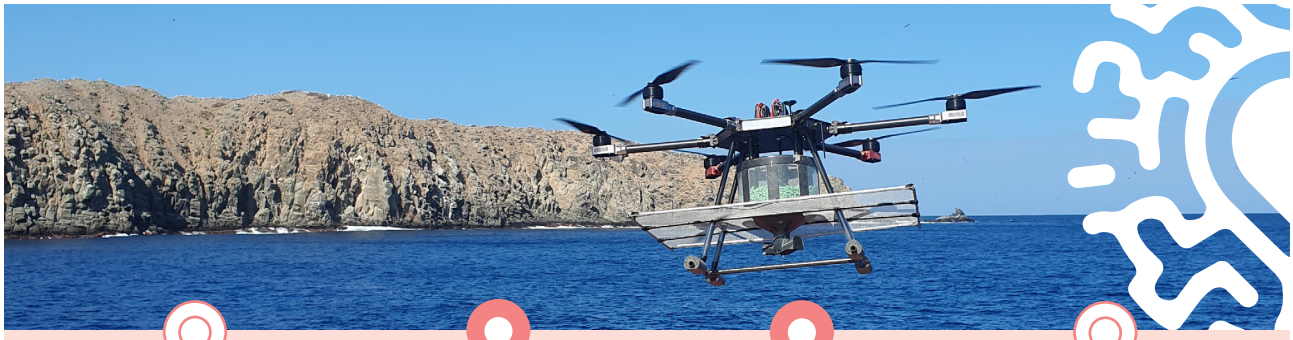
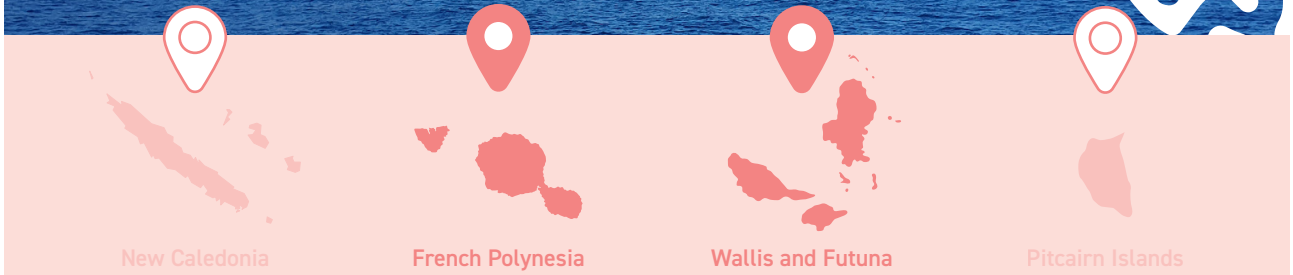
FINAL LESSONS-LEARNED FACTSHEET

ERADICATING RAT POPULATIONS

PROTEGE
PACIFIC TERRITORIES REGIONAL PROJECT FOR SUSTAINABLE ECOSYSTEM MANAGEMENT

Funded by European Union





BUDGET: €957,000 (XPF 114.3 Millions)

ACTION TIME PERIOD: August 2020 - September 2024

PARTNERS:

- Envico Technologies Ltd
- BirdLife International
- Island Conservation – Preventing Extinctions
- Service de l'Environnement – Wallis et Futuna
- SPREP PROE
- Manu
- CODIM – Communauté de Communes des Îles Marquises

BRIEF SUMMARY

Operations to eradicate the rat population have been taking place on islets in French Polynesia and in Wallis and Futuna to preserve native species and ecosystems threatened by these rodents.

The main goals are to strengthen the resilience of communities on Ua Pou and Wallis and to preserve populations of native species. These include the seabirds that nest on the islets of the Marquesas archipelago, as well as the birds, turtles, crabs and plants that comprise the ecosystems of the islets in the lagoon of Wallis.

Beyond protecting directly threatened species, the aim was to restore the balance to ecosystems as well as the ecosystem services provided by those species, including fertilising coral reefs and coastal waters. The project aimed to improve food security, by reducing the damage to food crops, as well as minimising the risk of diseases spread by rats, such as leptospirosis.

Thanks to the training and involvement of local stakeholders, and using innovative techniques, three islets in the Marquesas archipelago and 13 islets in the Wallis lagoon are now free of rats. Although not all the environmental benefits of these operations are fully known yet, a resurgence in turtle and crab populations has already been noted on the Wallis islets.

After more than four years of action, maintaining biosecurity and monitoring measures will be essential to safeguard the benefits of this operation. The project's successes and breakthroughs have put the territories in a good position to tackle even more ambitious projects in the future.

BACKGROUND

Rats severely affect the biodiversity of the Pacific islands. These omnivores prey on crustaceans, plants and bird and turtle nesting sites. In addition to the direct impacts on the species they attack, these predations also disrupt the natural function of ecosystems, both on land and at sea.

Terrestrial and pelagic birds are among the species most under threat from rats. By attacking their nesting sites, rats are one of the main causes of extinction of the Pacific island bird species. On the lagoon islets rats are also a threat to invertebrates, to turtles – whose eggs are targeted – and to plant regrowth, due to their consumption of certain seeds and fruits. As carriers of leptospirosis, rats also play a major role in the high incidence of this serious, even fatal, infectious disease. With 1,000 cases per 100,000 residents, Wallis and Futuna had the world's highest incidence rate in 2014.

"rats are the main cause of biodiversity loss in the Pacific"

Recent studies have also shown that eradicating rats on some islands leads to significant improvements in coastal marine biodiversity. The restoration of seabird populations increases the flow of nutrients towards the open sea, contributing to a resurgence of phytoplankton, the basis of marine food chains. In coastal lagoon ecosystems, this supply of nutrients helps improve the ecological condition of coral reefs, enabling them to better resist and recover from bleaching events, therefore strengthening their resilience to climate change.

In the Marquesas archipelago of **French Polynesia**, the project is part of a series of successful rodent eradication operations implemented on other islets (Teuaua in Ua Huka) or yet to happen in the near future (Hatuta'a in Nuku Hiva, Fatu Huku in Hiva Oa). This seeks to contribute to preserve an attribute corresponding to one of the three environmental criteria for the registration of the Marquesas Islands as a UNESCO World Heritage site in July 2024, and supports the Declaration of Universal Value.

On **Wallis and Futuna**, the action taken on the islets in the lagoon of Wallis was the first one aimed at eradicating rats. It therefore represents a first step in building the capacities of local services and partners on the ground.

ISSUES AND OBJECTIVES

Eradicating rats on the islets is a complex process that has to be dealt with rigorously to avoid the rebuilding of populations from a few survivors, to guard against potentially negative impacts on native species or human health and to prevent a subsequent reinvasion. Due to the human and logistical resources required, this can turn into an expensive process, especially since the affected sites are often difficult to access.

The involvement of specialist organisations able to provide training and technical support for local technical services was considered critical to the operations' success. These actions were supported by a one-off funding to restore ecosystems.

THE RAT ERADICATION HAS 5 GOALS:

- Preserving the nesting bird populations on the Marquesas islets
- Preserving native birds, invertebrates and plants on the Wallis islets
- Restoring ecosystem functions disrupted by the presence of rats
- Strengthening community resilience
- Reducing health risks linked to interaction with rats

OUTCOMES

The project helped eradicate the rat on three islets in the Marquesas archipelago in French Polynesia and thirteen islets in Wallis and Futuna. Together with biosecurity measures aimed at preventing the reintroduction of rats, these operations support the restoration of the islets' biodiversity. They have also demonstrated the effectiveness of innovative techniques for overcoming topographical constraints, while helping to open up new prospects for a predator free Pacific.

In the Marquesas archipelago in **French Polynesia**, an operation to eradicate rats was carried out on three uninhabited islets near the island of Ua Pou (Motu Oa, Takae and Mokohe). The initiative was mainly aimed at protecting nesting birds, but also at preserving the flora and invertebrates affected by rats.

"Innovative and effective solutions of spraying rat poison from drones"

The operation presented a genuine technical challenge due to the extremely steep topography of the islets. After several attempts, the chosen solution was to spray rat poison by drone, a method chosen for its practicality and cost after other options had been ruled out. In September 2024, one year after the eradication operation, an observation mission carried out by the Polynesian Ornithological Society (SOP-Manu) confirmed that there were no more rats on the three islets, and collected early observations on the action's results. Although it is still too early to measure all the benefits, numerous tropical shearwaters (one of the species most threatened by rats) have been seen returning to their nest burrows. This success should help the 14 seabird species recorded on the islets and should encourage the return of two threatened petrel species, which have not been seen on the islets since 1995. Improvements have also been noted in native plants, particularly trailing ones, whose flowers and seeds are quickly eaten by rats. Their regrowth should create a better habitat for native fauna, increasing land crab and insect populations.

As well as the direct benefits to local flora and fauna, restoring balance to these island ecosystems will have a positive impact on food security and resilience of local communities. By bringing back nutrients from the sea, seabirds contribute to the productivity of coastal waters, which in turn improves fishing resources. In addition, the harvesting of birds' eggs, traditionally carried out with conservation in mind, should be able to resume, thereby reinforcing local food practices.

In order to prevent any accidental reintroduction of rodents, biosecurity measures have been established in collaboration with local fishermen. The local community has also committed to closely monitoring the restoration of seabirds and other native species, thus ensuring the sustainability of this ecological achievement.

In the Wallis archipelago, 13 of the 16 islets in the lagoon of Wallis are now free of vertebrates thanks to the actions carried out over the four years of the project. These actions have already produced positive results, including an increase in hawksbill turtle hatchlings, which are no longer affected by rats or pigs, as well as a resurgence in the islands' land crab populations. The techniques used involved a combination of spraying rat poison manually and from the air using drones given the topographical constraints of the targeted islets. Manual spraying, deployed on the more accessible islets, required the participation of a significant number of people, as every islet had to be covered with at least 25kg of bait per hectare. A plan dividing them into sections was drawn up beforehand, with spraying points every 25 metres. **Using drones to spray bait on seven islets was a major first for Wallis and Futuna, and is now a reference method for restoration on other islands.**

"Already visible impacts on seabirds, turtles and land crabs"

The project also achieved a considerable reduction in wild pig populations. Their presence hindered the success of rat eradication operations, in addition to the direct impact caused by their predation of birds, crabs and turtle eggs. By eating the bait meant for rats, the pigs reduced its effectiveness, and increased the risk of some individual rats surviving. A map displaying their whereabouts made it possible to identify actions that combined setting traps with professional doghunting. Although it wasn't possible to remove every pig from Nuku'atea, reducing their number on this islet by 110 and on Faioa by 60 created significant advantages for biodiversity, which should last for some time.

In both territories, local consultations played an important role in the project's success, particularly when it came to obtaining authorisation for the operation from customary authorities and landowners.

KEY FIGURES

3 islets
with eradication confirmed in the Marquesas Islands

14 species
of birds protected in French Polynesia

170 wild pigs
removed from Nuku'atea and Faioa in Wallis

13 islets
out of 16 free of rats in Wallis

136 flights
of drones carried out during a 6-day operation in the Marquesas Islands

1st success
of rat poison spraying from drones in Wallis

FIRST-HAND ACCOUNTS

TEHANI WITHERS

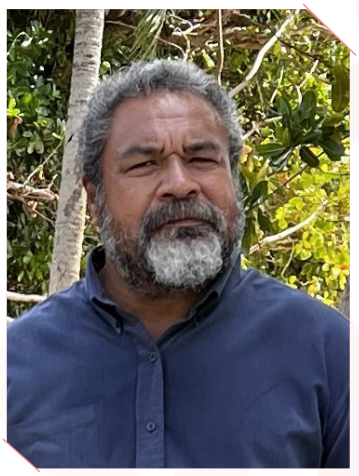
Polynesian Ornithological Society (SOP Manu)

During the observations at night, we saw many tropical shearwaters return to their nest burrows. Their species had been greatly affected by rats beforehand, particularly their eggs and chicks.

For the Marquesans who fish in these areas, eradicating the rats will provide a more sustainable food source over time.

FAIPULE SOANE VAKALEPU

Customary chief of the Mua district in Wallis



The invasion of wild pigs on the islets was a real threat to biodiversity, and needed an urgent response. Last year, the key initiative led by SPREP, the Environment Department and the chiefdom was to eradicate wild pigs through a hunting campaign. It was a bold but effective plan that allowed us to regulate the number of pigs and restore balance to the islets' ecosystems. We are delighted with the result, which is the culmination of good coordinaton between our various organisations.

ANTONY TALBONE

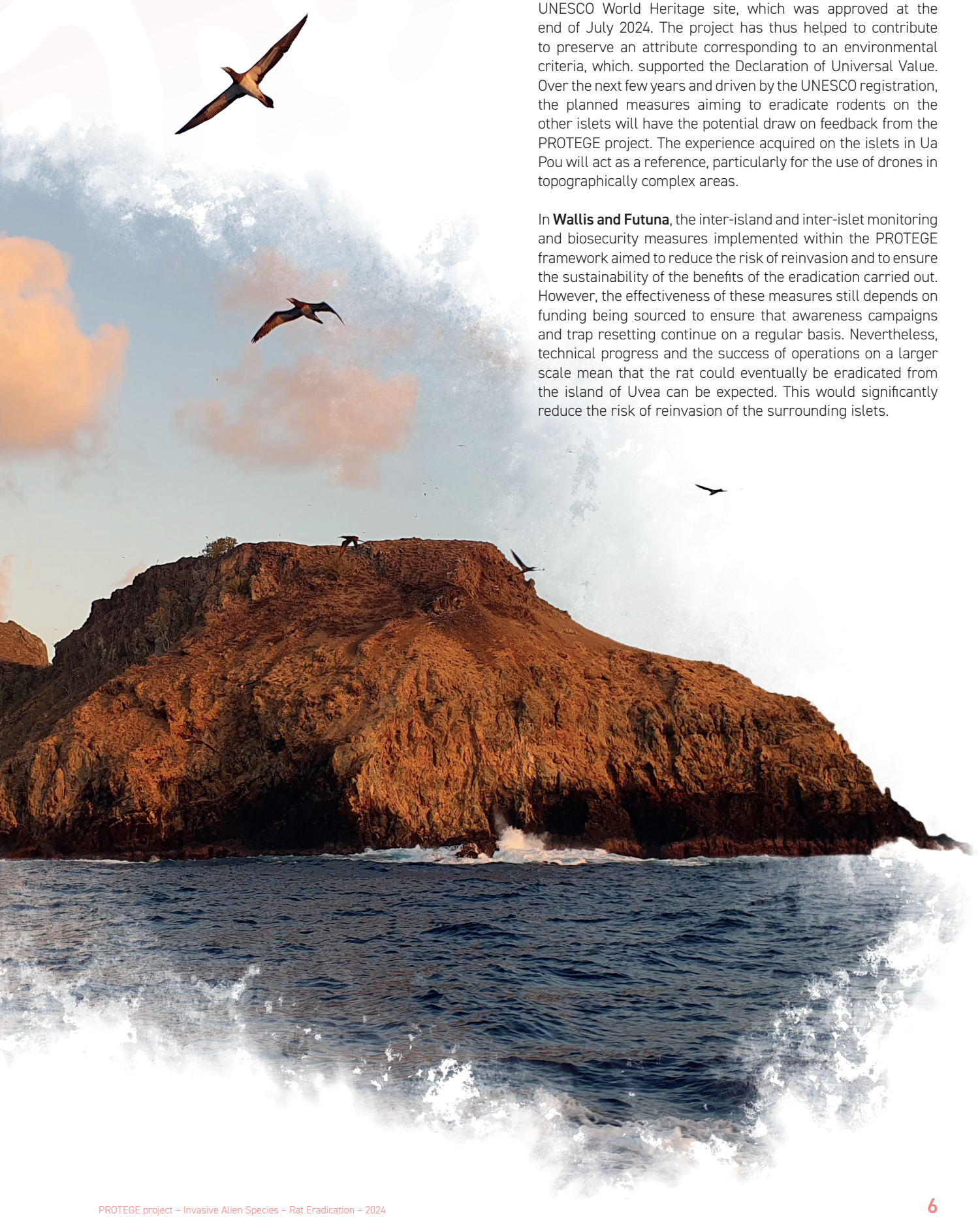
Technical Officer, Invasive Species, Wallis Territorial Environmental Service

Through PROTEGE, our skills have been enhanced thanks to the partnership with Island Conservation. Alongside the preparation for rat eradication operations on the islets, we conducted a survey to assess the pig population. I'm proud to have taken part, through PROTEGE, in the first project to regulate wild pig populations on the Territory's islets. We hope to continue these actions on the main islands.

PROSPECTS AND OUTLOOK

In **French Polynesia**, the actions carried out were in line with the aim of registering the Marquesas archipelago as a UNESCO World Heritage site, which was approved at the end of July 2024. The project has thus helped to contribute to preserve an attribute corresponding to an environmental criteria, which. supported the Declaration of Universal Value. Over the next few years and driven by the UNESCO registration, the planned measures aiming to eradicate rodents on the other islets will have the potential draw on feedback from the PROTEGE project. The experience acquired on the islets in Ua Pou will act as a reference, particularly for the use of drones in topographically complex areas.

In **Wallis and Futuna**, the inter-island and inter-islet monitoring and biosecurity measures implemented within the PROTEGE framework aimed to reduce the risk of reinvasion and to ensure the sustainability of the benefits of the eradication carried out. However, the effectiveness of these measures still depends on funding being sourced to ensure that awareness campaigns and trap resetting continue on a regular basis. Nevertheless, technical progress and the success of operations on a larger scale mean that the rat could eventually be eradicated from the island of Uvea can be expected. This would significantly reduce the risk of reinvasion of the surrounding islets.



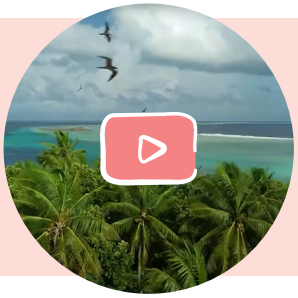
DOCUMENTARY RESOURCES

PROTEGE

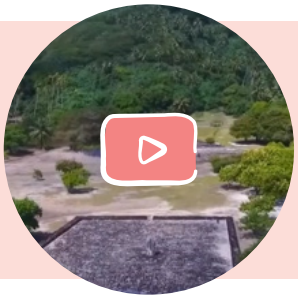
Scan or click to access resources

VIDEOS

Strengthening inter-island biosecurity and eradicating rats from the islets of Wallis and Futuna



Rats or Reefs
Invasive species and climate resilience in the Pacific



"Resilience" Episode 4: Invasive species, a scourge for biodiversity.

Short version

Long version

WEB

Wild pig trapping operations in Nuku'atea, Wallis and Futuna

Encouraging news for seabird conservation in Ua Pou, Marquesas Islands, one year after rat eradication in French Polynesia

REPORTS

- Griffiths, R & des Monstiers, B. (2019) – Restoration of the Wallis islets – 2019 Mission report.
- Griffiths, R, and des Monstiers, B. (2021) Operational Plan for the Eradication of Rattus rattus and Rattus exulans, Sus scrofa domesticus and Felis catus from Wallis islets, Wallis and Futuna.
- Des Monstiers, B., Pagot, J., and Singh, C. (2024), Eradication of the black rat and Polynesian rat from the Wallis lagoon islets by manual and aeriel spraying of rat poison (Wallis and Futuna)
- Birdlife International and SOP Manu (2024) Ua Pou Islets Pacific Rat Eradication, Monitoring and Biosecurity, Marquesas Islands French Polynesia.

Find all the project lessons-learned factsheets on invasive alien species **freely available on our website.**

PROTEGE

PACIFIC TERRITORIES REGIONAL PROJECT FOR SUSTAINABLE ECOSYSTEM MANAGEMENT

protege.spc.int/en

Pacific Community
Communauté du Pacifique

SPREP PROE

Funded by European Union

NOUVELLE CALÉDONIE

FRENCH POLYNESIA

WALLIS AND FUTUNA

PITCAIRN ISLANDS

This publication was produced with the support of the European Union. The contents of the publication remain the sole responsibility of the Secretariat of the Pacific Regional Environment Programme and the Pacific Community, and cannot in any way be considered to reflect the views of the European Union.