MUSSEL CONDITION INDEX AND LARVAE MONITORING

Weekly Bulletin

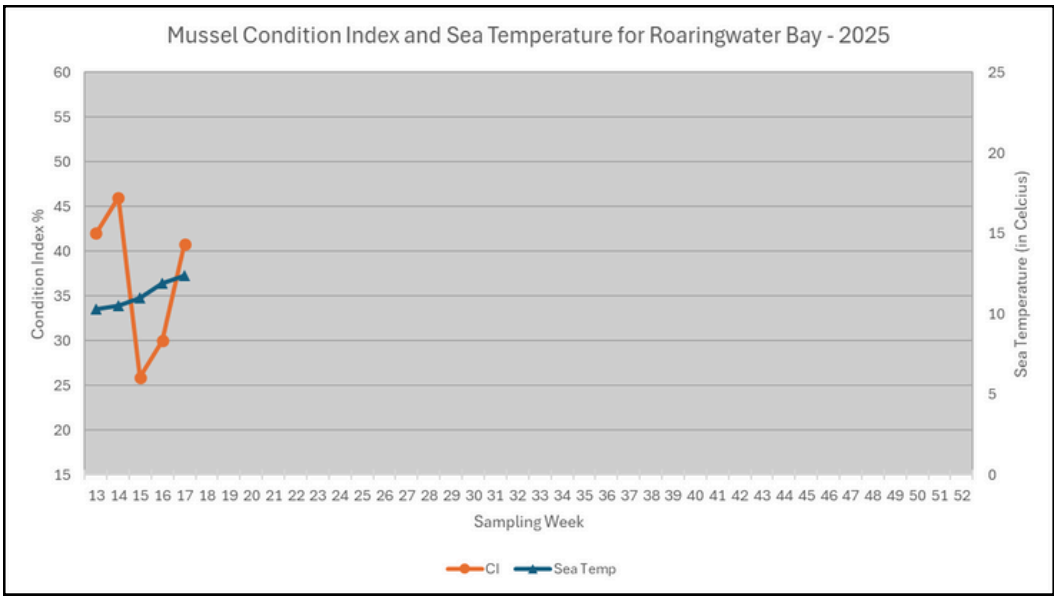
Roaringwater Bay

Southwest Mussel Larvae sampling

28th April 2025

Week 17 (21/04/2025 to 27/04/2025)

Condition Index (CI) for Roaringwater Bay



The Condition Index in Roaringwater increased significantly between week 16 and week 17 (**+10.84 %**), while the sea temperature (based on the Aquatroll readings) increased by 0.5°c to 12.4°c.

Those variations in the CI could be due to other factors than spawning and reconditioning. Sampled mussels could be coming from various parts of the bay which could have a slightly different cycle.

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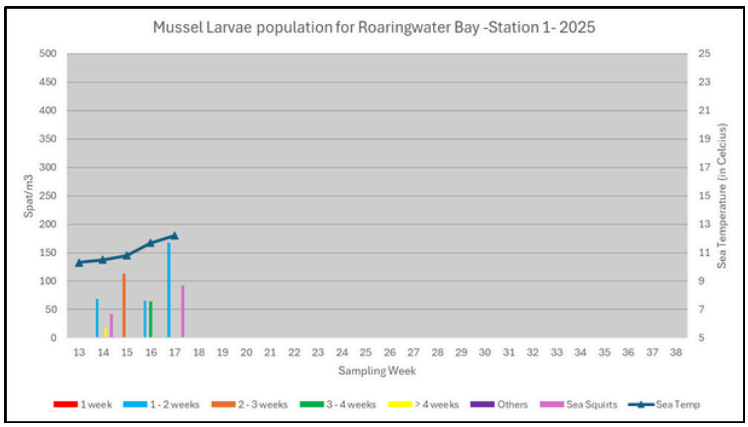
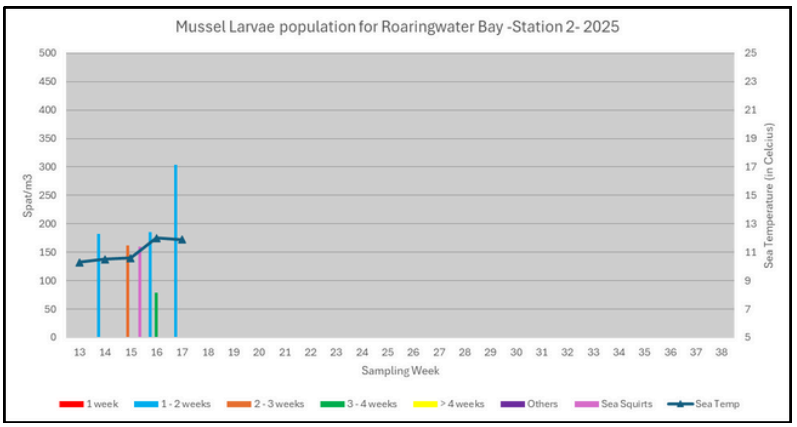
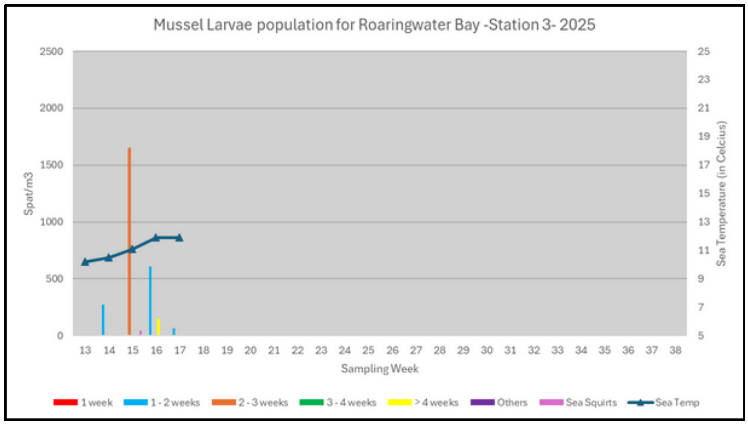
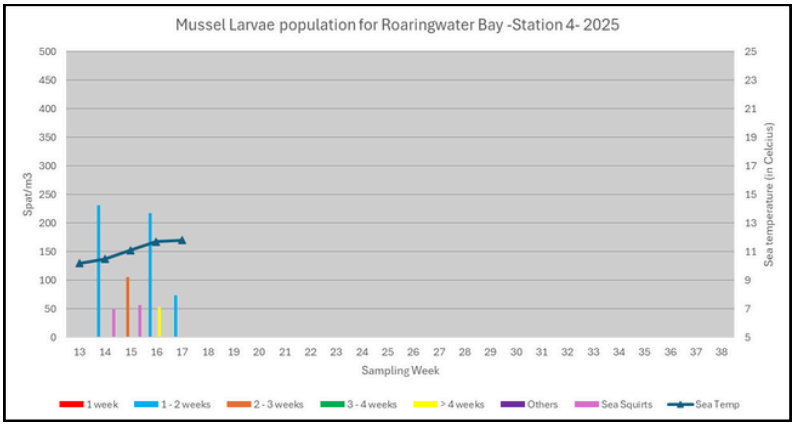
Larvae population evolution in Roaringwater Bay (4 stations)

For each sample, mussel larvae are classed by age: 1 week old, 1 to 2 weeks old, 2 to 3 weeks old, 3 to 4 weeks old, over 4 weeks old and others (younger or older). All 4 stations were sampled on the same day (09/04/2025).









Commentary

All sampling stations presented a different profile for Week 17. As per Week 16, the dominating larvae age class across the 4 stations is 1 to 2 weeks old. **This week, Station 2 presented the highest values with 304 spat/m^3 (1 to 2 weeks old)**, followed by Station 1 with 162 spat/m^3, Station 4 with 74 spat/m^3 and finally Station 3 with only 64 spat/m^3. The presence of 1 to 2 weeks old larvae throughout the weeks and sampling stations can indicate some trickle spawning events. However, looking at the CI values, there is a possibility that those larvae could be coming from somewhere else. The low concentration at Station 4 could indicate that larvae have settled (low levels since the peak of 2 to 3 weeks old on Week 15).

The sea temperature appears to be stable for all the sampling stations (+0.5°c for Station 1, -0.1°c for Station 2, no change for Station 3 and +0.1°c for Station 4). The Aquatroll deployed the previous week indicates that sea temperature at 3 m is steady at around 12.4 °c (+0.1°c).

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Further observations from analysis (number of sea squirts/m^3 are now included in the graphs):

- Station 1: The sample presented very low concentrations of copepods and medusa. The sea squirt concentration was 92 individuals/m^3 while seamatting reached 101 individuals/m^3. Very low level of Chaetoceros sp (halochaete) was observed in the sample.

- Station 2: Low levels of seamatting, winkles, barnacles and crabs were observed in the sample. There was no sea squirt found. Again the sample indicated a very low level of Chaetoceros sp.

- Station 3: The sample presented high levels of mixed copepods, barnacles, seamatting and winkles. No sea squirts were observed. From a phytoplankton perspective, Chaetoceros sp (halochaete) and Pseudonitzschia delicatissima concentrations were low.

- Station 4: As per Station 3, the sample presented high levels of mixed copepods, barnacles, seamatting and winkles. No sea squirts were observed. Agia, Chaetoceros sp (halochaete) was in low concentration.

- The Aquatroll still indicates low levels of Chlorophyll a, while turbidity has increased between the 26th and 28th of April. All the other parameters were stable.

- The phytoplankton concentration from the sample taken in Week 17 could not be analysed as the sample container arrived empty (loose screwcap).

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Summary Tables

Condition Index for the last 5 weeks

SAMPLING WEEK	CONDITION INDEX %	WATER TEMPERATURE (°C)	CI VARIATION	SEA TEMEPRATURE VARIATION
WEEK 13	42	10.3		
WEEK 14	46	10.5	+4	+0.2
WEEK 15	25.9	11	-20.1	+0.5
WEEK 16	30	11.9	+4.1	+0.9
WEEK 17	40.84	12.4	+10.84	+0.5

Larvae population distribution for the 4 sampling Stations:

Week 17	Spat/m3	Larvae Stage	Sea Temperature	Sea Squirts/m3
Roaringwater Bay 1	168	1 to 2 weeks	12.2	92
Roaringwater Bay 2	304	1 to 2 weeks	11.9	0
Roaringwater Bay 3	64	1 to 2 weeks	11.9	0
Roaringwater Bay 4	74	1 to 2 weeks	11.8	0

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