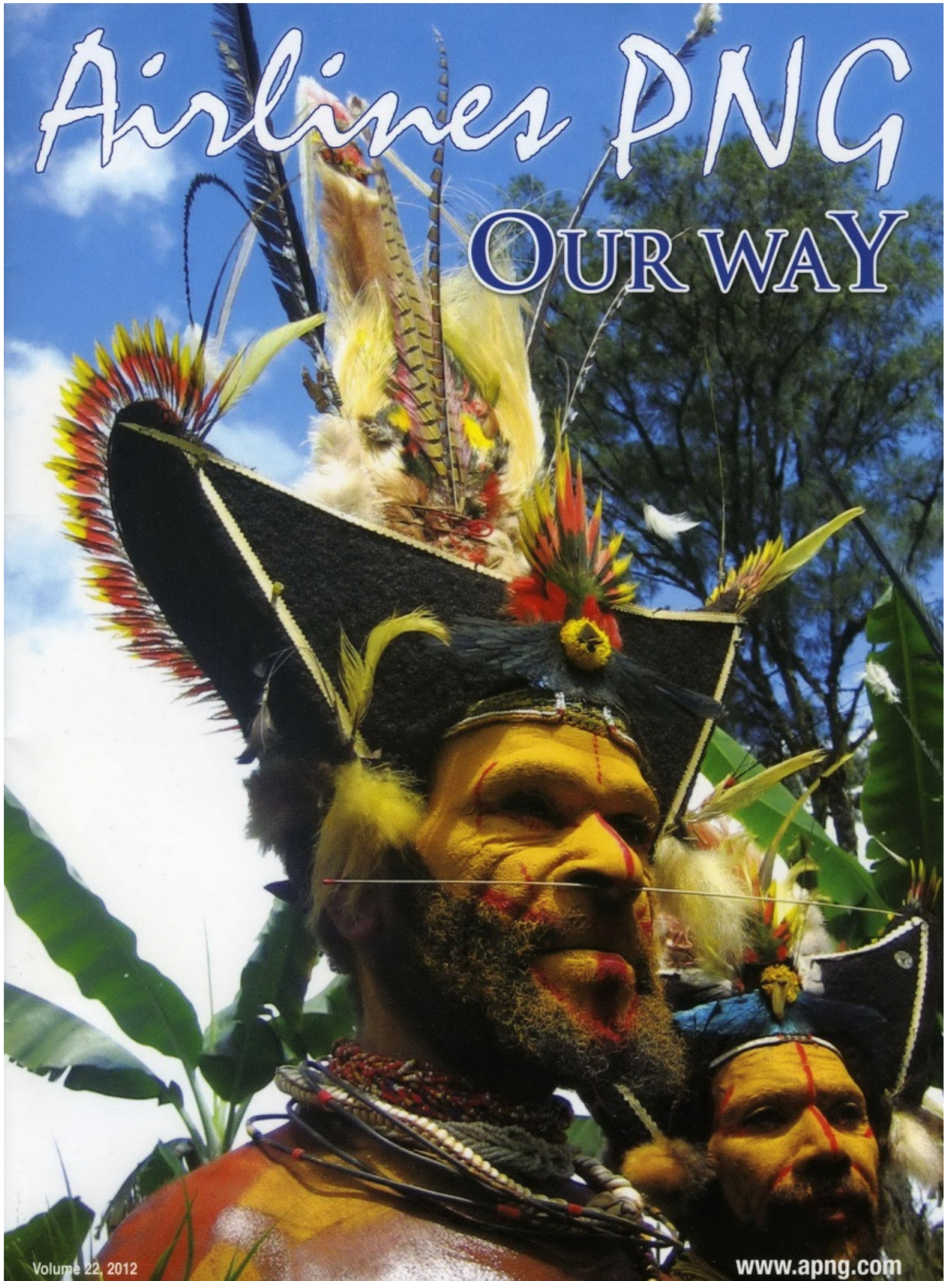


Airlines PNG

OUR WAY



Coral CRUCIBLE

Don Silcock

There is a line of thought among the marine scientific community that this is probably where the first corals originated - a large sheltered bay, roughly one third along the north coast of the island now called New Britain.

The bay is called Kimbe and there can be no doubt regarding its profound fecundity because the numbers, as they say, cannot lie....

Surveys by famous marine biologists like Professor Charles Veron and Dr Jerry Allen, and respected organisations like The Nature Conservancy, have helped to establish a bewildering array of statistics for the area.

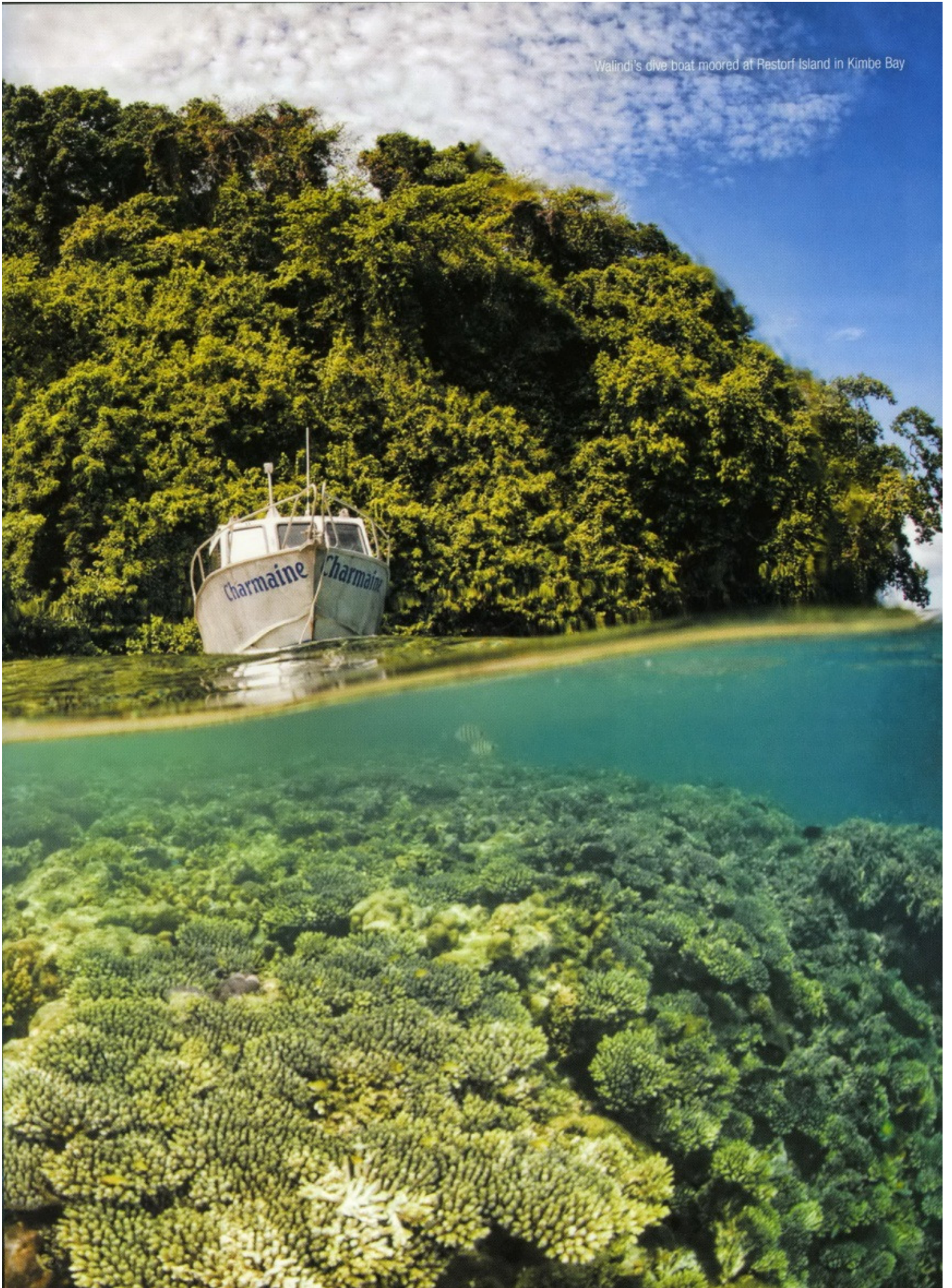
Depending on which survey results are used, Kimbe Bay is host to around 860 species of reef fish, 400 species of coral and at least 10 species of whales and dolphins.

To put that in a global perspective - in an area roughly the same size as California - Papua New Guinea is home to almost five per cent of the world's marine biodiversity.

Just under half of that fish fauna and virtually all of the coral species can be



Walindi's dive boat moored at Restorf Island in Kimbe Bay



A freediver skims over the reef at Otto's Point in Kimbe Bay



found in Kimbe Bay, which means that the bay should really be considered as a kind of fully stocked marine biological storehouse.

Location, Location, Location

New Britain is part of the Bismarck Archipelago, which forms the southern ridge of the so-called Ring of Fire - the volatile and unpredictable, horseshoe shaped seismic strip of oceanic trenches and volcanic arcs that wreaks periodic havoc and destruction around the Pacific Ocean basin.

The islands of the archipelago were formed some 8-10 million years ago as a result of what geologists refer rather mildly to as 'tectonic uplift'. The flight from Port Moresby into Hoskins Airport on the southern edge of Kimbe Bay will put the whole uplift concept into a slightly more dramatic perspective.

As you cross the narrow Vitiaz Strait from the main island of New Guinea

"The mountains also create a partial rain shadow over the north, making the south coast the second wettest place on earth..."

you will catch your first glimpse of New Britain and will see the western tip of a narrow crescent-shaped island roughly 500km long, by about 30km wide at its narrowest point and 150km at its widest.

Running along the spine of the island are huge mountain ranges, created by those tectonic uplifts, which are so high they effectively isolate the north coast from the south and create their own weather patterns, so that while the north coast follows the normal monsoonal

Colourful sponges underwater at Restorf Island



seasons, the south is completely opposite.

The mountains also create a partial rain shadow over the north, making the south coast the second wettest place on earth, with annual rainfalls of between six to eight metres.

The approach into Hoskins Airport takes you over the Willaumez Peninsula, the western boundary of Kimbe Bay, and provides a spectacular introduction to the other visually defining feature of this part of New Britain - volcanoes.

On the tip of the peninsula are two large freshwater lakes occupying the huge caldera left by the massive eruption of the Dakataua volcano some 1,150 years ago, and then dotted along the long and narrow isthmus are three smaller volcanoes.

The final approach in to Hoskins is

overshadowed by the large Mt Pago volcano and its two smaller siblings, whose periodic rumblings provide very poignant reminders of the powerful seismic phenomena far underground that created those tectonic uplifts.

Beneath Kimbe Bay

Bounded by the long Willaumez Peninsula to the west and Cape Tokoro, some 140km to the east, Kimbe Bay is sheltered from the worst of New Britain's weather.

Along the coastal area of the bay, a 200m shelf runs parallel to the shore for about five kilometres before dropping down to around 500m and up to 1000m in the eastern part. On the northern outskirts of the bay, as it approaches the Bismarck Sea, the sea floor drops off

Bright red goby on a soft coral tree



rapidly to in excess of 2000m.

Across this deep seascape are dramatic seamounts and coral pinnacles that rise up towards the surface and provide isolated ecosystems for the marine creatures of the bay.

The seamounts in particular act as beacons to the bay's diverse and prolific pelagics and marine mammals – with twelve species of mammals identified to date, including sperm whales, orcas, spinner dolphins, and dugong!

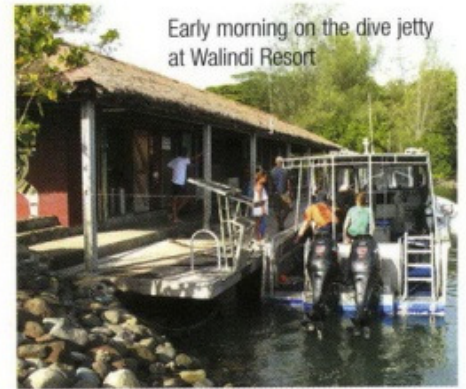
The deep waters and generally benign conditions function as a kind of marine nursery and are fundamental to the incredible biodiversity of Kimbe Bay, but the other significant element is the nutrient-rich currents of the Bismarck Sea that provide the nutrients to sustain the bay's residents and visitors.

To the south of New Britain are the 4000m-deep water basins of the Solomon Sea that the Southern Equatorial Current crosses as it makes its way towards the Bismarck Archipelago.

As this powerful current approaches the south coast of New Britain it creates upwellings that suck up the nitrogen and phosphorous-laden detritus of the sea from those deep basins.

The nutrients are carried north through the Vitiiaz Strait in the west, and the St Georges Channel (between New Britain and New Ireland) in the east, in to the Bismarck Sea where they enter the predominantly anticlockwise circulation produced by the regional current flows.

As those currents flow along the north coast of New Britain and around the top of the long and narrow Willaumez



Peninsula, eddies are produced in the western part of Kimbe Bay that direct the nutrient-rich flows into the bay and induce further upwellings from the deep water basins to the north.

In a nutshell, the forces of nature have combined to produce an almost perfect natural environment to create and sustain the coral crucible and the creatures that cohabit with it.

Diving Kimbe Bay

Kimbe Bay is one of the global locations that most divers want in their logbooks.

But it is a special kind of diving in many ways, as it's not a shark-lovers paradise or somewhere you go because manta rays or whale sharks aggregate at certain times of the year.

My personal definition would be "fish-bowl" diving as it is like being immersed in a fully stocked aquarium, but with a considerable random factor of nature in that you never know what is going to

"My personal definition would be 'fish-bowl diving' as it is like being immersed in a fully stocked aquarium..."

come in from the blue – such as that day at Susan's Reef, when I left three other divers on the deco line at the end of my safety stop and got back in the dive boat.

Vaguely wondering what was taking them so long, I am sure you can imagine my reaction when they eventually got in the boat some 10 minutes later and very excitedly explained that a large sailfish had come in just after I left, and repeatedly checked them out before heading back out into the blue again!

The random factor is particularly prevalent at the seamount dives such as

Bradford Shoals, which is located on the very edge of the bay where the seafloor is some 1,500m below.

Rising from that abyss to within 20m of the surface, its reef structure is mainly flat plates of hard corals, which, although not particularly photogenic, are home to numerous colourful small reef fish. But very few divers go to Bradford Shoals to see reef fish, because the main attraction is what is above the reef.

Surrounded by deep blue water and quite distant from the nearest reef structure, Bradford acts as a magnet for big fish and pelagics. The sea is the sea and never offers any guarantees, but on almost any given day you are almost certain to see large schools of barracuda, big-eye trevally, dog tooth tuna, unicorn fish and fusiliers.

Add in to that mix the meandering but skittish white-tip reef sharks, the cruising gray reef sharks out in the current and the chance to see a great hammerhead on an occasional foray up from the deep.

Then there is the visibility of often in excess of 40m and you can probably understand how I came up with the name fish-bowl diving.

"...the main attraction is what is above the reef..."

Preserving Kimbe Bay

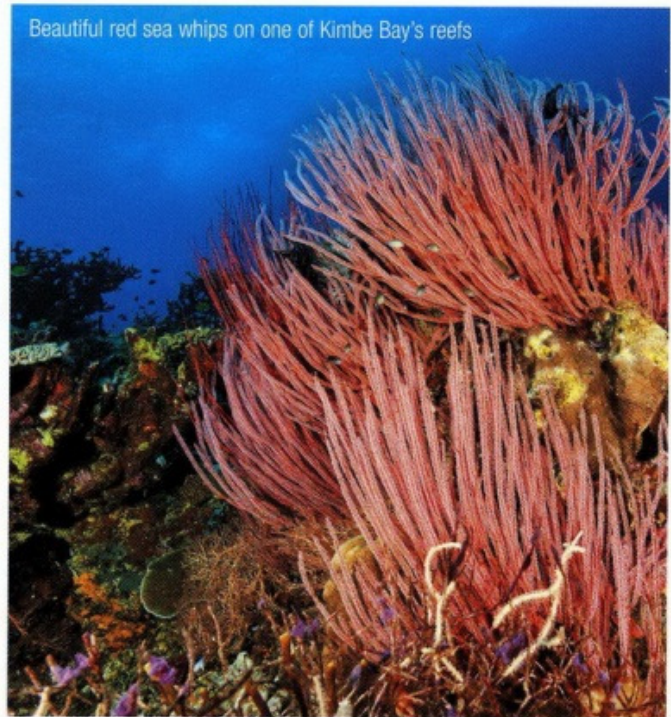
When Max and Cecilie Benjamin arrived in New Britain in the late 1960s they were agronomists whose principal interest was what came out of the ground around Kimbe Bay, rather than what was below its surface.

Their assignment in Papua New Guinea was supposed to be a short-term one on their way to a new life in Canada, but all that changed when they bought the 325 hectares Walindi palm oil plantation in 1969. The intention was to modernise and improve the plantation's operation, but by the early 1970s they had started to scuba dive at the weekends and were literally the first people to discover the incredible biodiversity of Kimbe Bay.

The rest is history and in 1983 Max and Cecilie started Walindi Plantation Dive Resort, which has grown in to a significant business complete with its own liveaboard dive boat the *MV Febrina*, capable of exploring the most remote locations of New Britain.

Their background as agronomists naturally inclined the Benjamins to take a long-term and sustainable approach to their businesses, such as installing permanent moorings on all the dive sites, but by the early 1990s they were seeing significant changes happening in the Kimbe Bay area, which if left unchecked could only degrade the pristine environment.

Up until the mid-1980s the local population lived the same subsistence but sustainable lifestyle they had for centuries, with virtually no impact on the marine life of Kimbe Bay. But by the end of the 80s it was becoming apparent that the development of the palm-oil industry in New Britain was changing that traditional lifestyle as economic migration into the area, combined with high natural rates of population increase, was resulting in a steadily rising population density in the urbanised areas.



Beautiful red sea whips on one of Kimbe Bay's reefs

The larger population placed far greater pressure on the local terrestrial and coastal eco-systems due to rising demand for food, firewood, and building materials plus a significant increase in pollution.

Furthermore, as more new people came in to the area they brought their own cultural practices, which diluted the local traditional ones that had evolved over the centuries to support and enhance the sustainable subsistence lifestyle of Kimbe Bay.

In 1993 the Benjamins joined forces with local government and The Nature Conservancy (TNC) to develop an overall long-term conservation strategy for Kimbe Bay.

The Conservancy came on board knowing that while the bay faced significant environmental challenges going forward, it had largely been spared the ravages of cyanide and dynamite fishing associated with the live reef fish trade, which had wreaked so much damage to coral reefs across Southeast Asia.

The following year TNC, supported logistically by Walindi, conducted the first ever Rapid Ecological Assessment (REA) of Kimbe Bay to try and quantify its actual biodiversity.

The results were staggering and revealed for the first time the true extent of what was below the surface of the bay and its importance as a marine biological storehouse, but the challenge now became how to preserve it. ▲

Don Silcock

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This is the first of a two part series of articles on Kimbe Bay, with the next to focus on the conservation strategy developed for the bay.

Airlines PNG flies from Port Moresby to Kimbe in West New Britain.

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