KT – Rarotonga Wetlands Report

RAROTONGA WETLANDS ASSESSMENT

The following report is a brief summary of the Rarotonga Wetlands Assessment conducted by the members of the Kumiti Tamataora (KT) of 2017 from the 9th November to 1st December 2017

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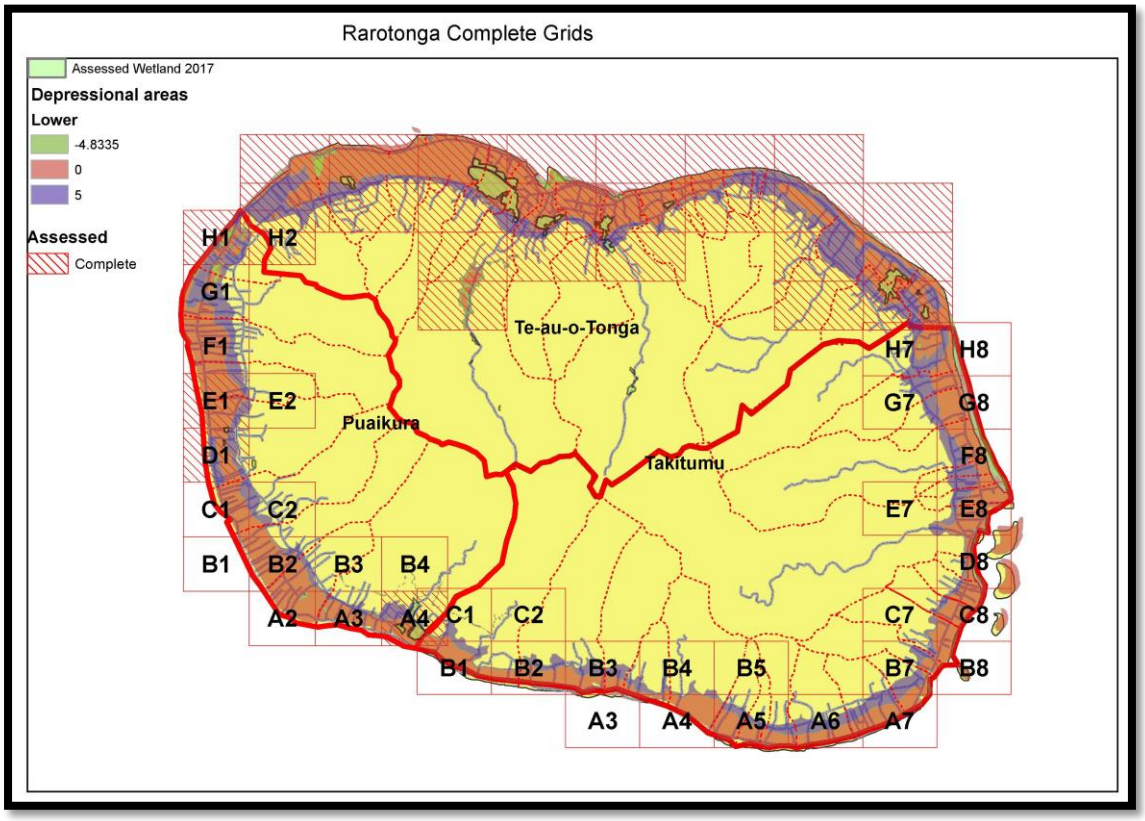


Areas not coloured were areas to be assessed by the Kumiti Tamaotora within the allocated time frame

Areas completed earlier in 2017

Introduction:

The Kumiti Tamataora with the support of the National Environment service (NES) Ridge to Reef project conducted a survey assessment of the wetlands surrounding Rarotonga which took place on the 09th November to 1st December 2017. The survey assessment was planned to provide information of all the remaining wetlands left on Rarotonga within the areas of Puiakura Arorangi, Titikaveka, Ngatangiia and Matavera. The work done was conducted with all 16 member including family members to assist with the assessment.

Background:

We the KT group wish to assist the National Environment Service with collecting all the necessary data for the Rarotonga Wetlands, because we as a Cook Islands family group can see the benefits and importance of wetlands to us people of the Cook Islands and also to our Environment as a whole. Wetlands are among the most productive ecosystems in the world and are valuable to you and your community. They improve water quality by absorbing and filtering out pollutants and sediments in the water. They also store floodwaters, acting as natural sponges and slowing down the force of flood and storm waters. Wetlands support biodiversity by providing breeding grounds for wildlife and nursery areas for fish.

The Rarotonga wetlands is decreasing every year and the National Environment Service do not have enough data or information to counter these ongoing issue on Rarotonga. The last wetlands assessment was conducted back in 2011 and the methodology used to conduct the work was not suitable in terms of measuring area size, land elevation, and also justifying the accuracy of the data.

Development is one of the main threats that wetlands encounter on Rarotonga and without this vital information, NES does not have suitable data or information which makes decision making limited and difficult.

The collecting of necessary data or information is to generate a baseline of information which will answer all the missing grabs and will assist with making decisions and setting work programs to best educate our communities and the whole of the Cook Islands.

The report includes the various survey methodologies that were undertaken by the survey team and some results on what was observed.

Key Outcomes of the assessment:

- Mapping locations of each wetland areas on Rarotonga within the areas of Puaikura, Titikaveka, Matavera and Ngatangiia.
- Documenting – locality, physiography, threats, present of water, Primary plants types of wetlands etc.
- Using GPS units, Mobile Phones and Camera to collect GPS coordinates and photo images of each area mapped.

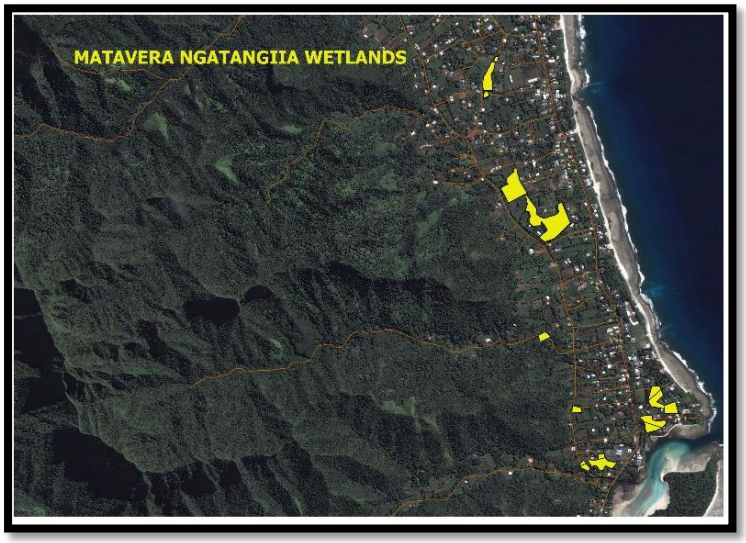
PUAIKURA BETELA/AROA/KAVERA/RUTAKI)

All the wetlands found and mapped in Puaikura are very well maintained in most areas and is accessible by foot, bike car and even trucks.

At each site mapped we found that 60% of these areas are still agricultural crops and 25% are not being attended to, but according to local planters within the areas, they are leaving vegetation to grow to assist with nutrition returning back into the ground.

The remaining 15% of the wetlands are left alone which has overgrown shrubs. Water is present within each of these sites mapped this is a result of fresh water springs found in each of these sites. These areas have been document and mapped for NES to use during decisions and planning process.

MATAVERA (ROTOPU/ PAUARA):

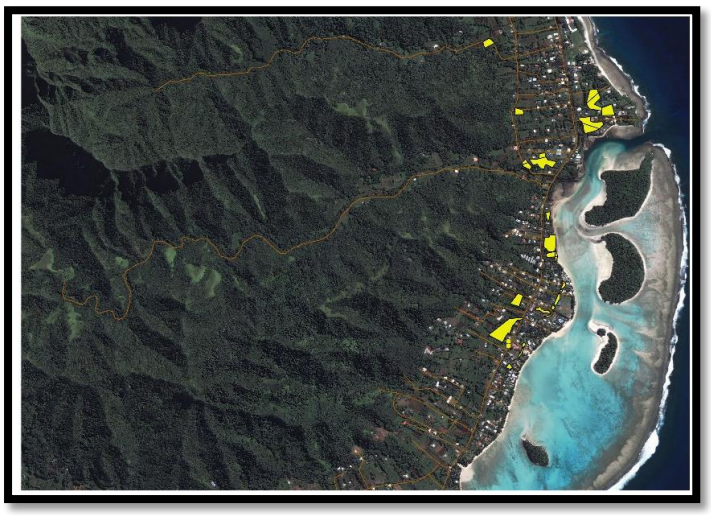


Methodology of Survey:

The methodology used for the assessment of these areas was with the use of a mobile app, that captures GPS coordinates, elevation and depression areas.

The mobile app proved to be a more efficient and easier way of conducting the survey and the required data collected was relevant and accurate.

The sites that were mapped, proved to be consistent to the report conducted back in 2011, which generally means, the areas is still remaining and being used, and only a small portion of the wetlands area had decreased in size. The majority of the wetlands surveyed are still being cultivated by individuals or families who live within these areas.



NGATANGIIA (TURANGI/ AVANA/ MURI):

The areas surveyed within this area, seemed to have changed in comparison to the survey conducted back in 2011.

The areas mapped especially those that were listed as being 'depression sites' were no longer, and a number of sites seemed to have been filled in due the high number of development that has taken place over time. It was also discovered that the salt marsh along the Avana area, has decreased slightly over time. The surveying of these areas including that of Matavera, was completed within a 10-day period.

Titikaveka:

The area of Titikaveka however proved to be challenging for many, as some of the wetland sites that were mapped in 2011 are either non-existent, or it was a depression area and not a wetland. Of the allocated sites, only one site was not mapped within the allocated timeframe of 21-days, and another site had to be redone due to the original methodology used.

Originally the team used the photo option on their android phones, however, the GPS coordinates were not accurate, and sites had to be re-surveyed using the mobile app being used by another team. However, some members used the GPS device which was accurate and the coordinates were entered into the spreadsheet for mapping purposes.

Ecological Outlook:

During the assessment it appeared that some wetland areas seemed to have changed in appearance. At one site (*Grid:* A6 *Area:* plot 5) the wetland area (*primary spp* taro – *area size*, ¼ acre) one wetland contained water meanwhile, the wetland closest to the banana plantation did not. These two wetlands were located side by side, and the wetland that contained stagnant water was closest to the main road, and the one that did not was on the inland side.

Recommendations:

For all data to be consistent, and the high number of android users on Rarotonga, that the mobile app be used or a GPS device.
By using these two devices, this will enable the data collected to be consistent for a survey of such kind.

It is also recommended that more images be captured and stored onto a database for future reference, this is ideal due to the high number of invasive species being found at all sites that may/will cause concern over the next 3-years.

Conclusion:

In conclusion, the assessment has proved to be a good educational tool for those who have not participated in an activity such as this.

And with the data collected, this will enable the National Environment Service to be able to make quicker and informed decisions for the betterment of communities and our islands.

Figure 1: Images of the three Wednesday Drone sites.