

Shell material continues to show positive results for enhancing biodiversity in the Marlborough Sounds

In December 2023, with support from Sanford, 4 tonnes of steam-cleaned mussel shells were deployed onto the seafloor in Pelorus Sound/Te Hoiere at varying heights off the seabed. The shells have been sampled after 1 and 6 months on the seabed, and will be sampled approximately every six months until June 2025. The results are encouraging so far, with a large range of biodiversity in the shell plots, compared to the control seafloor areas, including a range of organisms, such as scallops and triplefin fish eggs!

This work is a continuation of our previous work where we are expanding our understanding of how we can use shell material from aquaculture to enhance biodiversity on the degraded, muddy, seafloor. This experiment aims to understand how shell material at different elevations from the seabed enhances biodiversity, including recruiting organisms such as algae.

As we approach the one-year mark, we're excited to see how the ecosystem continues to evolve and grow, and we are looking forward to more analyses. During our six-month sampling, we noted the first signs of algae growth on the shells, an important indicator of the effectiveness of providing hard substrate on the seabed for recruiting organisms. We are hopeful that the upcoming sampling will reveal a continued increase in algae and other recruiting organisms and further development of these restored habitats.

By using shell to restore the seabed, we aim to enhance biodiversity and improve ecosystem services in areas where mussels were overharvested historically. The next year of monitoring will be very important in understanding how these restored habitats continue to develop and contribute to enhancing these degraded ecosystems. Stay tuned for more updates!



Left: A Triplefin fish posing for the camera on top of their eggs nestled into one of the shell plots. Right hand side: The beginning of some algal growth on the shell plots with a baby scallop recruiting onto the shell!

Please feel free to get in touch with any questions or if you'd like to get involved: Altan Ní Mhurchú: anim823@aucklanduni.ac.nz; Emilee Benjamin: emilee.benjamin@auckland.ac.nz.