

# Return of mussel shells restores seafloor habitat & enhances benthic biodiversity

Over three years ago, as part of the mussel restoration project in Te Hoiere, mussel shells were transplanted onto the seafloor from Sanford's factory to help understand the potential for aquaculture shell to be used as a restoration tool. Today, those shells are increasing seafloor biodiversity in two locations that were historically impacted by shellfish overharvesting in the early 1970s.

In February 2023, we performed a follow up biodiversity assessment on the transplanted shell layer to quantify changes. We tested two habitat types, muddy and sandy, and found that after ~ 2 years on the seabed, the organisms living on the shell (i.e., epifauna) and in the sediment (i.e., infauna) shifted in response to the shell layer. This led to an increase in biodiversity of the organisms living on the shell and no change in the biodiversity of organisms living in the sediment. Additional fine scale changes were observed on the different habitat types, and these are discussed in greater detail in the study.

These results are important to Te Hoiere and elsewhere in New Zealand as this study demonstrates that returning mussel shells as a habitat restoration tool, can enhance biodiversity in soft sediment habitats historically impacted by shellfish overharvesting.



Figure 1: The Sanford team deploying mussel shells in October 2020.



Figure 2: Shell layer on the seabed three months after deployment.

Please feel free to get in touch with any questions or if you'd like to get involved, Emilee Benjamin:  
[emilee.benjamin@auckland.ac.nz](mailto:emilee.benjamin@auckland.ac.nz)