



Seed Mussel Survey report for Castlemaine Harbour/ Cromane – 30/09/2015 and 1/10/2015

Vessel: MV T’Burke, Skipper John Murphy, Survey Officer Nicolas Chopin.

Equipment: 400 kHz side scan sonar, 1 meter dredge, 0.1 m2 Day Grab and underwater camera.

Area surveyed: In the Channel between Rosbehy Point and Inch Point from the Bar to Jack’s Pub.

Survey summary:

Following sightings of small spat from the local industry, the seed mussel survey was delayed until the end of September to facilitate data collection.

Due to very strong tide, the dredge was deployed first to sample the seabed. A lot of small size seed mussel was collected in a very short distance (half the usual 200 m towing length). The side scan sonar was then deployed once the current had abated. The features observed on the acoustic data confirmed the density found in the dredge: very well defined mussel settlements.

Three areas were define following the side scan sonar/dredge survey: the main bed (Area 1 on the Map) is approximately 104 hectares and situated in the middle of the channel, a smaller settlement (Area 2 on the Map) is only 15 hectares and finally a another small settlement took place south of Jack’s Pub (7 hectares).

The seed size varies from 20 mm (at western edge) to only few millimetres (eastern edge) and the small settlement south of the pub is mainly recent settlement of 1 or 2 mm. The side scan sonar was not deployed on this area due to the size of the seed found and the topology of the seabed (stones and lots of seaweed where the spat has settled on).

Table 1: Areas coordinates (in Degrees, decimal minutes WGS84):

Area 1:

<i>Latitude</i>	<i>longitude</i>
52° 5.644' N	9° 59.628' W
52° 5.725' N	9° 58.433' W
52° 5.619' N	9° 56.653' W
52° 5.827' N	9° 56.188' W
52° 5.428' N	9° 56.415' W
52° 5.348' N	9° 56.779' W
52° 5.526' N	9° 58.498' W
52° 5.454' N	9° 59.566' W

Area 2:

Latitude	longitude
52° 5.781' N	9° 56.126' W
52° 6.188' N	9° 55.308' W
52° 6.139' N	9° 55.209' W
52° 5.682' N	9° 56.048' W

Area 3:

Latitude	longitude
52° 6.481' N	9° 54.988' W
52° 6.472' N	9° 54.767' W
52° 6.199' N	9° 54.971' W
52° 6.218' N	9° 55.120' W

NOTE: The areas displayed on the attached map have been established following the side scan sonar data verified by ground truthing. These coordinates represent a simplified polygon of the area of the settlements identified.

The grab was only deployed in the main bed, the nature of the seabed and the size of the seed in the two small settlements makes it too difficult to collect suitable data. The current estimated tonnage for the main bed is 4500 tons (at the current size). Over 60% of the seed population is comprised between 6 and 12 mm on the main bed (according to 200 seed mussel sample measured). As mentioned before the seed size decreases from west to east.

Small starfish were observed on the eastern side of the main settlement as well as on Area 2. Few green crabs were spotted as well but there is no sign of mortality on the seed. Across the three areas, the seed looks in good conditions and well packed on the seabed.

Seabed Type:

- Area 1: coarse sand and small gravel
- Area 2: stones and gravel
- Area 3: red and brown seaweed stones and old oyster shells

Recommendations:

Considering the size of the seed and the time of the year, it is difficult to make a conclusion. As for the east coast fishery, it was a late settlement and comparing with 2014, these were the seed size found in mid-July. The local industry should be consulted to set an opening date for the fishery, following growth monitoring. There are currently over 4500 tons of small seed in the area, but like in the 2013 season all could be lost due to storms.

Nicolas Chopin
 BIM Inshore Survey Officer
 Aquaculture Technical Section

Note for the map:

TD stands for Tow Dingle
 GD stands for Grab Dingle
 In the legend dgd stands for dredge
 In the legend gb stands for grab