

Kia Orana,

*This is the first update from the field team delivering the Palmerston Island Rat Eradication in the Cook Islands. The project is funded by the New Zealand Ministry of Foreign Affairs and Trade through the MISCCAP programme. The planning and operational delivery of the eradication project is led by the New Zealand Department of Conservation, in collaboration with the Cook Island's National Environment Service, Ministry of Agriculture, the NGO – Te Ipukarea Society, and the Palmerston Island community. The project has been in planning stages for 18 months and the operational delivery is being carried out by the field team and community over August/September period.*

Kia Orana from Palmerston Atoll. It is hard to believe the first week has been and gone, and it is a great feeling to be on the ground in Palmerston after nine months of logistics and planning.

The team have had a productive first week, with the NZ DOC contingent (Em, James, Michael, and Jenny) arriving in Rarotonga last Thursday to meet up old and new team members from Rarotonga – Alanna, Henry, Mia (all from TIS), and Teariki (NES).

After regaining some sleep from a run of severely delayed NZ domestic flights - we spent our first full day on Rarotonga unloading our field equipment from the insulated 20 foot container that had travelled from New Zealand in June, in addition to equipment brought by plane. We spent the morning in the NES office running biosecurity checks on all of the gear and our personal belongings for unwanted organisms. There is a significant risk of transporting invasive organisms from Rarotonga which are not on Palmerston – particularly certain species of invasive ants. After confirming our gear was clean, we proceeded to load the checked in gear onto the vessel 'Anuanua Moana', which would be our home at sea to reach our destination of Palmerston Atoll. Palmerston is approximately 500 kilometers NW from Rarotonga, and can only be reached by sea as there is no landing for fixed wing aircraft, and it is out of range of the nearest Helicopter (Tahiti). From a project management perspective, the logistics of arranging transport between Rarotonga and Palmerston have been one of the most challenging parts of the project so far due to a lack of availability and uncertainty with vessels. We are grateful that both the Anuanua Moana, and the Vaka have made themselves available to accommodate our teams travel.

Before travel to Palmerston, the NZ contingent had a day in hand to climb Te Manga, a high Peak on the Island of Rarotonga, of which we were accompanied by a local dog affectionately referred to as 'dogo'. From Te Manga, we were able to see the Cook Island Voyaging Society vessel – Marumarua Atua coming into dock, so we set off back down the hill to catch up our future crew for the return voyage from Palmerston in September.

Our travel to Palmerston consisted of 48 hours at sea aboard the Anuanua Moana – an exploration boat run by Moana Minerals. The boat has a license and multi-year operation plan of science research – collecting data and samples of deep-sea bed biota, geology, and mapping geomorphology of the seabed. We got to watch the deployment and see footage from their Remote Operated Vehicle that was deployed to 4100m below the surface of the sea. The CEO, Hans Smit, also give us an informative presentation of the expedition plans of the boat over the next few years in collecting baseline data to improve knowledge around the seabed and to better inform Environmental Impact Assessments of deepsea mining of nodules. John, a member of the Cook Island's Seabed Mineral Authority, was also present on the boat as an inspector on behalf of the government, and was a wealth of information regarding the issues of seabed mining and exploration. Many thanks to Hans, Gary, and their crew – who welcomed and accommodated us – and transported us safely to the Atoll.

All incoming passengers and cargo to the Atoll must be transferred from larger ships to small dinghies, as the passages into the Atoll are constrained –allowing only smaller boats with shallow draught. The natural barrier of the

reef provides an excellent basis for biosecurity, as cargo is manually transferred and observed to smaller vessels for the journey into the Atoll.

It was great to see old friends and familiar faces arriving on the beach of the atoll, with the kids jumping and calling our names (particularly Alanna's!) as we came into view. After many quick hugs, catchups, and introductions, we were welcomed by the community officially in a shelter on the beach. Before our arrival, the Palmerston population consisted of 28 people – our arrival of 10 (8 of the field team & the new reverend and his wife) was near a 30% population increase.

The rest of the day involved ferrying cargo from the Anuanua to the atoll, delivering household cargo via tractor, and establishing the field team's new base at the Emergency Management Center.

That evening we held a presentation for the community to revisit what we learnt from last year's feasibility study in November; and to work through step-by-step what the next six weeks would involve. There was emphasis on everyone on the atoll having a vital part to play in the eradication for it to work, as a single female rat left could mean failure. We showed examples of bait trays and what bait coverage would look like on the ground; and discussed issues (such as unmanaged food scraps and waste) that would heighten the risk of the eradication failing. Rodent eradication's on inhabited islands are inherently more difficult than unpopulated islands due to the complexity of humans and the habitat, alternative food sources, and politics they bring – but the community is committed to seeing the project done well, and working together to give the project the best chance of success.

There are two islands in the Atoll with rats present, and to be confident that every rat will have access to a bait, we need to hand broadcast bait from a 20 meter by 20 meter grid across these islands. In tropical environments, kiore have been recorded in exceeding 200 individuals per hectare, and can breed year round due to the productivity of these environments. A 20 by 20 meter grid equates to more than 2200 points on the ground between Home Island and Cooks motu, that must be accurately marked and measured. In addition to this, over 103 buildings on Home Island (the inhabited island) must be baited with at least one bait-tray in every room, and underfloor and ceiling cavity.

Yesterday was our first operational day in the field, and we worked together in a team of ten to start cutting the first 20 by 20 meter transect of the grid on Home Island to get the methodology down as a team. Traditional ground base eradications have used a measured string line and compass to achieve an accurate grid. We have been fortunate enough to trial some Real Time Kinematic equipment which effectively is survey grade technology utilising full global satellite networks and low-energy radio communications between a base and rover unit, to allow us to walk to pre-generated grid points on our mobile phones to around 10 centimeters accuracy. We had some teething issues to get through on the first day, but by the end of the day we had identified and problem solved to resolve these issues and are up and running.

Our building baiting team have also begun inspecting buildings and planning bait tray positions, and recording the state of alternative food management and potential red flags to be addressed as we methodically survey Home Island. Em also breathed a sigh of relief as he checked the 6 tonnes of rat bait which had arrived on the island in late June, appears to be in good condition!

Over the next week, we anticipate to complete the grid layout over Home Island, and have fully deployed the building baiting trays (unbaited), while having canvassed any potential issues that require further resourcing on Home Island.

It is a pleasure to be back with the Palmerston community, and we have an excellent field team – it feels fortunate to have landed with a team of such diverse backgrounds and experiences which have gelled so well.

I will endeavour to send updates weekly on a Friday (CKT) – please let me know if you wish to be removed from the mailing list. The Starlink service we brought with us has been invaluable in terms of mobile data collection, data sharing, communications with family, and keeping everyone updated. Some pictures to accompany this update on the following pages!

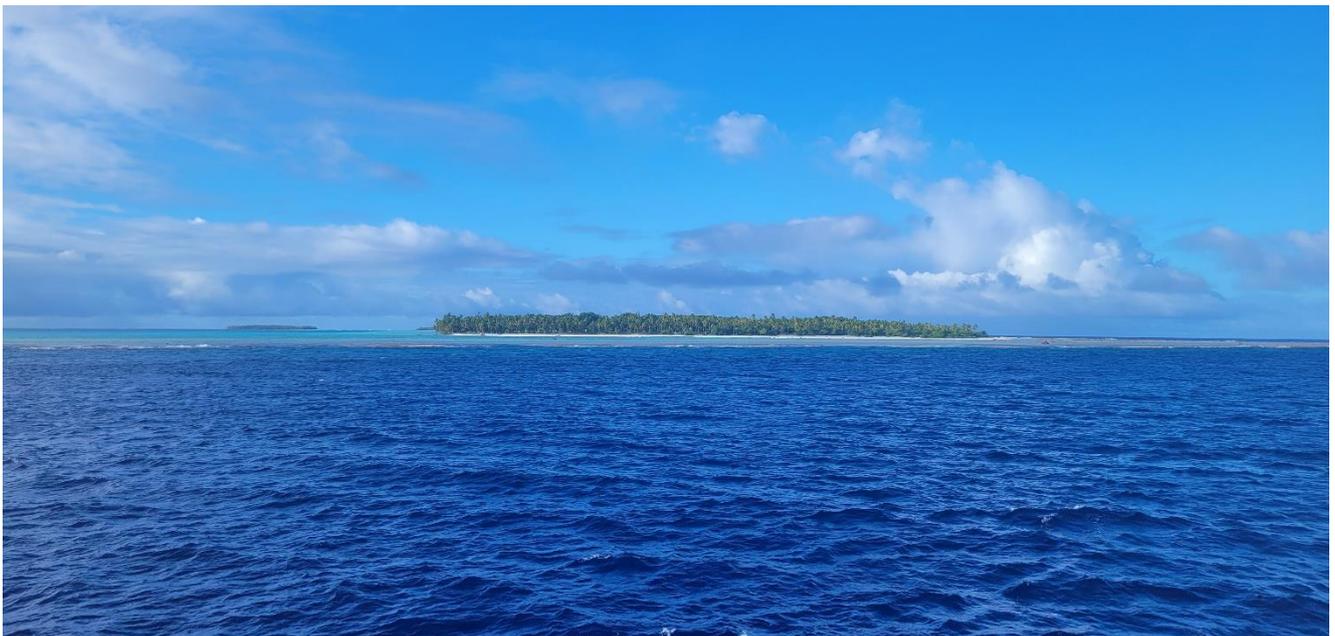
Wishing everyone good health at home in the Cook Islands and New Zealand.

Meitaki maata

Em and the RAT team



**Above:** Jenny and Michael enroute to Raro  
**Top right:** Biosecurity checks at NES office  
**Right:** The field team (minus Henry)  
**Below:** Home Island from the Anuanua





**Left:** Transferring from the Anuanua



**Left:** Helping out with cargo deliveries on Home Island



**Left:** James showing Madeina and James the RTK equipment we use for the grid layout



**Left:** Bait stored safely at Palmerston



**Left:** Presentation to the community, with bait density demonstrated in foreground



**Left:** Jenny showing the map of Home Island with the baiting grid



**Left:** Briefing our tasks for the day



**Left:** Julianna and Jenny setting up the grid



**Left:** Em syncing the days progress in the field



**Left:** The field team – from Left: Julianna, Teariki, Henry (kneeling), Mia, James, Em, Michael, Jenny, and Alanna



**Left:** Training run of grid layout