



2024 Impact Report



TETIAROA SOCIETY

A note from the president

Dear Reader,

With this 2024 Tetiaroa Society Impact Report, we are proud to have completed a decade of conservation, education, and science on Tetiaroa atoll and beyond.

The diligent work by scientists and educators these past 10 years, supported by The Brando, Frangipani SA, and our many donors, partners, volunteers, and community leaders, has allowed us to assemble a body of knowledge about the flora and fauna of the terrestrial, lagoon, and reef eco-systems of the atoll that is unsurpassed among Pacific islands.

We have shared this knowledge with younger generations of Polynesians and visitors from afar through our education programs. And, thanks to conservation efforts, we can confidently say that our island is in better condition now than 10 years ago. We continue to discover points of archeological interest and improve our understanding of Tetiaroa's place in Polynesian history and its significance to pre-colonial Polynesians. We also see, however, what may be the effects of climate change, with shore erosion, for example. We have designed and implemented a re-vegetation program to test protocols for mitigating these impacts.

None of this work would have been possible without the passionate and dedicated staff, rangers, and guides of Tetiaroa Society, working every day to support these activities and visitors of all kinds to our field station. Our hope is that by sharing our knowledge and passion for this astonishing island, we may encourage more visitors to lean in and help us fulfill our mission.

Thank you for your steadfast support. I hope you enjoy reading this report, and please do consider continuing your support with a generous donation to Tetiaroa Society.

Yours sincerely,
Richard Bailey, President



Contents



Research & Conservation	page 1
Education	page 21
Global Impact - BCI	page 26
Publications & Conferences	page 28
Collaborations	page 31
Community	page 32
Personnel	page 33
Guide Program	page 34
Ranger Program	page 36
Volunteers	page 37
Ecostation Use	page 38
Communications	page 39
Financial Report	page 40
Donate and Protect	page 41

RESEARCH & CONSERVATION

The research and conservation programs on Tetiaroa are vital for preserving the unique biodiversity of this extraordinary atoll. As a remote and ecologically rich island, Tetiaroa serves as a critical habitat for marine and terrestrial life, including seabirds, coral reefs, and endangered sea turtles. These programs are central to understanding the ecological dynamics of Tetiaroa and ensuring the sustainability of its ecosystems.

The Tetiaroa Atoll Restoration Program with its focus on restoration of both terrestrial and marine habitats is the core of our efforts to protect and preserve this island. The island's status as a sanctuary allows these efforts to flourish, promoting long-term resilience in the face of environmental challenges.

Ongoing scientific research helps monitor the health of the island's ecosystems and contributes to a broader understanding of climate change impacts. The island's isolation provides an invaluable natural laboratory where researchers can study the effects of human activity and environmental changes in a pristine context, offering insights that can inform global conservation efforts.

Moreover, these programs engage local communities and visitors, promoting environmental awareness and fostering a sense of shared responsibility for the island's future. By continuing to prioritize research and conservation on Tetiaroa, the Tetiaroa Society ensures that this fragile ecosystem remains intact for future generations, contributing to global biodiversity conservation and climate change resilience.





Tetiaroa Atoll Restoration Project

Rat eradication

The rat eradication program that was started in 2018 is still ongoing but very close to completion. After the last major intervention in 2022 there were still a few stray rats of both species - *Rattus norvegicus* (Ship Rat), and *Rattus exulans* (Polynesian Rat) on some of the motu.

During 2023 a team of dedicated workers and volunteers worked across all motu and detected these rats and exterminated them to the point that there were only Polynesian rats left on Motu Tiaraaunu.



Map of baited areas and rat free motus

In 2024 delays in bait orders and staffing meant that work commenced again late in the year and eventually the decision was made to wait until the dry season of 2025 for a full eradication effort on the motu.

There is ongoing monitoring to make sure that rats do not move to other nearby motu. The good news is that the Polynesian rat is much less mobile and less disruptive to the ecosystem than the Ship Rat. The rest of the island has been completely rat free now for over a year and the response of bird and crab populations has been spectacular as you will see in some of the project reports here.





Yellow Crazy Ant Eradication

Eradicating yellow-crazy ants (YCA) from Teti'aroa emerged as the top priority of the TARP after the rat removal. By spraying formic acid at any animal on its territory, this species has a high impact on seabirds and land crabs. However, we knew that we were facing a massive challenge – this species has only been successfully eradicated from an island once, but there have been many failed attempts. After contacting world experts in invasive ant management, we designed an eradication protocol inspired by the only successful program – this involved the use of hydrogel crystals soaked in sugar water and an anti-termite treatment as bait. Our tests in the field demonstrated that YCA were very attracted to this bait, while it had little impact on land crabs, making it ideal for atolls. Thanks to funding from the French Biodiversity Office, we mapped and treated the 62ha of invaded areas in 2022 and 2023. In 2024, we focused on detecting any remaining ants, and quantifying the ecosystem response to YCA removal. We were amazed to find that YCA only remained in two tiny areas (<0.04ha) out of the 62ha that were previously invaded. We began the process of retreating these areas in Nov 2024.

Principal Investigators:

Simon Ducatez, Jayna DeVore, Solène Fabre

Affiliations:

Teti'aroa Society, The French Biodiversity Agency (OFB),
UMR SECOPOL Université de la Polynésie française,
Institut de Recherche pour le Développement (IRD),
Fenua Ecologie

Project Dates: 2022 - ongoing

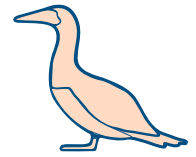


We also rejoiced at the return of nesting white terns in 'A'ie, a motu that used to host the highest white tern abundance in the atoll, but where they had disappeared since the YCA invasion. Brown noddies and land crabs are also recolonizing previously YCA-invaded areas, showing that the ant-removal is already benefiting the native biodiversity.

We are now sharing our protocols with other conservation NGOs for similar programs in French Polynesia. This short-term success is very promising and we will maintain our effort to hopefully call the atoll-wide eradication fully successful once our post-treatment monitoring period is complete.



Seabird abundance monitoring



In February, May, August, and November of 2024 we conducted our quarterly, atoll-wide seabird surveys. This long-term monitoring program allows us to assess the effects of the ongoing restoration initiatives on Tetiaroa on seabird abundances, as well as to identify potential barriers to seabird recovery.

At each quarterly monitoring period, we survey >35km of 100m transects around all 12 motu. Every bird is identified to species, and we assess the developmental stage of any eggs or chicks. We also identify each tree species used to inform eventual native vegetation restoration initiatives.

As in previous years, we found that habitats dominated by abandoned coprah plantations (i.e., coconut palms) are poor habitat for nesting seabirds, with post-eradication seabird recovery progressing more quickly in habitats dominated by native vegetation.

To compliment this survey data, we also used trail cameras to collect nest monitoring data for brown noddies, white terns, and lesser frigatebirds, allowing us to document effects of the restoration efforts on nest survival.

This year, our long-term seabird monitoring allowed us to document particularly low number of nesting seabirds during the El Niño period (January to May). This is typical during El Niño conditions, as warmer water temperatures generally mean less food for seabirds. In addition, large northerly swells in February hit some areas quite hard, with >90% of lesser frigatebirds losing their chicks because of this event.

Principal Investigators :

Jayna Devore, Simon Ducatez

Affiliations :

UMR SECOPOL

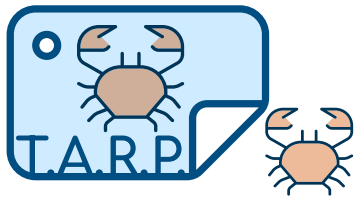
Université de la Polynésie Française,

Research Institute for Development

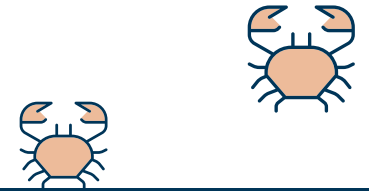
Project Dates: 2021 - ongoing



In contrast, the monitoring conducted in August and November (after El Niño) revealed a sharp increase in the number of white tern and brown noddy nests in the northern motu as compared to previous years, demonstrating that the recovery of these species is still underway following the rat eradication. The third successful reproduction of the pair of masked boobies that arrived following the rat eradication in 2021 was another important bird event for 2024.



Effects of rat eradication on crab abundance and behavior



Since 2021, we have been monitoring crab abundance and activity patterns by deploying trail cameras at 80 sites distributed across the atoll. Each trail camera is set to take a photo of a 10m² area every 15 minutes for 3 months per year. By identifying and counting each crab species in these photos, we have been able to document big changes in the crab communities following the rat eradication.

In 2024 our land crab monitoring documented increases in the abundance of several species. For example, *Geograpsus crinipes* and *Geograpsus grayi* were never observed when black rats were still present, but they are seen regularly now that the black rats have been eradicated. Importantly, we also documented the first evidence of reproduction for one of these crab species this year (*G. crinipes*). It took only ~2 years post-eradication for this species to both recolonize the motu and begin to reproduce.

By using images from these trail cameras to determine crab activity patterns, we have also documented changes in crab behavior initiated by rat removal. Prior to rat eradication, ghost crabs on rat-invaded motu were modifying their behavior patterns to avoid periods of peak rat activity (i.e., sunrise and sunset). By avoiding periods of peak rat activity, ghost crabs were likely trying to avoid being killed and eaten by predatory rats.

Principal Investigators:

Jayna DeVore, Simon Ducatez

Affiliation:

UMR SECOPOL

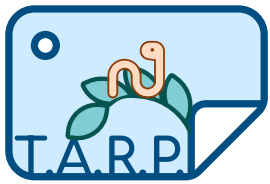
Université de la Polynésie Française [UPF],
French National Institute for Research in
Sustainable Development [IRD]

Project Dates: January 2021 - ongoing



However, since the eradication these crabs are recovering their normal activity patterns. In addition, in 2024 we have heard male horned ghost crabs “singing” (stridulating) from inside their burrows for the first time on motu that were previously invaded by rats. This singing is intended to attract females, but we like to think that they are celebrating the progress of the restoration program!





The cascading effects of invader-driven reductions in seabird abundance on plant-herbivore interactions

Seabirds are particularly important in atoll ecosystems because they import large quantities of nutrients from the pelagic environments where they feed into terrestrial environments where they deposit nutrient-rich guano. This guano (i.e., poop) is thought to promote plant growth and support healthy food webs. However, invasive species like rats and yellow crazy ants can cause long-term reductions in seabird densities, reducing nutrient inputs, with potential cascading effects on the entire food web.

To determine whether guano inputs by seabirds promote herbivore communities we conducted seabird and herbivore surveys and assessed herbivore damage on native tahinu (*Heliotropium arboretum*) trees at 58 sites across the atoll. We found that both herbivore abundance and herbivore damage were positively associated with seabird abundance, demonstrating that fertilization by seabirds plays an important role in promoting herbivore communities. The majority (~90%) of these herbivores were Heliotrope moth caterpillars (*Utetheisa pulchelloides*); these caterpillars have a specialized diet and on Tetiaroa tahinu is the only plant they eat. This pair of species is therefore an interesting model system to investigate the effect of guano input (and of the rat and ant eradications) on plant-herbivore interactions.

To complement our field data, we also conducted lab experiments on the interactions between the Heliotrope moth and tahinu. Using tahinu leaves collected from sites with varying levels of guano inputs, we measured the effect of guano inputs on:

- 1) caterpillar leaf preference,
- 2) caterpillar growth and survival,
- 3) host plant selection for egg laying by moths.

Principal Investigators:

Jayna DeVore, Simon Ducatez

Affiliation:

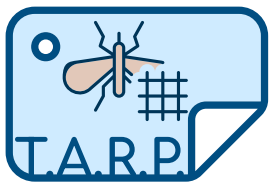
UMR SECOPOL

Université de la Polynésie Française [UPF],
French National Institute for Research in
Sustainable Development [IRD]

Project Dates: January 2024 - ongoing



We found that rat-invasion history (and the associated decreases in seabird abundance) affect this plant-herbivore interaction in complex ways, raising new questions about the interplay between plant palatability and herbivore defenses that will be addressed in 2025 through a new collaboration with chemists from the University of French Polynesia.



Drivers of spatial variation in mosquito abundance on the atoll of Tetiaroa

Invasive mosquitoes such as *Aedes polynesiensis*, *Aedes aegypti* and *Culex quinquefasciatus* are both annoying and vectors of arbovirus (arthropod borne viruses) such as filariasis. Despite their importance for human health, we have a limited understanding of their ecology. To improve control methods, we need to better characterize their spatial distribution, habitat use, and habitat preferences. This study aimed to identify parameters driving spatial variation in mosquito abundance to inform a mosquito control program on Tetiaroa.

We expected mosquito abundance to vary with both the availability of blood meals for females and the availability of freshwater as breeding sites. Since the rat eradication, mosquitoes on uninhabited motu should mostly rely on seabirds as blood sources, so we expected mosquitoes to be aggregated around seabirds. With regards to freshwater access, previous work suggested that mosquitoes on atolls often lay their eggs in tupa (*Cardisoma carnifex*) burrows because these crabs reach the freshwater lens when digging their burrows. Therefore, we expected mosquito abundance to positively associated with tupa burrow density.

To test these hypotheses, we characterized spatial variation in mosquito abundance, while also assessing the distribution of crab burrows in a 10ha study area. In parallel, we quantified spatial variation in seabird biomass and characterized the habitat around each mosquito trapping station. We also sampled water from a subset of burrows to determine the presence of mosquito larvae and nymphs and used mosquito emergence traps at crab burrow entrances to quantify mosquito emergence from burrows.

Our results suggest that even when present and abundant, tupa burrows were not a major habitat for mosquitoes at our study site, and seabird abundance was a poor predictor of mosquito abundance during our survey period. This suggests that mosquito control protocols should consider additional habitats, such as open coconuts and tree holes, as potential mosquito breeding sites.

Principal Investigators:

Luc Moulin, Jayna DeVore, Simon Ducatez, Hervé Bossin

Affiliation: UMR SECOPOL

Institut Louis Malardé [ILM],
Université de la Polynésie Française [UPF],
French National Institute for Research in
Sustainable Development [IRD]

Project Dates: January 2024 – June 2024



Hervé checking if there is Cardisoma carnifex in the trap



Luc setting up his mosquito trap



Spatial variation in guano inputs on Tetiaroa Atoll and consequences for litter decomposition

Tetiaroa has islets with varying histories of rat invasion and conversion to coconut palm (coprah) plantation, resulting in pronounced spatial variation in nesting seabird densities. It therefore offers an ideal framework to investigate the impact of seabird guano on litter decomposition processes (a crucial ecological process that influences nutrient cycles). To assess the consequences of this variation, we first quantified guano deposition by the three most common seabird species nesting in Tetiaroa: *Anous stolidus*, *Sula sula*, and *Sula leucogaster*.

To that aim, we

- (i) measured defecation rates, based on videos collected using trail cameras and behavioral observations conducted in the field,
- (ii) collected and weighed individual guano samples from nesting and resting birds and
- (iii) assessed seabird abundance at the sites where we measured litter decomposition.

In parallel, we measured the decomposition rate of *Pisonia grandis* litter by deploying 238 litter bags in the field at 16 sites distributed across the atoll. We collected these bags after different time intervals ranging from 10 to 97 days to quantify the remaining litter and obtain a measure of litter decomposition.



These sites represented three treatments: forests dominated by native vegetation where rats were either 1) never present or 2) recently eradicated, and 3) coconut palm dominated, rat-eradicated forests. We also measured *P. grandis* litter decomposition in a controlled environment, using 432 individually-tagged leaves from eight of these sites deployed on soil from three sites corresponding to each treatment level.

Principal Investigators:
Michaël Demortier, Jayna DeVore,
Simon Ducatez

Affiliations:
UMR SECOPOL [ILM, UPF, IRD]

Project Dates:
January 2024 – July 2024



We found that leaf litter decomposition rates were faster in native than in coconut palm forests, and decomposition rates were positively associated with the guano deposition rates where the litter was collected. These results underlined the importance of seabirds in the functioning of ecosystem functions on atolls and favored the obtention of a PhD scholarship for Michaël Demortier.

① Understanding the ecology of seabirds on Tetiaroa

The University of Washington seabird team continued research on the ecology of seabirds at Tetiaroa through a suite of data collection methods including ringing, GPS tagging, acoustic recording, point counts, and Red-footed Booby and Brown Booby nest counts. We also started analyses using previously collected data on nest outcomes for Brown Boobies and on point counts. Eve Hallock presented initial results from this work at the Pacific Seabird Group in February 2024 and January 2025.

During two field visits in 2024, we conducted nest counts of Brown Boobies at three monitoring transects, one each on Iti, Tiarau, and Horatera and nest counts of Red-footed Boobies at 27 plots on three motus, Iti, Tiarau, and Hiraanae. A UW undergraduate, Luke Houser, is working on analyzing some of these data along with older nest count data as a capstone research project.

To determine the relative activity of seabird species, we continued data collection at 41 acoustic recorders that record sounds for two minutes each hour across the atoll (not including Onetahi). We also conducted repeated point counts at each of the audiomoth locations along with 70 locations across Honuea, Iti, Rahi, Aie, and Reiono.



We ringed 89 individual birds with unique bands (both metal and color rings), including 19 Great Crested Terns and 43 Brown Boobies. Of the birds banded to date, we (along with Jayna DeVore and Simon Ducatez) resighted banded birds 95 times in 2024. We also placed GPS tracking units on nine Brown Boobies nesting on Iti. GPS locations provide information on where Brown Boobies are foraging along with areas they use within the atoll (see Figure 1). These data will be analyzed with Hidden Markov Models to better understand the factors driving foraging patterns for Brown Boobies.

In 2025, we will return to Tetiaroa and plan to expand our GPS tracking to include Great Crested Terns. We will continue to collect data on the abundance, survival, nesting phenology, and distribution of seabirds on Tetiaroa and will focus on publishing initial results from some of our studies.

Principal Investigators:

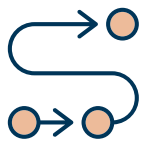
Beth Gardner, Sarah J. Converse,
Eve M Hallock, Amelia J. Duvall

Affiliations:

University of Washington
School of Environmental and Forest Sciences &
School of Aquatic and Fishery Sciences

Project Dates: January 2021 - ongoing





Investigating nutrient flow across the seabird-island-reef system

September 2024 marked two years of net primary productivity (NPP) data collection in five forest plots across Tetiaroa. We thank local researchers Solène Fabre Barroso and Julie Andre for their efforts in gathering this data. The project measured canopy, stem, and fine root NPP across two axes of ecosystem intactness (native forest presence and seabird presence), and represents the first NPP dataset from non-agricultural tropical island forests. Comparable plots have also been established in the Seychelles. We are in the process of drafting a manuscript based on the results. We find that native forest influences NPP more than seabird presence, but the combination of native forest and seabird presence is vital to restore full nutrient cycling in these forests.

DPhil student Pirta Palola developed a novel probabilistic machine-learning algorithm to map water quality in shallow reef environments using satellite and drone data. The algorithm was validated using field data collected in Tetiaroa in 2022 and 2023 and will be submitted for peer-review in the coming months.

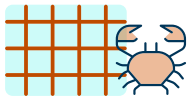
DPhil student Courtney Stuart used satellite data, seabird surveys, and algal $\delta^{15}\text{N}$, to analyze seabird-derived nutrient patterns in Tetiaroa's lagoon. Her models explained up to 88% of $\delta^{15}\text{N}$ variation and revealed that seabird biomass, depth, proximity to land, and seafloor curvature drive nutrient enrichment. Findings have been submitted to *Ecography* and will support restoration efforts and future studies on herbivorous fish distribution.

MSc student Sasha Hills collaborated with Rosalie Wright, to analyse the biophysical drivers shaping Tetiaroa' benthic communities. The results are currently under review in *Coral Reefs*. Sasha's MSc dissertation extended this work and found that ~75% of Tetiaroa's hard coral community are stress-tolerant species, likely to be more resilient in the face of future predicted climate change.

Principal Investigators:
Yadvinder Malhi, Lisa Wedding
Affiliation:
Oxford, Lancaster & Exeter University
Project Dates: 2022 - 2024

Pirta Palola collecting hyperspectral measurements to map water quality remotely





Atoll ecological response to simulated crab loss

Initial installation of 12 research sites occurred during February and June of 2024 to start a three year study. Areas were selected across a gradient of high to low crab activity to investigate the impact of land crabs on bio-available carbon, nitrogen, phosphorous, and micronutrients throughout the forest ecosystem. This work will demonstrate the role healthy land crab populations play in nutrient dynamics for atoll ecosystems, and provide evidence for the benefits of conservation efforts that include recovery and sustainable management of land crab populations in areas where they have been lost.

Each site has a fenced enclosure which simulates the removal of land crabs from an area. Fencing was installed, buried into a trench, and wrapped in flashing to prevent crabs from accessing the interior with crabs removed from the interior. A paired unfenced site was established along with each enclosure so the change in nutrient pools in the soil and plants between the “crab-free” enclosure and the paired site where crabs maintain access can be observed over time. Soil samples at the surface and depth were taken in June, and leaves were collected for stable isotope analysis. Preliminary data show areas with high crab densities have higher levels of soil organic carbon, nitrogen, phosphorous indicating crab activity is an important part of making a more nutrient rich soil within atoll forests.

Robotic sensors have also been deployed at the sites that measure soil carbon flux. These “fluxbots” are a first of their kind technology that create high-resolution data of how active the soil is through measuring how much CO₂ is produced. These robots will not only elucidate how land crabs affect the soil activity in atoll forests, but also provide the first ever such biogeochemical carbon flux dataset from an atoll.

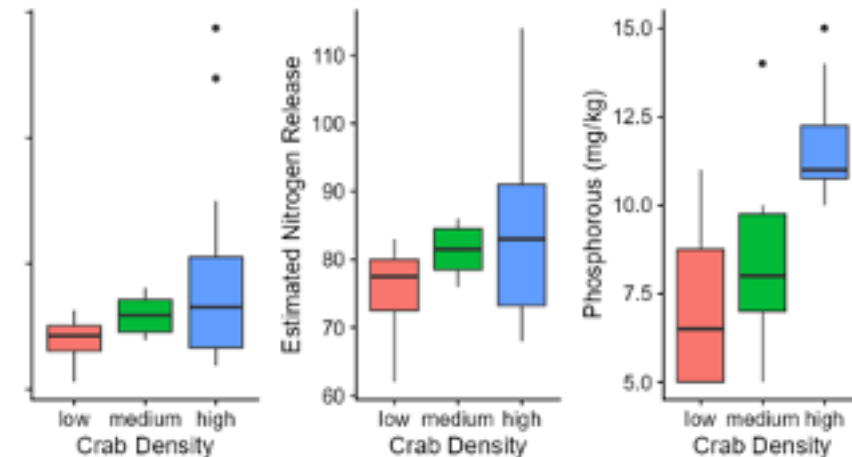
Principal Investigators:
Alexander Wegmann, Charlie Braman,
Andrew Petit
Affiliations:
The Nature Conservancy,
UC Santa Barbara
Project Dates: February 2024 - ongoing



Alex Wegmann and Andrew Petit finalizing an enclosure on Tiarauu



Enclosure site on Hira'a'anae



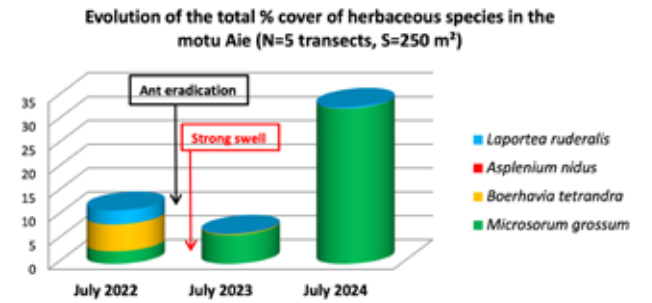
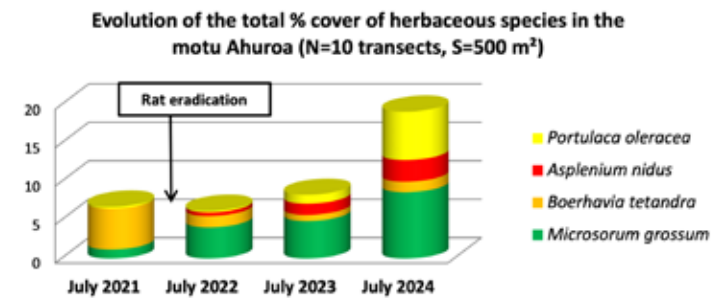
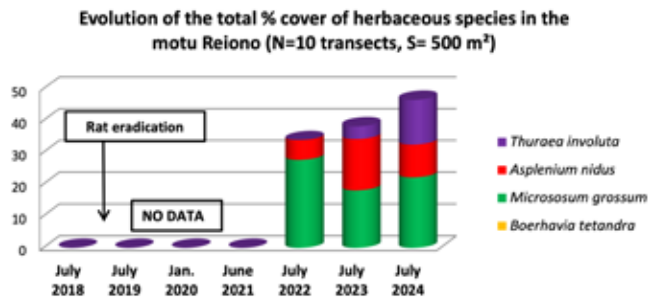
Long-term monitoring of vegetation dynamics after invasive alien species eradication

Annual monitoring was conducted along twenty 25 m long transects, representing 1,000 one square meter quadrats, set up on Motu Reiono (located South of the atoll) in 2018 and Motu Ahuroa (North of the atoll) in 2021, before and after rat eradication, and along five 25 m long transects (representing 250 one m² quadrats) on the small rat-free Motu 'A'ie (East of the atoll) in 2002, before and after the Yellow Crazy Ant *Anoplolepis gracilipes* eradication, in order to study forest dynamics (seedlings recruitment of native woody species and percentage of herbaceous plant cover).

Principal investigator :
 Jean-Yves Hiro Meyer
 Affiliation :
 Délégation à la Recherche
 Université de la Polynésie française
 Project dates : January 2021 - ongoing

This work has revealed:

1. a decrease of *Pisonia grandis* seedlings with time in the three motus;
2. an increase of *Cocos nucifera* seedlings in Reiono and Ahuroa;
3. an increase of *Pandanus tectorius* and *Guettarda speciosa* seedlings in Reiono and Ahuroa;
4. an increase of the cover of herbaceous plant (*Thuraea involuta* in Reiono, *Portulaca oleracea* in Ahuroa), especially native ferns (*Asplenium nidus* on Ahuroa, *Microsorium grossum* in 'A'ie);
5. the importance of natural disturbances (periodic high swells or tree fall gaps caused by strong winds) for woody seed germination and seedlings survival, and herbaceous plant growth and spread.



These preliminary results show that plant response to invasive alien species eradication (rats and ants) may vary according to the geographic and ecological characteristics of the motus, especially their initial plant composition (e.g. no coconut plantation in Ahuroa and 'A'ie), as well as the crucial importance of long term monitoring to study vegetation dynamics.



Groundwater Consumption Rates of Atoll Vegetation

Freshwater is a scarce but critical resource on tropical atolls, yet the rates at which common atoll plants consume water remains unknown. In 2024 we installed 65 custom sapflow sensors in trunks of five of the most common woody atoll plants: ha'ari/coconut palm (*Cocos nucifera*), pu'atea (*Pisonia grandis*), fara (*Pandanus tectorius*), naupata (*Scaevola taccada*), and tahinu (*Heliotropium arboreum*). We recently returned to Tetiaroa to repair and recharge the sensors, and to collect more data on the composition of Tetiaroa's forests and the physiology of its trees. Preliminary results suggest that coconut palms consume an average of 92 liters per day, while pu'atea--formerly the most widespread canopy tree on the Pacific atolls--consumes about 57 liters per day. However, more wood physiology data are needed to quantify water use by the largest pu'atea trees, whose trunks can reach well over 1 meter wide.

Coring a pu'atea tree with a sapflow sensor installed on Reiono



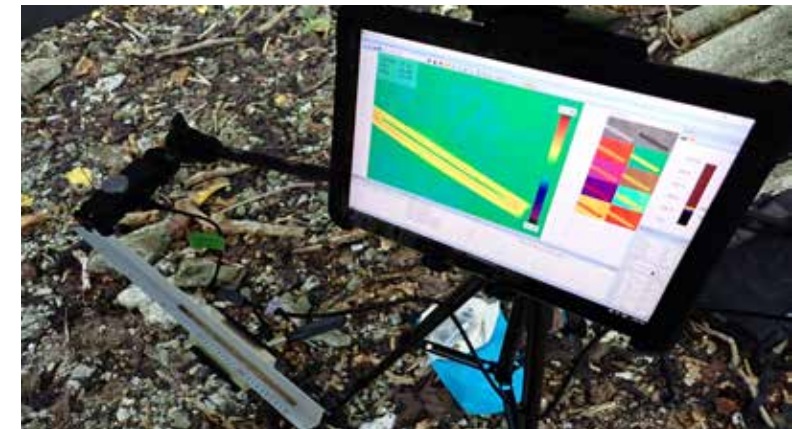
Principal Investigators:
Michael Burnett, Rayna Ruggeri, Irina Roybal
Affiliation:
University of California, Santa Barbara
Project Dates: February 2024 - ongoing



Repairing a sapflow sensor on a coconut palm, Tiarauu.

On our most recent trip, we began using a state-of-the-art thermal measurement technique to determine where water is transported within tree trunks. Combined with vegetation surveys, these measurements will allow us to scale our water use data from individual trees up to larger areas of forest and eventually entire motu.

Thermal measurements of a pu'atea wood core



Investigating the ecology of reef sharks in Tetiaroa

Coastal nursery areas are considered critical habitat for sharks and are of increasing importance given recent declines of many populations across the globe. Previous research has focused on the coexistence of multiple shark species in the same nursery; less attention has been given to how these dynamics change in relation to size/age within species, which could have population level consequences due to increased competition between younger individuals whose survival rates strongly influence population growth rates. Of the studies that have examined differences in movement patterns among age classes, most have been conducted in areas with varying degrees of fishing pressure and/or habitat degradation.

By contrast, in 2014 we began studying the spatial ecology of two large marine predators, sicklefin lemon (*Negaprion acutidens*) and blacktip reef sharks (*Carcharhinus melanopterus*), in the relatively undisturbed lagoon (nursery) of Tetiaroa, French Polynesia. Using passive acoustics and underwater video surveys, we are comparing space use and abundance across species and size/age classes within the nursery.

We completed two field seasons in 2024, in February and October. During both trips, we fully downloaded data from and then re-battered all 10 of the acoustic receivers in the lagoon, while adding 4 new receivers during the latter trip. Over the two trips, we also deployed 14 new V16 acoustic tracking tags (on 9 blacktip and 5 lemon sharks) and 30 V9 predation tags on 22 baby blacktip sharks and 8 baby lemon sharks, bringing us to a total of 120 tagged sharks since tagging began in 2021!

Principal Investigator:
Aaron Wirsig
Affiliation:
University of Washington
Project Dates:
March 2014 – long term



Impact: The results of our work will improve our understanding of how nursery habitats serve these species throughout various life stages and set a baseline that we can compare to future changes.



14





Monitoring of green turtle populations on Tetiaroa atoll by the Te mana o te moana association

Since 2007, the NGO Te Mana o te Moana has been monitoring green turtle nesting on Tetiaroa atoll. Each year, a team is present continuously from mid-September to April/May to carry out patrols on the beaches. The objective is to identify females nesting on the atoll, mark the nests, and excavate them after hatching to save trapped hatchlings and assess many parameters.

The 2023-2024 season was marked by a record number of events recorded, including nesting tracks. For the start of the 2024-2025 season, from September to the end of December 2024, 271 tracks were recorded, indicating a low season.

In 2024, four females were equipped with satellite tags to monitor their inter-spawning behavior and migration, with the aim of determining their migratory corridors and feeding areas. To date, these tagged turtles remain around the Tetiaroa atoll and have not yet started their migration.

Principal Investigator:

Dr. Gaspar Cécile, Dr. Gouin Jade,
Guillaume Théo, Clervoy Romain

Affiliations:

Association Te Mana o Te Moana

Project Dates: 2007 – Ongoing



Thermologger dans nid

In addition, studies on juvenile green turtles resident in Tetiaroa were initiated in 2024. Ten individuals were equipped with acoustic tags and ten others with LoRaWAN tags. This project aims to estimate the size of the population, identify their preferred distribution areas, and analyze their diving behavior and use of the lagoon and the outer reef slopes.

Initial results show sometimes high densities of juvenile turtles in certain areas of the reef. This project seeks to confirm the hypothesis that the lagoon's food resources constitute a sanctuary for green turtles in the region. This information is essential for the development of management and conservation initiatives.



CoolReef : A temperature-controlled environment for coral development

The main objective of “COOLREEF” is to create a temperature-controlled environment for coral development and compare a cooled area to an uncooled control area. The research was located on Tetiaroa Atoll, around the facilities of “The Brando” hotel, using the hotel’s existing Sea Water Air Conditioning infrastructure (SWAC)

In December 2022, the project team installed coral tables near the SWAC outflow pipes at a depth of approximately 12 meters, setting up cooled and control nurseries. Different coral species, known for their sensitivity to bleaching, were selected for the study, including *Acropora globiceps* and *Pocillopora verrucosa*. The cooling intervention was planned for the hot months of February to May 2024, coinciding with potential bleaching events.

Early results from the project indicate a marked improvement in the thermal environment of the cooled nursery, with temperatures maintained 1-2°C lower than the control site. This should mitigate the effects of bleaching and promote coral health. However, a full analysis of coral health, growth rates and environmental parameters such as pH and salinity is pending, with data to be assessed after the project.

Principal Investigators:

Serge Planes, Claire Boitel,
Hugo Bischoff, Caroline Bonpain,
Clément Esclavy

Affiliations:

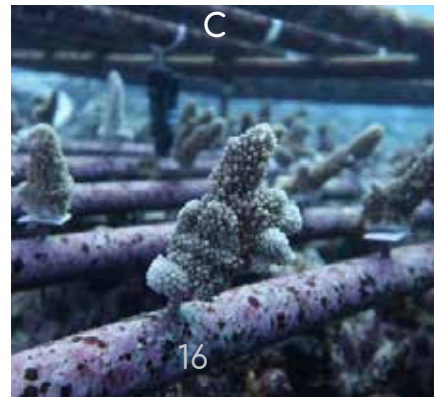
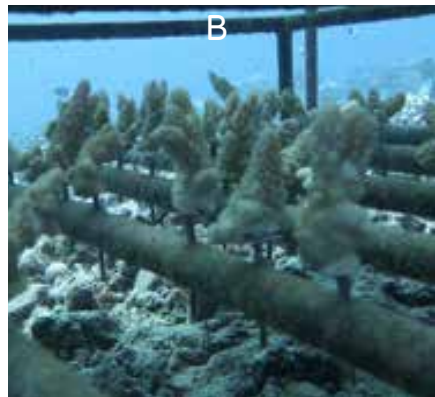
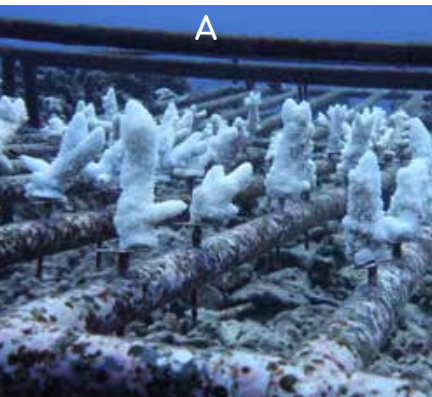
CRIOBE

Project Dates: 2022 - 2024

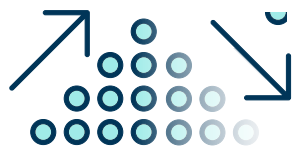


Boutures sous système de refroidissement. La stratification de l'eau froide est visible à la sortie du système.

Fragments d'Acropora globiceps en Avril, pendant le blanchissement, sous (A) contrôle, (B) ombrage et (C) refroidissement



COOLREEF has laid the foundation for further studies, suggesting modifications to the SWAC configuration to improve cooling efficiency and uniformity across the reef area. The project aligns with global efforts such as RRAP in Australia, demonstrating potential adaptation strategies for coral conservation in the face of increasing sea temperatures.



Ecophysiology and microplastics in French Polynesia coral reefs

Ecological surveys using transects and drone imagery are being conducted to assess the abundance and diversity of benthic organisms and evaluate the health of coral reefs in Tetiaroa. To investigate the formation of beachrock—a type of carbonate rock that rapidly forms in the intertidal zone—we are deploying sterile sediment pouches secured to the beachrock. These pouches will be retrieved at different intervals and analyzed at the University of Washington using microscopy and DNA techniques. Previous research has shown that beachrock can form in as little as five months, with filamentous cyanobacteria playing a key role by binding sediment together. We anticipate that microbes play a similar role in Tahiti.

To explore whether microplastics can become incorporated into beachrock, we are deploying sediment pouches mixed with microplastic beads. This will allow us to observe whether filaments or cements form on the microbeads, or if the chemical composition of carbonate sediment is essential for cementation.



Principal Investigators:

Jacqueline Padilla-Gamino, Katherine Lasdin

Affiliation:

University of Washington

Project Dates: May 2024 - ongoing



Additionally, a plastic degradation experiment is underway on Tiarauu and in the lagoon off Tiarauu to examine how three types of plastic degrade over two years within the atoll. This location was chosen based on its remoteness and prior data on plastic abundance.

This study aims to determine how polymers degrade, how their physical properties change, and which microbial communities colonize them.

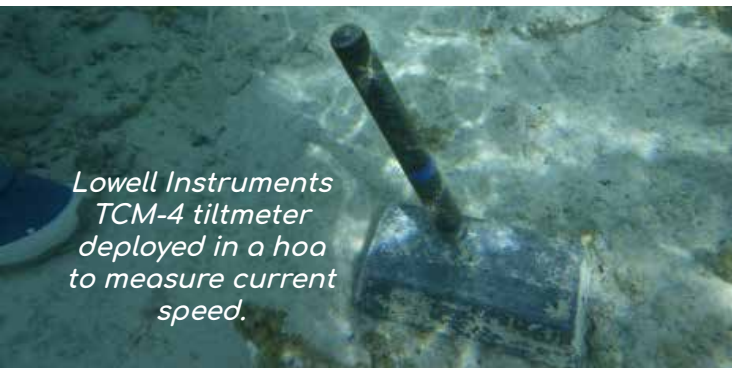


Wave-Driven morphodynamics of reef island and reef flat channels

During March of 2024, Associate Scientist Andrew Ashton of the Woods Hole Oceanographic Institution (WHOI) and Megan Gillen, PhD Candidate in the Massachusetts Institute of Technology (MIT)/WHOI Joint Program conducted field research at Tetiaroa to better understand how motu morphology is affected by waves and wave-driven currents. The question driving this research are whether the flows in the hoa channels are sufficient to transport sediment and keep them open—were there more hoa channels (and therefore more motu in Tetiaroa) in the geologic past?

Currents were measured by deploying tiltmeters three active northern hoa channels between Tiaraunu, Tauvini, Ahurea, and Hiraanae. We also deployed a prototype measuring device, Instagrain, which uses machine-learning-trained datasets to instantaneously measure (dry) sediment grain sized using imagery—grab samples were collected to better calibrate the device for atoll beach environments. Using bed sediment samples and ongoing collaborations with Benoit Stoll of UFP, we are determining whether these currents are sufficient to keep these hoa clear of coral sediment. To better understand the past, we also performed ground-penetrating radar surveys across several of the motu, in particular identifying infilled previously active hoa channels on Hiraanae motu.

Principal Investigators:
Andrew Ashton, Megan Gillen
Affiliations:
Woods Hole Oceanographic Institution,
Massachusetts Institute of Technology
Project Dates: March 2024



*Lowell Instruments
TCM-4 tiltmeter
deployed in a hoa
to measure current
speed.*

Overall, the preliminary data collected allow us to better understand the dynamic geomorphologic changes that affect motu and hoa systems, offering a window to better understand with a goal to understand how sea-level rise and other climate change impacts may affect these ubiquitous low-lying landforms, and we look forward to future collaborations with the Tetiaroa Society.



Archaeological research on Teti'arua

The CIRAP team has been conducting an archaeological research program on Teti'arua since 2015. During 2024 we continued laboratory analyses of the material recovered from our last excavations on the Onetahi ceremonial complex (structure ONE-05).

Thanks to the financial support from the Seeley family foundation, the Australian National University and the University of French Polynesia, we carried on the identification of mollusks, fish bones and charcoal fragments from the marae site, along with the genetic study of the young individual buried in the structure. Additionally, ANU Master student E. Scorsini completed her thesis on the geoarchaeological investigation of a cultivation pit (maite), located in the southern part of Onetahi motu. Her work was published in December 2024 in the journal *Archaeology in Oceania* (Scorsini et al. 2024).

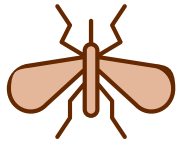
The CIRAP also started her ANR-funded research program on atolls socio-ecosystems in last February. With Teti'arua being one of the five targeted atolls in this project, our team came back to the island for two weeks of excavations last December. We excavated the last remaining structure on the Onetahi ceremonial complex (ONE-07), we also completed the detailed GPS mapping of the whole site with Dr Benoit Stoll. Our PhD student Théotime Peyre used photogrammetry to create 3D models of the main marae sites on the motu. Those models will soon be integrated into the GIS system and will allow people to virtually visit the sites online. We will continue to develop these models for other sites of importance on the island.

Principal investigator:
Guillaume Molle
Affiliations:
CIRAP University of French Polynesia
Project Dates:
August 2017 – long term



*view of excavations ONE-07
(photo G. Molle)*





Mosquito Abatement

Tetiaroa AeLIMIN – An innovative strategy for the suppression of the Pacific tiger mosquito *Ae. polynesiensis* in Pacific island settings

Over the past decade, Institut Louis Malardé has engaged in various field evaluation of innovative “Rear & Release” mosquito control strategies such as the Incompatible Insect Technique (release of *Wolbachia*-carrying male mosquitoes that sterilize their female counterpart in infested areas); from a limited-scale, feasibility trial on a motu of Raiatea to the largest field evaluation completed to date in French Polynesia on the atoll of Tetiaroa. An initial 12 months intervention was carried out in 2015-2016 which resulted in the successful suppression of *Aedes polynesiensis* on motu Onetahi (ca. 1 sq. km). Preventative male mosquito releases have been performed since (except during the COVID crisis) to keep the mosquito nuisance at bay on the resort. Mosquito monitoring performed throughout the motu in 2024 indicates a successful suppression with only a few residual foci remaining.

The next endeavour now envisioned by Tetiaroa Society and Institut Louis Malardé is to prepare for a larger scale-deployment targeting mosquito elimination across the entire atoll in the years to come. This Tetiaroa Atoll Mosquito Elimination (TAME) project will contribute fundamental baseline data (including spatial mosquito population genomics analysis) and knowledge necessary to control mosquito populations at scale. Importantly, this will include outreach to the hotel guests and local communities including educational information about the challenges and opportunities of innovative mosquito control.

The project will leverage ILM's new INNOVENTOMO male mosquito factory, an infrastructure unique in France and the Pacific, developed for the mass-rearing and release of sterile male mosquitoes to further explore the feasibility and sustainability of island-wide mosquito elimination.

Principal Investigator:
Hervé Bossin

Affiliations:

L'Institut Louis Malardé,
Laboratoire en Entomologie Médicale (ILM-LEM),
The Brando, Tetiaroa Society,
Pacific Beachcomber SC company

Project Dates: 2015 - ongoing



Teragihei pouring mixed pupae into the separation machine



Manual male and female pupae separator - hock sorter

EDUCATION

Through the Tetiaroa Education Program Tetiaroa Society has the chance to enlighten and enrich the lives of young people and share this remarkable island while teaching science and traditional knowledge. For our local students, ages 8 to 18, it is a chance to learn about their natural and cultural heritage in a spectacular natural setting and to take home lessons of sustainability learned from their visit to The Brando resort. For the international students it is an introduction to an incredible tropical island with research and conservation programs and sustainability practices that are a model for the rest of the world.



➔ University of California Berkeley ISP Course

In January of this year TS once again hosted the Island Sustainability Program from the University of California Berkeley. This field course spent 3 weeks on the island and the students participated in a wide range of activities that introduced them to the sustainable practices and conservation research on Tetiaroa. Some of these hands-on activities included:



- Learning about the goals and programs of Tetiaroa Society from the senior staff.
- Conducting vegetation surveys with Dr. Jean-Yves Meyer which provided insights into the dynamics of forest recovery after rat eradication.
- Being introduced to crab behavior and foraging activities and how these are evolving after rat eradication.
- Gaining insights into the complete cycle of the Institute Malarde's sterile mosquito programs from deployment and collection of traps, to identification of mosquitos.
- Learning about the rich avifauna of Tetiaroa with field trips to nesting sites
- Learning about the sustainability infrastructure and initiatives of The Brando Resort by taking part in an in-depth green tour and in discussion with the president of Tetiaroa Society Richard Bailey.

As always this was an invaluable learning experience for these students that will prepare them for careers as future caretakers of the planet.



➔ Chadwick High School



Chadwick High School returned to Tetiaroa this year and had an amazing experience encompassing environmental education, cultural immersion, and community engagement. Over the course of their 5 days on the island they actively participated in conservation efforts, carried out beach cleanups, learned about sustainability from the resort infrastructure, and participated in cultural activities.

➔ Lakeside High School

Students and professors from the Lakeside School visited Tetiaroa again this year. In the 7 days they were here they participated in a variety of activities including:

- Assisting with the mapping of the invasive Yellow Crazy Ants
- Carried out a short study on hermit crab behavior
- Had lectures on the goals and programs of Tetiaroa Society
- Participated in cultural programs such as dance and songs.

This immersive experience not only advanced the students knowledge of conservation science, but also strengthened their appreciation of Polynesian culture and the importance of traditional knowledge.



➔ Local School Groups



On Motu Tiara'aunu, the focus shifted to aquatic activities. The students improved their swimming skills and learned about proper behaviors for swimming in groups. These activities included supervised aquatic games, emphasizing the importance of respecting the marine environment while exploring the underwater world, observing corals and identifying various fish species.

A significant part of the stay was dedicated to scientific and environmental education. The students visited a motu and observed the Plateau des Archers. Accompanied by scientists, they participated in the research and identification of micro-debris, raising their awareness of marine pollution. Additionally, they observed and identified the habitats and behaviors of local birds, enhancing their understanding of ornithology and the importance of wildlife conservation.

This year the Tetiaroa Society Education program once again hosted multiple local school groups for 4 day trips to the island. Each group comes with their own particular focus and projects but they all participate in similar activities.

The stay began with a warm welcoming ceremony at the ceremonial platform or paepae on Motu Onetahi. The students also visit different types of marae, observing and learning about these sacred sites from various archipelagos. This cultural exploration offers them a deeper understanding of local historical practices and traditions.

The students participated in agricultural activities at the traditional cultivation pit or maite. Guided by local experts, they learned traditional gardening techniques and engaged in planting activities, contributing to the preservation of local biodiversity. This hands-on experience helped them appreciate the importance of sustainable agricultural practices.





After visiting the sustainable infrastructure of The Brando resort they engaged in eco-construction projects, where they imagined and built the “Villa of their dreams” or a Cultural Center. They also participated in artisanal activities, such as constructing a fisherman’s hut or karuru and various weaving projects using materials derived from coconut trees, fostering their creativity and appreciation for traditional crafts.

Evening activities were filled with games, songs, and quizzes, providing a fun and engaging way for the students to reinforce their learnings from the day. These moments of camaraderie strengthened the bonds between the students and contributed to a balanced experience of learning and relaxation.

Their educational stay in Tetiaroo provided the students with a unique opportunity to immerse themselves in a variety of cultural, ecological, and aquatic activities, enriching their knowledge and skills in numerous ways.



GLOBAL IMPACT



The Blue Climate Initiative continued work this year in the campaign against Deep Sea Mining on two fronts: economics and culture.



The BCI co-sponsored a side event at the March International Seabed Authority (ISA) meeting. The panel made the case that DSM is economically unfeasible due to new battery technologies and the lack of need for deep sea minerals.

The panel featured Jeanne Everett and Daniel Kammen from the BCI, Bobbi-Jo Dobush from the Ocean Foundation, Michael Norton, from the European Academies Science Advisory Council, and Martin Webeler with the Environmental Justice Foundation

In July, Frank and Hinano Murphy returned to the ISA where they represented Tetiaroa Society in its new Observer status. Tetiaroa Society helped to organize a side event with indigenous representatives from Micronesia and Tonga, including two senior (Pwo) navigators who presented their views on Deep Sea Mining. This was a pivotal meeting since there was a vote for a new Secretary General, and after heavy campaigning on her behalf by the consortium of anti DSM organizations Laeticia Calveho was elected.





WILD12

Hinano Murphy was invited to talk at the WILD12 Congress where she delivered a presentation on the Voice of the Ocean and the connection that the indigenous people of Oceania have with the ocean. This resonated amazingly well at a conference which was a showcase for indigenous land stewardship.



Hui pū 'ia nā leo o Moananuiākea

"We gather to share our voices, together for the great Pacific Ocean"

In June Hinano and Frank were invited to participate in a gathering of Pacific indigenous elders, This meeting of 35 people from 22 islands culminated in a shared vision statement on the obligation of indigenous people of the Pacific to once again become the stewards of the Pacific ocean.



PUBLICATIONS & CONFERENCES

UMR SECOPOL Seminars

University of French Polynesia, Tahiti

- February 1st, 2024: seminar
"Impacts of invasive rats on the survival, abundance, morphology, and behavior of ghost crabs on Tetiarooa"
- Simon Ducatez and Jayna DeVore
- October 31, 2024: seminar
"A yellow crazy ant eradication program clarifies ant impacts on the seabirds and terrestrial crabs of Tetiarooa"
- Jayna DeVore and Simon Ducatez

UPF Research Conferences

March 7, 2024

- "Quantification of spatial variations in guano inputs to Tetiarooa atoll and consequences for litter decomposition"
- Michaël Demortier, Simon Ducatez, and Jayna DeVore
(Won 1st Prize for a Masters student presentation)



Workshop on Chagos Archipelago Marine Protected Area

In March Frank Murphy was invited to Mauritius to participate in a workshop to create a sustainable management plan for the Chagos Archipelago. Frank gave a presentation on the Tetiarooa Sustainability Model featuring the partnership between the non-profit Tetiarooa Society, The Brando Resort, The Brand Family Trust, and the Commune of Arue. This idea of partnering with a high-end tourist operation to help fund conservation actions was well-received and discussed over the full extent of the meeting.

International Society for Behavioral Ecology Congress

Melbourne, Australia, 29 September - 4 October, 2024

- “Invasive rats alter seabird breeding site selection with cascading consequences for caterpillar foraging behavior”
- Jayna DeVore and Simon Ducatez
- “Invasive species cause behavioral changes in land crabs that dissipate after invader eradication.”
- Simon Ducatez and Jayna DeVore



Annual Behavior Live conference

November 5, 2024

- Plenary presentation:
“Adapting to a changing world: behavior at the forefront in birds and terrestrial crabs”
- Simon Ducatez and Jayna DeVore

Island Health & Sustainability International Research Conference

19-20 November 2024, Moorea, French Polynesia

- “Tetiaroa atoll restoration project”
- Jayna DeVore (UPF)
- “Ecology and control of invasive species”
- Simon Ducatez (IRD)



TEdX Boston Planet Action



Hinano and Frank Murphy gave talks at this event which was focused on planetary stewardship. Hinano spoke about the “Voice of the Ocean” and made the case for supporting indigenous leaders from Oceania to bring their views of the ocean to the issues of ocean conservation. Frank spoke about the importance for scientists to recognize and support the transmission of traditional knowledge, and to learn from indigenous people about how to manage our world. Frank also gave a talk about the dangers and fallacies of Deep Sea Mining at the New England Aquarium as part of the extended program of this event.



Publications

Tetiaroa, and the work being done there with the Tetiaroa Atoll Restoration Program (TARP) was featured in three prestigious journals this year.



It started with the article, “Rethinking atoll futures: local resilience to global challenges” published in the March edition of Trends in Ecology and Evolution.

Authors: Sebastian Steibl, Paul Kench, Hillary Young, Alex Wegman, Nick Holmes, Nancy Bunbury, Teurumereariki Murphy-Teavai, Neil Davies, Frank Murphy, James Russell. 2024, 39:3



Then in August the journal Nature published “Atolls are globally important sites for tropical seabirds”

Authors: Sebastian Steibl, Simon Steigger, Alex Wegman, Nick Holmes, Hillary Young, James Russell; 2024, 8:1907-1915

Lastly in November the Annual Reviews of Ecology Evolution and Systematics published “A Renaissance in Atoll Ecology”.

Authors: Sebastian Steibl, Nancy Bunbury, Hillary Young, James Russell; 2024, 55:301-322

COLLABORATIONS



In 2023 Tetiaroa Society joined a project with The American Bird Conservancy and The Nature Conservancy to develop guidelines for atoll restoration. This resulted in a successful grant proposal to the International Union for the Conservation of Nature to develop “*The Seabird Forest Toolkit: A Resource for Climate Adaptation Across Tropical Ocean Regions.*” Work continued in 2024.

The FAIR Island Project is working with Tetiaroa Society to coordinate research on the island with an optimal data policy for open access, mandatory registration requirements, and data management plans containing controlled vocabularies and identifiers implementing global standards. All researchers working on Tetiaroa, resident or visiting, are required to create data management plans (DMPs) for their proposed projects to study the island and said DMPs are updated as data collection advances. The goal is to translate the broader FAIR principles into a set of specific requirements and implementable activities that demonstrate how good data management practices and policies accelerate research for the benefit of all stakeholders.



Tetiaroa Society continued its partnership with Mission Blue this year as one of their Hope Spots. Mission Blue is developing support for a global network of marine reserves and Tetiaroa Society is proud to be a partner with them.

COMMUNITY



As always Tetiaroa Society worked hard to involve community members in our programs on the island. Besides the incredible volunteer force, there were two groups that made a huge impact this year. The Tahiti Choir School once again came to the island to sing for both the resort guests and the resident staff. Their amazing artistry and choice of traditional and modern music was a moving experience for all involved.



Also an important new partnership has begun with the RSME. This looks to be a perfect win/win situation with the RSME providing excellent and energetic service for TS field projects, and TS providing training and education programs on culture, island ecology, conservation, and sustainability. Already the organized actions this last year were very successful and we look forward to continued collaboration in the coming years.



OPERATIONS



Personnel

Diverse skills, one common goal, moving forward together to preserve the atoll

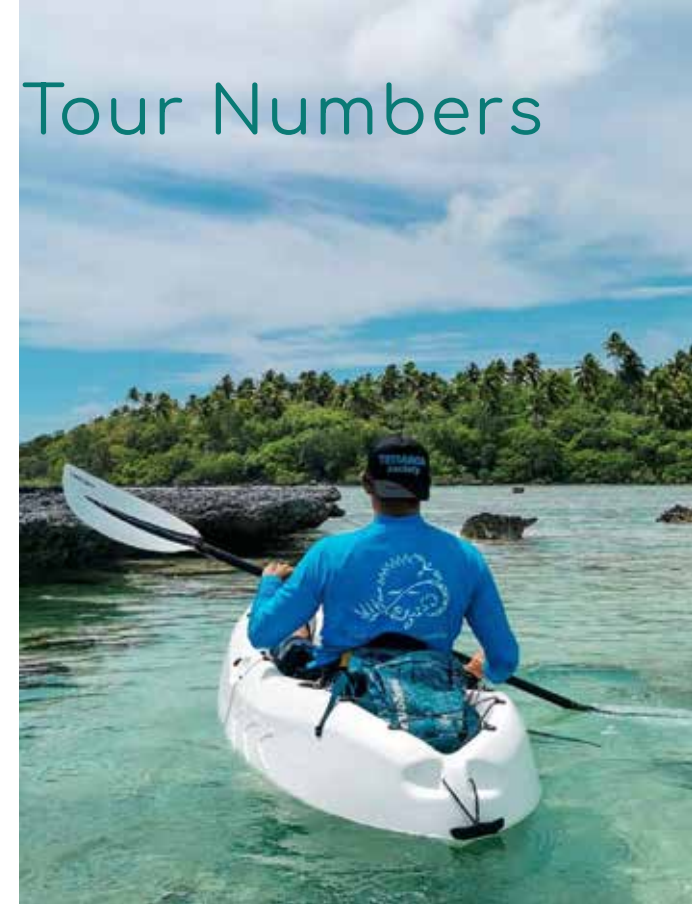
At Tetiaroa Society, the diverse skills of each team member are an essential strength for achieving our many conservation programs. Bringing our expertise together and working hand in hand allows us to progress each day toward our common goal: to protect the atoll and its precious ecosystems sustainably. Together, we make a difference.



Guide Program : Actions and Tour Numbers

Tours per month

	Tours	Guests
January	48	283
February	67	313
March	121	474
April	116	530
May	150	624
June	105	534
July	104	408
August	124	622
September	101	372
October	99	363
November	115	458
December	109	370
TOTALS	1259	5351



Guide Program : Team & Activities

In 2024, the team of naturalist guides took part in various initiatives to enhance both their own skills and those of the staff. Internal training sessions, such as Stargazing with the Marketing team and learning Paumotu weaving with Tevahine Teariki, helped refine their cultural and scientific knowledge. The team also welcomed and trained new guides, including Tehiana, Margaux, and Lana (Tekura), strengthening their expertise.

The guides benefited from thematic conferences: Margaux led sessions on turtles, flora and birds, while Tehiana shared her expertise on marine mammals, and Solène Fabre provided insights on yellow crazy ants. Tihoni conducted several sunrise Stargazing sessions, offering an immersive experience for participants. Renowned experts, such as Hinano Murphy and Eliane Tevahitua, also contributed by sharing their knowledge of Polynesian culture, with their extensive work on Toponyms.

Additionally, the guides played a key role in knowledge transmission through Green Tours for schools and the creation of a new Lagoon School by Kealoha and Lucas. Discussions with scientists Jean-Yves Meyer, Kirk Gastricht, and Claire Boitel, as well as archaeologists Guillaume Molle and Vahine Rurua, further deepened the understanding and promotion of the island's natural and historical heritage.»



Tihoni conducting a sunrise Stargazing session



Margaux, doing a turtle presentation

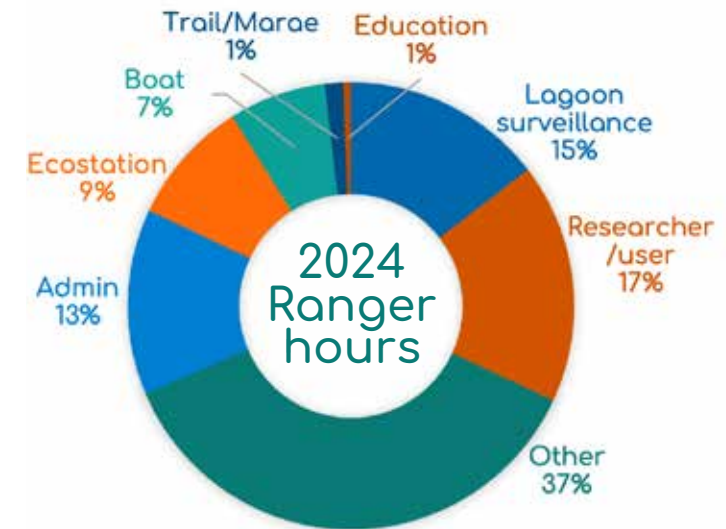




Ranger Program :The team and the work

The decrease in working hours between 2023 and 2024 was due to a reduction in scientific programs, not a decline in ranger commitment. Compared to 2022, the workload remained stable, demonstrating a return to normal operations after an exceptional year in 2023.

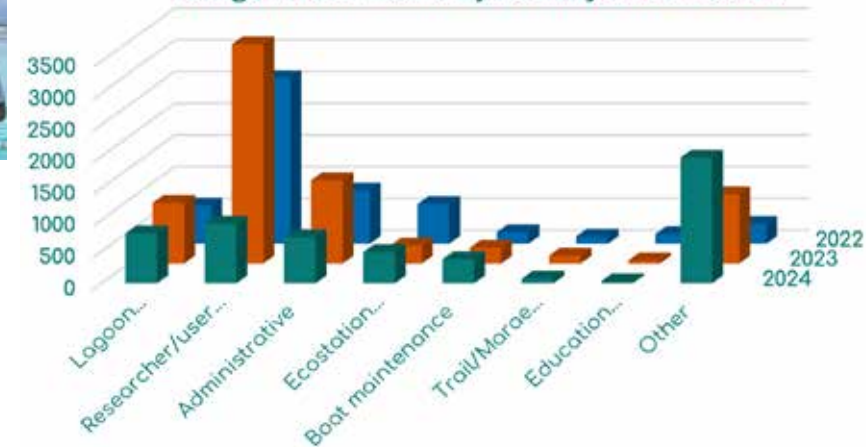
The year 2024 marked significant developments in several areas of the Ranger Program. Lagoon monitoring improved with stricter enforcement of protection regulations and increased awareness among charters, showing notable progress compared to 2022. However, assistance to researchers and users declined due to fewer programs, reverting to a level closer to that of 2022. Administratively, the need for a more structured reporting system was identified to ensure better traceability of interventions. Maintenance of the eco-station stabilized, while boat maintenance remains a critical issue, requiring regular servicing and engine replacements to sustain operations. Trail and marae upkeep require a structured management plan, particularly to support eco-tourism activities. The educational program suffered from a lack of engagement, as resources were prioritized for atoll surveillance. Finally, additional activities included the liquidation of leave balances and ranger training for captain certification, strengthening their competencies for the coming years.



Evaluation

- Surveillance and infrastructure management were effectively ensured despite organizational constraints.
- Boat maintenance was an excessive burden, requiring a reorganization of technical interventions.
- Education and trail maintenance were not prioritized.

Ranger Work-hours by Activity 2022 - 2024



Volunteers : Key Players in Conservation in 2024

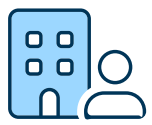
In 2024, volunteers played a vital role in the conservation efforts of Tetiaroa Society by actively participating in two major programs: the eradication of yellow crazy ants and rats. Their commitment made it possible to take concrete action across large areas of the atoll.

In the fight against yellow crazy ants, volunteers were essential for carrying out baiting operations, helping to slow down the spread of this invasive species and protect local ecosystems. Their support allowed for the rapid treatment of the most affected areas.

For the rat eradication program, volunteers provided valuable assistance by participating in surveillance missions using cameras and updating transects. These updated transects will serve as a basis for a full-scale baiting operation planned in the coming months. Their diligence and involvement helped to better target priority areas.

These actions highlight how crucial volunteer support is for the long-term protection of Tetiaroa's ecosystems. Their energy and dedication are essential to the success of our projects. We sincerely thank them for their support and determination.





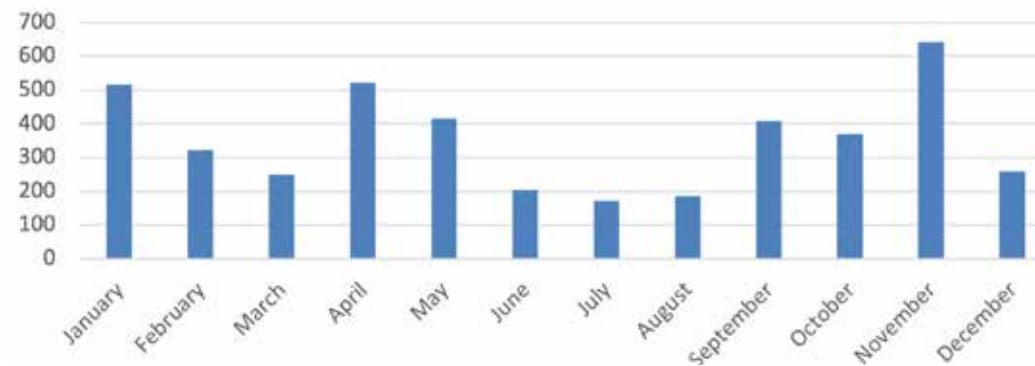
Ecostation Use

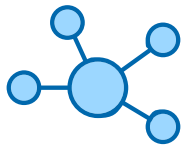
User Groups	User Days
Value Park	1
Nautisport	3
Wildlife Conservation	8
University of California Santa Cruz	11
California State University	14
Florida International University	20
Oxford University	22
WHOI	24
CRIOBE	95
TS-Guide Contractor	102
University of French Polynesia	120
Institut de Recherche pour le Développement	154
University of California Santa Barbara	189
University of Washington	204
Institute Louis Malardé	339
TS Education Program	1095
TS-intern (YCA, rats, volunteers and some of TS staff with no "fare")	1323
TOTAL	3724



Month	User Days
January	516
February	323
March	249
April	522
May	415
June	204
July	173
August	187
September	409
October	370
November	641
December	258

Ecostation user-days 2024





Communications

Tetiaroa Society Communications rolled along this year. The website was migrated to Drupal 10, performance, code & styling upgrades were implemented throughout the year. Three well-received newsletters were sent out to our readers,. Internal communications improved as the team moved to shared Microsoft office apps and storage.

Newsletters “News from the Atoll”



Tetiaroa Society sent over 13,000 newsletters during 2024, with an average open rate of 62%. “News from the Atoll” has 4380 subscribers, of which 42% are considered ‘highly engaged’ (they open the newsletter and click links).

Social Media



Tetiaroa Society has 5.7K followers and a 5-star rating on facebook. With posts in English and French, our message is reaching a diverse audience.

Communications via Website

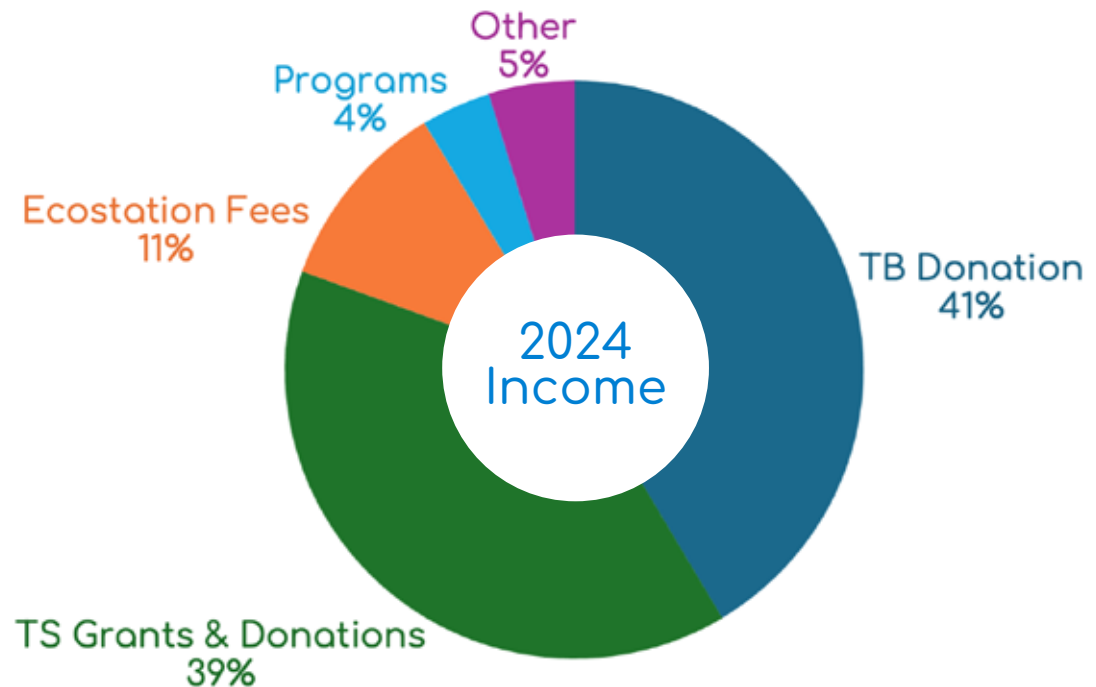
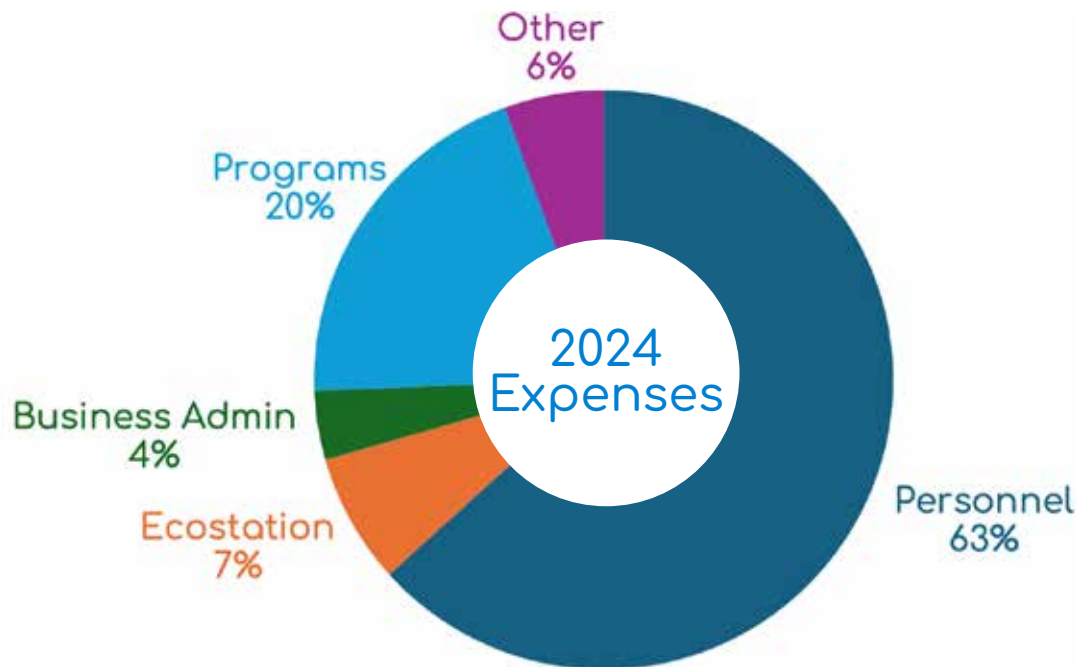




Expenses & Income

Expense category	Amount USD
Personnel	\$640,861
Ecostation	\$73,751
Business Admin	\$39,001
Programs	\$203,098
Other	\$56,258
TOTAL	\$1,012,968

Income source	Amount USD
TB Donation	\$444,442
TS Grants & Donations	\$418,805
Ecostation Fees	\$115,476
Programs	\$41,834
Other	\$51,280
TOTAL	\$1,017,837



Donations

Donations are vital to the programs and mission of Tetiaroa Society. Without donations we could not do the important work we are engaged in.

We are fortunate that donations from The Brando pay for our core operations, but we need additional funds to achieve our objectives.

We deeply appreciate the support we received in 2023.



Donate on our website
Thank you for your support!

Big thanks to all who shared their photographs.

Partners



SUSTAINABILITY
COLLABORATION !

