PRISMSS Triannual Newsletter
April 2024

PRISMSS
Restoring Island Resilience

Invasive species are the leading driver of biodiversity loss in the Pacific. They have a significant impact on ecosystem resilience leading to a loss of ecosystem services and a reduced ability to adapt to climate change.

The Pacific Regional Invasive Species Management Support Service (PRISMSS) aims to assist the Pacific in stepping up on-the-ground management of invasive species.

Visit PRISMSS Page

Talofa lava and warm Pacific greetings to all!
As we embrace the New Year, our collective efforts across the Pacific are already in full swing. We commenced the year on a high note with the 8th PRISMSS meeting held in the windy capital of Wellington, New Zealand in early February.
The meeting brought together the technical leads from the five PRISMSS Programmes, representing the partner organisations. The newly appointed PRISMSS Manager, Mr. Dominic Sadler, and PRISMSS Programmatic Coordinator, Mr. Josef Pisi, led the meeting which demonstrated how far we have come in sustaining the service.

The meeting served as a platform for in-depth discussions and collaboration aimed at reviewing the progress and advancements within PRISMSS Programmes and current

initiatives, with a focus on identifying challenges and, more importantly, exploring innovative strategies to scale up investment and support for invasive species management across the Pacific.

PRISMSS members worked towards developing a shared understanding of best practices, including considerations for gender, disability, and inclusion practices, as well as the integration of traditional knowledge into our strategies. Looking ahead, participants identified future events and opportunities to further advance the goals and objectives of PRISMSS, ensuring continued progress in the battle against invasive species.

PROTECT OUR ISLANDS

Prevent the arrival, establishment and spread of invasive species

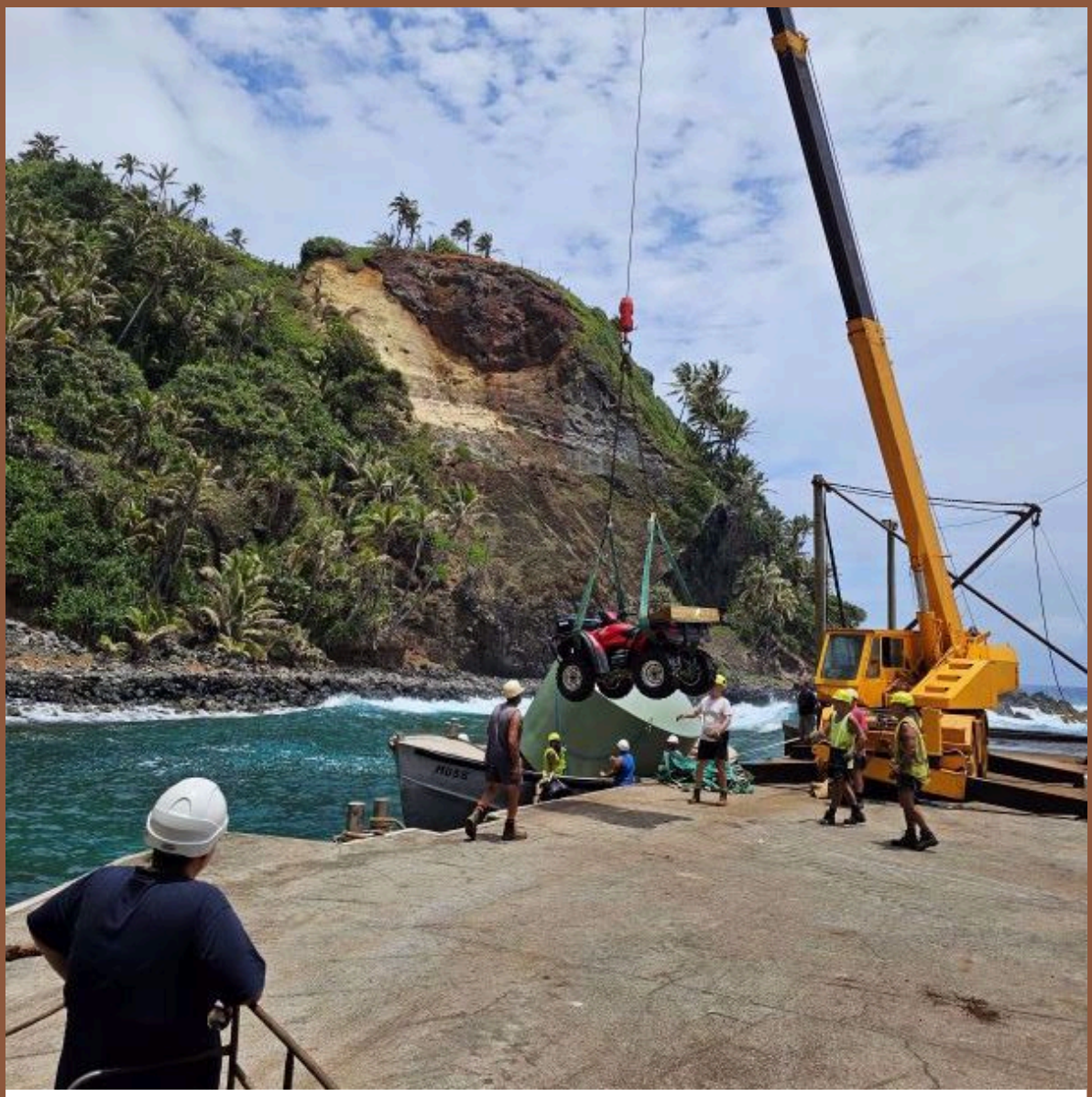
Being one of the smallest inhabited places on earth, the Pitcairn Islands exemplify some of the key challenges to effectively preventing the arrival establishment and spread of invasive species – as well as best-practice actions to overcome these challenges.

PRISMSS partners had the privilege of spending time on Pitcairn Island in late 2024 and observing the Pitcairn biosecurity team, Charlene and Jay Warren, in action. Just a few of the key actions that Pitcairn have or are planning to implement include:

- Biosecurity legislation that incorporates actions to protect outlying islands – by focusing on domestic as well as international transport, the territory values protecting local resources.
- Pushing the risk back to source, where it belongs – the supplies to Pitcairn are sourced from New Zealand, so risk can be managed prior to departure, rather than waiting until goods arrive in Pitcairn.
- Well-managed pathways – the crew of the scrupulously clean Silver Supporter have no tolerance for rats and use rat guards when at port. The biosecurity team know exactly what is arriving on the ship, and from the cruise ships that they also trade with. Not being able to land directly on Pitcairn provides another level of protection.

With ongoing discussions around making the entire Pitcairn Islands territory rat-free, having these measures in place well in advance, will help ensure success of the eradication.

Cruise and expedition ships visit Pitcairn frequently and are all subject to biosecurity checks (photo credit: Monica Gruber)



All bulk goods arriving are immediately checked at the port by Charlene Warren, Biosecurity Officer (Photo credit: Monica Gruber)

PREDATOR FREE PACIFIC

Removal of invasive mammalian predators from islands

The PFP Programme had a huge year in 2023 with rats and other invasive species removed from 49 individual motu including Late the largest island in the western Pacific to be cleared of rats.

Last December, the Ministry of Natural Resources and Environment Samoa and New Zealand Department of Conservation presented their findings to the Apolima community, aiming to raise awareness and propose viable solutions for eradicating rats while prioritizing safety.

Considering Apolima's size and challenging terrain, the study identified a combination of aerial and manual rat bait application as the most effective method. Broadcast aerial application emerged as the sole feasible method for accurate distribution.

In January, the Tokelau Rat Eradication Feasibility Study report was completed, concluding that eradication of invasive species is achievable. Consultations with Tokelau's village councils confirmed the need for action, as invasive species threaten native flora and fauna, impacting local livelihoods.

If Tokelau proceeds with eradication, it could become the first nation to eliminate all invasive mammalian pests, offering an opportunity to study nature-based solutions for restoring atoll environments and mitigating climate change impacts.
This year is shaping up to be another big one with implementations planned in 10 countries and at least 20 sites. And in very exciting news, a coordinator for the PFP Programme, Grace Ah Young-Grey has been appointed. Grace will be based in Samoa with the PRISMSS team, please welcome her to the team.

The Apolima Rat Eradication Feasibilty Study findings were presented to the Apolima Community in December 2023

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WAR ON WEEDS

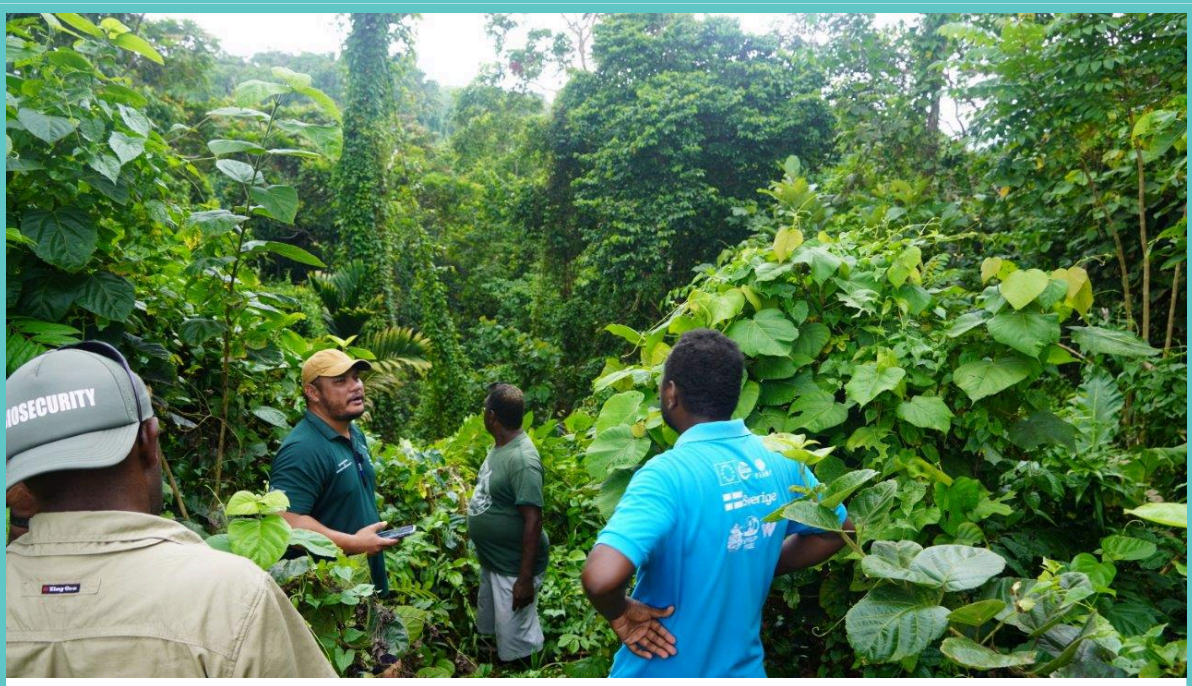
Management of high priority weeds

Following the completion of the War On Weeds (WOW) Capability Frameworks during the PILN Meeting in November 2023, it became evident that the lack of technical skills posed a significant challenge for weed management within the Solomon Islands and Vanuatu.

In response both the Solomon Islands and Vanuatu received a visit from the WOW technical leads to determine if there were opportunities to completely remove high priority environmental species of weeds that are evident in only small numbers under the new PRISMSS - Restoring Island Resilience project this year.

National stakeholder workshops identified priority weed species and assessed their distribution as to whether it was realistic or feasible to attempt to manage the species to a very low level with the resources that are available. Unfortunately no high priority species met these criteria so it was deemed that a WOW programme is not currently required and that the weed species would need to be managed either under the Natural Enemies - Natural Solutions Programme due to their widespread distribution or on a priority site-led basis under a Resilient Ecosystem - Resilient Communities Programme.

Basic training in the use of herbicides was provided to assist in the event that a high-priority weed is detected and needs to be responded to.



Site visit with the locals to observe identified high priority weeds in Solomon Islands, which were found to be widespread and would require a site-led management approach

New invasive species battlers were trained to manage high priority weeds once they are detected in Vanuatu.

NATURAL ENEMIES - NATURAL SOLUTIONS

Biological control of widespread weeds

Significant Merremia Dieback Found in Madagascar

Peltate morning glory *(Decalobanthus peltatus)*, more commonly known as merremia, has in recent decades become a highly invasive vine in many parts of the Pacific. The vine clearly thrives on human and other disturbance (including cyclones), but global change might also be a factor, as studies show elevated atmospheric CO2 levels can favour the growth of woody vines over forest trees.

As part of the Managing Invasive Species for Climate Change Adaptation in the Pacific (MISCCAP) project, the Natural Enemies - Natural Solutions (NENS) team have been exploring whether natural enemies might provide a solution.

A key step was to try to clarify the status of merremia in the Pacific as there are conflicting views about whether this plant is native or introduced. Many people helped to collect samples of merremia across the Pacific, and from other places of interest, for DNA analysis. This study has confirmed that the status of merremia is complex.

There are at least four genotypes in the Pacific, two of which are relatively recent introductions, which may support a common story that merremia was spread about during World War 2 for camouflage purposes. But the other two appear to have been present in the Pacific for a very long time as they less closely match any populations from the Indo-Malaysia region which is thought to be the original native range.

We also needed to know more about the natural enemies of merremia to determine if any might have potential. Surveys in 19 countries found nothing of significant interest (and no merremia in two) until the last place visited, Madagascar, where significant dieback was found in November 2023.

The damage looked similar to when vines have been cut or sprayed, and only merremia was affected in this way. The damage appeared to be caused by a stem-mining insect which possibly allows secondary pathogens to then take hold.

The dieback was causing enough damage at many sites to prevent the vine from being smothering, even disturbed sites where it usually flourishes. The mines were old and empty, so attack occurs at a different time of the year. Collaborators at the University of Antananarivo will revisit sites in 2024 to try to find and the causative organism(s) behind the dieback so they can be studied.

Merremia dieback discovered in Madagascar last year gives hope for NENS solution

Sample 2: Merremia dieback in Madagasca

RESILIENT ECOSYSTEMS - RESILIENT COMMUNITIES

Priority area ecological restoration

Following the completion of the Resilient Ecosystems - Resilient Communities (RERC) Capability Frameworks during the PILN Meeting in November 2023, it became evident that the lack of technical skills posed a significant challenge in invasive species control and habitat restoration efforts within the Solomon Islands and Vanuatu.

In response both the Solomon Islands and Vanuatu received a visit from the RERC technical leads to determine priority sites to restore under the new PRISMSS- Restoring Island Resilience project this year.

RERC stakeholder workshops identified priority restoration sites based on the outcomes of biodiversity, ecosystem resilience, social, economic and health benefits. Pilot sites were further refined due to feasibility including easy access and community support.

Logistical considerations were worked through to enable a programme of work to be planned for the restoration of the sites through managing multiple invasive species such as weeds and predators.

Working through the restoration process with the community and government agencies allowed a good understanding of what would be required by all stakeholders to make it a success and helped identify what resources and equipment is available locally.

In the Solomon Islands the Barana Community and Nature Park was identified as the key pilot site where the national activity would be launched. Being a large watershed

behind the main city of Honiara, the site has high importance for ecosystem services and an important site for the community as a stronghold for traditional knowledge.

In Vanuatu the Nusemetu Community Conservation Area on the Island of Tanna was identified as the restoration site to pilot the RERC Programme.The people of Nusemetu heavily depend on the use of natural resources from the forest to sustain their daily livelihood, most importantly for food. These resources play a very important role in their beliefs, customs, traditions and culture.

It is anticipated that both these activities will be underway from July 2024.

As the project progresses capability will be built through the network of rangers from throughout the Solomon Islands and Vanuatu to facilitate further RERC sites nationally.

A hands-on training session was completed at the Barana Community Nature and Heritage Park , demonstrating the management of weeds at the site that could be achieved with available resources

The RERC site prioritization workshop identified eight priority sites for restoration including weed management and potential predator management

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