





COMMUNITY *coral conservation*

In the mainly patriarchal society of Papua New Guinea, women are at the forefront of protecting some of the world's healthiest coral reefs, thereby challenging the status quo – above and below the surface.

Words by Nane Steinhoff

Photographs by Andy Lewis & Linda Berry

A school of powder blue tang swims back and forth in excited unison on its quest to find the next meal. Yellow butterfly fish dart in and out of colourful coral unimpressed by the human presence swimming above them. In the distance, a large group of big-eyed barracuda hangs out on the reef edge. A turtle flaps its fins to dart off into the deep blue distance and thousands of small, multi-coloured fish dance above the vibrant brain, staghorn and soft corals. Upon taking a closer look at the varied underwater landscape, spinecheek anemonefish hide within the swaying arms of translucent bulb-tentacle sea anemones. The coral density and its health in this special place is one of the world's most astonishing.

Equipped with a short wetsuit, a snorkel, pair of fins and a camera, Naomi Longa swims over the coral reef with her colleague, surveying the reef using a variation of the common 50m x 5m visual transect survey method. While Longa swims at the front, she counts the many fishes that are relevant to the area. Her colleague follows closely behind, carefully taking a set of geotagged images every five metres. "The Sea Women of Melanesia programme was started in 2016 by Dr Andy Lewis," explains Longa, the team leader of the Sea Women of Melanesia programme and adds: "We empower these women by training them with basic reef survey techniques so that they are able to find an ideal area for a marine reserve in their community. We usually start with snorkelling training, and then once I see that the women are confident in the water, we do the survey technique. After I train them, I can see a very big difference. They can all swim confidently in the water, they can I.D. the fish and they can identify the corals. Once they finish the training, they're going to go back to their own community and they're going to do the survey in their own reefs, while talking to the village elders about what they learn." The Coral Sea Foundation, an Australian not-for-profit organisation is working with Melanesian women like Longa to better assess and protect the local reefs through the Sea Women of Melanesia programme which is aimed at training local women to help the indigenous people of Melanesia to better look after their marine resources.

Papua New Guinea lies in the southwestern Pacific. The country is made up of New Guinea's eastern half and numerous small offshore islands. With rich cultural heritage, traditional tribal villages, different spoken languages and a rich biological diversity, dense rainforests, and active volcanoes, it is a country of exceptional beauty and contrast. Pristine beaches and some of the world's healthiest coral reefs dot the country that lies within the famous Coral Triangle. Low human population and geographic isolation of most of the islands have preserved healthy ocean ecosystems in the region that sport over three-quarters of the world's hard corals, around 2,000 reef fish species as well as at least 131 kinds of rays and sharks.

Papua New Guinea's reefs are generally healthy, according to Dr Andy Lewis, founder and executive director of the Coral Sea Foundation: "If the reefs are near large centres of population, they're overfished. However, they haven't suffered as many bleaching events as other places in the last five to ten years. It's a huge archipelago. If you're away from people, the health of the reefs is generally pretty good. Sharks and the bigger elements of the fish populations have been overfished and there are very few functioning marine protected areas in the country but in terms of their biodiversity, these reefs are still some of the world's most stunning, and they probably will be for some time to come."

With coastline more than 10,000 miles long and approximately 1,205,000 square miles of marine waters, coastal communities in Papua New Guinea have relied on the ocean for food and cultural purposes for millennia. With growing modernisation and globalisation, however, traditional fishing techniques increasingly give way to industrial fishing activities. "Reefs near where people live are chronically overfished. On some, only small damselfish are left and anything edible has been taken off," explains Dr Lewis. "Where there's industry and oil palm plantations, where the region's heavy rainfall washes sediments into the ocean, we're seeing coastal degradation." Additional threats to marine environments come from coral bleaching events, crown of thorn starfish outbreaks as well as the widespread chewing of betel nuts which utilises lime from coral reefs. These threats, combined with the fact that not much research has been conducted about the vast and diverse marine habitats of the country that include shallow mangroves, estuaries and reefs, abyssal plains, sea mounts as well as hydrothermal vents, is a major cause of concern.

But the Sea Women of Melanesia not-for-profit association is banking on a community-centred approach to turn the tide and protect vast expanses of Papua New Guinea's marine life. The general idea: to train indigenous women who can proactively map reefs and turn these into marine reserves. Dr Lewis explains: "When I was working in Papua New Guinea, many young women in the communities requested to learn more about marine biology. I realised that around 70% of students in biology and environmental sciences courses at universities in Papua New Guinea were women so there was this huge resource of young, environmentally aware women who were passionate conservationists but didn't know how to get into it

PREVIOUS: A yellow gorgonian coral from the Swinger Passage, Papua New Guinea.

THIS PAGE: A clownfish in a magnificent sea anemone in the Nua Marine Reserve Network, Ferguson Island, Papua New Guinea.





and what to do. That was the main impetus for the start of the project." As the first woman to be trained by the programme, Lorie Pipiga remembers: "I was born in a village near Sebutuia Bay, surrounded by rainforest and coral reefs. These ecosystems have provided food and resources for my people for thousands of years. One day, a logging company came to Sebutuia Bay and began producing roads through the rainforest, cutting timber, and disturbing the environment. They silenced opposition from our community with money and bribes. I saw my own people losing the benefits provided by the land and saw the waste and soil from the logging spoiling the coral reefs in the bay."

After joining the Sea Women of Melanesia project, she flew out to Australia to learn scuba diving and marine biology with the Coral Sea Foundation. Today, she is using her skills to set up the first marine park in her area and teaches her community to protect their own resources sustainably. The aim of Sea Women of Melanesia is to have the women lead the process of marine reserve creation at a grassroots level in their communities. "In other words, they're the facilitators that let the community know what the benefits of a marine reserve are, how they are set up and how they get registered with the government," says Dr Lewis.

"At a community level, the women already do most of the work in terms of getting food, managing food, looking after gardens, looking after kids and the household. So, in that sense, they're already thinking along a sustainable and conservation sort of framework," explains Dr Lewis. And because Papua New Guinea is so culturally diverse the approach simply makes sense. "If we go into an area and try to convince local people to put in a marine reserve, the first thing we have to understand is the culture of that particular area. There are more than 800 different language groups in Papua New Guinea so you can never hope to know all the cultural aspects of the country. The best way to understand this information is through Papua New Guinean women in our team that go into these villages and talk to other women from those areas. Through that dialogue, they are able to gather important information on who owns the reef, where and when the fishing takes place and whether there are any disputes over who owns what reef, the internal politics of the area. Getting that information is crucial to be able to do good marine conservation work," says Dr Lewis.

And the female approach works – despite Papua New Guinea still being a patriarchal society. Women in the region are still not considered equal to men, and they are scarcely represented in government and industry settings. Furthermore, according to *The Guardian*, 15,444 cases of domestic violence were reported in 2020 in Papua New Guinea, while only 250 people were prosecuted and only

"Low human population and geographic isolation of most of the islands have preserved healthy ocean ecosystems in the region."

100 were convicted. In some parts of the country, women aren't allowed to dive. "Of course, there was potential for men in position of power to get their noses out of joint," says Dr Lewis. "But that didn't really happen. It has been well-received. Local people can see that their marine resources are getting depleted, so we haven't had to sell the idea of marine reserves. In fact, we had far more people asking us to help them set up marine reserves than we have the resources for. To see that we're getting towards that point now where regional officers and team leaders begin to train other women is fantastic."

The efforts have recently been awarded by the United Nations' Champions of the Earth awards – a prize that seeks to recognise outstanding environmental leaders from all walks of life. Dr Lewis says: "Let's face it, it might look idyllic with its blue water, coconut palms and lovely jungle islands but it is Papua New Guinea. Every possible disease you can imagine is there and without a little bit of medical aid, life in those villages can be very difficult. Supplies are hard to get and the security situation didn't get any better throughout the pandemic. The women are doing all this conservation work constantly thinking about their security, sea piracy and land piracy. To have that recognised at an international level, and to see the validity of the project recognised through that award, means a lot."

Scaling up, in a sustainable way, is the organisation's current main objective. "With three regional offices and only a small core team of women that are driving the programme, we are still small," explains Dr Lewis. After expanding the programme in Papua New Guinea, eyes are set for expansion into the Solomon Islands "because between Papua New Guinea and the Solomons, those two places currently have the greatest, most important and most biodiverse reefs". Of course, expanding requires funding, more management expertise as well as more people on the ground. "If we can continue to build a good team of people and continue to attract the support of good people, the sky is the limit. Within five to ten years, I would love to see a network of Sea Women programmes all around the South Pacific, supported by vessels and government agencies that are really getting on with the job of turning 30% of this area into reserves. The quicker we do it the better. There's no time to waste." 