Project Update: January 2016

It's been a busy couple of months here in Fiji, on the grind working away, having near heart attacks after weather threatened to destroy our experimental set up, and the threat of cyclones looming over us. Here is where we stand so far.

Figure 1: Aerial of the site, if you look closely you can see some of the enclosures.

We have been using belt transects to get sea cucumber density and diversity estimates but also microhabitat associations and link this to size classes. Manasa (Village fish warden/field assistant) and I have done a total of 26 100m belt transects, 14 of them at night, counted and measured the length of 1052 individual sea cucumbers, from this 440 *H. scabra* have been measured and weighed to provide a length-weight relationship. There is a clear relationship (R-squared of 0.86) between the two, and we would like to continue this until we reach approximately 600 individuals.

Figure 2: Rounding up our night surveys, H. scabra in size classes ready to be weighed.

Judging from the graph I will need more individuals >17cm, so no more belt transects (for Natuvu at least) we will be snorkeling in the three 'blue holes' and deeper areas in Natuvu's reef flat to find these larger individuals. Through the strong microhabitat-species-size class associations we have found so far we are able to target certain size classes and species for surveys based on the microhabitats.

We have also found a very significant variation in species composition and size classes between day and night, which more or less correlates with work done by Mercier *et al.* in the Solomon Islands.

November 2015 was a very sensitive month for the project with some members of the village stopping all work on the project and demanding I pay "good will donations" to them (basically a bribe of sorts). Not only is this practice unethical but also illegal to demand for or make any of these types of payments. This caused us to lose a month of work and has made some working relations in the village difficult. After hours of meetings between the villagers and I, and help from Wildlife Conservation Society Fiji they allowed me to continue my work but this is the reality of community work in Fiji.

Figure 3: Sediment cores for porosity and grain size analysis.

Sedimentary oxygen consumption shows variation between our different treatments, we have two more sets of sampling for SOC until the project ends. We hope the variation between our treatments will strengthen.

To end on a good note… a first for Fiji! (as far as we know) we have recorded wild spawning of *H. scabra*, meaning we now have an idea of when the spawning season is and what triggers the natural spawning for this species in Fiji. Adding to the knowledge bank that we need to sustainably (ecologically and economically) manage *H. scabra.*