



VANUATU: REEF CHECK AUSTRALIA EXPEDITION

OVERVIEW

An international team of marine scientists and Reef Check volunteer researchers left Townsville, Queensland in 2004 on a 21-day scientific expedition to the Shéfa Province of Vanuatu. The expedition was organised in response to a request from the Efaté Scuba Association and Vanuatu Department of Fisheries to help build local community capacity to monitor reef health and the effects of recent expansions in aquarium fish exports from the region. The region's marine aquarium trade holds the potential to provide a valuable and significant source of income to coastal communities, a key factor for sustainable economic growth.

The expedition team conducted an assessment of coral reef health and the impacts of this industry on the reefs surrounding Efaté. The team also trained 11 local dive and marine protected area staff in Reef Check and aquarium fish survey methods and helped to set up a national Reef Check Trainer with the tools to continue with this project.

This expedition was the first of its kind for Reef Check Australia and succeeded in providing assistance to coral reef stakeholders in Vanuatu, in capacity building for coral reef monitoring activities, as well as providing an outstanding opportunity to its Australian volunteers to experience coral reef conservation and management issues in the South Pacific.



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BUILDING NETWORKS

Through this expedition Reef Check Australia facilitated a relationship between government, local industry and communities from Australia and Vanuatu. Continued collaboration between the multiple stakeholders of Vanuatu's coral reef resources has been recognised as key to successful, sustainable management. Reef Check Australia aims to continue to facilitate and participate in such collaboration.

TRAINING, EDUCATION AND PUBLIC AWARENESS



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Building local capacity to monitor the status of Vanuatu's reef resources has been identified as a strategic goal of the Vanuatu Department of Fisheries. Engaging coral reef stakeholders to assist with reef management has been proven to increase the likelihood of success.

Reef Check Australia's Training team ran a successful series of Reef Check and aquarium fish monitoring training workshops for Mele Bay and Nguna-Pele communities. After successfully completing and passing the courses, many of the

new trainees accompanied the survey team on the expedition dives and gained extra field experience and training.

THE SURVEY

The Reef Check *Plus* protocol was used to survey coral communities, key macro-invertebrate populations, other human impacts and food fish populations and the MAQTRAC protocol was used to survey key aquarium fish. In addition, a rapid assessment technique was used to determine the tourism value of each site. Surveys were conducted at Mele Bay, Pele Island and Hat Island.



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KEY FINDINGS

CORALS AND REEF CONDITION

Extremely high percentages of coral cover of up to 70% were observed at Devil's Point in Mele Bay and 50% cover around the marine protected areas of Nguna-Pele Islands. These coral communities comprised of attractive, healthy plate and branching coral growth forms, representing high tourist value. There was little evidence of damage, with minor impacts from cyclones and small boat anchors.



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AQUARIUM FISH

A wide range of colourful fish was observed in this region, which is a key attraction for tourists, as well as important for the aquarium industry. A particularly high abundance of pygmy angelfish (*Centropyge* spp.), which are popular aquarium fish, were observed with a potential new species found by Dr Glenn Almany.

Densities of a number of species that are targeted by the aquarium collectors were found to be lower at one of the collection sites visited than at the protected site that was surveyed. Further studies are needed to determine if these findings are a cause of aquarium fish harvesting or due to natural

differences in the abundance of such species across reefs. Such studies will also be essential to determine and maintain sustainable levels of extraction for this valuable industry.

COMMERCIALY IMPORTANT MARINE SPECIES



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Key macro-invertebrate abundance was low at all sites visited with higher numbers of giant clam (*Tridacna* spp.), pencil urchins (*Heterocentrotus mammilatus*) and trochus (*Trochus niloticus*) where fishing pressure was reported as lower. Key food fish abundance was also low at all sites visited. These findings support anecdotal reports that artisanal fishing pressure is high in this region.

FUTURE DIRECTIONS

The establishment of a network of marine protected areas within regions that are harvested is an effective instrument to

protect habitats and stocks of fish and invertebrates from over-collection and to ensure these resources are available for future generations. Engaging the community in the monitoring and management of these reserves is key for their success, especially in areas where resources are limited. Reef Check provides a tool for communities to demonstrate the effectiveness of their reserves, which ultimately builds support and stewardship of their resources.



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The Vanuatu Department of Fisheries aim to educate and engage their local communities in the management of their coral reef resources. To assist in the realisation of these goals, Reef Check Australia aim to return to Vanuatu annually to continue to assist with community education, capacity building, monitoring, analysis and reporting.

SUPPORT

Reef Check Australia's Vanuatu coral reef monitoring expedition proudly acknowledges funding and in-kind support from Reef Check, Reef Check Australia, Vanuatu Department of Fisheries, Efate Scuba Operators Association, AusAid, Air Vanuatu, CRC Reef, Queensland Department of Primary Industries and Fisheries, James Cook University, Fulbright Program, National Science Foundation, United Nations Environment Program, United States Coral Reef Task Force and in particular, the Volunteer expedition team, who contributed personal funds as well as three weeks of their time to make the adventure possible.