

**Maitai Bay Rahui Monitoring 2019 – Summary of results and activity**  
**Mountains to Sea Conservation – Vince Kerr September 19th**

*Kaupapa*

Bring balance back to our Moana  
Restore the depleted areas  
Restore Tapu, restore Mana  
Implement a sustainability plan for future generations



The Mountains to Sea Conservation Trust (MTSCT), based in Northland and home of the *Experiencing Marine Reserves Programme*, has an active community support program aimed at helping local communities and hapu to develop conservation actions and restore Kaitiakitanga. The conservation support programme is led by Trustee Vince Kerr. This summary of our work at Maitai Bay will be followed by a full report due out this month.

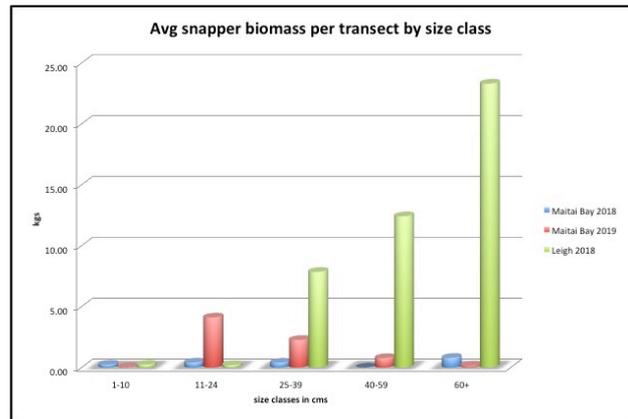
**Monitoring 2019 results summary**

A team from the Mountains to Sea Conservation Trust supported by Whetu Rutene carried out habitat mapping work, fish diversity and abundance monitoring in the Rahui this last summer. Three complementary methods have been established to characterise the reef fish community and create a baseline for which to compare results in further years. The goals are to support learning about the benefits of the Rahui and tracking the ecological restoration.



*(Left) Whetu doing crayfish counts, (Right) one of our friends.....*

Results of timed swim surveys showed encouraging signs in the Rahui area. A large number of small-size snapper showed up this summer (2019). It is too soon to know if the Rahui has influenced this change, but it will be interesting to follow the progress of this large cohort of small snapper in the Bay in the summer of 2020 and following years. There was also a large increase in sandagger wrasse in the 2019 summer from the previous year. Other species mostly showed small increases in numbers. There were 17,550 fish counted on 45 timed swim surveys carried out on 13 transects. Of the total count 1,522 of the fish were snapper indicating they are a very important species on these reefs. Each timed swim transect involves a slow swim over the shallow reef for 15 minutes and covers roughly 400m along the shoreline of the reef. The other two methods used in our survey were a fish diversity scuba based count and a baited underwater video system which put a camera down on the bottom for 30 mins at 25 sites in and outside the Rahui area. The methods used and results are explained in full detail in the main report. Results of the fish diversity and baited underwater video generally supported the findings from the timed swim work.



*(Left a map of the timed swim paths at Merita and Wairua and Omahuri areas, (Right) A graph which compares the average biomass (combined weight) of fish counted on the timed swims to the results using the same method at the Leigh Marine Reserve (light green bars). Maitai Bay had more small fish but the Marine Reserve at Leigh had a much greater number of mid-size and large fish, especially snapper*



*(Left) A kina feeding front attacking the last remaining patch of the large brown kelp at the bottom of the shallow mixed weed zone near the surface. (Right) a view of the rich encrusting invertebrate and algal community which forms under a healthy kelp forest – extremely valuable habitat for many coastal species*

We have put together a reasonable picture of what the reef and fish communities look like after decades of heavy fishing. Clearly there are degraded habitats and a greatly reduced fish community. The value of the monitoring effort going forward is that we will be able to track the changes that take place as a result of the Rahui. Every indication is that the changes will be dramatic and significant, but not fast as these communities take time to recover. Realistically restoring these shallow reef systems should be viewed as a generational project. A really large snapper or crayfish takes 20 years to grow, and they are a key part of these shallow reefs communities. In the full monitoring report we provide a comparison of the current

health of Maitai Bay to the long standing Marine Reserve at Leigh. This provides us with a view of what to expect from the restoration process.



*The stark contrast between a kina barren and a healthy kelp forest*

The Mountains To Sea Conservation team look forward to continuing to work with the hapu on this project. We are keen to test our approach within the setting of matauranga maori and the mahi of kaitiakitanga. These learning's along the way will help with the urgent job of making decisions for the greater Rohe area. Our experience out in the water - seeing new fish species, more fish, larger fish showing up on the reefs each year when for so many years we have watched things get worse - is a thrill. We would love to see this experience shared far and wide.



*(left) A medium sized red moki seen over a kina barren area, this species is long lived and slow to reproduce and resides and browses on the kelp forest species, it is affected by even low levels of spear fishing. (Right) a group of sanddagger wrass, this species has increased in number over the last year a school of Parore swims by in the distance, single blue mao mao at top of the screen.*