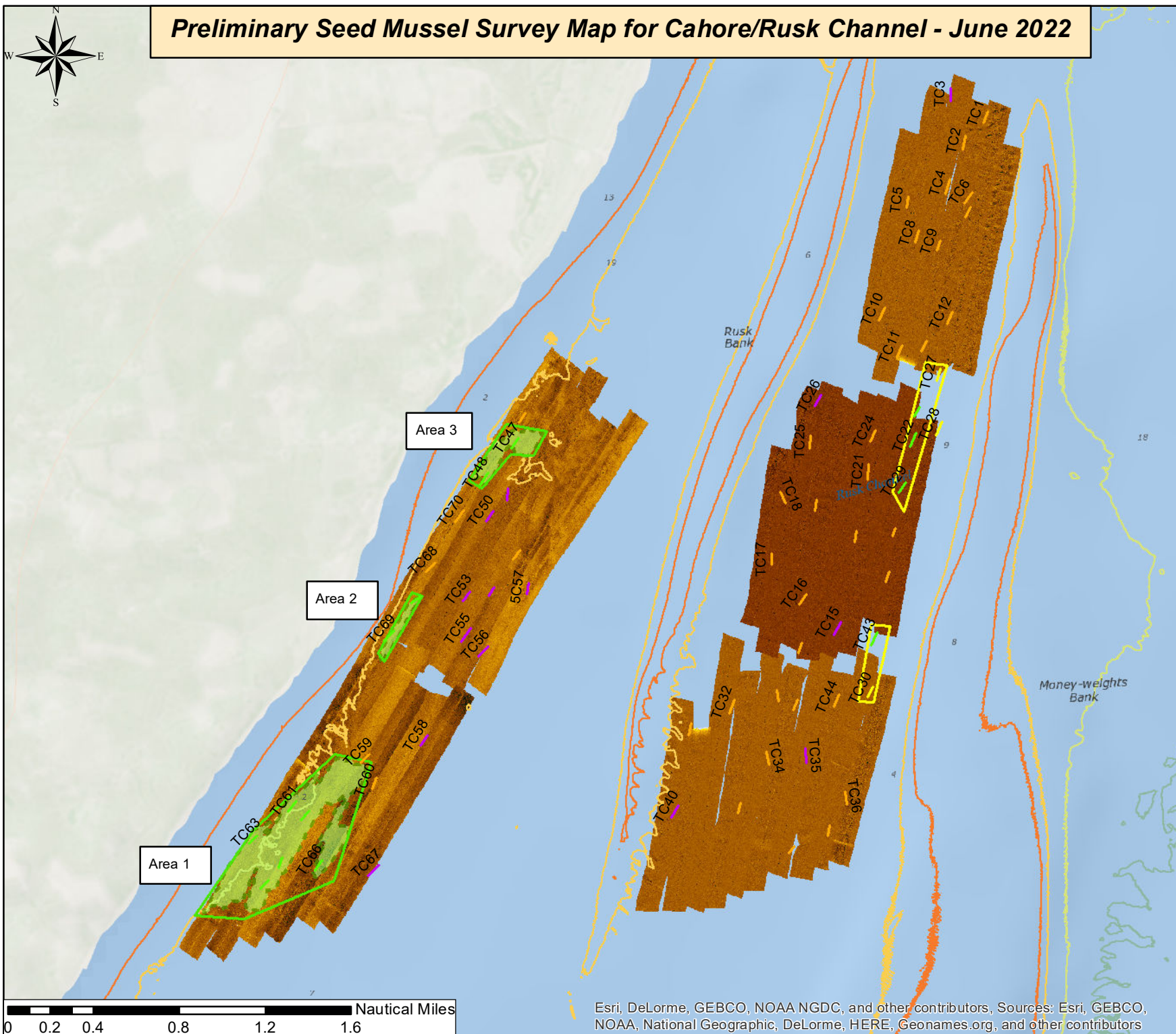
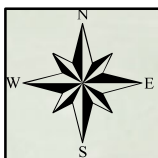
category

- seed
- signs
- o_spec
- shells_st
- potential_seed_areas
- Bed_extent
- possible_beds
- Side scan sonar tracks

INFOMAR_bathylines_5m

Contour

- 0
- 5
- 10
- 20
- 30
- 40



0 0.2 0.4 0.8 1.2 1.6 Nautical Miles

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