Hauraki Gulf Monitoring Project Progress Report: November 2019

In November 2017, Foundation North provided the New Zealand Association for Environmental Education (NZAEE) with funding for a citizen science seashore monitoring project in the Hauraki Gulf, Auckland. It used the Marine Metre Squared (Mm²) Project to extend Seaweek 2017 into place-based action. The funding was extended into 2019 and the work continues to gain momentum in schools and community groups.

The Marine Metre Squared Project - Ngā Tini o te Waitai

Marine Metre Squared (Mm²) is a citizen science project owned and managed by the New Zealand Marine Studies Centre, University of Otago. It is an easy way for anyone to survey the plants and animals living on their local seashore and participate in long term monitoring of their marine environment.

Literally, the statement Ngā Tini o te Waitai translates as 'the multitudes of the sea water'.

Outcomes for the Hauraki Gulf

- Data to contribute to community understanding and Gulf management;
- Connection of people to local marine environments;
- Better understanding of the impacts and issues affecting the Hauraki Gulf in the long term, and what changes are affecting seashore ecology.

The Hauraki Gulf Monitoring Project (HGMP) is an opportunity for children, their families, whānau and wider community to engage with collecting useful data about their local marine environment and exploring the impacts that human activities are having on it - and what they can do to encourage positive change and develop a sense of kaitiakitanga / guardianship. The project contributes to objectives outlined in the 2018 *Sea Change - Tai Timu Tai Pari - Hauraki Gulf Marine Spatial Plan.*

Background

The Mm² project is supported by the New Zealand Marine Studies Centre (NZMSC), based at Otago University, and Director Sally Carson is supervising its implementation. NZMSC provide resources, shore identification guides and the database which holds the data collected, plus technical support to the Project Manager. The project involves up to six visits per school or group to support their data collection, uploading and processing of data.

Key questions that each group will address are:

- Why should we engage with this project?
- What does this information tell us about our marine environment?
- What is impacting on our marine environment?
- How can we better understand what is affecting our coast?
- What can we do to help restore our coastal environment?

Three years into the project, we are seeing some of the schools and groups involved continuing to collect their own data sets, and putting their learning to action in hands on projects related to their site. The results will be shared with the wider community in each area.

2019 progress update

Shanthie Walker took over the Mm² project from Mels Barton from July to November 2019. She has been facilitating five groups to participate in the project over this time: three primary schools, one secondary school and one community group. The five groups have had an introductory briefing, introductory education session and collected and uploaded their first data set.

This year the project has expanded into the Kaipatiki, Rodney (Mahurangi, Waiwera) and Hibiscus Bays areas of Auckland. In 2017-18 work was centred around Takapuna/Devonport, Torbay, Waiheke Island, Te Atatu, Rosebank, Pakuranga, Beachlands/Maraetai and Colville. It is planned to further expand our reach in 2020.

We have also delivered a teacher workshop at the Sir Peter Blake Marine Education & Recreation Centre (MERC) to further support more teachers to deliver the project next year. We have also been involved in networking events such as Sealife Aquarium /Kelly Tarlton's teacher workshop and Brown's Bay School's action project at Rothesay Bay Beach.

2019 facilitated groups: work to date

GROUP 1: Verran Primary School

Kereru class (95 Year 5 and 6 students) participated in the facilitated HGMP/Mm² project.

The school has had a long association with Little Shoal Bay. They have informally visited these rock pools and the stream over many years, with some students living nearby. Verran students are interested in the changes at Little Shoal Bay over time: the beach is covered in sediment compared to a few years ago and that the

Verran literacy group students survey at Little Shoal Bay

habitat has changed from rock pools with a variety of biodiversity approximately ten years ago to more of a mudflat environment in the present.

Data from 13 rocky shore surveys was collected in October 2019 and uploaded onto the Mm² website. All students in the group gathered some data and they found a variety of snails and seaweeds, as well as some crabs. They noticed that not many sensitive filter feeding animals are living there as there have been in the past. Students also did a litter clean-up during their visit.

Year 4 students visited Takapuna Beach and their findings were contrasted with what the Year 5/6s found at Little Shoal Bay.

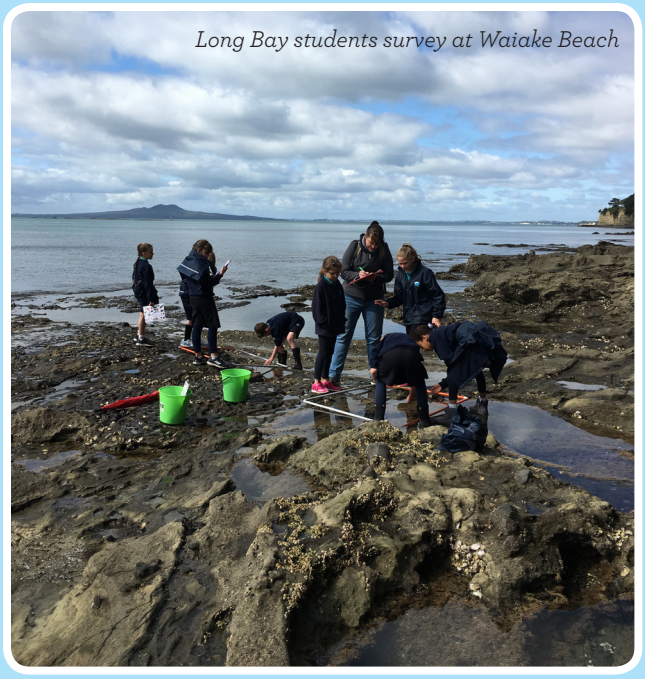
Students are investigating how the sediment may have built up over time and what can be done about it. The literacy group of students are going to report to their community by making booklets with information about Little Shoal Bay, Rocky Shores in New Zealand and what we can do to protect them.

A data analysis and literacy session is planned for November 13th. There are plans to do further monitoring in future to document any changes in biodiversity.

GROUP 2: Long Bay Primary School

Long Bay Primary's Totara Team of 67 students also participated in the project. Most are Year 5 level, with 14 Year 4s. They have a significant connection to Waiake Beach: which is their turangawaewae. They have done numerous previous investigations at Waiake Beach and are working towards helping to enhance this area a long term goal.

The team had an introductory session in the classroom and learned about which species they may see and how to do a quadrat survey. Then all students collected data at Waiake Beach with 15 rocky shore surveys completed.



Long Bay students survey at Waiake Beach

Students were surprised to find Mediterranean fan worm present on their beach. They would like to monitor the spread of this invasive species and hopefully do something about it. The principal and the teachers are enthusiastic about continuing the project and they have already committed dates and completed more fieldwork later this month (November 2019).

Slideshow about their Mm² project: https://docs.google.com/presentation/d/1RvwQk6zZxfwdiJEWNP2hasOvtHY9nvP-PC1K273I53Y/edit?usp=sharing

The school are also petitioning to include Waiake Beach in the Long Bay Marine Reserve, see: https://www.parliament.nz/en/pb/petitions/document/PET_86616/petition-of-aaron-joyes-for-long-bay-primary-school-tangaroas

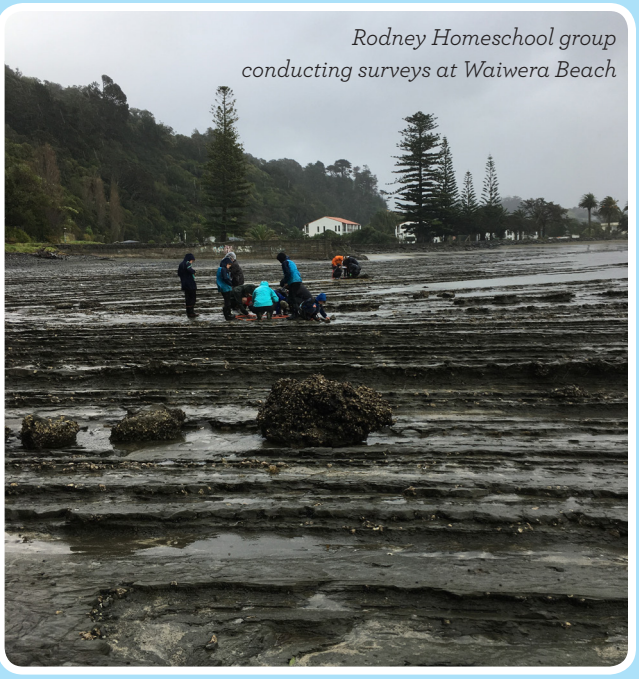
GROUP 3: Rodney Homeschool Group

The Rodney Homeschool group received an introductory teacher briefing session, and have collected and uploaded their first sets of field data at Waiwera Beach.

The group are interested in the rocky shore at Waiwera Beach and the impact people are having on it. They decided to focus on the different snails present, particularly in the cat's eye population and how it may be changing over time. Around 24 students participated in the first fieldwork day plus eight teachers and parent helpers and eight Mm² squares were completed.

Several families have significant connections to the coast, and are really invested in the future health of the area.

The second field trip is planned for mid-November, when the group will decide on their next steps.



Rodney Homeschool group conducting surveys at Waiwera Beach

GROUP 4: Waitotara Sustainable Living group

The Waitotara Sustainable Living Group are a group of locals concerned about environmental and sustainability issues in Waiwera Valley. They are working to restore the Waiwera Valley catchment with a variety of initiatives such as planting and growing native trees.

They plan to use the sandy shore Mm² surveys alongside the WaiCare freshwater investigations as an indication of the condition of the catchment.

The group received training in the Mm² method and seven members of the group plan to take responsibility for the ongoing monitoring.

We completed a rocky shore and a sandy shore survey at the beach as a baseline data set during September.

Waitotara members conducting survey at Waiwera

It is planned to do regular monitoring of the shellfish at Waiwera Beach, recording both the size and abundance. They would like to answer the question '*Is the shellfish population at Waiwera Beach changing over time?*.' In 2020 the group plan to share their findings with the Rodney Homeschool Group.

GROUP 5: Mahurangi College

The Year 10 EFS students at Mahurangi College, Warkworth participated in the project. The college have previously monitored shellfish at Whangateau, near Leigh.

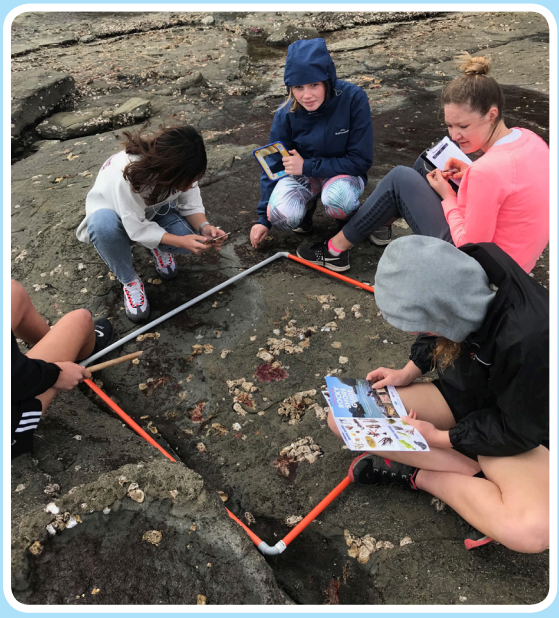
Students of the EFS group were concerned about the impacts of recent ongoing development on Omaha Beach. They wanted to find out what the range of biodiversity was like at this location.

The group took part in a classroom-based introductory session before their visit. The students then collected their first set of data which comprised six rocky shore Mm² squares, two each over the high, mid and low tide zones. They are comparing the biodiversity within these zones.

Everyone was surprised at the abundance of biodiversity at Omaha, with a huge range of species found, including kina, red beadlet anemones and a wide variety of snails.

Right: Red beadlet anemones at Omaha Beach

Below: Mahurangi College students doing an Mm² at Omaha Beach



Students also did a litter clean-up and audit during the visit. We were struggling to find any litter, which was encouraging.

The students are planning to compare their findings to the Whangateau rocky shore where they regular monitor shellfish in November.

Mahurangi College Mm² slideshow: https://docs.google.com/presentation/d/1fwoBwyDoLMwXBgJQyHRY1BduAHzAL-cJWFZwta9-fUw/edit?usp=sharing

Other groups

We have worked with Community Waitakere educators and with Te Atatu Intermediate School who collected and uploaded their first data set in May 2018. On November 7th we will facilitate a follow up session with this group, collecting more data on the sandy shore. This group are continuing their detailed monitoring in Te Atatu but need ongoing support in order to achieve this.

Workshops and events

BLAKE Inspire Teachers event

Sally Carson and Shanthie Walker delivered an interactive session to teachers as part of the Blake Inspire Teachers week. We conducted rocky shore surveys at Campbells Bay Beach with the 24 participants. The group of teachers were motivated to take their new knowledge and skills back to their classrooms.

Brown's Bay School at Rothesay Bay

Shanthie Walker delivered a session as part of an event at Rothesay Bay Beach Reserve for the Year 3s of Brown's Bay School. The event was called 'Getting to know and improving our local beach and reserve' and included learning about freshwater life, pests, invertebrates, coastal life and planting.

As part of the event, Shanthie showed the marine metre squared method to all participants and conducted some sandy shore surveys. This involved 100 students and 29 parents, guardians and teachers.

Sealife Aquarium / Kelly Tarlton's teacher workshop

Shanthie delivered a presentation about the HGMP and Marine Metre Squared (Mm²) Project to a group of 30 teachers at this teacher workshop. There were a lot of other marine education providers here and we spoke about several potential collaborations in the future,

especially with Sustainable Coastlines and their new litter app and the Sir Peter Blake Marine Education and Recreation Centre.

Teacher workshop – Mm²/HGMP at MERC

Sally Carson, Director of the NZ Marine Studies Centre and Shanthie Walker are holding a teacher workshop at the Sir Peter Blake Marine Education and Recreation Centre (MERC) at Long Bay, Auckland today (November 5th, 2019). The purpose is to educate participants about the context for and use of data collected using Mm² and encourage more groups to join the project. Five different schools, 12 individuals and four organisations are taking part. Seven groups will receive Mm² kits so that they can conduct ongoing monitoring on their shoreline. The workshop will encourage community monitoring and action for their local marine environment. Networking and collaboration will also be a feature of the event. Representatives from Auckland Council, the Tread Lightly Caravan and MERC will also attend. Long Bay Primary School will speak about their work with the Mm² project and HGMP.

Resources

All the groups were provided with a Mm² field kit comprising a metre squared made of plastic pipe, bucket, sieve, trowel and sample tin. Groups also received a class set of NZMSC seashore identification guides. They also received a set of NZMSC workbooks (Rocky Shore Activity Book, Mudflat Mysteries Activity Book, Rocky Shore Colouring Book).

Impact

In 2019, 208 students and 51 adults participated in the HGMP. We also delivered education sessions based around the project to a further 100 students and 92 adults during 2019.

In total, since 2017, 591 students and 144 adults have participated in the HGMP. To date, 22 schools and four community groups have committed to and are undertaking ongoing monitoring.

There are now 701 individuals and groups registered for the Mm² project in the Auckland Region (a 106% increase on the 340 in 2016) and 218 in Northland (a 120% increase on the 99 in 2016) indicating the level of interest in the project and the success of using both Seaweek and the HGMP in these regions to actively promote it.

In Auckland the number of groups uploading data has increased from 38 in 2016 to 88 (132% increase). The percentage of those registered and also uploading data is 13%. However the number of Mm² surveys has increased to 435 (an increase of 285% from 113 surveys in 2016).

Ongoing evaluation shows that additional support, such as is being provided by this project, is needed to effectively engage these groups and individuals in taking action for their environment.

"The incredible mahi done by NZAEE over a number of years now is vital in ensuring that succeeding generations are empowered with the knowledge necessary to play their full role as kaitiaki of our shared taonga Tīkapa Moana/ Hauraki Gulf. The work with schools and communities in monitoring the health of their local coastline provides that broader understanding of and commitment to solving the environmental challenges facing our Marine Park."
Alex Rogers, CEO Hauraki Gulf Forum

Evaluation

An evaluation methodology has been developed to measure outcomes of the project and teachers in the groups have already provided pre-survey evaluation form data. Post-survey evaluations are currently being performed and the results will inform our actions in 2020 and beyond.

Next steps

We are intending to work with MERC in 2020 to deliver the programme alongside Seaweek. One of our goals is to reach more low decile schools and cover more of the southern side of the Hauraki Gulf next year.

Thanks to Foundation North and the New Zealand Marine Studies Centre, Otago University for supporting this monitoring project.

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Te Kaitiaki Pūtea ō Tāmaki ō Tai Tokerau

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