

# Biodiversity survey of paradise in the South Pacific

Last June, a team of scientists and technicians joined the Ornithological Society of Polynesia-Manu (SOP-Manu - BirdLife in French Polynesia) to survey the flora and fauna of remote atolls in the south-east Tuamotu Archipelago. Due to the remote location of the sites, the team travelled by sailboat from Rikitea, braving treacherous landings on the reefs surrounding the closed atolls to access the hidden gems of Morane, Vahanga and Tenarunga. Fred Jacq is the first botanist to set foot on Morane. For him it was an extraordinary experience: "Morane is an exceptional atoll, because it only has a few groves of coconut palms; being spared the large plantations (as seen on most of the other atolls in the Tuamotu Archipelago) has preserved the native flora." Mr Jacq also took the opportunity to collect insect specimens which will be identified by a specialized entomologist. Elodie Lagouy, a marine biologist, explored the lagoon environment: "Of the 53 closed atolls in French Polynesia, 14 remained unexplored by science, including Morane. This initial survey revealed 88 species of fish, 24 hard corals, 8 echinoderms, and a variety of molluscs including Giant Clam and wild pearl oysters." One of only 2 atolls free of mammalian predators in the Tuamotu Archipelago (the other being Tenararo), Morane is a haven for birds. Marie-Hélène Burle, a PhD candidate from Canada's Simon Fraser University, is on her third field season studying the Endangered endemic Tuamotu Sandpiper ("titi") in key areas of its range. With the help of her assistant François Sanz, she has determined that Morane houses the largest known population of Tuamotu Sandpiper, estimating 500 individuals live on the atoll. Thomas Ghestemme from the SOP-Manu surveyed landbirds, and carefully combed the atoll for the Critically Endangered Polynesian Ground-dove, or "tuturu": only 2 individuals were observed. Thomas states: "The tuturu's situation is very worrying, as Morane was thought to hold 50 individuals, or nearly half of the known population. Due to our current findings we have serious concerns for the future of this species." "The diversity and abundance of seabirds observed for Morane underlines the importance of predator-free islands as safe nesting and roosting sites" says Steve Cranwell from BirdLife International. Eleven species of seabird were recorded including the largest breeding population of Near-Threatened Murphy's Petrel (over 1000 pairs) in French Polynesia. In contrast, less than 10 Murphys petrel and a single breeding pair were found on "nearby" Vahanga Atoll a consequence of the introduced Pacific rat. After three full days of scouring Morane, the team set sail for the Northern Actéon islands of Vahanga, Tenarunga and Tenararo. The abandoned coconut plantation of Vahanga (more accurately known by its Paumotu name of Vaega) was surveyed in preparation for an operation to eradicate rats from the Atoll in 2013. A predator assessment of Tenarunga confirmed feral cats and Black rat two voracious predators of native wildlife on islands. Few birds were observed on either atoll, which is consistent for islands with invasive mammalian predators, and the team was understandably surprised to cross paths with a single Polynesian Ground-dove near the village on Tenarunga. A likely migrant from the

nearby predator free atoll of Tenararo. Unfortunately rough weather caught up with the expedition at this point, and due to safety concerns plans to survey the third atoll of Tenararo had to be abandoned. Predator-free Tenararo is one of the last strongholds of both Polynesian Ground-dove and Tuamotu Sandpiper, and is less than 10km from Vahanga. It is hoped that the eradication operation on Vahanga in 2013 will provide a buffer zone of protection for Tenararo, and a dispersal site for its many at-risk avian species. The Ornithological Society of French Polynesia-Manu would like to thank the Critical Ecosystems Partnership Fund (CEPF), Energy and Natural Resources Thematic Programme (ENRTP), and Pacific Development and Conservation Trust (PDCT) for their generous financing which made this expedition possible, and the Société Agricole des Actéons, Direction de l'Environnement, Mairie des Gambier, and local community of Mangareva for their authorization, guidance and ongoing support of the SOP-Manu's efforts. The CEPF is a joint initiative of l'Agence Française de Développement, Conservation International, the Global Environment Facility, the Government of Japan, the John D. and Catherine T. MacArthur Foundation, and the World Bank.