

Seed Mussel Survey Report for the South Glassgorman Bank Area – 30/05/2022 to 2/06/2022

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: From the south tip of the Glassgorman Bank to the north of Cahore Point up to the 20 meter contour line including the 2021 bed location (see maps attached).

Survey summary:

Three areas, covering historical bed locations were searched using the side scan sonar. No typical seed mussel bed patterns were observed on the acoustic data, however while investigating marked targets, some recently settled seed was found. Small amounts were found scattered in a strip covering approximately **31.5 hectares** located 1.8 nautical mile approximately northeast of Poulduff/ Cahore Pier in a north to south direction.

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

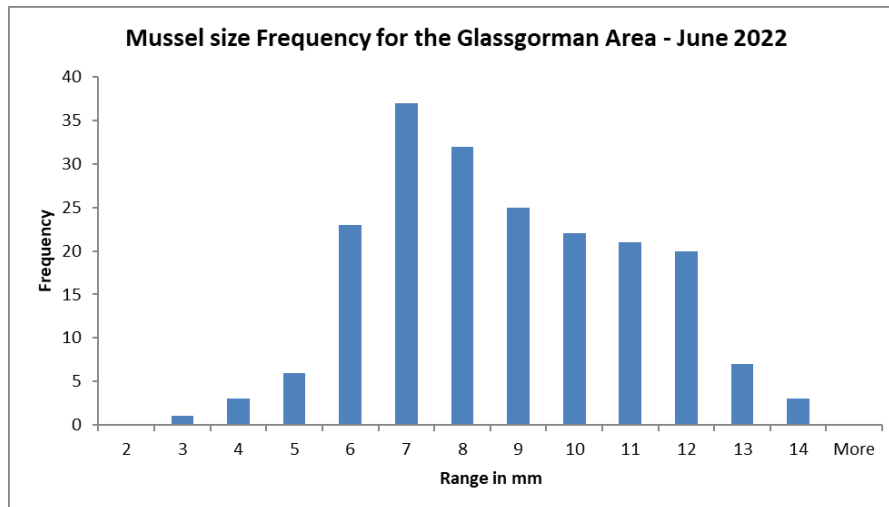
Latitude	Longitude
52° 35.543' N	6° 9.263' W
52° 35.547' N	6° 9.151' W
52° 34.357' N	6° 9.218' W
52° 34.426' N	6° 9.362' W

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 (yellow boxes on the map).

Four tows presented small quantities of newly settled seed on stones and other part of the substratum (shells, bryozoans, hydroids).

The average size of the seed mussel found at the Glassgorman was **8.2 mm** (minimum: 2.1 mm, maximum: 13.8 mm). The largest size frequency was comprised between 6 and 8 mm, accounting for 34.5% of the mussel measured (n=200).





No overwintered seed mussel was found within the survey area, including the 2021 seed mussel beds although at least 211 tonnes remained following the post fishery survey carried out in mid-October in 2021 once fishing activities at stopped.

The seed mussel found during this survey appear to be strongly attached to various part of the seabed and despite a significant quantity of starfish observed within the tows at the location and at close proximity, there was no visible mortality.

Because of the current size of the seed, no detailed biomass or waste was recorded at the time of the survey.



Fig.1: Glassgorman seed mussel (1/06/2022)

Summary:

The size of the seed mussel on the Glassgorman bed did not allow a thorough biomass and predation impact assessment. However, considering the average growth rate of seed mussel of 7 mm/ month⁻¹ (Pérez-Camacho et al., 1995; Rodhouse et al., 1984), also corroborated with field observation, it is expected that the seed will double in size by the start of July. A full biomass and alien invasive species survey will be carried out at that time with detailed reports to follow.

Aquaculture Technical Section
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BIM

BIM. (2016). *Side Scan Sonar Features Catalogue*. Retrieved from https://www.researchgate.net/publication/358640202_Side_Scan_Sonar_Features_Catalogue_related_to_Aquaculture_and_Inshore_Fishing_Activities#fullTextFileContent

Pérez-Camacho, A., Labarta, U., & Beiras, R. (1995). Growth of mussels (*Mytilus edulis galloprovincialis*) on cultivation rafts: influence of seed source. *Aquaculture*, 138(1–4), 349–362. Retrieved from <http://www.sciencedirect.com/science/article/pii/0044848695011390>

Rodhouse, P. G., Roden, C. M., Burnell, G. M., Hensey, M. P., McMahon, T., Ottway, B., & Ryan, T. H. (1984). Food Resource, Gametogenesis And Growth Of *Mytilus Edulis* On The Shore And In Suspended Culture: Killary Harbour, Ireland. *Journal of the Marine Biological Association of the United Kingdom*, 64(3), 513–529. <https://doi.org/10.1017/S0025315400030204>

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 Dalen, 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>



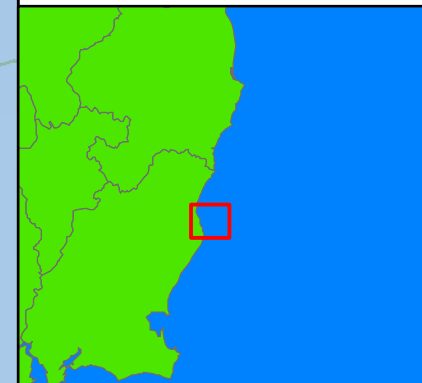
Có-mhaoinithe ag an
Aontas Eorpach
Co-funded by the
European Union



Rialtas na hÉireann
Government of Ireland

Bord Iascaigh Mhara
Irish Sea Fisheries Board

Preliminary Seed Mussel Survey Map for the South Glassgorman - May 2022



Legend

Tows Glassgorman category

- signs
- other species
- shells stones
- potential_seed_areas
- Side scan sonar tracks

INFOMAR_bathylines_5m

Contour

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

