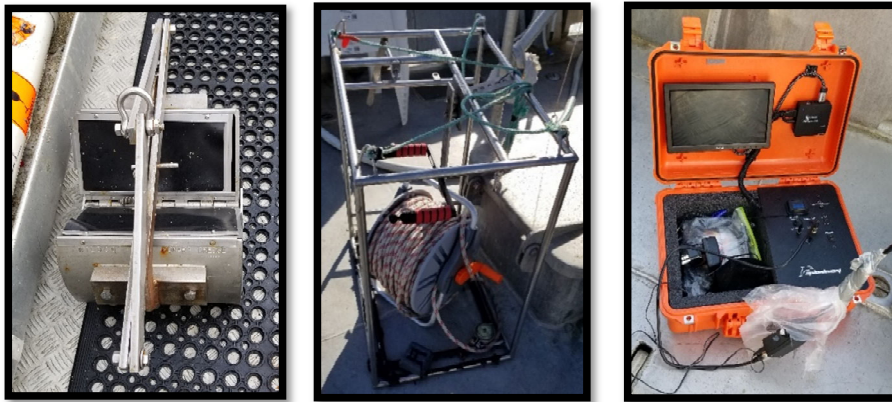


## Mussel Restoration Project - Monthly Update for November 2019

The month of November was a great month for the mussel restoration project. Preparations were made for our first mussel deployment that is scheduled to happen on the 9<sup>th</sup> and 10<sup>th</sup> of December, weather permitting. Firstly, I had to become a Worksafe NZ certified occupational scuba diver, which involved extensive training so that I can dive with NIWA to deploy the mussels and to monitor them in the future.

The next important preparation was to perform our initial assessment of each of the five initial restoration sites ready for deployment. Sean Handley, Trevyn Toone (a PhD student working on intertidal restoration), Jon Stead (a technician at NIWA), and I went out on NIWA's boat the Nereis. We took underwater photos using a drop camera, mapped the benthic habitat using a side scan sonar, took sediment and macrofauna samples, and installed water quality sampling devices. This information will give us a thorough understanding of each location, as well as, a comparison baseline for after the mussels are deployed.



*Picture 1: The equipment we used to perform our sampling of the initial sites.  
Left to Right: Sediment Grab, Drop frame for the camera, Splash Camera*

The experimental design for the first deployment of mussels includes three, 3 m<sup>2</sup> plots with mussels and three controls at each of the five locations. Below I have placed a diagram to help visualize what that will look like at each location. Working with Vaughan Ellis and their crew from Aroma we will place the mussels in natural clumps, the best we can, on designated plots on the sea floor at approximately 5-7 m depth. We will be using the control plots as a comparison for sediment and biodiversity changes that we see occurring in the plots with mussels. Each site will have a different layout of the plots to ensure that there isn't any experimental bias on the results.



Picture 2: A group of clumped mussels that have been taken off a line. Our plan is to keep the mussels in clumps when harvesting them to maximize survival after deployment.



Figure 1: This is a schematic of the initial deployment. Yellow: 3m<sup>2</sup> Control Plots, Green: 3 m<sup>2</sup> Plots with Mussels

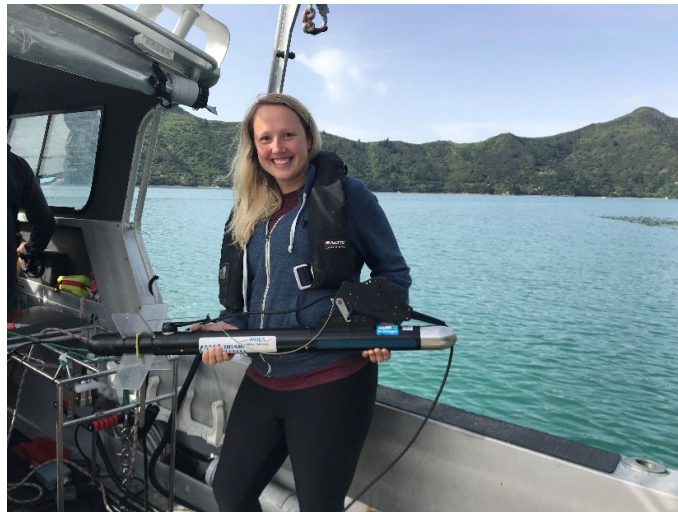
Next month I will be reporting early to let all of you know how our deployment went before the Christmas holidays. If you have any comments or feedback on this month's progress, please feel free to email me at [egol669@aucklanduni.ac.nz](mailto:egol669@aucklanduni.ac.nz).

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

**Photos from November 2019**



*Sean, Trevyn and Emilee performing the initial site surveys on the 21<sup>st</sup> and 22<sup>nd</sup> of November.*



*Emilee with the side scan. This machine is used to map the bottom habitat at each site.*



*Emilee with a scuba instructor from Waikawa going through an SSI certified rescue diver course.*