

## Tianure/ January 2020



### TE IPUKAREA SOCIETY

*Caring for our Environment  
Taporoporo i to tatou Ao Rangi*

**Kia Orana, katou katoatoa, teia te nuti no  
Tiānuare 2020.**

**Welcome to the January 2020 edition of our  
newsletter.**

*This year promises to be an interesting one with some weighty issues to keep abreast of including deep sea mining within Cook Islands waters, the review of the Environment Act and the need to ensure that environmental impacts are being properly considered in project permits – something we have been recently reminded of with Te Tatou Vai's trialling of chemicals in Rarotonga's water supply.*

*We have some great waste management projects in the pipeline, a new style eco-friendly seawall project in Avana plus we are helping teach composting in schools this term, supporting the Ministry of Agriculture programme.*

*We enter our second year of the highly successful Mana Tiaki Eco-Certification scheme for tourism operators. Check out the new website at [www.manatiaki.org](http://www.manatiaki.org) or follow us on Facebook [@ManaTiaki](https://www.facebook.com/ManaTiaki)*

*Check out our new [Givealittle](#) page which we have started for our Protect a Little Paradise campaign.*

*Givealittle is a crowd funding site based in New Zealand. This page will make it easier for our supporters, both overseas and locally, to donate to TIS, with either credit card (international) or online payments (within NZ). All funds received will be put towards core costs of running our organisation and supporting our projects in Rarotonga and throughout the outer islands.*

*We have also employed a new intern, Andrea George. Andrea is from Aitutaki and has recently completed her final year at Tereora College. She intends to study marine science at BYU in Hawaii later this year. Read more about her in this edition. Welcome Andrea!*

### Deep Sea Mining Research Continues

On Monday, January 6<sup>th</sup>, staff from Te Ipukarea Society joined with other stakeholders for a presentation of the preliminary results of the Ocean Mineral Limited (OML) exploration trip north of Aitutaki.

Charlee Maclean from the Society was among those chosen to go, but due to delays because of bad weather eventually pulled out of the trip. The ship was at sea for just over a week, from Christmas day to January.



TIS's Charlee and Laurie looking at the mud collected from 5.2km ocean depths

Adrian Flynn and Laurie Meyer from OML showed the onlookers the equipment used to collect the nodule samples, as well as some of the nodules themselves and some of the sediment from 5.2km depth.

A total of 50 free fall grab samples were collected. These are being sent overseas for detailed analysis of the mineral content. In response to a question about biological samples, we were told that none were collected for this trip, but there would need to be detailed biological surveys done as a part of any EIA before mining could commence.



Stakeholders learning about the recent OML research voyage

### Our new intern, Andrea

This year's intern, Andrea George has been supported by funding from the United States Consular General in Auckland, as an outcome of a successful Sea and Earth Advocates (SEA) workshop held last year. A quick chat with Andrea shows just how passionate she is for the marine environment of the Cook Islands.

### Can you tell us a little about yourself?

Kia Orana, I am Andrea Tauariki George and I am 17 years of age. I was born in Las Vegas but was raised in Aitutaki. In 2019, I shifted to Rarotonga to complete my final year of secondary education at Tereora College.

### Why do you want to be a Marine Scientist?

Growing up in Aitutaki and being able to experience first-hand the benefits of our marine environment for the economy and cultural expression has influenced the fascination I have for marine science. The serious impacts of westernization on the health of our marine ecosystem has instilled into me a sense of responsibility toward future generations to help restore this ecosystem to a healthy and thriving state.

### What were your favourite subjects at school?

Definitely biology and geography. These subjects had given me the opportunity to study our land and people and to gain an understanding of current issues in our terrestrial and marine environment.

### What are your ambitions for the year 2020?

This year I aim to gain experience in the environmental workplace. By the end of the year, I hope to gain some level of financial stability which will enable me to attend university.

### What do you like to do in your spare time?

I find the most joy in simply observing and basking in nature. I enjoy exploring the scattered islets of Aitutaki and snorkelling in its magnificent lagoon. I also enjoy impromptu nature walks with our family dog. Photography is also a hobby of mine, with nature often the subject of my shots.

### What are your thoughts about the current status of our marine environment?

I believe that there is still much we can do to relieve the suffering undergone by marine life. The gradual deterioration of our lagoon remains visible today with coral and fish populations being greatly impacted by rising temperatures and pollution. In order to combat these issues, I believe they need to be addressed with a united effort between environmentalists, government officials and the public.



Our new intern at TIS, Andrea George



## Epic Opportunity to Come Home to Reconnect



Ant Vavia discovers the reef of Mitiaro, his family island.

Environmental scientist and friend of Te Ipukarea Society, Ant Vavia has started 2020 with a change in scenery and lifestyle by moving from Aotearoa to Mitiaro – his family home island. He shares about his PhD research on coastal reef fisheries and ra’ui.

Jumping back a few years, in 2014 when I began my BSc in Marine and Environmental Sciences at the Auckland University of Technology (AUT), I didn’t ponder too much on the specifics of where my studies would take me.

Now and then I would imagine working in a Pacific marine environment and doing it in the Cook Islands was only that - imagination. I wasn’t sure what that would look like or how to get there, and I’d usually just leave it at that and focus on what immediate work needed to be done. But throughout my undergrad I grew less concerned with ‘how to get there’ and focused on just getting there and letting the process roll out while keeping my goals in mind.

In my final year of undergrad, I did a paper on coastal reef ecology in the Western Province, Solomon Islands. This was a big step for me as I was actually doing work in the Pacific, which was pretty choice! That opportunity then led onto completing my Honours research project in the Solomon’s in 2017 on seaweed farming and GIS. Hop, skip and jump forward a year, I enrolled into a PhD program.

By that stage I had already made my mind up; if I’m going to be working on a minimum 3-year research project, it will have purpose, be important, involve communities, and add to the written body of marine knowledge – so I brought it home to Mitiaro.

With marine resources providing for a large portion of diet and economy in the Cook Islands and other Pacific nations, my goal is to develop a better understanding of coastal reef fisheries. This will involve ageing fishes and determining their ability to reproduce which will help to understand fishes’ tolerance to fishing pressures.

It will also involve the role of ra’ui and how these are used to manage marine resources. I will record what fish are being brought in over the course of a year to assess what is targeted and to highlight if there are any trends in catch.

And lastly, I will have an ethnographic component to my research. In other words, I want to dive into traditional customs, knowledge and practices surrounding marine resource use and management. You cannot study a fishery just by observing the fish, because a fishery includes the people; people that actively engage with the resources. Therefore, understanding the community is critical.

The choice thing with all of this besides doing something for the Cook Islands, and the academia, is that this is an epic opportunity to come home to catch a glimpse and reconnect with where my tupuna worked and thrived; my cultural fix. This is me levelling up!

## CITC and Te Ipukarea Society - working together as leaders of change

So many of our people are doing their best to reduce their eco-footprint. However, sometimes the magnitude of the task feels overwhelming. Leadership from our government and large industry is imperative if we are to achieve transformative and effective change.

The Cook Islands are fortunate that our largest and longest serving company CITC, has committed to a strong green direction.

Being the largest importer in the Cook Islands, CITC recognised that their operations have a large impact on the environment. They first set themselves the goal of being leaders of change by announcing a new campaign to ‘Go Green’ in 2013 - a theme that continues to define their direction.

In line with this, six years ago CITC chose to support Te Ipukarea Society by becoming our first ever Gold corporate member.



CITC display of eco-products at the Green Expo

CITC are constantly setting themselves new challenges. This year they ran 'The Last Straw' campaign collecting the public's unused plastic straws and sending to NZ for recycling, together with their own remaining stock. They now only sell paper and metal straws.

General Manager Gaye Whitta advises they are currently working with Fonterra to have no plastic straws attached to tetrapaks and are also looking for alternatives to plastic meat trays, such as heavy cardboard which can withstand moisture. This will be a welcome change from the plastic trays!

Protecting the marine environment is another priority. Over the years CITC has consistently identified and stopped selling products with potentially damaging ingredients including phosphate laundry powder, plastic microbeads and sunscreens containing harmful ingredients like oxybenzone, known for its damaging bleaching effects on the coral reef.

Both Te Ipukarea Society and CITC are members of the Solid Waste Management Committee which lobbies government on legislative changes to address waste issues. Such changes include developing a policy on Advanced Disposal Fees and advocating for the Solid Waste Management Bill which, among other things seeks to ban a selection of single use plastics.

Exciting times lay ahead with real potential for change. We look forward to continuing to work together with CITC in 2020 and beyond, to achieve our common environmental goals for the Cook Islands.

## Teuru studies Conservation Leadership in Cambridge

Te Ipukarea Society member, Teuru Tiraa-Passfield is pursuing an 11 month MPhil in Conservation Leadership at Cambridge University. Here is what she has to say!

If someone had told me a few years ago that I would soon be studying at the University of Cambridge, I would have said they didn't know me very well. Yet here I am in the UK, wearing four times the layers I do in Raro (still with jandals, of course), for a Masters degree at the University of Cambridge.

So far, I am: struggling to get through a mountain of readings; craving the warm sunshine of Rarotonga; missing the best hugs in the world from my 3 year old daughter; crying at the NZD to GBP conversion rate; missing fresh tuna; fighting "impostor syndrome" daily; and still, thoroughly enjoying every single new learning experience.



Teuru Tiraa-Passfield enjoying the cold Cambridge colours

I'm here pursuing an 11 month MPhil in Conservation Leadership which, given our local and global commitments, I believe is of great relevance to the Cook



Islands. There are 21 of us from 16 different countries. I am the only Pacific Islander this year, and so proud to be here as a Cook Islander.

The course focuses largely on leadership and management in the context of environmental conservation. It is delivered by a wide range of experts in various fields, many of whom work for international conservation NGOs but also lecturers in business, engineering and private consultancies. Most of our learning takes place in the David Attenborough Building, near the partner organisations of the Cambridge Conservation Initiative (CCI).

The modules so far have been on conservation problems and practice, management, and innovation for conservation leadership. Still to cover are conservation enterprise, communicating conservation, and conservation governance. In every lecture we are asked to think critically and to challenge the narrative based on our own experience.

I have so much respect for the people I'm studying with. It has been fascinating to learn about the work they do in their respective countries - protected area management, conservation of lions, lemurs, tigers, various birds, and different ecosystems.

The course includes a 4 month placement with one of the partner organisations of the CCI. The placement involves addressing a leadership challenge facing the organisation and I intend to choose a challenge that is relevant to the Cook Islands.



Teuru's class of future conservation leaders

I am excited to start the leadership part of the programme. I believe a good leader is one who is values-driven, genuine, has integrity, and actively encourages and fosters the leadership potential of

others. I don't believe that leadership is hierarchical - anyone can be a leader by noticing where change is needed, and then stepping up to help make that change. I want to lean into the challenges that come my way and to grow in my leadership capacity.

It seems like a miracle that I'm here, but I know it is not. I am here because of opportunities, trust, and support. Opportunities that I have been given, encouraged to apply for, and that I am privileged to have. Trust from people who have vouched for me, given me chances, and even second chances. And finally support. Scholarship support from Fauna and Flora International. Visa and immigration support from the Cook Islands Ministry of Education. Support from Te Ipukarea Society, friends, mentors, and lecturers, in the form of encouragement and capacity building.

And of course, support from my family. For everything. It's one thing to be given an opportunity, but it's another to have a family that will do everything in their power to ensure you can make the most of it. Words don't do justice to the gratitude I feel for them - hopefully a degree from the University of Cambridge will.

## Seeing the Sea

*The essay below is reprinted from the Journal of the Society for Underwater Technology with kind permission from the author, Philomène Verlaan and the Society. A full copy of the Journal can be found here: <https://issuu.com/sut7>*

How humans see the oceans is crucial to the future of life on this planet, which we persist in calling "earth" although nearly three-quarters of it is "ocean", as pointed out by, amongst others, Arthur C. Clarke.

"Sea blindness" is a concept usually associated with the public's lack of knowledge of the shipping world and the dependence of trade on the sea. However, sea blindness also afflicts humans (with the exception of a few fast-disappearing traditional coastal communities) on just about every marine metric, including that of the critical importance of the sea to our well-being.

An example of traditional coastal communities seeing their ocean is Pacific Islanders thinking of themselves as Oceanians. They speak of their world as "our sea of islands" in the striking imagery of Dr Epeli Hau'ofa, who considered himself to be Tongan, Fijian and Oceanian.

Oceanians see the ocean as a medium of connection between each other, and not of separation. The ocean joins the Pacific Islands and their inhabitants; it does not isolate them. Voyaging between islands, using traditional navigation techniques, requires envisioning the islands as moving. The island voyagers in their vessels are the fixed point.

Seeing is not simple – it takes different forms. Seeing as a means of learning is not straightforward, because valuable sources of learning may well be in plain sight but invisible to both untutored and over-tutored eyes. Identifying and removing those blinkers are essential to seeing fully. The anthropocentric blinker (i.e., where it is asked, "How is this good for me?") especially impedes seeing to learn.

However, we need to beware of the tyranny of the visual. The deceptive opacity of the ocean makes it particularly vulnerable to the "out of sight, out of mind" syndrome, and bedevils not only our attempts to understand it, but also to protect and preserve it.



The Cook Islands traditional voyaging canoe, Marumaru Atua, is sailed using traditional Pacific Islands navigation knowledge. Photo credit Stuart Chape.

The great Pacific Island navigators not only use visual cues, such as stars, clouds, water colour and birds, to orient themselves on a journey between islands. Crucial to their portfolio of navigation skills is their ability to disentangle complex wave and current patterns to discern the effects of waves reflected off real, but invisible, islands. They do so by using their entire bodies as the sensor – usually by lying flat out and face down on the bottom of the vessel – with their eyes closed. Training for this requires immersing themselves well beyond the reef in the deep sea, learning to feel its movements and to differentiate between swell, tide,

local currents and deflections from other islands (Brower, 1983). This is physical oceanography seen without eyes and learned through the body. It adds an additional level of meaning to the concept of 'physical' in physical oceanography.

The tyranny of the visual has other unhelpful aspects when it comes to seeing the ocean. For example, we cannot see the adverse effects of noise pollution, acidification or warming on the sea itself. Would we care as much about the effect of warming on corals if they did not lose their vibrant colours because of it, even though we know they are dying?

Even when we use other sensory technical media to learn about the sea, such as acoustics (e.g., echosounders) and (geo)chemistry (e.g., conductivity-temperature-depth (CTD) instruments), the data obtained must be translated into images in order to be useful. Those data are also used as the basis for models of the sea and its living and non-living processes. Dr Joseph Reid, the eminent physical oceanographer specialising in ocean currents, won the Albatross Award (oceanography's Nobel Prize) for "his outrageous insistence that ocean circulation models should bear some resemblance to reality." Modelling requires filters and judgments chosen and implemented by humans. What essential information about the sea do we miss with these filters and judgments – in other words, information we can only obtain by looking directly, with our own eyes, into the ocean?

I emphasise "directly" because when we try to see the sea, we do so ever more remotely from the sea itself, i.e., through camera-equipped devices. The number of human-occupied research submersibles, never large, has plummeted. Just as moving formerly human interactions online to be mediated by machines is probably unhealthy in terms of how humanity is seeing itself, engaging ever more remotely with the ocean in order to gather information about it is unlikely to help us to see it most constructively. Nor, to recall the concept of exchange as an intrinsic component of learning through seeing, is it likely to enable the ocean to engage with us in response. It is that engagement that seeing for learning should foster. However, it is not easy to have an exchange with the ocean.

Dr John Craven, a dedicated and creative ocean engineer who never ceased his search for new ways to "see" the

ocean, once summarised his lifetime's experience of working in and with the ocean as: "If you bring something new to the sea, the sea will bring something new to you" (Craven, 2001).

Our removal from direct experience of the sea risks denying ourselves the chance to receive something new from the sea. It also results in the diminution, if not whole-scale elimination, of our empathy with, and hence, in our alienation from physical realities.

I serve on the PhD committee of a student at the University of Hawai'i who is looking at the anthropology of deep-sea mining. The student's field work includes voyaging on deep-sea mineral vessels to ascertain how the technicians, scientists and crew see the sea and the resource. One finding from this work describes how the use of remote sensing equipment led to descriptions of the ocean between the ship and seabed as 'liquid rock' (Harris, 2016).

We are a deeply visual species. We hunger for direct experience. I have not yet met anyone who considers watching a video of Venice to be the equivalent of actually going there. Despite my overall caveat about visual tyranny, let us use this predilection for the directly experienced to our and the ocean's advantage: to promote exchange; to leave options open for something new to be brought to us by the sea; for us to at least see something new.

This means, inter alia, putting scientists back in research submersibles, to (re)invest in long-term, direct observational presence by real humans in the real sea.

[References available on request]

*Philomène Verlaan JD PhD FIMarEST FSUT Dr Philomène Verlaan is an oceanographer specialized in the biogeochemistry and ecology of deepsea ferromanganese nodules and crusts (Ph.D., Imperial College London) with extensive sea-going experience (24 oceanographic research cruises and nine submersible dives so far). She is also an attorney-at-law specialized in international law of the sea (J.D., Florida State University; Member of the Florida Bar). Author of over 50 refereed publications, she is a Visiting Colleague at the Department of Oceanography, University of Hawai'i and Trustee of the Advisory Committee on Protection of the Sea (www.acops.org.uk).*



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