

# NEWS UPDATE

## MEI TE VAI KI TE VAI – RESTORING THE HEALTH OF OUR LAGOONS

RAROTONGA NEWS UPDATE, FEBRUARY 2018

### AT A GLANCE

- Dredging delayed
- Expert help for Muri's seaweed problem
- Water testing at Muri Lagoon
- Drone used to help map Muri Lagoon

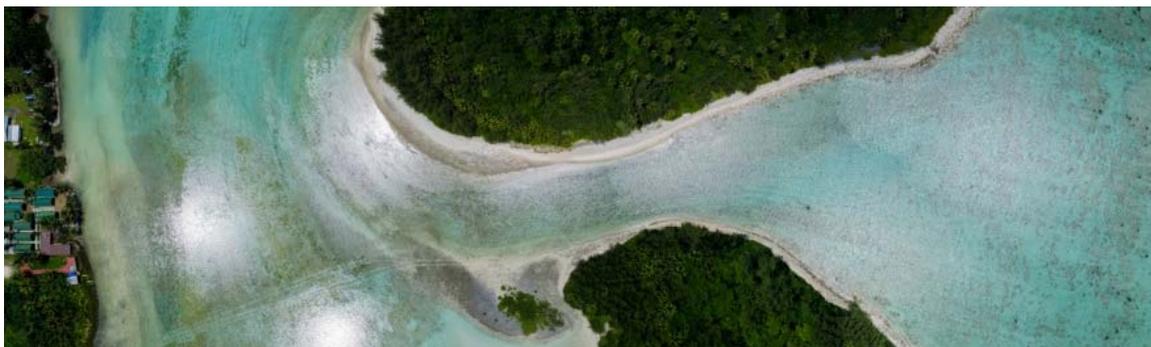
### WHAT'S HAPPENING?

#### Dredging delayed

In December, we lodged an Environmental Impact Assessment with NES for a near-shore dredging plan to remove sediment from the mouth of the Vai Te Renga Stream near Pacific Resort. As part of their assessment process, the NES publicly notified our proposal. Submissions to NES closed on 16th February. The NES will now review submissions before making their decision on whether the proposed dredging work can take place. This means we won't be able to complete the work during the tourism low-season as planned. As our planned dredging is adjacent to a resort, completing the work during the tourism season is not an option due to the potential impact on guests' enjoyment of their stay. Once we have a response to our application from NES, we will work closely with impacted people and businesses to identify a suitable time for the work.

You can find a copy of our proposal on the NES website [at http://environment.gov.ck/advisory-compliance-division/eias/](http://environment.gov.ck/advisory-compliance-division/eias/).

#### Expert help for Muri's seaweed problem



*Above: Seaweed visible in the lagoon (image courtesy of MMR)*

The Ministry of Marine Resources' (MMR) science team has been conducting field work as part of the project's investigation of the prolific seaweed growth in Muri Lagoon. Last month MMR sponsored a visit by Dr Susan Williams, Distinguished Professor of Evolution & Ecology at the University of California's Bodega Marine Laboratory. Dr Williams is the former Director of the University of California's Bodega Marine Laboratory; her research focuses on the ecology of nearshore marine ecosystems, particularly seagrass and seaweed beds and coral reefs. Dr Williams said: "Identification of the seaweeds is hard because there are few taxonomic references for the South Pacific. Although knowing the name of the seaweed is important, it is critical to know how abundant it is." The data will be used for reporting findings on the seaweed growth in the lagoon.

"What we have found is that the seaweed is abundant I was very surprised at that. In some places over 90 per cent of the bottom is covered with it. In the 40-plus years I've been working in lagoons I've never seen such an

abundance of green seaweed.” What also surprised the team was that the Rutaki sample area had the most abundance of green seaweeds.

Dr Williams says her first impression is that the excessive growth of seaweeds in Rarotonga’s lagoon may be caused by nutrient overload. “We know that it’s a problem because such an abundance of seaweed is not typical of a healthy lagoon and reef environment. Fast-growing ‘clouds’ of seaweed often act as nutrient sponges. For now, we do not know what has caused it – the team is working on that as well as a monitoring programme.”

***“These problems can be solved once you figure out the cause, but it doesn’t happen overnight.”***

Dr Williams says the seaweed problem is not unique to the Cook Islands and habitat rehabilitation is possible over time. “Many coastal areas suffer from seaweed problems, especially green seaweed. A coastal community in Hawaii had a problem with seaweed growth, they addressed the problem and recovery took from 10-20 years. You need to work hard to correct the problem, and it will take a while.”

After her brief six-day visit, Dr Williams said it was heartening to see that the community and government want to do something about the seaweed problem. “No one is ignoring it and that’s the first step.” Dr Williams said she was honoured to visit the Cook Islands and assist in MMR’s work.

## **Water testing at Muri Lagoon**

Experts from two Australian universities are on Rarotonga conducting a series of lagoon and land based tests to build a better picture of the Muri environment.



*Above: Dr Douglas Tait (left) and Matt Blacka (right)*

Research scientist Doctor Douglas Tait of Southern Cross University along with students Michael Reading and Kylie Maguire are testing the water quality of Muri lagoon as well as the ground water flow to the lagoon. Doctor Tait is no stranger to the lagoon as his thesis was based on the Muri area, through his work with the WATSAN unit on the island.

Doctor Tait says the current testing his team is conducting is focused on investigating where nutrients enter the lagoon, how much enters the lagoon and how long it stays in the lagoon environment. They are also investigating ground water flow and how sediments in the lagoon may contribute to algae growth.

## **Drone used to help map Muri Lagoon**

Also conducting investigations to find the source of the Muri lagoon issues is principal coastal engineer Matt Blacka and his colleague and drone pilot Chris Drummond from the University of New South Wales.

The pair is investigating the lagoon hydrodynamics using equipment anchored to the lagoon floor to gather information on the currents, wave and flushing of Muri lagoon. They will also map the slope and depth of the lagoon. They have also been using a drone to map the area with data gathered to be used to create a 3D model of the Muri lagoon and coastal area.

In particular they will be looking to see how the Muri lagoon and coast has changed and how this has impacted the lagoon. They have also been conducting coastal hazard mapping in the areas from Tupapa to Nikao.

Mei Te Vai Ki Te Vai Hydro-geologist and Environmental Scientist Anthony Kirk says that results and data from the series of investigations by visiting experts and those being conducted by the Ministry of Marine Resources and PMU will be combined together to give a clearer picture of the Muri lagoon issues and ultimately the best way forward to improve the precious environment.

Some testing equipment will remain in the Muri lagoon area and the PMU asks the public not to disturb it, as scientists continue to gather vital data to help develop a sustainable solution to the Muri lagoon issues. The PMU expects to release preliminary results later this year.

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or ask our team for a [copy.](#)**