

October / December 2024

OZDIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

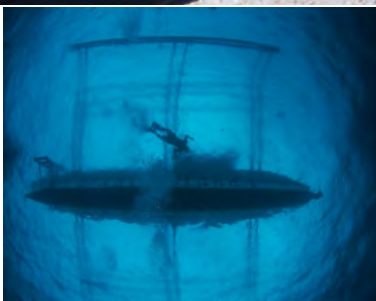
TOP 10
DIVE SPOTS
PART II

BASSAS
DA INDIA

TANZANIA

SHARK
ENCOUNTER'S MICRONESIA

THE FINAL EDITION



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October / December 2024 Edition



Editor's Deco

Yes, it is true, it will be the final edition of OZDiver Magazine.

After more than 20 years of publishing dive magazines and diving books it is time to hang up my fins.

I think I have reached my expiration date on this lifelong diving adventure.

It was 20 years of unforgettable diving adventures that took me all over the world, including 10 years publishing Divestyle magazine in South Africa and another 10 years publishing OZDiver magazine in Australia.

But it is time for me to start a new adventure in life. For more than 20 years my whole family gave up

everything for me so that I could travel, dive and follow my dreams.

Without their support there would have been no way that I could have done my work.

Thank you for all your support over all these years and for following me and the magazine wherever we travelled to.

May God be with you and your family as He is with me and my family every day.

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Johan Boshoff

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

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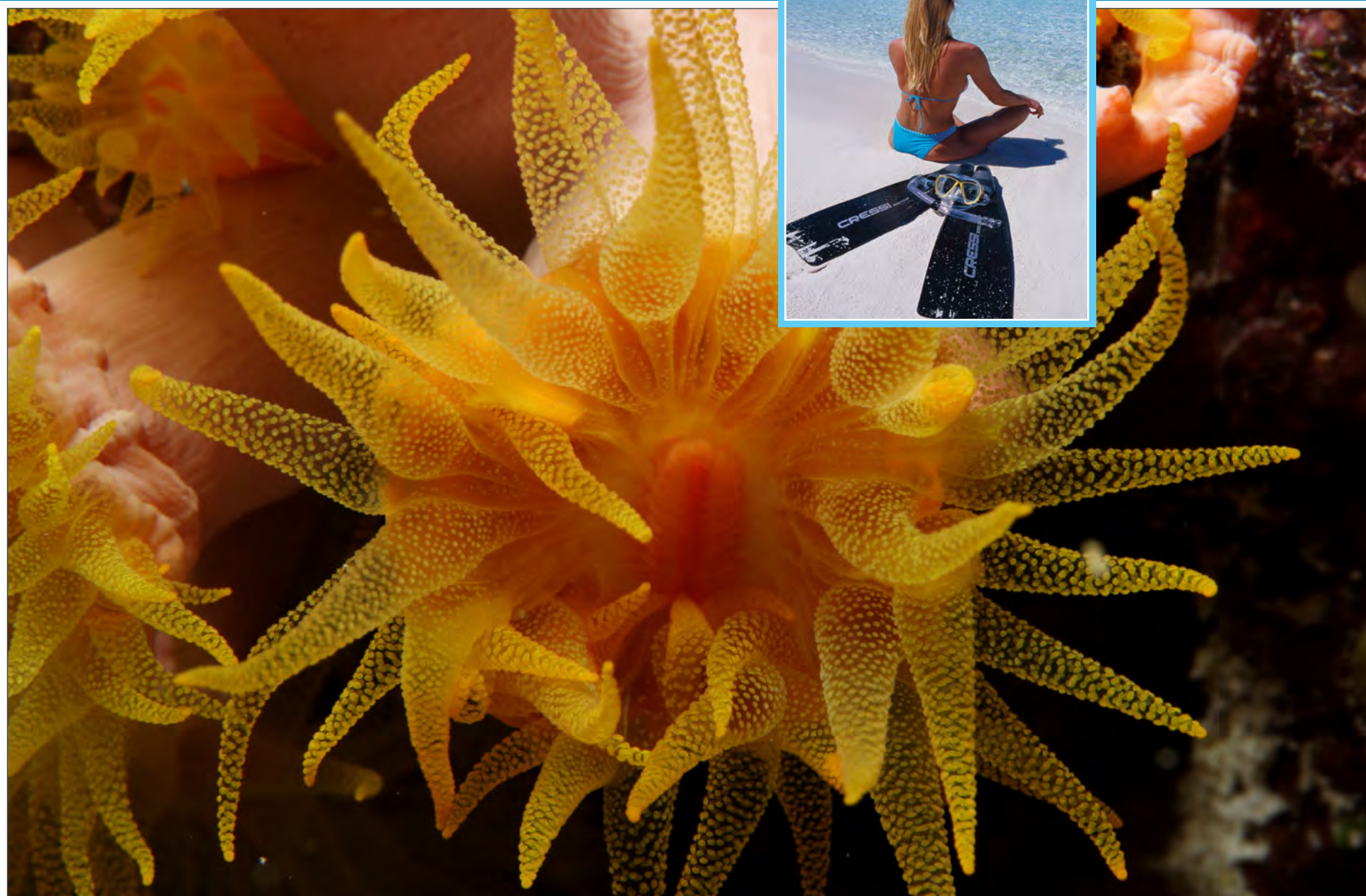
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Do I at least look like a Diver?

By Dawie Schlebusch

It's the last dive of the day and I can't wait to get back. This is launch number four and I have pretty much had it with divers who don't listen to what I say and who don't do what I ask them to do.

Divers up and here we go – we are on our way to do a recreational 15m, 50 minute dive in 28°C water. As I turned around I realized that this last dive was going to be fun, because on the boat were some serious divers.

So who can be classed as a serious diver? Well there are different groups in which you can put these serious divers. The first group is the well equipped diver, let's call them the 'tech divers'. They will always dive with more than one cylinder or a rebreather. They will carry at least two computers, usually the most expensive ones. They'll definitely wear a dry suit and will have a camera attached to them.

They also carry a spare mask in a pocket attached to their legs. But the easiest way of identifying a tech diver is by the way they put their masks the wrong way around on their foreheads.

The second group of divers classified as serious divers are the ones with all the gadgets. Let's call them the 'toy boys'. These divers will dive with transmitter computers and two cameras.

Everything is attached to them with retractors and they are very shiny divers because every D-ring has got two clips on it. They have a waterproof iPod with waterproof earphones attached to the mask strap.

The thing that makes this group of divers stand out is the DPV's or underwater scooters that they own.

The third group of divers is those with used equipment. Let's call them the 'old boys'. They don't carry anything extra and they don't have any bits hanging loose – everything is nicely secured but well used. The BC is completely faded and the computer screen is so scratched you can hardly make out what it says. The way to identify them is by their fins – old well used fins, usually Cressi frogs, and the front ends are bent up from the seventy four million fin strokes they have done.

The fourth group of divers has big cameras, serious equipment with long strobe arms and big dome ports. We'll call them the 'aliens' due to all those extra arms and wires and things.

They have standard scuba equipment and nothing extra that can get in the way of their camera. The easiest way of knowing that there is an alien on the boat is by the cooler boxes that they carry with them.

Then you have the 'diver'. He has got the necessary equipment and he is here to dive, and that is it. Just to dive and see the fish!

So back to the dive... There is one 'tech diver' fully equipped for his 15m dive, music playing all the way down and up. I have two 'toy boys' with their DPV's and all, three 'old boys', two 'aliens' and two 'divers'.

The DM looks like an open water diver in between everyone else on the boat and the tank rack is a mess – there is a rebreather, two DPV's and two cooler boxes. It is a known fact that it is going to take everyone 15 minutes to kit up before they do the back roll.

The DM is to the left and I am to the right as we start kitting the divers up. Exactly fifteen minutes later and everyone is ready for the back roll. I drive the boat to the drop zone.

We stop and I start the count down. "Three, two, one, go," and they are off. Everyone is on the surface, I look at all the equipment and the fun starts. Two minutes later and the last 'alien' is underwater and everyone is diving.

Seven minutes into the dive and someone surfaces – it's the 'tech diver'. "What's

wrong?" I asked. "My dry suit zip is not closed properly and it is leaking." I have to pick him up, so he starts taking his kit off, first the bailout cylinder, then the cameras and then the rebreather. This takes a total of eight minutes. I help him back on the boat and confirm his dry suit is open.


"Going back in?" I asked after I closed his suit. "No, I will stay on the boat," comes the reply.

I think that at least now I can also listen to some music, but as I turn around I see another diver on the surface. It is one of the 'aliens'. "What's wrong?" I ask once again. "The strobes are dead," he replies, "You can pick me up." As I helped him into the boat my eye catches a third diver on the surface, and for the third time I have to ask the same question. "The line of my deploy buoy got stuck in the propeller of the DPV."

I had to smile – this was just too much fun. I loaded the diver and shortly after the rest of the divers start surfacing.


I loaded the last divers and DM and asked how the dive was. "It was great," replied one of the old boys. "Yes, beautiful shark," said one of the divers, and I realized that a great dive has got nothing to do with what you look like when you dive – you just need to go under the surface and enjoy yourself.

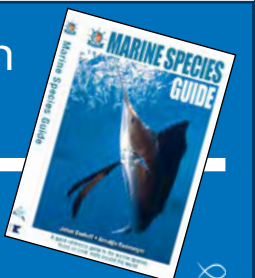
Don't get me wrong, I am a 'tech diver' myself, I have an alien-like camera and have frog fins. But you need to ask yourself, why am I diving, where am I diving and what do I need to enjoy this dive? Less might just be more when we go diving!

So do I need to look like a diver to have fun? 

WIN

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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

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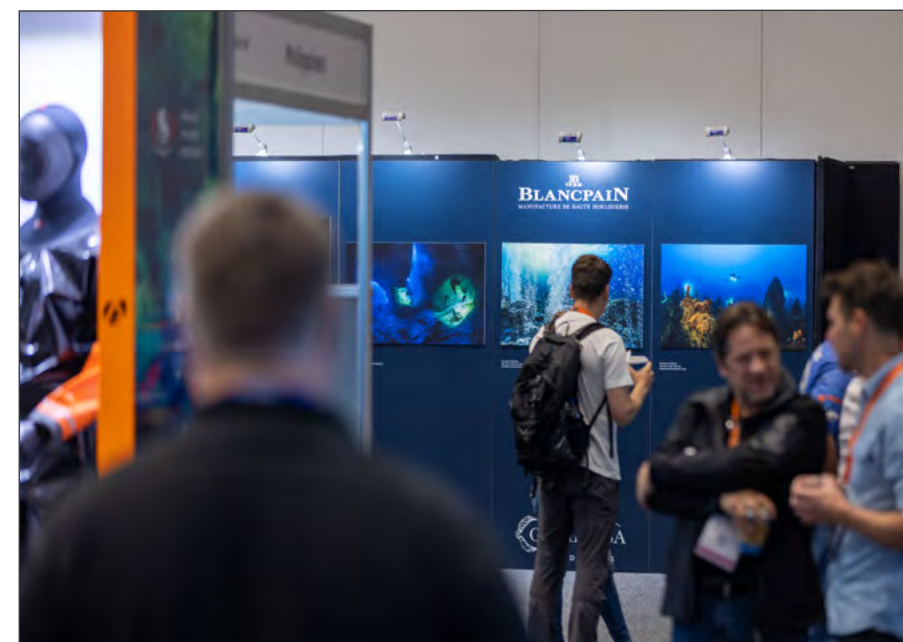
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Both shows serve as an invigorating platform for the Australian and global diving community - giving them a voice and providing a space to meet, foster relationships, exchange ideas and receive recognition for their achievements.



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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).

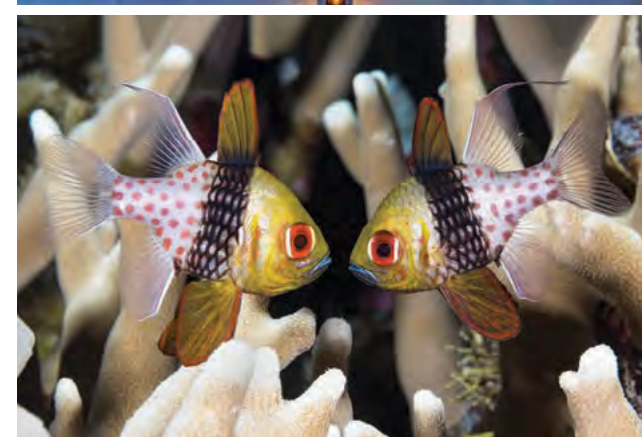
Here's what we need:

- 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)

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Top 10 Dive Spots New South Wales

Part II



Part 1 had two dive spots North of Sydney, Two South and one in Sydney. I am going to add two more to the North, two from Sydney and one more to the South.

There could be plenty more and I will cheat by giving you some more spots that are definitely worth a visit and, on their day are every bit as good as the 10 listed.

Whether you agree with the top 10 list or not, whether you think there are some obvious starters that have been left out...I hope you enjoy your diving in New South Wales; it has a lot to offer.

I am going to start almost as far North as NSW extends and that's in Byron Bay, about an 8hr drive from Sydney. Picking one Dive Spot I am going to pick Cod Hole at Julian Rocks, also known as Nguthungulli, (DSNSW Page 50).

Julian Rocks is a 10-minute boat ride out from The Pass and puts you right in the vicinity of some other top-notch diving: Hugo's Trench (DSNSW Page 53) and The Needles (DSNSW Page 54).

Let's concentrate on the Cod Hole, however. The Hole itself, and the immediate surrounds, are the highlight of the dive but will probably only take up 10-15 minutes of your bottom time.

You never know what is going to be waiting for you at the Cod Hole ...both in it and around it. The hole itself is really a decent sized swim through, probably enough to fit three or four divers...only made difficult by the fish life inside the hole.

The depth is around the 18m mark if you enter from the bottom and as you swim through you will come up to 14 or so metres. I have never dived this spot without having the hole stacked full of fish.

Mulloway, Wobbegongs, Rays, Groupers, Trevally, Sweetlips and even the odd Grey Nurse. Take a torch with

you to have a good poke around.

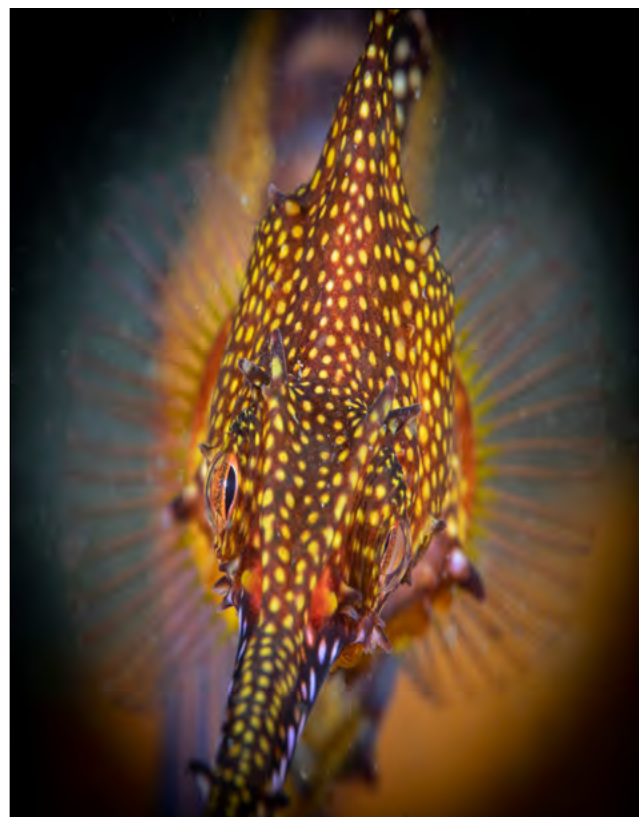
As you exit, assuming you are going up, there are invariably Kingfish, more Mulloway, Turtles, and Wobbegongs hanging around.

There is a lot of fish life here and it is tempting to hang around although the sand trenches that slope down to around the 22 Metre mark are also worth a look. An uncomplicated dive that is often gold!

We'll stay in Northern NSW but head South, about a 2-2.5hr drive from Byron Bay to The Solitary Islands.

The Solitary Islands offer some great diving, and I am torn between two spots here.

Fish Soup/The Slot (DSNSW Page 61) at North-West Rock (aka The Mouse) just off North Solitary Island or Grey Nurse Gutters and through to Manta Arch (DSNSW Page 69) at the South Solitary Islands. The Grey Nurse Gutters without the Grey Nurse can be



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a bit ho-hum...and, despite the name, Manta's are not that common at Manta Arch...still an excellent dive.

I am going with Fish Soup/The Slot largely because even if it is an off day, it is still a very good dive.

It is also a more compact dive site and being shallower you will get more bottom time.

If you are going out of Wooli it is around a 20-minute boat trip.

You are essentially diving the crack between the two small islands that make up The Mouse. You normally drop in on the West side of the Rock to around 15 metres and then swim through the channel between the two islands.

This shallows to around 8-9 metres and can get a bit surgy. As you swim through, you'll see large Smooth Rays, Black God, Gropers and Wobbegongs. As you exit the channel you are met with...fish soup. Fish everywhere.

Bream, Morwongs, Trevally, Mado, Mangrove jacks, Sweetlips, Pomfret, and they are all just hanging around. It is this blaze of colour and movement that you are doing the dive for.

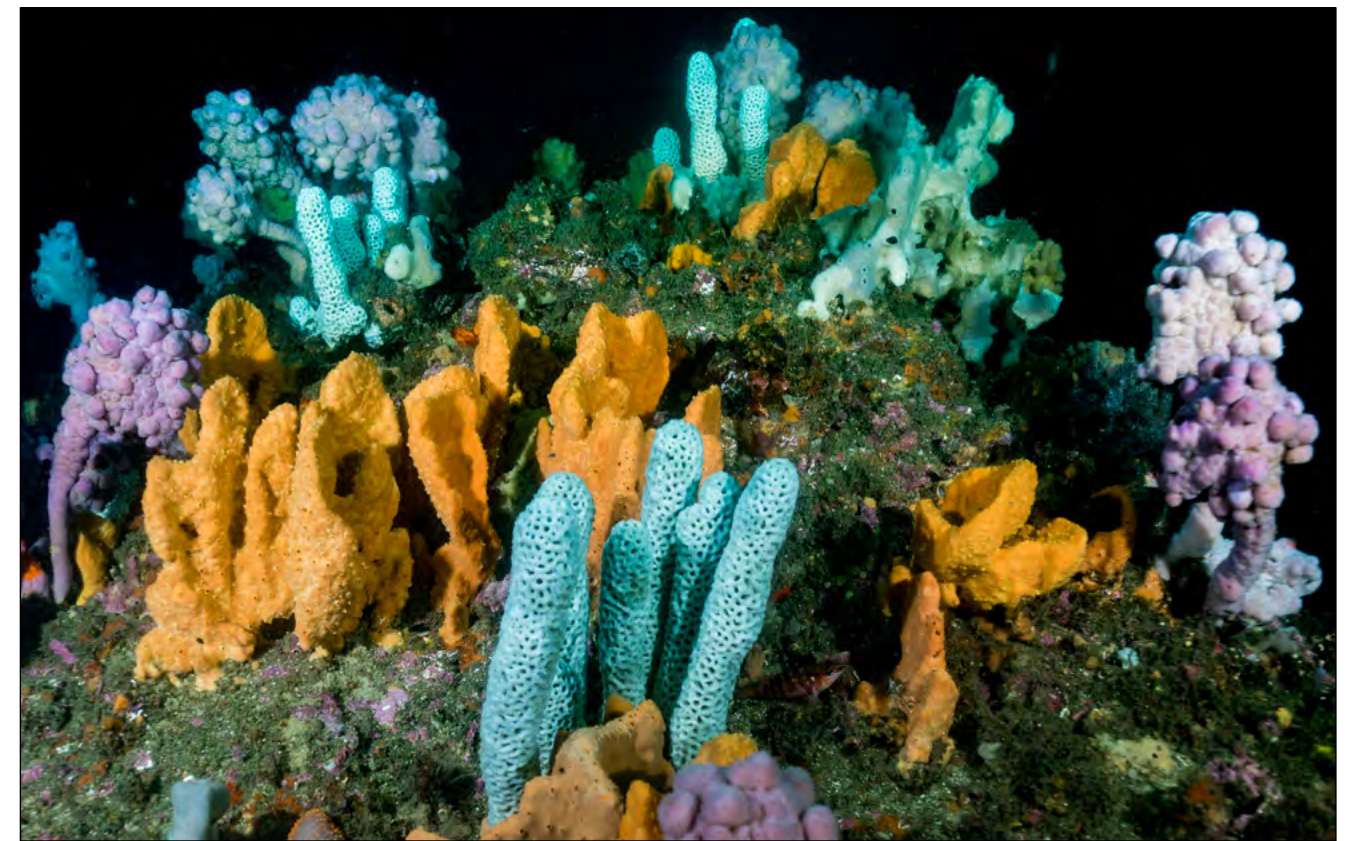
It's a nice simple dive that everyone can do, plenty of bottom time, plenty to see and memorable.

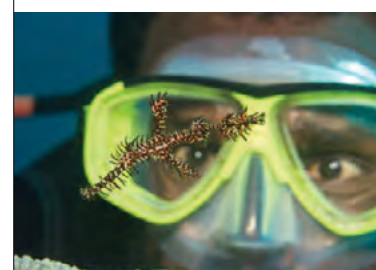
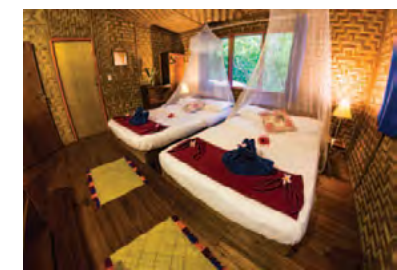
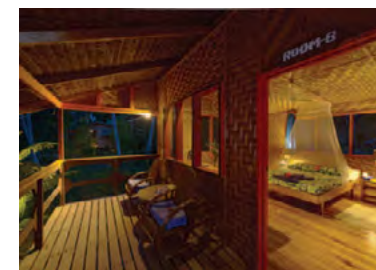
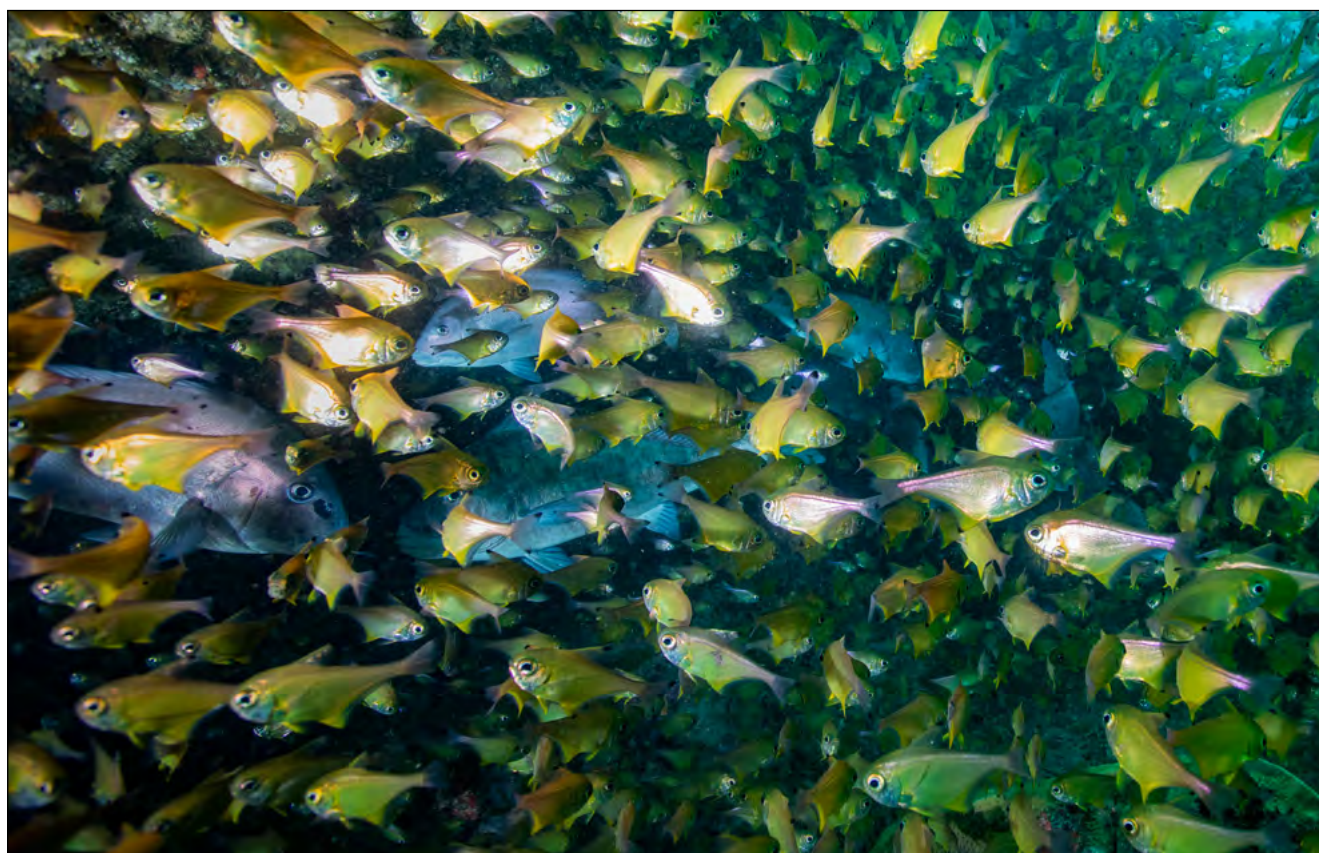
You are also a short boat ride from Anemone Bay (DSNSW page 62) with its veritable carpet of anemones and resident anemone fish and is very much worth a dive.

Back to Sydney for our next dive and The Apartments off Long Reef (DSNSW Page 162) is the next pick in my top 10. This is another boat dive.

If you are coming from Fisherman's Beach, it is a short 5-minute hop to the dive spot.

It is also a popular fishing spot so you will have to be aware of other boats and any lines in the water. Depending on where you anchor it will probably





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be around the 12-14 metre mark, the site itself gets down to around 24 metres in some spots.

The Apartments is probably named for the number of swim throughs and separate 'rooms' that are available to dive in and through.

The most notable swim through is the Cathedral...with the altar at one end! You process down the Knave pushing your way through the Pomfret, Yellow Tails and Mado that obscure your vision. If it is sunny the light will stream through some of the openings creating quite an ethereal effect.

This is quite large enough to have three divers processing through. Genuflect at the front and carry on! Apart from the swim throughs, that also tend to house large numbers of Giant Cuttlefish at the right time of year, the swim throughs will keep you amused for a while but when you head off to the main gutter where the Grey Nurse swim up and down you have hit pay dirt! To get to the Grey Nurse you

have to swim through massive shoals of Pomfret, Yellow Tail, Mado and Stripey; . they are everywhere. If you drop down into the gutter and wedge yourself in to one side the sharks will gently swim by examining you. You can also watch them from the ledges on top of the gutter and it is equally impressive.

On its day an absolute top 10 dive. When it's not its day it is still an excellent dive due to the sheer numbers of shoaling fish.

Moving South, but still in Sydney, I think it might cause a bit of controversy to pick Bare Island at Botany Bay as a top 10 site (DSNSW Page 198 - 200).

I did say in my view accessibility was a factor and Bare Island is a shore dive, with plenty of parking (if you are early enough), offers good access to several dive spots and offers plenty of time underwater rather than depth. If you are so inclined and pretty good



on your air (rebreather and scooter users do not have that issue) you can circumnavigate the island.

I have never bothered because I tend to poke around and potter and will sometimes take 10-15 minutes over a camera shot...but I know divers who have done the whole island.

If you head over the bridge, down the stairs to your left and back under the bridge there is a little boat ramp where you can flop into the water.

That can be pretty slippery and if it is surgy you are better off walking further down the rock/sea edge to the West and flopping in there.

There are other spots to get in, such as on the South side of the island facing the open sea or into the 'swimming pool' on the North West corner but the 'boat ramp' is often a good starting point.

On the Western side of the island there is a riot of coral and sponge colour, and you can also find the elusive Sydney Pygmy Pipehorse here.

Frog fish, Nudibranchs and Prowfish (aka Red Indian Fish or Red Forehead fish) are also to be found.

As you swim around the South side you might well bump into some Weedy Sea Dragons and as you pass the caverns and caves keep a lookout for Eastern Blue Devil fish (aka Bleeker's Blue Devil Fish).

There is also the Bommie directly South of the Island that is worth a visit. There is more than enough to Bare Island to do a double dive and you won't even cover the same ground twice.

There is an excellent map of this site put together by Marco Bordieri, with more than a nod to Michael McFadyen, which you can find at <https://www.viz.net.au/maps-of-shore-dive-sites/bare-island>.

The final pick sees us heading to Jervis Bay about 2 ½ hours drive South of Sydney. Most times you are going to head out of Huskisson on a boat for your Jervis Bay diving and for this dive at Drum and Drumsticks (DSNSW Page 234) you will benefit from having a larger boat.

The spot is about 40-50 minutes out of Huskisson and then North out of the bay past the majestic sea cliffs of point perpendicular.

The journey out is worth the trip with the Sea cliffs, pods of Dolphins in the bay and Humpback Whales either heading up the coast or returning with their calves.

You might also catch a submarine or frigate coming into the bay, heading towards HMAS Cresswell and we haven't even got in the water yet! When you get to Drum and Drumstick(s) there is a decent sized colony of seals that call this home.

One of the drumsticks has suffered a few too many hits from the Navy and the Airforce when they were using this spot to practice dropping their ordinance.

The seals are curious and playful, and I reckon you can easily spend the whole dive amusing, and being amused by, the seals.

If you head into the cave under the drum, you will often find Eastern Blue Devil fish and Giant Cuttlefish hanging around.

You will also find some bits of dummy ordinance lying around the bottom. Better to be safe than sorry ...so look but don't touch.

A spitting distance from the Seal colony is the wreck of the TSS Wandra sitting in about 25 metres.

The Wandra is a good little dive itself and you can see the boiler and engines which are still clearly visible.

It is worth doing the wreck first and then heading to the seals. So, seals and a decent wreck on the one dive... not a bad way to round out the top 10 dives in NSW.

There are of course plenty of other quality dives as well as sites that are very commonly visited.

Gordon's Bay, Camp Cove, Clifton Gardens, Oak Park and Shelly Beach all have a plethora of divers in the water every weekend.


That is often due more to dive shop proximity combined with site accessibility rather than anything else...but they are none the less good sites.

I have not mentioned Seal Rocks which

has some cracking dives, nor Eden in the South of the State or Cook Island out of Tweed Heads...all worthy of a visit.

I make no apologies for wanting to sneak in mentions of more dive spots... there are a lot up and down the NSW coast and those of us who live in NSW are fortunate.

Both Melbourne and Sydney offer the diver the opportunity to just walk in the water and have a quality dive within 30 minutes of the city centre... there are not many places in the world where you can say the same.

I hope you appreciate how lucky we are, and I hope you enjoy checking out, or revisiting, some of my Top 10 pick. 



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Mola Mola

The ocean sunfish are bony fish, with large lateral fins like a whale, but they hang vertically in the water with their round and bony mouths up gulping water and gasping, round grey tongues sticking out, rather like 'blaasops', who are in fact their nearest relatives. They used to be classified scientifically as Molidae until fairly recently.

Viewed side on, they are huge, like oval elephants, but from behind they are almost two dimensional, like a playing card. They seem to get a lot of parasites in their vestigial tails, which are not actually tails at all, but in fact a fusion of their dorsal and anal fins to make a sort of rudder, called a caudus. This caudus is flat, rounded, and scalloped with crevices in it a bit like pie crust.

There are 12 fin rays in the caudus, and it is here that the parasites lodge. It is because of this that Mola Mola need help at cleaner stations. The cleaners are not the normal little blue streak cleaner wrasses, nor are they the bigger bicoloured wrasses; in Bali they are actually bannerfish.

The sunfish isn't fussy; if it rids their skins of parasites, it is welcome no matter what its day job is. This need

keeps them coming back to the warm clear waters of Bali where they are industriously cleaned by the Balinese fish population.

The largest populations of sunfish are found along the southern coastline of the continental United States, but despite this, not much is known about them. They lay millions of eggs, and are by far the world's most prolific egg laying fish. The eggs scatter over vast areas and the baby sunfish look a little like pufferfish and bear little resemblance to their bizarre parents in their early years. They are born with a tail fin which eventually fuses with maturity, and have all the normal bony spines characteristic of the pufferfish or 'blaasop'.

They swim in schools to start with, only becoming solitary as they reach sexual maturity.

The adults are huge animals, growing up to 3m across and weighing around a ton, making them the largest bony fish in the ocean.

So how do they sustain this huge bulk? They eat mainly jellyfish, plankton, small fish and zooplankton. The waters around us were filled with tiny jellies about 3cm across, propelling themselves around at depth in the unusually cool water.

When you compare the small, round mouth of the Mola Mola with the massive mouth of a whale shark, they must spend most of their time trying to ingest enough food to sustain this bulk. They suck water and food in through the mouth, and their teeth have fused into a beak-like structure, while they have crushing teeth at the back of the throat that enable them to tear crustaceans into smaller bits.

Speculation is that they are extremely vulnerable to cold as they are sometimes seen lying near the surface on their sides looking dead. The scientists think this is to expose as much of their bulk as possible to the sun, and certainly they cannot survive in cold oceans. This makes finding enough food difficult, as

zoo plankton and jellies mainly occur where there is a cold upwelling or current flooding in from the colder depths of the ocean.

To obtain sufficient food it is thought they may also have to dive down to great depths, as side catch Mola Mola deaths have revealed stomach contents from vegetation and shrimps living at depths below 200 metres. Their cumbersome structure makes travel fairly slow, and swishing the dorsal and ventral fins they can only travel at a rate of up to 26km a day.

They are pelagic, but they prefer water temperatures greater than 10°C. Although they are generally solitary, groups of two or more have been spotted together at cleaner stations. They have few predators as mature adults, but it seems that few of their 300 million eggs survive to adulthood.

Sharks, orcas and sea lions can prey on the mature adults but the young are hunted by many predators. There is some fear that their habits are changing because of global warming, but there are no scientific studies to back this up. ■



Currents

The rivers in the Sea

The ocean's water is constantly in motion, but there is a pattern and direction to this seeming chaos – currents.

Surface currents are currents present in the upper 10% of the water and derive mainly from wind patterns. When wind blows over large areas with reasonable consistency of direction and strength, significant volumes of water move horizontally across the oceans.

In the northern hemisphere, the trade winds (near latitude 15 degrees N), blow from the northwest to southwest; the westerly's in the mid-latitudes blow primarily from the southwest.

At very high latitudes, the polar easterlies blow from east to west. A mirror image set of these wind belts exists in the southern hemisphere.

The energy from these wind systems drives the major surface ocean

currents. Some of these currents transport more than 100 times the volume of water carried by all of the earth's rivers combined.

As with a wind-driven wave, surface current speed diminishes rapidly with depth, becoming negligible at depths around 190m.

The earth's rotation also affects the major ocean currents. This is termed the 'Coriolis effect', and explains why objects in the northern hemisphere deflect to the right of the direction of the force acting on them (in this case, the wind is the force and the object is the water's surface).

The opposite is true in the southern hemisphere. There, objects deflect to the left of the direction of force. The result is that water tends to pile up in the middle of the ocean basins as the major currents travel along their edges according to the Coriolis Effect.

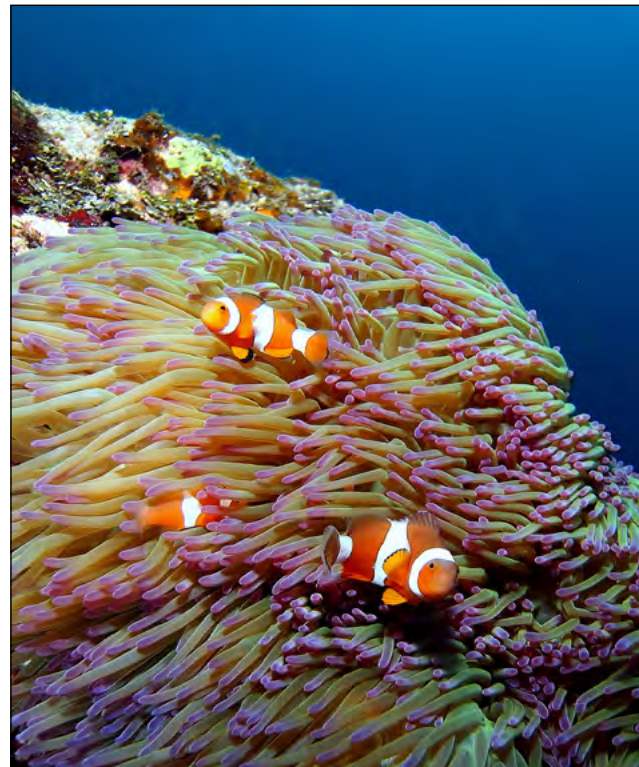
These circular water movement patterns are called 'gyres' and they play major roles in the global heat and marine life distribution. There are six major gyres – the North Atlantic and the North Pacific in the northern hemisphere and the South Atlantic, the South Pacific, the Indian Ocean and

the Antarctic Circumpolar Current in the southern hemisphere.

Currents also persist below the upper layer of the ocean and are driven primarily by thermohaline circulation. This process is responsible for most vertical water movement and eventually circulates the entire ocean. This circulation starts because equatorial regions receive more heat than polar regions. Simplistically, water is cooled and made denser and less salty at the poles. This water then sinks and drifts towards the equator. As the water moves towards the equator, it is warmed and made less dense, therefore rising to the surface. Once on the surface it is pushed again towards the poles where it is cooled and the process begins anew.

Currents occur in oceans, but also to some extent in large lakes, seas and even smaller water bodies. However, the stronger the wind needed to develop a current of a given strength because there is less surface area across which to transfer energy.

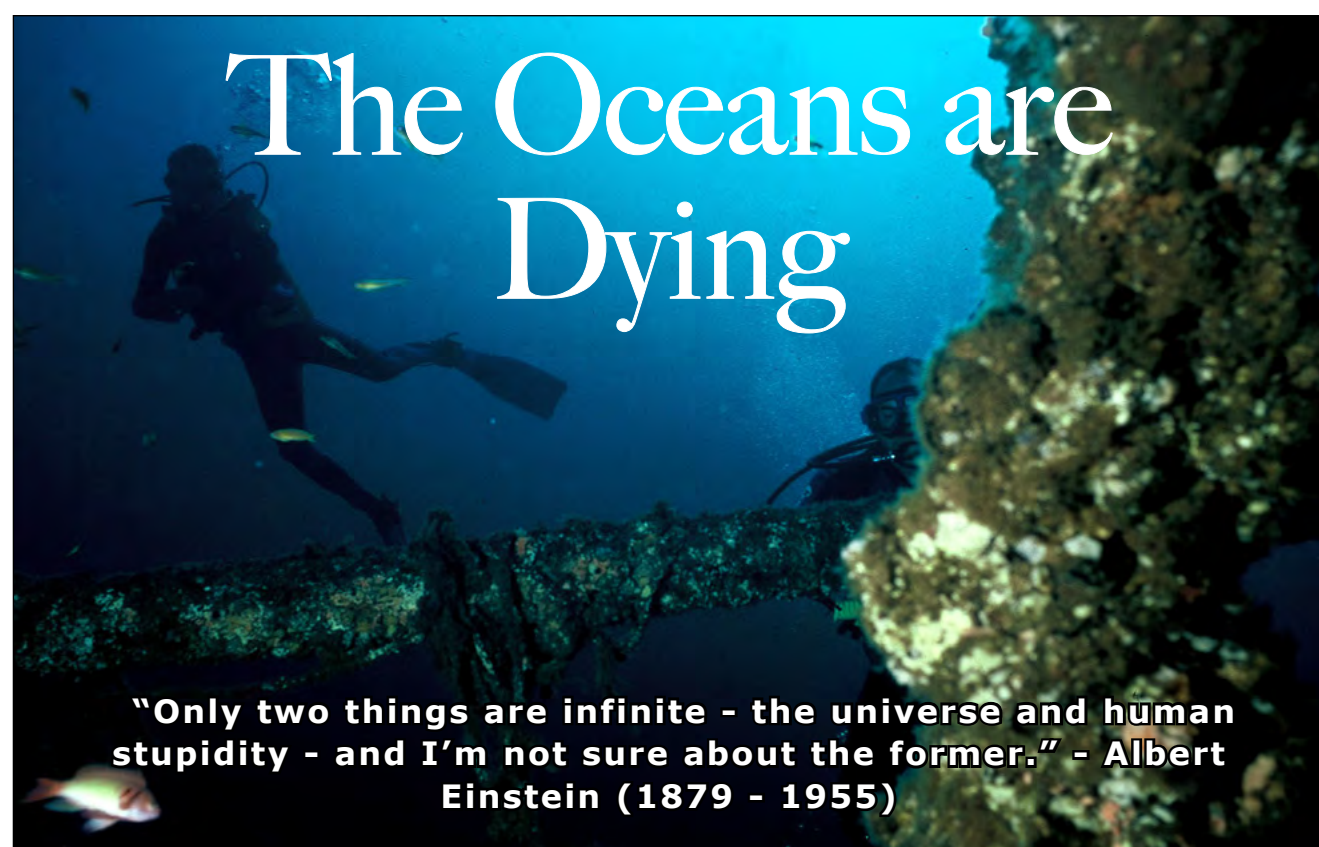
However, many large lakes have sufficient area to generate significant currents (and waves). ■



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"Only two things are infinite - the universe and human stupidity - and I'm not sure about the former." - Albert Einstein (1879 - 1955)

I don't believe in Earth Day. I think it's silly to devote a single day of the year to being concerned about the environment, but then again, I suppose one day is better than none at all.

The issue now is global warming. When we were trying to warn people about global warming and climate change twenty years ago, no one was interested. Now it's become the "in" issue and the big organizations are tapping the public for donations to address the problem, although no one has come up with anything that makes much sense so far.

Global warming has become a money-maker for the big bureaucratic organizations whose primary concern is simply corporate self-preservation. Greenpeace is telling people they can slow down global warming by singing in the shower – I kid you not! All you have to do is run the water, get wet, shut the water off and sing in the shower as you lather up, before opening up the faucet and rinsing off.

So all along it was just that simple to save the world!

One of the major problems is that the big organizations are too politically correct to address the ecologically correct solutions. Instead, they are baffling everyone with abstract concepts like carbon trading and carbon storage or trying to sell us a new hybrid Japanese car.

But let's look at the number one cause of global greenhouse gas emissions – human overpopulation. It's the very same issue that was the priority concern at the 1972 United Nations Conference on the Environment in Stockholm. Today it world's population stands at 6.5 billion. That's a lot of people!

In 1950, the world population was 3 billion – that figure has now more than doubled. Six-and-a-half billion people produce one hell of a lot of waste and use an unbelievable amount of resources and energy. And this number

is rising minute by minute, day by day, year by year. Most of the people having children these days have no idea why they're even having children other than "it's what you do". Many of these people don't love their children, and those who say they do, aren't actively trying to ensure their children have a world to live in one day.

Unless over-population is addressed, there is absolutely no way of slowing down global greenhouse gas emissions. But how do you do that within the context of an economic system that requires larger and larger numbers to perform the essential task of consuming products? Corporations need workers and buyers. Governments need tax-payers, bureaucrats and soldiers. More people mean more money.

There are three laws or principles of ecology that can be looked at. First is the Law of Diversity - the strength of an eco-system lies in the diversity of the species within it. If you weaken the diversity, the entire system will be weakened and will ultimately collapse. Second is the Law of Interdependence - all of the species within an eco-system are interdependent. We need each other to survive. Thirdly is the Law of Finite Resources - there is a limit to growth because there is a limit to the carrying capacity.

The human population is exceeding the ecological carrying capacity. This is leading to the diminishing of both resources and the diversity of species. This in turn, is causing serious problems with interdependence. Albert Einstein once wrote: "If the bee disappeared off the surface of the globe, then man would have only four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man." It's that simple. Humans are holding onto our place on earth by our fingertips. For example, should something happen and there was no more grass, we would be screwed.

That would mean the earthworms would disappear and then so would

the bees. According to Einstein (who was somewhat smarter than most of us), we would then only four years left. That's just enough time to get a university degree and discover that everything you've just learnt has become totally useless because you are sitting on the doorstep of total global ecological annihilation.

We are cutting down forests and plundering the oceans of their creatures. We are polluting the soil, the air and the water and we are rapidly running out of fresh water to drink. The oceans have been abused to the point that 90% of the fish have been removed from their eco-systems and at this very moment there are over 65000km of long lines in the Pacific Ocean alone. Tens of thousands of fishing vessels are scouring the seas in a rapacious quest to scoop up everything that swims or crawls. This is ecological insanity.

Strange as it may sound, the largest marine predator on the planet right now is the cow. More than half the fish taken from the sea is turned into fish meal and fed to domestic livestock. Puffins are starving in the North Sea so that sand eels can be fed to chickens in Denmark.

Sheep and pigs have replaced the shark and the sea lion as the dominant predators in the ocean and domestic house cats are eating more fish than all the world's seals combined.

We are extracting up to sixty fish from the sea to raise a single farm salmon! The demand for shark fins is rising in China. Ignorant people still want to wear fur coats and in America, we order fries, a cheeseburger and a "diet" coke. All I see is a bunch of arrogant primates who are out of control.

Consider the humble honey bee and remember that this little black and yellow insect that's busy flying from flower to flower is all that stands between us and our demise as a species on this planet. We had better see to it that they don't disappear. ■



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SCAN FOR MORE INFO

GLOBAL NEWS



Challenges with Dive Medical Services Around the World

In DAN's 44 years of managing emergency evacuations and claims for divers around the world, we are proud to have worked with many excellent care providers.

The vast majority of hyperbaric and other medical facilities that have treated DAN® members are staffed by consummate professionals, and in most cases, care is exceedingly good.

These medical professionals maintain constant contact with DAN staff, and together we work diligently toward effecting the best available treatment and/or evacuation for our members.

But divers should be aware that there are emergency service providers who are more motivated by profit than patient well-being. People who have just experienced a dive accident are vulnerable and may not be thinking as clearly as they otherwise would be.

Injured divers are rarely familiar with the local "system" for hyperbaric care and may be susceptible to advice from whoever offers it.

In some places bounties are paid to dive operators or cab drivers to get injured divers into the care of one medical provider over others. In these cases, divers become commodities in a revenue machine rather than, as DAN would prefer, patients to be treated with immediacy and concern.

Unfortunately, we have discovered serious issues with a few hyperbaric chamber facilities outside of DAN's direct sphere of influence.

Deceptive Practices

We have seen centres that represent themselves as "DAN referral facilities" or claim they are approved by DAN. The display of posters, tank decals, or certificates with DAN logos should not be interpreted as endorsement or certification by DAN. These materials are readily available to anyone.

DAN does not certify health care facilities or endorse particular operations. A DAN logo on a chamber does not prove legitimacy.

Hyperbaric chamber staff may claim to be DAN physicians or medics.

This is at best misleading and at worst blatantly dishonest. With the exception of Dr. Dario Gomez in Cozumel, Mexico, DAN does not employ physicians to provide medical services in any country outside the U.S. DAN staff consult with local medical professionals to make sure divers get the best care possible.

When you call the DAN Emergency Hotline we can provide up-to-date information on local medical services, but the care providers do not work for DAN. If you are ever told otherwise, immediately be suspicious; that might be the first of several lies you are told.

Lately we have seen repeated instances of diagnosis and treatment plans being influenced by financial benefit to the facility rather than by the medical needs of patients.

In our experience, most cases of decompression illness (DCI) are either resolved or stabilised with one to three hyperbaric chamber treatments. In severe cases, more treatments may be appropriate, but the patient can usually fly safely and resume treatment at a facility closer to home.

If your symptoms worsen or persist without improvement, further diagnostic testing may be warranted to identify other possible causes. More of the same treatment is seldom the answer. If repeated chamber treatments are being recommended, it's a good time to call the DAN Emergency Hotline.

Perhaps further treatment will be recommended, but it may be better to arrange a transfer to a medical facility with a broader range of diagnostic and treatment capabilities.

In reviewing insurance claims made by some of these unscrupulous chamber operations, we have seen exorbitant fees for basic services, invoices for services that were never provided, and multiple billings for the same services.

While most facilities offer services for reasonable and customary fees, those with questionable billing practices increase the costs for everyone. Ambulance charges can likewise be outrageously inflated — even when the “ambulance” is little more than a taxi driver rewarded by a chamber operator to divert accident victims to one treatment facility over another.

We have seen unethical demands for advance payment of copays and deductibles. DAN’s dive accident insurance program guarantees the payment of 100 percent of treatment costs; members should never be required to pay out of pocket.

Reputable chamber operators know this and look solely to DAN for payment once presented with a member’s DAN insurance credentials. Finding yourself immersed in a corrupt system is difficult, and again we urge you to reach out to DAN for clarification of financial procedures — just as you would for medical treatments. DAN is just a phone call away 24 hours a day, every day.

If a medical facility ever restricts access to a phone to call DAN, consider that a huge red flag. A DAN member or a travelling companion must contact DAN to allow us to arrange necessary payments or guarantees.

Calling the DAN Emergency Hotline ensures we know you had an accident, and it initiates the procedure for payment of related costs. Be aware that even the most basic level of DAN membership provides for evacuation from an accident site as long as it’s at least 80km’s away from your home.

Unless we are engaged early in the process, our ability to help and to compensate members fully may be compromised.

If you only have a hammer, you tend to see every problem as a nail. This can be true among providers of hyperbaric medicine; if your only available tool for treating scuba divers is a recompression chamber, your inclination may be to treat all injured divers for DCI.

But prematurely concluding that symptoms require chamber treatment can delay proper care and may even exacerbate an injury that’s not actually bubble-related.

If a stroke is assumed to be DCI just because a patient was diving earlier in the day, permanent damage, which could have been prevented, might result.

Not every ache or pain that occurs after diving is the result of DCI.

An Example: Cut Results in Chamber Treatment

During a dive trip in the Caribbean, a DAN member suffered a serious cut to her leg while diving on a shallow wreck.

First aid was given immediately, and the bleeding was under control by the time the boat reached the dock. Although efforts were made to have an ambulance meet the boat, one was not available. Instead, a taxi was dispatched to take the member to the local hospital. After learning that

his passenger had been diving, the taxi driver bypassed the hospital and delivered the member to the local hyperbaric chamber.

The staff at the chamber examined the cut, determined that the bleeding had stopped and, despite the absence of any symptoms of decompression sickness (DCS), recommended a precautionary Table 6 chamber treatment.

When the member came out of the chamber almost six hours later, she was put into another taxi and transported to the hospital, where the wound was finally cleaned and sutured.

Fortunately, this delay did not cause serious harm to the injured member. A call to the DAN Emergency Hotline for support and assistance could have precluded the absurd and expensive chamber treatment and gotten the member to needed medical care much more quickly.

If treatment inconsistent with your injuries is recommended, question the judgement and motives of those making the recommendation. You are entitled to a second opinion. You can trust DAN; hundreds of thousands of divers have for more than 40 years.


Most of the hyperbaric facilities DAN members will encounter are professionally staffed, modern, safe, and honest. But a few people have found ways to exploit the system to their own benefit — at the expense of travelling divers who may be hurt and vulnerable.

By sharing our experiences with these unscrupulous individuals, we hope to improve divers’ understanding of how services should be delivered and what practices are cause for concern.

A Reminder

DAN is available to help you, your travelling companions, and local health care providers better understand your symptoms and make the correct diagnosis.

All divers can call the DAN Hotline for advice; however, DAN can only arrange an emergency medical evacuation and pay for associated transport and medical costs for current DAN Members, within the limits of their coverage option.

If you are travelling overseas to dive, ensure your DAN 



Micronesian Island Fever

YAP

The world of diving ends beyond Palau. Or maybe not? Located some hundred miles to the east in the open Pacific, Yap is an oasis to a big population of mantas and sharks. Even on the topside, 'diving' is the thing to do – namely diving into the traditional culture of Micronesia and enchanted realms with giant stone money, ancient stone trails and village communities that still abound with folklore and myths.



"Snow White was there again!" Halfway up the ladder, Carolyn Jenson has a smile all over her face while some buddies are scratching their head with that troubled look.

Thanks to Gordon, our guide, we know better by now. "Snow White" is not your average product of nitrogen narcosis – Goofnuw Channel is too shallow anyway – actually she is one of the few white mantas ever reported. That sunny day in January, the gracious beauty of a ray is joined by five males to kick off mating season.

As is often the case, there are a few rules learned beforehand that turn a brief encounter into a spectacle never ever to be forgotten: everybody takes a seat on the sandy bottom, stops moving and concentrates on breathing slowly.

After a stop by the cleaning station the first manta approaches the

group of divers and covers the sun over them like a giant umbrella. Hovering only a metre on top of them, this 'flying carpet' obviously enjoys the Jacuzzi from the divers' tiny air bubbles. For more than two minutes it does not seem to move at all as if time is standing still.

Over the years, more than 100 different mantas have been recorded by the Manta Ray Bay Resort/Yap Divers staff in Yap, which, since 2009, was the first manta ray sanctuary in the world.

And the quest is still ongoing: "If somebody finds a new one we have not recorded yet, they can give it a name," says dive centre manager Jan Sledsens. "If you have booked our manta guarantee package, and if you don't see one in twelve dives, we will refund you for your diving," he continues.

Still, if you 'only' stick to the



cleaning stations you will miss the steep walls meeting the abyss, the critters in the inner reef, the caverns and the deep indigo of the Pacific on the Eastern side of the island, where viz exceeds 130 feet many times.

And this is all without mentioning those guys with the pointed teeth. As we still attach to the mooring buoy of the divespot Vertigo the next day, the first black-tip reef shark starts circling the boat with solid expectations.

Arriving on the reef plateau at 8m we already find four of them, and a single look over the wall makes sure that the grey reef sharks have realised that they have company.

Shark diving couldn't be easier: at a depth of 12m, everybody is offered a seat on the coral floor torn down by the waves in this place.



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With a perfect view of the natural arena with a good amount of twenty sharks gliding over a 100m deep bottom, it is remarkably different from South African shark spots such as Aliwal Shoal or Protea Banks.

Video guys and photographers alike should not miss out on a shark feed. Every once in a while, silver-tips or the occasional hammerhead joins in. In the words of German underwater photographer, Frank Schneider, after his first dive there, "How's your flash card?" he says chuckling, "Mine is bursting with 379 shots."

Apart from mantas and sharks, schooling humphead parrotfish, turtles, eagle and sting rays, morays, barracudas and numerous other critters inhabit the hard coral gardens, which can be reached in a ten to forty minute ride on one of the seven solid dive boats. There is also a pod of roughly 50 shy spinner

dolphins in the island's south-east, and every once in a while there are surprise encounters with tigers and other oceanic sharks, sunfish and even a family of orcas, which showed up the last two years in September.

While Yap is not exactly Lembeh Strait, macro fans will still enjoy the sight of various nudibranchs, black, yellow, white and purple leaffish, white mantis shrimps, ghost pipefish, whip coral crabs and different types of gobies and shrimps in spots such as Slow & Easy, a critter spot located only five minutes from the shore.

The cosy, family-run, 35-room-resort has the pioneering Yap Divers dive centre of the island, under its roof, which itself harbours the Manta Visions photo and video centre and plenty of dry storage room for housings and other equipment. Or,



to put it in a nutshell, 16 booths, each equipped with electric looking glasses, a charging station with American and European style sockets and a spacious locker unit.

Over the years, pros like Eric Cheng, Marty Snyderman, Andy Sallmon and Bob Halstead visited the Manta Ray Bay Resort as well as many TV crews, including National Geographic.

While there are no docking stations at Manta Visions to catch an immediate glimpse of your pictures, Yap's reputation for 'big stuff' extends to the screening of your images: the restaurant ship beamer screen measures no less than 18 feet and is used for the display of the day's best images and frames virtually every evening at dinner time.

A perfect opportunity to sneak in

and connect your notebook while you're waiting for your blackened sashimi... Next August will also see the 5th 'MantaFest' shoot-out/workshop with pros Tim Rock, Frank Schneider and – once again – Marty Snyderman giving lectures and rewarding the winners of prizes sponsored by big names from the industry, such as Mares.

As two-tank dives are most common, the boats are usually back before 2pm, and those not going for a third one have the perfect opportunity to explore the island.

Twice a week, Manta Ray Bay Resort offers cultural trips to Kaday, where the village elders explain traditional life in Yap to visitors, who enjoy a colourful and quite impressive dance performance as well as the taste of betelnut, a slightly narcotic palm tree nut that most of the people on the island chew all day. However, on



Dive the World

Yap

By: Daniel Brinckmann

its 18km length from north to south, Yap also offers pristine beaches, a plant life reminiscent of the choices available in your favourite garden centre, airplane wrecks and flak units from World War II as well as amazingly big mangrove jungles with a proper green roof just waiting to be discovered by kayak.

And don't mind the women from Yap's outer islands, who still love to do their shopping bare-breasted in the supermarket in Yap's 'capital', Colonia. Not covering their thighs on the other hand would be a no-go in Yap's culture, which to this day has remained unique.

On Rumung, a small isle north to the interconnected island triangle that is Yap's biggest and highest piece of land, people simply decided that they would rather have no tourists around, and thus it is

only possible to visit the island in the company of a friend. Not that Yap, with less than 100 hotel rooms and two planes a week is an overcrowded place anyway... "If you visit a place like a beach on your own," my dive guide Gordon says, "Make sure to pick a leaf from one of the trees." This is, he goes on to explain, a symbolic promise that you will behave well and respect the private property.

And quite surprisingly, most of Yap's ground is private property.

At least once in a Yap stay, one should be back in the resort by sunset to take part in a special dive. This is when the mandarin fish start their famous mating dances.

In less than 5m of water and located almost in walking distance from the dive centre, the submerged orgy



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often features five to six couples of these fish, which are often referred to as the most beautiful fish with their rainbow-like colours. And eventually, what could be better than to end a great day of diving with a fresh beer on an ancient sailing schooner that is permanently moored as a restaurant ship?

Bill Acker, the owner of Manta Ray Bay Resort and native of Austin, Texas, is proud of his place and probably the one and only micro brewery in the diving world. One that even has hops and malt imported from as far away as the Czech Republic and Germany for its two distinctive brands.

While this day's underwater video is shown on the ship's big screen, Bill comes over for a journalist briefing, something he must have done a hundred times. I learn that the man with the grey moustache who so many divers around the world known as the 'Manta Man',

first arrived in Yap as a member of the Peace Corps. Funnily enough, he only settled on opening a dive resort when one clever soul explained to him that large amounts of sharks and mantas are not your usual dive buddies.

Adventurous stories of shark encounters and big game fishing for marlin on nearby Hunter's Seamount (he also runs deep sea fishing trips from his resort) are traded, and just a heartbeat later he is off home with his wife Patricia, a native of Yap, but not before he waves at the waiter to hand me another brew.

Nice folk... though not as nice as Carolyn, who comes over to my table, still smiling from cheek to cheek over her encounter with 'Snow White' and the sharks. "Isn't life wonderful?" the true Californian blonde beauty says and lets her eyes roam the lagoon's horizon. Yes, at least every once in a while, life is just perfect. 🐠





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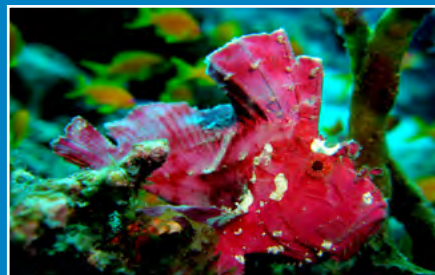
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Pemba & Mafia

Tanzania

Whether you are a diver who would like to spend a few days on safari, or a safari nut who would like to spend a few days diving, Tanzania and its islands have plenty to offer and excellent air links make getting around a cinch. If you're mad about both, like me, then it's a dream come true.



Basking in the warm waters of the Indian Ocean, there are three main islands off the Tanzanian coast, each with its particular attractions. Straight east from Dar-es-Salaam, the main port of entry, lie the spice islands of the Zanzibar archipelago, made up of bustling and touristy Unguja (often erroneously referred to as Zanzibar), and the hillier and sleepier Pemba. Slightly to the south is the flat and sparsely populated Mafia Island, home to the Mafia Island Marine Park.

Pemba Island

The 30-minute, half-empty flight yielded picture-postcard aerial shots of Mnemba atoll and uninhabited islands and reefs before touching down in ChakeChake, Pemba's biggest town, half-way up the west coast at the end of a long, mangrove-lined creek. The airport is a small ramshackle affair, and despite a plethora of attractions including atmospheric ruins, primeval forest, unique bird species, deserted beaches and some of the best diving in the Indian Ocean, Pemba often hosts less than 100 tourists at any given time.



ChakeChake has the only ATM on the island and is the main commercial centre, but don't expect to find a Pick n'Pay. There are several narrow streets of small shops, many selling khangas (the local sarong) and fabrics, tailors and the odd local takeaway with soggy chips and chewy meat skewers.

There is a market with fresh produce, fishmongers are often seen wheeling their goods around in the baskets of their bicycles, and it's well worth a wander round the dusty streets. Other than the daladalas (public transport on flatbeds fitted out with bench seats and a low roof), the only traffic to watch out for around the market might be the odd ox-cart. A few hundred metres north of Barclays Bank I went past the main mosque, where a pick-up game of soccer was occasionally interrupted by grazing cattle straying into the penalty area.

The lack of tourism and low coastal habitation have helped keep Pemban reefs in good condition. During the European summer when the cooler



water is coming up there are plenty of rainbow runners, kingfish, sailfish, yellowfin tuna, pilot trevallies and big-eye and giant trevallies who like the slightly cooler water coming up from the deep channel between the island and the mainland between May and November.

Renowned marine biologist and author, Dr. Ewald Lieske, thinks that the three gaps of Uvinje, Fundo and Njao are very special, partly due to the diversity of fish, marine scenery and good coral health, and because there are no people that impact the kindergarten as it is too deep.

In an interview in 2010 he said that, "These three gaps always have something to offer the diver. Good coral growth, good fish life and sponge growth. That is important for diversity, these big barrel sponges and finger sponges. Uvinje has a very good fish count. It is better than 60 places that I have seen on an expedition in the Maldives in spring 2007 with 16 biologists. And that is saying something." It certainly is, and the sheer, coral-covered walls of these gaps are the main reason I keep coming back here.

Swahili Divers and the Kervan Saray Beach eco-resort on the northwest coast are run by Farhat Jah, with a seemingly eccentric mixture of Turkish and Indian heritage with a British upbringing, and his Dutch wife, Cisca.

Known by locals as Mr. Raf, and just Raf to anyone else, there is something of a young Basil Fawlty in him that, whilst a little surprising initially, is ultimately endearing. The accommodation was built in 2008 from local materials, and the quarry where the bricks were cut is, well, a stone's throw away.

It is the best priced on the island with both dorm beds and double suites, and good value packages. Food is wholesome and filling, and is locally-sourced and cooked with love on charcoal stoves (the chocolate biscuit cake is a speciality). As the RIB zipped across the top of

the flat sea, taking us to Deep Freeze, Raf regaled me with stories from his ten years on Pemba. He pioneered much of the diving from the island, and has discovered many of the sites himself, hence the odd names. You'll find no Aquarium here... Deep Freeze, Slobodan's Bunker (after the ex-Serbian warmonger), Egger's Ascent, and Emilio's Back Passage to name a few. With a wealth of knowledge of the reefs and conditions, years of experience, and a passion for underwater photography and videography, you can pick up a host of tips from Raf, provided you can keep up with the rapid-fire conversation.

The ride had been soothing, re-enforcing the remoteness of this small island 50km off the coast of one of the poorest countries in the world. We passed locals in sailing dhows or dugouts, fishing teams of up to ten men swam nets into a circle, slapping the water as they went to scare fish into the net.

A lone spearfisherman here and there in Jacques Cousteau masks and an elbow-grease-powered spear hunted for dinner. Looking down as we kitted up, the table corals twenty metres down were clearly visible. Backwards roll, hot tub, okay, going down. Equalize, all together? Look around. Wow... With a capital 'W'. On one side was a wall, like the top of a submerged mountain, covered in hard and soft corals of all descriptions, positively teeming with fish.

On the other, the bluest blue, near perfect viz, dropping down, and down, and down. Lucky there is no point talking underwater, because I was speechless. There was not one moment when there was not something to watch. The surface interval snack of still-warm crepes was taken on a deserted island of fossilised coral and white sand before heading off to Slobodan's Bunker, best described by looking down on your hand with digits splayed, each gap a ravine in the reef full of marine life.

Skirting round the end of one 'finger', the faint but unmistakable outline of a hammerhead cruised past in the distance. Sharks and rays are not everyday occurrences here, but I seem



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to bring luck with me. The following day, at Le Trek, we watched four Napoleon wrasse pass below us and a school of barracuda cruise by as we kept the wall left shoulder. Then one of the five other clients started babbling and bubbling loudly, pointing back to the right. And along came a 6m wingspan manta, accompanied by the largest and ugliest old cobia I have ever laid my eyes upon. She glided by on the outside to the edge of visibility, then turned, slowly soaring back under me and up over the group.

Over the next two days, I had the depths and the schools of big-eye jacks of Snapper Point, the barracudas, grouper and assorted morays at Trigger Wall and Trigger Corner, the pipefish of Murray's Wall, the eels, nudibranchs and anemonefish of Egger's Ascent and Chelsea Gin and the gazillion fish of beautiful Manta Point (but no more manta luck) to play with. Dives were broken up by picnics on tidal sand islands and incredible coves in cyan waters under cloudless skies. It was blissful; more dream diving.

Maybe it's a mix of the remoteness of the island, the remoteness of Raf's sites, and a touch of the dreamer in me, but the diving here felt like real adventure, as if all I needed was a red woolly hat and I was the re-incarnation of Commandant Cousteau. There was little time for dreaming though, as it was time to indulge in some more island-hopping, via Stone Town and Dar, and venture into the unknown to check out Mafia Island.

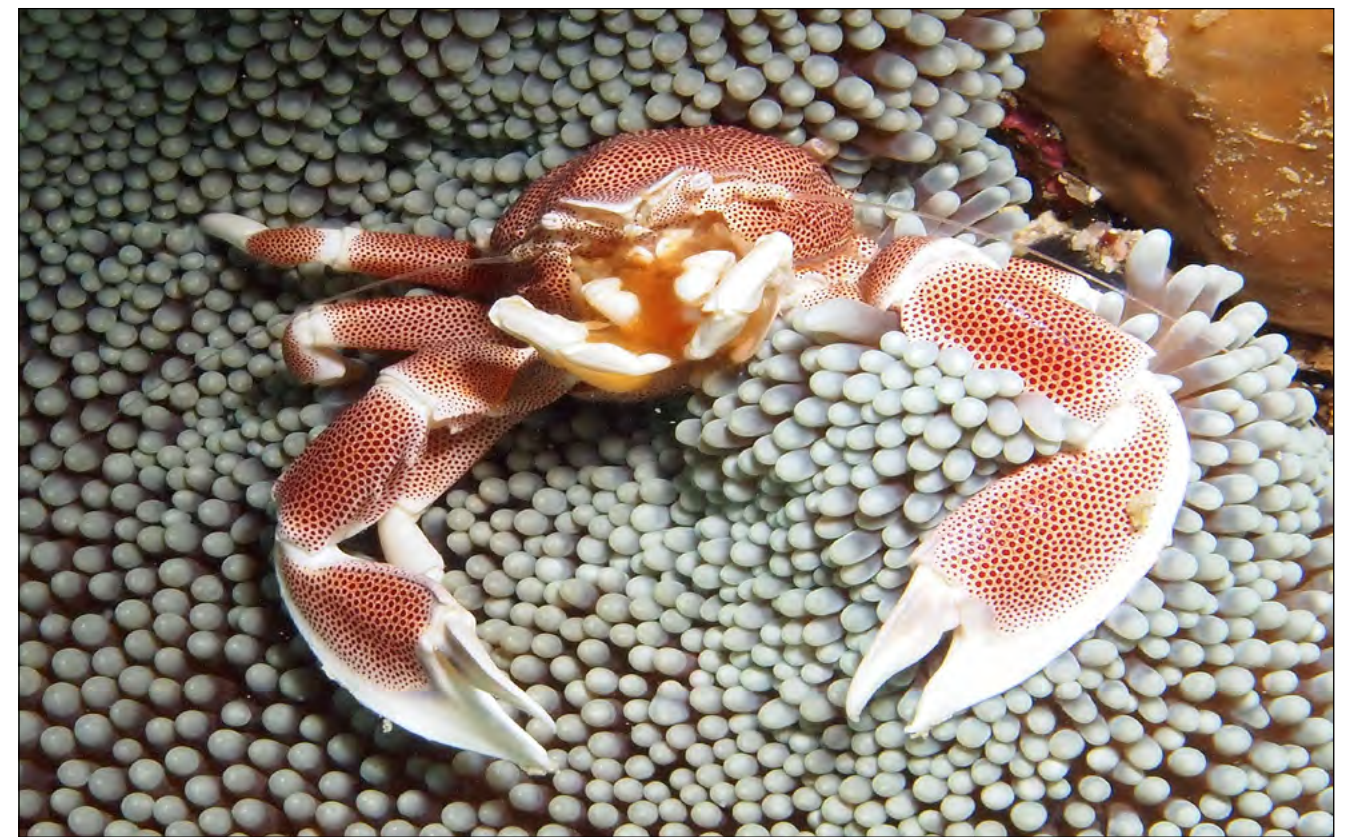
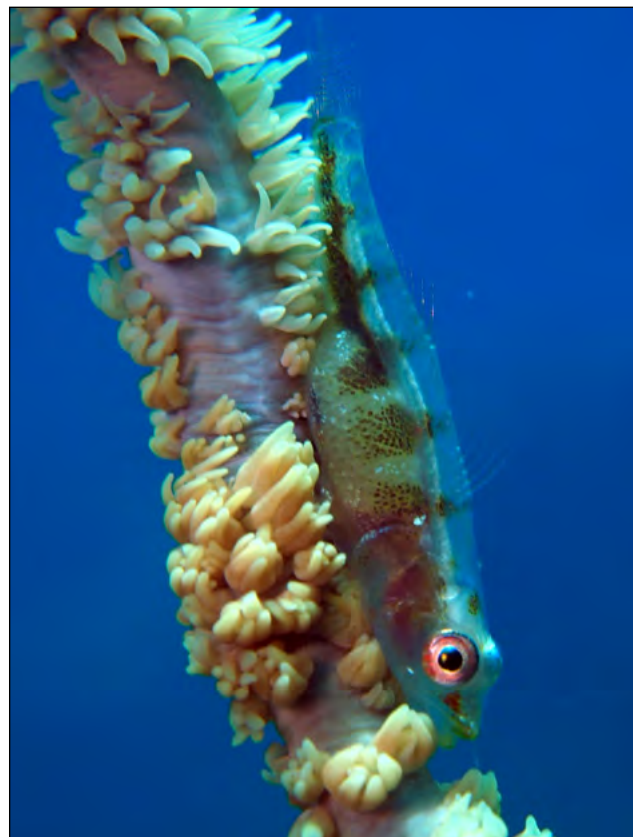
Mafia Island

Mafia Island lies 30 minutes south-west of Dar-es-Salaam by light aircraft and has two main attractions: snorkelling with the seasonal whale sharks off the east coast of Kilidoni from December to March, and diving on the outer reefs of the west coast and a couple of passes on the edge of Chole Bay, the location of several dive lodges.

Kinasi Lodge is the pick of the bunch, with a beautiful pool and beach, thoughtfully appointed rooms and

plentiful gourmet cuisine. Owner Peter Byrne is a committed environmentalist and the lodge has solar water heating, biogas, composting and grey water recycling projects on the go. With only 13 suites spread around the large grounds, it is easy to relax and feel pampered, and for those who would like further pampering, there is a spa and massage centre on site with a resident Thai masseuse and masseur. In terms of a luxury to price ratio, Kinasi Lodge is certainly one of the best places I have visited, anywhere.

The totally chilled atmosphere is reflected throughout. Diving is carried out from a traditional wooden dhow powered by outboards. Departing after breakfast, lunch is generally taken on the boat between dives, unless tides dictate an early start in which case a hearty mid-morning snack is the order of the surface interval and late lunch is taken on returning to the lodge. Kinasi Pass is relatively barren in terms of coral when compared to Pemba, but it has a surprising quantity of fish



– snappers are plentiful, morays and schools of barracuda are common, and it is rare to not see at least one large grouper per dive here. This is due to the tide that brings in fresh sea water and nutrients every twelve hours, which also means that it is important to dive it on a slack tide so as to get the best visibility and the least current.

Of the reefs outside the pass to the north, Dindini Caves north and south are a long series of overhangs in the rock wall that drops from the reef top at 6m down to the bottom at around 30m. Visibility is nearly always over 20m here and often more, and the overhangs are favourite haunts of large potato groupers. These cuties can grow up to 2m long and 200kg, and often treat divers with curiosity.

Twice they happily hung around to have their picture taken and show that they were not disturbed by our presence. There is also good macro-life on the walls with plenty of whip corals and resident gobies. The sites at Gina's Pass and Juani are covered in soft purple and pink corals and schools of blue-lined, five-lined and Bengal snapper, and are excellent places to encounter turtles.


On my last full day we headed over to the west coast as it was whale shark season. Between late November and March, plankton blooms occur in the channel between the island and the Rufiji River estuary, attracting the biggest species of fish in the ocean on an almost daily basis. On a custom-built boat with metre-wide flat pontoons we headed off in search of them.

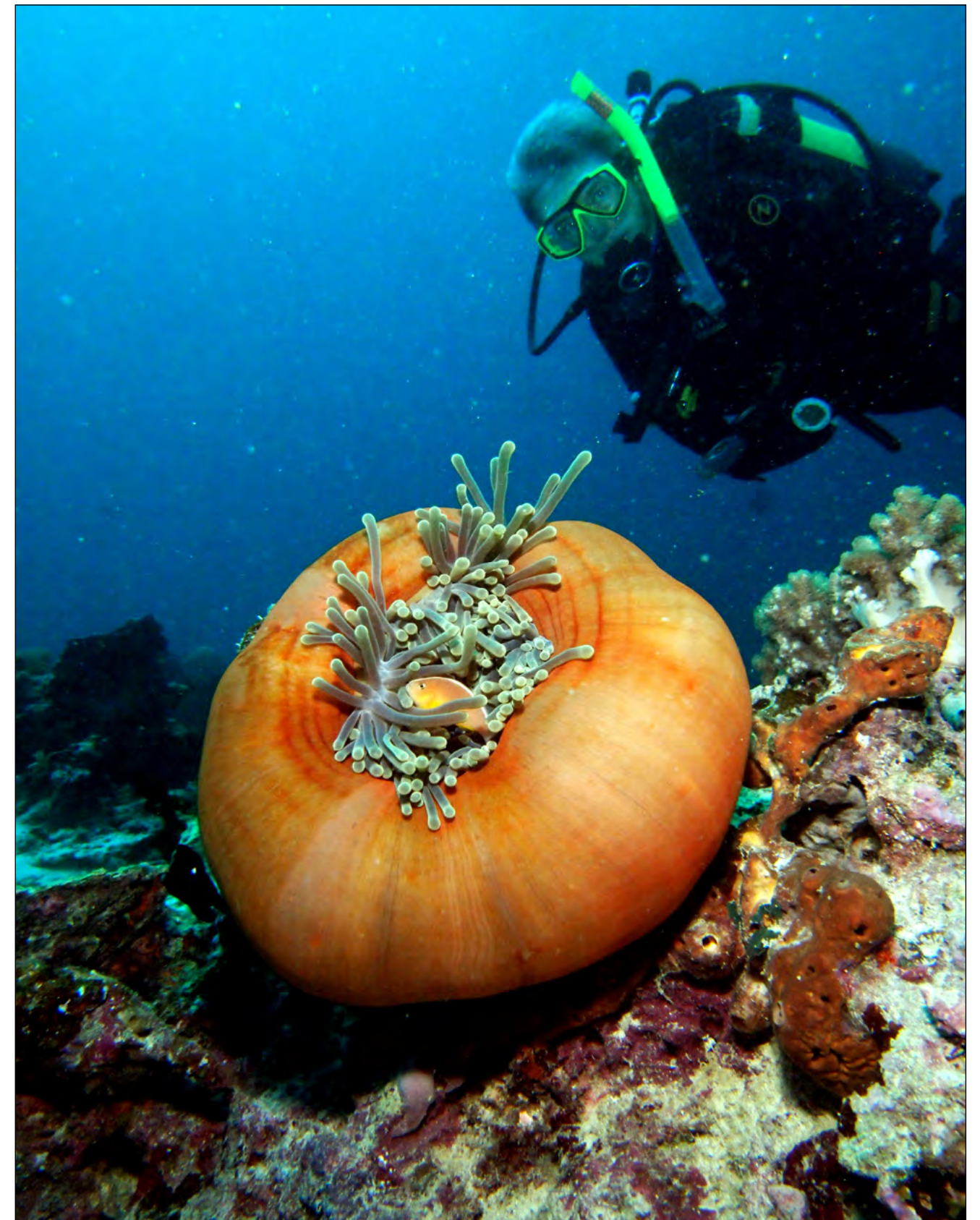
Spotting the dorsal fin of a surface-feeding sub-adult, the skipper positioned us in its path and in we went. Finning alongside a four-and-half-metre male, I snapped away hopefully, the sunlight over my shoulder making viewing an almost impossible task, trying to catch the yellow fish riding its bow-wave. Once it had moved on, the boat picked us up and started to take us further ahead again when another one popped up 15m away, followed by a third. In total we probably saw five or six individuals, and during one quiet

five-minute spell, a devil ray turned up and started doing underwater loop-the-loops lest I get bored. Fantastic. It would be remiss to visit Tanzania and not go on safari. The so-called Northern Circuit has the world famous and unforgettable Ngorongoro Crater, the Serengeti and its massive migration, and the lesser known but most enjoyable Manyara and Tarangire National Parks.

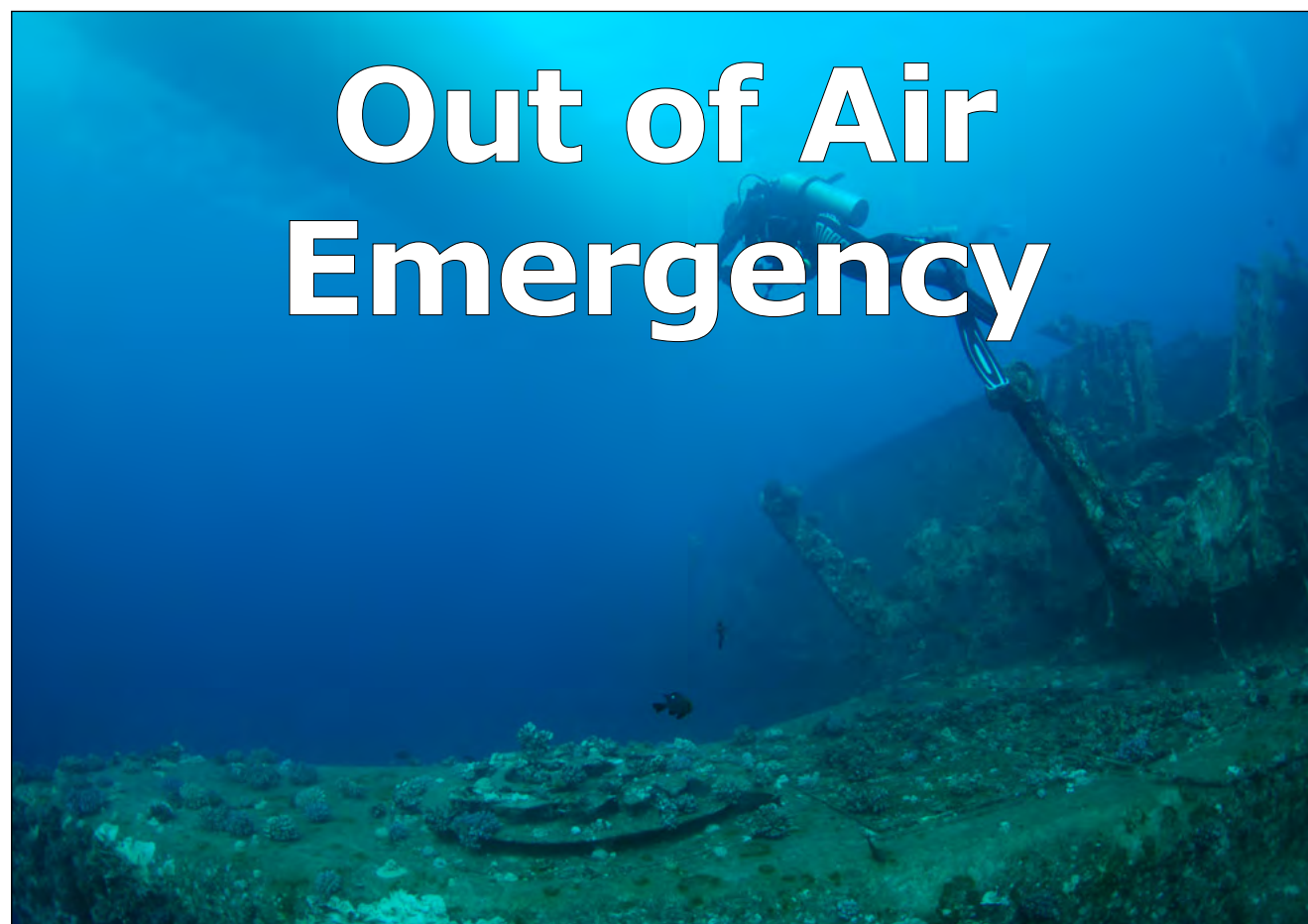
The former is a UNESCO World Biosphere Reserve and home to the lake of the same name, huge flocks of flamingos and pelicans, and its famous tree-climbing lions – the latter has its massive and fantasy-world baobab trees, herds of elephants and over 500 bird species. Both are also excellent for most African mammal species, though the UN World Heritage Site Ngorongoro Crater is the only place where black rhinos can be found in Tanzania.

The south is home to the very accessible Mikumi National Park, the beautiful and little-visited gem of Ruaha, the continent's largest National Park, and Selous game reserve, one of the largest conservation areas on the planet. This rolling wilderness, studded with the great angular-branched baobab trees, and intersected by the Ruaha River, is known for its magnificent elephant population, huge herds of buffalo as well as for other mammals and, in particular, its bird life. With personal park fees at USD25 instead of the USD100 charged at the flagship parks in the north, and with access from Dar-es-Salaam by vehicle, Ruaha, Selous and Mikumi are attractive options.

As well as diving and safaris there are also treks with donkey portage through the Ngorongoro highlands to splendid Lake Natron and its flamingos, the Olduvai Gorge, where a 1,8 million-year-old hominid fossil was unearthed, and Oldoinyo Lengai, a 2 878m active volcano. For those who like a real challenge, 4 566m Mount Meru in Arusha National Park is particularly steep in parts, and of course there is the climb to Uhuru Peak, the highest point on the continent atop Mount Kilimanjaro. 



Out of Air Emergency



Air supply is vital for any sort of diving and running out of air must be every prospective or novice scuba divers biggest fear.

Yet this is also one situation that can be completely avoided if gauges are regularly checked and the diver does not experience failure on his/her regulator.

The primary objective when a diver runs out of air during a dive would be for that diver to secure and establish an alternate air supply to his/her own which has just been exhausted.

The first port of call would be, of course, the dive buddy since they have hopefully been keeping an eye on their air supply and will have enough for both of you to reach the surface quite comfortably while maintaining a safe ascent rate. Remember that in any out of air situation the dive is immediately

terminated and the diver that is out of air, and the person assisting that diver, should return to the surface without delay.

Even the usual safety stop (sport diving) can be omitted as it would be better to reach the safety of the surface, with its unlimited air supply, than two divers running out of air while trying to complete their safety stop.

Experiencing an out of air emergency situation while diving within a group with a dive master or dive leader is one that might be nerve wrenching if you are a dive leader, but also one that is easily managed if handled correctly.

For the other divers in the group, such a situation and the way in which it is handled will most certainly give them a great indication of the calibre of dive leader in which they are entrusting their lives.

In my opinion, the dive leader should, as soon as the situation occurs, ensure the diver obtains air and calm the diver down.

Thereafter it might be a good idea to establish who in group has the largest amount of air left and pair the diver with this person while sending them up.

Hopefully the other diver will have an octo and buddy breathing won't be required as that will just add stress to the already panicked out of air diver.

If the diver with the most air happens to be the dive leader, it is important to terminate the dive for all other divers when escorting the out of air diver to the surface, unless there are adequate experienced divers to continue the dive. This will, however, be the dive leader's call.

When on a technical dive an out of air situation can be more complicated due to a number of additional factors that need to be taken into consideration.

Before I cover these considerations it would be important to note that in technical diving the occurrence of this situation would be highly unlikely due to the training technical divers receive, redundant equipment being used and the amount of planning that goes into

such dives.


But if this situation does occur, the following would need to be considered in addition to the regular considerations above by a sport diver.

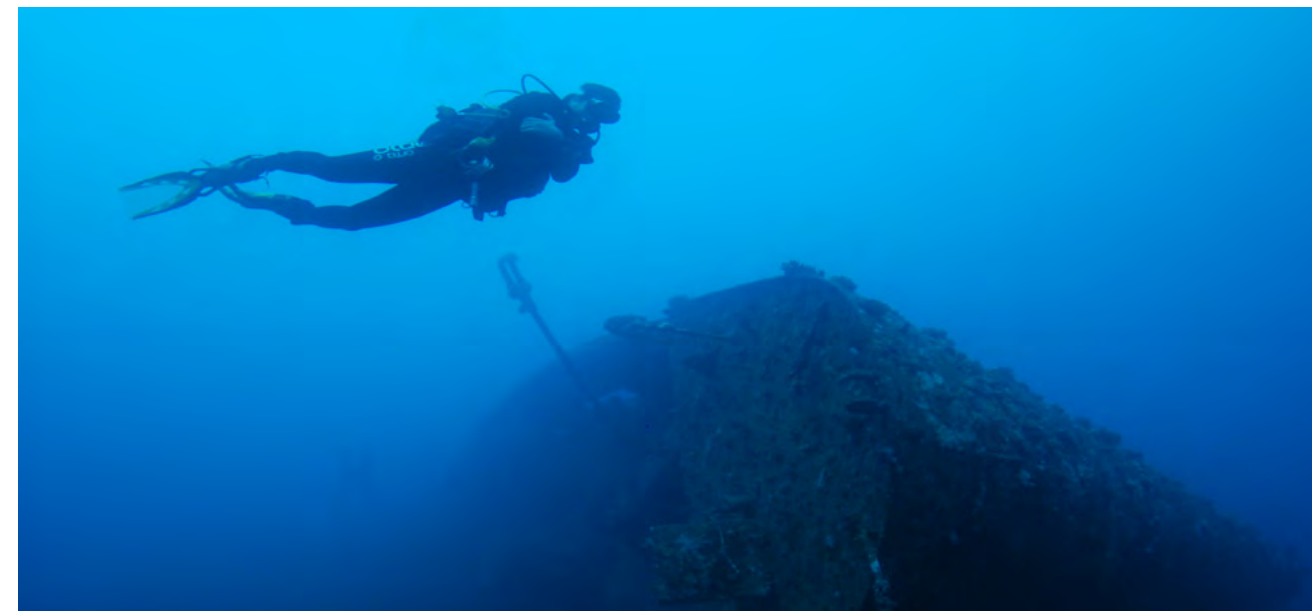
Due to the various gasses used a technical diver will need to evaluate what gas is safe for them to breathe at their current depth.

Returning to the surface would also be a bit more challenging as the decompression stops are compulsory, and they will need to obey them in order to avoid the risk of experiencing DCS.

Yet as I mentioned previously, technical divers plan for contingencies like this and mostly use what is called the rule of thirds when doing their gas planning for any dive.

The following are general steps to consider when you find yourself in an out of air situation:

- Stay calm.
- Secure an alternate air supply.
- Breathe normally.
- Surface immediately. 



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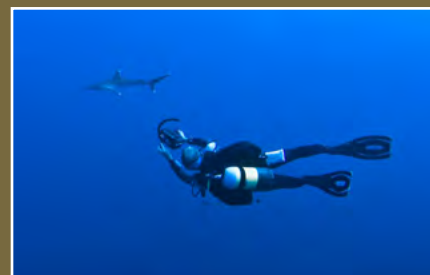
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Bassas Da India

"Been there, done that," is all you hear these days from well travelled international divers. There are only a few well known and unique prime dive locations in the world such as Galapagos and Cocos and it seems that any well travelled diver worth his salt has visited these sites.



Naturally, when hearing about a special place that is one of the top five wild diving sites in the world, you would think that this would be in one of these far flung places.

Bassas Da India is a submerged volcanic atoll which rises up from 3 000m to break the surface on low tide in the middle of the Mozambique Channel.

The atoll was first recorded by Portuguese explorers in the early sixteenth century and was named Baixo da Judia (Shoal of Judia), after the name of a Portuguese ship that ran aground there.

The name later became Bassas Da India due to transcription errors by cartographers.

This is a well known graveyard to nearly 100 shipwrecks where many came to their peril in what was thought to be deep ocean in the middle of nowhere.

On high tide all but a few small boulder-like jagged rocks can be seen as well as the only two visible wrecks of the many ships that met their destiny here.

Without these references at high tide many more ships could possibly have met their peril.

You would think that after the first few ships had landed on Bassas Da India that this would have been a known hazard to avoid, but even up until now Bassas Da India is plotted 1,5 miles off course on most instruments.

If it was not for the incredibly deep waters dropping away down the shaft of the atoll there would be an endless number of wrecks to dive.

There are a few known wrecks to dive but unfortunately they are still relatively deep. In monsoon season the waters are extremely rough and what exists within diving reach has been flattened by the huge seas.

The atoll is patrolled by the French Navy as these are French governed waters and they are very protective over the atoll

for obvious reasons and any attempts to salvage any of the wrecks would result in tough measures being taken. Up until now access to the atoll was not permitted yet now all boats mooring at the atoll require a permit from the French Government.

Breathtaking is the word for the experience from start to finish.

To start with there is the flight into Vilanculos (Mozambique) with the stunning scenery of the white of the sandbanks contrasting with the turquoise and jade coloured waters of the Bazaruto archipelago.

This breathtaking scenery really gets the blood pumping with the need to immediately slip that wetsuit on and drop into the Indian Ocean.

The crossing to Bassas Da India takes two days, with the first day dedicated to exploring Vilanculos (Mozambique) to get your last minute supplies, checking gear and receiving a thorough briefing before the epic journey.

The second day starts early with a stunning meander through the narrow channels of the archipelago which can take up to three hours.

The striking landmark of the high sand dunes on Bazaruto Island marks our exit point through what is called the 'washing machine', where the calm flowing current from inside the archipelago meets the swells from the open seas.

Depending on the sea conditions this can be a baptism of what is to come. Once the boat is through the sails go up and autopilot is set to a tiny reference point on the map in the middle of the deep Mozambique Channel.

If you look at the map you will see that the Mozambique Channel runs between Mozambique and Madagascar, and you would therefore naturally think that these waters are fairly protected by this huge island.

With a distance of nearly 1 000km between the two you could not be more

wrong. We chose the time to visit Bassas Da India very carefully (typically people go between the months of May and September as any other time would normally be rolling the dice with the threat of monsoons).

The 30-40 hour journey can have vast contrasts, from plain sailing on calm waters to a marathon, gut wrenching roller coaster, so this is a warning to the faint hearted – this is not a Caribbean cruise, it is the real deal but totally worth it.

You may ask yourself "Why would I want to go through four days of this just to get there and back to a dive spot?"

Well we cannot explain the feeling that you will have when catching a glimpse of the New Holland shipwreck as a dot on the horizon.

This dot on the horizon will be something that you will never forget as this is the icon of this wild and unforgiving place.

As you get closer you will see the beauty

and the beast that is Bassas Da India. The approach to the wreck is slow but with every minute that passes the excitement builds as the dot morphs slowly into a huge wreck in front of us.

Seeing the twisted, rusty structure will send a chill down your spine and have you thinking about what those unfortunate sailors and crew went through.

They had nowhere to go when striking the atoll and for them the closest dry land was at least 500km away – an eternity in rough, shark infested seas.

As we approach the perimeter of the atoll, which runs 10km across, suddenly out of the deep blue from 50m deep we can see the bottom – what a sight!

All we see is striking reef which lines 35km around the perimeter of the atoll.

This is when you realise what we have ahead of you for the next six days!

The water is so clear that you can pick



Exploration

Bassas Da India

your dive spot from the surface just by watching the bottom as we amble along the edge of the atoll.

There are no dull, lifeless spots around the atoll and even on the mooring spots you can dive stunning reefs boasting an abundance of life.

Fortunately, the atoll does not just fall away from the rim immediately and there is a constant diveable perimeter around the atoll.

The atoll is vast and has contrasting sides which offer an extremely diverse range of dives and marine life.

During this season we experience predominantly south easterly winds and the mooring locations are set on the north and northeast of the atoll (these are sheltered from the open sea swells).

This side offers unbelievable world class reef dives with amazing underwater topology. From huge table corals to an

abundance of soft corals, you will be constantly snapping away with your camera.

There is an abundance of fish on the reefs with large schools of Parrotfish, Fusiliers, Anthias, Wrasse, Butterflyfish, Angelfish, Moray eels, turtles and much more.

There is everything for the keen photographer too, from large predators to intricate macro life.

The reef starts from the top rim of the atoll and there is a fairly sharp drop off of approximately 6m which offers the most unbelievable snorkelling.

From the bottom of this wall there is a gradual sloping shelf with an abundance of marine life.

Sometimes, depending on the tide, the closer you get to the rim of the atoll the worse the visibility will be due to the debris running off the reef, because at low



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MV Oceania is a 27 metre catamaran catering for up to 16 divers in 8 cabins. Modern comfort with two guest deck levels.

Image © Grant Thomas

At low tide the water cascades from the rim of the atoll, running like a waterfall into the ocean.

The ledge can be up to 300m wide, and as you go deeper the ledge drops away down to more than 50m, which can offer the most amazing wall dives packed with marine life.

This is an excellent place to look out for game fish and predators and it is not uncommon to see Kingfish up to 50kg in size, Silver tip sharks, Hammerhead sharks, Zambezi sharks and even the odd Sailfish if you are lucky.

On nearly all dives you can see large Potato bass, which seem to be everywhere around the atoll in abundance, as well as some gigantic Napoleon wrasse over 2m in length.

Everything at Bassas is big and this may be because of its remoteness and the fact that it is protected by the French Navy.

There are no commercial fishing boats, illegal or legal, bar a few private chartered

game fishing boats from time to time, and this is evident as soon as you immerse yourself into this oasis.

On your descent you can basically pick what type of dive you want as it is all there for you within easy reach.

The best thing about the northern side is that it is nearly always diveable as it is normally protected by the atoll from the wind and swells.

From experience the currents on the north side are mild and gentle and dives are easygoing.

The reef and dives can be easily compared to Palau with striking colours and a vast array of corals and marine life – these reef dives alone are worth the trip to Bassas without the thrills from the 'Wild Side'.

South of the atoll is aptly named and aforementioned Wild Side.

This coastline is treacherous with a constant swell thrashing the reef, and if there are supporting winds this can



be a very difficult place to dive. This side of the atoll is, however, a Mecca for predators and shark activity with a healthy population of game fish and many different shark species.

If conditions are suitable for diving then this side is a must for the adventure diver with an awesome number of sharks and large scale predators in the waters.

Care must be taken even dropping off the boat into the water as the waters are populated with Oceanic white-tip sharks, Zambezi sharks, Hammerhead sharks, Tiger sharks, Silver-tip sharks and even Galapagos sharks.

The Galapagos sharks have only been spotted at Bassas Da India and nowhere else in the Mozambican Channel, which leads scientists to believe that this could be a nursery ground for this shark species.

The Wild Side is definitely where the action is and don't be surprised to find yourself surrounded by Zambezi sharks on your first dive.

The operators will make sure that you are ready for these dives and well briefed for what to expect and how to behave.

All of the trips are guided by a shark specialist and safety is the number one focus on these dives. You are in extreme territory here in a remote destination and any accidents, even small, could escalate into a major problem.

The Wild Side is a difficult place to dive as the dive is close to the breakers and the atoll – caution must be exercised when planning these dives, especially with regards to the weather. The weather can change quickly at sea and a concise call must always be given with regards to the weather, and especially with regards to the skills of each diver.

Mistakes cannot happen this far out at sea as a lost diver will be very difficult to find and this is definitely not the place to be lost at sea.

The amazing thing about the sharks at Bassas is that they do not seem to swim separately from one another and many

divers have witnessed multiple species of sharks swimming together.

Normally you would expect to see different sharks at separate times during dives, but divers have witnessed Zambezi sharks swimming with Silver-tip sharks and Galapagos sharks.

These waters are teeming with life and there is an abundance of supersized game fish close by.

Between dives we will tow tracer lines without bait and as the atoll drops so dramatically away we do not have to travel far from the edge in search for the big game fish.

Normally it does not take long before everyone is yelling with excitement as the reel fizzes and dips. These waters are a bounty with shoals of Tuna, Wahoo and an abundance of Barracuda and sharks.

Once a fish is hooked then it is a race against time to bring the fish in as quickly as possible before it is taken by one of the many sharks on the prowl. After the first Yellowfin tuna is caught it will be only minutes until the freshest sushi you have ever had will be on the table. Nothing goes to waste on the fish as the scraps are used for bait for fishing and the carcass is used to tempt some of the bigger residents in the water to the boat at night.

On one of the mooring spots there are a couple of huge Zambezi sharks over 4m in length that are not shy to come to the boat. To see such large Zambezi sharks the size of a Great white is a spectacle and definitely a chilling reminder of how wild this place is.

If you don't like the thought of not putting your feet on solid ground for 10 days then you will love the idea of walking on the atoll at low tide.

The atoll walk is the most amazing experience as it is like a walking dive! As you step onto the atoll, water cascades past your feet in a frantic rush to escape to the ocean.

As you look along the edge of the rim you will spot many fast flowing channels where the bulk of the water escapes at low tide.



At these exit points, flashes of green and blue will catch your eye as schools of Parrotfish line up and feed from the lagoon water gushing into the ocean. The lagoon inside the atoll is 1m higher than the outside on low tide, and with an internal area of approximately 75km² there is a lot of water moving over the rim.

This is a huge body of water which is trapped inside the atoll, and twice a day water flows over the exposed reef into the ocean. When walking on the rim you will be blown away with the amazing, pristine corals that are exposed and endless amounts of oysters and clams that populate this area.

If fresh oysters are your thing then this is the ultimate place to shop for lunch as they are everywhere! As you walk towards the emerald green lagoon in the middle you will see bright colours darting around in the pools around you.

Tropical fish of every kind charge their way through the tight maze of channels to the open sea, the lagoon or the many deep pools offering protection until the tide once again rises.

As you walk along fish will leap from pool

to pool and you will see the wake from the backs of large Surgeon and Parrotfish slipstreaming just under the surface.

This is truly spectacular and right then and there you will find it almost impossible to believe that you are standing in the middle of the Mozambique Channel, 500km from civilisation and just 500m away the water is thousands of metres deep.

As you approach the lagoon, reef turns to sand, and if you are lucky you will find a patch of beach to sit on.

The lagoon is vast and on the horizon you may see the white horses breaking from the Wild Side.

The water inside the lagoon is crystal clear with a sandy bottom a maximum 15m deep, but there is not much life inside compared to the outside reef, bar a few Tiger sharks. On top of what there is around the atoll, from the end of June to October there are hundreds of Ressel Cave in the Mozambique Channel and there is every opportunity to get up close and personal with these gentle giants.

This place is truly a paradise within reach. This is one of the last untouched natural phenomenon's left in this world. 🏠

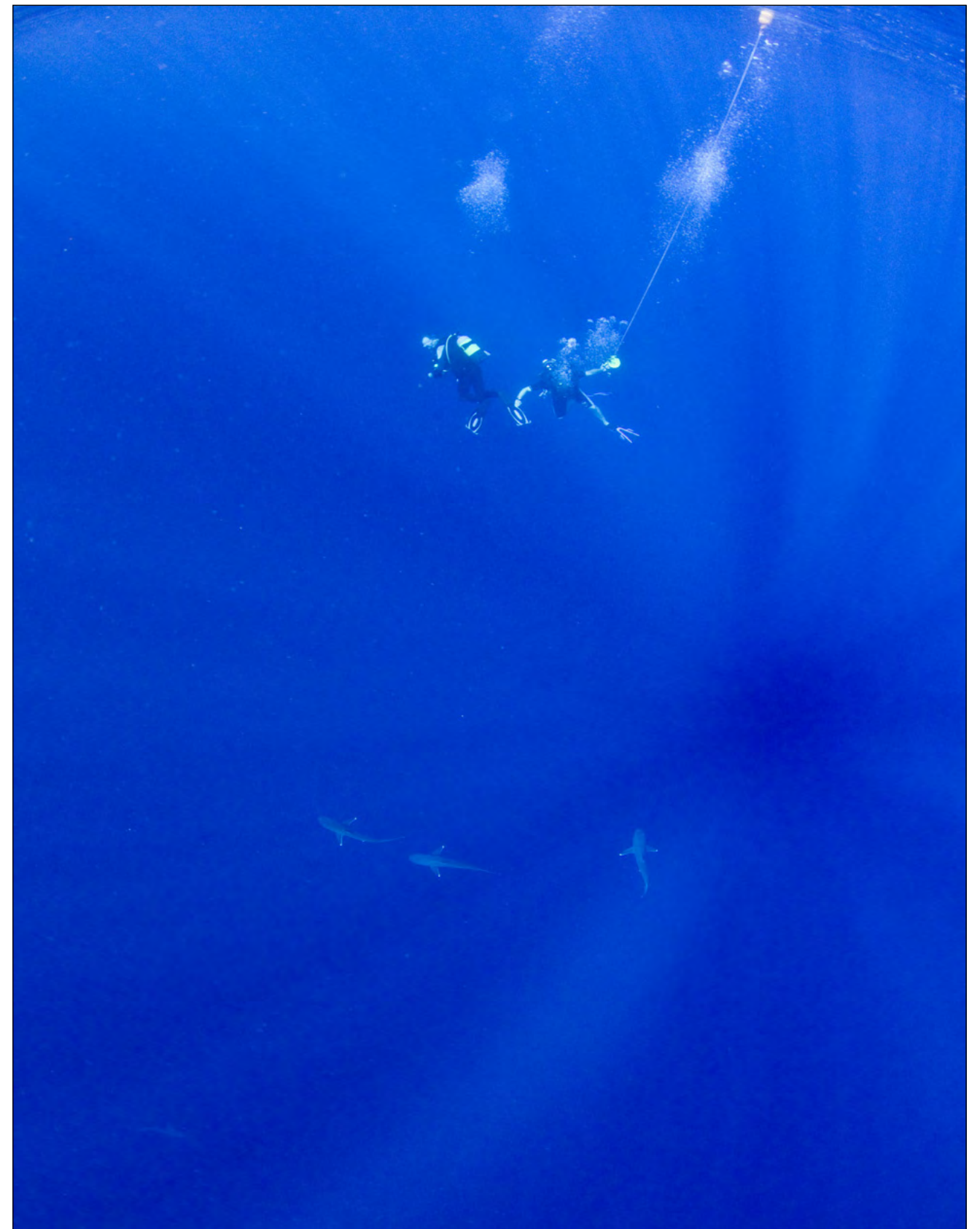
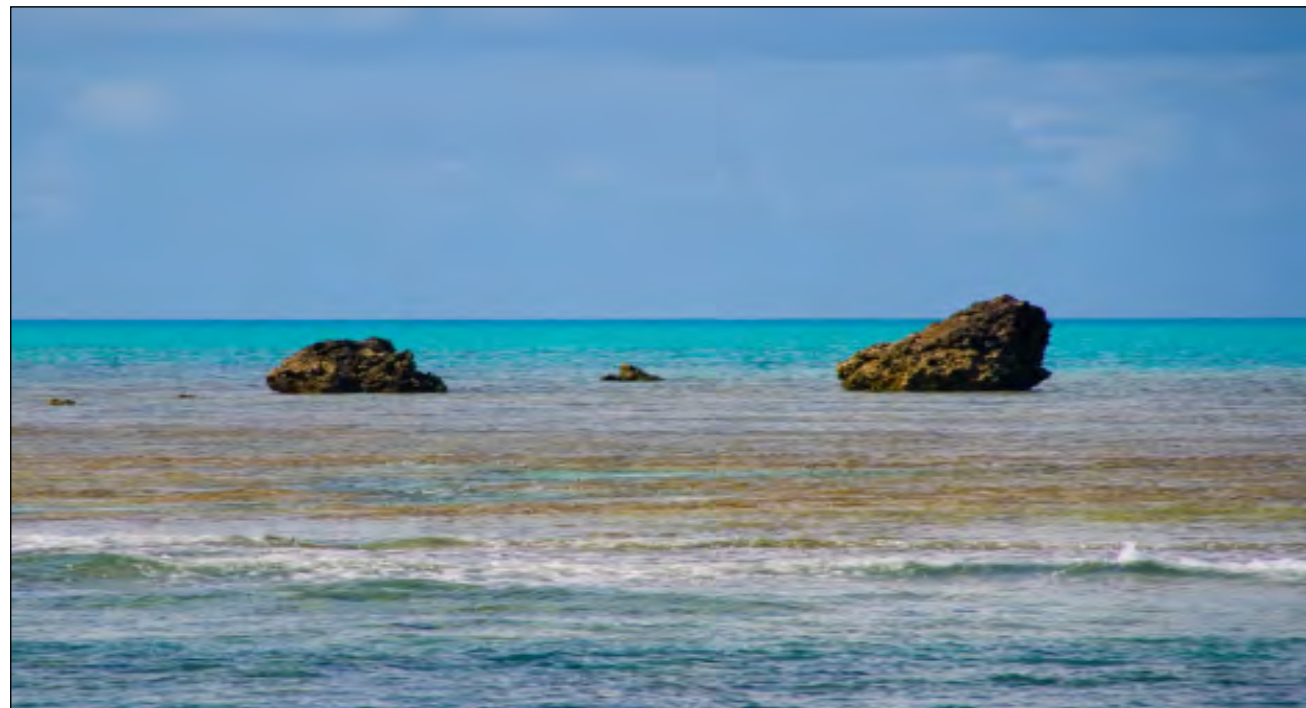


Photo School

Macro Photography

In this article we are going to look at macro photography, a technique which brings out incredible colours and detail at tremendous rates of magnification.

The great thing about macro photography is that it is one of the easiest forms of underwater photography.

It works in almost all water conditions and is the only successful technique during a night dive.

You can photograph a large percentage of the marine life on the reef just using macro.

One of the hardest parts about macro photography is finding those really small subjects.

There is so much to learn when doing macro photography because you need

to know about the behaviour of the subject you want to photograph. The purpose of macro photography is to capture the subject at actual or larger than life size.

You will of course need to place the lens very close to the subject to fill the whole frame.

This produces unmatched colour richness, and using a small aperture will deliver amazing sharpness of detail.

The most important rule for macro photography is to choose your subject with care. Avoid taking photographs from a top viewpoint.

Always try having your subject facing the lens –you want to create perspective and depth in the photograph. It is important to

keep your own movement down to a minimum, so avoid rapid movement and be patient. You also don't want to stir up any sediment, as this will ruin your opportunity.

With macro photography you are going to be challenged by a very narrow depth of field so consider the plane of the subject in relation to the orientation of the film plane.

If these planes are kept parallel, you attain maximum sharpness otherwise you are going to have to rethink your composition and decide where the in-focus area is going to be.

When focus cannot simultaneously be sharp on the mouth and eyes of a subject facing the camera, you must compromise.

While keeping depth of field in mind, place sharp focus somewhere between the eyes and mouth, so that

an acceptable photograph can be composed.

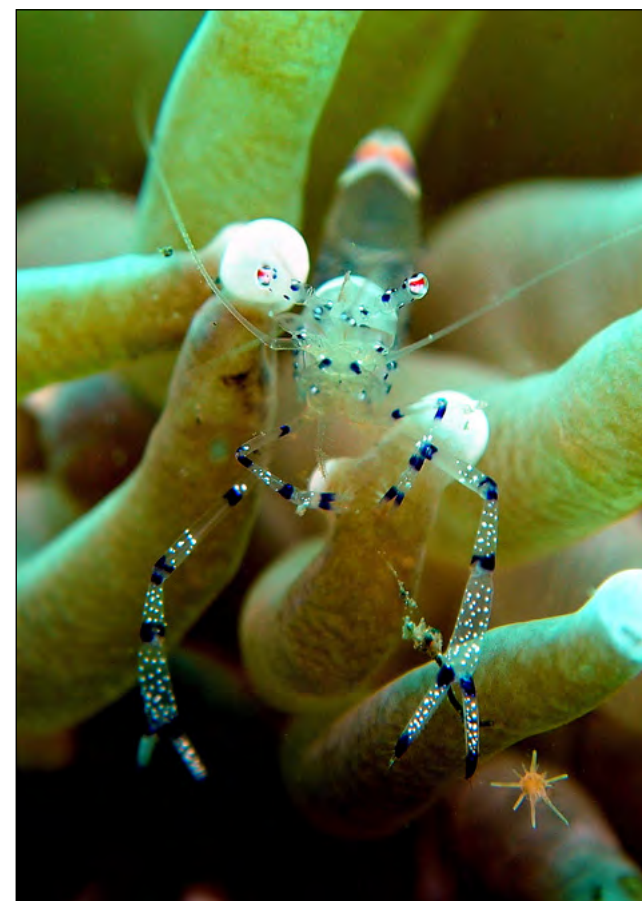
With macro photography, you will have to approach your subjects very carefully as some will shy away or retract from the light. Always wait for and capture action, or a sense of it.

If you are fortunate enough and your subject remain still to be photographed, savour the moment and compose as many different photographs as you possibly can.

Always be mindful of when is it enough and be considerate to the marine life you intend photographing.

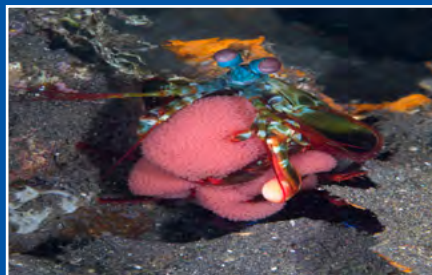
Always be sure of your physical position in relation to the reef and make sure your buoyancy is perfect.

Then there are also those unfortunate times when you just have to let the opportunity go. ■



George Borovskis

A journey through the Lens



Through the Lens

Photographer

I learnt to dive in 1985 when my friend Fabio lured me to do the open water course with Dave Ireland's dive shop in Cronulla.

I thought this is crazy but quickly got the bug and relished exploring this magnificent world. T

his was a place of sensory overload, where I was a visitor and every dive counted as an adventure.

Overseas family holidays usually allowed me to have the opportunity of seeing what was below the waterline as well as on land.

I live and dive in Sydney and believe we are blessed to have so many great shore dives close to a major city.

My favourite haunts are the three dive sites at Kurnell where on its day, I believe the sites here rival macro hot spots overseas.

I did not take up UW photography until much later. In 2006 on a trip to Cyprus I used my first UW camera a Canon Ixus 750 compact with a whopping 7.1 megapixels.

For the next 4 years it was my kit for bringing home images to show friends and family.

In that time, I purchased a Canon 40D and dreamt of maybe getting a housing for it.

Then I saw a Seatool housing on ebay. Told my wife and went off to a dive club meeting. When I came home, she said "I bought it"!!

I was in two minds, elation and oh my god now the bank balance will never be the same. Happily, it all worked out fine.

Optically triggered Inon Z240s, 60mm macro lens and I was ready for the steep learning curve.

From 2010 to 2013 I learnt the craft of shooting fully manual in both camera and strobes and then an opportunity

came my way to upgrade so I sold the 40D kit and replaced it with my current set up. I now use a Canon 5D Mk 3 in a Nauticam housing, optically triggered twin Inon Z240s.

Lenses are Canon EF 100mm f2.8 L Macro, Canon EF 16 – 35mm f4.0 L Wide and Sigma 15mm fisheye.

Additionally, there is a Nauticam SMC -1 Macro Converter which is a challenge to say the least especially in surgy water but worth the perseverance.

In 2012 my diving life took an even better turn.

My wife learnt to dive and has since become my regular dive buddy and fantastic spotter of small critters.

It is what she calls her Zen time. There is little concern (well maybe a little) when dive gear needs to be bought and holidays have now taken on a new perspective. With the advent of COVID-19 our dive travels have focussed on Australian destinations.

We have had the privilege of diving the Coral Sea and ribbon reefs.

This was a sensational trip with coral spawning a true highlight.

Diving is a weekly ritual all year round and with any luck a new Canon mirrorless camera could be on the horizon.

We dive at Kurnell quite often and I sometimes wonder what Captain Cook would think if he knew what was below the Endeavour in 1770.

I bet it would have been spectacular.

Many of our friends do not dive and love seeing the photos of what we have in our waters around Sydney.

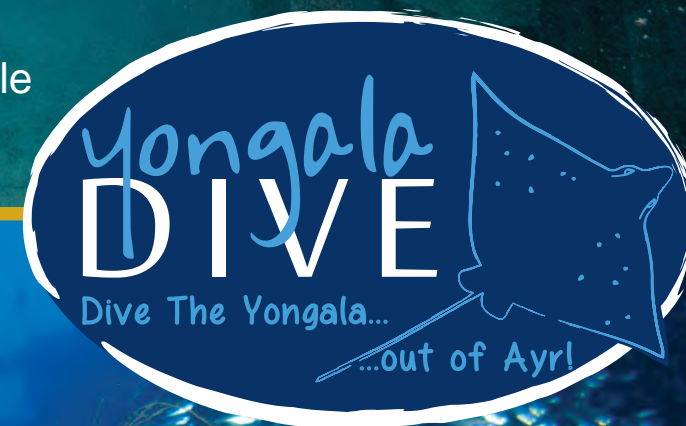
They refer to themselves as armchair divers.

I hope you enjoy these images as much as they do. 🇦🇺

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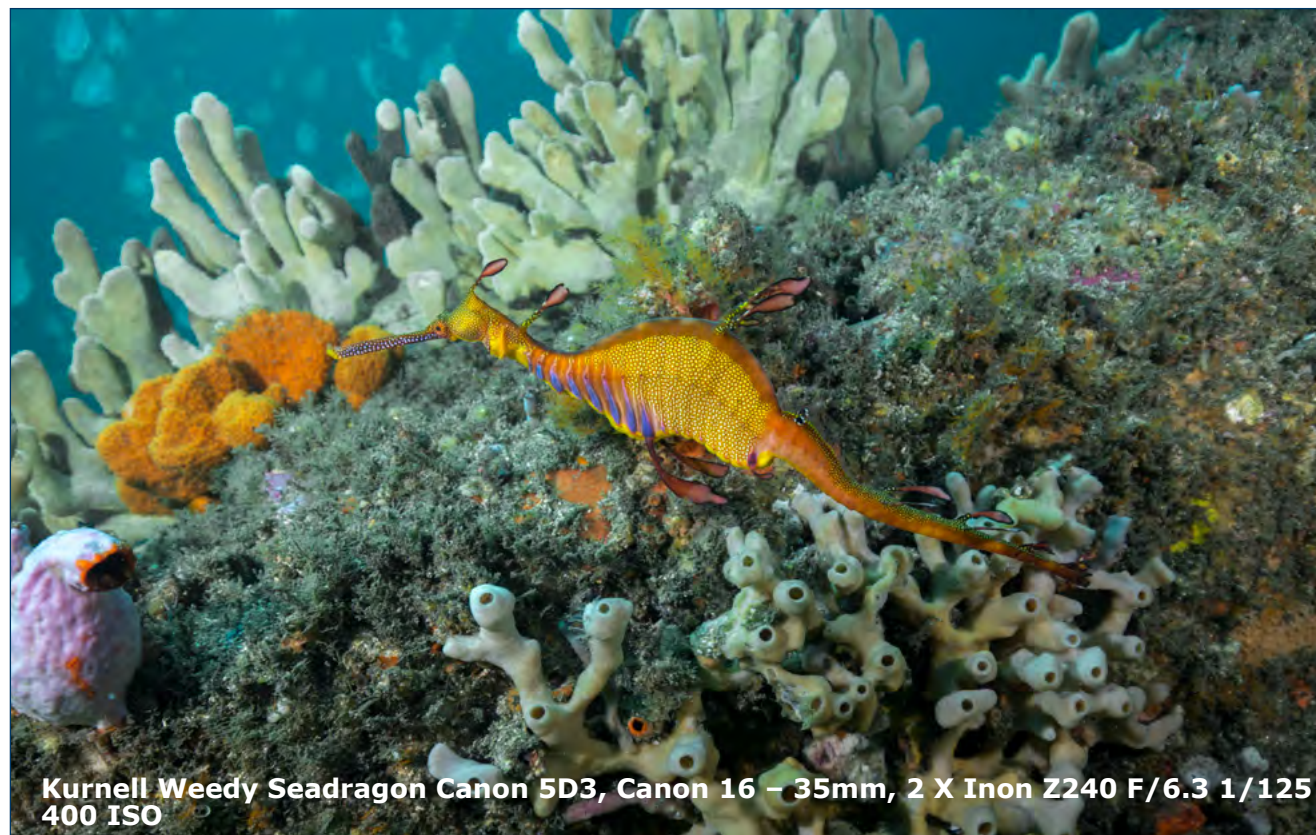
Komodo (Sangeang) Ornate Ghost Pipefish Canon 5D3, Canon 100mm, 2 X Inon Z240 F/22 1/200 400 ISO



Bare Island Pteraeolidia Ianthina – Nudibranch Canon 40D, Canon 60mm, Inon Z240 F/20 1/160 400 ISO



Lembeh Striated Anglerfish Canon 5D3, Canon 100mm, 2 X Inon Z240 F/22 1/200 400 ISO





Bunaken Hawksbill Turtle Canon 5D3, Canon 16 – 35mm, 2 X Inon Z240 F/5.6 1/60 100 ISO



Komodo Reef Manta Ray Canon 5D3, Canon 16 – 35mm, 2 X Inon Z240 F/6.3 1/125 100 ISO



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By: Sean French

The forensics of a shark bite

In order to appreciate the strength of a shark’s bite, use the human bite as a reference.

A gray reef shark exerts about 70 kg of bite force, twice the amount of pressure exerted by a human bite. The severity of a shark bite is not only determined by the jaw strength, but by the destructive force of the teeth, too.

Essentially, the bottom teeth serve as forks and the top row does the cutting. The tiger shark has the meanest set of teeth with the most destructive tissue-shearing force as it not only cuts but saws – all in one single biting action.

To make matters worse, some of the larger sharks have an approach speed of up to 25 mph. Once the victim is taken, it can continue at about 15 mph, compounding the shearing force of the bite.

Having recovered from a bite on his left calf by a bull shark in the Bahamas, Dr Erich Ritter embarked on an intensive forensic study on the damaging effect of the bites of different ‘high-risk’ sharks.

As chief scientist of the Global Shark Attack File, he compiled a team of plastics and polymer technologists, orthopedic surgeons, medical technicians and cinematic special-effects technicians.

He wanted to analyze and recreate almost every aspect of a shark bite, including the angle and speed of approach and the bite force required to sever muscle and/or bone.

The flesh-ripping strength of a bull shark is 150 kg, and after finding out what force was required to rip his calf muscle right off, Dr Ritter was curious about the bite force required to bite through bone.

The lucky survivor of such an unfortunate experience was Heather Boswell. Working as a chef on a medium-size cruise vessel in the Pacific near Easter Island, she felt like a quick swim in the sea during a break and was attacked by a large great white.

Soon after it had grabbed hold of her, she felt a ‘pop’ as her femur was snapped. This was shown by Dr Ritter and his team to require a bite force of 400kg.

Heather is the only known person to date to survive a bite as severe as this (see Table 1 below).

Body areas bitten

The following percentages represent the body areas bitten in attacks recorded since the mid-50s:

- Head – 2.4%
- Shoulders – 3.8%
- Hands & Fingers – 20%
- Arms – 23%
- Chest – 5.5%
- Abdomen and waist – 11.2%
- Genitals – 2.2%
- Back – 3.7%
- Buttocks – 3.7%
- Thighs – 33%
- Calves and knees – 40%
- Feet and toes – 23%



Table 1:

GRADE	ANATOMICAL PARTS AFFECTED	POSSIBLE OUTCOME
Grade 1	Both femoral arteries One femoral and one posterior tibial artery One femoral artery in upper 1/3 of thigh	Fatal
Grade 2	One femoral artery in lower 2/3 of thigh One brachial artery Two posterior tibial arteries Abdominal wounds with (major) internal organ involvement	Should survive if proper treatment is available
Grade 3	One posterior tibial artery Superficial limb wounds with no arteries cut Superficial trunk injuries	Always live if properly treated



Note that all these percentages collectively exceed 100% due to multiple injuries occurring in the same attack e.g. trauma to the hands when fighting off the shark, or due to arms or hands being near the leg during the bite.

The Severity of a Bite

Different sharks have varying degrees of destructive capability with their jaws or teeth. Your survivability depends on the damage done to various vital anatomical parts. The following is a simple guide as per table 1:

Management of a shark bite victim
A severe shark attack is a nightmare to deal with, specifically when hypovolemic shock is compounded by multi-organ failure.

If large blood vessels are damaged, the body's compensatory mechanism is severely challenged. Treatment priorities are illustrated by the 4 S's:



SAFETY – Safety of the rescuer(s) and then the patient.

SEND – Summon advanced life-support assistance.

STABILISE – Stabilise the patient before rushing off to hospital on the back of a bakkie. Your primary focus is to stop bleeding and manage shock.

SCOOT – Getting the patient to a suitable medical facility and a surgeon as soon as possible, combined with the intravenous administration of whole blood products, will result in the best prognosis.

For immediate first-aid care priorities, the ABCD guide is best:

A – Ensure the patient’s AIRWAY is open to facilitate easy breathing.

B – Ensure that the patient is BREATHING and if not, provide assisted ventilations. If available, supplemental oxygen is invaluable to sustain metabolic oxygen requirements, especially if some blood is lost.

C – Monitor blood CIRCULATION and pulse rates in both unconscious and conscious patients. The radial pulse (wrist) is a crude but handy guide to indicate what you are dealing with.

If the patient is conscious, but has no palpable radial pulse, shock is pretty well established and you need to hurry to arrange intravenous access promptly.

If no radial pulse is present, you need to monitor the carotid pulse as your default assessment site. Please note, if there is injury to the arm or leg it

Table 2:			
SIGNS & SYMPTOMS	COMPENSATING	DE-COMPENSATING	IRREVERSIBLE
Sweating	Excessively	Moderately	None
Pale skin / mucous membranes	Normal to slightly pale	Pale	Very pale
Breathing	Increased	Very fast	Slow and shallow
Pulse	Increased	Very fast	Slow and weak
Speech	Normal	Normal - confused	Confused - minimal
Level of consciousness	Normal	Normal - confused	Confused - coma
Capillary refill - nailbeds	1-2 secs	More than 2 secs	Pale – no refill
Blood pressure	Normal	Slightly lower than normal	Very low

is wise to check the ‘distal’ pulse – opposite the wound on either the wrist or top of foot, whichever is relevant.

D – DISABILITIES caused by complete or partial amputations do sometimes occur. To stop bleeding in such cases with direct pressure and elevation alone will not be sufficient.

Although not taught in first aid, in these severe cases a tourniquet should be used from the start, because concern for loss of life is greater than concern for loss of the limb.

Remember, exsanguination (bleeding to death) ‘hurts more’ than an elective amputation.

Shock

The following guide is simple and useful for effective shock management:

Refer to table 2:

The Most Dangerous Sharks
The following list is a statistical illustration of the species that most often attack humans, starting from the least at No 1 to the most attacks by a specimen on humans at No 10.

To indicate the risk of a specific shark’s bite, a risk-index is used and is illustrated below in Table 3 as Priority 1, 2 or 3. With sharks, this risk-index is based on the size of the bite, size of the shark, teeth configuration, jaw anatomy, jaw strength and general tenacity.

The list is provided by the International Shark Attack File from the Florida Museum of Natural History.

Refer to table 3:

Note that the order of listing below has no relationship with the risk-index, but is in fact closely related to the Grades of injury in Table 1. It just illustrates statistically the ten shark species that do attack humans most often, in no particular order.

Refer to table 4:

What are the odds of a shark bite? Statistics reveal that in over 3 500 attacks recorded since 1580, only a fraction of all shark attacks were on scuba divers. Of all those attacks, 85% were close to shore, with about two-thirds in less than five feet of water.

For the average person who enjoys the sea often, the risk of a shark attack is calculated to be less than that of being struck by lightning, winning the lotto or a coconut falling on your head.

Table 3:		
PRIORITY	CODE	STATUS
1	RED	Almost dead, dying or will die if no specialized interventions are started asap
2	YELLOW	Not critical but could become critical with time if no proper care is given soon
3	GREEN	Walking wounded (to prevent complacency with this category, please note that secondary infection from a shark bite could deteriorate to increase morbidity)

Given the ratio of fatalities, about one million sharks are killed for every one of us. Remember, too, that not all fatal shark attacks were due to fatal wounds inflicted.

If a body washes up ashore with only Grade 3 injuries and no witness reports, it is nearly impossible for a pathologist to determine if the cause of death was due to drowning or due to shock.

Several shark bite victims could have survived the bite had they got to land or a boat sooner. The injury inflicted by the bite was debilitating and thus not allowing self-rescue in water – therefore the victim DROWNS.

Prevention

I suppose the best form of prevention would be not to get into the sea at all, but that is not practical advice.

So, here are a few pointers to follow, specifically aimed at scuba divers and spear-fishermen:

Scuba divers:

- Do not turn your back on any risky species of shark.
- Move away from any feeding frenzy or 'aromatic zone' i.e. injured fish, chumming.
- When on the surface, keep an eye below you, not just on where you are going.
- In an impending attack, punch the shark's nose, or, if it is a big shark, turn your back for the cylinder to take most of the blow (if your BC pops, ditch your weights).

Spearo's:

- Apply what you can of the

abovementioned.

- Watch your back all the time, especially with fish on your line.
- Remember you are a fellow predator and in direct competition to a risky shark. Larger sharks have delicate hierarchies and you do not even feature in the pecking order.
- If you have a fish and a risky shark approaches you, remember what they teach you in an anti-hijacking course – hand it over! No trophy fish is worth the risk of injury.

Tips gleaned from the accounts of survivors include to keep calm if you are taken, to go for the eyes and gills, and to do what you can to minimize tissue shearing. Above all, never give up!

Closing thoughts

As the adage goes, 'We can't protect what we don't understand'. This is even more applicable with sharks.

Unfortunately, the emotive aspect skews the objectivity of public opinion. To compound matters further, many people are not interested in the plight of the sharks.

We as scuba divers are probably the least likely victims, yet our influence as ambassadors of the oceans and its creatures is quite profound and more objective. We therefore need to exercise our influence as much as we can. I hope this article has given you a better insight to the 'real' risks to divers and therefore better perspective of your place in the shark's world – not them in ours. ◀



Table 4			
FREQ	TYPE OF SHARK	RISK-INDEX	COMMENTS
1	Lemon shark (<i>Negaprion brevirostris</i>)	P2/3	
2	Blue shark (<i>Prionace glauca</i>)	P2/3	
3	Hammerhead (<i>Sphyrna mokarran</i>)	P2/3	
4	Ragged tooth (<i>Eugomphodus Taurus</i>)	P2/3	
5	Grey reef (<i>Carcharhinus amblyrhynchos</i>)	P2/3	Most attacks on scuba divers
6	Shortfin Mako (<i>Isurus oxyrinchus</i>)	P2/3	
7	Oceanic whitetip (<i>Charcharhinus longimanus</i>)	P2/3	
8	Tiger (<i>Galeocerdo cuvier</i>)	P1/2	
9	Great white (<i>Charcharodon carcharias</i>)	P1/2	
10	Bull / Zambezi shark (<i>Charcharhinus leucas</i>)	P2/3	

Ressel Cave

Emergence du Ressel is a famous cave in the southern French department of Lot, and its furthest reaches have already been explored by many famous divers. But you don't have to go 4 km inside to appreciate the magic.

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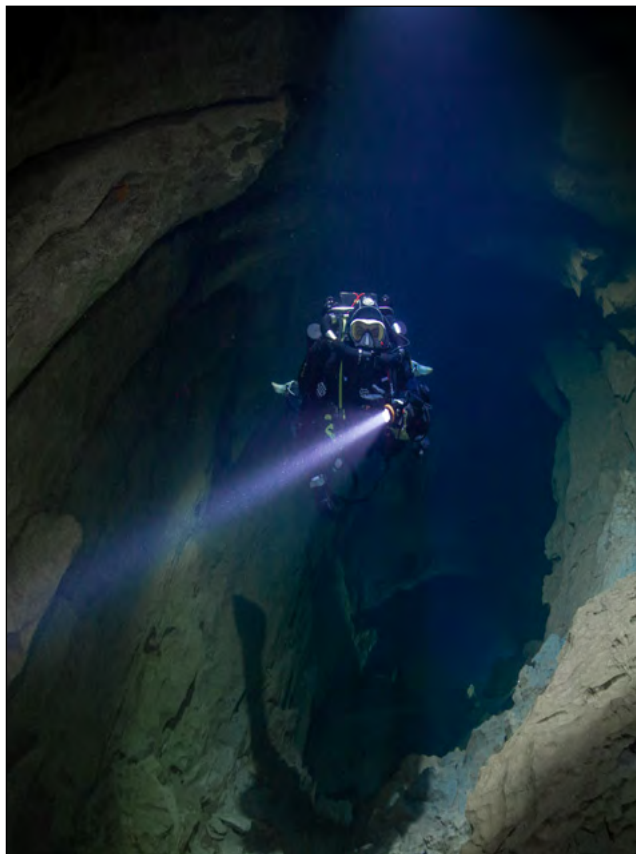
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Finally!!! We can go to the Lot again. This time for a week of training and then a week of diving vacation with the wife. For the training I have some students along for their Intro-To-Cave Diver course. The coming days will be busy with skills and drysteaching. Theory has already been given in Belgium so that we can still get the most out of our dives. In addition to the students, there are a few other certified divers who I will be diving with later at the end of the trip to take some nice pictures. All systems are in exceptional condition, with views over 20m

Why the "Lot"?

The area in France is famous because most European divers take their courses here, so they don't have to travel to Mexico or Florida. One of the most famous caves around here is Ressel. Ressel is located in the village of marcilhac-sur-célé. In the heart of the "Lot. Most pictures you can see online are there with dramatic and huge blocks of white rock, flat structures, and the



shafts of this cave. The facilities are nice, we have plenty of parking for our cars, and finally a nice building has been put up with a toilet. From the parking lot we have to walk a 100m and arrive at the entry point on the Celé River. Here we can prepare all our equipment for our dive.

History

The Ressel was first dived in 1968, by 2 divers of the speleoclub Auvergnat. Martin and Debras reach the 150m, Only in 1973 the line would be laid to 300m, with a maximum depth of 30m. In 1975, Fantoli and Touloumdoian reached Pit 4 and went to a depth of -45m. Further exploration will continue over the years, especially by Jochem Hasemayer in the early 1980s, where he plants his knife in the rock he attaches his line to at an 1100m depth in the system. This knife is still there.

On August 12, 1990, Olivier Isler will be the first to cross Siphon 1. Total dive time back and forth will be 10h35min. End Siphon 1 is at Lac Isler, From here one can continue to the next siphons. Ressel consists of 5 siphons, of which siphon 1 is the longest (1850m) and the deepest (-83m). From sump 4, begins the deep section that is only submersible with Trimix mixtures. In the following years, the further sumps are explored by gentlemen such as Rick Stanton, Martin Farr, Mallison. In 1999, the end of Siphon 5 was reached. The Total length on the main line is 4415 meters.

Spectacular views in the first section.

It's impressive to be honest, the visibility all around is spectacular. More than 10 meters of visibility, which before the start was about 5 cm of visibility in the Celé River, quite a change. As soon as you get to the entrance, it looms, the water clears up like snow in the sun. The first thought that ever crossed my mind was: How on earth did they find this cave? With the visibility of the river, how can you see a hole that is 6 meters below the surface on one side, which



frankly isn't that big. Inquiries with locals revealed that when the cave fills up, you can even see a geyser in the river! Another impressive detail.

There is a rope that runs from the point where you get in, all the way into the cave, and it continues to the main line - you don't need a primary reel here - it's really easy to find the entrance, at 6 meters deep. Then there is a huge tunnel, with white giant rocks, impressive.

The first dives of the training were only up to the T (180 meters), here the mandatory skills were practiced, so that later one can widen the comfort zone. This is also a very nice section, especially because of the large blocks here. There are even 3 exceptional phenomena visible, these are 3 blocks consisting of white limestone, with a large black spot in them. These black spots you won't find anywhere else. It is wonderful to be able to admire nature like this.

After a week of intensive diving, lessons and above all a lot of fun, I can certify the divers, and they make a few more dives in Ressel under supervision.

For me it was an enjoyable training, with students who became friends. Now that the training is done, it is time to make a photo dive as planned beforehand.

This dive will happen with me, my wife Caroline, Elfi and Bart. All 4 of us will travel the way by scooter. With a scooter we will be at the point where we will take the photos in less than 15min. The well-known Pit 4, about 400m from the exit.

We are all diving on rebreather to get the longest possible bottom time. For the photo session, Olivier Bertieaux gave me 2 demo lights to test and use. These will be strategically placed or held by a fellow diver during the photo session.

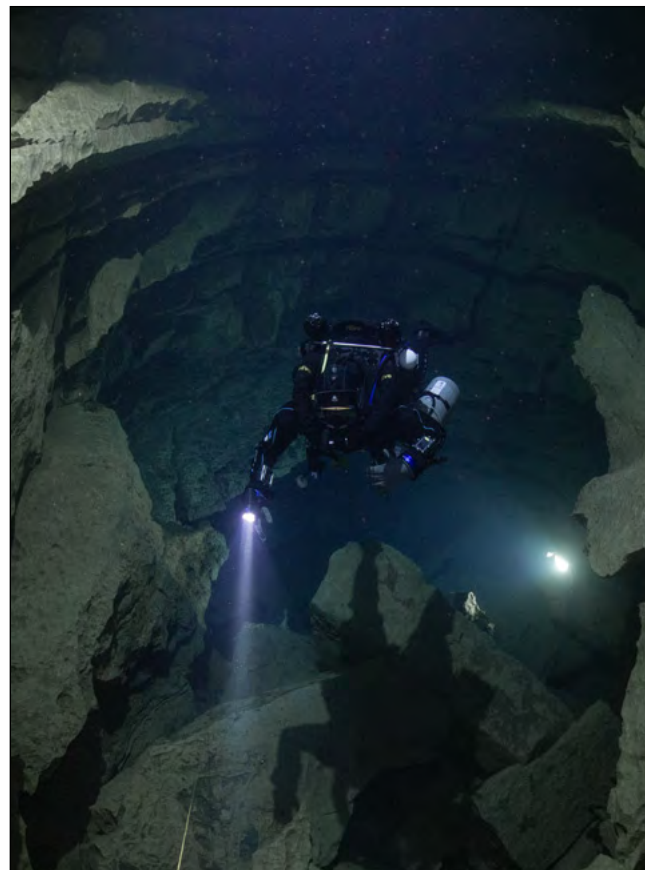
Once arrived at the spot, we hang the scooters on the line, and Bart and I move into the Pit to put away a lamp

so we can create an effect along the bottom.

Once the divers are hanging in place, I start shooting the story that was agreed before we started the dive. This is the first time that I will not use the Strokes and only work with artificial light from lamps, which gave a little adjustment at the beginning. But Wow, the result is great. You need a lot of lumens and I'm glad I can use 60000 and 30000lumens. But spreading out the light still makes the photos more beautiful and natural.

Once we already have some bottom time, we decide it's time to turn back a bit. We hook our scooters back up, and as soon as everyone is ready, we set off back down the road until we get to the gallery where we have another 10 meters or so of depth. Here we will have another shoot, but with scooter still on, so we have some pictures of that as well.


After about 100 minutes I signal that I have enough images, and we calmly set

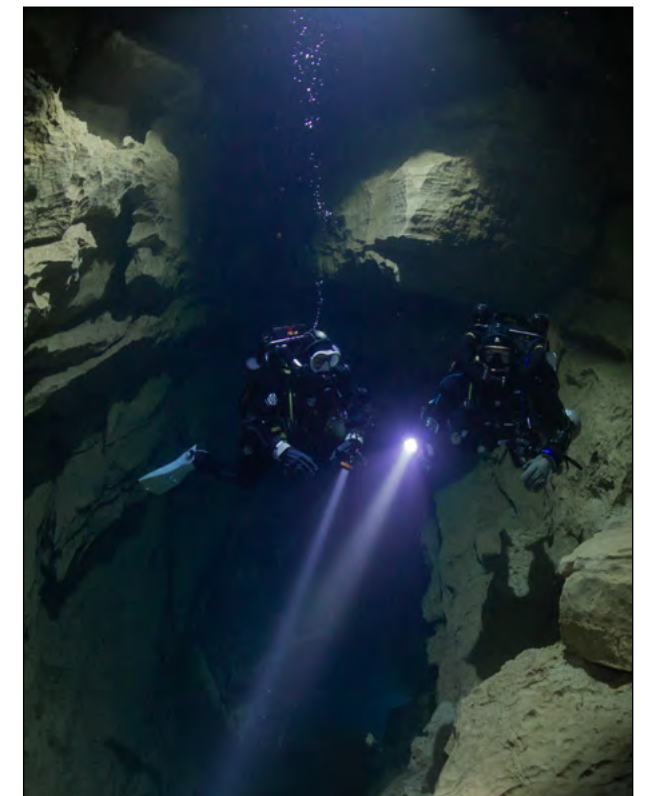


off on our way out.

Once at the top, I am unstoppable with enthusiasm about the lights we got. The difference with flash is enormous. During the week, I took my camera out a few times to take pictures of students. This was with strobes, and the results were different anyway. The first thing I say to Caroline is, I must have such a powerful lamp, only the price tag is a bit disappointing. But I am not the only one who is happy. On the shore I see all happy faces, students who have pushed their comfort zone, who have come to know the beauty of the caves. And are proud of their trajectory.

How wonderful it is to be able to convey your passion as an instructor.

Who wants to dive Ressel, the system is one of the most beautiful caves in Europe, which is very Accessible. However, do not enter it without the some knowledge and the necessary training. 



Remote Location Rescue



Every single scuba diver I have ever met has a small and persistent dream to dive weird and wonderful dive spots that are off the general radar, sites that are not dived a lot or possibly not at all (if one can be lucky enough to stumble upon such a spot).

But diving such sites, which are most often remote in nature, can be a bit more difficult and dangerous due to the distance from proper medical care. How does a diver explore such a site safely?

It starts with the question that

many divers often ask, and this is, "how will I be rescued or receive proper medical care should I need it in a remote diving location?"

This is a question that is not quite as straightforward as it seems because the reality is that the only answer to it will be, "It depends".

The next natural question is to ask on what it depends?

And as you most certainly already know, it depends on numerous factors, including but not limited to the following:

- How remote is the location?
- Do you have effective communication methods?
- What type of diving is to be done?
- What conditions can be expected at the dive site?
- Are you experienced enough to dive this particular site?
- Are there first aid capabilities within the dive group?

After reading the above list you might have realised that these are questions that can be answered before even arriving at the dive site, and herein lies the key to answering the original question – it

all boils down to planning before you even attempt to dive at any remote diving location.

The following are important considerations that need to be run through prior to leaving on such a dive trip:

- Ensure that all divers are appropriately qualified to perform the dive.
- Attempt to have a rescue diver in the dive party.
- Take along a diver or individual trained in basic life support.
- Take along O2 supply.
- Consider DAN cover.



- Consider taking surface support.

- Make sure you obtain the following emergency numbers:

-Closest Police Station.

-DAN emergency number.

-Closest medical facility.

-Nearest chamber (also find out if the chamber is operational).

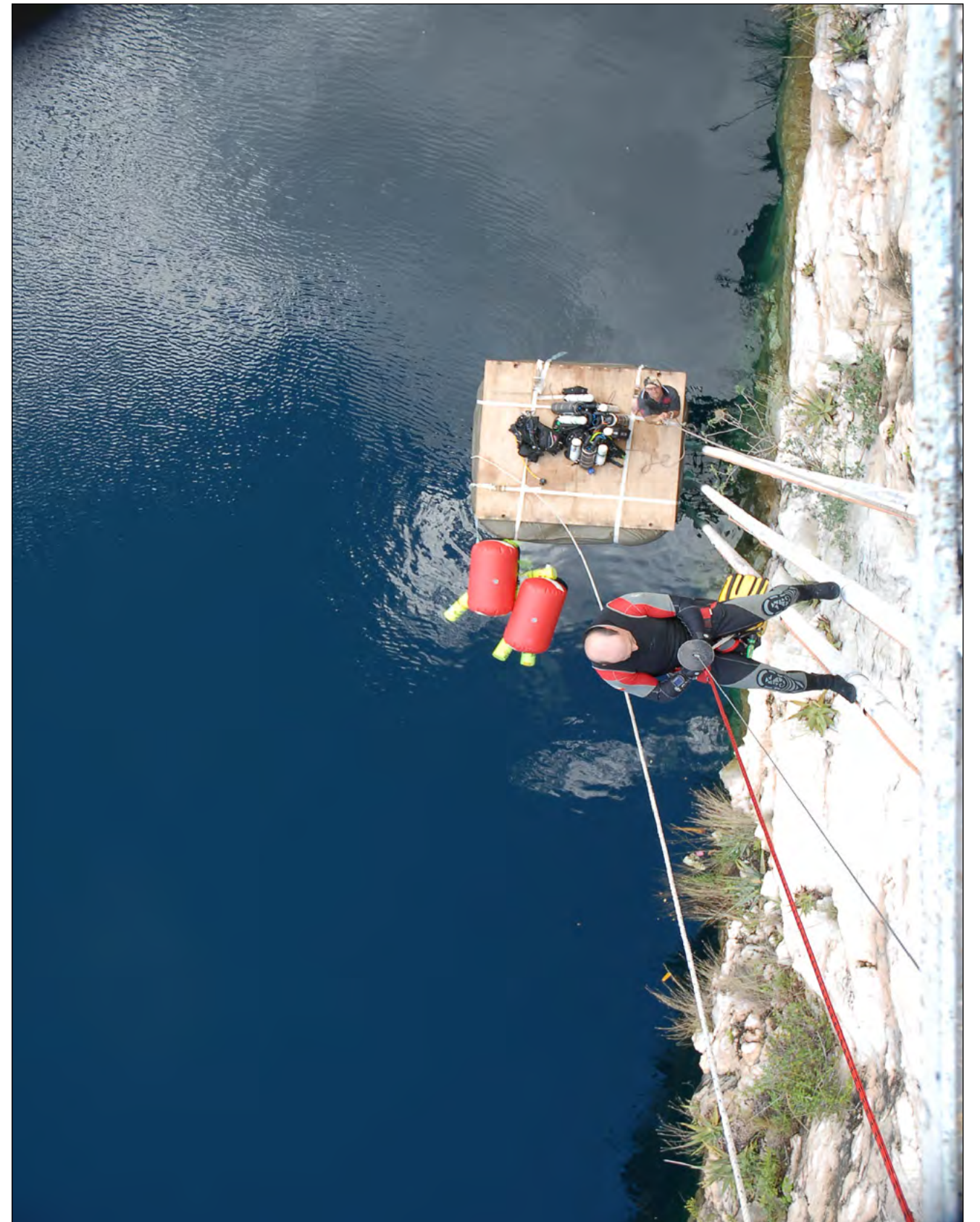
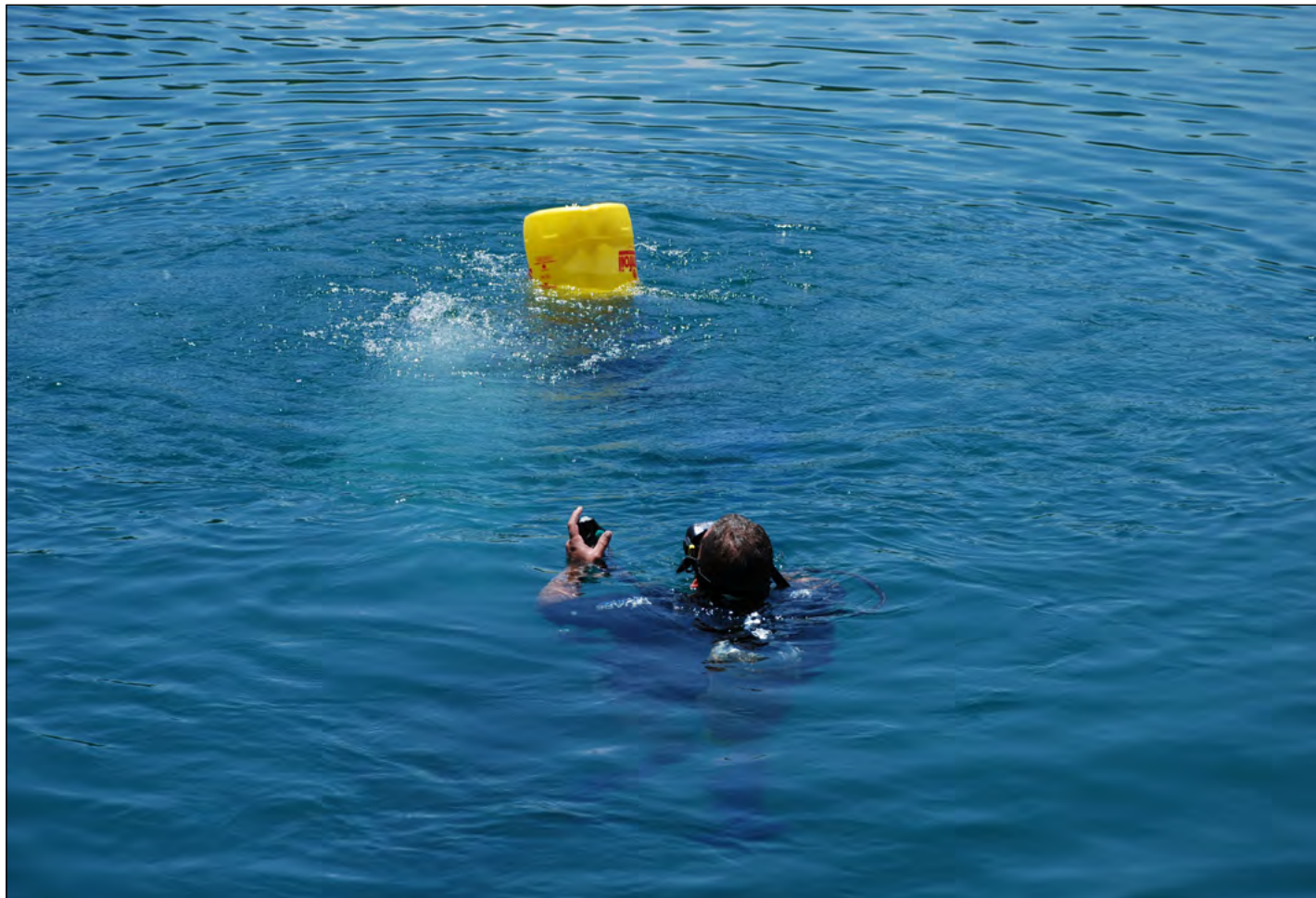
- Talk to divers that have previously dived the site and establish any special needs with regards to emergency situations that they would recommend.

After you have ensured that the proper and adequate planning was

done prior to the trip and that all relevant emergency information is available, it would be a good idea to have a get-together evening to discuss and share this information with everybody going on the dive trip.

It would also be wise to brief someone not going on the trip as to all the planned activities and what to do if you should contact them to assist.

Diving any remote location safely starts and ends with planning, planning and some more planning and having the relevant information at your fingertips if and when needed. Remember the old saying, 'failing to plan is planning to fail'. 🚩



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What different gasses can we use to Dive?

Q & A

Nuno Gomes




TRIMIX is a diving gas, consisting of oxygen, helium and nitrogen, it is often used in deep diving when technical dives are carried out. With the mixture of the three gases it is possible to create mixes suitable for different depths by adjusting the percentages.

The main reason for adding helium to the breathing mix is to reduce the percentages of nitrogen and oxygen, below those of air, to allow the gas mixture to be breathed safely on deep dives. A lower percentage of nitrogen is required to reduce nitrogen narcosis and other physiological effects of the gas at depth, helium has less narcotic effect. A lower percentage of oxygen reduces the risk of oxygen toxicity on deep dives.

The lower density of helium reduces breathing resistance at depth. Helium also off-gasses quicker and so it does not enter slow tissues as readily as

nitrogen.

Helium conducts heat 5 times faster than air; often helium breathing divers carry separate gas supplies to inflate drysuits.

Divers using helium suffer from high pressure nervous syndrome (HPNS) during descent. Helium in-gasses quicker and it requires deeper decompression stops than for a similar decompression dives using air. 

Barry Coleman




Helitrox is a mixture of Helium, Oxygen (content 22 percent and above) and Nitrogen. This mixture is used extensively for deco and dives between 35m and 49m based on a PpO2 of 1.3. The theoretical advantage is similar to Nitrox

diving, for example, reduced equivalent nitrogen depth and reduced nitrogen loading.

Obviously this is more beneficial the shallower the depth – the Helium is used in recreational diving to reduce the narcosis levels.

There are a few courses on the market today using this mix, such as recreational trimix.

In decompression diving the benefits are that it may be used as a transition gas mixture from a high Helium or Nitrogen content to a lower mix, whilst increasing the Oxygen to accelerate the Nitrogen or Helium off-gas until the final decompression gas is in use, which may very well be a Helitrox mix. 

Pieter Smith



The air that we breathe and we fill our cylinders with consists of mainly 79% Nitrogen and 20% Oxygen. If you increase the percentage of Oxygen in the gas it's known as Nitrox.

Nitrogen is absorbed by our bodies when we dive due to


increased pressure. This saturation of Nitrogen under increased pressure will, with a decrease in pressure, come out of solution into our bloodstream and our bodies need to get rid of it through our lungs.

The 'workers' in our blood stream that need to transport the Nitrogen to our lungs so that we can get rid of it, are Oxygen. It then makes sense that if we increase the percentage of Oxygen in the gas we breathe, we have more 'workers' to get rid of the Nitrogen. Nitrox gives us the advantage of getting rid of Nitrogen faster and more effectively.

Nitrox is used as a decompression gas in technical diving and as a safer gas to dive with in sport diving. You will feel less tired after a day's diving on nitrox than on air. Oxygen becomes toxic when under pressure for the human body. You may recall, from training, that the safety margin for Oxygen equal 1.4bar (partial pressure). Nitrox as a gas with increased Oxygen levels will become toxic at a shallower depth than air (partial pressure again).

The risk diving with nitrox is that you need to know your depth limit of the gas

you use and that you dive within your limit.

Maintaining good buoyancy when diving with nitrox becomes more important as Oxygen toxicity is more dangerous than Nitrogen narcosis. 

Pieter Venter




Air is what we are all thankful for breathing everyday. It comprises roughly of 80% Nitrogen and 20% Oxygen and a small percentage of Carbon Dioxide and water. Humans evolved such that this gas mixture is optimum at one atmosphere.

This gas mixture, with the water removed, gets compressed in our cylinders about 200 times to 200 atmospheres.

Unfortunately, the moment we breathe it in a compressed state, when diving, it is not biologically optimal anymore, even as shallow as 10m on low exposure dives and any depth for high exposure dives. Beyond about 40m it can be debilitatingly narcotic due to the high partial pressure of Nitrogen and beyond about 70m fatally toxic due to the high Oxygen partial pressure.

However, air is free and you only pay for its compression into your cylinder and, thankfully, our bodies can tolerate compressed air comfortably up to 40m recreationally. Furthermore, air is simple to use during mixed gas diving excursions where mixing gas takes time and wrong mixtures can be fatal. Even when breathed for short periods accidentally or in an emergency at depths up to 100m, it should not cause instant death like many mixed gasses at their non intended depth.

Air is therefore still the preferred recreational breathing gas for most and my preferred descent gas on mixed gas dives.

In short, air is not ideal for diving but we can thankfully comfortably tolerate it to save money, time and prevent accidents from overcomplicating a dive with too many optimum gas mixes to be used at their respective specific depths only. 

A full-page background image showing a diver in a black wetsuit and mask, surrounded by a massive, dense bloom of translucent jellyfish in clear blue water. The jellyfish are of various sizes and are floating all around the diver, creating a surreal and awe-inspiring scene.

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DM's SMB's and Lost Divers



It's 7pm and it's a perfect evening. There is not a cloud in the sky and with a great day of diving behind us, we are standing in Sodwana around the braai talking about our dives and share some stories.

As always, the one topic we can't avoid comes up. It's the one thing all divers talk about and the one thing skippers never want to experience – a diver going missing.

We have all heard the stories, and they even made a movie about lost divers, but the first question is always who the skipper was. A lot of divers go missing, yet most get picked up shortly afterwards – the scary thing is that by the time they are picked up they don't even know that they have been missing.

So how does it work? Well it is very easy – if you surface after a dive and you are not within 30m of the buoy line, you are missing.

Skippers stay close to the buoy line. We watch the buoy line and we make sure that other boats don't go close to the buoy line. If you surface away from the buoy line, you are lost.

If you are left exposed in the open ocean, a fishing boat on its way home will not see you when you are floating with only your head above the water, and if your skipper doesn't spot you on the surface in time, there can be serious consciousness.

Next time you get back on the boat, do yourself a favour and take a look around you – look at the open ocean

and try to spot divers floating out in the water.

How difficult is it to get lost?

Put yourself in the position of the skipper. The first diver surfaces next to the buoy line. You drive there and pick him up, but the wind is blowing so you start drifting away from the buoy line.

You keep your eyes on the buoy line while you load the diver and all his equipment. Your eye catches a second and third diver surfacing about 15m from the buoy line.

You have drifted away, so by now you are about 70m from the buoy line. You drive back to the other divers. By the time you get to them they are about 40m from the buoy line. While you are picking them up, a diver surfaces 60m on the other side of the buoy line. You look up towards the buoy line which is 40m away from you, and you can't see the diver on the surface because he is about 100m away.

You look up again towards the buoy

line and see that the rest of the group has surfaced; you are about 60m from them.

The lost diver is now about 130m from you and 60m from the group. You drive the boat back to the group of divers and start picking them up.

The boat drifts much faster than the single diver, and by the time you have the remaining five divers on the boat you are about 300m from the missing diver. Everyone gets on the boat and you do a quick head count.

One diver is missing, and you ask who is missing a buddy. One diver confirms his buddy is not on the boat. You start looking for him but you are now about 400m away.

You take landmarks to get orientated and see that you have moved from the point where you picked the last divers up. You start moving back to the position where you picked the last divers up. The missing diver has now moved with the wind and is about




120m from the spot.

You stop the boat, check the wind direction and determine the direction where the diver should be, but because the diver originally surfaced about 60m away, you are not exactly on course. You start driving in the direction you think he might be in and someone spots the diver about 50m from the boat. You drive over and pick the diver up. You sigh and think how close you came to losing your first diver, but you are clear.

You still have a clean record and your next launch is in two hours time. If you lucky, all the divers will follow the most important rule they were taught in the briefing – if you can't see the buoy line, you are lost. Ascend to the surface and reunite. If everyone does this and does not dive for that extra

five minutes, they will all surface very close to the buoy line and skippers will be able to see them when they surface.

If you always do that and you always surface with they buoy line, then you are the diver that skippers love to have on their boats. But to be 100% sure that you are safe, always carry a surface marker buoy in your pocket, just incase one day the skipper doesn't see you. If you don't know what they are for, ask someone that has a surface marker buoy with them to jump off the boat and someone without a buoy to go in with them.

Ask the skipper to drive 100m away and try and spot the two divers. Believe me, after this experiment you will make sure that you have a surface marker in your pocket the next time you dive. 



Surviving a Computer Failure

If there is one diving accessory that most divers these days have or at least plan to buy shortly, it is most probably some form of dive computer. This is due to the fact that the cost of dive computers is relatively inexpensive, considering the added safety benefit.

Dive computers also allow divers to dive longer due to their ability to sample every five seconds (some even more often) and calculate a multi-level profile as compared to when a diver uses a square profile to plan a dive using a dive table or some of the available dive calculators.

So with the above taken into account, many divers may ask the question; "Is there even a need to plan for a dive using a calculator or table?"

The answer is of course, there is definitely a need to plan a dive (even if just high level using a table or dive calculator), but let's explore why as many divers these days (including instructors,) seem to do quite the opposite and just head for the water directly after having donned their dive computer.

Firstly, all divers should realise that a dive computer is a highly sophisticated, electronic (that is right, it runs on batteries if you did not think about it before now) diving instrument that is also prone to failure.

So have you ever when you have been diving asked yourself how you would survive the dive if your computer were to fail? Is it even possible to survive the dive when a computer fails?

You can survive in one of two ways; Firstly would be by sheer luck (or maybe dumb luck would be a more accurate description) and the second would be by planning and knowing beforehand what to do in such a situation.

A computer failure is of course a lot more critical in a technical or decompression dive than in a standard, run of the mill,

recreational or sport dive, but it is still an undesirable event. Luckily technical divers are well aware of this fact and have adapted their diving practices accordingly, for example there is hardly a technical diver alive that only dives with one dive computer. They usually have at least one back-up computer and a bottom timer to ensure that they can still accurately perform their required safety stops in order to avoid decompression sickness in these extended range dives.

These dive computers and bottom timers are of course used in conjunction with a slate which usually contains five (you read correctly: five) dive plans to cover all possible contingencies. These plans include, at a minimum, the follow alternatives:

- Actual Dive Plan (Plan to be dived under normal circumstances)
- Time Overshoot (Contingency plan if the diver spends five minutes more at depth than the original scheduled dive time)
- Depth Overshoot (Contingency plan if the diver overshoots the depth by 5m)
- Loss Gas (Decompressions schedule if a diver is to lose some of their deco gasses)
- Bailout (A five minute plan to allow a diver to surface when a critical equipment malfunction occurs)


I think you would agree whilst looking at the above that technical divers do a huge amount of planning before entering the water and this is definitely something their counterparts in sport diving can learn from, as essentially, in my opinion, the ability of a diver to survive a computer failure, although a lot less of a risk in sport diving, can be directly related to the amount of planning the diver does before the dive.

The planning, in combination with certain, dare I say, 'best practices' such as glancing at your gauges and dive computers often and remembering your last reading will put you in the best position to survive

a computer failure. This will allow you to at least have some idea of your dive time should the computer fail during the remainder of the dive, which in turn should allow you to know if you will have, or can expect to have, any compulsory stops on the way to the surface.

It is of course highly recommended that you terminate your dive immediately in such an event and make your way to the surface as quickly as possible while honouring all compulsory stops as best you can. Safety stops can, of course, be omitted, but in my opinion, if you have the gas to complete them, I would recommend it.

In summary, surviving a computer failure is quite possible in any type of diving, but your ability to do this is directly related to the amount of planning that you performed prior to the dive. It is also a good idea (a must in technical diving) to have a back-up dive computer or bottom timer to reduce reliance on a single mechanical device.

It is also advisable to have your dive computer serviced and battery replaced at least annually to minimise the risks of such failures occurring in the first place. 



OZ DIVER



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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.

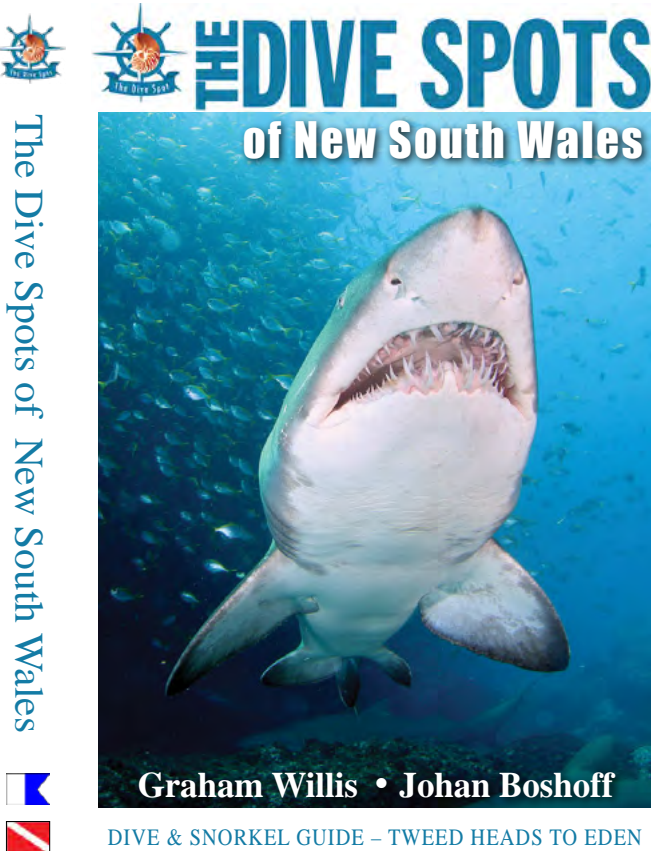
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The Dive Spots of New South Wales is an indispensable guide for all levels of divers and snorkeler, broadening their horizons on places to visit and dive/snorkel in New South Wales. Through extensive travel and diving, Johan Boshoff and Graham Willis 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.

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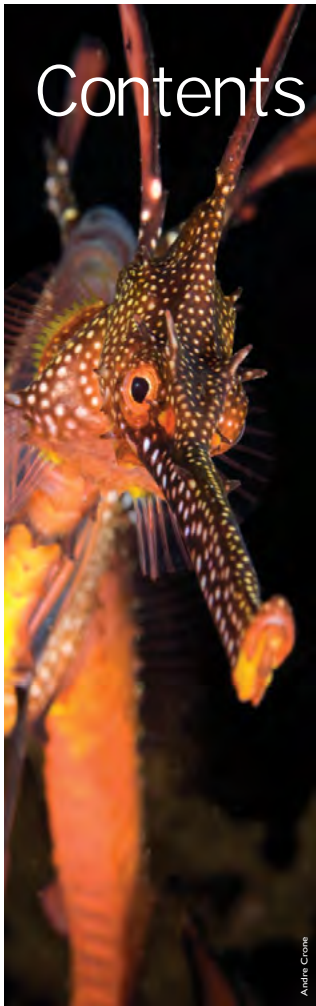
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THE DIVE SPOTS
of New South Wales

Graham Willis • Johan Boshoff

DIVE & SNORKEL GUIDE – TWEED HEADS TO EDEN



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The Dive Spots of New South Wales

3

Gear, books, software, apps and scuba diving gadget reviews.

Here is a chance for your diving gear, books, software, apps and gadgets to be reviewed. If you have anything that you would like to share with the OZDiver Magazine and other divers, send an email to Log Book at info@ozdiver.com.au.

OZ DIVER

Marine Species Guide

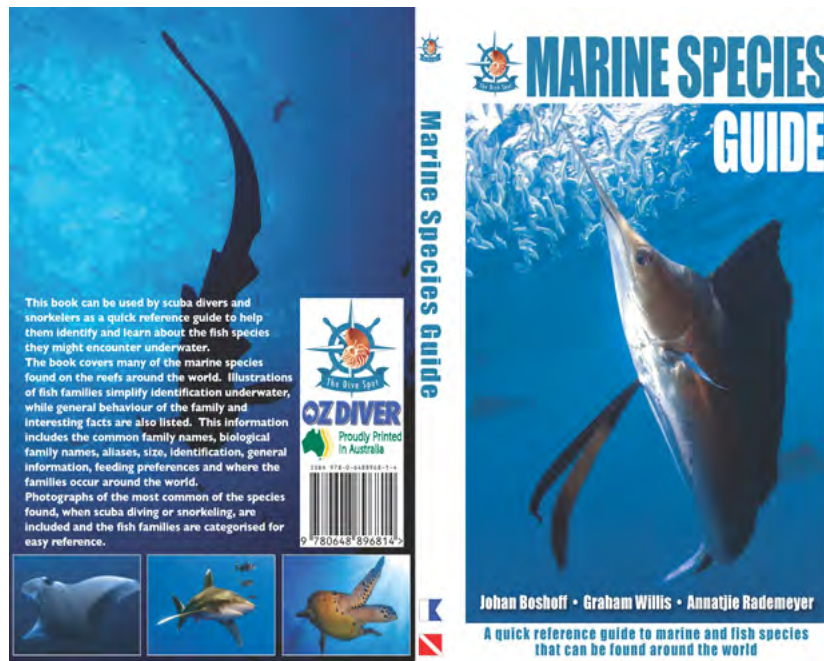
This book can be used by scuba divers and snorkelers as a quick reference guide to help them identify and learn about the fish species they might encounter underwater.

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.

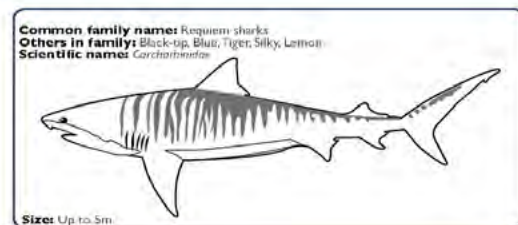
This information includes the common family names, biological family names, aliases, size, identification, general information, feeding preferences and where the families occur around the world.

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



Requiem sharks



Common family names: Requiem sharks
Others in family: Black-tip, Blue, Tiger, Silky, Lemon
Scientific name: *Carcharhinidae*

Size: Up to 5m

IDENTIFICATION
Tiger shark (*Galeocerdo cuvier*): Greyish upper body with distinctive darker 'tiger-like' stripes. Up to 5m long, average 3m.

Black-tip shark (*Carcharhinus limbatus*): Snout is pointed, long gill slits. Black tips on dorsal, pectoral, pelvic and caudal fins. Up to 2.8m long, average 1.5m.

Blue shark (*Prionace glauca*): Long body, tapered at each end. Very long pectoral fins. Top of body darker blue. Tip of pectoral and anal fins are black. Up to 4.5m average 1.5m.

GENERAL INFO
Family consists of 12 genera and 59 species. The teeth are blade-like with a cusp. The sharks have five gill slits. They have a nictitating eyelid (third eyelid to protect the eye). Potentially dangerous.

FEEDING
Feeds on fish, seals, birds, smaller sharks, squid, turtles and dolphins.

DISTRIBUTION
Widely distributed in all of the tropical oceans of the world.

Common species:



Tiger shark: *Galeocerdo cuvier*
Black-tip shark: *Carcharhinus limbatus*
Blue shark: *Prionace glauca*

Great white sharks



Common family names: Great white sharks
Aliases: White pointer
Scientific name: *Carcharodon carcharias*

Size: Up to 8m, average 4m

IDENTIFICATION
Large spindle-shaped body with a blunt, conical snout and large, triangular, saw-edged teeth. Large half-moon dorsal fin. Prominent black eyes. Lead-grey to brown or black above, lighter on sides, white below.

GENERAL INFO
Lamnidae family consists of 3 genera and 5 species. The Great white is the only surviving species in the genus *Carcharodon* - *Megolodon* is extinct. The Mako, Salmon and Porbeagle sharks also fall under this family. Upper and lower lobe of the tail is nearly the same size. Females are generally larger than males. Weighs up to 2,200kg. Ovoviviparous. Potentially dangerous.

FEEDING
They are carnivores and eat primarily fish, but are also opportunistic feeders. They will eat rays, dolphins, whales, seals, turtles, sea otters and penguins. Hunt with ambush technique.

DISTRIBUTION
Occurs in all subtropical oceans of the world.

Common species:



Great white shark: *Carcharodon carcharias*
Great white shark: *Carcharodon carcharias*
Great white shark: *Carcharodon carcharias*

Scubapro A2 Dive Computer

There is a saying "big things come in small packages" and that is what the Scubapro A2 Dive Computer is: a big computer in a small housing. I always fancied small dive computers and when it was time for an upgrade, I found exactly what I needed.

By Johan Boshoff

I needed a watch type computer that did everything I wanted it to do. I was looking for a dive computer for recreational scuba diving but that could also be used for my technical diving and the Scubapro A2 Dive Computer offered everything. From recreational diving to full technical diving and it even works for my rebreather.

The Scubapro A2 Dive Computer is a fully functional wristwatch-style dive computer with a high-resolution, hybrid matrix display with large numbers, making it easy to read underwater, even in adverse conditions, and even easier to use and navigate.

You can choose from six dive modes: Scuba, Gauge, Freediving, Trimix, Sidemount and CCR. Its Predictive Multi-Gas algorithm can accommodate up to eight gases (21-100% O₂) plus two in CCR mode. The digital tilt-compensated compass provides easy navigation underwater or on the surface. And when the diving is done, cord-free connectivity using a Bluetooth LE interface lets you easily sync with a PC, Mac, Android or iPhone, for data downloading and more. The A2 has wireless air integration which can handle multiple transmitters while monitoring tank pressure and providing true remaining bottom time based on a diver's workload from breathing. An optional heart-rate monitor belt allows the A2 to record heartbeat and skin temperature, providing even more vital, individualized information that can be factored into your decompression calculation.

Features

- Wireless air-integration can handle multiple transmitters, monitor tank pressure and provide true remaining bottom time (RBT) calculations based on the workload from breathing
- Digital tilt-compensated 3D compass allows for easy navigation
- Predictive Multi-Gas ZH-L16 ADT MB algorithm accommodates eight gases (21-100% O₂) plus two in CCR mode
- PDIS (Profile Dependent Intermediate Stops) calculates an intermediate stop based on N₂ loading, current and previous dives and breathing mixes for better diving
- Microbubble levels let you adjust the level of conservatism in the algorithm to match your experience level, age and physical conditioning
- Heart rate monitor records heartbeat and skin temperature (with SCUBAPRO HRM Belt only) that can be factored into the decompression calculation along with workload
- Multiple Dive modes: Scuba, Gauge, Apnea, Trimix, Sidemount, CCR
- Sport mode offers sport-related functions like a swim stroke counter, activity counter (pedometer) and stopwatch
- High-resolution hybrid matrix display with large numbers is easy to read under water, even in adverse conditions
- Intuitive menu and four button controls make it easy to navigate through the system
- Lightweight design is so comfortable on the wrist you won't want to take it off
- Modern design with full watch functions is perfect for topside time-keeping as well as underwater data tracking
- Max Operating Depth: 394ft/120m
- Bluetooth Low Energy interface lets you download dives to any iOS or Android device or PC/Mac
- Firmware can be user-updated by going to scubapro.com
- CR2450 battery is rated for up to two years/300 dives
- Included: Protection foil, Quick Card, Arm Strap Extension, Read First (user manual is available online).
- Optional equipment: Transmitter and heart rate belt



If watch type dive computers is your thing, then this one is for you.

A DIVER'S GUIDE TO THE WORLD

Over the course of 14 months, National Geographic dive travel experts Carrie Miller and Chris Taylor traveled to 50 inspirational locations around the world, spending more than 250 hours underwater, to create their one-of-a-kind guidebook: *A DIVER'S GUIDE TO THE WORLD: Remarkable Dive Travel Destinations Above and Beneath the Surface*.

This book was born from love—a love of travel and a love of the ocean, the phantasmagorical blue expanse that covers more than 70 percent of our planet's surface, unexplored and unprotected, mysterious and magical.

Although the land and sea are wonderfully and inextricably interconnected, travelers tend to visit one or the other. Scuba divers seek out underwater realms, impatiently counting down surface intervals until their next dive. Land-lovers might venture out for a snorkel or sail, but they're glimpsing only a pixel of the bigger picture. Exploring both underwater and on land is the most holistic way of experiencing a destination and the interconnectedness between the green and blue.

This is a book for those explorations—for ocean travelers. It's a different kind of guidebook, written for divers who like to travel, divers traveling with non-diving companions, and travelers with an interest in the underwater world.

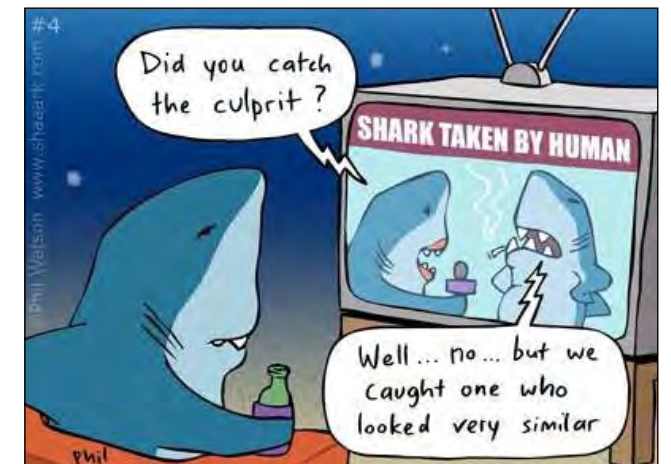
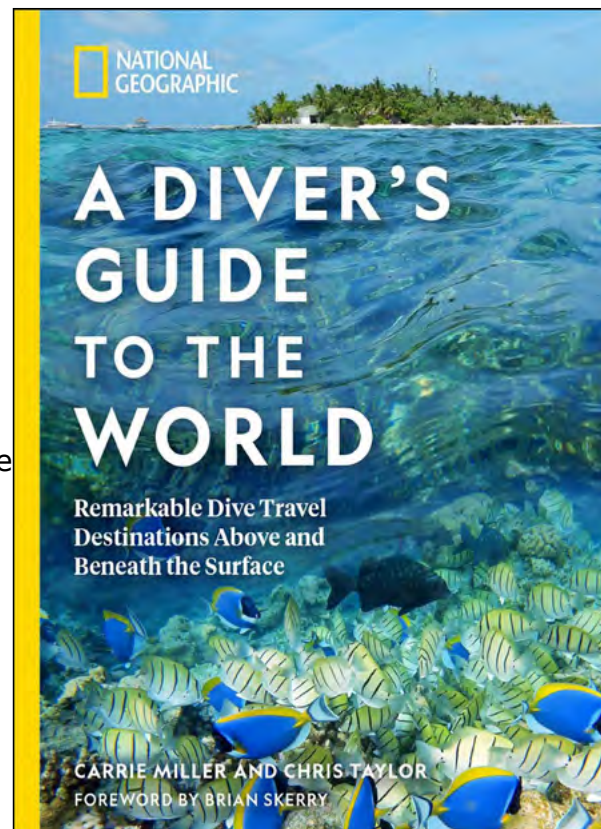
Each of the 50 locations is its own chapter – marvel at manta rays and dragons in Komodo; learn martial arts and go shore-diving in Okinawa; go on a tour of WWII history on land and underwater in the Solomon Islands; linger in the land and sea gardens of Bormes-les-Mimosas, France; and road-trip around the marine reserves and coastal towns of New Zealand's North Island.

Each chapter contains compelling stories, stunning National Geographic photography, and expert advice, including travel tips, dive information, and activity suggestions, from remarkable shared experiences to solo excursions if divers and travelers choose to go their own ways for an afternoon.

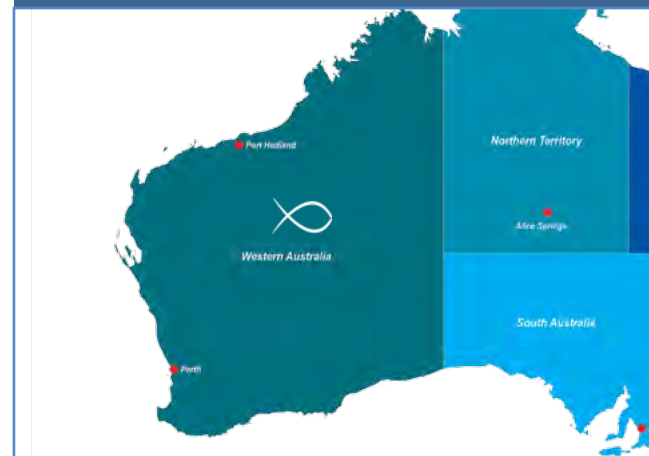
Miller and Taylor believe in conservation through exploration, so each location also highlights a global issue such as the necessity of protecting remarkable ecosystems like coral reefs and mangroves, to sea turtle and shark conservation. They feature scientists and organizations that are striving to make a difference and suggest ways you can learn more and get involved.

Whether you're dreaming of your next dive holiday or looking to travel the world a little differently, this book will inspire you to get out and explore—above and beneath the surface!

A DIVER'S GUIDE TO THE WORLD
By Carrie Miller and Chris Taylor (www.beneaththesurface.media)
Publisher: National Geographic Books
Release Date: December 6, 2022
The book is available from Amazon or <https://books.disney.com>



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Dive Ningaloo - Exmouth / Ningaloo



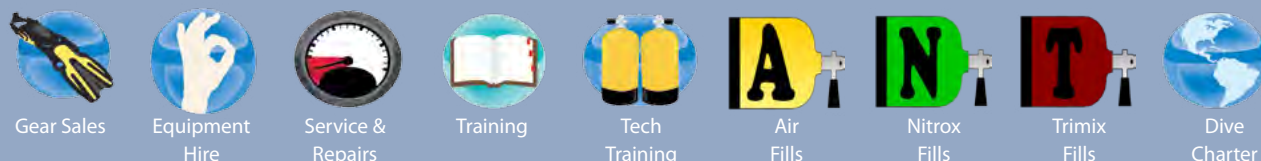
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Web: www.divealbany.com.au

South Australia



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Mail: barrettn80@hotmail.com

Web: www.nbscuba.com.au

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Mail: info@divingadelaide.com.au

Web: www.divingadelaide.com.au

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Mail: secretary@uecofsa.org.au

Web: www.uecofsa.org.au

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ausdivinginstruction- Geelong



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Phone: 0408365216 or 0352722181

Mail: steve@ausdivinginstruction.com.au

Web: www.ausdivinginstruction.com.au

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Web: www.baycityscuba.com

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Dive Victoria Group

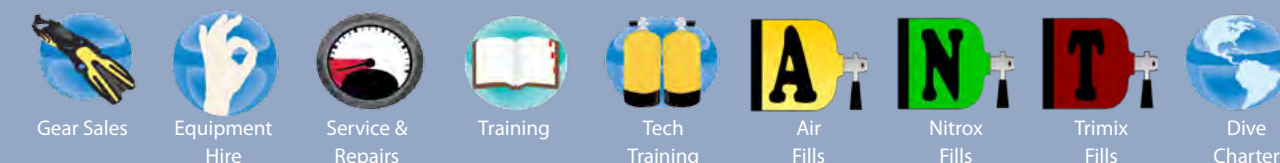


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Mail: john@frogdive.com.au

Web: www.frogdive.com.au

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Web: www.southerncrossdivers.com.au

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Web: www.southwestrocksdive.com.au

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Web: www.scubaworld.com.au

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Web: www.ozaquatec.com

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