



Project Baseline

Facilitating Needed Underwater Science

AMANDA WHITE / PROJECT BASELINE

A donation for time aboard the M/Y *Ad-Vantage* (above) made the GUE New Zealand's Project Baseline mission in Fiji possible.

Text by Michael Menduno
Photos courtesy of Project Baseline

Project Baseline's team conducted over 100 video transects of coral reef and benthic habitats of the Great Astrolabe Reef in Fiji, one of the largest barrier reefs in the world, to compile baseline reports in order to effectively monitor the health of the reef.

Having completed two high-profile collaborative research projects in 2016—one with the National Oceanic and Atmospheric Administration (NOAA) documenting the U-576 WWII German submarine at a depth of 721ft

(220m) off North Carolina along the US East Coast, and the other working with the Nekton Oxford Deep Ocean Research Institute (Nekton) to conduct the XL Catlin Deep Ocean Survey in Bermuda—Project Baseline continues to find ways to broker and facilitate needed underwater exploration and research. Its recent proof-of-concept project in Fiji conducted in collaboration with scientists from the University of the South Pacific (USP), based in Suva, Fiji, and Nova Southeastern University (Nova) in Ft. Lauderdale, Florida, and the super-yacht owners who provided the vessel, is a prime example.

Over the 14-day mission on 14-27 May 2017, Project Baseline's team conducted over 100 video transects of coral reef and benthic habitats of the Great Astrolabe



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Dr Todd Kincaid (center), along with the captain of the *Ad-Vantage*, Peter Rowsell (right), gives the morning briefing.

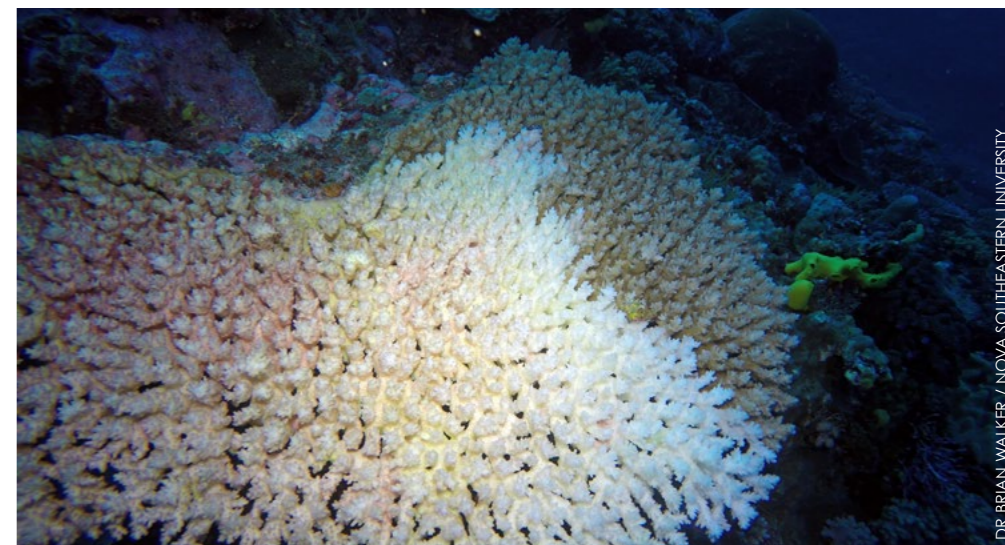
Reef, one of the largest barrier reefs in the world, facilitated dives for scientists from USP and Nova, and conducted 12 dives on submersible Moby collecting vertical video transects from depths of 50 to

362m. In addition, they were able to engage with the local communities in Malolo and Kadavu on the mission and its relevance to their historical and cultural relationship with the sea.



On a reef wall at North Astrolabe Reef in Fiji, there is a surgeonfish and several table corals.

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The red tissue on the left of this coral at Namotu Reef in Fiji is dead, while the white in the middle is diseased; the brown portion on the far right is healthy. The cause of the disease is unknown.

DR. BRIAN WALKER / NOVA SOUTHEASTERN UNIVERSITY



At Astrolabe Reef, Dr Brian Wilson from Nova Southeastern University in Florida records coral reef health and species.

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Dr Charles Messing commences a dive in the *Ad-Vantage's* submersible, Moby, to record crinoid.



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"The mission allowed us to monitor the health of the northern-most part of the reef far from human settlements and haunts and contrast it with areas near tourist hubs. The Fijian government doesn't have the resources to do this by itself," explained Dr. Rico, head of marine sciences at USP, who along with his students, is preparing a baseline report based on the data that was collected. The report will be used to help government policy-makers protect Fijian reefs.

A long time ago, in a reef far, far away...

Ironically, the origins of the Fijian project stretches back to 1998, the year that Jarrod Jablonski and now Project Baseline director Todd Kincaid, formed Global Underwater Explorers (GUE). At the time, British accountants-

turned-divers Mel Jeavons and Jamie Obern volunteered with the National Trust of Fiji, a Fijian government-sponsored conservationist organization, to run a coral and fish survey of the remote islands. There, they befriended a fellow volunteer named Sarah.

Flash-forward nearly 20 years to 2015/2016, Jeavons and Obern, who got married and became GUE divers, were running their training company Tech Dive New Zealand, based in Tutukaka, Northland. Meanwhile, their friend Sarah Foulis was now the chief stewardess and wife of the captain of the luxury yacht *M/Y Vantage*, which operated in the South Pacific. Even better, the ship's owners (who want to

At North Astrolabe Reef in Fiji, Dr Todd Kincaid (right) works with team GUE diver Jamie Obern (left) on the transects.

remain anonymous) were interested in donating their support vessel, *M/Y Ad-Vantage*—a 55m research vessel, which included a submersible and dive boats—for use in ocean research by recognized non-profit organizations. Jeavons, with the help of Jablonski and Kincaid began work on securing the ship.

Jeavons received the go-head on the boat in late 2016, but it took until mid-April 2017 to work out the details. Direct costs for the two-week survey project came to over US\$300,000, most of which were ship-related, but this included an amount for operating expenses, which was also fully funded by the owners of *Ad-Vantage*. That gave Kincaid and the Project Baseline team just three weeks to pull the project in Fiji together to meet the ship's sailing window—the most critical item being getting the necessary permissions from the Fijian government.

Kincaid and Jeavons engaged Rico at USP, who said he would welcome the collaboration. Rico wrote a request letter and had it hand-delivered to the Prime Minister of Fiji. However, there



MARTIN MCCLELLAN / PROJECT BASELINE

was no time to wait for approval before organizing the rest of the project.

Gambling on ocean science

Kincaid had already engaged marine scientists Brian Walker and Charles Messing at Nova, and scrambled to assemble the rest of their citizen scientist research team—including New Zealand-based GUE instructor Russell Hughes, Tech Dive New Zealand photographer Rob Wilson, explorer Martin McClellan of *SS Tahoe* fame, submersible pilot Randy Holt and safety officer Shane Zigler—and make travel arrangements.

"We totally gambled and decided to act as if," explained Kincaid, who said that up to that point, everything had been done on a handshake; there was no paperwork. "The Prime Minister's letter actually arrived the day I arrived on the *Ad-Vantage*. No one other than the captain and

I knew that the ship wasn't going anywhere without that letter."

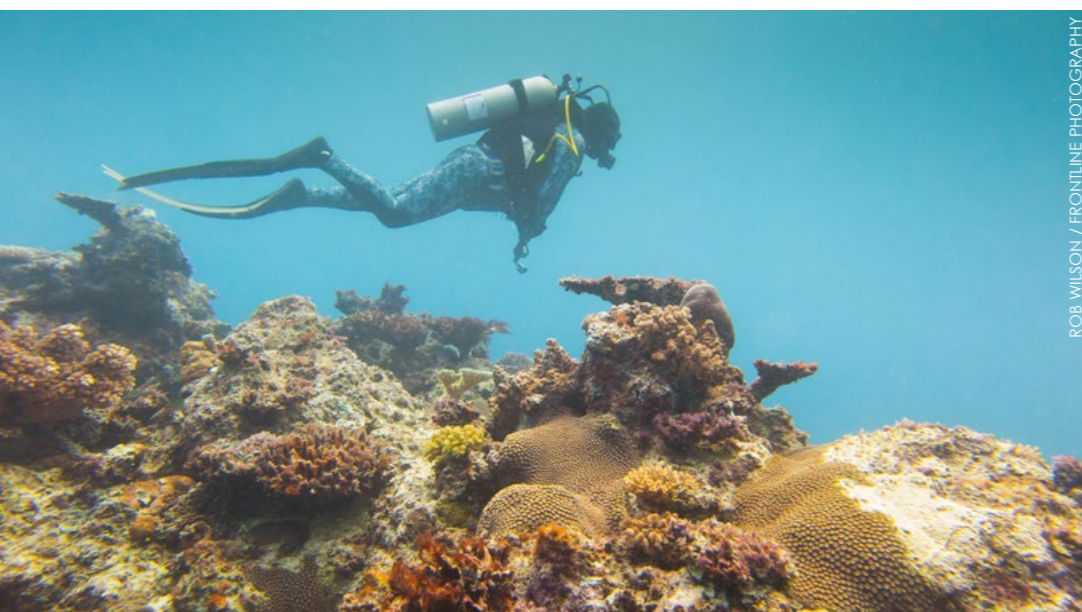
However, organizing a scientific mission in three week's time was not their only challenge. They still needed to secure permission to dive from the local village chiefs who oversaw the fishing grounds, which was accomplished with the help of Rico and USP.

In addition, sea conditions arising from Tropical Cyclone Ella, which passed north of their target area the day before the expedition was scheduled to begin, forced the team to delay the diving for three days and seek out alternative protected locations. Interestingly, the coral reef transects, which were taken during three-hour or longer rebreather dives, were limited to 100ft (30m) of depth due to the fact there was insufficient time to obtain any helium. GUE's Project Baseline evidently practices what it preaches.

In the aftermath of the project, the scientists Rico, Walker and

Messing are working together with graduate students to analyze the copious visual and other data gathered during the mission. Tech Dive New Zealand's Jeavons and Obern will continue to work with *Ad-Vantage* in the South Pacific region, while Kincaid, a water scientist, scouts out possible super-yachts for future baseline projects. Citizen science will never be the same. ■

Michael Menduno is an award-winning reporter and technologist based in California, USA, who has written about diving and diving technology for more than 25 years and coined the term "technical diving." He was the founder and publisher of aqua-CORPS: The Journal for Technical Diving (1990-1996), which helped usher technical diving into the mainstream of sports diving, and organized the first Tek, EUROtek and AsiaTek conferences, as well as Rebreather Forums 1 and 2.



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Dr. Rico Rico dives Astrolabe Reef near Kadavu.

