

January Issue # 24 Climate Change Cook Islands Office of the Prime Minister

Welcome to the new Year

Shell cleaning in Manihiki- by Tina Weir

Pinctada margaritifera, the black-lipped pearl oyster, occurs naturally in the lagoon of Manihiki Atoll, Cook Islands where it is cultivated to produce lucrative black pearls. At one time the black pearl was the top export in the Cook Islands, worth an estimated 18 million dollars annually. However, following a devastating vibrio spp. outbreak in 2000 and declining global prices, the Cook Islands black pearl industry drastically declined and has not since recovered.

As part of an EU Global Climate Change project to support and develop sustainable livelihoods on the remote northern atolls, the Ministry of Marine Resources (MMR) is partnering with local farmers to introduce and trial new techniques and farm management practices to improve the quality and profitability of pearls produced in Manihiki. This report presents findings from a preliminary study investigating the ideal timing and effectiveness of preventatively cleaning shells in-water to minimize bio-fouling.

Growth performance is an ideal indicator for *P. margaritifera* because it represents the integrated response of the physiological activity, and thus overall health, of the entire oyster. Additionally it has been shown that shell growth is strongly correlated with deposition of nacre on implanted nucleus (Coeroli & Mizuno, 1985), and thus with pearl quality (Blay, C. et al, 2014). This study demonstrates that bio-fouling has a strong influence on growth performance of *P. margaritifera* in the Manihiki lagoon, and as such likely on pearl quality as well.

Findings and conclusion

We found that in-water cleaning using a wire brush caused a significant increase in average shell size within a period of just 6 months. Though there were

no significant differences in average shell size between the cleaning treatments, we recommend against using the in-water cleaning technique after periods greater than 8 weeks due to the increased waste load generated from the higher level of fouling accumulated in the additional 4 weeks (as evidenced by the doubling in time required to clean the shells).

The 8 week cleaning interval appears ideal – with shells gaining maximum health benefits whilst keeping labour requirements and waste material to a minimum. By performing the extra work to maintain shells in an un-fouled state farmers will improve pearl quality, oyster health, reduce the amount of stress on oysters at seeding time and also minimize the amount of floats and resources required to run their farms in the long-term.



Diver using a wire brush to clean a *P. Margaritifera* shell (Photo by Tina Weir 2014)

GIZ – SRIC CC Partnership



Chief of Staff, Elizabeth Wright-Koteka signing the agreement on behalf of Cook Islands 6 Jan 2015 (Photo by Ana Tira)

Kura Tauī'anga Reva

GIZ- which stands for German Society for International Cooperation has approved a EURO400,000.000 funding in partnership with Strengthening the Resilience of Island Communities to Climate Change (SRIC CC) to strengthen water infrastructure in the Northern Group islands of Rakahanga, Manihiki, Nassau, Pukapuka and Penryhn. The project aims to repair community water tanks to harvest and store rainwater which will provide additional water capacity on each of these islands. The scoping exercise was carried out on the islands of Pukapuka and Penryhn this month with Manihiki and Rakahanga early in February.

50 days for 50 years cycle/walk initiative



Team meeting on 7Jan 2015 (Photo by Ana Tiraa)

Climate Change Cook Islands has embraced the 50th Anniversary Celebrations of the nation by launching into the 50 days 50 years walk/cycle initiative. Other government agencies who have joined this initiative are the Ministry of Education, Health, National Environment Services, 50th Anniversary Coordination with NGOs and private sector Te Ipukarea Society, Ride Rarotonga, Cook Islands Cycling Federation and Storytellers Eco Cycle Tours. The initiative is to encourage the public to make a commitment to cycle or walk to work or school for fifty days within 200 days to the 50th Anniversary, 'there are multiple benefits to the individual and also to the nation' says Ana Tiraa, Director of Climate Change Cook Islands. "This will encourage our people to adopt a healthy lifestyle, lose weight and save on petrol money whilst at the same time reducing our green house gas emission into the atmosphere to which Cook Islands is the highest emitter in the Pacific per capita". There are great prizes to be won on achieving milestones and registration forms can be obtained from Climate Change Cook Islands at the Office of the Prime Minister.

Way to Paris

The first meeting of our preparations for the United Nations Framework Convention on Climate Change (UNFCCC) was held on Tuesday 27 Jan. This is one of many more meetings as we stratify our position on the world fora of climate change. It was noted that we ought to continue advocating on what we have always been following at these meetings. That is, focus on adaptation, finance and loss & damage. However, the upcoming meeting in Paris at the end of this year is a very important one, as this will endorse text in the new climate change agreement pre 2020. Hence, we want to ensure that our views are reflected in the agreement like every other party that is signatory to the Convention.



UNFCCC meeting Tues 27 Jan 2015 (Photo by Celine Dyer)

Rauti Para in Pukapuka

Our Rauti Para team consisting of Dr Teina Rongo, Celine Dyer from Climate Change and Mitchell Tutangata from ICT all from the Office of the Prime Minister embarked on the island of Pukapuka on Monday 19 January to deliver the Rauti Para project. This phase of the project is fully funded by SRIC CC of the Adaptation Fund with implementing partners, Climate Change Cook Islands, ICT Office of the Prime Minister, SPC EU GCCA PSIS and Rauti Para Kumiti.

Pukapuka is the first island in the Northern Cooks to receive the tablet training that was delivered last year in the Southern Cook Islands. However, due to transport arrangements the team was only able to spend two days on the island.

Being a remote and isolated island in terms of both transport and distance from the main Cook group, we took advantage of the two days to do as much as possible and so decided to run an introductory tablet class rather than a full training.

Kura Tauī'anga Reva



Looking towards Pukapuka from Motu Ko 19 Jan (Photo by Celine Dyer)

Of the two days on Pukapuka we conducted video interviews, climate change awareness presentation and introductory tablet training, to which fifty four people registered their names for tablet training on Pukapuka.



People on Pukapuka having a go at the tablets 20 Jan (Photo by Celine Dyer)

(A full report can be viewed on the climate change facebook page).

Penryhn Rauti Para project



Tetautua village in Penryhn 22 Jan 2015 (Photo by Celine Dyer)

From Pukapuka the team flew across to Penryhn to deliver the same Rauti Para program. Since, Tetautua village is on the other side of the lagoon, one session of the tablet introductory was held on Omoka village to which the children came out and made use of the tablets.



Children of Omoka, Penryhn making use of the tablets 21 Jan 2015 (Photo by Celine Dyer)



Sea water washing over the main road of Omoka 23 Jan (Photo by Mitchell Tutangata)

Kura Tauī'anga Reva

Friday 23 Jan we were able to capture the king tide washing over the main road in Omoka, and were told by the locals that this was a common sight to them.



Tetautua village with tide coming in 22 Jan (Photo by Celine Dyer)



A child at Tetautua village outside his home (Photo by Celine Dyer)

Sea level rise is very obvious in Penryhn as we saw it and from what people were telling us. (A report on the Rauti Para project can be viewed on the climate change facebook page).

More photos from Pukapuka & Penryhn



At Pukapuka 19 Jan (Photo by Celine Dyer)



Pukapuka at Tua eastern side of mainland 20 Jan (Photo by Celine Dyer)

Kura – Kuriri

Celine Dyer will be attending the ADP meeting in Geneva from 8 – 13 Feb, the AOSIS from 6-7Feb.

Ana Tiraā will attend the INDCs meeting from the 17th – 21 Feb in New Zealand.

Dr Teina Rongo will attend the INDCs meeting in Bangkok from 27 – 29 Feb.

The SRIC CC water project team of Odi Tangianau and Ben Parakoti will be scoping the islands of Manihiki and Rakahanga from the 3rd – 16 Feb.

Till next time...Kia Manuia!