April / June 2024

OZDIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

NAVY PIER

SAUDI ARABIA

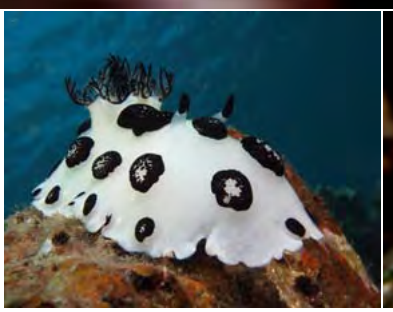
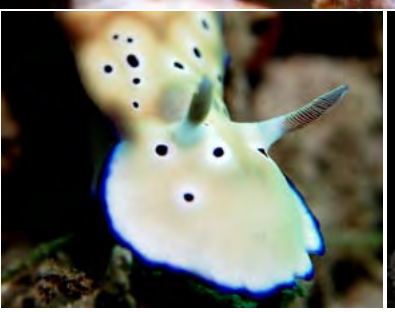
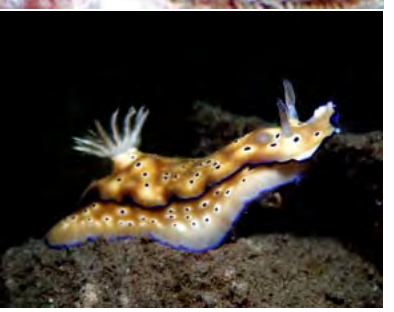
CIRCLE OF LIFE

NITROX

CHUUK LAGOON

STINGRAY CITY

PAPUA NEW GUINEA

April / June 2024 Edition

Editor's Deco

I don't have a lot to say, looking around at the world we live in and everything that is happening.

I want to start the edition with an old Cree Indian saying that stuck in my mind from one of my trips:

Only when the last tree has died, and the last river been poisoned, and the last fish has been caught, will we realise that we cannot eat money.

This magazine is full of interesting stories and articles.

Remember to visit OZDiver's website and ensure that you download your free copy of some of my dive books that I have published, as all the hard copies are sold out.

I decided to provide a free digital version for my readers to download.

If you want to publish your articles or photos in OZDiver magazine, do not hesitate to contact me.

Editor in Chief & Publisher

Johan Boshoff

But seek first the kingdom of God and His righteousness and...

OZ DIVER

Publisher & Editor-in-Chief
Johan Boshoff
editor@ozdiver.com.au

Marketing Coordinator
Bjanca Letinic
info@ozdiver.com.au

Office
+ 61 (0) 44 887 9903
info@ozdiver.com.au

Contributing Editors
Graham Willis
Malcolm Nobbs
Andre Crone
Christopher Bartlett

Primary Photographers
Christopher Bartlett
David Caravias
Graham Willis
Andre Crone

Copy Editors & Proof Readers
Gregg Cocking - Irene Groenewald

Production & Web Master
www.innovativebusiness.com.au

Distribution
World Wide - In Him we trust.


Johan Boshoff


Bjanca Letinic


Amilda Boshoff


Irene Groenewald

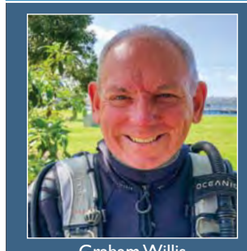
it's FREE and it's online

Download on the App Store

GET IT ON Google play

WWW.OZDIVER.COM.AU

Primary Contributors & Photographers


Graham Willis


Christopher Bartlett


Malcolm Nobbs


Nuno Gomes


Dave Abbott

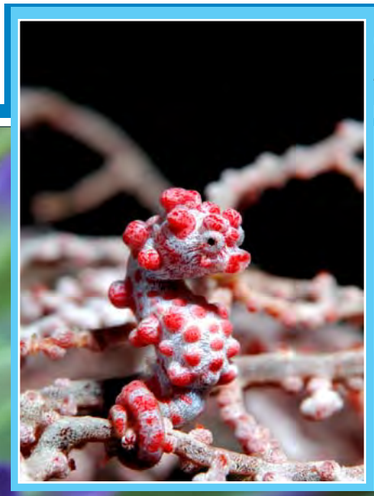

David Caravias


Barry Coleman


Andre Crone

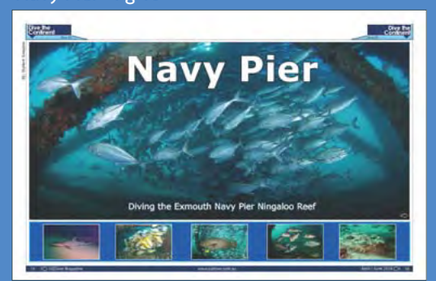

Johan van Zyl

CONTENTS



COVER PHOTO
Johan Boshoff

Navy Pier - Pg 15

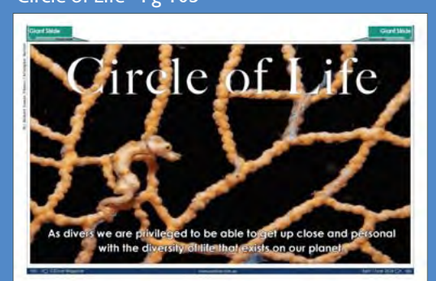


Papua New Guinea - Pg 45

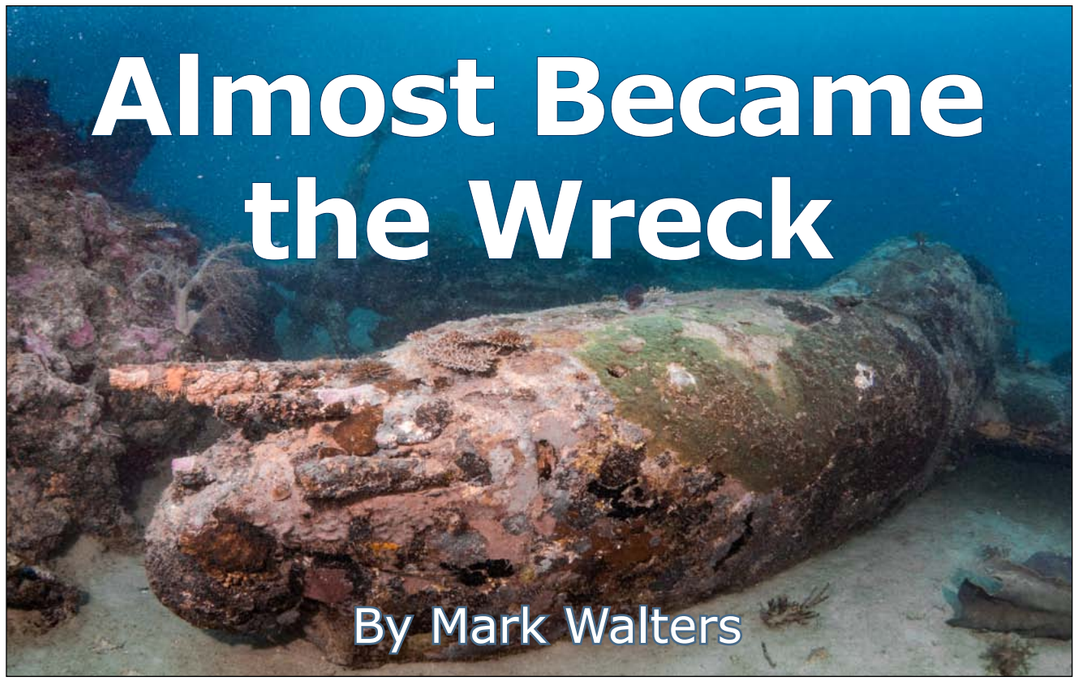
Saudi Arabia - Pg 63

Chuuk Lagoon - Pg 79

Circle of Life - Pg 105



Almost Became the Wreck



By Mark Walters

By: Mark Walters Photos: Christopher Bartlett

My wife and I managed to sneak in a (very expensive) two-tank dive earlier this month. We were excited about getting into water that was warmer and supposedly cleaner than our local dive spot diving back home.

As it turned out, this was to be my 100th dive, in the worst conditions I have ever dived in and a classic example of what not to do when scuba diving.

Our first dive was on the a wreck, which lies on the seabed 33m down. My hired weight belt buckle did not lock closed, so the DM suggested I double the end over & tuck it under to try secure the belt. This seemed to work.

Common sense should have kicked in right there and I should have refused to dive. But instead we rolled over the side of the boat into very poor viz (about 2 to 4m) and followed the DM down the shot line. The group was swimming really fast and my wife was lagging behind me at the back of the group.

In the time it took to look back and check on her, when I looked forward I could no longer see the rest of the group or the shot line. I stopped so that she could catch up, and together we continued the descent to the wreck. We found the wreck shortly thereafter, but the rest of the group was nowhere to be seen.

There was a huge surge around the wreck and we had to hold onto it to avoid being pulled off. At that point I felt my weight belt come loose.

Luckily I was able to grab it and I stuck it through the front clips of my BC. Here I made my second mistake.

I should have aborted the dive at this point, but with the cost of dives on my mind, I was stubbornly going to try get my moneys worth.

So despite the pea-soup viz and the surge, we decided to continue the dive, circling the wreck anti-clockwise. This took us head-on into a much stronger surge, so bad that we had to pull ourselves across the deck of the wreck, which was lying about 30 degrees off vertical.

Around the back of the wreck the surge was not so bad, and we could look into the port holes where there were large dense shoals of goldies just inside the wreck.

My wife then pointed out a massive Brindle Bass (about 2m long, 1m wide) that was circling behind us and checking us out.

Around the next side of the wreck we found the bubbles of rest of the group and signalled to them with torches, eventually they came up to our depth.

At this point I stuck my head into the next port hole, only to encounter some extreme surge coming out of the hole. This did two things. Firstly it blew me off the wreck, and secondly in the process I lost my weight belt.

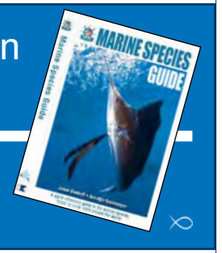
Frantic signals to my wife to swim to me got the desired effect. She quickly cottoned onto what had happened and allowed me to use her as my “weight belt” while dumping our air. To his credit, when I signalled to the DM that I had lost the weight belt, he immediately took his belt off and passed it around my waist. Only then did we abort the dive.

There was one major lesson I came away with: Over-confidence and being obstinate will eventually get you into trouble. There were four other lessons I re-learnt the hard way:

1. If you have an equipment failure before the dive, do not try jury-rig it. Fix it properly or abort the dive.
2. For any equipment failure during the dive, end the dive immediately.
3. If you encounter conditions beyond your training and experience, put your pride in your pocket and end the dive.
4. Check all wreck portholes and openings for surge before sticking your head inside!

WIN

Send your letter to us and win a Marine Life Species Guide



Here is a chance to be heard! If you have anything that you would like to share with OZDiver Magazine and other divers, send an email to Log Book at info@ozdiver.com.au. Remember that letters have more impact when they are short and sweet. We have the right to edit and shorten letters. In every issue, the winning letter will receive a Marine Life Species Guide.

OZ NEWS

OZTek | ADEX AUSTRALIA

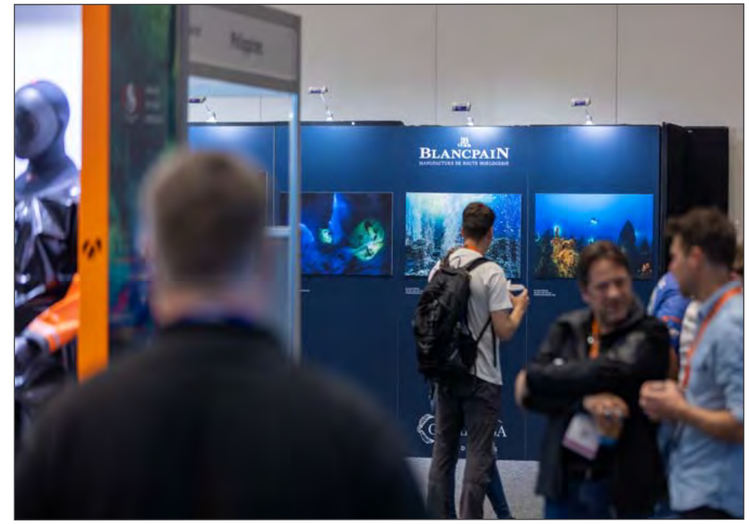
ADVANCED DIVE CONFERENCE

Less than a year to the inaugural ADEX OZTek 2025

Australia's brand new 2025 Recreational Dive and Travel Show, incorporating the best of all diving worlds! Watch out for some truly inspirational projects releasing soon

The combination of ADEX's imaginary, recreational extravaganza with the aspirational adventure of OZTek, will set Australian diving on its head.

Come and have fun, be enriched, join in the marine discovery next March 2025 at the iconic International Convention Centre, Darling Harbour - the heart of Sydney's entertainment arena.



When?
March 15/16, 2025 - ADEX Australia recreational dive and travel show extraordinaire in combo with the iconic OZTek Advanced Diving Conference.

Where?
Sydney International Convention Centre, (ICC) Darling Harbour Hall 2, on the foreshore of Sydney City.

OZTek Advanced Diving Conference showcasing latest developments in diving and innovation created by underwater explorers in their bid to unlock the ocean's secrets.

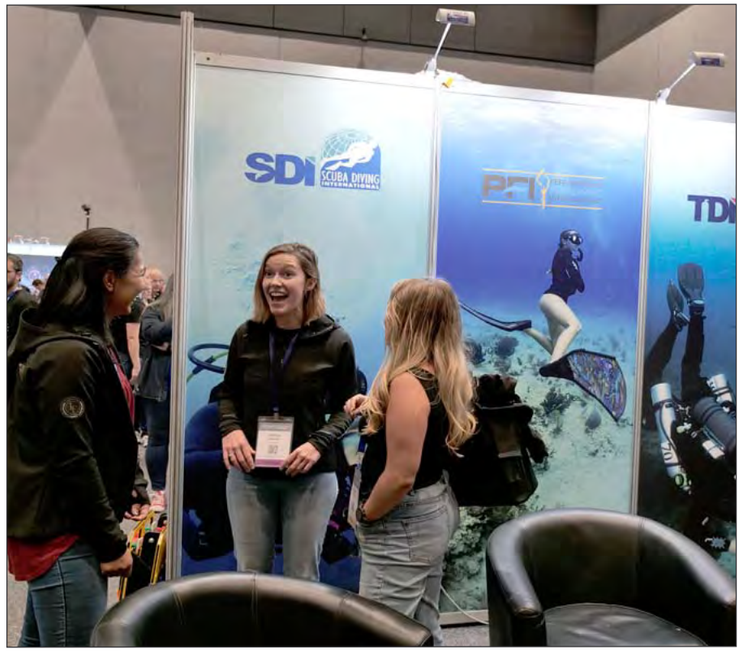
This inspiring 25 year old conference has become interchangeable with diving excitement and adventure. Nothing less than the usual outstanding international cast of speakers - each an acknowledged expert in their respective field of diving expertise. https://oztek.com.au/

ADEX Australia, will open its doors to welcome divers, non-divers, students and families, with its specially curated programmes and fun loving festivities designed to entice and inspire more people to love our oceans.

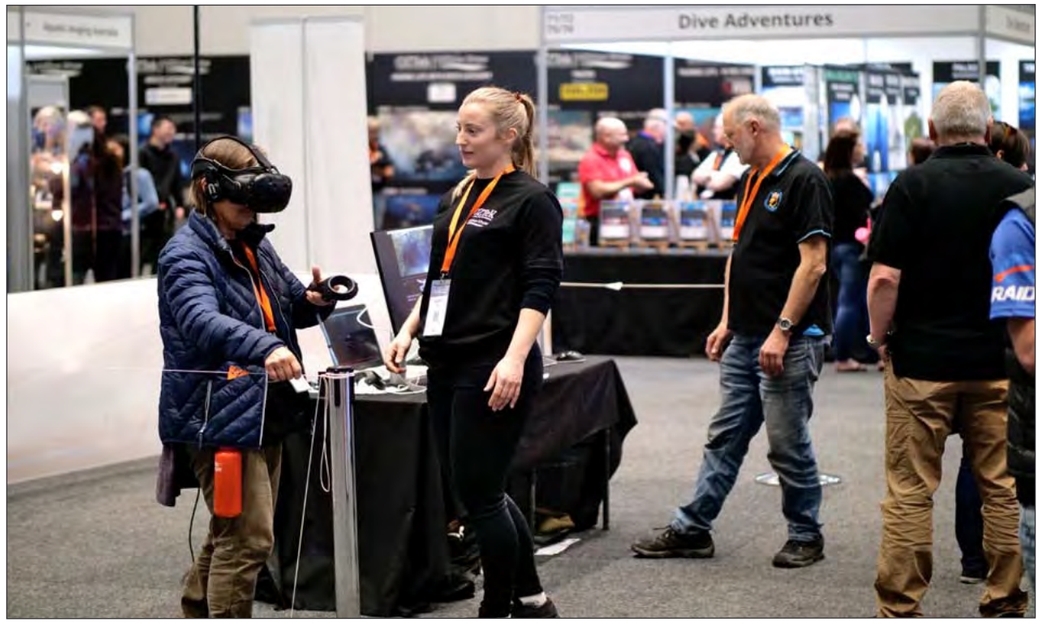
Photography, marine galleries, real and virtual ocean experiences, equipment, jewellery, marine apparel .. it'll all be there.

For an idea of what to expect… imagine ADEX 2023 - with a down under flare https://www.adex.asia/main/wp-content/uploads/2023/06/Marketing-Video-FF_Facebook-1_compressed.mp4

Both shows serve as an invigorating platform for the Australian and global diving community - giving them a voice and providing a space to meet, foster relationships, exchange ideas and receive recognition for their achievements.



adexoztek.com.au - March 2025 - Don't miss it.



Dive Schools / Operators / Organisers / Instructors

Do you have any interesting, newsworthy info to share with the dive industry? If so, we would like to invite you to send us your OZ News section for possible inclusion in the magazine (please note that inclusion is FREE of charge).

Here's what we need:
- Newsworthy stories (promotional material will not be accepted)
- Word limit: 100 words
- Text prepared in a Word document
- Accompanying high-resolution image(s) are welcome (please supply caption and image credit)

Please send to info@ozdiver.com.au

"We are thrilled to be returning in a few months! The reef systems here are the most unspoiled we have seen in our travels around the world and the resort is paradise. We can't wait to see all our friends at Wakatobi." ~ Robert and Barbara Hay

wakatobi

www.wakatobi.com

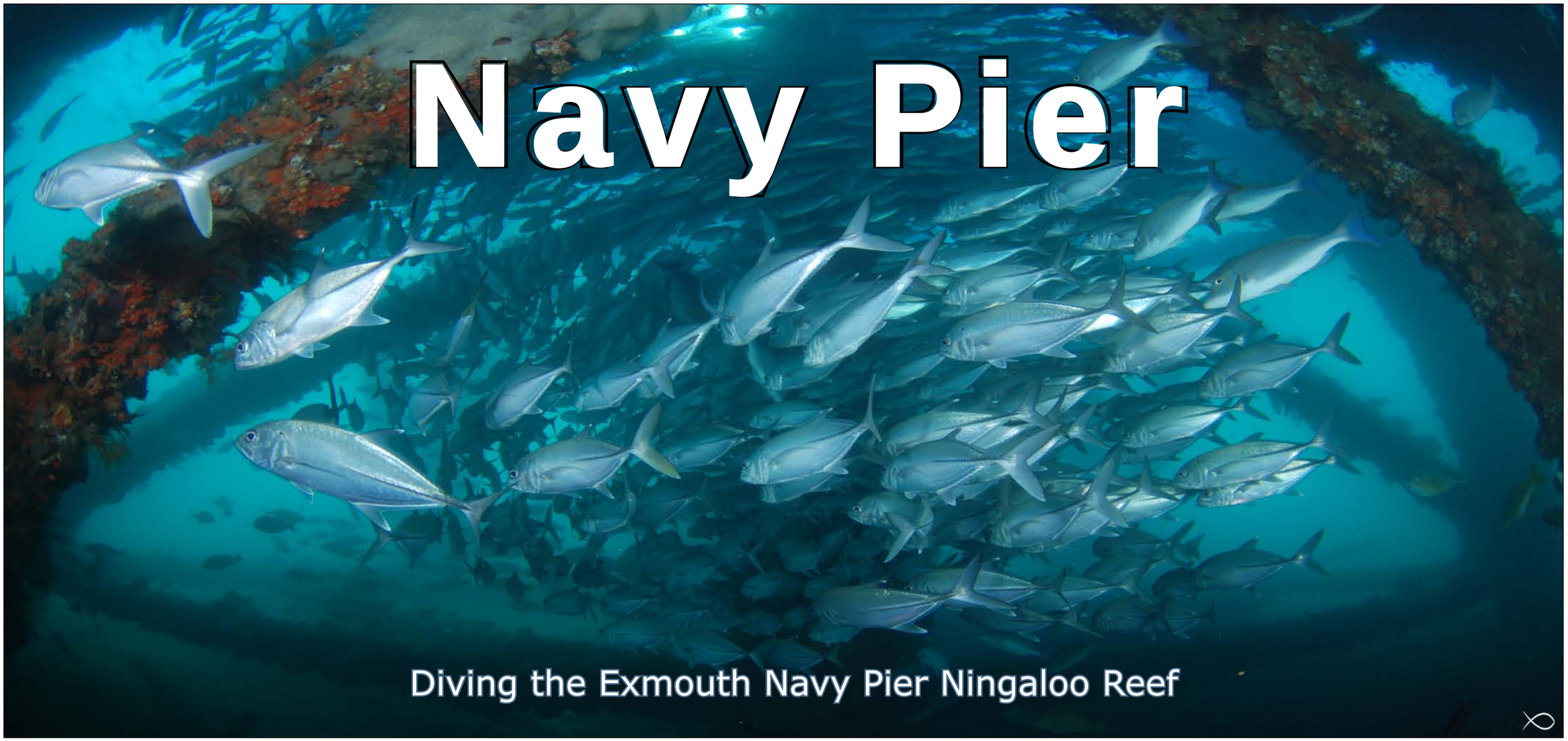
An experience without equal

At Wakatobi, you don't compromise on comfort to get away from it all. Our private air charter brings you directly to this remote island, where the indulgences of a five-star resort and luxury liveaboard await. Our dive team and private guides ensure your underwater experiences will create lasting memories that remain vivid and rewarding long after the visit to Wakatobi is concluded. You need only ask and we will gladly provide any service or facility within our power. This unmatched combination of world-renowned reefs and relaxed luxuries put Wakatobi in a category all its own.

Dive the Continent
Dive OZ

By: Mathew Kempton

Navy Pier



Diving the Exmouth Navy Pier Ningaloo Reef





By: Mathew Kempton

Last year, as part of a two-month road trip from Sydney to Western Australia and back, my wife, Liz, and I took the opportunity to dive both the Exmouth Navy Pier and Ningaloo Reef in W.A.

Both locations have long been on our bucket list of dive places to visit but access, given the areas remoteness, is not something that makes it easy; the road trip provided us with the perfect opportunity.

Exmouth is, essentially, the gateway to Ningaloo and is a great place to base yourself for a few days to not only dive the Navy Pier and Ningaloo reef but to also experience Exmouth Gulf and Cape Range National Park.

It's also the base from which all the Whale shark snorkelling day trips operate. Whilst staying in Exmouth we dived the Navy Pier twice before spending four days out on the reef aboard the catamaran Shore Thing.

Arguably rated among the world's top ten land-based dive sites, the Exmouth Navy Pier is home to over 200 fish species, from giant Queensland gropers lurking around the Pier pylons, to spiralling schools of big-eye trevally and barracuda, to a kaleidoscope of smaller reef fish including the smaller stuff like nudibranchs, shrimp, flatworms, etc.

In the 1960's, under the threat of an escalating Cold War, the Australian and US governments agreed to build an elaborate communications network to assist military intelligence.

The Harold E. Holt Communications Station opened in 1967 in Exmouth with 13 transmitter towers sending messages across the whole Indian Ocean and Western Pacific down to 50m underwater.

Believe it or not, due to the American influence, cars in Exmouth drove on the right-hand side of the road, US dollars could be used in shops and a ten pin bowling alley was central to the town.

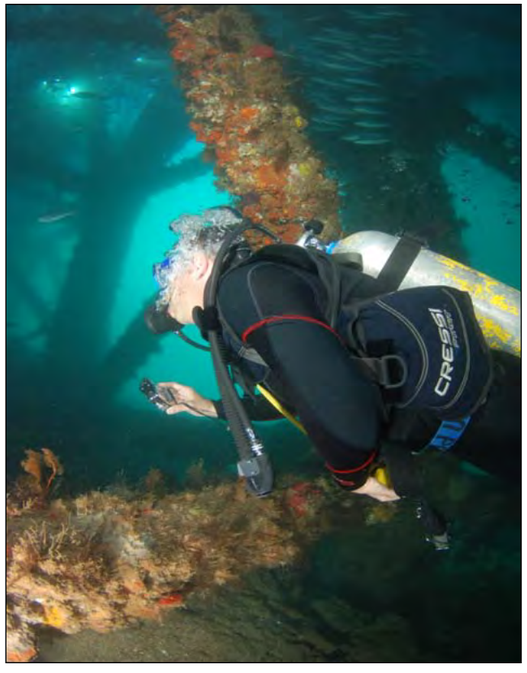
Located 14km from Exmouth, the Pier was originally constructed to help transport resources used to build the town and naval base.

Public access to the pier was totally prohibited for 50 years as it formed part of the US naval base.

In hindsight, this closure period served both the sea and divers well — it is now regarded as one of the world's top diving sites. Today the Pier is primarily used by divers and the odd supply ship that brings in diesel fuel to run the generators that power the Communications Station.

The Pier and surrounding land and sea is still a restricted area; permits are required to access it – including for divers.

The Pier itself is a basic 'T' structure around 110 metres long, reaches a depth of 15 metres and, as with any jetty dive, underwater navigation is easy. Assuming the current is mild to non-existent it really is an easy dive



Dive the Continent
Dive OZ

WE WANT YOU

BECOME AN ICON. BECOME A PRO.

- MAKE A CAREER OUT OF DIVING AND START TEACHING
- FLEXIBILITY THROUGH WORLDWIDE CAREER OPPORTUNITIES
- STATE OF THE ART EDUCATION SYSTEM WITH 24/7 SERVICES

SCAN HERE TO LEAD

SSI®

MYSSI APP: iOS |

Image © Mares/Bob Bobisavljevic, iStock/merve zengin

By: Mathew Kempton

for all levels of diver.

There is only one dive operation based in Exmouth able to access the Pier.

They pick you up from your accommodation, provide you with the necessary dive gear, fully brief (and I mean fully brief) on the whole Pier diving process (it is quite involved), arrange permits, drive you to the Pier as well as escorting you through the communication station check points, guide the dive, provide snacks and return you to your accommodation.

The dive itself is accessed via a giant step which, depending on the tide, can be as high as 3m, exit is via a ladder.

The Pier can only be dived at slack tide so it's normally only a single dive; having said that we were able to dive it on the slack low tide in the late afternoon and slack high tide first thing the next morning.

Descending beneath the surface, you enter a world teeming with life.

The pylons of the Pier serve as an underwater oasis, providing a perfect substrate for corals, sponges, and anemones to flourish. These vibrant organisms create a stunning backdrop against the otherwise industrial setting of the Pier.

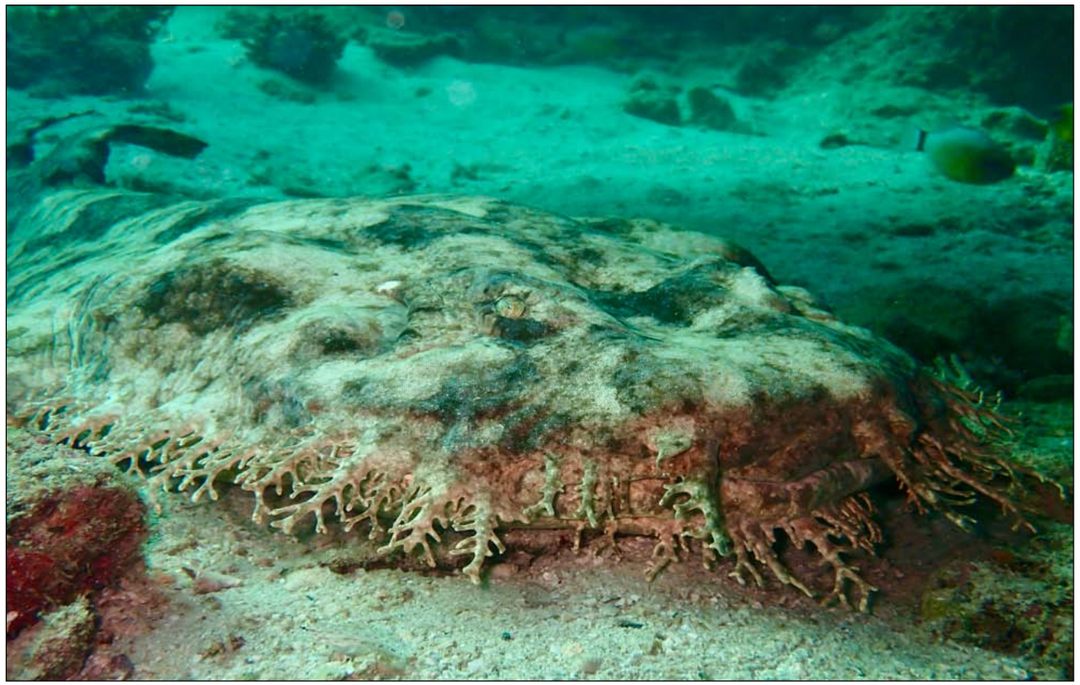
As you explore the Pier's pylons, you'll notice an incredible diversity of colours and textures let alone the marine life on the pylons and moving around you.

Although the visibility is not extraordinary, usually around 10m at best, the life under the Pier is nothing short of breathtaking.

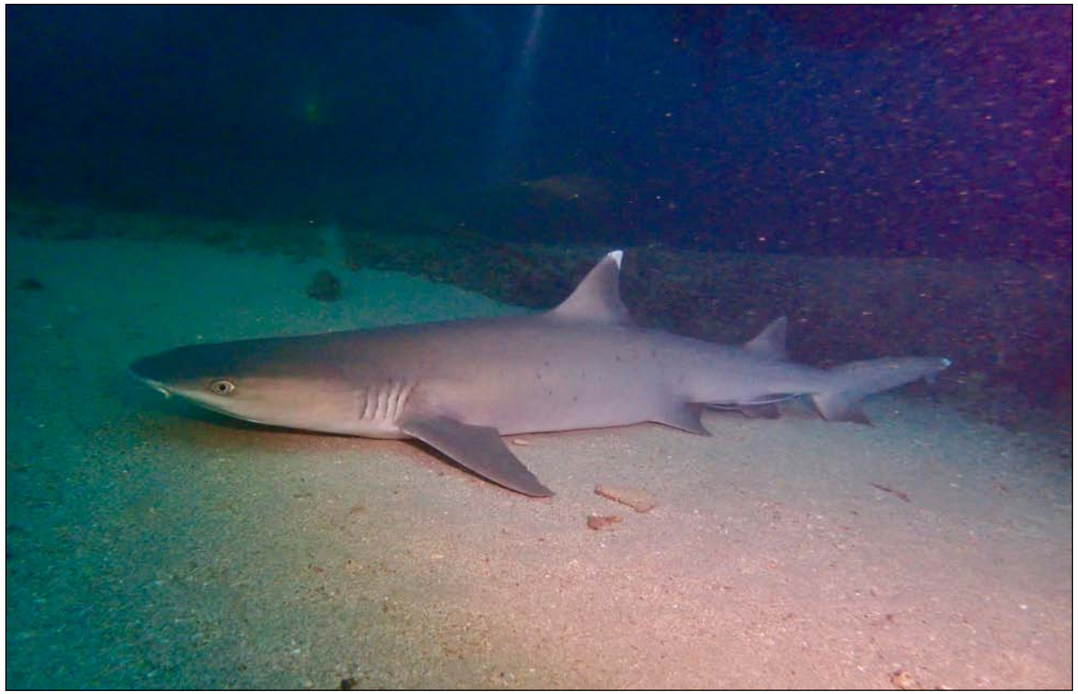
Schools of fish dance around you; trevallies, surgeonfish, batfish, and a plethora of reef dwellers create a vibrant tapestry of movement and life.

Early in the dive we became aware of a large presence hanging over our shoulder – the "BFG" or Big Friendly Grouper has been resident under the Pier for decades and at 2.5m long and 350kg is an imposing figure with an

Dive the Continent
Dive OZ



By: Mathew Kempton



Picture a small private island, with white sandy beaches, tall palm trees, beautiful tropical gardens, traditionally-built, comfortable bungalows, magnificent sunsets and fine food.

Surrounding this little hideaway are some of the most healthy & colourful reefs and best fish life this planet has to offer...

www.lissenung.com

By: Mathew Kempton

inquisitive nature. We thought he'd left us for him only to appear later in the dive hovering above us to see what we were up to.

He's not the only grouper down there, there are quite a few, but he is the biggest! The Pier's structure also serves as a nursery for juvenile fish, making it a captivating spot to observe the beginning stages of marine life.

On our dives we saw quite a few white tipped reef sharks, a couple of wobbegong sharks, numerous octopuses, a large loggerhead turtle, plenty of flatworms and nudibranchs, a number of moray eels and a couple of eagle rays as well.

As you conclude your dive and ascend back to the surface, you can't help but feel a sense of awe at the hidden world you have just witnessed.

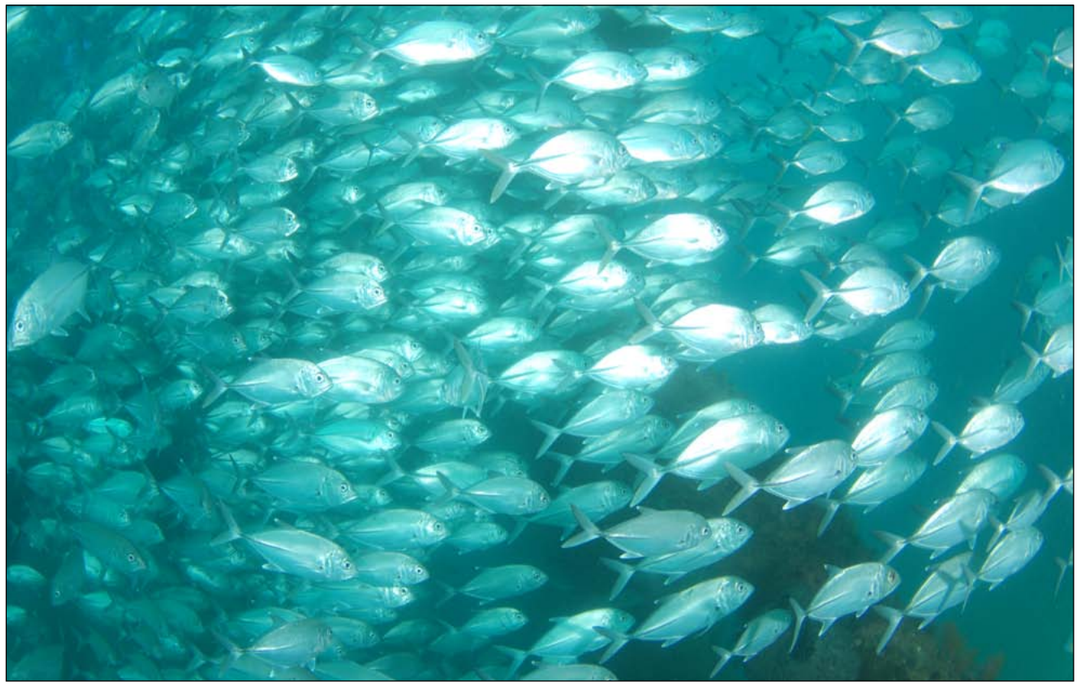
The Pier really does offer divers a glimpse into a thriving marine ecosystem, where human engineering and the forces of nature coexist.

If you are in the area scuba diving the Exmouth Navy Pier really is a must. It's a dive that combines the thrill of exploration with the opportunity to witness the wonders of a large variety of marine life up close.

A day or so after experiencing the Exmouth Navy Pier we boarded our home for the next few nights – the catamaran that services divers wanting to venture out onto Ningaloo reef.

The catamaran offers an exceptional diving experience, combining comfort, convenience, and breathtaking underwater adventures on Ningaloo Reef. This spacious and well-equipped vessel is designed to cater to the needs of divers, ensuring a seamless and unforgettable journey. Having said that, you don't need to be a diver to be on the cat; of the eight guests on board six were snorkellers.

The catamaran boasts ample deck space, both shaded and sunny, where you can relax, soak up the sun, and take in the panoramic views of the



By: Mathew Kempton

surrounding reef and shoreline. The on-board facilities include comfortable seating areas, a fully equipped dive deck, and spacious cabins (some with ensuites), for rest and relaxation during the cruise.

Ningaloo Reef, situated along Australia's western coast, is a true underwater paradise. Its clear waters, vibrant coral gardens, and diverse marine life make it a dream destination for scuba diving enthusiasts. The Reef, a UNESCO World Heritage Site, stretches over 300 kilometres, offering an abundance of dive sites to explore. What makes Ningaloo distinct from the Great Barrier Reef is that it's accessible from the shoreline for snorkellers but to get to the more interesting and remote dive sites a boat is really required.

Ningaloo Reef is home to a rich diversity of marine life. As you plunge into the water, you'll be greeted by colourful coral gardens teeming with an array of fish species. Parrotfish, angelfish, butterflyfish, and clownfish dazzle with their vibrant colours, while schools of trevallies and batfish glide through the water in harmony.

The black sailfin catfish, endemic to Ningaloo, is often found in and under coral outcrops and crevices. The coral formations are a sight to behold, with their intricate structures providing shelter for a myriad of marine organisms.

Venturing into the depths, you'll discover hidden underwater canyons, where gorgonian fans and sea whips sway with the current. These canyons serve as havens for larger marine creatures. You'll see grey, black and white tipped reef sharks patrolling their territories, eagle rays gliding over the reef and, if you're lucky, a manta ray or two or even one of the larger, less common, species of shark. On one dive we were fortunate to see an ornate eagle ray; evidently it was only the 61st recording of one at Ningaloo reef.

Of the dives we did on Ningaloo, for us, Ashos Gap was certainly the standout site. Like much of the reef, the topography at this site is a collection of coral structures forming gullies, canyons and swim throughs. The action at this site is centred around a large coral bommie that serves as a cleaning station – for sharks. It's suitable for both snorkellers and divers. Divers can base themselves on the rocks around the bommie and get ready for the action.

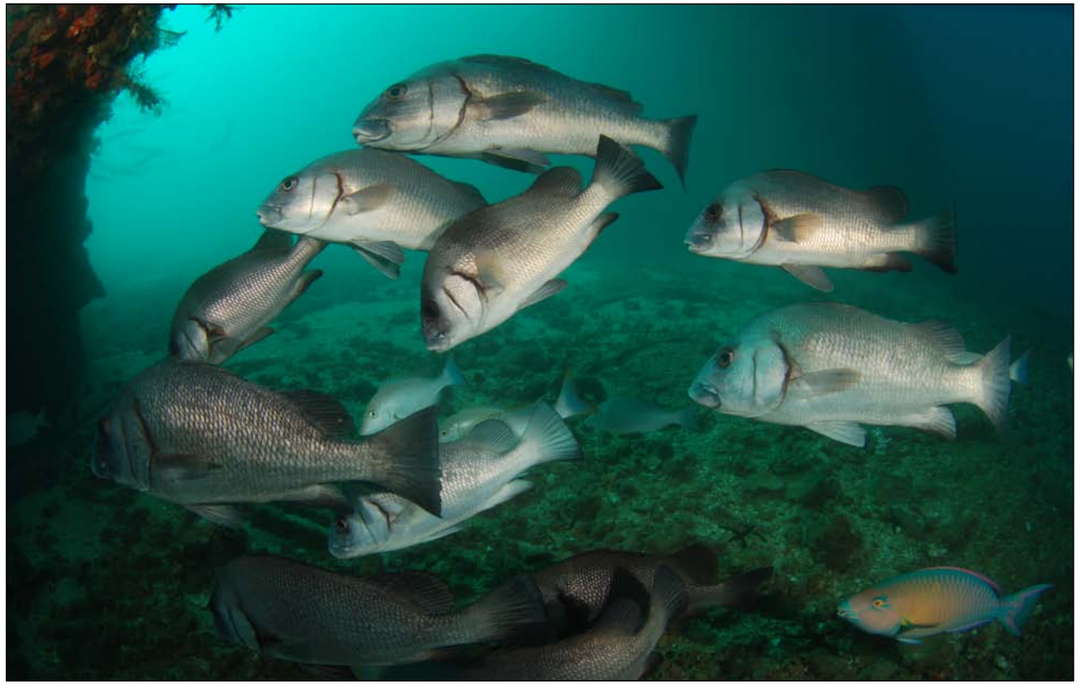
Grey reef sharks swim up and over the bommie facing into the current; at this point they hover in the current at about 45 degrees for 10 seconds or so with their mouths open. The cleaning fish come up from the bommie and the sharks do a sort of shimmy as the fish do their work cleaning parasites, dead skin, etc from the shark's mouth and body.

It's the most amazing behaviour to observe; it's not limited to sharks either. While we were there a large loggerhead turtle came and plonked itself in the middle of the bommie. It sat there for about 10 minutes letting the cleaner fish get to it whilst about ten grey reef sharks cycled through getting their spa work done one and two at a time. Amazing!

Back on board the catamaran, you can relax and share your diving experiences with fellow adventurers. The crew will take care of your needs, providing delicious meals and refreshing beverages to refuel and re-energize you for the next dive. Whether you're a seasoned diver or new to the underwater world, scuba diving Ningaloo promises an unforgettable journey. Immerse yourself in the beauty of Ningaloo Reef, explore its diverse ecosystems, and encounter some of the most incredible marine creatures on the planet.

The combination of comfortable accommodation, attentive crew, and exceptional diving opportunities makes a liveaboard vessel a great choice for an extraordinary diving adventure on Ningaloo Reef.

Dive the Continent
Dive OZ



Solomon Is. Diving

Solomon Is.

visitsolomons.com.sb

Sea Anemones

By: Christo van Jaarsveld

What's in a name?
Cnidaria - knide in Greek = nettle
Anthozoa - anthos in Greek = flower and zoon in Greek = animal
Zoantharia - Zoon in Greek = animal and anthos = flower
Actiniaria - aktis in Greek = ray and aria in Latin = like

Sea anemones are animals that resemble beautiful underwater flowers. Their petal-like tentacles range in colour from white, yellow and orange to red and deep purple.

The slow, graceful movements of their tentacles are deceptive and anemones are in fact voracious carnivores that feed on marine creatures. Some species are cannibals and will even devour smaller anemones. They do not suddenly lash out and seize their prey - their action is far subtler. The tentacles are equipped with cells that sting and paralyse the prey, be it a fish, shrimp, crab or any other creature wandering past. When a tentacle brushes against the prey, the cells release the sting and adjacent tentacles fold over to hold the creature as well as sting it further. The victim is then moved around and pushed towards the mouth, which lies at the centre of the tentacles.

The sting of anemones found along the coast is not harmful to humans. If you place your finger in the centre of an open anemone, the tentacles react as if they have a large meal in their grasp and close inwards, attempting to push your finger into the mouth.

This pulling sensation can be a little unnerving and as you extract your finger, the friction of the tentacles feels much like the rough lick of a cat's tongue.

Weird and Wonders
Marine Life Facts

Most anemones have a slit-shaped mouth rather than a round one and are capable of swallowing fairly large creatures. Their throats secrete a slime that allows the food to slide down into the hollow interior, which is the stomach. Down each side of the throat is a hairy groove. These hairs pump water into the anemone's interior, where it breathes by extracting oxygen from the water. The oxygen requirement is relatively small as the anemone is almost motionless and does not use much energy.

When exposed to bright light or when left high and dry after the tide has gone out, the anemone will fold its tentacles inwards into its mouth and form a tight ball. Since they are not plants, the anemones don't have roots and cling to rocks with the aid of muscles and sticky mucus. They stand on a fleshy foot and are capable of moving around, almost like a snail. Some anemones have been spotted "walking" with the assistance of their tentacles.

Marine aquarists often obtain anemones and position them in aesthetically pleasing positions in their tanks, only to find that the animals have walked up the glass and positioned themselves in the stream of air bubbles coming from the filter. Clown fish are often kept in the same tank as anemones as the two live together in nature and these tropical fish are not harmed by the stinging tentacles. Anemones have many enemies, such as sea-slugs (nudibranchs) and certain fish and crab species which ignore the stinging tentacles and find that anemone flesh makes for a tasty meal.

These creatures reproduce in a variety of ways. They can slowly split from top to bottom, or split in half at the waist. Before this splitting motion takes place, a new set of tentacles grows around the bottom half just below the breaking point. Some species produce little buds at their base and these baby anemones break off from the adult and live on their own.

Sea anemones can live for many years, and in some aquariums they have been recorded to live for almost a hundred years. Many species live alone, while others grow in colonies. These anemone colonies are called zoanthids and are commonly found covering the rocks on the coast.

By: Niel Swart

Shady Characters

It's all smoke and mirrors as marine organisms use their colouring to display and perceive visual signals or to camouflage them from predators.

All oceanic creatures feature specific adaptations geared to provide them with a survival advantage, and colouration is no exception.

Marine organisms generally sport colour schemes that are specifically suited to the light environment of their local habitat. Reef fish which live near the surface take advantage of the plentiful light at shallow depths, and display a range of colours in order to signal to each other, safe in the knowledge that they can 'escape' if they are spotted by a predator.

Certain groups of fish adopt colour schemes that warn that they are poisonous, dangerous or simply taste bad, while in other fish, changes in the colouration of an individual can be indicative of the fish's reproductive condition or even of its mood. Another reason that reef fish display coloured lines, stripes and spots is that it helps to break up their outline – an effect known as disruptive colouration. In the open ocean however, there is little hiding place, and animals tend to take the more cautious approach of disappearing by 'blending in with the environment'. The method and colouring which allows an animal to 'blend in' with the environment, depends on the depth at which the animal lives.

Those at the surface (e.g. bluebottles) tend to adopt a blue colouring so as to match the upward scattering of blue light from the ocean, and thus appear invisible to predators from above (like birds).

Being transparent is an effective form of disguise for many types of plankton (like jellyfish), but is not practical for larger organisms. Many of these larger animals, particularly fish, have flattened bodies which they cover with a reflective material. In doing so they simulate a 'vertical mirror', which reflects the surrounding ocean colour and effectively makes the animal invisible from the side (known as silvering – e.g. hatchet fish).

Weird and Wonders
Ocean Facts

It is also possible for these animals to 'tilt' their bodies and therefore their 'mirrors', creating a flash of light which can be used to distract predators or to communicate with other members of the school (like sardines). Many open-ocean fish and shallow-water predators use a colour scheme known as counter-shading, where the belly of the organism is silver or white, while its back is dark.

When viewed from below, the white belly of the animal blends in with the highly illuminated surface waters, and when viewed from above the dark back of the animal matches the black depths – effectively providing camouflage from both angles (think Great White Shark). Similarly deep-water organisms employ all-round brown, black, purple or scarlet colouration, in order to blend in with the deep-water, low-light environment. Some organisms, however, live at intermediate depths, or change the depth at which they live at different stages in their life cycle, and therefore either adopt a compromise of ideal colour schemes, or undergo changes in their appearance through the stages of development.

Bioluminescence, the process by which organisms produce their own light, is common in marine organisms and is most often achieved by a chemical reaction which occurs in a specialised organ named a 'photophore'. Bioluminescence occurs in animals living at all depths and is often blue/green in colour since these are the least absorbed colours in water and therefore the most efficient.

The reasons for using bioluminescence range from a means of passive camouflage (i.e. counterillumination – where the light from the organism matches the downward penetrating natural light in order to eliminate its silhouette) to forms of active defence, such as flashes of light in the case of some phytoplankton and fish, to squirting clouds of luminescence by certain shrimps, squid, fish and worms. Bioluminescence is also effectively used for sexual displays in certain organisms (like fireworms and lantern fish) and may even be used as a hunting aid in the form of a 'lure' or 'flashlight' in the case of anglerfish.

On the whole, marine organisms have developed a suite of specialised adaptations which allow them to effectively display and perceive visual signals, as well to camouflage themselves so effectively that they disappear into their oceanic surrounds.

DO YOU WANT TO CHANGE YOUR LIFE?

SDI IS THE WAY

JOIN US AT >>>> SCAN HERE

The Decimation of the Great White Shark

By: Hermien Roelvert

The great white shark has survived an array of disasters during the last years, including several ice ages, which saw the extinction of many animals.

Yet it is unlikely to survive its biggest threat to date... us. Some shark specialists believe they could be wiped out within the next decade.

With the alarming decline in their numbers, this might be the last chance for people to see these incredible creatures without having to visit a museum.

Since the great white shark was listed on CITES Appendix II at the 13th meeting of the Conference of Parties of CITES in Bangkok, 2004, we have still seen a massive drop in their numbers.

Through research conducted by White Shark Africa (UK) students aboard vessels, we have seen the average number of individual great white shark sightings per boat trip drop from 4,56 to 2,75 and another recent study has discovered that only 219 great white sharks now exist in the waters off California.

The World Wildlife Fund (WWF) seem to have made an accurate prediction in September 2004 when they listed the great white shark among the ten species of animals and trees it believes will most likely become extinct.

hark finning, trophy hunting, the fishing trade, beach protection nets and ocean pollution all play a part in the decimation of these top level predators. Females do not reach reproductive age until at least 15 years of age, have a low reproductive rate with very small litters and therefore cannot reproduce at the same rate as their decline.

Despite their ferocious portrayal, the great white shark is a sociable character, often gentle and inquisitive, and even playful at times.

They contribute massively to our ecosystems, and with their deteriorating numbers we will see a direct impact on the entire planet.

These top predators keep the marine ecosystems in balance with the prey they eat, and if it is not held in check, the food source for several species of marine life disappears, including microorganisms which are essential for sustaining life.

mares®

STAY CONNECTED

BECOME ONE WITH THE OCEAN

SXS 62X

IMMERSE YOURSELF IN A FANTASTIC JOURNEY THROUGH THE UNDERWATER WORLD, WITH A LIGHTWEIGHT REGULATOR THAT YOU WILL BARELY NOTICE IS THERE, EXCEPT FOR ITS OUTSTANDING BREATHING COMFORT! THANKS TO ITS INNOVATIVE DESIGN, NOT A SINGLE BUBBLE WILL DISTURB YOUR EXPERIENCE.

SCAN FOR MORE INFO

GLOBAL NEWS

Prepared and Aware

Preparedness is essential in diving — with the right plans, protocols and mindset, both above and below the water, you'll be set to take on just about any challenge.

Expect the Expected … and the Unexpected

The more you know about your upcoming dives, the better off you'll be. Look at recent reports and forecasts about the site's weather and sea state, and ask yourself: Are your current skills and fitness up to the task?

Currents, temperature and visibility change daily, so it's important to know what you should be prepared for. A change in one or more of these variables could have a significant impact on your experience of the dive.

Limit Distractions

While multitasking can be an easy way to get tasks done quickly, it can come at the expense of doing things well. Execution of certain tasks requires our full attention to ensure they get done properly.

It's also important to limit distractions and prioritise tasks based on their importance. A great example would be avoiding assembling gear during a dive briefing. While it may be easy to zone out and organise your gear, give the dive operator your full attention and set up your gear later — there will be time.

Make a List

While they may sound like a nuisance, checklists not only ensure tasks are completed but also serve as a form of accountability. When completed before dives, checklists have been shown to reduce errors, improve performance and enhance safety — for both divers and dive operators.

Standard predive procedures include review of equipment, the dive plan and responses to emergency events. You're likely familiar with the predive safety check memory-aid BWRAF, but you may not know SEABAG, another useful reminder of some important predive considerations.

BWRAF: BCD, weights, releases, air and final OK

SEABAG: Site survey (entry, exit, hazards, etc.), emergency (preparation, equipment, etc.), activity (planned dive), buoyancy, air and gear and go Predive checks and on-site checks are important for reducing incidents and ensuring safe and fun dives.

Drill Your Skills

Are you ready to take action in the event of an emergency?

As a diver, you understand the risks that exist, but knowing is just part of the battle.

From implementing the right first aid skills to simply keeping calm, how you respond in an emergency is imperative.

Make sure you practice your skills routinely and refresh your first aid, CPR, and oxygen administration skills every couple of years.

EAPs

Emergency action plans (EAPs) are essential risk mitigation tools used by dive operators and professionals — but they are useful for recreational divers, too.

While there is no one-size-fits-all format for an EAP, a personal EAP should consist of details about how to handle both medical and non-medical events.

Actions taken may vary depending on the event, the location, and the individual — some situations may warrant calling for help first, while others may involve immediate provision of first aid.

The EAP should include emergency equipment such as first aid kits, oxygen units, means of communication (and along with them, information such as phone numbers of local hospitals).

An EAP should be realistic enough that you can follow it, and it should be able to be adapted based on your location and circumstances.

Use Your Voice

Your voice is a powerful tool in keeping you, your dive buddy and everyone in your group safe throughout the dive.

If at any point you feel uncomfortable with or underprepared for the dive, call it off.

DAN® WORLD

While you may feel bad about cancelling the fun, there is empowerment to be found in sticking up for yourself.

Beyond the dive, if you see something concerning about your dive operator, the conditions, how your buddy assembles gear, or anything else, say something.

Speak up about your concerns. Shedding light on a potential risk could prevent a bad outcome.

Keep Learning

Knowledge is power, and it's important to stay proficient and skilled.

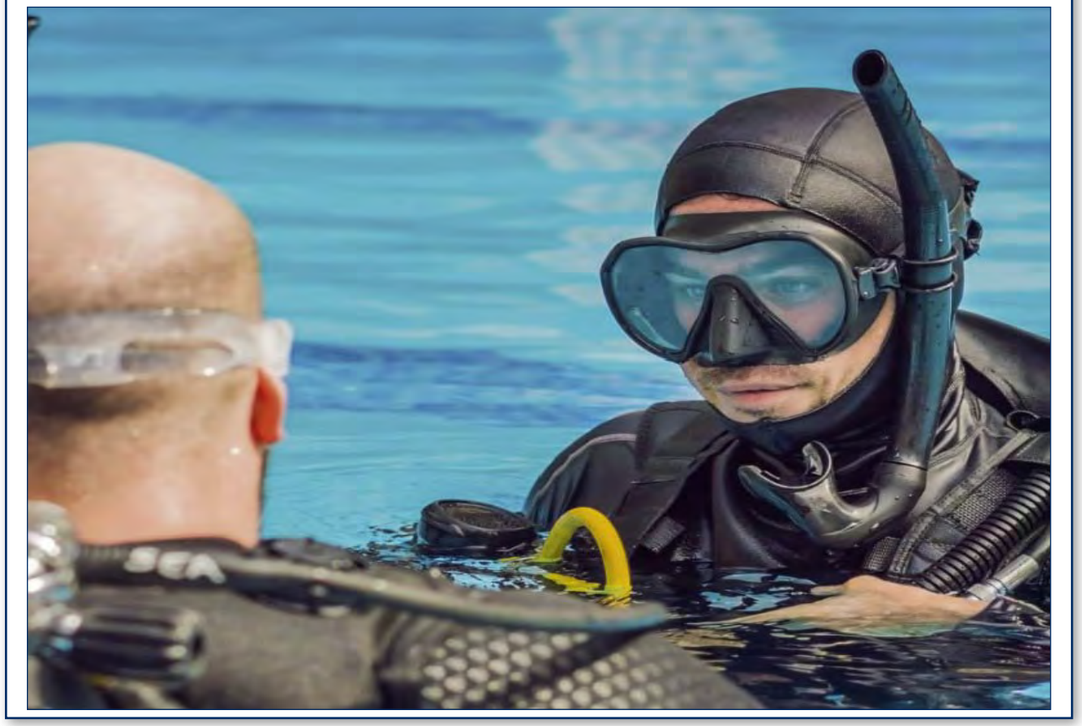
Whether you're interested in pursuing an advanced certification or just want to keep the rust at bay, find a course through your training agency.

And tune in to information about interesting topics, whether on scuba forums, in your favourite dive magazines or in webinars.

Worth the Work
All these precautions and protocols may sound cumbersome, but it's amazing how quickly they can become second nature.

And when safety is squared away, enjoyment is optimised.

World.DAN.org

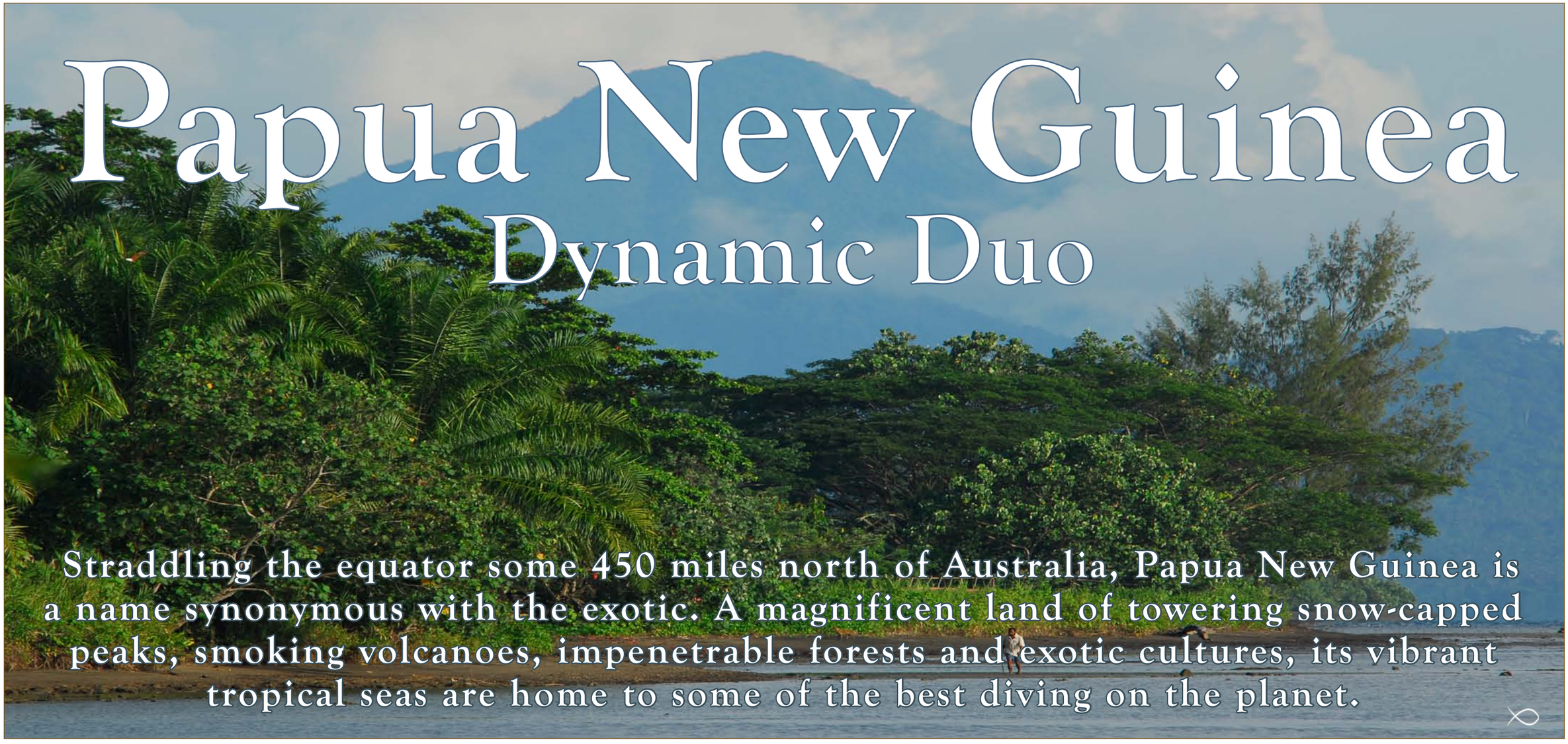


Dive the World
Papua New Guinea

By: Scott Bennett

Papua New Guinea

Dynamic Duo



Straddling the equator some 450 miles north of Australia, Papua New Guinea is a name synonymous with the exotic. A magnificent land of towering snow-capped peaks, smoking volcanoes, impenetrable forests and exotic cultures, its vibrant tropical seas are home to some of the best diving on the planet.

By: Scott Bennett

The allure of this island nation has always beckoned, and as I was going to be in North Queensland, the opportunity was too good to pass up. With my time somewhat limited, I'd arranged to visit two of the country's most famous dive resorts: The Walindi Plantation Resort located on the island of New Britain and Loloata, a mere stone's throw from Port Moresby's International Airport.

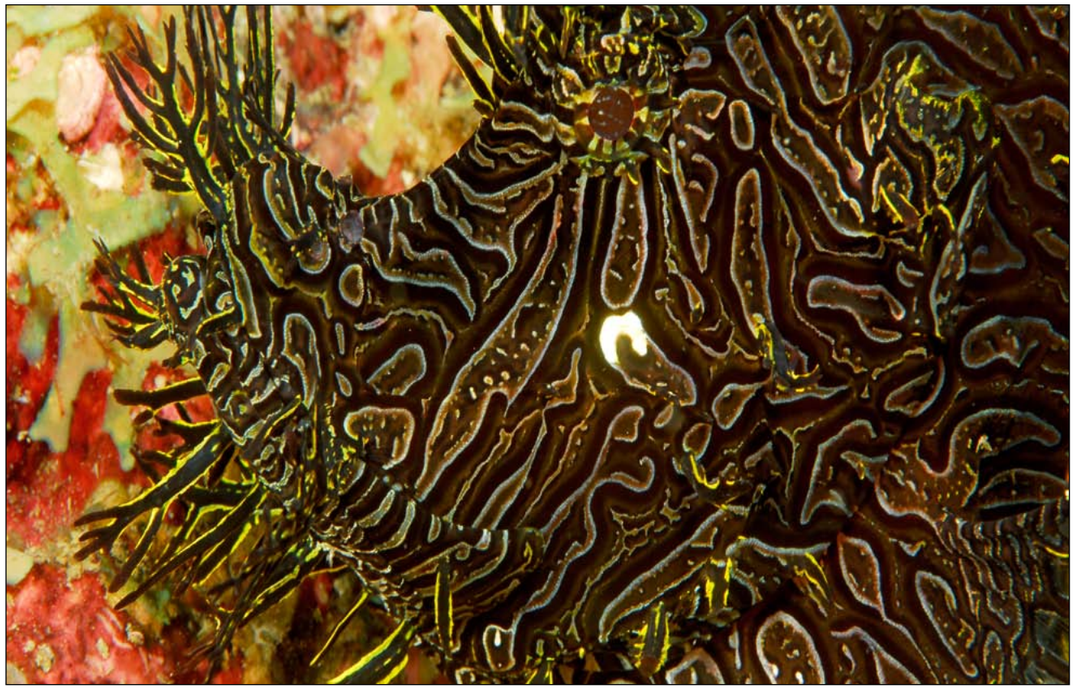
From Cairns, it's a brief 70-minute flight to the capitol of Port Moresby. After collecting my bags, I headed to the domestic terminal to catch my flight to Hoskins Airport. After takeoff, the cloud-swathed spine of mountains bisecting the island soon gave way to the emerald waters of the Dampier Strait and the island province of New Britain.

Walindi Plantation Resort really is a plantation. Initially established as a cocoa plantation in 1935, the property was purchased in 1969 by Australian agriculturist Max Benjamin who replanted the property with oil palms. In the early 1970s, Benjamin began to explore Kimbe Bay and soon discovered a marine habitat of unparalled diversity right on his own doorstep. Benjamin eventually shifted his focus from the palm plantation to running a dive business with his wife Cecile.

Today, a maximum of 24 guests are catered for in 12 self-contained bungalows nestled amidst the luxuriant tropical vegetation. Walindi's dive boats regularly visit approximately 25 dive sites, with travel times ranging from five to 75 minutes.

Largely unspoiled by human activity, the nutrient-rich waters boast more than 200 reefs and dive sites possessing a staggering 70% of all coral species recorded in the Indo/

Dive the World
Papua New Guinea



By: Scott Bennett

Pacific region. Over 900 fish species have been recorded, a total sure to increase as additional research is carried out. It was definitely looking like a case of too many sites and not enough time!

Walindi offers regular full-day excursions to Kimbe Bay's plethora of sites. Inglis Shoals, an isolated seamount 45-minutes from the resort is renowned for superb visibility and big fish.

Descending along the mooring line to the reef top at 12m, we were soon engulfed by a school of chevron barracuda. After a few perfunctory glances, they ignored us and continued patrolling the reef perimeter.

The pinnacle's summit was shrouded with a patchwork of anemones, giant orange sponges and hard corals. Swirling amongst them

This Is Your Next Office

Become a PADI Pro

Dive Into your Future

By: Scott Bennett

were successions of purple anthias, angelfish, surgeonfish, triggerfish and one very compliant cuttlefish whose tentacles practically touched the domeport of my housing. During the safety stop, a couple of grey reef sharks arrived to check us out. Coming progressively closer with each pass, they were starting to make me a tad uneasy.

Back on the boat, I discovered that this is a common occurrence here and the sharks were merely curious. One of Kimbe's signature sites is the world-famous Susan's Reef. Its extravagant aggregation of whip corals interspersed with sponges and plate corals has earned it a place on many a diver's all-time top ten lists.

Dense congregations of staghorn corals competed with elephant ear sponges and magnificent fan corals nearly 3m across. The magnitude of life jam-packed into this relatively small area was like an undersea Garden of Eden. I could have easily spent all day in this one exquisite location.

Susan's was a tough act to follow, but Christine's Reef admirably rose to the challenge and delivered in spades! A series of detached reefs connected by underwater ridges, Christine's was another knock-your-fins-off site with all the Kimbe trademarks.

Towering barrel sponges adorned with multicoloured feathers competed with a mélange of gorgonians, soft corals, whip corals and massive orange sponges. Inching across the sandy bottom was the remarkable sea cucumber thelenota rubolineata.

Boasting an intricate network of vivid red lines and knobby

By: Scott Bennett

protuberances, it must rank as one of the most photogenic members of its family. After a superlative day of diving I couldn't wait to see what the next day had in store.

Joel's Reef was another outlying seamount cloaked with magnificent hard coral gardens interspersed with numerous anemones and sponges. Chevron barracuda and big-eye trevally patrolled the blue, while close inspection of the reef top revealed abundant nudibranchs and commensal shrimps.

Good buoyancy was imperative here, as a large portion of the reef top was blanketed with fire coral.

South Emma Reef was bursting with butterflyfish, fire dartfish, clown triggerfish, batfish and longfin bannerfish. Further down, at 12m, was a prolific mantle of hard corals, soft corals and sponges.

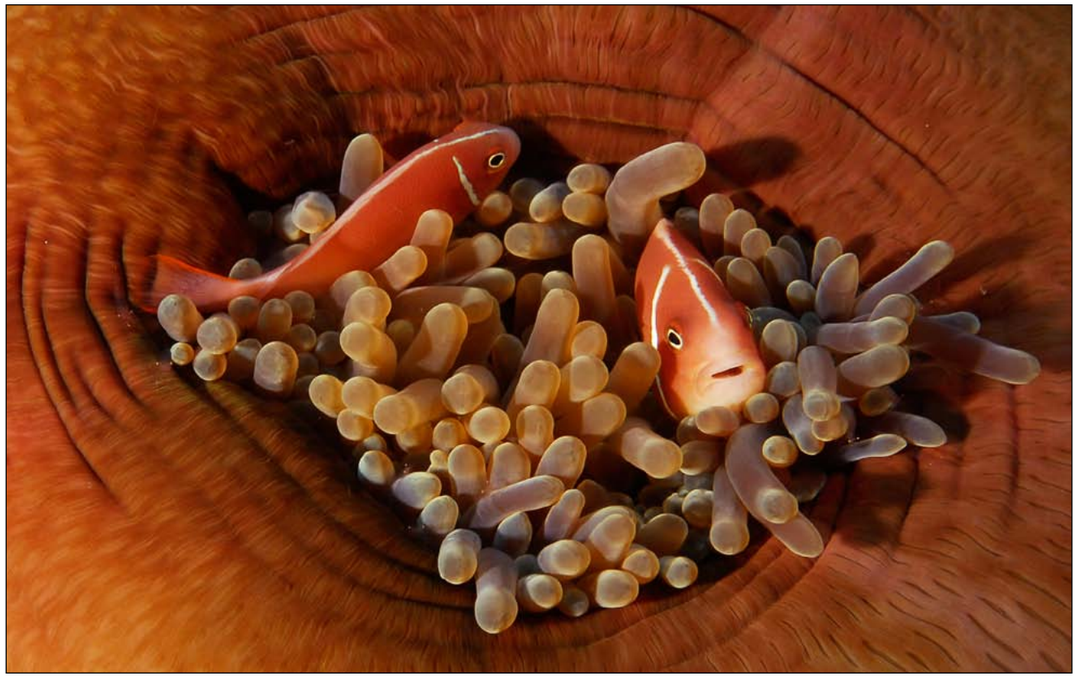
The final stop was Restorf Island, an idyllic spot where tropical forest crept to a luminous beach of white sand. The reef sloped gradually amidst a patchwork of loosely connected coral bommies.

Sandy areas were alive with garden eels, gobies and partner shrimps, while the bommies were jam-packed with morays, nudibranchs and Christmas tree worms and anemones housed spinecheek anemonefish, pink anemonefish and clownfish. The highlight was a white dwarf scorpionfish, sitting immobile and practically invisible on the sandy bottom.

I was so engrossed photographing it that I almost knelt on a much smaller second individual sitting nearby.

The next morning, I sadly bid my generous hosts farewell. Despite

Dive the World
Papua New Guinea



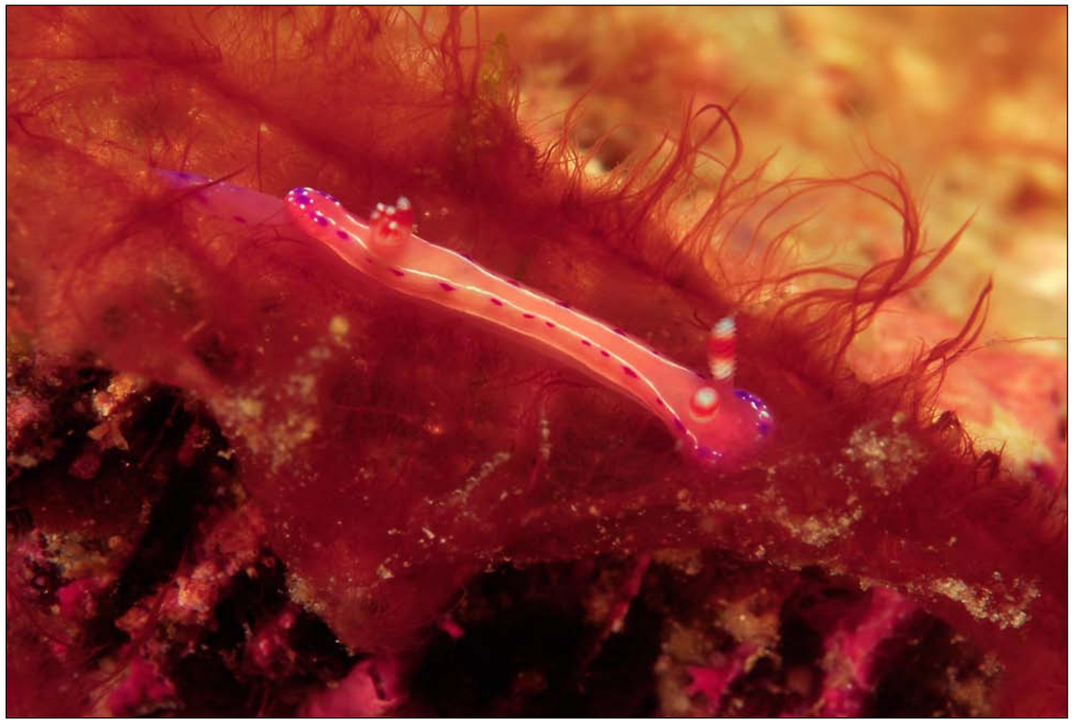
By: Scott Bennett

my all-too-brief stay, the incredible diving was already making me think about a return trip. But onwards! More diving adventures lay in wait at my second destination, Loloata Island Resort.

The name Loloata is derived from two Motu words, 'loloa' and 'a' which mean 'hill' and 'one.' The main house was established as a private residence in the early 60s and by 1970, Loloata was established as a weekend retreat. By 1978 it was a bona fide resort catering to holidaymakers, diving enthusiasts and conference groups. Longtime manager, Dik Knight, is a true diving pioneer in the region and has personally discovered a number of the area's dive sites.

Strolling to the dive shop after breakfast the next morning, I met Franco who was to be my guide for the next two days. Under a glorious clear blue sky, we set out across Bootless Bay for the 20-minute boat ride to Suzie's Bommie. Upon arrival, we headed straight to the bottom at 30m.

I spied what appeared to be the graceful contour of a large moray eel undulating above the sandy bottom. Upon closer inspection, my eyes widened as I realised this was no eel, but an enormous olive sea snake! Just as I was getting into position to take a shot, it propelled itself to the surface for a breath of air (and I wasn't about to get in its way!) We then approached the massive bommie and slowly started to work our way around its perimeter, observing common lionfish, leaf scorpionfish and one massive stonefish garbed in a gaudy attire of pink, orange, white and green.



By: Scott Bennett

Approaching the current-swept point, I was greeted by a swirling maelstrom of fish. Innumerable oblique-lined sweetlips were joined by a cornucopia of yellowtail fusiliers, harlequin sweetlips, anthias, coral trout and a couple of camera-shy Napoleon wrasse.

The reef top below was carpeted in an incredible profusion of tubastrea, fan and soft corals, their polyps extended to capture passing morsels swept in by the strong currents.

After the adrenaline rush of Suzie's Bommie, the next two dives proved to be equally spellbinding. Di's Delight featured three coral bommies separated by 4m clefts jam-packed with Gorgonians.

Upon descending the mooring line, a short swim led to the reef tops at depths of 10-13m. Sitting atop one rocky outcrop was a compliant orange weedy scorpionfish.

Okay, it wasn't a lacy, but who's complaining! I spent the rest of the dive happily photographing it from every angle.

At Quayle's Reef, a tiny fan coral at 18m played host to a miniscule bargibanti pygmy seahorse, while further exploration revealed an abundance of nudibranchs.

Especially impressive were a pair of spectacular long-cirri phyllodesmium, or 'solar-power' nudibranchs.

The next morning I awoke early for my last diving day. It was hard to decide where to go, but Franco suggested Baldwin's Bommie, an isolated bommie he hadn't visited for almost a year. Soft corals, whip corals, purple anthias and scores of angelfish painted a rich canvas with photo opportunities at every turn. Nudibranchs were also common, including an exquisite spotted hypselodoris, its slender red frame accented with spots of purple. The star attraction was a pair of camera-friendly white halameda ghost pipefish.

Our final dive was the Pumpkin Patch. Consisting of seven bommies connected to the main reef via a coral-shrouded ridge; it is also a favourite haunt of Loloata's most sought-after residents: the lacy scorpionfish. To ensure success, no less than three dive guides had come along to locate one for me.

Halfway into the dive, I was starting to get nervous. The scorpionfish were conspicuously absent and time was starting to run out! Moments later, while shooting some wide-angle images of the luxuriant coral growth, Franco came at me like a torpedo.

Wildly gesturing for me to follow, we swam to the neighbouring bommie and descended to 20m. There, perched on an outcrop, was a black lacy scorpionfish. Getting close to photograph it proved easier said than done. A strong current coupled with a number of obstructing coral spires made photography difficult.

To add insult to injury, my computer was on the verge of going into deco. Moments later, Franco found another one only metres away; pink and even more even more inaccessibly positioned! Undaunted, I managed to fire off a few shots before the cursed 'beep, beep, beep' of my computer indicated I'd gone into deco.

After squeezing in a few final shots, I ascended to the safety stop. Mission accomplished!

wonderful indonesia

BALI I KOMODO I RAJA AMPAT | ALOR I BANDA NEIRA

Sea Safari Cruises offer a wide range of diving liveaboard activities within the Indonesian Archipelago. Using traditional rigged Bugis Phinisi Schooners, constructed with at least three decks, our boats give you plenty of space to relax. Whether it's in the air-conditioned comfort of the large saloon or lazing under the shade of one of the ship's huge sails, you will find it easy to unwind.

BOOK NOW!

AVAILABLE DATE 2023 & 2024

Komodo
20 - 26 March 2024 (SS7)
7 - 13 July 2024 (Cheng Ho)
8 - 14 September 2024 (Cheng Ho)

Raja Ampat
8 - 14 November 2024 (SS8)
5 - 11 December 2024 (SS6)

Ternate – Halmahera
3 - 9 August 2024 (SS8)

Mention this ad for a
15% OzDiver discount

NITROX onboard enos DAN WORLD

Sea Safari Cruises
Dive and Leisure Liveaboard in Indonesia Archipelago

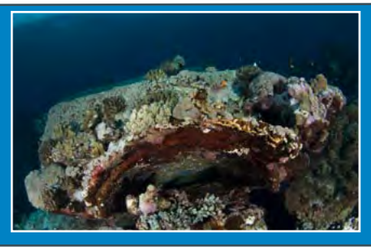
M : +62 821-4485-6979 E : mark@seasafaricruises.com www.seasafaricruises.com seasafaricruises seasafaricruises

Dive the World
Saudi Arabia

By: Fiona McIntosh

Saudi Arabia

That the Red Sea is a beautiful spot to dive is well known to most of divers. Divers from Europe fly to the Egyptian part of the Red Sea on a daily basis. Each day over and over again hundreds of dive boats sail off to discover the beautiful world of the Red Sea, but visions of over-crowded harbours and traffic jams with divers underwater almost spoils the fun. As the Red Sea is much larger than only the Egyptian part we became curious to discover diving possibilities in other parts of the Red Sea. This time we flew a bit further south where we examined the diving





By: Fiona McIntosh

At first sight the main difference between diving in Egypt and Saudi Arabia seems to be the number of divers you will encouter in the water. In Egypt it is no exception that dozens of dive boats are on the same dive spot at the same time. That is something that will not happen to you in Saudi Arabia. With only a limited number of liveaboard boats in the country there will be no other divers at the same place. We were thus curious to discover wether the limited number of divers also meant that the life underwater was better in relation to Egypt.

Saudi Arabia is a strict Islamic country in the Middle East. The kingdom of Saudi Arabia is the largest country in the Arab peninsula. Thanks to its size it has borders with many countries: Jordan, Oman, Koeweit, Qatar, United Arab Emirates and Yemen. The country is lead by king Abdullah Bin Abdulaziz Al Saud and his family. Although most people will envision desert when thinking about Saudi Arabia, it apears to be much more varied; there are forests, grasslands, mountain areas, and of course also the well-known desert. Thanks to the wealth of oil, Saudi has become a prosperous country.

Our attention though is on the coastline of Saudi Arabia, in particular the coastline of the Red Sea. The sea is well known to us from our trips to Egypt, but we were more than curious to meet the underwater life over there.

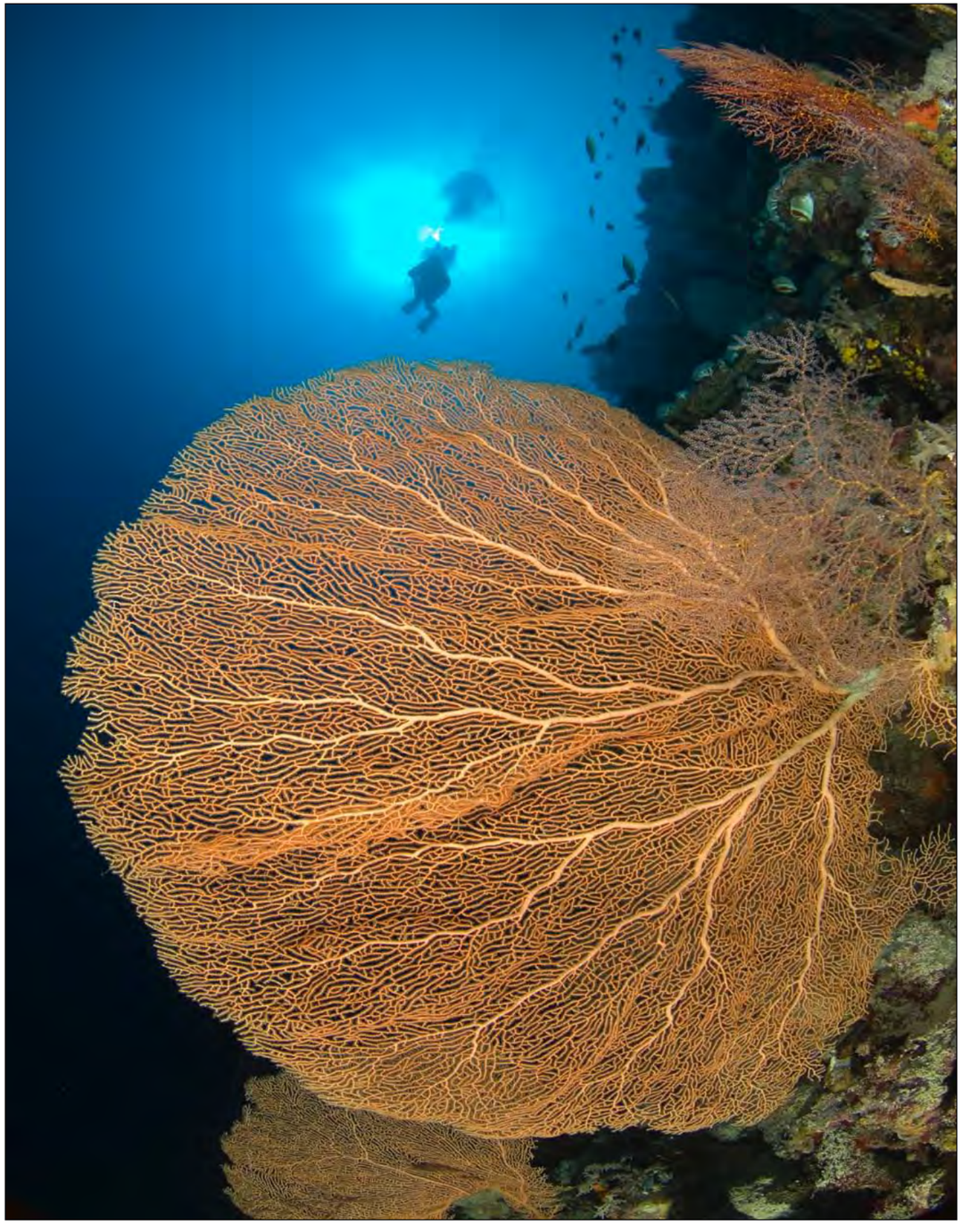
Traveling to Saudi Arabia requires a pre-arranged visa. We fly with Saudi Arabia airlines from Paris to Jeddah at the west coast of Saudi, and from Jeddah you can reach several different diving areas. You can leave from the harbour of Jeddah for a dive trip to Yanbu in the north, or there is also the possibility to drive a bit south and join a dive boat to the Farasan Banks from there. For our first trip we decide to go to the Farasan Banks, which lies at the same hight as the border of Sudan with Eritrea at the other side of the Red Sea. From the airport of Jeddah it is a three hour drive to the harbour where our liveaboard was. During the drive we only saw sand, big caramel plains lying before and behind us – it is almost a depressing sight.

At Farasan Banks the quiet azure ocean is varied with little white islands. The diving around the Farasan Banks mostly consists of real wall dives. At the east and the west of these islands and reefs the walls go into the depths for more than 500m. In the northern and southern areas of the Farasan Banks some shallower plateaus can be found – no wrecks have yet been discovered in this area.

Arriving at our first dive spot for the trip, Canyons, it inmediately strikes us that we are the only boat to be found there. Where can you still find this? We remembered the situation where dozens of boats are together at the same dive spot in the Red Sea – this could be promising. And the first dive certainly was very special. Enourmous coral gardens welcome us underwater, but we also find nudibranchs and other small animals such as gobies on sea whips.

A trip around Farasan takes you from the harbour of Al-Lith in the direction of Jebel Al-Lith and the islands of Malattu,

Dive the World
Saudi Arabia



By: Fiona McIntosh

Dohar, Marmar and Jadir. Besides beautiful dive spots this area has some nesting areas where birds and turtles find their breeding grounds.

At our second dive our dive guide was very enthusiastic at the briefing. We dived on Gorgonian Point, one of his favourite spots. Due to the name we assumed that we would find a lot of gorgonions at the site, but it would not be the first dive site where the name has nothing to do with what you actually find underwater. Each country has, for example, a Shark Point, where for years no sharks have been seen.

Yet this time the dive site really did live up to its name. At a depth of 30-40mwe swam along a number of gorgonians – and these were not your normal gorgonians – the size of them was really amazing, the biggest we have ever seen; metres high and metres wide they decorated the reef. But it wasn't just their size which was special, but also the fact that they were entirely intact, which is unique.

Besides these gorgonians we also found a metre wide and long garden with bubble coral, and of course the well-known crabs and shrimps. At the end of the dive we encountered a grazing turtle and deep beneath us a shark passed by. But out first day's diving wasn't done yet – we still had to do a night dive. In this area it is difficult to find a protected anchor place for the night dive, and with a limited number of anchorages, the number of dive spots is also limited. Fortunately there is always something nice to find during a night dive; shrimps hiding in small holes in the reef or scorpionfish lying down perfectly camouflaged. Under overhangs on the reef several fish tried to catch some sleep to prepare themselves for a new day. After the dive a nice dinner was served on the top deck – spiced fish, pasta and other delicacies under a clear sky filled with stars welcomed us on the first night.

The next day we stood again with full expectations on the back deck of the ship. What would this day bring for us? The first dive was at the south side of Malathu Island. Underwater we notice a splendid coral garden, and just like the day before we are surprised by the virginality of the underwater landscape. We, however, hardly get time to take a good look at these corals as a school of fish comes from far towards us, asking for closer inspection. As we come closer the scope of this school becomes even more impressive – it proves to be an enormous school of barracudas. Gracefully they swim around us.

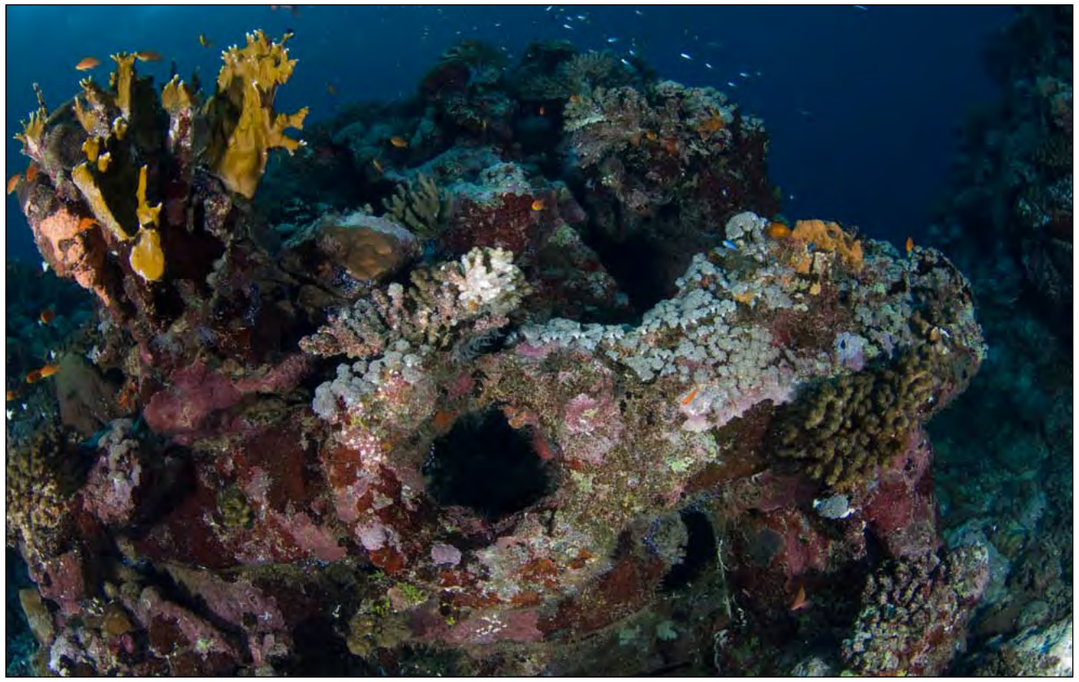
On the fourth day of our trip we thought that we had seen most of the surprises over here. But while diving on dive sites like Ciopi Reef, Eagle Island, Danak Island and a number of other dive sites we saw things that we had never before seen. We found black corals at several places; sometimes they were relatively small branches, but especially on Muddhar we saw enormous trees of black coral on the south side of the reef. With a length of at least 3m, these were the biggest chunks of black coral we had ever seen.

Apart from the black coral we encountered something else on these dive sites – on a number branches of black coral we noticed a brightly coloured mass. On closer inspection it proved be a type sponge, yet from a distance it looked like a slimy mass hanging down from the branches. We asked our dive guide about these sponges and it appears that these dripping sponges are so far only found in Saudi Arabia. It is an endemic species only seen on the reefs of Farasan Banks. The colours of these dripping sponges were phenomenal – bright red pieces were varied with almost fluorecent yellow and white pieces of sponge.

Divers with a love of the small things will have more than enough to see in Saudi Arabia. Beautiful nudibranchs, such as as the white and black Halgerda willeyi and the brightly coloured Nembrotha magalocera decorate the reef. Small shrimps try to hide themselves in remote areas and on the many sea whips both shrimps and small gobies are found. On sandy pieces of the reef you will be surprised by the variety of life found there, like small cuttlefish or symbiotic gobies.

In between dives there is the possibility

Dive the World
Saudi Arabia



Here at **Sea Rovers**, we believe in equality.
Which is why we have a no discrimination policy.
We believe that snorkelers are people too and they are always welcome on our boats.

It has, however, been scientifically proven that this condition, given a suitable warm water environment and proper instruction, can be cured.

Which is why we recommend signing up your snorkeling loved one for an **SSI Try Scuba Diving Course**. After all, 2/3 of the world's surface is water, don't you want them to join you in exploring the ocean depths and experiencing an expanded world view?

So sign aboard today and join
The Pirates who Dive
(or snorkel, whatever makes you happy)

Sea Rovers
Pirate Centre
Questing for Undersea Treasures Since 2008

SSI · Green Fins · SDI

SCOURING THE OCEANS
FOR UNDERSEA TREASURES
SINCE 2008

QR Marks the spot

By: Fiona McIntosh

to visit one of the very small islands. On these small islands you will meet no inhabitants; they are too small for that, and a as a result, a lot of birds and salamanders have made these small islands their home or breeding grounds. If you are unlucky not to have seen turtles during your diving you will certainly find proof on these islands that they occur in this area, including skeletons of dead turtles.

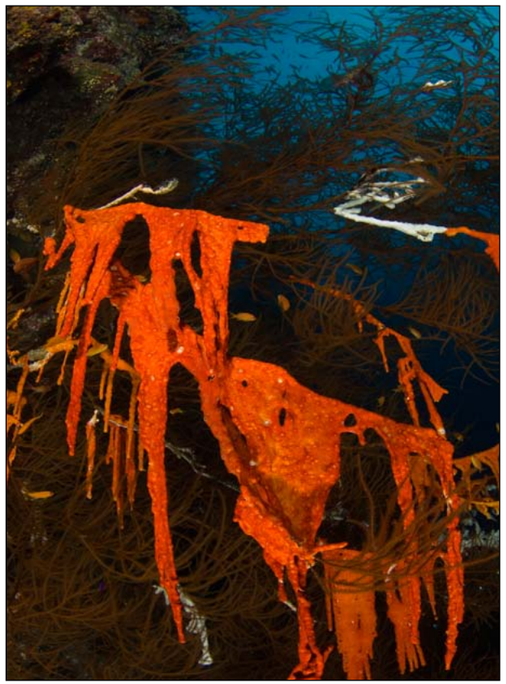
With our dive trip at Farasan almost coming to an end, it is time to do some exploration dives. As of the number of known dive sites is still relatively small we were asked to take a look at a new dive site to figure out whether it would be worthwhile going there. It is really exiting to have no more information about the site you are going to visit other than the depth of the reef. According to some local fishermen there might have been a wreck at the spot, yet on the given coordinates where they had dived before no wreck was found – we were going to exlpore the rest of the reef.

The start of our dive was just like every other in the area – we saw nice soft corals, black coral, gorgonians and other types of coral, while the small stuff was also very well represented. We were a bit disappointed though, as we had hoped to discover something new and become famous! At the end of the dive we decided take a look at the other side of a big rock, and what we found there was a splendid reward on this nevertheless already beautiful dive holiday. Behind the rocks lay the wreck of old a steam ship. The propellor of the ship lay behind a large rock, the axe lying on top of the rock and on the other side of it the steam turbine could be found. It is clear that the wreck had been here for many years as soft corals, sponges and thousands of glassfish have transformed the wreck into their home. This was an amazing end to this week of diving, as we were the ones to find the first wreck on the Farasan Banks.

For our second trip in Saudi Arabia we decided to go to the Yanbu area in the north. This area lies at the highest point of the south border of Egypt and Sudan. The surroundings here are a bit different to what we had seen at the Farasan Banks. Here, as far as we could see, were vast areas of azure blue water. Underwater we were treated to steep drop-offs and loads of wrecks. The vastness and the calmness is really a contrast to the life on shore with its numerous gas stations and big, bulky shopping malls.

For this trip we were able to use rebreathers. When arranged in advance with our tour operator, www.diveaway.be, it is possible to have enough oxygen on board for a rebreather. Again we were amazed by the steep drop-offs we encountered there. We hung for minutes besides the drop-off, enjoying the immense golden gorgonians. The pink coloured soft corals seem to be bigger there than we had ever seen before.

We encountered the mysteries of the ocean while discovering several wrecks on the bottom of the ocean. Corals have taken over the outside of the ship, trying to make a new home on the steel hull.



Dive the World
Saudi Arabia

By: Fiona McIntosh

Anchors lay at aimlessly on the bottom of the sea. On the larger wrecks we were able to explore the insides of the ships; descending into the core of one of the vessels we discovered how well preserved the engine room still was. The insides of wrecks are also a favourite hiding place for dozens of glassfish while the propellers of the ships always allows for beautiful photo opportunities.

While ascending after a dive here it is always wise to look into the blue or up to the surface, as when the water is not too warm you have a change of encountering the big stuff, such as sharks, although enormous schools of barracuda's will be frequently seen here. Thousands of silvery barracuda's circled around our heads during one ascent, and it was almost as if we had entered into a fish soup.

After the diving there is always time to visit the old city of Jeddah. For Western women a visit to the city is a bit different. In this strongly Islamic country, all women have to adapt their clothing to the local uses and wearing an abbaya is mandatory. A head cover is not necessary but the long black dress is a must.
Men also need to adapt; trousers are mandatory.

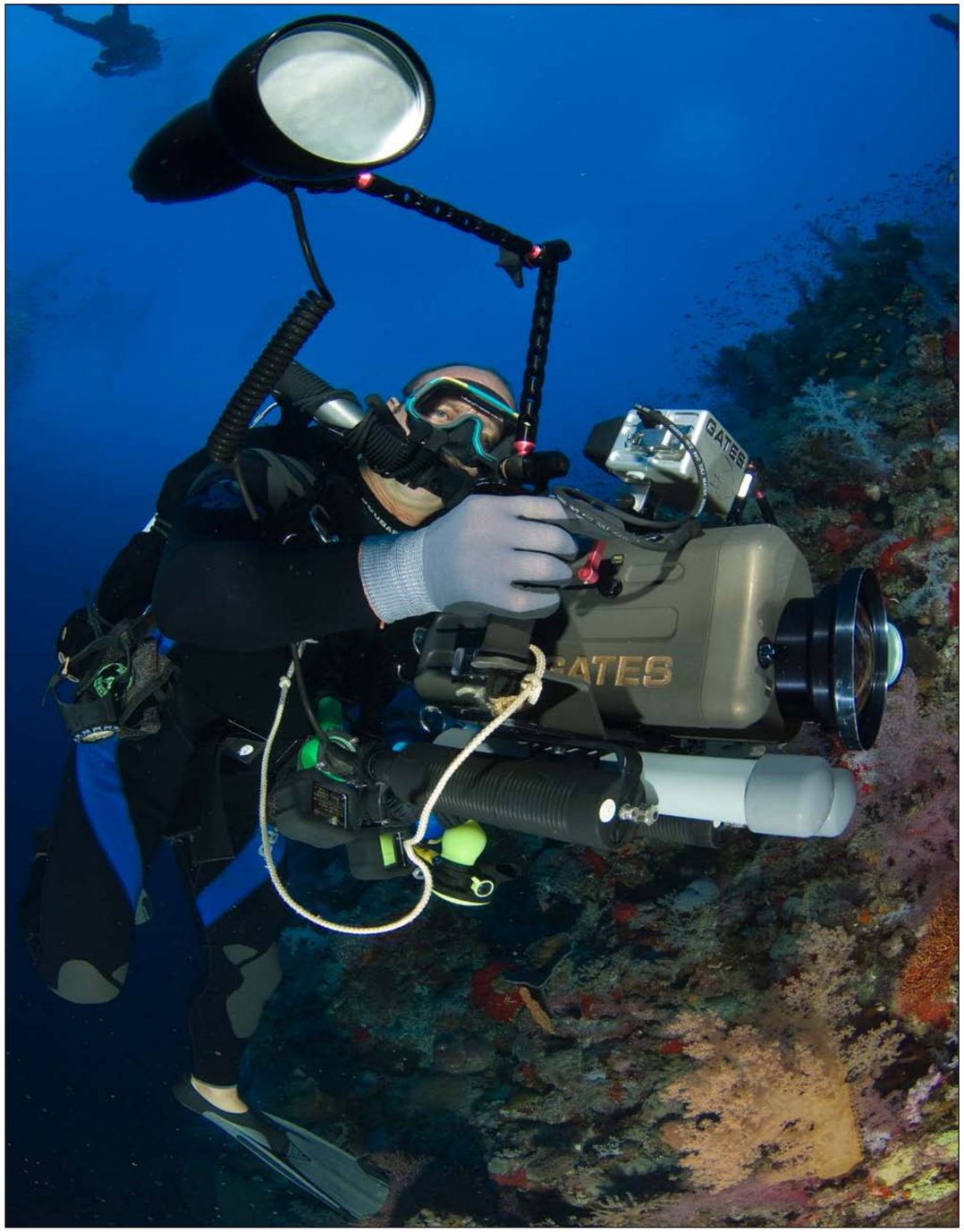
Different mosques in this part of the city are beautifully decorated by the minaret.

The houses are not very well maintained, but the artistic handwork of the wooden balconies of the houses is amazing. The local people of the old city of Jeddah proved to be very nice – everywhere you go they welcome you, and of course, you are invited into their shops. If you like fresh herbs, you certainly must pay a visit to the old city as several shops display their brightly coloured spices in their windows, and various quantities can be bought good prices.

And do you want to see the big cars? As Saudi Arabia seems to be a rich country, loads of enormous cars can be seen driving around the city. Pay a visit to one of the modern shopping malls and car dealers to marvel at the beautiful big cars over here.

After the trip we can look back on some surprisingly good travels. All the promises of untouched reefs, sharks and small life were realised. In the Yanbu area, loads of wrecks were visited and we never saw such big gorgonians in our lives. For us it certainly will not be the last time that we pay a visit to Saudi's beautiful underwater world.

Dive the World
Saudi Arabia



Dive Medicals

By: Dr Allen Kayle

Is it important for divers to go for a medical check-up before they start their first dive course or not?

All dive schools require new students to sign a formal indemnity releasing the school from any responsibility for injury or death. Without really knowing what the course is about, what the hazards are, or whether it is even medically safe for them to dive, novice divers happily sign the form.

Every dive school would prefer their students to have a dive medical before starting any course. Potential problems can be uncovered, managed and everyone ends up feeling safer. It's not the actual dive medical that is the problem – it's the cost. Divers are usually young, with limited expenditure and they have had to save and budget for the cost of their course and dive gear.

This is where the problems creep in. A mandatory dive medical, even at medical aid rates, will raise the costs by about R400 and a chest X-ray may double this figure. A fit young student may feel this is unnecessary expense and look for another, less strict dive school. The first school then loses both a student and income.

Some dive instructors require an initial diving medical for each new student and this is to indicate a possible contraindication to diving and ensure that no unnecessary risks are taken.

A few are driven by cash flow alone and don't bother to screen for medical problems. They should be overlooked.

Annual diving medicals are legally mandatory for commercial divers, even for 9m of water certification. Despite the same or greater risks, no such requirement exists for sport diving.

One cannot prohibit anyone from taking up diving as a sport, but the consequences of diving with known or unknown conditions affecting blood circulation, the lungs and the brain may be crippling or even fatal.

I highly recommend that every new diving student has an initial medical prior to doing their course. About 10 percent of divers I consult fail their dive medical and there are many reasons for this.

By far the most common is the total inability to equalise the middle ear. Following adequate treatment and guidance, the vast majority of these divers are then able to start their dive course. Without their medical examination, they would have completed their pool training and then failed their open water sessions because of persistent middle ear barotrauma during descent.

I have also failed numerous students for known conditions, varying from inadequately controlled asthma, high blood pressure and diabetes to previously undiagnosed lung cysts, cancer, tuberculosis and heart disease. The majority of these were younger than 30 years of age. Many overseas dive sites have already experienced serious underwater problems and simply will not permit a sport diver to join without an up-to-date medical diving clearance. I recommend that every diver has a repeat medical after two years and that every diver older than forty has an annual medical.

The psychological aspect of medicals is relevant too. Certain drug regimes in the management of depression and anxiety, fear of closed or open spaces and peer pressure to dive are common. Some people are simply terrified of the sea, cannot bear the claustrophobic limitations of a mask or a mouth-held regulator, or are poor swimmers but will do anything to appease their spouses or friends. None of them are fit to dive.

A diving medical is not a general check-up. The medical is aimed at detecting physical and psychological factors that could be harmful or fatal under water. Without dive medicine training and knowledge, it's simply not possible to provide a valid opinion on a person's fitness to dive. The examining doctor should be a dive doctor and know what is to be expected.

day trip diving to Rottnest Island

bluedestiny

- Rottnest Island Snorkel or Dive Day Trips
- Rottnest Island Night Dives
- Carnac Island Snorkel or Dive Day Trips
- Key Biscayne Wreck Dives
- Crayfish Catching Dives
- Grey Nurse Shark Cave Dives
- Private Dive Charters

Join Blue Destiny for your next dive day to Rottnest Island

Our awesome day out includes • 2 fantastic boat dives around Perth's water playground Rottnest Island, boasting the best limestone reef and abundant marine life at one of over 150 dive sites • catered lunch with a variety of awesome food (vegan, vegetarian & gluten free diets available) • cylinder hire for second dive • dive guides available • full equipment hire available delivered to the vessel

www.bluedestiny.com.au **phone 08 9455 4448** **email info@bluedestiny.com.au**

Exploration
Chuuk

By: Fiona McIntosh

Chuuk

The tiny archipelago of Chuuk in Micronesia is a wreck diving mecca that you will return to again and again.





By: Fiona McIntosh

"If you can't dive Chuuk, you can't dive anywhere,"It's warm, there's no current and the viz is 90ft – like diving in a bath tub." The almost entirely British group looked somewhat confused, having never fathomed the North American preference for imperial measures, but we got the gist.

I'd always imagined wreck diving to be the realm of the macho, yet while there are numerous deep wrecks to amuse techies, many of the wrecks are well within open-water limits. Nonetheless, I wasn't so sure about the captain's diving habits as I rolled backward into the swell the next day and descended down the line – we were going deeper and deeper into a dark ocean and this was a bit more testing than he'd made it out to be.

The outline of a huge destroyer began to take shape after a few metres. It was the Fumitsuki (meaning, in true Japanese naming fashion, "month of rice ears".) It was sitting upright on the seabed, almost as if it was floating on the sand.

As we sank to the bottom of the mooring, the detail of the huge and coral-encrusted form became clearer. It was evident that we'd have to be selective – at 100m long and lying 30m to 45m deep, exploring the whole boat would clearly take several dives.

The scene was tranquil. The bow, though covered with marine life, was intact and majestic. There was no sign of any damage – no evidence of the cataclysmic events that had sent her to these depths over 60 years ago. But as we swam towards the stern, past a large anti-aircraft gun and torpedo launcher, the reason for her demise was quickly apparent.

The bridge had been blown off, the conning tower lay broken in the sand. We swam along the decks, noting the massive guns and propeller, the intact rigging, the torpedo tubes, spent shell casings and a collection of gas masks, ceramic bowls, binoculars and other artefacts.

We began our slow ascent with squadrons of batfish flitting silently among us as we hovered over the world's most famous

underwater graveyard. The ghost fleet of Chuuk is a chilling reminder of the carnage of war.

The coral reef surrounding Chuuk is the third largest in the world and makes for great diving already, but the presence of wrecks is what makes it legendary.

Strategically situated in the middle of shipping lanes between Japan, Australia and Hawaii, Chuuk Lagoon is a huge, deep, reef-encircled natural harbour.

The high, pointed islands, appearing as jungle-covered shark fins, are the tips of a vast volcanic pinnacle that thrust up from the deep seabed to create a giant ocean lake within a ring of living corals – a huge sheltered anchorage.

Prior to the outbreak of WWII, Japanese administrators employed nearly 30 000 Korean, Okinawan and Chuukese labourers to convert Chuuk into the second most important naval fortress in the Pacific. It was from this base that the Japanese military launched their main offensive against Hawaii's Pearl Harbour in 1941.

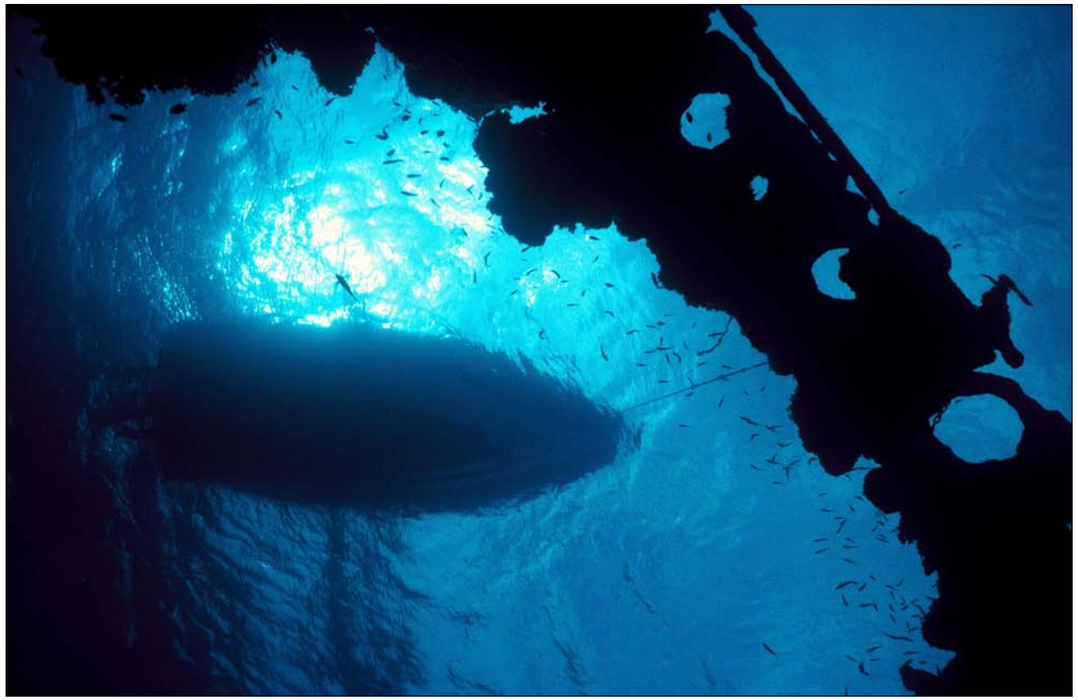
Patrol boats, torpedo boats, submarines, tugs, landing craft, gunboats and mine sweepers maintained the sea defences, while five airfields provided complete protection over Chuuk 's facilities.

The fortified lagoon was the departure point for numerous Japanese war campaigns and a vital link in the supply line supporting the many island groups captured by Japanese forces.

At its height, it's estimated that 60 attack submarines, 250 merchant ships and 125 warships, including aircraft carriers, operated from Chuuk.

By early 1944, Allied victories were forcing a Japanese retreat and Chuuk became a key target for the American military moving to recapture the Pacific.

A series of attacks beginning in February 1944 completely demolished Chuuk's fortifications, sinking some 80 ships and destroying nearly 500 aircraft.



By: Fiona McIntosh

Thousands of Japanese and locals were killed under ferocious bombing, but worse was to follow. With supply lines to the isolated lagoon destroyed, the remaining Japanese and Chuuk islanders struggled to survive in the rat-infested jungles and more than 15 000 Japanese starved to death before the war's end.

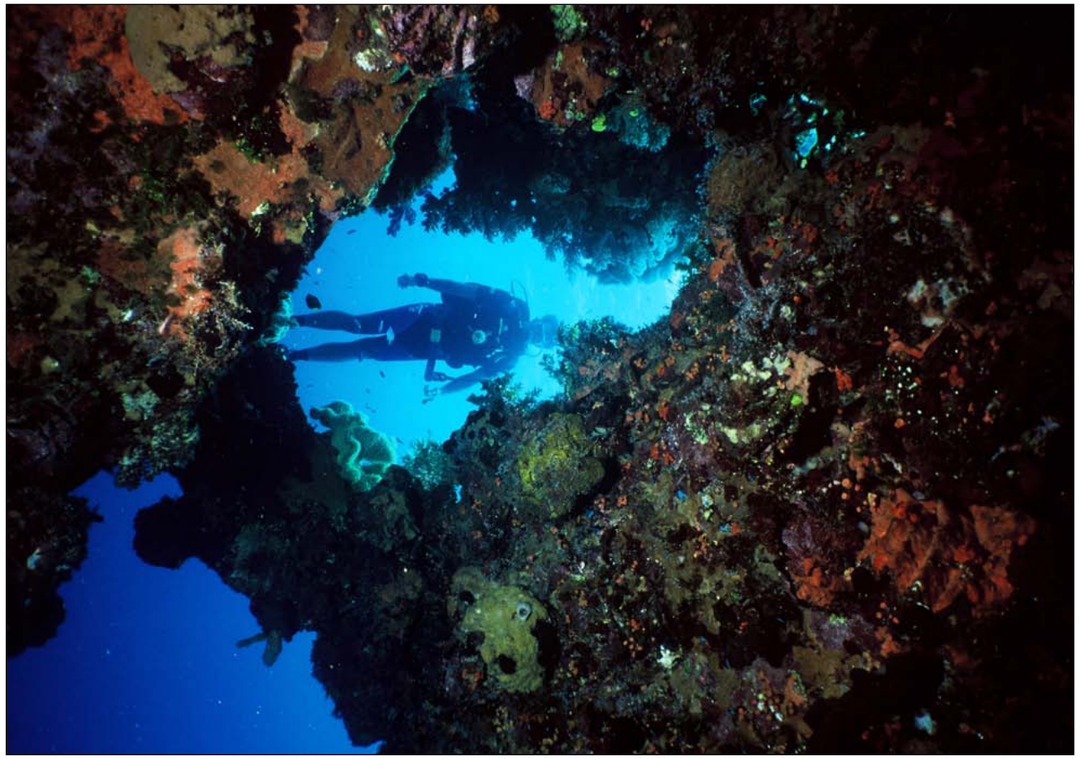
The first and most devastating of the attacks was Operation Hailstorm. US surveillance aircraft flew over the lagoon on 4 February 1944, revealing the location of the Eten airfields and the Dublon seaplane-base – and the fact that nearly all of the Japanese Combined Fleet was gathered in Chuuk.

An attack planned for mid-April was brought forward. And although the Japanese Admiral, Koga, had correctly predicted a strike and had ordered the warships, various cruisers and supply ships to retreat, a large number of small combatant and supply ships remained.

A pre-dawn attack began at 4.40am on 17 February, with 350 US fighters and fighter-bombers taking off from twelve aircraft carriers. With a rising sun shining into the eyes of Japanese gunners, the American bombers approached from the east, flying low under Japanese radar, strafing the airfields. The first bombs produced brilliant, blinding flashes as heat and light burst in a blazing flame.

Operation Hailstorm was underway. The Japanese were caught by surprise. Desperate to save as many planes as possible, officers were ordering aircraft mechanics and technicians to take off and head north, while the pilots frantically swam to or leapt on boats headed for the airfields.

Many aircraft were disabled by enemy fire as they taxied down the runway and countless dogfights filled the air. The Japanese lost 170 aircraft in aerial combat and literally hundreds on the ground.



By: Fiona McIntosh

As you glide among the stately wrecks, it's hard to imagine the scene on the water that day.

Huge 500-pound bombs split the decks of destroyers and exploded amidships in a deafening, ear-splitting roar, creating hot balls of red, orange and black flames and smoke billowing skyward. Low-flying torpedo attack planes released deadly long cylinders that sped towards the ships.

The torpedoes ripped into ship's bows, buckling steel plates, collapsing bulkheads and tearing out jagged holes through which raging waters flooded in. Chaos prevailed with frightened crews trapped inside, trying to escape or find air pockets as the ships rolled and sunk.

In no time the lagoon was full of stricken ships belching clouds of rolling black smoke. Those still afloat lined up in single file to escape through the only non-mined channel in the south as torpedoes streaked towards them. Many ships were downed as they fled.

The Fumitsuki is one of them and, as we floated over the decks, we recognised what must have been the belongings of the surprised crew scattered haphazardly amongst the munitions – a shoe, books, a torn jacket and a cup, still in good nick after all these years.

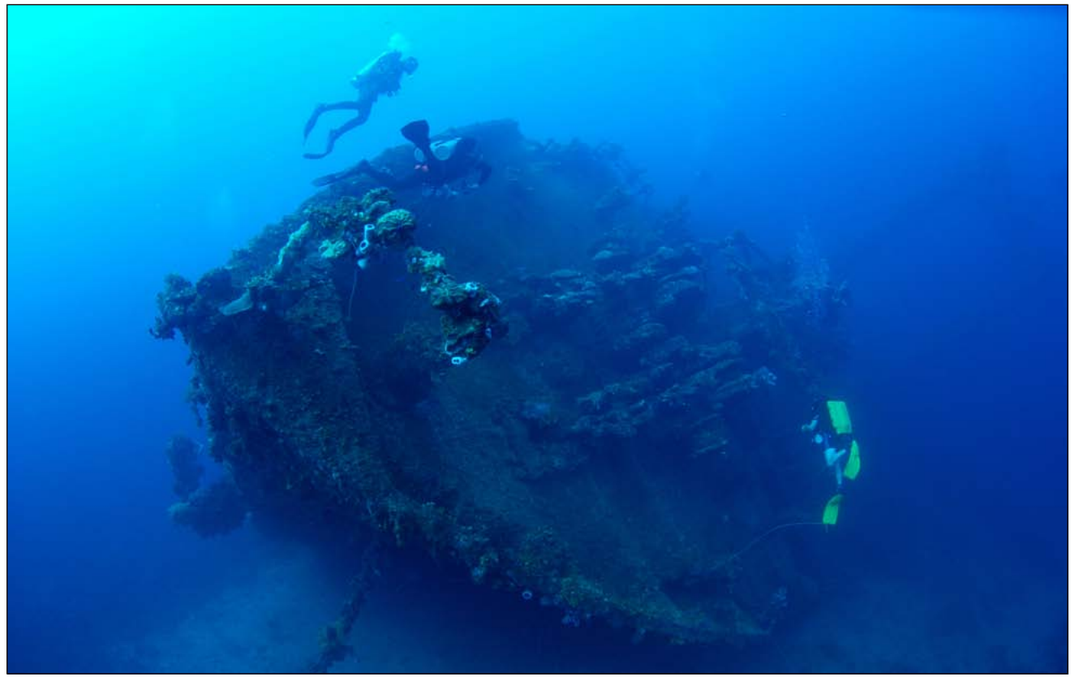
A looting hold was put in place during the late 60s, but evidence of some early staged pilfering is clear.

These ships were "discovered" by adventure divers such as Jacques Cousteau, Al Giddings and Klaus Lindemann, and reliable sources report that in the 70s Cousteau shipped out many tonnes of artefacts, including nameplates, clocks, bells and other easily removable and potentially valuable items.

There are over 70 wrecks that can be dived in the lagoon. The classics include the Fumitsuki and Shinkoku Maru, a well-preserved tanker built in 1939 that took part in the Pearl Harbour attack.

For a 60 year-old wreck, the Shinkoku Maru is in amazingly good shape. We started at the bow – a vast artificial reef

Exploration
Chuuk



By: Fiona McIntosh

of vivid pink, blue and orange corals. Big barrel-shaped sponges give way to delicate fans; whip corals penetrate eerily into the deep blue and vast clams display their speckled velvet bodies.

We swam through the holds and lower decks, inspecting the contents of her bowels: the galley, the officers' quarters with its well-preserved array of cut glass decanters and glasses, sake bowls and officers' uniforms, and her operating room complete with medicine bottles, instruments and a pile of gramophone records – all part of the old infirmary.

But even from the outside the ship is mind-blowing, what with her big masthead jutting up to the surface, vast spare prop blades on her stern, well-preserved bow and stern guns, and a massive propeller.

As you slowly explore, you'll see a solid brass bridge to engine room telegraphs, a box of bottles, a large brass chest and a telephone as well as numerous lengths of piping and rounds of ammunition.

There was so much to see that even the presence of several black-tip sharks circling the bow couldn't divert our attentions. We dived her twice more that week – once at night when she was even more amazing.

As if we hadn't been spoilt enough for one day, our next dive was on the Fujikawa Maru, a massive aircraft ferry that's considered by veterans to be a top wreck in the Ghost Fleet. There are plenty of penetration dives through holds and spacious lower decks past endless cables, ladders, cans and shells.

The sight of a bathtub sent shivers up my spine as I thought of the poor people entombed in the ship during those days of horror.

The Fujikawa Maru was delivering its cargo of planes, and while most had been landed, there are still disassembled parts of Japanese Zeros in hold two.

The long-range and easily manoeuvrable Zero was a superb weapon for offensive warfare, but these sleek fighters had little protective armour and when hit they'd burst into flames and burn like tinderboxes.

Not that we spent too much time contemplating the fate of the combatants – a turtle swimming out of one of the upper decks soon dispelled any melancholy.

We finished the day with a magnificent dive on a Mitsubishi G4M bomber, foregoing the night dive for Christmas Day turkey and festivities.

The fairly intact G4M, or "Betty bomber" as it was known to the Allied forces, lies in 12m to 17m of water. Night was falling as we descended, but the wings and cockpit were visible from the surface.

We swam through the plane, inspected the cockpit then checked out the engines and propellers about 50m away – a pleasant swim over undulating coral reef.

The pattern was thus set for the week: five dives a day if you had the stamina, comprising a deep dive after breakfast, a couple of colourful or dramatic shallower dives, followed by an aircraft or small vessel late in the day, and a night dive after dinner.

We dived flying boats, fighter planes, bombers, transport vessels, destroyers, freighters and a huge submarine.

We saw tanks, trucks, dramatic guns, munitions, towering gantries and masts as well as the living quarters, kitchens, urinals, sake bottles, teacups and personal belongings of the people fighting in the Pacific arena of WWII.

Sometimes it was the superstructure of the wreck that impressed; other times it was the detail as we penetrated the holds – the instruments of the plane, the ship's nameplate, piles of cartridge belts and bullets, or a haunting skull.

At least once a day we were treated to a wreck barely recognisable from under the amount of marine life colonising it. These tapestries of nature challenge the most beautiful reefs in the world for colour and complexity.

We swam with squadrons of eagle rays and

Exploration
Chuuk

By: Fiona McIntosh

great shoals of barracuda, watched tiny clown fish, bright butterfly fish, striking blue-and-yellow damsels and other bright tropical fish. At night the wrecks were even more dramatic and their covering reefs took on a different sheen.

Hydroids bloomed and we saw parrotfish encased in their nightly mucus cocoons. Most of us settled for three dives a day, occasionally rising to a fourth when we had the energy or when one of the gems was dangled before us.

The rest of the time we chilled on Thorfinn, reading and watching historical films about the wrecks, lounging in the spa or sunning ourselves on deck.

It was the perfect lazy existence and the 22 crew members on board ensured that we barely lifted a finger during the trip.

Our dive gear was kitted up for each dive, superb meals were served and the wine flowed.

So is Chuuk the ultimate wreck site? Well, in nine days we only touched the surface of the diving and everyday we were blown away. One day it was the tanks sitting at 50m on the deck of the upright San Francisco, the next day it was the instrument panel of an almost intact aircraft.

The great ships, once mighty floating islands of grey steel now lying in state on the seabed, are incredible. But so are the corals, the vast molluscs and the number and diversity of reef and pelagic fish.

There's even a shark dive for those who can tear themselves away from the wrecks. A testament to Chuuk's beauty and fascination is surely the fact that in our party of five couples one lot were on their eleventh visit, while another had returned eight times.

I was blown away by the place, in fact, I'd go a step further: I've been fortunate to have dived extensively throughout the world, but if I had to name my ultimate dive site, the dramatic Ghost Fleet with its bright corals and sponges, territorial sharks and turtles, colourful fish, warm water and great viz would certainly be it.

Exploration
Chuuk

By: Rian Bester Photos: Christopher Bartlett

Photo School

Film Sensitivity

When we talk about film sensitivity, we use the term ISO. On many cameras today, this can be set either manually or automatically and it has a variety of different values.

If we have an ISO of 100 then it is considered to have a slow sensitivity but a good colour saturation.

An ISO of 100 can be used for close-up or macro photography, especially if you are making use of strobes.

On the other hand, if we use an ISO of 1600, then we talk about a fast sensitivity but the result is very noisy.

This 'noise' is seen in the form of small dots all over the photograph – in the old days we used to talk about the 'grain' on the photographs.

This ISO is very useful in low light conditions and deeper water.

Changing the ISO of the camera allows you to have more freedom in changing the shutter speed or the aperture depending on the light conditions you are faced with.

There are many ways of setting up the camera to achieve the correct exposure but not all of them are going to be very practical underwater.

For example, a tripod underwater is not very realistic. You also don't have infinite distance and unlimited light to work with, so we need to improvise.

There are some basic settings which will help you to get off the ground and grasp a better understanding of this concept.

If you can set your camera to some sort of pre-setting then this could reduce the task loading that you are faced with – you are probably not going to remember everything in the beginning anyway.

A good start would be to set your camera to aperture priority.This means that the camera will automatically set the required shutter speed to obtain the correct exposure.

Another way to ensure good exposure is by 'bracketing'.

This is traditionally taking three photographs with one f-stop below and one f-stop above the recommended exposure.

For example, if f8 is the selected aperture, then take two extra photographs using aperture settings of f5.6 and f11 – this will allow you to choose the best result.

The same can be done when shutter speed has been set as a priority.

Never just settle for one photograph, always take multiple photographs with varying settings to try and get the correct exposure.

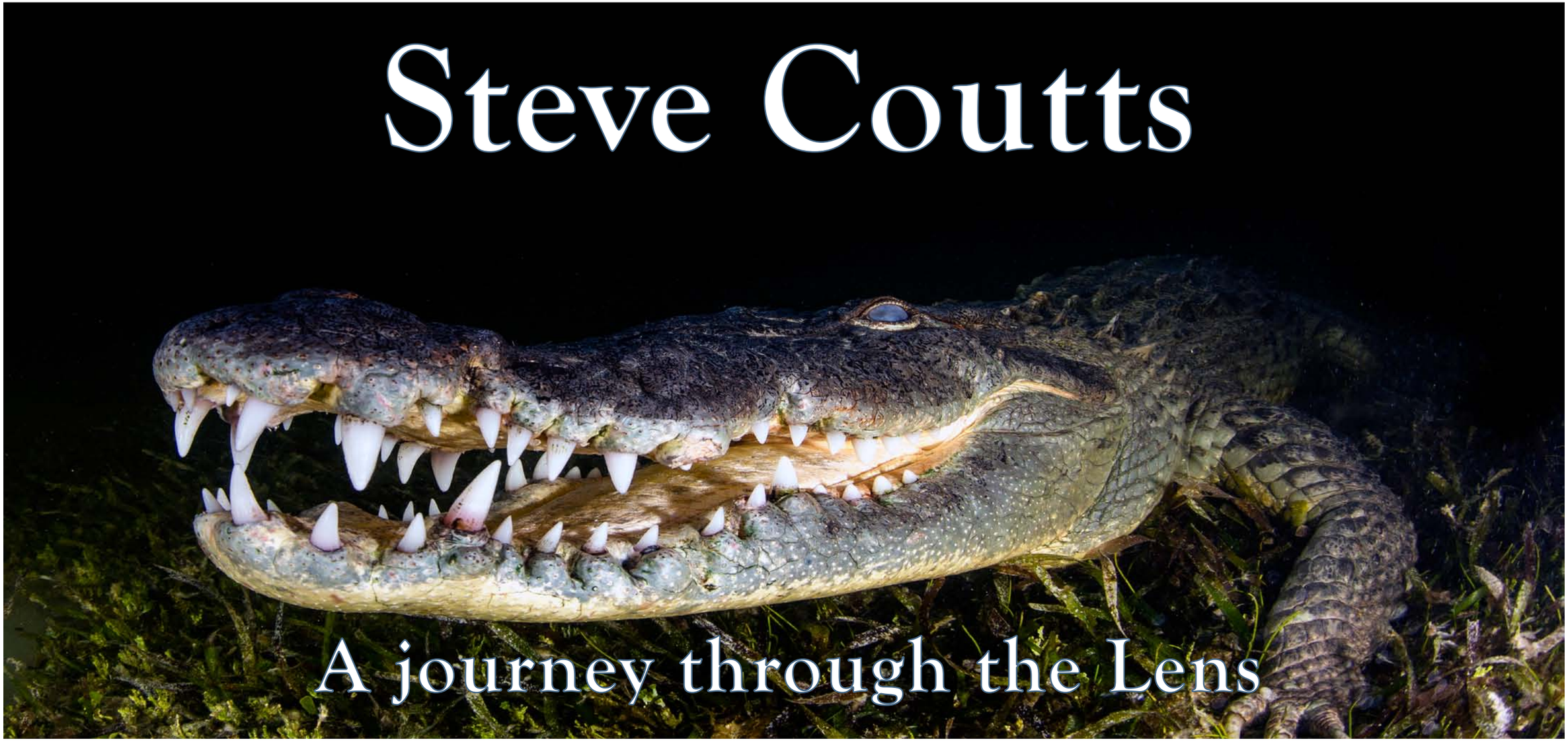
As you become more experienced and gain more confidence with your camera, you will be able to start using the full manual option and really become creative with lighting.

Remember that photography is after all just painting with light.

Through the Lens
Photographer

By: Steve Coutts

Steve Coutts



A journey through the Lens

By: Steve Coutts

I live on Sydney's Northern Beaches and fortunate to have such incredible diving around me. Here is a short summary of my photography diving Sunday afternoons as a child were spent watching natural history documentaries on TV and so blossomed the fascination with the underwater world.

It wasn't until I started working did I have the money to take my first venture under the sea and learnt to dive on holiday with friends in Turkey back in 1997.

Sadly the area had been dynamite fished so there wasn't a lot to see, but the feeling of weightlessness and being an explorer in my own right was nurtured.

It didn't take long to plan my next adventure, this time to do my advanced course in Sharm el Sheikh, Egypt. What an experience, the huge corals, the deep canyons of the Straits of Tiran, the large pelagics and schooling fish.

It was then that I realised that I wanted to be able to tell my story in images and not just words.

I got an entry level DSLR, the Canon 300D with its kit lens of 18-55mm in an Ikelite housing with a single Ikelite DS125 strobe. It was primarily on auto settings as I wasn't a big photographer previously.

At that time I was based in the UK, predominately diving shipwrecks off the South Coast and the camera lay idle for many years, coming out for holidays and what I call 'happy snapping'. Just trying to capture images as and when I found them.

Point and shoot and hoping I got the whole subject in the image.
It wasn't until I moved back to Australia in 2006 was I able to dive regularly and begin to improve my photographic knowledge and skills.

I booked aboard the Mike Ball Minke Whale trip and upgraded my camera to a Canon 50D with a 17-40mm lens but stuck with Ikelite for my housing and strobes (upgraded to DS160s).

Most of my diving was shooting wide angle subjects and I remember telling my dive buddy Pete McGee that shooting nudibranchs wasn't my thing and you won't catch me photographing them. Words that he often reminds me of. I upgraded my equipment further to Nauticam housing, INON strobes (Z240 and now Z330) and Canon 5DMkIII / 5DSR cameras. I further increased my lenses to include 8-15mm fisheye and 100mm macro lens.

The ergonomics of Nauticam was like a breath of fresh air, allowing control to finger tips and really helped my photography.

In order to get better at macro, I was often found hunting bugs and spiders in the garden and I soon realised how much we walk past every day and miss out on.

Taking the time to slow down and look, and I mean really look opened my mind to the possibilities of capturing this tiny world in a camera.
It was then the equipment began to get more specialised with Nauticam SMC1 and SMC2 diopters, a 20mm extension tube and backscatter mini flash snoot.

My macro underwater took a little while to progress and reached out to Ken Thongpila for some mentoring.

I had tried to teach myself and it was a long learning curve. Having someone to share ideas, techniques and give you feedback is so important.

You can now find me with flip down spectacles over my dive mask nose to the floor trying to find the tiniest of nudibranchs to capture images, identify them and help others trying to see them too.

Sharing the underwater world with those that are able to explore underwater but also with those that aren't to help educate people about the wonders of the seas and why it's so important we preserve them.

By: Steve Coutts

Whaleshark image taken in August 2018 at Isla Mujeres, Mexico. Canon 5DMkIII, 8-15mm (@15mm) 1/320, f10, ISO400

Giant Australian Cuttlefish image taken in May 2015 at Cabbage Tree Bay Aquatic Reserve, NSW, Australia. Canon 5DMKIII, Canon 17-40 (@17mm), Inon Z240 Strobes, 1/100, f10, ISO800

West Indian Manatee image taken in August 2018 at Xcalak, Mexico. Canon 5DMKIII, Canon 8-15mm (@15mm), 2 Inon Z240 Strobes, 1/200, f6.3, ISO160

Great White Shark image taken in July 2017 at the Neptune Islands, Australia. Canon 5DIII, 8-15mm (@15mm), 1/250, f6.3, ISO100. Inon Z240 strobes.

By: Steve Coutts

Car Wash Cenotes image taken in August 2018 at Tulum, Mexico. Canon 5DMKIII, Canon 8-15mm (@15mm), Inon Z240 Strobes, 1/320, f10, ISO125

Whaleshark selfie image taken in August 2018 at Isla Mujeres, Mexico. Canon 5DMkIII, 8-15mm (@15mm) 1/320, f14, ISO640

American Crocodile image taken in August 2018 at Banco Chinchorro, Mexico. Canon 5DMKIII, Canon 8-15mm (@15mm), Inon Z240 Strobes, 1/250, f8, ISO250

Sea Spider image taken in April 2021 at Kurnell, NSW, Australia. Canon 5DSR, 100mm macro, 1/200, f20, ISO200. Backscatter mini flash snooted.

By: Steve Coutts

Pteraeolidia ianthina image taken in November 2020 at Bare Island, NSW, Australia. Canon 5DSR, 100mm macro, 1/160, f20, ISO200. Backscatter mini flash snooted.

Nembrotha rosannulata image taken in April 2021 at Barons Hut, Sydney, Australia. Canon 5DSR, 100mm macro, 1/200, f11, ISO200. Backscatter mini flash snooted.

By: Steve Coutts

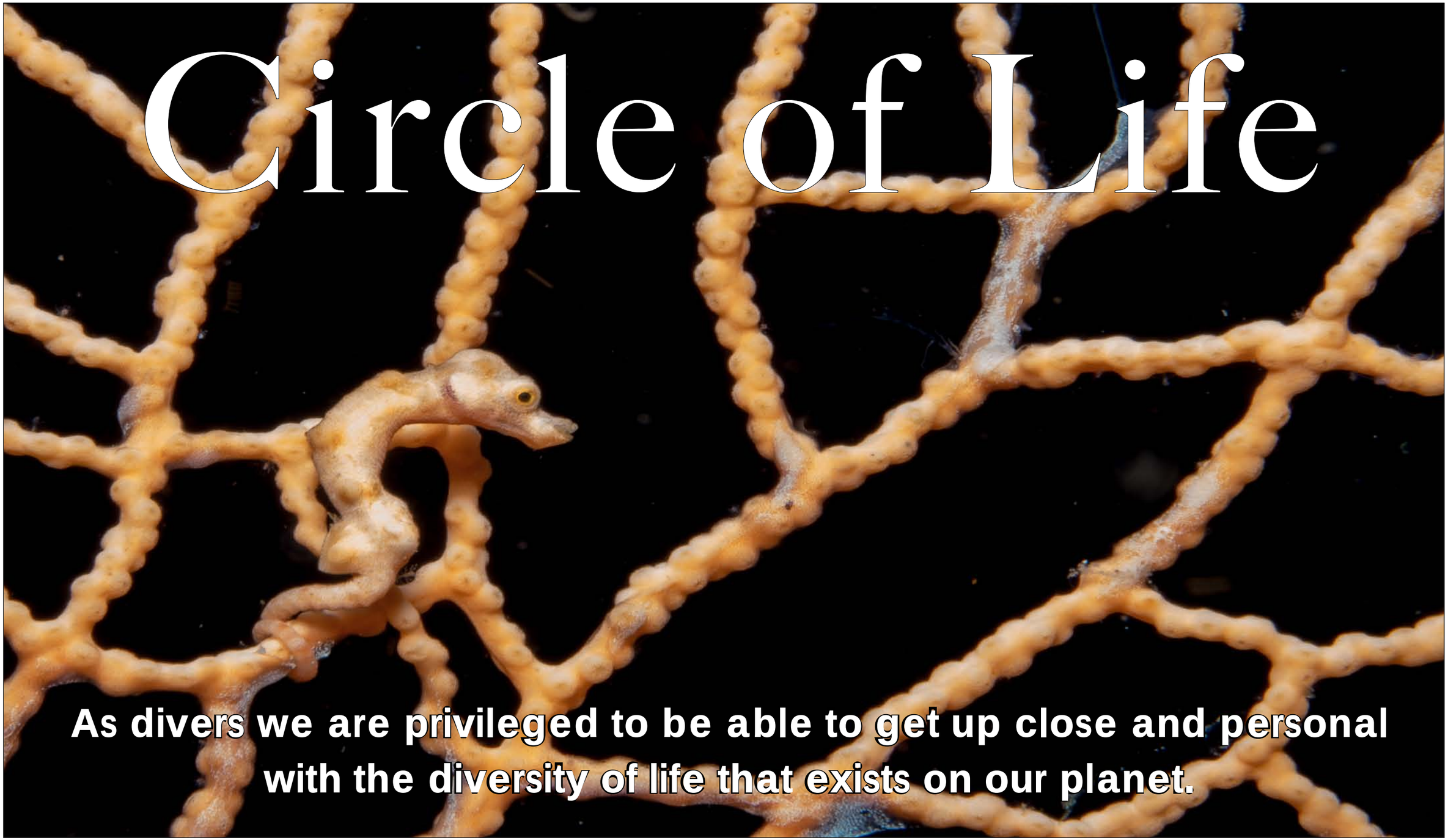
Ornate Ghost Pipefish image taken in April 2021 at Kurnell, NSW, Australia. Canon 5DSR, 100mm macro, 1/200, f11, ISO200. Backscatter mini flash snooted.

Red-fingered anglerfish image taken in April 2021 in Kurnell, NSW, Australia. Canon 5DSR, 100mm macro, 1/200, f13, ISO200. Backscatter mini flash snooted.

Giant Stride
Circle of Life

Circle of Life

By: Richard Lomax Photos: Christopher Bartlett



As divers we are privileged to be able to get up close and personal with the diversity of life that exists on our planet.

Join us as we commemorate the remarkable achievements of **ADEX** 30 and **OzTek** 25 years, all in one extraordinary venue.

OZTek ADEX AUSTRALIA

MARCH 15-16 2025

SYDNEY INTERNATIONAL CONVENTION AND EXHIBITION CENTRE

DARLING HARBOUR, HALL 2

www.adex.asia

Come and be a part of the impressive Dive and Travel Show **ADEX** & Advanced Diving Conference **OZTek**. These two highly respected and well-established events are joining forces to create an extraordinary experience for the Australian public. Get ready to be amazed by an event that is unparalleled in Australia.

By: Richard Lomax Photos: Christopher Bartlett

If you are lucky enough to encounter, say a seahorse, would you call it a fish? What about Kelp?

Is it a plant? What about a sponge? In the early 1700s, Carolus Linnaeus devised the method by which life is named and which is still used to this day.

The system creates a unique name and in so doing classifies the life form. The abbreviated diagram alongside shows that there are eight principal categories to this classification starting at the top with three domains and ending with millions of species.

The reason why Linnaeus system is still relevant today is because it is able to give unique names to these millions of species.

Before microscopes and genetic code identification, classification was simple – if it moved it fell into the animal kingdom, if it was static then it was classified as a plant.

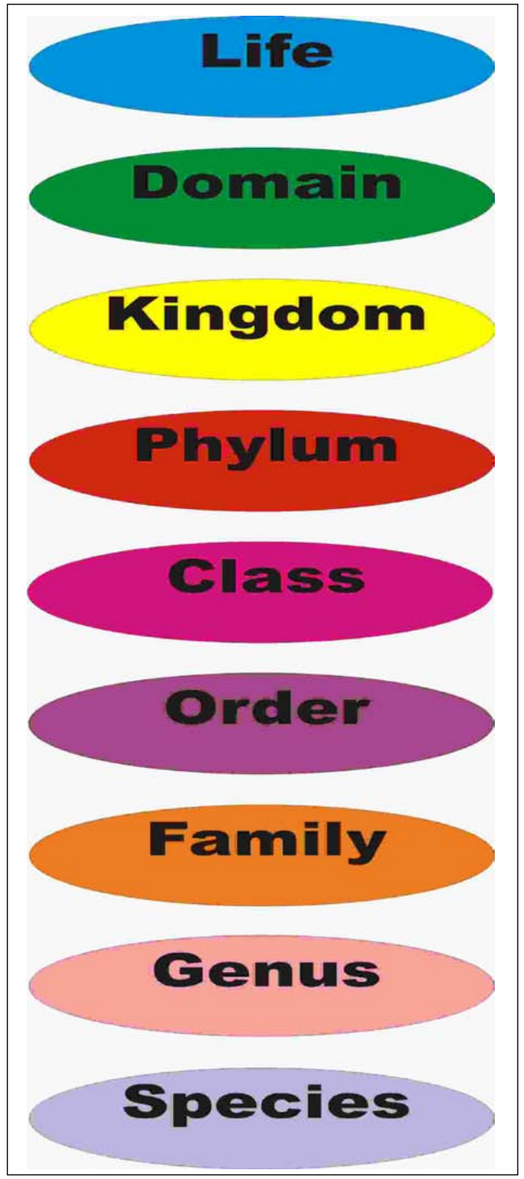
By 1990 genetic evidence showed that most life was microscopic and this microscopic life was not only extensive but diverse. It also changed the way things were classified.

Diagram shows how a seahorse and kelp are named. Naming is based on grouping life forms into categories based on structure, both internal and external, the cellular make up and now recently, also on the genetics.

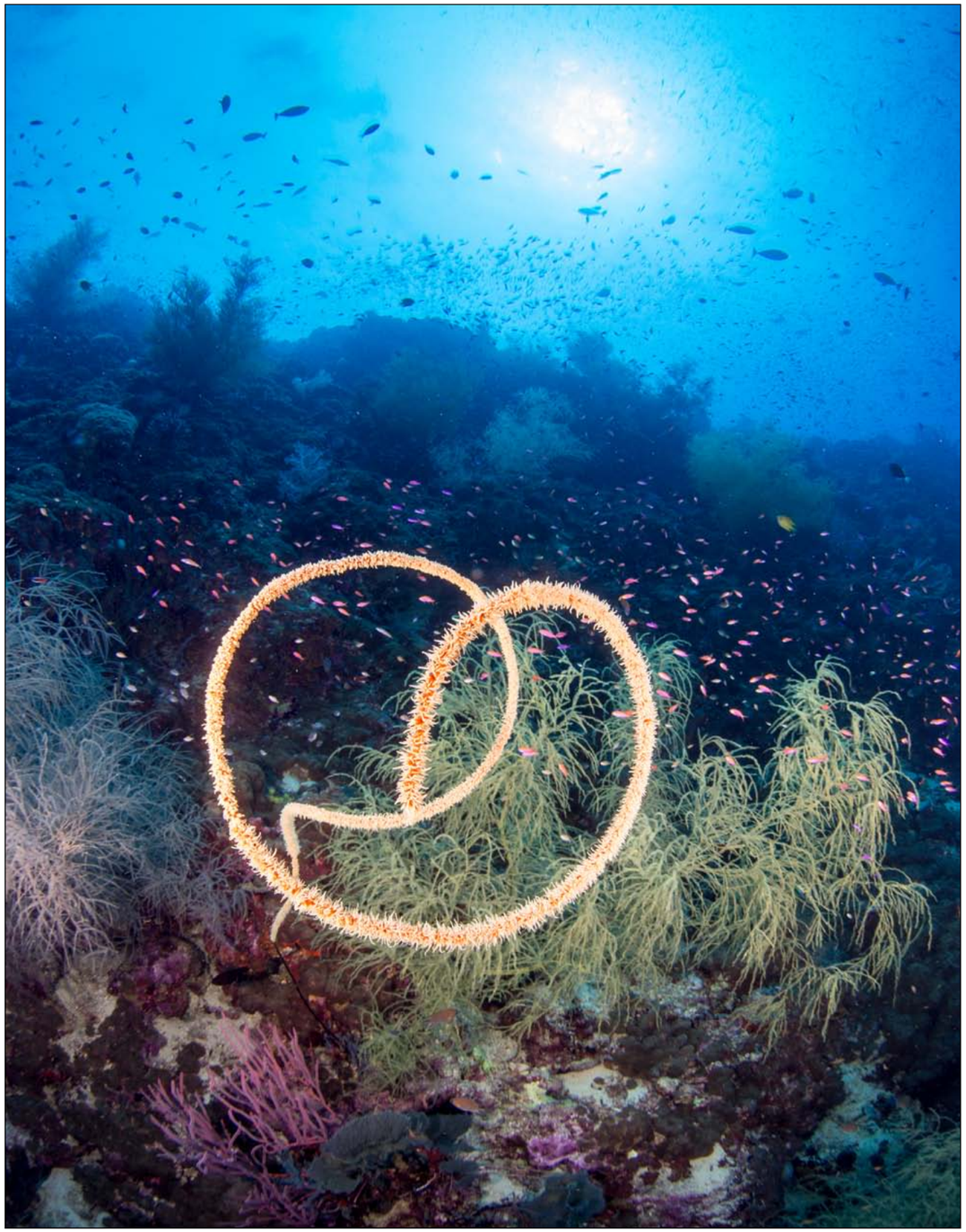
Let's look at the Crowned seahorse (Hippocampus camelopardis – the seahorse with a dolphin tail, camel's head and leopard spots).

You can make up your own mind about how this poor animal got its name! It has cells with a nucleus so it belongs to the domain Eukarya (cell with a nucleus).

Seahorses eat other life forms, move, have a blastula stage and have cells with no cell wall, which makes the part of the animal kingdom. It falls into the Phylum Chordata because of its 'notch cord'. It has a swim bladder, a skeleton of bone, paired fins, scales and lives in water to name a few characteristics, which makes it fall into the Infraclass Teleostei (bony fish), and because of the fins are webbed, seahorses fall into the Class Actinopterygii (ray small wings).



Giant Stride
Circle of Life



By: Richard Lomax Photos: Christopher Bartlett

Seahorses are grouped into the Order Syngathiform (with jaw shape) with other fish which have elongated, narrow bodies surrounded by a series of bony rings and small tubular mouths. The family Syngathidae is formed by seahorses and pipefish, Leafy sea dragons and Weedy sea dragons.

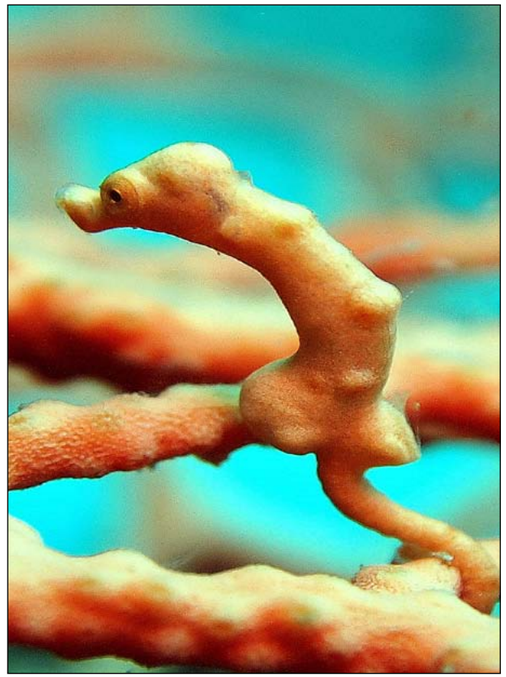
Trumpetfish, Cornetfish, Snipefish and the like fall into different families.

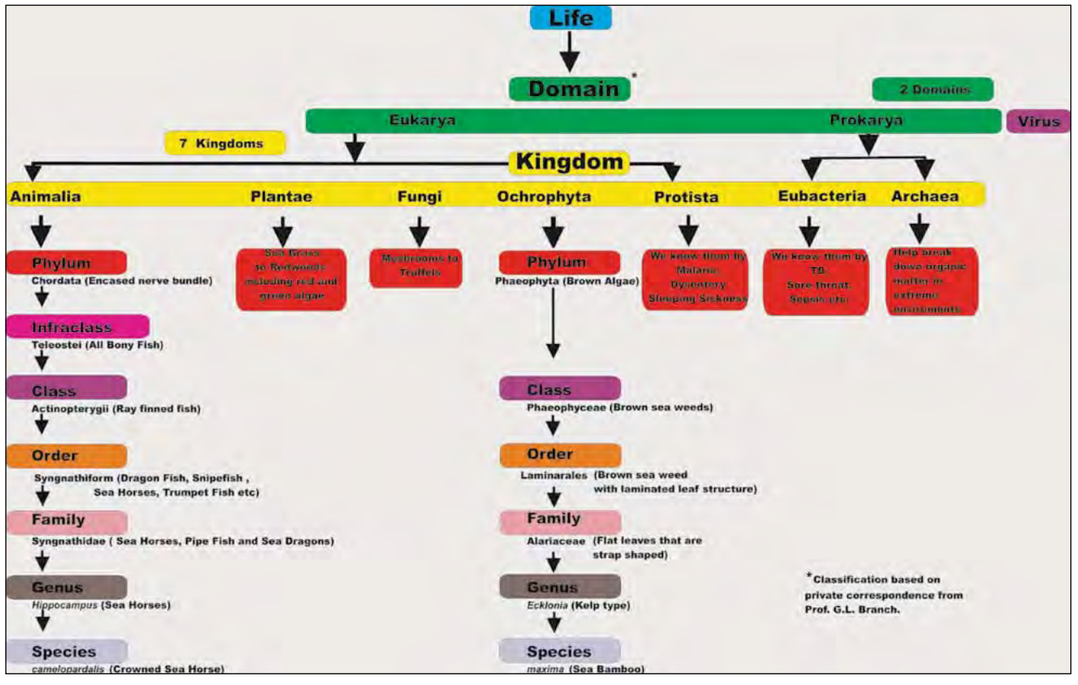
And finally, all seahorses fall into the Genus Hippocampus. Its unique armoured body profile and upright stature make it different to pipefish.

The different types of seahorses are named by their species name.

So a 'seahorse' is a fish! And klp is a type of algae and not a plant!

Diagram shows the main life forms that we encounter as divers and the reasons scientist have grouped them into these phyla.





By: Richard Lomax Photos: Christopher Bartlett

For life to exist, atoms need to be extracted from the environment and converted into ‘life’ molecules to be used as food, energy and building blocks (atoms are the smallest building blocks on which the whole universe is constructed. ‘Life’ molecules, which are made up of atoms, are the building blocks of life).

Once the ‘life’ molecules have been used and excreted, the spent molecules need to be reconverted into atoms or useable ‘life’ molecules again. What we know is that every organism exists to keep this cycle working and in balance.

How the different organisms interact is still largely a mystery other than to say that their design fits the purpose and niche which they perfectly occupy.

What is the purpose of a seahorse? Because we don’t know, just shows how little we do know.

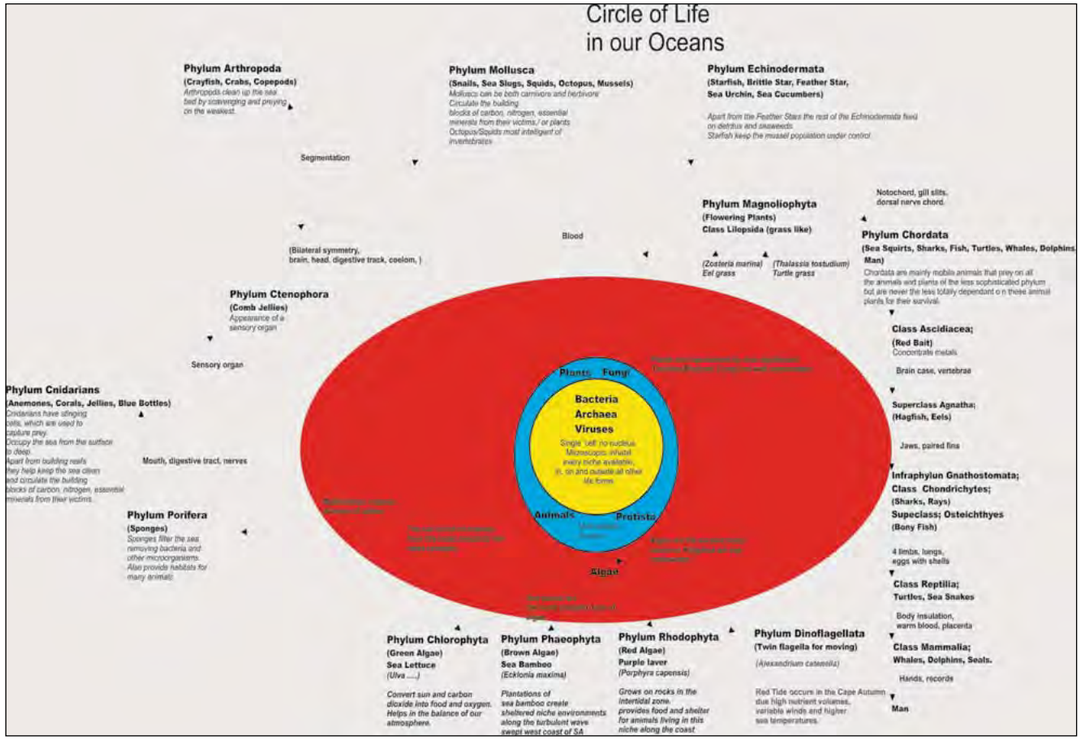
Let’s illustrate this statement by looking at a recent study involving Pacific kelp (Macrocystis pyrifera), Bull Kelp (Nereocystis leutkeana) and the Sea otter (Enhydra species).

The specialised cells in kelp convert carbon dioxide (CO2, a ‘non-life molecule’) into ‘life sugar’ molecules using sunlight as the energy source. The kelp grows using the sugar molecules and it releases oxygen back into the environment.

Without this removal of CO2 and release of oxygen, life as we know it would die.

The other essential ‘life’ molecules, nitrogen, iron, zinc and phosphorous, are supplied by specialised bacteria and archaea living in or on the kelp, which convert these atoms into ‘life’ molecules.

Sea urchins and other animals, eat



the kelp. They are in turn eaten by other animals. One of these animals is the Sea otter, which eats an equivalent of 80 ‘quarter pound sea urchin hamburgers’ a day.

When trapping decimated the Sea otter population, the kelp forests were in turn decimated by sea urchins. Saving the Sea otter saved the kelp forests and all the industries associated with these underwater forests.

The simple conclusion reached was, no sea otters, no kelp, no oxygen, no industry, no jobs! Who would ever have guessed?

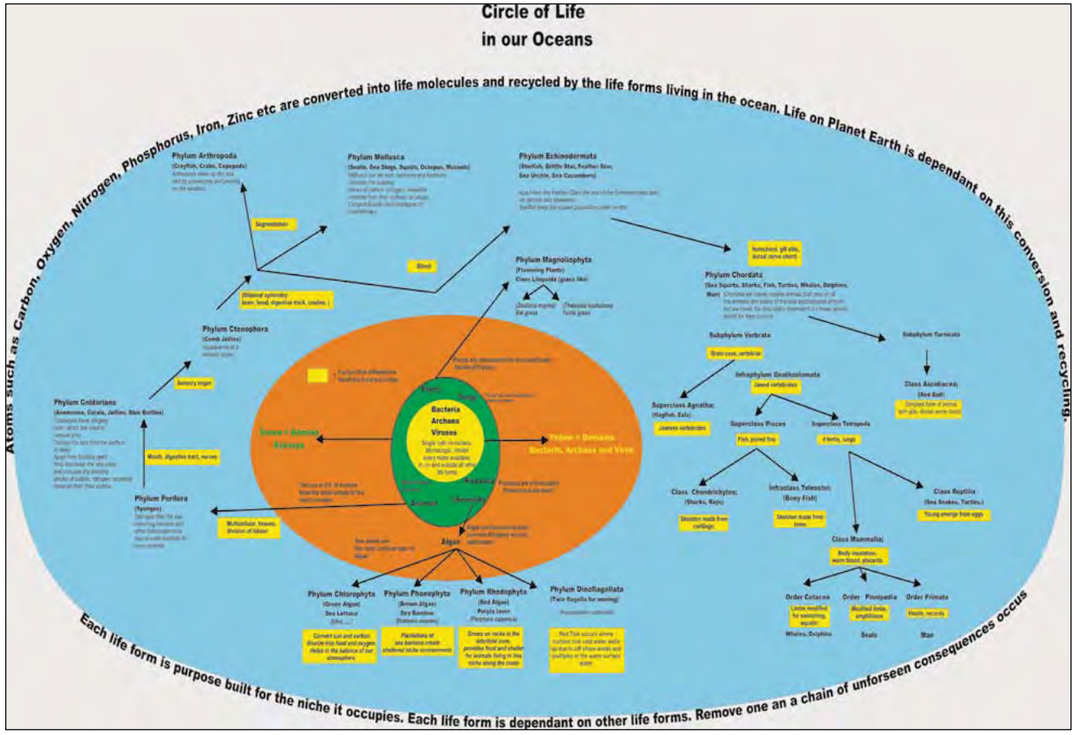
This cycle of reproducing, growing, eating and dying ensures that the ocean is filtered and cleaned, CO2 (Greenhouse gas) is removed from the atmosphere and life giving oxygen replenished. Underlying the whole cycle is a wonderful molecule called RNA.

All life is built from the same building blocks – ‘life’ molecules. The plans for making the ‘life’ molecules and then putting them together to create a living organism are encoded in the RNA molecule.

To explain this idea further think of the ‘life’ molecules as ‘Lego’ blocks. With a few basic ‘Lego’ blocks the most complex structures can be built. ‘Life Lego’ molecules build even more incredible structures (life forms), from a microscopic virus to the huge Blue whale.

But what is so unique, is that these plans stored on the RNA molecule are used by all life for building the blocks (molecules) and then assembling the blocks into life forms.

And then, when a new life form is created because of a new niche, the blueprint is stored back onto the RNA molecule. Life plans are never lost.



By: Richard Lomax Photos: Christopher Bartlett

I hope you can now appreciate that all life is special and in general we are ignorant of the purpose of most of the organisms and how they interact with each other to provide a living functioning planet. So take care of the ocean and all its creatures.

We know so little.

Notes: The literature used for this article shows that classification is in a state of flux as the new classifications are blended with the old.

As there is no acceptable standard that reflects the changes, I have used classifications/names best suited to illustrating the concepts of this article.

I have attached an alternative to diagram two showing how dynamic and in flux the categorisation of life is.

I have included viruses into the circle of life because they are also made up from RNA.

Giant Stride
Circle of Life

Giant Stride
Stingray City

By: Angelique Rausch

Stingray City

Grand Cayman is home to a legendary dive location – Stingray City and possibly the world's most popular 4m dive you'll ever do.

ESCAPE THE WINTER: 10% OFF

Welcome to Indonesia's secret: North Sulawesi.

Dive the Bunaken Marine Park, Bangka Archipelago, the Lembeh Strait and explore some of the world's highest biodiversity.

Our two resorts on both coasts of the area ensure you get to see all the spectacular nature North Sulawesi has to offer.

OZDiver readers enjoy a special discount for the months June, July and August!

SCAN ME

THALASSA
DIVE RESORTS INDONESIA

www.thalassamanado.com info@thalassamanado.com

@thalassadiveresorts +62 8820 2146 1066

By: Angelique Rausch

To understand Stingray City we need to understand the Cayman Islands geography.

Grand Cayman is a pinnacle of an underwater mountain and its cliffs are the great walls we can dive. These cliffs go down as deep as 5 000m... To the north we have the North Sound, a big horseshoe-shaped harbour between 3-6m deep.

On the edge of the North Sound there is a fringing barrier reef. Coral formations break the surface and can reach up to 4m of the water.

As long as there have been people living in the Cayman Islands there have been fishermen. Fishermen would take their boats out of the North Sound into the deeper waters to catch the fish but it gets really rough out there.

So they would come back through the barrier reef and anchor up in the shallow water and clean their catch. Due to a massive mosquito population, the fisher preferred cleaning their catch out on the open ocean as on land, the mosquitoes were known to occasionally suffocate livestock.

As they cleaned their catch the bits they didn't want (fins, scales and guts) would be thrown overboard. Pretty soon, the southern stingrays started associating boats stopping and anchoring with being fed.

Today we're limited to the amount and type of food we feed them by the Department of Environment. In Grand Cayman there are roughly between 80 000 to 120 000 cruise ship passengers visiting the island annually and it's a $120 million industry.

With the large number of tourists visiting Stingray City, it was needed to add laws to protect this natural grouping of southern rays (Dasyatis Americana).

Giant Stride
Stingray City

By: Angelique Rausch

Found in tropical and subtropical waters of the Western Atlantic Ocean from New Jersey down to Brazil, they have a flat, diamond-shaped disc, with different colours such as mud brown, olive, grey and white underbellies.

As you get out of the canals with your boat, the North Sound's crystal clear Caribbean blue waters lie out in front of you.

On wind-still days you can travel in your boat looking down in the clear water and see seastars on the bottom of 4m deep water.

Once at the site you are briefed on how to interact with these friendly, puppy-like creatures. These stingrays have been interacted with for the last 30 years and are very used to people.

The stingrays range from 30cm up to 2m from wing to wing and can weigh up to 60kg. They are ovoviviparous, meaning that they have live young – they will swim into the mangroves and have live pups but they leave them there. They have no parental care.

The places you avoid touching the stingray are on top in the middle of the body where there are three ridges of spines, literally three lines of rough bumps that form an armour plating for the stingray.

The second place to avoid is the mouth of the stingray. They don't have big strong teeth but do have very powerful suction, similar to a very strong vacuum cleaner and a jaw that can give you what is known as a stingray love-bite or 'hicky'.

Lastly, the stinger, the barb everyone is afraid of, but it's literally a black point half way down the tail that is sharp. Due to where the barb is located on the stingray's tail, it is a purely defensive weapon. The only way to hurt yourself on the sting of a southern stingray is by you putting your full body weight onto the barb.

It's difficult to describe the feeling when you jump into crystal clear Caribbean waters, drop down to your knees on the sandy seafloor and see majestic creatures flying towards you looking for their afternoon snack.

Here you can break all the diving rules you've learned – go ahead and feel the stingray's velvety smooth bellies.

They feel like portabella mushrooms and they will swim through your legs, over your head and invade your personal space. Amazingly, they really do seem to enjoy the attention and all the stroking and touching they get.

The dive guides accompanying you tend to handle the food (frozen squid) in a sealed container and feed the stingrays individually. The dive becomes very much like a feeding frenzy and once the food has been eaten, the stingrays get bored and go off in search of other divers, better known as feeding groups.

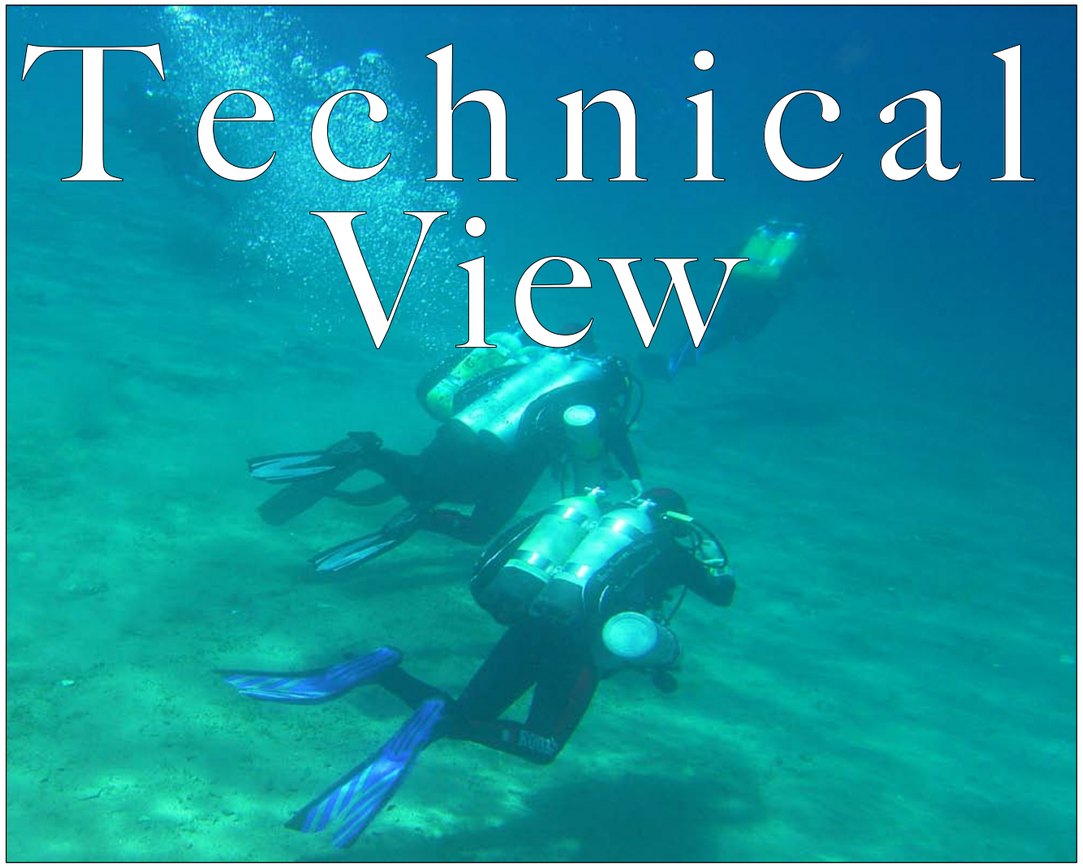
We, as instructors and dive masters, play with these stingrays every day and we know a lot of them by name. The one with no tail is called Frisbee and then there is Sally (the biggest one), Pushy, Chopper, Cindy, Jamie, Tri-pod and Romeo. All the stingrays have different markings and different personalities.

Stingray City is amazing and simply nothing can prepare you for that first rush of adrenaline.

The balance of nature and enterprise is a curious mix and experiencing it first hand is a rare treat.

Technical View

By: Wiehan Thuynsman



Technical diving is a sensitive topic, not only for those who practise it but also for those who are misinformed about what technical diving really is.

These people include fellow divers and family members. One thing is certain... technical diving is a step above the norm and I feel that in some aspects it is safer than recreational diving.

I once heard someone say that with technical diving you challenge yourself, and in recreational or sport diving you amuse yourself.

It depends on the diver I suppose.

What do people hear when someone speaks about technical diving? Perhaps deep diving, cave dives, heavy decompression times, massive amounts of cylinders, the 'bends' and gambling with your life each time you do a 'technical' dive.

These are all true depending on what you are prepared to do as a technical diver, and of course, this is heavily dependent on your skill, experience, qualification level and what you see as the ultimate risk.

It's not as easy as getting into your twin set, slinging three cylinders and going down Mariana's Trench. No, training more training and yes, even more training and actual dive experience will get you to a level where depth or distance can be explored fully prepared and safely.

These dives and skills cannot be rushed and only certain instructors have the know-how to get people trained in these courses and they must have the confidence in their own ability to ensure safety and best practise methods.

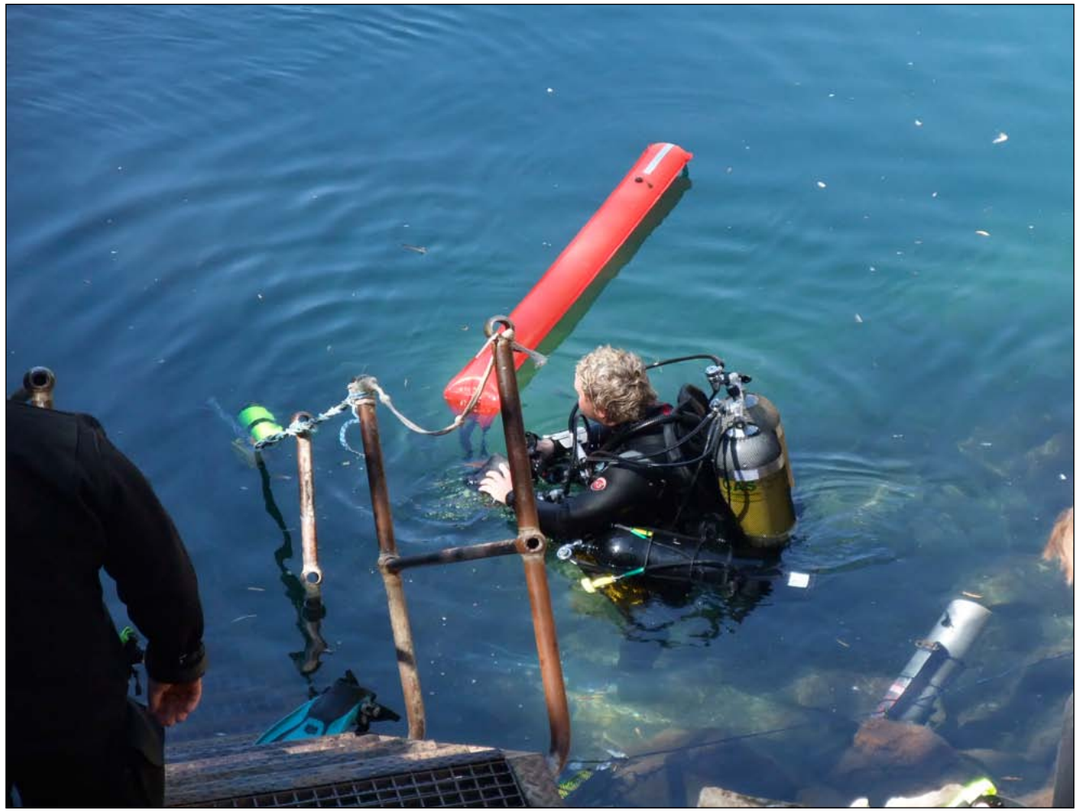
Did you know that to dive deeper than 40m you must first complete quite a few courses within the technical diving arena and gain the necessary experience before you are allowed to dive deeper?

The first step into technical diving will teach you how stay longer at depth and get more out of those 40m dives than the normal recreational dive. Instead of eight minute dives you can do a 25 minute dive and still come out at around 50 minutes.

Various organisations offer technical diving courses and these courses are usually well geared with ample information arming the diver with plenty of knowledge to make the dives as safe as possible.

To give you an example where I feel technical diving is safer than sport diving, is doing a 40m dive.

Guys are going down to that depth with single 10-litre, 12-litre and



By: Wiehan Thuynsman

15-litre cylinders and pushing low on air as far as they can go. What happens if something goes wrong, if a sudden gas loss occurs?

You are going to have serious problems.

Technical divers will descend to that depth with two 12-litre or 15-litre cylinders strapped to their back, along with a decompression gas sling.

The dive plan will make use of rules assuring low on air for yourself and your buddy if required, meaning that the chances for you losing all your gas when a sudden gas loss occurs will be greatly reduced because of planning and you can actually isolate your cylinders.

Technical diving is about goals and what you need to do to achieve that goal. The risk involved can increase depending on what you have as your goal.

Diving into complex cave systems or diving to great depth chasing the triple digit handshake increases risk, but this is again reduced as far as possible by proper professional training and planning.

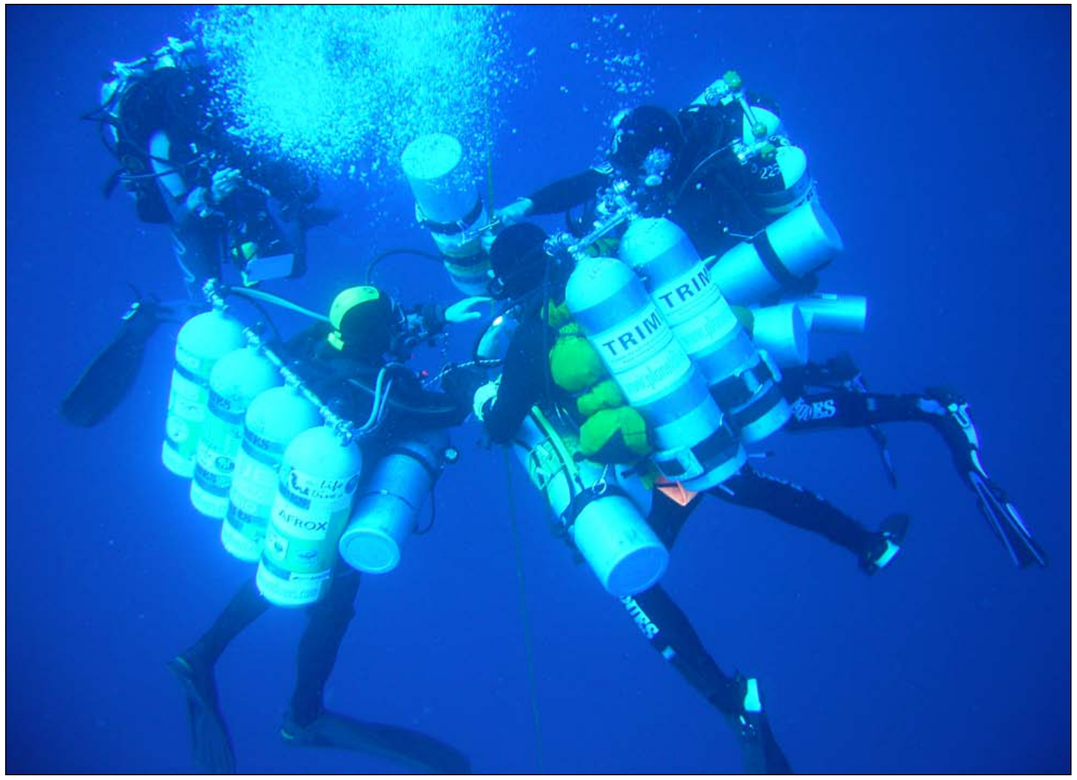
I think of these dives as extreme scuba diving – technical diving is left behind when you go places where few have been and others have actually paid the ultimate price because of situations spiralling out of control.

When things go wrong at 20m, you can get out quickly without any significant problems. When they go wrong at 100m, training, experience, planning, team work, self control and nothing else will get you out.

Divers enjoying these types of dives usually have huge amounts of respect for the sport and for living life, and therefore, these type of dives will continue and become safer as skills and equipment evolves.

Consider technical diving if you want to increase your skill and diving knowledge and have clear goals set.

Get in contact with a technical instructor – you will be greatly surprised by the 'other' side of diving.



Solomon Is. Diving

Photo: Gerald Rambert

With so many islands, liveaboard is one of the beat ways to access those hard to reach dive sites.

visitsolomons.com.sb

Photo By: Nuno Gomes

Nuno Gomes

As we all know Nitrox is freely available to all divers i.e. Nitrox 21. (The composition of the air that we breathe is 21% oxygen and 79% Nitrogen).

When we dive only the nitrogen contributes towards decompression. In order to reduce decompression times we need to reduce the percentage of Nitrogen in the gas that we breath, in doing that we have to increase the percentage of the oxygen because it must all add up to 100% i.e. 21% + 79% = 100% or 36% + 64% = 100% Because we are adding oxygen the process is known as enriching the air with oxygen.A typical Nitrox mixture is 36% oxygen and 64% nitrogen i.e. Nitrox 36. How deep can one go with Nitrox 36? The most important fact to remember is that oxygen becomes toxic at a partial pressure of 1.4 - 1.6 atmospheres. At 30 meters the partial pressure of oxygen will be 1.44 atmospheres I.e. 4 X 0.36 = 1.44. So 30 meters is as deep as one can go on Nitrox 36. What is the benefit? One can go to 50 meters on air!!! (depending to what agency one is affiliated). The benefit is that one can stay longer at 30 meters without decompressing as long as one has enough Nitrox in the cylinder to stay there. Personally I find Nitrox very useful, in technical diving, as a decompression gas, it reduces decompression times tremendously. If you are thinking of doing technical diving, nitrox diving is a very good first step.

Barry Coleman

EANx OR Nitrox has many advantages over air diving. Some of the benefits are:

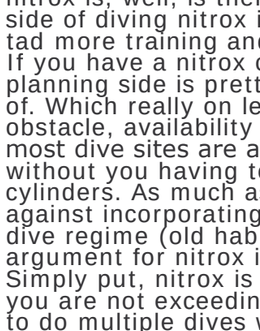
1. EANx when used with standard dive tables or computers, provides a tremendous safety factor. In fact, when utilized in this fashion, the actual nitrogen accumulation is that for a 3msw to 6msw shallower dive. This application of EANx is actually ideal for divers who simply wish to be more conservative, those individuals who are not as young as they once were or those who may not be in the peak of physical fitness.
2. A significant increase in bottom time no-decompression limits.
3. A reduction in the possibility of decompression illness.
4. A reduction of decompression time if the no decompression limits are exceeded.
5.Reduced fatigue after the dive (declared by many EANx divers).

EANx was first used in 1912 and has been used extensively for over thirty years by commercial organizations and the military. It has also been in the medical field as a therapy gas. Advance level divers have been taking advantage of EANx for cave diving, wreck diving, marine harvest and many other diving applications. More recently, EANx has been recognized by international Scuba diving certification agencies as an alternative breathing gas for recreational diving.

Pieter Smith

Why not ? Although air is a wonderful gas to breathe and is life sustaining, it is not necessarily the best gas to breathe underwater! Imagine grandma in hospital on pure oxygen, she's on O2 because it's good for her, Oxygen is a medicine and the time spent breathing it is the dosage. The pure O2 that she breathes at the surface is equivalent to your breathing air at 40 m!! (40m = 5bar = 1.05 bar Oxygen + 3.95 bar Nitrogen).Since Grandma is at 1atmosphere (1 Bar) and she is breathing 100% O2 (1 Bar = 1.00 bar Oxygen + 0.00 bar Nitrogen), you are physiologically breathing the "same" Oxygen!!You are just wetter....
Problem you have is all that Nitrogen.... this builds up while you are under pressure and has to be released eventually; this is why we have Dive tables to give us a safe time to spend underwater.
This problem can get solved by making the Nitrogen less; you do this by adding more Oxygen! And you have Nitrox.... simple.
So for a 25 m dive you can dive with a Nitrox 28 (28 denotes the % Oxygen present) to give you the equivalent of Grandma's Oxygen (1 Bar) but your Nitrogen has lessened from 79% to 72%! This means longer bottom time. If you push the percentage of Oxygen even higher you will have even less Nitrogen with even more bottom time! Nitrox has the ability to almost double your bottom time on most dives.
Oxygen has other dangers that need to be considered but these you will learn more about when you do your Nitrox course.

Pieter Venter



Coming as I do from an old CMAS background, nitrox is something I am slowly being weaned on to. One would imagine as a deep diver I would prefer nitrox. After all, it gets you out of the water cleaner, fresher and faster. You get longer bottom times, deeper and you do not have to fight narcosis when you are there. All valid reasons, unless the dive you are training for requires you to function at a high narcotic depth. When contemplating a dive sub 100m, it is just not practical to mix a gas that totally eliminates narcosis. Therefore it is critical that I am able to operate under that level of narcosis, which means I have to build up on deep air. And that is the only reason for choosing air as a breathing mixture. On a Trimix dive, air is persona non grata, being too rich in nitrogen and too lean in oxygen.
The combination of rich nitrogen and rich helium is one of the key ingredients in counter diffusion bends. Something to be avoided at all costs. The only reason not to be diving nitrox is, well, is there one ? The down side of diving nitrox is that it requires a tad more training and planning.
If you have a nitrox computer, the planning side is pretty much taken care of. Which really on leaves one more obstacle, availability and these days most dive sites are able to fill nitrox, without you having to oxygen clean cylinders. As much as I have rebelled against incorporating nitrox into my dive regime (old habits die hard), the argument for nitrox is just too strong. Simply put, nitrox is the ideal mix when you are not exceeding 40m and want to do multiple dives with the maximum bottom time, minimum decompression and optimal safety.

Photo: Crispin Middleton

Join us as we commemorate the remarkable achievements of **ADEX** 30 and **OzTek** 25 years, all in one extraordinary venue.

OZTek ADEX AUSTRALIA

MARCH 15-16 2025

SYDNEY INTERNATIONAL CONVENTION AND EXHIBITION CENTRE

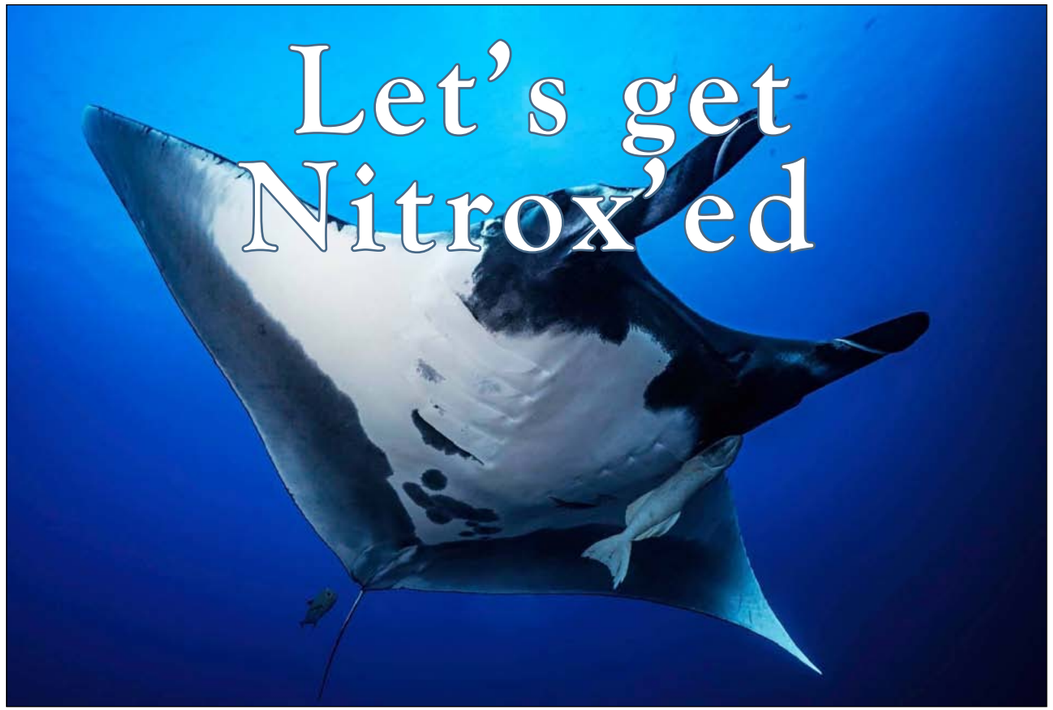
DARLING HARBOUR, HALL 2

www.adex.asia

Come and be a part of the impressive Dive and Travel Show **ADEX** & Advanced Diving Conference **OZTek**. These two highly respected and well-established events are joining forces to create an extraordinary experience for the Australian public. Get ready to be amazed by an event that is unparalleled in Australia.

By: Wiehan Thuynsma

Let's get Nitrox'ed



So what is nitrox and why should you consider diving with it? Simply put, nitrox is a mix between nitrogen (N) and oxygen (O2).

Air contains both gasses, 79% nitrogen and 21% oxygen which means that air can actually be considered a nitrox blend, thus next time you dive air you are actually diving a nitrox (EAN21) mix. Nitrox is normally presented as EANx, translated as Enriched Air Nitrox and the 'x' is reserved for the actual percentage O2 within the mix itself.

In recreational scuba diving there are two standard types of nitrox blends - a 32% and a 36% mix put down as EAN32 or EAN36 where the 32 or 36 number represents the percentage of O2 in the mix. Within recreational diving nitrox can be consumed up to a 40% (EAN40) oxygen limit mix.

Dive planning around nitrox is based on exactly the same principles as with normal air diving, the only difference is that EANx tables, looking exactly the same as air tables, are used showing different bottom times as well as different surface interval times.

Therefore it is very simple and easy to plan nitrox dives, the question now is why would divers want to use nitrox as a gas mix instead of normal air?

The simple answer to this is to extend the bottom time on the reef. A nitrox mix will increase the time you can spend at a certain depth.

Nitrox is usually used for mid-level depth dives, meaning that to experience its real effect it must be used between depths of 20m and 40m.

A huge misconception is that nitrox will allow the diver to dive to deeper depths - this is definitely not the case, and the increase of O2 limits the depth that can be reached.

For instance, technical divers search for great depth will limit the O2 percentage content in their blends and rather add in helium (He) as an oxygen substitute.

Diving nitrox means the nitrogen up-take is slower because the supply is made less by the larger share of oxygen which translates into a longer bottom time.

In addition to the extended bottom time, surface interval times will be shortened between dives which means that repetitive dives can be done in quicker succession.

Nitrox is a popular choice when scuba divers travel far to dive and want to get the most from their dive trips.

For instance, when visiting the Red Sea, diving nitrox will be hugely beneficial because of all the benefits it offers. Considering the cost of a nitrox fill, it usually is a bit more expensive than a normal air dive but definitely worth it if you think about the longer bottom time.

Using nitrox as the preferred mix does not mean the risk for decompression sickness is avoided because of the higher percentage oxygen.

Diving any mix should be treated within the gas rule set or calculations. When considering nitrox the operator will fill your tank to your preferred nitrox mix, but it is still your own responsibility to check and analyse your own cylinder and ensure that the gas mixture is correct and falls within the dive plan.

I do recommend considering a nitrox qualification if you want to extend your bottom time – it's a quick and easy course and well worth the time for the benefit.

Happy nitrox diving!

By: Johan Boshoff

Fins - Not Flippers!

To really appreciate how fins help during dives, one should try diving or even just swimming in full SCUBA gear without them.

You'll be dead tired and will literally be going nowhere fast. Fins do most of the physical work on a dive, since they are connected to the legs that do the kicking. For this reason, it's vitally important to select the set that meets your diving needs the best.

Choosing the correct type of fins to buy is not easy and you'll need to do a lot of research to get it right on the first time. If a particular pair of fins catch your eye while on a dive, ask the owner's opinion and even ask to try them out if possible – this is an option you won't have when at the dive shop.

Basic fin classification:
SCUBA fins come in two configurations: the open-heel and the closed-heel fin. The open-heel is designed to be used in conjunction with a boot that is slipped into the foot-well and securely strapped together by an adjustable heel strap. Advantages of this type of fin include retention of body heat in cold conditions and it's easier to walk on rough terrain to and from a dive, especially at inland dive sites. The closed-heel fin is designed to be used without a boot.

The bare foot is slipped into the foot-well and the rubber back of the fin is pulled over the heel – similar to pulling on a pair of slippers. Advantages of this fin include comfort during diving, ease to put on and being able to walk barefoot on the beach as soon as your dive is over.

Selecting a pair of fins
Getting the correct size is important – it's often difficult to put them on or take off when in or out of the water. A fin that's too tight will make your feet go numb and spoil your dive – then you'll have to go out and buy another pair anyway. The moral of this story? Size does count!

While checking the size, also try to become accustomed to the buckling system so that you can decide whether or not you'll be comfortable putting them on and taking them off. When buying fins at a dive shop, you cant test them in water – by being logical and using common sense, you should be able to work out which will suit you best.

While in a sitting position, put the fins on and move your legs in a kicking motion to check for comfort. You won't feel resistance as you would in the water, but you'll get a good idea of the fit, especially in the ankle area where you might feel rubbing or discomfort if the fins are the wrong size.
If you're buying for the first time, you'll have to rely on the advice given by your instructor or the dive shop salesperson. Make sure you use common sense and don't fall into the trap of buying the wrong pair.

There are various types of fins that are available – the most common are the traditional "paddle" fins. These have a straight blade that extends from foot-well and are nothing fancy. Many argue that the simplest is the best. Most of the fin manufacturers also offer specially engineered fins that provide more propulsion through pivoting blades that change to the most efficient angle with each kick. There are also fins with splits and cut-outs in the blades, all of which are aimed at enhancing the kicking force and efficiency of the diver. When buying your fins from a reputable dealer, range is not going to be a problem so selection could be rather tricky.

Finning techniques
Selecting the most suitable fin does not mean this is where the story ends. Correct finning techniques are extremely important and will vary depending on the type of dive you're doing, the type of fins and equipment you're using and the fitness level of the diver. Fins made from stiff rubber will be best suited for a technical diver who is carrying a lot of equipment, as this requires hard kicking and quite a bit of physical fitness. A sport diver with normal gear will be fine with a softer fin that is lighter and easier to kick with. These fins will also provide more thrust as there is less equipment being carried. Spear fins can also be used - they are long bladed fins designed to give maximum thrust. Although they're meant for spear fishing divers, they can also be used for regular diving.

You need to find a technique that you're comfortable with. The frog kick is pretty good when ascending, or you can use the traditional kick – just make sure to use strong strokes and complete the full leg motion. Other popular techniques include the dolphin kick, which is done by moving your body in an upward and downward wave movement, and the flutter kick, which uses the normal finning kick along with bent knees and a moderate cadence. If you're doing something wrong or have a fin that isn't suited to your style, it will almost certainly end with cramping at the bottom of your foot or calf muscle. This can be corrected by performing the "cramp stretch" - grabbing the top of the fin and straightening the leg that is cramped up.

Once the right fins have been selected and you're comfortable with them, it's important to get to know exactly how they work. Understand the buckle mechanism and become accustomed to putting them on and removing them while in the water. Do this while wearing gear and without looking down. Should a fin be lost during a dive, you'll be able to recover from the situation without hassle. Always carry a spare strap or two, as they do tend to perish and break with age - rubber and neoprene are the most popular types of straps that are available. Certain fins even have a spring-like strap that is self-adjustable.
A handy tip to remember is that the tunnel-shaped pieces of plastic that come with the fins should be kept and placed in the foot-wells after use. This will ensure the fins retain their natural shape and don't distort during storage. Lastly, like with all equipment, rinse them properly after using them and store in a cool place.

OZ DIVER

IT's FREE & IT's ONLINE

Available on the App Store

Available on the Google play

WWW.OZDIVER.COM.AU

The Dive Spots of NEW SOUTH WALES

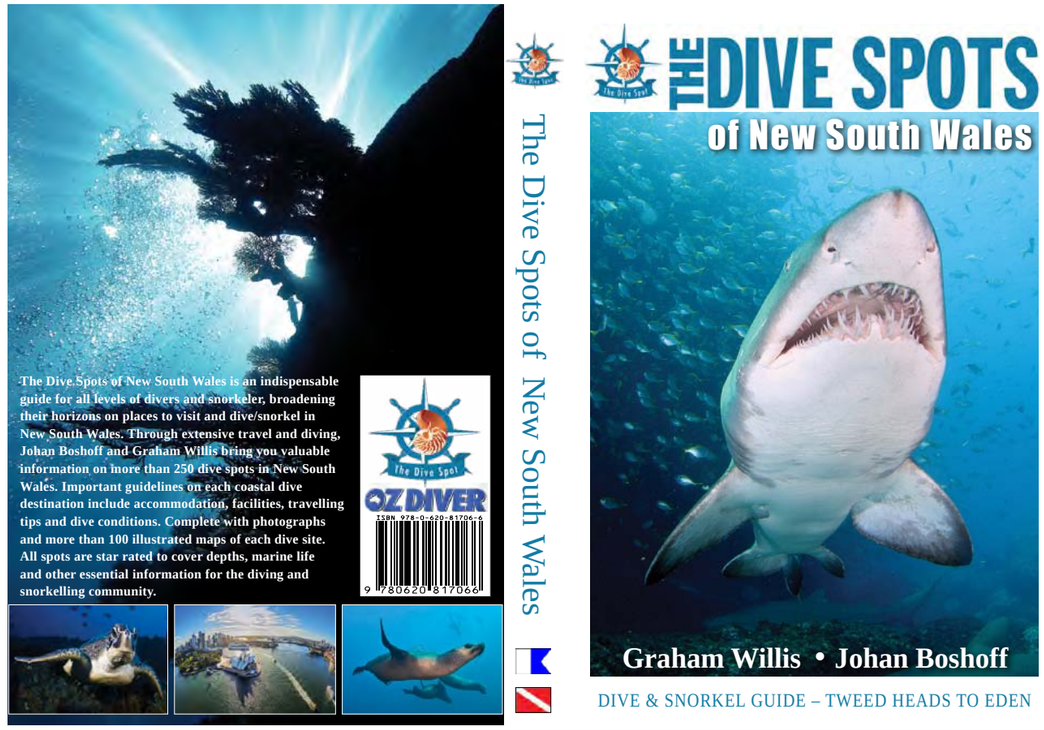
The Dive Spots of New South Wales is an indispensable guide for all levels of divers and snorkeler, broadening their horizons on places to visit and dive/snorkel in New South Wales.

Through extensive travel and diving, Johan Boshoff and Graham Willis bring you valuable information on more than 250 dive spots in New South Wales.

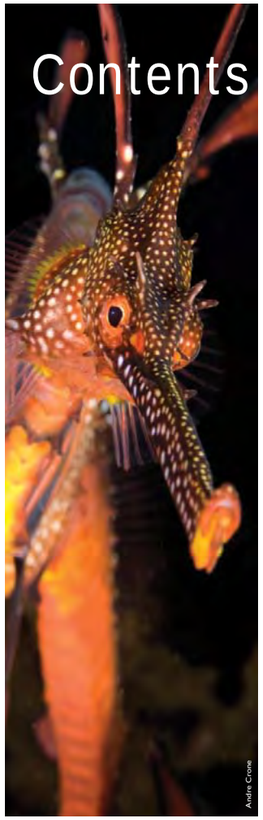
Important guidelines on each coastal dive destination include accommodation, facilities, travelling tips and dive conditions. Complete with photographs and more than 100 illustrated maps of each dive site.

All spots are star rated to cover depths, marine life and other essential information for the diving and snorkelling community.

To buy your copy for $ 39.95, visit www.ozdiver.com.au or email info@ozdiver.com.au



Contents



GENERAL

NORTH COAST

CENTRAL COAST

SYDNEY & SURROUNDINGS

Northern Beaches

Sydney Harbour

Southern Beaches

SOUTH COAST

Marine Species Guide

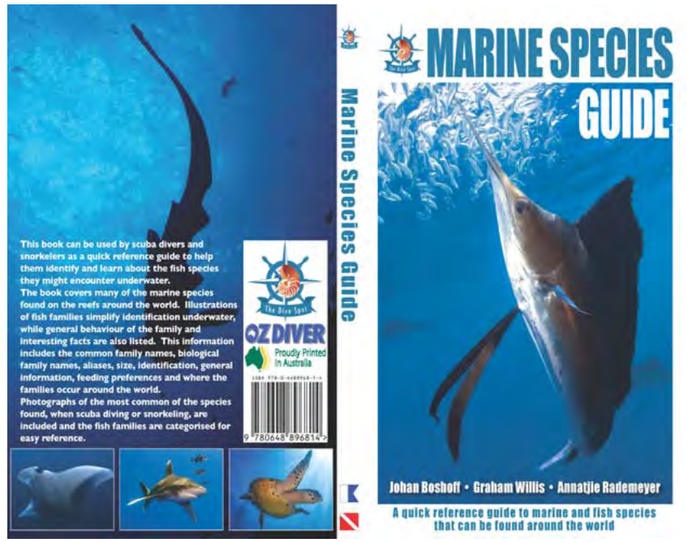
This book can be used by scuba divers and snorkelers as a quick reference guide to help them identify and learn about the fish species they might encounter underwater.

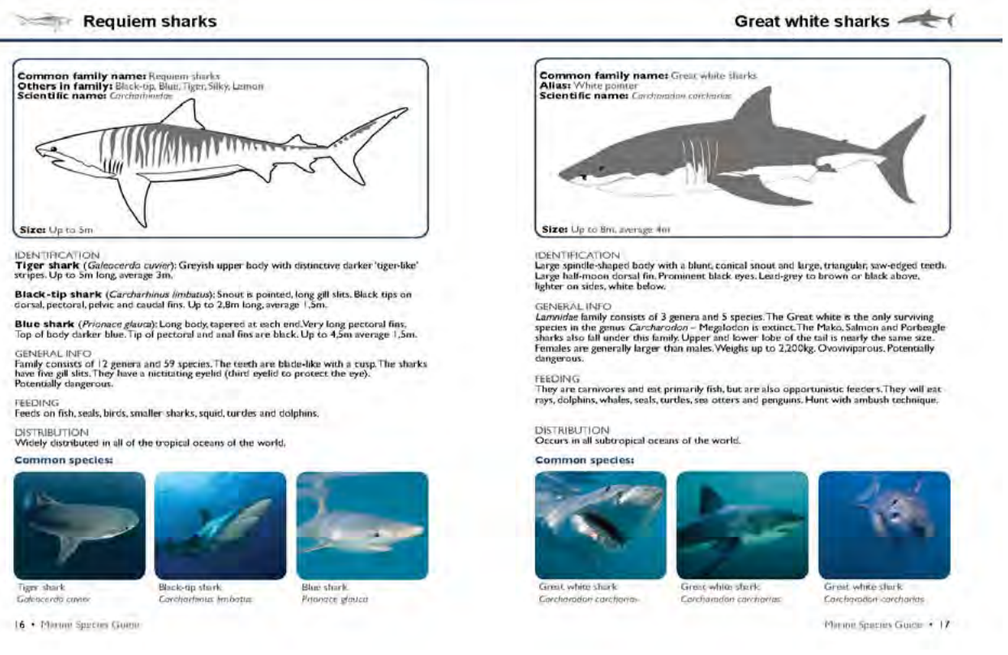
The book covers many of the marine species found on the reefs around the world. Illustrations of fish families simplify identification underwater, while general behaviour of the family and interesting facts are also listed.

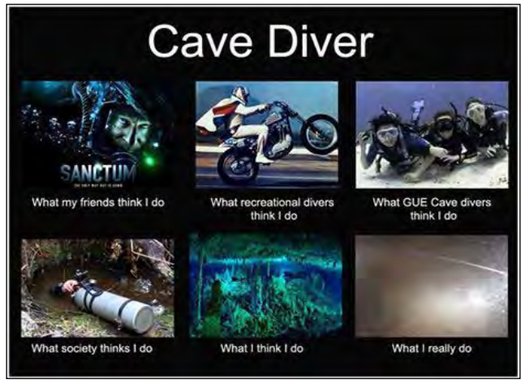
This information includes the common family names, biological family names, aliases, size, identification, general information, feeding preferences and where the families occur around the world.

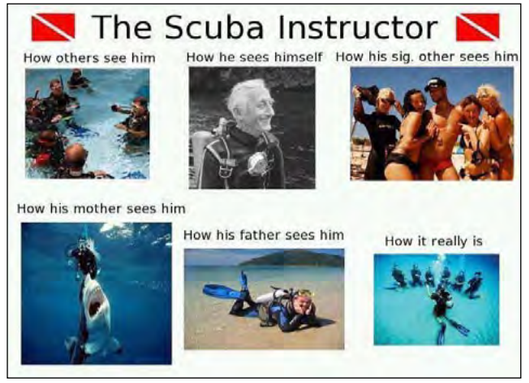
Photographs of the most common of the species found, when scuba diving or snorkeling, are included and the fish families are categorised for easy reference.

To buy your copy for $ 25, visit www.ozdiver.com.au or email info@ozdiver.com.au









Send your funnies to info@ozdiver.com.au

Western Australia

Perth Region

The Dive Spot - South Perth

We specialise in a wide variety of dive related activities. Our scuba training range from beginners to the more advanced including specialities and professional courses.
Phone: +61 (0) 44 887 9903
Mail: info@thedivespot.com.au
Web: www.thedivespot.com.au

Perth Scuba - Canning Vale

WA's largest dive shop, best range of snorkelling, free diving and scuba equipment. WA's PADI Career Development Centre offers courses from beginner to professional and TDI technical training. Perth Scuba has a free dive club offering twice weekly guided dives.
Phone: +61 (0) 8 9455 4448
Mail: info@perthscuba.com
Web: www.perthscuba.com

Perth Diving Academy - Hillarys

PDA Hillarys for all of your dive and snorkelling requirements local and friendly staff to help you make the right choices open 7 days come and see us down at the Hillarys Boat Harbour just north of the boat ramp see you there
Phone: +61 (0) 89 448 6343
Mail: troy@perthdiving.com.au
Web: www.perthdiving.com.au

Diving Frontiers - Perth

For ALL your Scuba, Spearfishing and Freediving needs! Our SSI Instructor Training Centre teaches courses from Scuba Diver, right through to Instructor. Let our friendly and knowledgeable staff ensure you get the best quality service, at the best possible price!
Phone: +61 (0) 89 240 6662
Mail: mail@divingfrontiers.com.au
Web: www.divingfrontiers.com.au

The DiveTub - Bibra Lake - Perth

Since 2007 to service the Australian Dive Industry with the best scuba equipment available. We offer high-end gear, including recreational, technical and commercial equipment. Wherever possible we'll price match any online dive store to ensure you get the best deal!
Phone: +61 (0) 8 92400163
Mail: info@scubaimports.com.au
Web: www.scubaimports.com.au

Western Blue Dive Charters- Mindarie

We are the only dive company north of Fremantle that operates seven days offering double dive charters, returning before lunch, and allowing you to catch crayfish if you wish. Being a small company we offer a personalised service at an affordable price
Phone: +61 (0) 40 954 5553
Mail: info@westernbluedive.com.au
Web: www.westernbluedive.com.au

Blue Destiny Boat Charters - Fremantle

Blue Destiny is a Perth's premium dive boat for day trips to Rotto and Carnac Island. Our 68 feet catamaran is a stable and very comfortable boat. Departs from Fremantle daily for 2 dives with a full cooked lunch included.
Phone: +61 (0) 43 934 2522
Mail: info@bluedestiny.com.au
Web: www.bluedestiny.com.au

Mandurah

Oceano Dive Centre

Welcome to Oceano your local dive shop. We have the friendliest staff best price, awesome range and we proud our self's for the excellence in training. We provide full support for all your dive needs!!
Phone: +61 (0) 85 352 047
Mail: info@oceanodivecentre.com.au
Web: www.oceanodivecentre.com.au

Bunbury

Octopus Garden Dive Charters

Just 1.5 hours south of Perth is Bunbury, home of the Lena Dive Wreck (18 metres) & abundant local & coral reef(0-33 metres), including "Blade Coral"—photographers paradise. Small groups –experienced & personalised service. Comfortable, enclosed diesel powered vessel.
Phone: +61 (0) 43 892 5011
Mail: kimroyce@gateway.net.au
Web: www.octopusgardendivecharters.com

Geraldton

Albatroz Scuba

Albatroz Scuba offers internationally recognized NAUI and SSI scuba diving courses. Small groups ensure personal attention during your training. We also have an active social club for after course adventures!
Phone: +61 (0) 45 828 5497
Mail: scubageoff@yahoo.com.au
Web: www.facebook.com/AlbatrOZScuba

Dive Ningaloo - Exmouth / Ningaloo

Dive Ningaloo has the exclusive licence to dive the Exmouth Navy Pier - top ten dive site!
Dive the Muiron Islands and Ningaloo Reef in comfort on the Ningaloo's largest dive boat, but with small groups. Learn to Dive PADI courses.
Phone: +61 (0) 4 567 02437
Mail: info@diveningaloo.com.au
Web: www.diveningaloo.com

Gear Sales · Equipment Hire · Service & Repairs · Training · Tech Training · Air Fills · Nitrox Fills · Trimix Fills · Dive Charter

PADI · NAUI · SSI · TDI · SDI · IANTD · RAID · CMAS · CDAA

Albany

Southcoast Diving Supplies

Diving Albany means experiencing anything from Wrecks to Reef. The “Perth and Cheynes 3 are two well known dive wrecks and the spectacular reef dives ranging from 3-50 M plus offers a diverse choice to a wide variety of divers
Phone: +61 (0) 89 8417 176
Mail: whale@divealbany.com.au
Web: www.divealbany.com.au

South Australia

Port Lincoln

Calypso Star Charters - Port Lincoln

Calypso Star Charters is an iconic charter company providing guests with the opportunity to dive with Great White Sharks or Swim with Sealions. With market leading vessels, Advanced Eco Certification and Eco Guides we are the forefront of tour provision.
Phone: +61 (0) 86 82 3939
Mail: info@sharkcagediving.com.au
Web: www.sharkcagediving.com.au

ND Scuba - McLaren Vale

We are a small business that go above and beyond. We pride ourselves on providing safe and fun-filled courses at affordable prices. You get trained on a more personal level through to one on one, or small group tuition.
Phone: +61 (0) 88 323 8275
Mail: barrettn80@hotmail.com
Web: www.nbscuba.com.au

Adelaide

Diving Adelaide

Diving Adelaide is Adelaide’s newest PADI 5 Star Dive Centre. We run all PADI courses as well as Leafy Sea Dragon Tours. Diving Adelaide is located next to the tram and bus-stop in Adelaide; easy to reach with public transport.
Phone: +61 (0) 8 73 250 331
Mail: info@divingadelaide.com.au
Web: www.divingadelaide.com.au

Underwater Explorer’s Club of SA

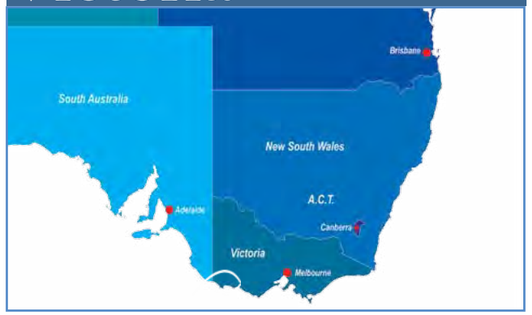
The UEC is the oldest recreational scuba diving club in Australia, established in 1954. We do regular dives at locations within metropolitan Adelaide and have frequent trips to regional South Australia. Why not come and join us for a dive.
Phone: +61 (0) 417 838 387
Mail: secretary@uecofsa.org.au
Web: www.uecofsa.org.au

Glengowrie

Downunderpix

Downunderpix is an underwater photography business established in South Australia. We provide all things underwater photography to the local, national and international markets. This includes supplying a range of underwater photography services as well as selling underwater camera equipment and scuba diving equipment.
Phone: +61 (0) 41 981 9083
Mail:info@downunderpix.com
Web: www.downunderpix.com

Victoria



ausdivinginstruction- Geelong

Learn to Scuba Dive in Melbourne & Geelong @ Australian Diving Instruction Geelong’s only PADI 5 Star IDC Facility, Offering Charter Boat, PADI Specialties Courses including Tec 40>45>50, Trimix 65, Trimix Diver, Accommodation, Local/International Dive Trips, Dive any of the 4 WW1 J Class Submarines the HMAS Canberra, and Ships Graveyard of Bass Straits.
Phone: 0408365216 or 0352722181
Mail: steve@ausdivinginstruction.com.au
Web: www.ausdivinginstruction.com.au

Bay City Scuba

Bay City Scuba is Geelong’s premier dive shop. Offering all levels of training from Freediving through to Technical training and offering a huge selection of equipment to your diving needs. A RAID training facility offering extensive technical OC & CC rebreather training.
Phone: +61 (0) 35 248 1488
Mail: info@baycityscuba.com
Web: www.baycityscuba.com

The Scuba Doctor Australia

The Scuba Doctor is an online and in-store dive shop stocked with quality brand recreational, technical and commercial diving products. Low prices on scuba, spearfishing, freediving, snorkelling and watersports equipment, plus Air, Nitrox and Trimix fills.
Phone: +61 (0) 3 5985 1700
Mail: diveshop@scubadoctor.com.au
Web: www.scubadoctor.com.au

Dive Victoria Group

Our Training, Dive Charter and Group Accommodation services cater for local, interstate and international divers. On our doorstep we have amazing wall dives from 10-100m that we can dive every day and wrecks 8-80m in the Ships Graveyard
Phone: +61 (0) 3 5258 4188
Mail: info@divevictoria.com.au
Web: www.divevictoria.com.au

Gear Sales · Equipment Hire · Service & Repairs · Training · Tech Training · Air Fills · Nitrox Fills · Trimix Fills · Dive Charter

PADI · NAUI · SSI · TDI · SDI · IANTD · RAID · CMAS · CDAA

New South Wales

Sydney

Frog Dive

Frog Dive is one of the oldest dive shops in the Sydney area. We can train you right through from an openwater course to CCR training. Sales, training, hire, servicing, boat and weekly shore dives we do it all at Frog Dive.
Phone: +61 (0) 2 9958 5699
Mail: john@frogdive.com.au
Web: www.frogdive.com.au

Southern Cross Divers

Southern Cross Divers is best known for rebreathers and "tec" diving – we do nothing else but "tec". We will not stock a unit unless we can offer the customers a complete solution to all their CCR needs. We are Australia's CCR specialist store.
Phone: +61 (0) 2 9969 5072
Mail: barry@southerncrossdivers.com.au
Web: www.southerncrossdivers.com.au

Erina

Dive Imports Australia

Dive Imports Australia located in Erina for all your training, servicing, eqyuipment hire and air fills. Your local PADI 5*IDC Centre and closest shop to the HMAS Adelaide wreck. Boat dives to the wreck available 7 days a week.
Phone: +61 (0) 4 1844 8652
Mail: chris@scubaholics.com.au
Web: www.diveimportsaustralia.com.au

Nelson Bay

Feet First Dive

Jump in FEET FIRST with Nelson Bay's friendliest dive centre. Explore & enjoy the amazement of our Marine Sanctuary from the shore; take our boat to the local Grey Nurse Shark colony; OR Rebreathe our selection of Wrecks
Phone: +61 (0) 2 4984 2092
Mail: enquiries@feetfirstdive.com.au
Web: www.feetfirstdive.com.au

South West Rocks

South West Rocks Dive Centre

Our Training, Dive Charter and Group Accommodation services cater for local, interstate and international divers. On our doorstep we have amazing wall dives from 10-100m that we can dive every day and wrecks 8-80m in the Ships Graveyard
Phone: +61 (0) 2 656 66474
Mail: info@southwestrocksdive.com.au
Web: www.southwestrocksdive.com.au

Dive Operators
Australia

Queensland

Sunshine Coast

Scuba World

Dive one of Australia's top ten dive sites the Ex-HMAS Brisbane.We are the only operator that comes back to the sheltered waters of Mooloolaba bay for a relaxing morning tea. Enjoy hassle free diving from our private marina berth.
Phone: +61 (0) 7 5444 8595
Mail: rob@scubaworld.com.au
Web: www.scubaworld.com.au

Brisbane

Ozaquatec- Brisbane

Brisbane's largest dedicated scuba service centre, Ozaquatec has all of your servicing needs in one place at competitive rates. Our fast, friendly and professional customer service gives you, the diver, complete peace of mind.
Phone: +61 (0) 7 3399 1413
Mail: admin@ozaquatec.com
Web: www.ozaquatec.com

Gold Coast

Devocean Dive- Gold Coast

Devocean Dive is South East QLD's Premier PADI 5 star Instructor Development Centre. We offer unsurpassed service is a safe, fun environment with qualified, experienced Instructors. We look forward helping you achieve your SCUBA diving goals.
Phone: +61 (0) 75 528 0655
Mail: admin@devoceandive.com
Web: www.devoceandive.com

Tasmania

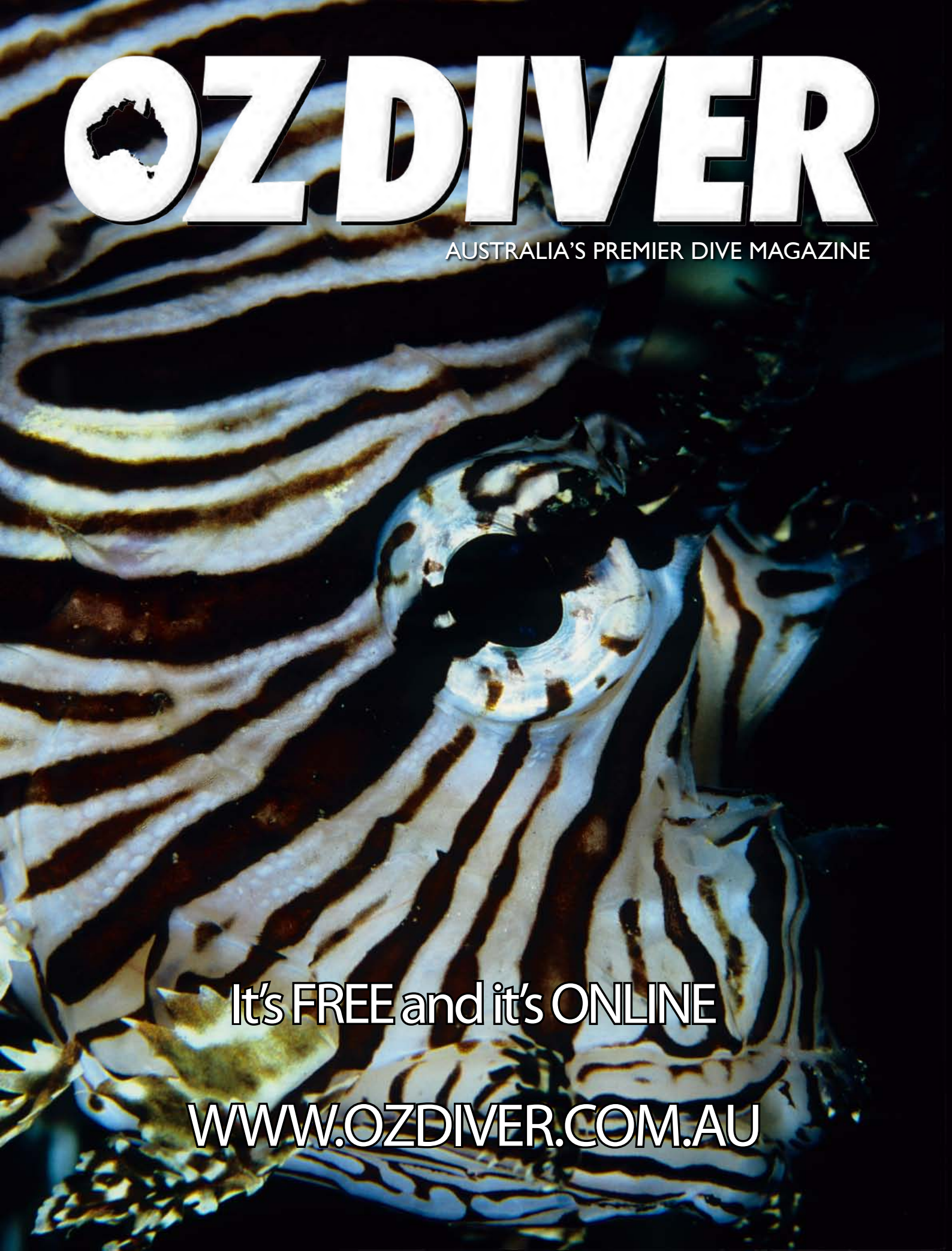
Bicheno

Bicheno Dive Centre

Tasmainan diving at its best 32 different boat sites 16-40 meters 8 different shore dives with max depth of 20mtrs Boat travel time under 5 mins.
Home of the weedy sea dragon.
Phone: +61 (0) 3 6375 1138
Mail: bichenodivecentre@bigpond.com
Web: www.bichenodive.com

Gear Sales · Equipment Hire · Service & Repairs · Training · Tech Training · Air Fills · Nitrox Fills · Trimix Fills · Dive Charter

PADI · NAUI · SSI · TDI · SDI · IANTD · RAID · CMAS · CDAA


OZ DIVER
AUSTRALIA'S PREMIER DIVE MAGAZINE
It's FREE and it's ONLINE
WWW.OZDIVER.COM.AU