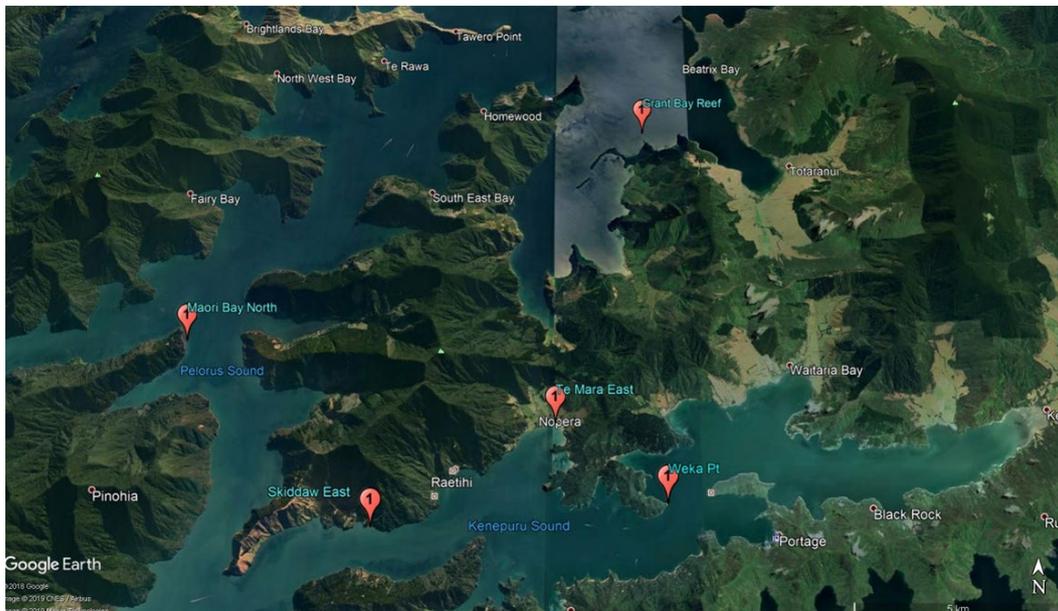


## Marine Farming Association October Monthly Update

My name is Emilee Benjamin and I am a PhD student from the University of Auckland that is partnering with NIWA and working on the green-lipped mussel restoration project in the Marlborough Sounds. I am writing this as an update of what has gone on for the month of October and I plan to start sending these updates monthly to keep everyone informed and to reach out to get any advice or feedback that any of you may have for the project.

The goal of October was to determine locations throughout the inner Pelorus Sound that would be good for the initial green-lipped mussel restoration plots. This process was a great collaborative effort! Sean Handley and I went through the historic literature, and had meetings with Rob Davidson, Andrew King, and Vaughan Ellis. Vaughan Ellis, from Aroma Ltd, took us out on their boat, the 88 South, on two different days to take videos of the bottom habitat at thirteen different locations throughout the inner Pelorus. Andrew King took us on an intertidal journey and showed us natural green-lipped mussel populations that are occurring in the Kenepuru. Rob Davidson gave us information on the bottom habitat underneath mussel farms and places where he has seen populations survive. With all this information we decided on five locations to put the initial experimental restoration plots, three within the Kenepuru Sound and two outside.



*Figure 1: A Map of the Pelorus Sound with the 5 Sites chosen for the first green-lipped mussel deployment.*

Once we determined the locations, we had to decide on the experimental design. We decided we will deploy three, 3m<sup>2</sup> plots of local broodstock mussels at each of the five locations pictured above. This will be a total of fifteen experimental plots. The first step will be to perform an initial assessment, to provide a baseline, of the ecosystem that is currently at each of these locations. We will take sediment samples, water quality measurements, and more focused video and camera footage at each of these locations. The next step will be to work with Aroma and NIWA to deploy the mussels into their plots. We are aiming at performing this initial assessment and deploying the mussels in late November.

We are getting the local broodstock for the first deployment from Andrew King. We will use 4 tonnes for the 15 experimental plots, but the second deployment that we perform will require a lot more mussels. Aroma had found that an unusually large amount of local broodstock had naturally settled on a line that had mussels from Kaitaia on it. The local stock was so easily distinguishable from the Kaitaia sourced mussels. The local stock was smaller, brighter, and more yellow than the Kaitaia

mussels. This made it possible for me to go on the Kakara and pick out the local stock while the mussel farmers were doing their normal harvesting. This type of natural settlement, if it continues, would be a great source of local stock for this project going forward. It is possible that other farms may experience a similar settlement of the local stock among the Kaitaia mussels. If this happens, we can collect the natural settlement and seed it out on new lines to grow it for the restoration project. If you might be interested in participating in this, please contact Vaughan.

Next month we will be performing the initial surveys of the five locations, deploying the mussels into their experimental plots and working out more information on the second deployment. If you have any comments or feedback on this month's progress, or advice for next month, please feel free to email me at [egol669@aucklanduni.ac.nz](mailto:egol669@aucklanduni.ac.nz).

Thank you for all your help and your time with this project. 😊

**Photos from October 2019**



*Vaughan Ellis opening a green-lipped mussel to look at the condition.*



*Andrew King showing some seaweed that was found among the green-lipped mussels.*



*A natural green-lipped mussel population found in the Kenepuru Sound.*



*Emilee out on the Kakara collecting local broodstock that had settled naturally on Aroma's mussel lines.*



*Left: Local broodstock that had settled naturally on the mussel lines.  
Right: Kaitia spat that was seeded onto the lines.*



*Emilee and Trevyn Toone, another PhD student, on the 88 South enjoying the view.*



*Sean Handley and Trevyn Toone on the 88 South preparing the camera sled for video surveys.*



*Emilee taking video surveys on the 88 South.*