

Dr Gerry Allen document-
ing species at Ngulu Atoll
in the Caroline Islands,
Micronesia, in 2007

Text by Don Silcock
Photos courtesy of Dr Gerry Allen

This is the second article in a series by Don Silcock exploring how a successful conservation strategy was developed and implemented in Raja Ampat, on the northwestern tip of Indonesia's remote West Papua province.



Dr Gerry Allen is an Australian ichthyologist renowned for his extensive contributions to the study of coral reef fishes.



Conservation in

Raja Ampat

Part II: Dr Gerry Allen's Role in Quantifying a Species Factory

The **first article**, in issue #132, focused on Mark Erdmann, Vice President of Asia Pacific Marine Programmes for Conservation International (CI) and architect of the innovative, broad-based, bottom-up strategy that underpins conservation efforts in the region. Central to Erdmann's

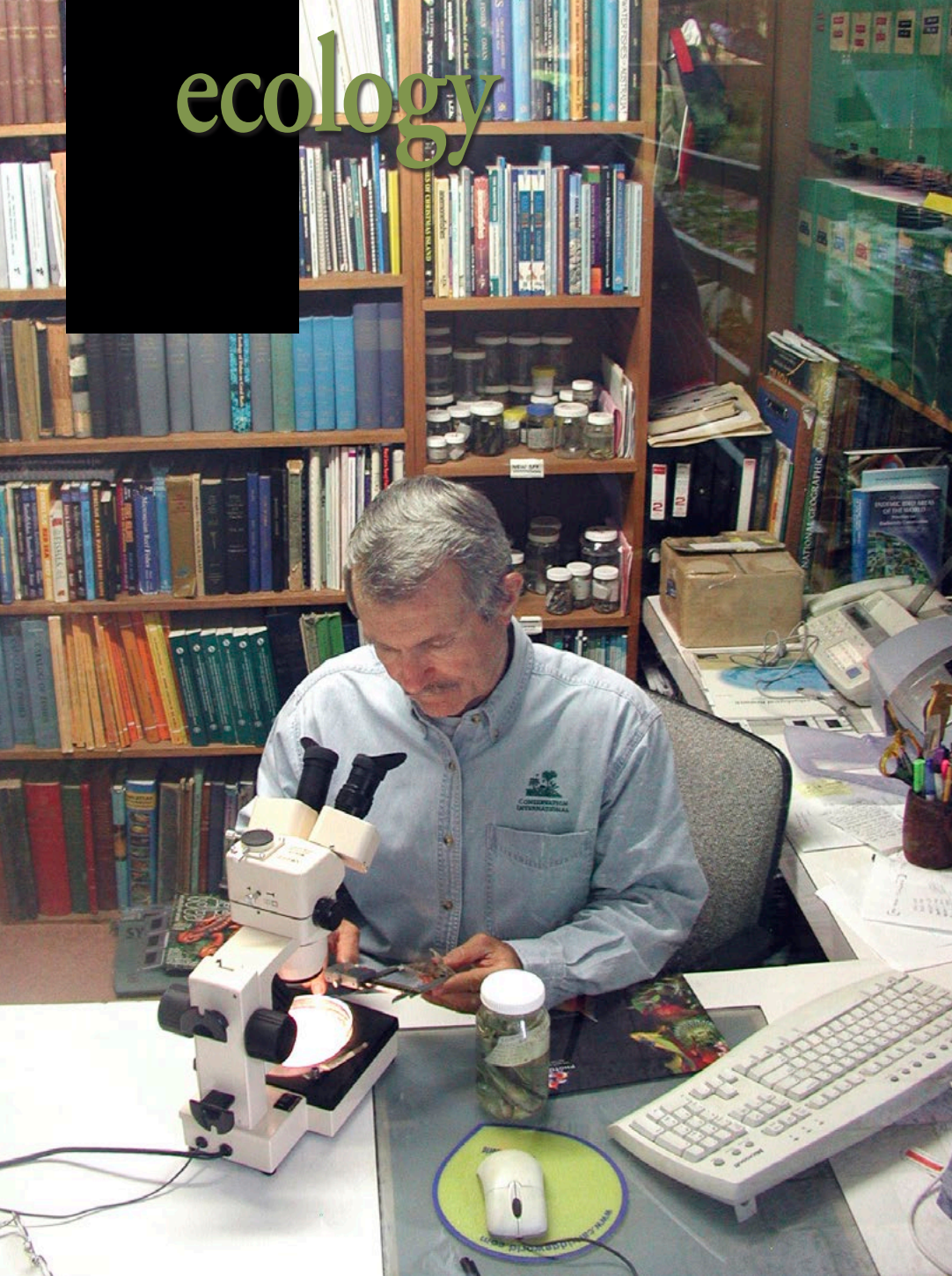
approach was the need to quantify Raja Ampat's extraordinary biodiversity. The person who played a pivotal and sustained role in that critical undertaking was Gerry Allen, whose contributions have been instrumental in shaping the conservation narrative of this incredible area.

Who is Gerry Allen?

Dr Gerald R. Allen is a renowned Australian ichthyologist celebrated for his extensive contributions to the study of coral reef fishes. He is perhaps best known as the co-author, alongside Mark Erdmann, of the recently updated three-volume series

Reef Fishes of the East Indies, often referred to as the "fish bible" of the Indo-Pacific region.

Gerry, as he is universally known, has had an immense influence on marine biology and conservation. During his prolific career spanning several decades, he has authored over 400 scien-



Dr Gerry Allen at work in his study in Perth (left), on assignment studying anemonefish in Madagascar in 2006 (below) and in the field in the Anambas Islands (right)



Raja Ampat

tific articles and 35 books, firmly establishing himself as one of the world's leading authorities on coral reef biodiversity and ichthyology.

Born in Los Angeles in 1942, Gerry grew up in the scenic mountain country of Trinity County in northern California. He earned his Bachelor of Science degree in zoology from the University of Hawaii, where a pivotal mentor, Dr Bill Gosline, helped shape his

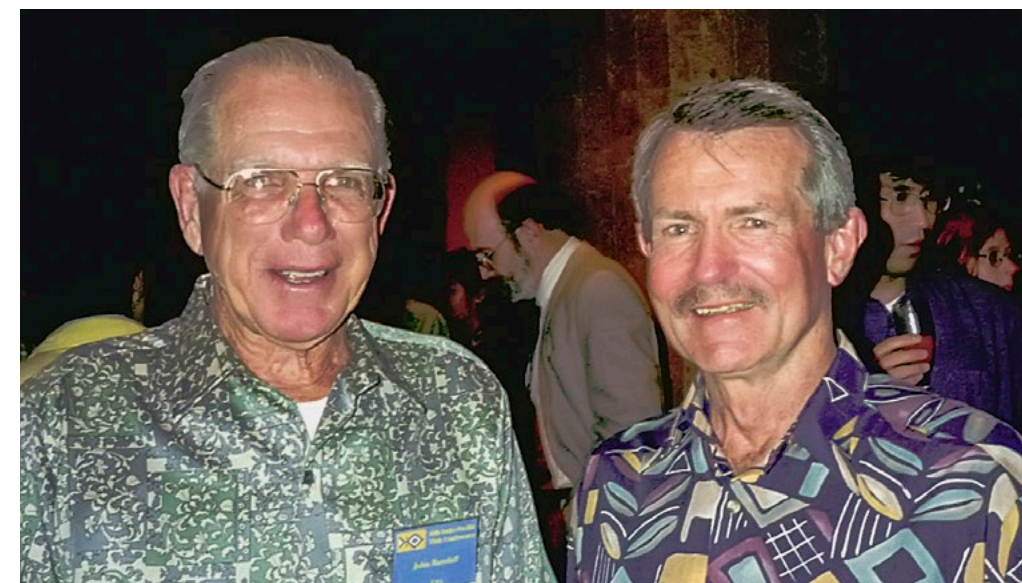
career path. Gosline, an internationally respected expert on fish classification, introduced Gerry to Dr Jack Randall, a former student who had already established himself as a leading authority on the classification of both Atlantic and Indo-Pacific coral reef fishes—all while still in his early 40s.

Randall had returned to Hawaii to take up the role of Curator of Fishes at the Bishop Museum. Under his guidance,



Gerry became a graduate assistant at the museum, where he gained invaluable experience in managing a world-class fish collection and honing his fish identification skills. Field trips with

Randall to the Marshall Islands deepened Gerry's expertise, culminating in a three-year PhD programme studying anemonefishes. He earned his doctorate in zoology in 1971.



Allen and Dr Jack Randall, Ambon, 1975 (left) and Durban, 2001 (above)

Gerry learned to dive in 1966 while studying at the University of Hawaii. Eager to transition from snorkelling to scuba diving, he was constrained by a tight budget and the respon-

sibilities of supporting a young family. He could not afford a formal dive course. Instead, he purchased a second-hand tank and double-hose regulator for US\$50 and, guided by a

Allen at the Smithsonian in 2009 (right); Allen, with dive gear on a horse, and Dr Jack Randall at Easter Island in 1969 (below)



Allen studying specimens on a live-board while on assignment near Bima in Indonesia (below)

Raja Ampat



Allen conducting a post-tsunami survey in Aceh in 2005 (above). The Conservation International team in Indonesia in 2006 (right). Allen is standing centre, with his son Mark left of him and Mark Erdmann right of him.



paperback manual on scuba basics, taught himself to dive.

Despite these rather modest beginnings, he has since logged over 12,000 dives across nearly every tropical sea on the planet. However,

his favourite region remains the Indonesia-New Guinea area because of its tremendously rich coral reef biodiversity.

Coming to Australia

Gerry's journey to Australia

began shortly after he earned his PhD when he accepted a position as a fisheries officer in Micronesia and relocated his young family to Palau. This proved to be a challenging move because, in the early

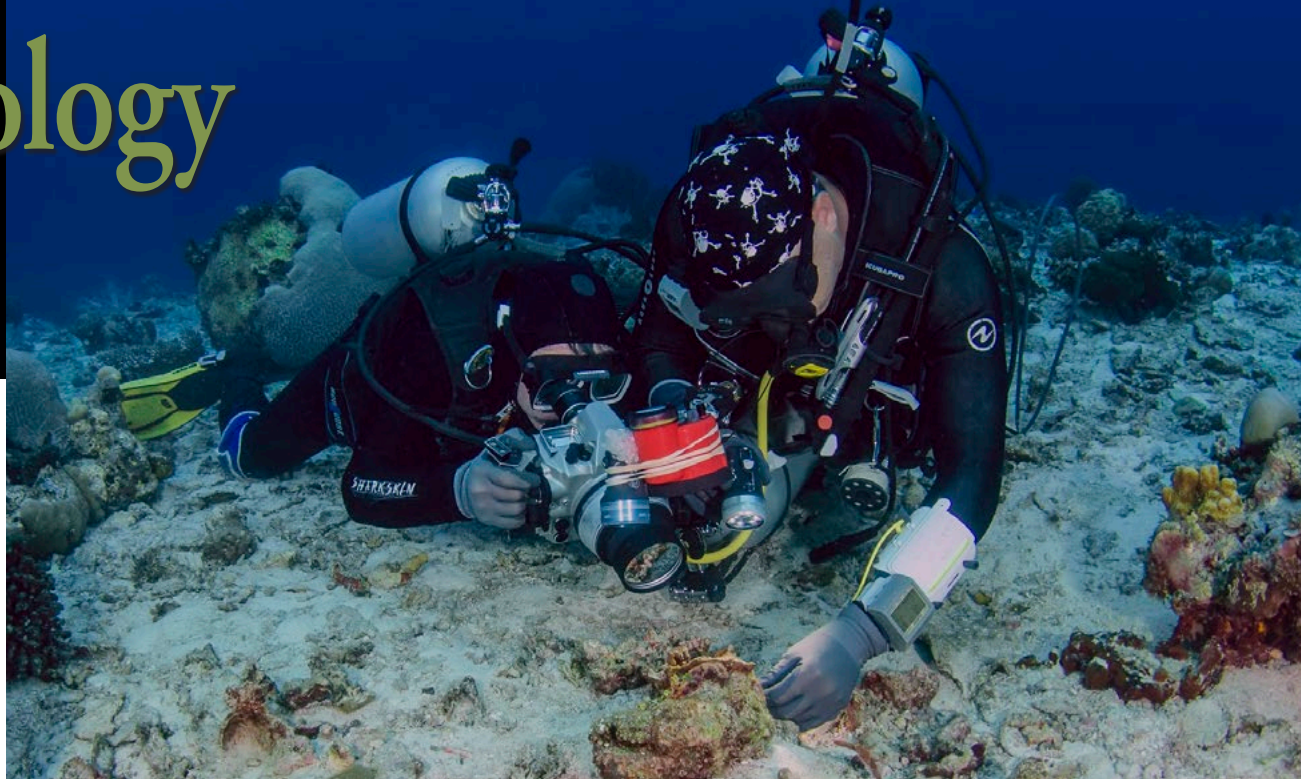
1970s, Palau was still very much a developing country, and the conditions were tough for Gerry, his wife, Connie, and their six-year-old son, Tony.

Relief came when fellow marine scientist Dr Walter Starck

arrived in Palau aboard his well-equipped research vessel, *El Torito*. Starck invited Gerry to join him on an extended research expedition to Australia via Papua New Guinea, and he eagerly seized the opportunity.

The expedition stretched over several months, with *El Torito* finally arriving in Australia in June 1972. Later that year, both Gerry and Connie landed jobs at the Australian Museum in Sydney.

In 1974, Gerry and his fam-



Allen and Erdmann documenting species underwater (right) and in Raja Ampat in 2015 (below)



ily moved to Perth, where he served as Senior Curator of Fishes at the Western Australian Museum for the next 23 years. This period proved to be a pivotal phase in his career, solidifying his reputation as a leading ichthyologist while allowing him to contribute significantly to the study and conservation of fish biodiversity in the Indo-Pacific region.

Conservation International

In 1997, Gerry accepted an offer from CI to become their Science Team Leader for marine conservation surveys. From his base in Perth, he led numerous field expeditions to locations such as Indonesia, Papua New Guinea, the Philippines, Brazil and Madagascar. The primary goal of these trips was to conduct

biological surveys of coral reefs, assessing their potential for designation as marine protected areas.

In 2004, Gerry transitioned from full-time work with CI to operate as a private consultant, which provided him the flexibility to collaborate with other leading conservation organisations such as The Nature Conservancy (TNC) and the World Wildlife Fund (WWF).

Enter Mark Erdmann...

In 2005, following the devastating Boxing Day (Sumatra-Andaman) tsunami of December 2004, Gerry Allen was hired by CI to assess the impact of the disaster on the reef systems around Weh Island in Sumatra, near the earthquake's epicentre. CI also assigned one of its newer recruits, Mark Erdmann, to the Weh Island assessment, pairing him with Gerry. The two clicked immediately, forging a partnership that has spanned two decades and delivered remarkable results.

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Erdmann and Allen documenting species underwater (left) and examining a specimen on the dive boat (below)



Among their most significant achievements was the collection of foundational biodiversity data, which Erdmann used to develop CI's successful conservation strategy for Raja Ampat. The impact of the Allen-Erdmann collaboration on the preservation of Raja Ampat's extraordinary marine biodiversity simply cannot be overstated. Over the years, their combined efforts have provided the critical data that underpins Erdmann's holistic, science-driven approach to conservation—one that has turned

Raja Ampat into a global model for marine biodiversity preservation.

Rapid Assessment Programmes

Gerry brings many things to the Erdmann-Allen tag team—not least of which are his incredible knowledge of fish, a tremendous capacity for hard work and (it has to be said...) a wonderful sense of humour! However, what truly set Gerry apart was his ability to lead an underwater Rapid Assessment Programme (RAP).

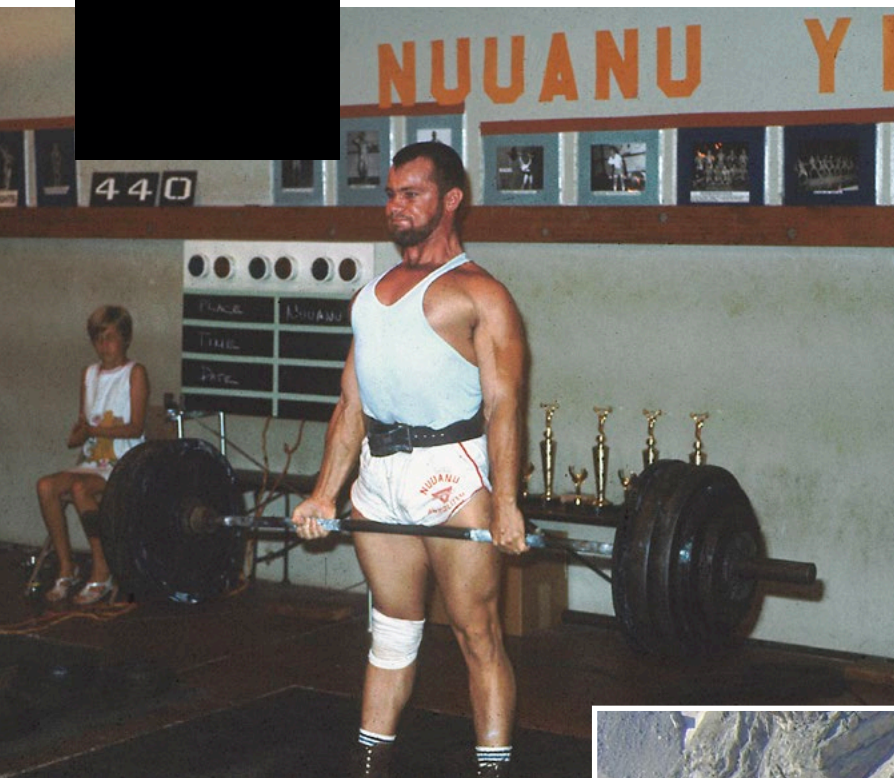
RAP is a methodology conceived

to quickly provide a “first cut” assessment of a little-known area's biological biodiversity and was first deployed for the tropical forests of the Andes, just one step ahead of the bulldozers. The numbers it produces are an indication of the conservation value of a specific area and the ammunition to fight rampant destruction. Or, put another way, if what is there is not quantified, how can the destruction be argued against?

Conducting a rapid assessment on land is complex and requires an

assortment of local and international expertise. These assessments are logistically challenging, expensive to support and can take anywhere between two to eight weeks to complete, depending on the area being surveyed. Underwater, there are the additional complications of tides, currents, air consumption, decompression and the basic fact that in the dynamic and ever-changing environment of a thriving coral reef, counting every individual fish is simply impossible.

What Gerry has done is take the basic concept of the rapid assessment developed by CI in the Andes and make it work underwater by assembling and leading a small group of experts (in fishes, corals, molluscs, etc.) on a chartered liveboard to conduct that first cut analysis. Based on what the experts observed underwater, the collective data can be used to develop a strong, but not absolutely definitive, indication of an area's biodiversity.



How it works: Gerry's CFDI

These days, we would probably call it an algorithm—a way to mathematically extrapolate a credible result from a large amount of disparate data. Gerry's "algorithm" is the Coral Fish Diversity Index (CFDI) and is built on decades of experience in places like the Marshall Islands, Easter Island and Christmas Island, identifying and counting fish, then trying to make sense of what it all means.

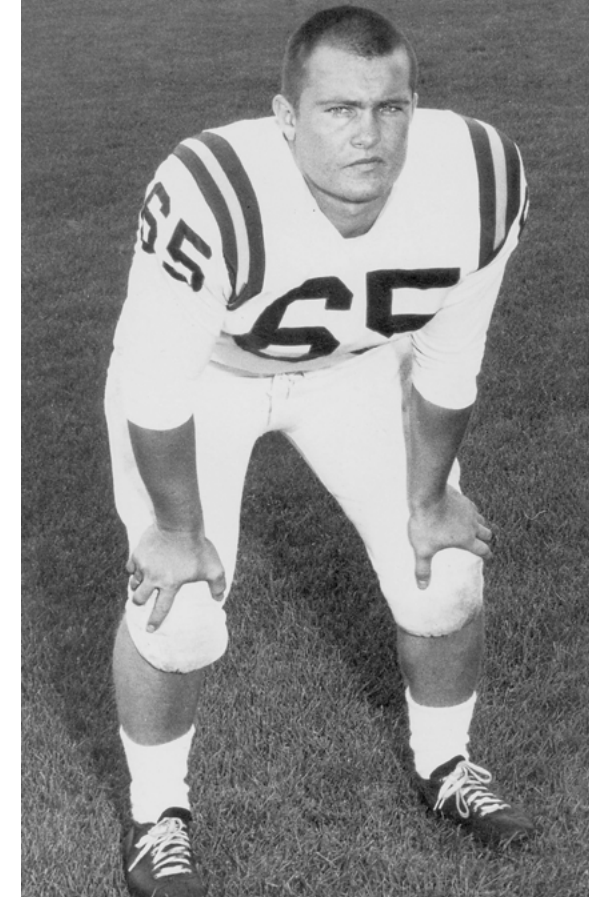
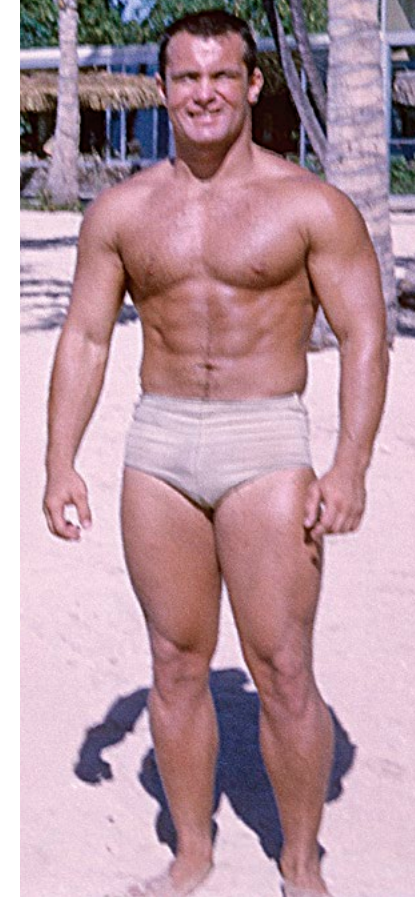
The analysis of all that field-collected data has allowed Gerry to boil things down to this: On a healthy reef, there are six prominent fish families—butterflyfish, angelfish, surgeonfish, damselfish, wrasse and parrotfish—which, if counted over a fixed period of time can, provide a pretty accurate indication of the overall biodi-



versity of that reef.

Often working as a two-man survey team, Allen and Erdmann have developed a strategic approach to max-

imise their coverage of fish species in each location they study. Gerry typically focuses on surveying shallower depths, down to around 40m, while



RIGHT TO LEFT: Allen playing gridiron football in Wyoming in his youth, bodybuilding in Hawaii in 1963, training for a national cycling championship in 1988 and mountaineering in Nepal in 2005 and Grand Teton Peak in Wyoming in 2009

Mark takes on the deeper zones, ranging from 40 to 70m. During his often-lengthy decompression stops, Mark meticulously counts dwarf gobies and other cryptic reef fishes in the shallows, ensuring that no ecological niche goes unnoticed.

The results of their baseline surveys in Raja Ampat, as well as the many others that have followed, are staggering, with over 1,660 species of reef fish and 574 species of coral documented. Additionally, their work has identified more than 70 species of reef fish, corals and crustaceans that are endemic to Raja Ampat and the broader Bird's Head Seascape in the province of West Papua, earning the over-

all area its reputation as the "species factory".

In Raja Ampat in the early 2000s, the "bulldozers" were the cyanide fishers, bomb fishers and shark finners. What Mark Erdmann needed to stop them was ammunition, which Gerry was able to provide with his knowledge, experience and approach to an underwater RAP. ■

Don Silcock is an Australian underwater photographer based on the island of Bali in Indonesia. Find extensive location guides, articles and images on some of the best diving locations in the Indo-Pacific region, as well as "big animal" experiences globally, on his website at: indopacificimages.com.

MUCH MORE THAN A FISH NERD...

It would be very easy to conclude that Gerry Allen is a fish nerd, albeit with a strong sense of humour. But talk to him and the people who have worked with him, and you will quickly realise that he is a very determined and focused individual.

That same focus and determination has been directed at much more than just fish, though. Starting in his teenage years in California, he pursued gridiron (American) football with such passion that he won a place at university on a football scholarship. Then it was weightlifting and bodybuilding in his early 20s, after which came cycling and triathlons, followed by rock climbing and mountaineering, including a full-on Himalayan expedition. Now in his early 80s, he cycles daily for a couple of hours and has taken up bird photography. A truly exceptional individual! ■