October / December 2021

OZ DIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

DOMINICA THE EMERALD ISLE

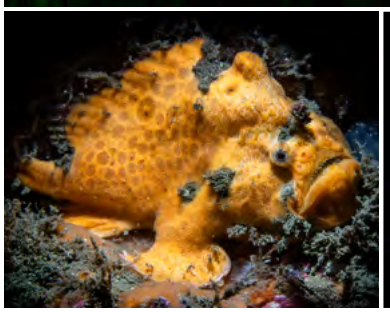
THE SALEM EXPRESS

SHARK FACTS

NEPTUNE ISLANDS GREAT WHITES

BLUE-RINGED OCTOPUS

GRAND CAYMAN

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Steve Coutts

October / December 2021 Edition

Editor's Deco Stop

2021 is almost gone… Just like an amazing magic trick, it has disappeared. For some of us the year would have flown by very quickly, while for others it might have taken a little longer. It is true what they say – time does fly when you are having fun or having new adventures (or as you get older).

When you look back on the year just passed, there were so many plans, so many things to do, but suddenly the year is over and you find that there was not enough time to fit everything in or you were in lockdown.

So at the beginning of next year, I urge you to set out a plan for the 12 months ahead. Pencil in the things that you really want to do first and then plan the rest of the year around them.

Then hope that we can get out of this lockdowns and start traveling again.

I always tend to think that every new year will be better than the one just passed, yet as you know, life is happening while you are busy with your planning, so we will never know what surprises will come on our way in 2022.

All we can do is get on with things and wait to see what the next surprise is! One thing that I hope for is that diving and traveling will be a big part of my day-to-day life next year, and I hope it will be part of your year to.

I hope that 2022 takes you and your family to bluer waters.

"Never take life seriously. Nobody gets out alive anyway."

Editor in Chief & Publisher

Johan Boshoff

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

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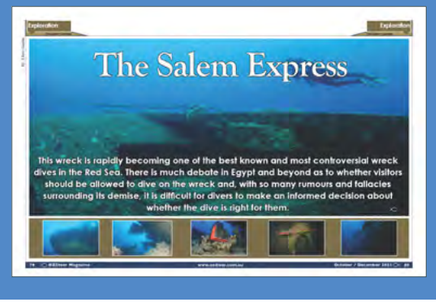

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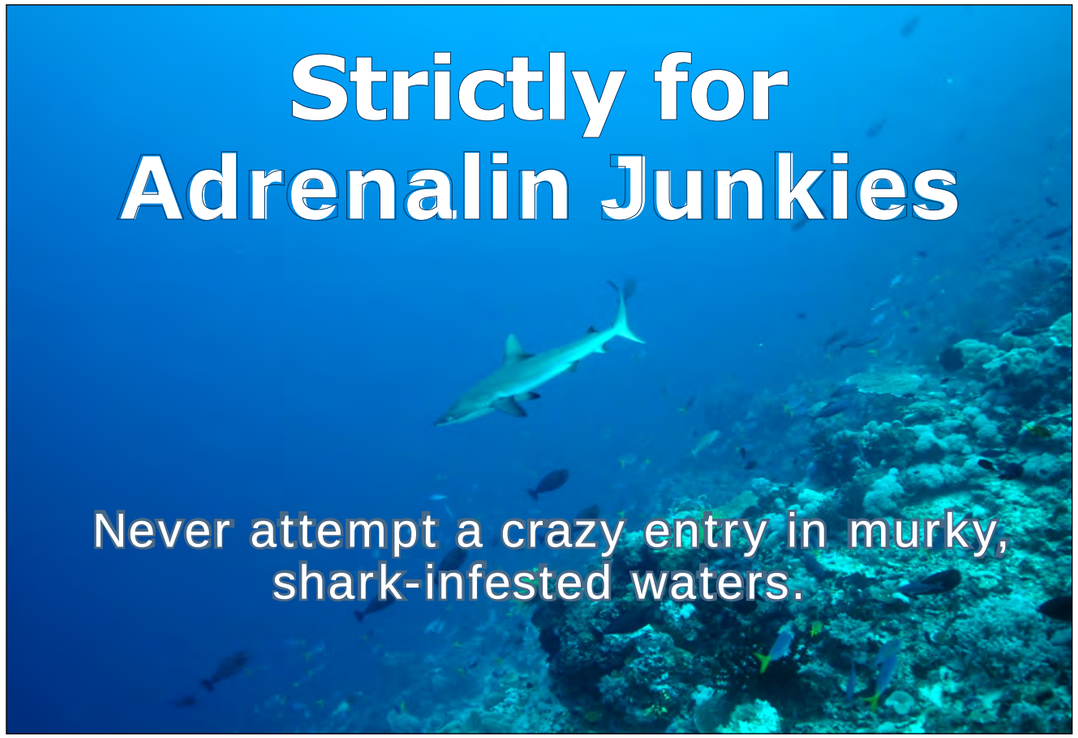
Strictly for Adrenalin Junkies

By: Leon Rademeyer Photos By: Christopher Bartlett



In two weeks time, we were heading off to dive the Key Bisquin, which is a sunken oil rig out at sea that lies at 42m. So we needed to get ready for this huge event. We had to make sure that our equipment was up to scratch. (Surprise, surprise... it was not.) And we also just needed to get comfortable in the water as we hadn't dived for four months.

We were supposed to dive on the Saturday, but due to lack of interest and a freezing cold spell, the boat didn't have enough people to launch. This meant doing a dive on Sunday morning, instead of going to church, which in retrospect would have been a way safer choice! But no, we decided to attempt a shore-entry dive with four other friends off North Mole wreck.

Now yes, it does sound normal, until you see the entry point – whoever thought of mixing abseiling with diving was a total adrenalin junky. Or had never done this entry with waves, which of course, is a whole other ball game!

So after kitting up and finding out that my second stage was leaking badly, which by now should have sent alarm bells ringing, then dressing up in three wetsuits, gloves and the whole shebang, we abseiled down the side of the wall with our gear on. Man, oh, man, I wish I had taken my camera... We eventually got to the bottom, put on our fins and waited for a wave so that we could slide over the rocks and into the water. Not for a moment did I ever consider how the hell I was going to get out!

The viz was about two metres and the dive site was still a 150m swim from the rocks. Because of the high swell, we decided to navigate our way to the site and then proceed to find the wreck. All good – if you had enough weight! Even though I had put an extra 2kg on for the Michelin Man effect, the lack of diving and crazy entry, and the murky water and shark-infested seas had made me a little anxious, so of course I couldn't go down. And when I tried to call my buddy, he was gone. No problem. Well, that's what I thought before I tried to get out.

I swam to the entry to check it out and thought about how I was going to approach it for a couple of minutes. Then, uninvited, a thought popped into my head, 'wait a minute; I look like a shiny black seal'. I decided I needed to get out of the water – and fast! I tried to reach the rope, which was hooked into the rocks, but I was struggling. I was mashed against the rocks for a very long 10 minutes, and nearly broke my arm in the process. Panic had begun to gnaw at my nerves.

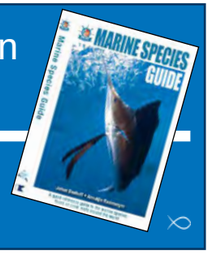
Now, you all know the feeling, and it has a snowball effect. I can't say my whole life flashed before me, thankfully, but I was starting to freak out – big time! Every time a wave bashed me into the rocks, I tried to grip something, but I would just slide down, bashing into more rocks below me. It was hectic, and my prayers started to get louder and more heartfelt.

I finally managed to pull myself up, gear and all, onto a half-submerged rock. The only slight problem with that was that I was now out of reach of the rope, and had absolutely no hope of getting up from this point, without help. I knew it would be a whole hour until the rest of the group finished the dive. But like always, God was with me through these terrifying moments; he was definitely watching over me... someone came to my rescue, and after much tugging and pulling, I was saved! Never again, well not when there are waves – and never on a Sunday!

Lessons to be learnt:
- Never do anything on your own.
- Make sure your buddy knows where you are – at all times! (Assumption is after all the mother of all stuff ups!)
- Don't do shore-entry diving... off the rocks... when there are waves.
- When all the signs show that you shouldn't be diving, step away from the water – do not dive.
- And last, but not least, Sunday is not for diving, it's for church!

WIN

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



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

OZ NEWS

OZTek Advanced Diving Conference & OZDive Show ‘22

We’re ramping up …. Speakers are being contacted, websites updated (again!) and we’re feeling confident the OZTek Advanced Diving Conference and OZDive Show ‘22 on Oct 1-2, 2022 is going to be better than ever.

Frankly, we can’t wait to see everyone!

Remember - OZTek Advanced Diving Conference and OZDive Show ‘22 will be held at the Melbourne Conference & Exhibition Centre (Jeff’s Shed) on October 1/2, 2022.

OZTek ADVANCED DIVE CONFERENCE | OzDive ‘22 EXPO

The very start of the Australian diving season.

Watch out for details on speakers, exhibitors, things to do, things to see, things to hear, things to touch … I’m excited!

We’ll be ready for action - no holding back - watch this space - or subscribe to our newsletter at www.OZDiveShow.com.au

The combination of the traditional OZTek Conference, alongside the OZDive Show will bring together divers from all over Australia like never before.

https://OZTek.com.au / https://OZDiveShow.com.au
Contact Sue Crowe on Sue.Crowe@diveOZTek.com.au or +61 498 964 963

PADI’s Bubble Bucket List for Aussies

With Australia’s official travel bubble with New Zealand now open for quarantine-free travel, Aussies have more places to explore both above and beneath the ocean in both their backyard and across the Tasman Sea.

To help Aussies plan their next holiday, PADI® has put together the ultimate bubble bucket list for where they can seek adventure and save the ocean.

From great spots to learn to dive in to once-in-a-lifetime underwater encounters and conservation efforts to take part in, a meaningful holiday adventure awaits Aussies as they join the global community of PADI Torchbearers ™ who are working to create balance between humanity and the ocean.

With the minimum age to become a PADI Jr. Open Water certified being 10 years old, Aussie families can enjoy world-class diving together on their next bubble holiday in Australia or New Zealand.

1. Poor Knights Island, New Zealand
Named as one of Jacque Cousteau’s top dive spots in the world, the cliffs of Poor Knights Island offer magnificent diving adventures. PADI 5 Star Dive Center Dive! Tutukaka offers divers of all levels world-class dive experiences. Learn to dive in their salt water pool before finishing up the Open Water Course out at Poor Knights Island. Or for those that are already certified, dive into kelp forests, grottoes, chimneys, tunnels, archway, the world’s largest sea cave and be surrounded by thousands of fish that often make the sea surface bubble. This protected marine reserve’s success story offers inspiration to keep working towards saving the ocean.

2. Bay of Islands, New Zealand
Picturesque both on land and underwater, the Bay of Islands has a unique blended marine environment where tropical fish visit the temperate climates. PADI 5 Star Dive Center Paihia Dive takes divers out to the marine protected reserve of Deep Water Cove to explore the HMNZ Canterbury and be witness to sunfish, scorpionfish, the largest short tailed stingrays in the world and five different types of moray eels. With the PADI Open Water Diver course available for those

looking to try diving for the first time, it also makes for a great place to get certified while on a bubble holiday.

3. Coromandel, New Zealand
With so many world-class dive sites scattered throughout the Coromandel, there are endless diving adventures to be had in one of the most popular holiday spots in New Zealand. PADI 5 Star Dive Center Dive Zone Whitianga organizes dive trips out to the Mercury Islands, Aldermen Islands, Cathedral Cove and the Te Whanganui A Hei Marine Reserve. There are over 30 dive sites to choose from that often get visits from dolphins and orcas, with the Gemstone Bay Marine reserve offering a 'Narnia' like experience for divers of all levels.

4. Tauranga, New Zealand
From shipwrecks to reefs, Tauranga offers diverse dives within a range of marine reserves that now boast a huge variety of marine life. PADI 5 Star Dive Center Dive Zone Tauranga brings keen adventurers out to Mayor Island, Okaparu Reef, and the Astrolabe Reef where the shipwreck of The Rena lies. They also offer Open Water divers the chance to begin their PADI Advanced Open Water Diver certification.

5. Great Barrier Reef, Australia
Dive into this designated UNESCO World Heritage Site in Queensland. The Great Barrier Reef stretches 1,400 miles down the east coast of Australia, where there are over 600 islands and 2,900 individual reefs to explore. PADI 5 Star Dive Center Divers Den offer dive courses and trips to the Great Barrier Reef all year round, where you can encounter unique marine life that include minke whales, manta rays, sharks, cuttlefish, sea turtles and sea snakes. But one of the truly unique experiences are their flouro diving, where they will take you'll see the underwater world light up during a night dive.

6. Western Australia
One of the top six hot spots in the world for marine diversity, diving the rich waters of Western Australia is a breath-taking experience. PADI 5 Star Dive Center Perth Scuba takes keen divers out to sea to experience drift dives and the underwater phenomenon of cabbage coral acting as cleaning stations for reef sharks, turtles, groupers and manta rays. The dive center offers a 3-day PADI Open Water Diver course, making Western Australia a great destination to learn to dive on holiday during anytime of the year.

7. South Australia
Diving in South Australia is always full of surprises, with the ever-changing seasonal environments in the ocean. Two top marine encounters divers come to this region for are to witness the annual Australian giant cuttlefish spawning between May and August and to encounter the Leafy Seadragon. PADI 5 Star Dive Center Adelaide Scuba can help organize both of these unique marine encounters, offering guided shore and boat dives all year long. Those lucky enough may also see bottlenose dolphins, fur seals and southern right whales while out at sea. In addition to group courses, the dive center also offers one-on-one learn to dive courses that can be completed in four days and organized into your holiday itinerary.

8. New South Wales, Australia
With over 74 dive locations, six marine parks and the Southern Hemisphere's longest ocean cavern dive in along New South Wale's 1,240 mile rugged coastline, divers has the luxury of diversity here. The warm currents mixing with the cold waters create unique opportunities to dive with grey nurse sharks, turtles, fur seals, rays and weedy seadragons. PADI 5 Star Dive Center Abyss Scuba Diving will take divers out to experience all that New South Wales offers as well as educate divers how to spot and protect the unique marine life found in these waters.

9. Victoria, Australia
World-renowned for the spectacular wreck diving, plenty of adventure awaits in sunken flight decks, engine rooms and WW1 submarines. There's plenty of marine life too, with PADI 5 Star Dive Center Academy of Scuba taking divers out to see octopus, eels, seahorses, parrotfish, zebra fish, spider crabs and over 150 species of nudibranchs. Offering personalized dive courses and tours, they'll create the ultimate dive experience in Victoria and show you all the local hidden gems underwater.

Dive Schools / Operators / Organisers / Instructors

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

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

Please send to info@ozdiver.com.au

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Photo by Matt Smith

Dive the Continent
Dive OZ

By: Graham Willis

Great Whites

Neptune Islands - South Australia





By: Graham Willis

In June I hopped on the MV Rodney Fox, departing out of Port Lincoln in South Australia, for a four-day, three-night trip with Mathew Kempton and Andrew Cocks to commune with some Great Whites. Fair to say the vast majority of our non-diving friends thought we were completely insane…even when they knew we were going to be in a cage! I think they still remember the line 'You're going to need a bigger boat' uttered by Chief Brody in the 1975 movie 'Jaws' where 'Bruce' had a starring role.

Great Whites (Carcharodon carcharias) are top predators, but mankind has ensured they are now listed as vulnerable by the International Union for Conservation of Nature (IUCN). Other than humans the only other predators of Great Whites are either larger Great Whites or Orcas. …the two tend not to co-exist.

There have been several reported attacks over the years, and it seems the Orcas are only interested in the Great White's liver. Given that can be up to 25% of the Shark's weight and is a significant source of fat (energy) it makes a lot of sense. There was an attack by a pod of Orcas on a Great White in the Neptune Islands in 2015 which resulted in that shark being killed.

The Great Whites did not hang around and they vacated the spot for some three months, as they had done off California and False Bay in South Africa. Luckily for us there were no Orcas in evidence, just one Humpback passing through.

The female Great Whites grow bigger than the males and can grow to over six metres and weigh in at over two tonnes. The majority of fully grown Great Whites are in the four to five metre range and weigh in at one and a half tonnes…that still makes them pretty big.

The Whites roam far and wide and are also comfortable in quite a range of water temperatures from around 12C up to 24C. One of their 'magic powers' is to be able to regulate their internal temperature, through their vascular network, to better cope with a range of water temperatures. The Great White has a reputation as a coastal shark, rather than a deep-water shark, but having been found at over 1,000 metres this somewhat challenges that assumption.

It is certainly the case that they cover large expanses of open ocean before 'settling' in areas with a more abundant food supply...such as seals. The Neptune Islands are home to Australia's largest colony of long nose fur seals, and they are one of the key attractions for the Great Whites to hang around the Neptune Islands… good for the sharks…less ideal for the seals.

The Neptune Islands consists of two groups of islands, North and South Neptunes, near the entrance to the Spencer Gulf, just off the aptly named Cape Catastrophe. The Cape was named by Matthew Flinders in 1802 when a cutter launched from his ship, Investigator, in search of fresh water foundered in the surf and all eight of the crew perished.

South Neptune Island is home to a lighthouse, the lighthouse keepers were replaced by an automatic light in 1990, and forms part of the Neptune Islands Group (Ron and Valerie Taylor) Marine Park. The Marine Park was renamed, to include Ron and Valerie Taylor, in 2012 to acknowledge their close association with the region and their contribution to the marine environment.

Incidentally, given we are writing about Great Whites, their underwater videography included footage shot around the Neptune Islands for Jaws and Jaws2.

We were fortunate with the seas and the weather. The trip prior to ours was cancelled due to big (five metre)

Dive the Continent
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By: Graham Willis

seas and yet all we managed was a swell shy of a metre…how fickle is nature? We were also lucky with the weather and had the smallest sprinkle of rain on one day and that was it.

It was also much warmer, a balmy 14C, than I had assumed it would be in winter, given our relative proximity to the Southern Ocean and the lack of anything between us and the Antarctic to modify any poor weather. Can't help good luck!

There are three tour operators licenced to operate shark dives in the Neptune Islands, but Rodney Fox is the only one which can drop a cage to the bottom in addition to a cage on the surface…and based on my experience you will see much more in the bottom cage than you will in the surface cage.

It is also one of the only two boats able to use berley to attract the sharks. Some people object to the use of berley and the feeding of the sharks…did I say feeding? There was absolutely no shark feeding going on. Yes, the crew tied tuna tails to a line and dragged it through the water… but not once in 3 days did a shark launch itself at the bait and even if they had done the crew were ready to pull the bait in.

I thought they would be launching themselves at any morsel of Tuna in the water, however the sharks proved hard to attract. I think they were more curious than anything and certainly showed less than a passing interest in the food 'on offer'. I have to say that did not line up with my image of how the Great Whites would behave around food.

Apart from the potential for 'feeding' Great Whites there is also a worry about changing the shark's behaviour such that they become attracted to human/boating activities. The Rodney Fox crew keep a careful tally of what berley goes in the water, what bait is put in the water and the sharks they see. In 15 years of operation the crews have seen more than 1,000

Dive the Continent
Dive OZ

By: Graham Willis

different sharks.

On average that is more than a different shark every week and does little to suggest the sharks become habituated to the presence of the boat, berley or divers. Having said that you are NOT guaranteed to see a Great White...they are wild animals and have a large ocean to roam in.

Currently your best bet is between September and January, but May and June also offer good viewing.

The large females arrive between April and July and the males tend to 'drop in' throughout the year. Have a look at the Rodney Fox website for more information or just give them a call.

The MV Rodney Fox departed from Port Lincoln in the morning and, after a slight delay to rectify a misbehaving heat exchanger, we were underway. On the way down to The Neptunes we had a dive adjacent to a colony of long nosed fur seals at Hopkins Island. The island is just before you leave the shelter of the Jussieu Peninsula and head into the open sea, around two hours or so of steaming from Port Lincoln.

You could snorkel or dive and we learned that the best option, by a long shot, was to snorkel.

You are only in 3-5 metres of water, and we ended up pushing into quite a strong current for the full 40 minutes, seeing 2 seals and then calling it a day. You get taken over by the boat's tender and picked up at the end of the dive.

Be aware that there is no ladder available to get back into the boat, so you need to be happy taking your gear off (if diving) and finning up into the boat.

Anyway, luckily, we were not here for the seals because that dive was better put down as 40 minutes of exercise rather than a Seal dive...

onwards to the Great Whites. After around another two hours of steaming we arrived in the lee of the main island in the North Neptunes and dropped anchor. There was great excitement on the boat, amongst both crew and guests, when the first shark broke the surface after we had only been there for around an hour... we all hoped it would be there in the morning.

The MV Rodney Fox, funnily enough named after ... the Rodney Fox, is relatively new to the Shark Diving business having been sailed around from the Top End via Fremantle to get fitted out. The boat was previously a pearling boat and what was its 'factory' deck is now a very spacious dive deck.

As an aside the dive deck has four hot water showers on it so the chances are high that you can leap straight into a shower to warm up

By: Graham Willis

post dive.
There are also four toilets that can provide immediate relief pre and post dive! The main deck also houses the saloon and galley where you are provided regular sustenance. Most of the accommodation, for up to 18 customers, is on the upper deck with 6, two-bunk cabins, the remainder is on the lower deck. We had seven crew to look after us, including the captain and the chef.
The cabins are compact and there is not a wealth of storage. If you have a larger camera rig you will probably have it laid out across your bed and much of your charging will be done in the room. There are power boards and the like in the saloon, but space is limited.

The stern was where all the real action happened! There are two cages that get dropped into the water with room for up to 4 people in each cage. The surface cage has a surface fed air supply system…so you are weighted but not carrying any scuba gear. The surface cage caters for any non-divers on board as well as those divers who are looking for more shark action. The 'bottom' cage descends to within a couple of metres of the bottom and is suspended from a crane. Three divers and one cage captain get into the cage on the stern and are then lifted into the water until the correct depth is reached. When at the prescribed depth (12-18m) the cage remains there (moving around somewhat) for around 30 minutes per dive.

First dive was set for 9am and a roster drawn up for the day's diving in the bottom cage. The Surface cage was open slather…first in best dressed unless you were a snorkeler in which case (rightly so) you had priority.

Everybody was assured of at least one dive a day…in reality the schedule could accommodate two dives per person. This is where the willingness

By: Graham Willis

of the guests to get kitted up in plenty of time combined with the planning of the crew pay a dividend.

A disorganised crew or tardy guests will quickly mess things up and if each cage takes an extra 10 minutes to get down…by the end of the day you have blown the times of a second dive out by nearly two hours.
You do not go into either cage in full scuba gear.

You have your mask (no snorkel required), wetsuit (dry suit if sensible!) tanks and regs, no BCD and no fins. Instead of the weight pockets in your BCD or a weight belt you are provided with a weight harness to hold you on the floor of the cage. You are not trying to achieve neutral buoyancy …you want to be firmly on the bottom of the cage!

As you get into the cage (a little wearing on the knees if you are tall) three of you are distributed to corners of the cage, the cage captain, always a crew member, taking the fourth corner. As you go down the cage captain checks to make sure you are all ok and able to equalise …and down you go starting the process of scanning for Great Whites.

You quickly become aware that your view is going to be obscured by the relentless school of trevally that are sniffing around the cage and the bait container that sits in the cage. The ever-present Trevally can be a bit of an issue and there is some talk of relocating them. Apart from the Trevally you might spot a Blue Grouper or two, some Leatherjackets, some very large King Fish, or even a Ray…but the main action is obviously the Great Whites.

The cage captains are 'working the cage'. Banging the grating, jumping up and down on the bottom of the cage and pulling out bits of Tuna to attract the sharks…in fact it is quite noisy in the cage. This is in complete contrast to the shark that glides into view and just as silently and smoothly vanishes into the middle distance. You quickly appreciate that the Great White's camouflage is built to order… it just disappears. In fact, the easiest way of spotting the shark is to look for the fish trailing it because they are silver and reflect more light.

Sure enough… our first shark arrived. Scratch and Sniff was what the crew called it because of the white patch on its nose. It was a 2.5-3 metre male, so a bit of a teenager really, and very impressive. Three or four passes was all we could get out of the shark on that dive…but BINGO…one dive and one shark. It is interesting what one settles for over time. If we had come away from the trip with only that first dive, we would probably have been ok with it.

As it happened not only we, but every cage diver, saw a shark on every dive…so our expectations of an ever more spectacular encounter went up with each dive. We had an extra bonus with IMAX also joining us for the last dive on Day 3 and the morning of Day 4. IMAX was a larger shark and would have to have been close to 4.5 metres…Scratch and Sniff kept a respectful distance. They really are magnificent creatures, flawlessly adapted to their environment and clearly in charge!

The surface cage was less of a sure thing and attracting the sharks to the surface proved hard. They were curious, inquisitive and no doubt wondering what all the noise was about …but not so curious that they were running around the surface cage. Hit rate in the Surface cage maybe 20%...hit rate in the bottom cage 100%.

A word or two for the photographers amongst you. In many ways you are better off with a more compact unit such as an Olympus TG-6 or Go-Pro type camera. I started the first dive with my strobes and a wide angle (17-40 mm) zoom but manoeuvering them in the cage was difficult. The sharks were also too far away on most passes for the exposure to be assisted by my Inon Z330 strobes.

So, I dumped the strobes and switched over to using natural light. I ended up shooting at around 1/200, f4.0 and boosting the ISO to 1600. I found that gave me a reasonable balance between potential blur and quality. I also saw a number of the stills extracted from Go-Pro footage that fellow guests shared and although the images were lower res they did the trick on anything up to A4 size and you would be pretty happy with them.

The crew were top notch and managed to get us all in the water twice on a full day and once on the day we returned to Port Lincoln. The crew were always moving, getting divers kitted up, operating the crane to lower the cage, chumming the water, stocking the bottom cage with bits of Tuna to attract the sharks, washing dishes, keeping a constant flow of clean post-dive towels flowing and so on.

They were on the go from 6:30 in the morning to 10pm at night. The chef was invariably busy providing one of the three square meals a day along with snacks in between those meals… we did not go hungry.

The captain pitched in as well …any less than seven crew and life would have been much more hectic for them and probably less smooth for the guests.

In summary we were very lucky. Lucky to have calm seas, good weather, sharks on every dive, a great crew, a good bunch of guests and even luckier to avoid all the interstate COVID restrictions that were rearing their ugly head at the time.

It was all over far too soon, and we were heading back to Port Lincoln happy with what we had experienced but wanting more; a good way to leave things.

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Jellyfish

By: Christo van Jaarsveld

Cnidaria means "nettle" in Greek and this refers to the stinging tentacles. The class Scyphozoa is made up of the Greek word skyphos which means cup and zoon which means animal.

Jellyfish are often washed up and stranded on our beaches. Unfortunately by that time, they are usually badly battered and dead, so you will have some difficulty in imagining the original shape of the mutilated jellyfish.

There are three main groups of jellyfish and as they do not have common names, we will have to use their scientific names. These are Semaeostomae, Rhizostomae and Cubomedusae.

The semaeostome jellyfishes have an umbrella-shaped body with a fringe of stinging tentacles hanging round the edge. Where the handle of the umbrella would be, there is a square mouth with lips that are pulled out into four lobes (or multiples of four) that hang down beneath the umbrella. These lobes are also equipped with stinging cells.

The body is made up of a thick layer of jelly, which is about 95 percent water. This means that the jellyfish has almost the same density of the seawater and is neutrally buoyant, with a slight tendency to sink.

By contracting its muscles, the jellyfish can close the umbrella and force water out in order to rise via mild jet-propulsion. When the muscles relax, the jelly becomes slack and the umbrella opens once again.

Weird and Wonders
Marine Life Facts

Jellyfish are carnivorous and they catch shrimp, crabs, fish and plankton with their tentacles. They paralyze their prey before passing the food into the mouth. If the victim is still alive while it's being eaten, the stinging cells inside in jellyfish will kill it.

The food is broken down into a soup-type mixture, combined with water and pumped through hollow tubes throughout the jelly and absorbed where needed.

The pumping motion is done by many little "hairs" lining the tubes and oxygen is extracted from the water as it flows through the body.

Some jellyfish catch their food by spreading out their tentacles, slowly sinking down and trapping anything in their path. They pulse to the surface and repeat the procedure time and again.

The jellyfish is not perfectly circular around the edges. There are usually indentations that line the entire skirting and there are usually four, or multiples of four. These indentations house a number of different sense organs, including eyes that are able to register light intensity.

The indentations also store the balancing organs that sense whether the jellyfish has tipped to one side or if it's level. They send messages to the muscles, inducing them to contract unequally and jet water out at an angle to level the body.

Through the transparent jelly body, you may notice coloured patches – mauve, blue or pink, depending on the species of jellyfish. These are the sex organs of the jellyfish.

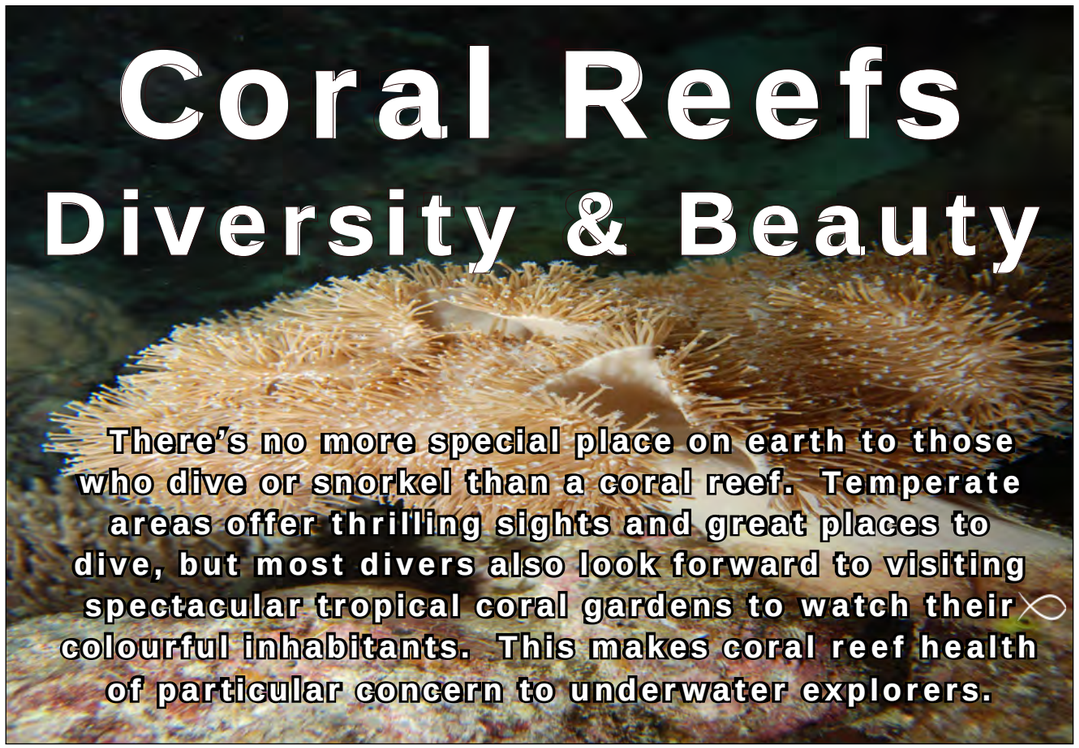
The females lay tiny eggs. Larvae then hatch and swim around, usually coming to rest on the sea-bed and then growing into a plant-like column as a stack of saucer-shaped discs develop. The most advanced disc, the one on top of the stack, breaks off and drifts free every now and again. Each of these discs develops into a new, complete jellyfish.

Some species can grow to reach enormous sizes and weigh many tons, with tentacles and lobes extending down to 30m or more. However, the ones washed onto our beaches are usually 50cm or less in diameter and can still give a painful sting.

The main differences between the semaeostome and rhizostome jellyfishes are that the latter do not have tentacles hanging around the circumference of their bodies and that their mouth lobes are different. The rhizostomes do not just have a single large mouth, but have many smaller sucking ones located all over the lobes.

By: Christo van Jaarsveld

Coral Reefs
Diversity & Beauty



There's no more special place on earth to those who dive or snorkel than a coral reef. Temperate areas offer thrilling sights and great places to dive, but most divers also look forward to visiting spectacular tropical coral gardens to watch their colourful inhabitants. This makes coral reef health of particular concern to underwater explorers.

Beyond their innate beauty and popularity as dive and snorkel sites, coral reefs are habitat and nursery grounds for 25% of all known marine species – many of which humans rely on for food.

This is an impressive statistic considering how little of the sea bottom coral reef is. While the total range is difficult to determine, the most accepted figure is that coral reefs cover only about 600 000 square kilometres. That's about one-tenth of one percent of the total sea bottom, or an area about the size of the province of British Columbia or the nation of Venezuela.

Coral reefs are important because they are storehouses of biodiversity. The term 'coral reef' does not do justice to the complexity of these ecosystems. They could more accurately be called 'biotic reefs'. Some biologists refer to reefs as 'rainforests of the oceans' because they support an incredible array of organisms. Pharmacologists have found an abundance of biomedical compounds on reefs, from antibiotics to anti-cancer agents, and suspect there are thousands more yet to be discovered.

From a purely physical perspective, coral reefs are vital structures. They protect islands and coastal communities from storms, wave damage and erosion. The Coral Reef Alliance (CORAL) estimates that each square metre of coral reef protects about $47 000 in property values.

Many tropical nations base their tourism industries on the appeal of the surrounding coral reefs. In some areas, reef diving or snorkelling tours are significant income sources and are foundational to the countries' economics.

The coral
Corals grow best in the shallow, clear water of tropical and subtropical oceans where the annual temperature range is between 18-30°C. Reefs are actually massive coral colonies. Corals are tiny marine invertebrates (from the phylum Cnidaria) that secrete skeletons of calcium carbonate (limestone) to form small cups called corallites. The reef grows as individual coral animals, called polyps, anchor within these limestone cups to collectively form large structures.

Most corals are impressive builders. The largest structure on earth manufactured by living organisms is Australia's Great Barrier Reef, which is visible even from outer space.

Corals that build massive reefs (hermatypic or mound building corals), have a special symbiotic relationship with the algae that reside deep within the polyp's tissues. This algae (zooxanthellae) enables a coral colony to function as both plant and animal.

The algae produce food via photosynthesis, while the polyp catches plankton from the water column. The algae release oxygen and sugars that are consumed by the polyp and the coral releases carbon dioxide and nitrogenous waste that sustains the algae. Because algae depend on light, reef-building corals do not grow well deeper than 25m.

When a coral colony dies, either through natural or human-induced factors, it forms a substrate on which new corals grow. Coralline algae (algae that itself secretes limestone), cements the sand and coral fragments together to fill in the spaces between the larger fragments of dead coral skeletons. This cementing process and growth provides stability and makes reefs less susceptible to damage from waves and storms.

The reef
Corals may form a reef's foundation, but reef ecosystems flourish due to an amazing menagerie of other organisms. For example, bacteria and algae coat the sandy bottom and portions of the reef not covered by living coral.

This provides food for mollusks, crustaceans, sea cucumbers, sea urchins and herbivorous fish. These organisms, in turn, provide vital housekeeping functions that keep the ecosystem healthy and also serve as food sources for organisms higher up on the food chain.

Other organisms, such as sponges, worms and mollusks, play an important role by eroding a reef's massive limestone fortress. This type of erosion is a positive force because it creates additional living space within the reef.

Scientists estimate that as much as 40% of a coral reef is actually open space. Broken segments of coral provide new habitats and are eventually cemented back into the reef by coralline algae. This action of grazers such as Parrotfish and sea urchins produce large quantities of sediment, which also results in new living spaces for smaller fish and invertebrates.

Growth rate
Contrary to popular belief, all corals do not grow at the same rate. In fact, there are considerable differences among species. For example, branching corals such as stag horn coral can grow horizontally about 10cm per year, while massive forms like boulder coral grow at one-tenth this rate. Vertical growth differs as well and can be as slow as a few millimetres per year.

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Weird and Wonders
Environmental Affairs

By: Amilda Boshoff

Garbage Patches

There are five major Gyres in the oceans worldwide, all of which are believed to contain plastic and POPs (persistent organic pollutants), which consist of carbon-containing chemical compounds that, to a varying degree, resist photochemical, biological and chemical breakdown.

Gyres are vortexes of wind and currents that occur naturally in the oceans.

They rotate clockwise in the northern hemisphere and counter clockwise in the southern hemisphere, which creates a whirlpool effect where the vortex moves slower at the centre, and that is where a vast amount of plastic and polystyrene debris collects.

The one Gyre that we are going to concentrate on is the North Pacific Gyre of which there is more data available. (A similar Gyre is also found in the Atlantic Ocean).

It is estimated that the North Pacific Gyre (also known as the Great Pacific Garbage Patch), is estimated to be double the size of the American state of Texas and it swirls in the Pacific Ocean between the coast of California and Hawaii. The patch is estimated to carry 11 million tons of floating plastic that covers an area of almost five million square miles in the Pacific Ocean, and it is growing day by day.

The Garbage Patch is characterised by a very high concentration of chemical sludge, pelagic plastics and other debris that has been trapped in the currents of the North Pacific Gyre, but despite the magnitude of trapped pollutants, the patch is not visible from satellite photography since it primarily consists of suspended particles in the upper water column.

Plastic breaks down to ever smaller polymers and thus these submerged particles are not visible from space (or they appear as a continuous debris field, making is hard to estimate the exact size). Instead, the size of the patch is determined by various methods of sampling, but how do you determine the boundary between the 'normal' and 'elevated' levels of pollutants of the affected area, as none of these pollutants should be found in the sea in the first place?

The Scripps Institution of Oceanography did a survey mission of the Gyre in August and found that plastic debris was present in one hundred consecutive samples taken at various depths along a 2 700km path through the Great Pacific Garbage Patch.

From the survey, the data showed that although the debris field does contain large pieces, it is on the whole made up of smaller items which increase in concentration towards the Gyre's centre.

These confetti-like particles are clearly visible just beneath the water's surface which makes it even more dangerous for marine mammals.

But where does all this garbage come from? One might think that ships are the main polluters of our oceans, but to date no one can surely say that this is the case as many rivers flow into the oceans carrying various amounts of pollutants, with winds and currents sweeping these pollutants away to the Gyres.

Pollutants range from old and abandoned fishing nets and plastic bottles to micro-pellets used in abrasive cleaners. Currents can carry debris from the west coast of North America to the Gyre in roughly six years and debris from the east coast of Asia in 12 months, which means more debris carried to the Gyre on a daily basis.

Researchers have studied the effects and impact of plastic photo degradation in the upper water column. Unlike the debris that biodegrades, the photo degraded plastic disintegrates into even smaller pieces down to the molecular level.

As the debris disintegrates, the plastic ultimately becomes small enough to be ingested by aquatic organisms which reside near the ocean's surface, upon which the plastics enter the food chain.

Some of the long lasting plastics end up in the stomachs of marine birds and animals and their young, such as the sea turtles and Black footed albatross.

As if the danger of particles isn't enough, some of the plastics decompose within a year of entering the water, leaching potentially toxic chemicals into the ocean.

Floating debris can absorb organic pollutants from sea water, including PCBs, DDT and PAHs. Besides the toxic effect it can have on the body, some of these are mistaken by the endocrine system as estradiol, which can cause hormone disruption in the affected animal.

Let's continue with the effects on the food chain: toxin containing plastic pieces is eaten by jellyfish, which are eaten by larger fish.

Many of these fish are consumed by humans, resulting in the ingestion of toxic chemicals that the fish can't rid its body of. Now if that doesn't give you a reason to start recycling plastics, well I guess nothing will!!

Explanation of abbreviations:

PCB – Not the Pietermaritzburg Chamber of Business, but Polychlorinated biphenyls which are a class of organic compounds with 1-10 chlorine atoms attached to the biphenyl, which is a molecule composed of two benzene rings.

DDT- This was the first synthetic pesticide of the modern age which promised much but caused so much environmental concern because it wasn't biodegradable and continued its path of destruction down the food chain.

PAH – Polycyclic aromatic hydrocarbon, also known as poly-aromatic hydrocarbons, are potent atmospheric pollutants that consist of fused aromatic rings. Napthalene is the simplest example of a PAH.

Estradiol – This is the predominant sex hormone present in females and it plays a major role in the reproductive and sexual functioning, but also affects other organs, including the bones.

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GLOBAL NEWS

US$2.6 billion global trade in shark and ray meat revealed. Better rules and transparency needed to fight overexploitation.

More than 200 countries and territories are importing and exporting shark and ray meat for a global trade that was valued at US$2.6 billion between 2012 and 2019, with Spain being the world's top exporter, Italy the top importer and the EU accounting for over 20% of the global shark meat trade.

Ahead of International Shark Awareness Day (14 July), WWF presents The shark and ray meat network: a deep dive into a global affair, a ground-breaking analysis shedding new light on this highly complex and opaque trade that is contributing to the ongoing decline of shark and ray species in our ocean.

WWF worked with a team of scientists to develop the first analysis of the global shark and ray trade network using graph theory [1], which reveals not only the major importers and exporters of shark and ray meat, but also the traders playing essential roles as intermediaries.

The report clearly shows how and where to focus international efforts to reverse the decline of shark and ray population, and calls for far greater transparency and traceability that are needed to stop the ongoing depletion of these vital species – and of our ocean more broadly. Today, 36% of the more than 1,200 known shark and ray species are threatened with extinction [2].

Even though shark fins are generally much more expensive than shark meat, and the global fin trade has received far more attention to date, the global trade in shark and ray meat is actually larger than the trade in fins, both in volume and value [3]. It is dominated by Spain (exporting shark meat to 85 different countries and territories), while the most important trade bridges for the shark meat network are between Japan and Spain, UK and Spain, Portugal and Spain, Japan and Panama, and China and Japan. The EU has established itself as the main supplier to Southeast and East Asian markets, with its own exports and imports accounting for about 22% of the total global shark meat trade.

Simone Niedermueller of WWF Mediterranean Marine Initiative, said: "We are eating more shark and ray meat than we realize, and this is happening everywhere, including in Europe, with serious consequences for some species already at risk of extinction. Sharks and rays are migrating more when they are dead than alive, as their meat crosses over 200 borders, with some Mediterranean and European countries playing key roles as importers and exporters, as well as consumers.

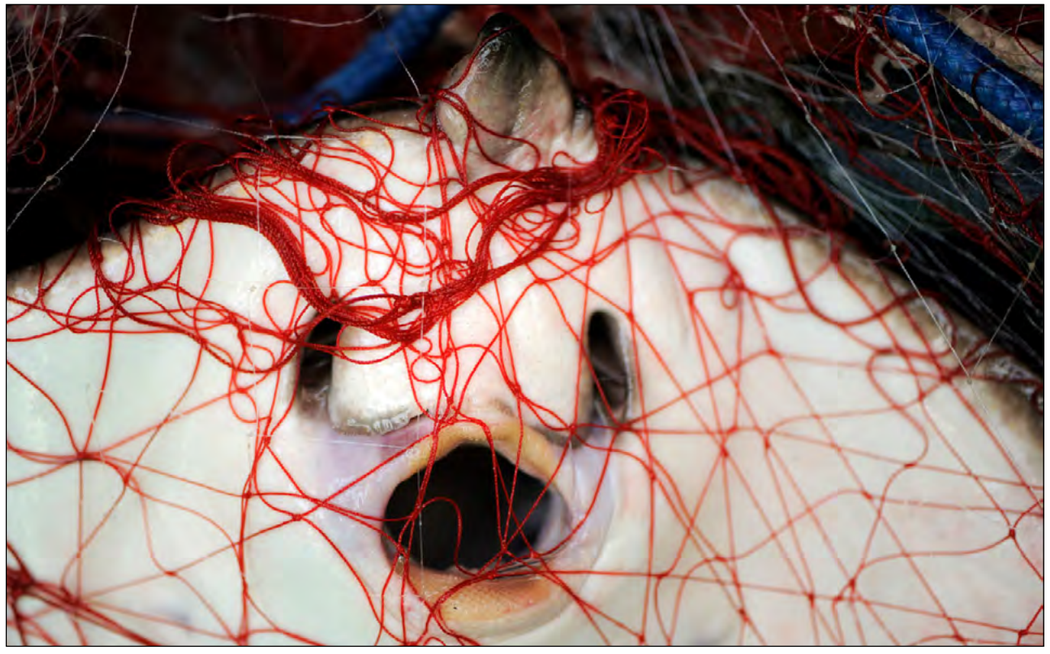
It's a global trade that requires management and transparency to tackle illegality and the rapid depletion of sharks and rays in our ocean."

The global trade network for ray meat is less diversified, with trade between Argentina as an exporter and South Korea as an importer dominating the market. But some European countries are key for the stability of the ray trade network, and have an important role to play in regulating it.

"Demand for shark fin is well-known as a driver for the overexploitation of sharks and rays, and fingers point at Asia, where shark fin soup consumption is highest. This new report spotlights a far larger global trade in shark and ray meat that many are unaware of. The trade links are extensive, with an array of countries playing an active role, including several EU member states at the core of this network.

All of these countries need to urgently adopt and implement regulations and controls for sustainable fisheries and traceability, to ensure that the trade is from properly managed and legally sourced stocks, that protected species are kept off the market, and consumers can make informed purchases.": added Andy Cornish, Leader of Sharks: Restoring the Balance, WWF's global shark and ray conservation programme.

WWF is also asking consumers to avoid buying or eating shark and ray meat unless from sustainable and traceable sources. However, very few products currently available in the market meet these requirements. [4]



[1] Graph theory is the mathematical study of a network of interacting elements. This approach provides a quantitative but simplified view of the multiple factors involved in the connection (edges) among elements (nodes) contained in a network. In a network of traders, graph theory provides insights into the trading relationships' properties and identifies critical nodes (traders) with high centrality that are connected to many other traders, or clusters of well-connected traders. More information can be found in the report. Online data can be accessed here: https://aospina.shinyapps.io/SRGTN_WWF/

[2] Sharks and rays are in crisis globally. Up to 100 million are killed each year, and some populations have declined by more than 95% as a result of overfishing. Today, 36% of the more than 1,200 known shark and ray species are threatened with extinction. The decline of sharks and rays is a contributing factor to the deterioration of our ocean, and symptomatic of much wider marine overexploitation. Read more here and on Mediterranean sharks, here.

[3] The total value of shark and ray trade in the period 2012-2019 exceeds US$4.1 billion. The value of shark and ray meat combined ($2.6 billion) exceeds the value of shark fins ($1.5 billion) in the same period. Prices can range from US$0.1/kg for meat to more than US$100/kg for fins. Of the top traders, Italy pays on average the highest price for imports of shark meat at US$4/kg, while Hong Kong pays the highest price for fins at US$30/kg.

[4] In addition to fishing, other threats are increasingly worsening the status of sharks in the Mediterranean. Among these are plastic pollution, with sharks ingesting or becoming entangled into plastic items, and seafood frauds. DNA testing has shown that many consumers who think they're eating Mediterranean swordfish, for example, will in fact be tucking into a plate of illegally marketed shark meat and mislabelling, including selling sharks under misleading names, is widespread. Read more in WWF MMI's report Sharks in crisis.

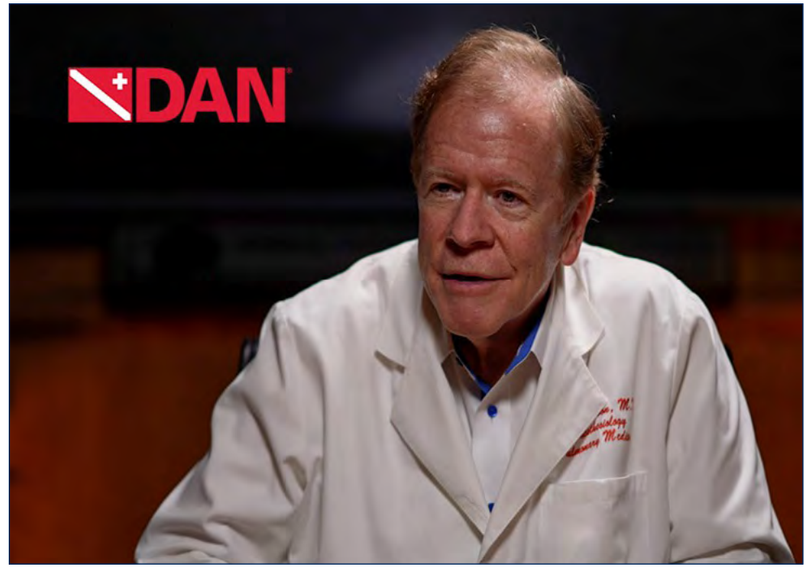
Richard Moon, M.D., Named 2021 DAN/Rolex Diver of the Year

DURHAM, NC –– Divers Alert Network® and Rolex are pleased to announce that Richard Moon, M.D., has been selected as the 2021 DAN/Rolex Diver of the Year. The award was presented at a virtual event earlier this year.

Dr. Moon is a professor of anesthesiology at Duke University and the medical director of the Duke Center for Hyperbaric Medicine and Environmental Physiology. He is also a former medical director of DAN. Throughout his 40-year career in dive medicine and research, Dr. Moon has sought to gain a better understanding of cardiorespiratory function on the human body when subjected to environmental conditions such as being deep underwater or at high altitude. His research into the effects of decompression has benefitted hundreds of divers suffering from decompression sickness and other dive-related injuries. Through his commitment and significant contributions to dive medicine, Dr. Moon has made diving safer for all.

For more than three decades, DAN and Rolex have collaborated to honor an individual who has made substantial contributions to dive medicine, safety or research and to name that person the DAN/Rolex Diver of the Year. This award is one of the most significant honors in diving. It began in the late 1980s as a generous grant to DAN from Rolex to recognize the organization's work on behalf of divers. The award evolved to feature a Rolex watch for the recipient along with a donation to DAN to help fund dive safety research.

"Any of Dr. Moon's 40 years of service in dive medicine could have earned him this prestigious award; we hope he will accept this token of recognition for his lifetime of achievements," said DAN president and CEO Bill Ziefle. "We are always looking for stand-out individuals who are making positive impacts on diving.
We want to honor Dr. Moon's heroic work on behalf of divers with this award."



Dive the World
Grand Cayman

By: Peter de Maagt

Grand Cayman

Peace and Quiet on the East End

To be perfectly honest, a visit to the Cayman Islands was initially not extremely high on my 'bucket list'. The Cayman Islands historically have been a tax-haven and I suppose most of us do not have to bother too much with that particular aspect. Of course, they didn't have to twist my arm too much when I got the opportunity to go and dive with a couple of underwater photography friends.

By: Peter de Maagt

Grand Cayman is served by Owen Roberts International Airport, a lovely small Caribbean airport. As soon as you leave the plane and your feet hit the runway, you are greeted by a steel drum band. After being warmed by the early morning sun, going through customs is a breeze. Can you imagine any better way of getting into the island spirit?

The Cayman Islands are a British Crown Colony in the West Indies. Although Grand Cayman is the largest island it is still only 35km long and 11km wide.

Tourism is a huge business on Grand Cayman – it offers a heady mix of all the creature comforts and luxuries you could ever dream of. Just add crystal-clear blue water, environmentally protected reefs, friendly locals, basically no crime and you can imagine that you have a winning combination.

Most people who visit Grand Cayman stay on the west side of the island in one of the many tourist resorts or in George Town. The capital city in the south west corner is also the place where the cruise ships anchor and send their passengers ashore, making its streets crowded when the ships are in. Many of them will do some duty-free shopping in one of the many trendy shops, but the majority will flock to the beautiful Seven Mile Beach and will not resist the overwhelming temptation to just relax.

Generally speaking, that side of the island typifies the diving found. Whilst the west side offers good diving it can be more crowded and one should consider moving to the East End in order to experience some of the very finest diving that the Cayman Islands have to offer.

The atmosphere on this side is also markedly different – the beaches there are the place for chilling and there are no crowds. With this in mind we quickly picked up our rental car and drove off towards the other side of the island, a scenic 45 minute drive away.

As diving is such a major part of the tourist industry, diving in the Cayman Islands has become highly organised and very professionally run. Our diving was organised with Ocean Frontiers who provided an excellent all-round service from the booking through to the great dive guides. After depositing your gear with them on the first day they will maintain it after every dive.

Each evening they dismantle and rinse your gear and then hang it up to dry. The next day, when you get to the boat, it is close to being set-up: the only thing left to do is to check your nitrox level.

Ocean Frontiers is intimately linked with Compass Point Resorts which offers a range of luxurious oceanfront self-catering condominiums with their own private patio.

So you can imagine that after a long flight, we just unpacked and enjoyed the view of our first brilliant 'Caymanian' sunset on the patio.
We spent a whole week boat diving using the Eastern Skies, a 45 foot powerful mono-hull and did two dives in the morning and one shallower afternoon dive. I dove nitrox 32, which is the standard nitrox mix on the island and which is ideal for the depths that we had planned.

To set the scene: blue skies, 27oC outside and water temperature of about 25oC. The visibility was reliably consistent, averaging between 15-25m.

The typical reef has two steps: a mini wall starting at 5m, dropping to 12-15m and then a vertical drop to the ocean depths.

Many of the dive sites feature drop-offs, stunning walls and canyons. A series of permanent mooring buoys and very strict guidelines were laid down some years ago and the benefits are clear to see – the reefs are in a remarkably good

By: Peter de Maagt

condition in most areas.

One of the largest tourist attractions in the Cayman is Stingray City, whose fame has grown to iconic proportions. It may be that stingrays began gathering in the area about 15 years ago when fishermen came to the calmer, shallower waters just inside the reef to clean their fish.

Soon they noticed stingrays hanging around the boats waiting for the leftovers. As this practice turned into a tradition, some dive masters realised that the stingrays could be fed by hand and before long they had capitalised on this and the stingrays became a pet attraction.

The current Stingray City dive is actually not the original location, a largely unknown fact to most visitors. The depth of the original site was 3-5m which was considered slightly too deep for the average snorkeler, so a second site was created named Stingray Sandbar. The depth of this 'dive site' is only about a metre. If you want to visit this site, it is best to get out of bed very early and make it an early dawn trip which will probably give you about one to two hours all to yourself before the many cruise ship passengers, novice snorkelers and families arrive.

This also has the advantage that at this time of the morning the stingrays form large groups of 10 to 20 individuals circling over, under and around you. This behaviour stops as soon as they get fed when their behaviour transforms into a literal 'bun fight'. So, as soon as other boats started arriving we decided to leave and headed over to the harbour for a nice beachside lunch at the local Kaibo Beach bar.

We did also 'dive' the original Stingray City. Normally I am not a fan of the tourist-type dives but this one was a blast! We could watch our dive

Dive the World
Grand Cayman

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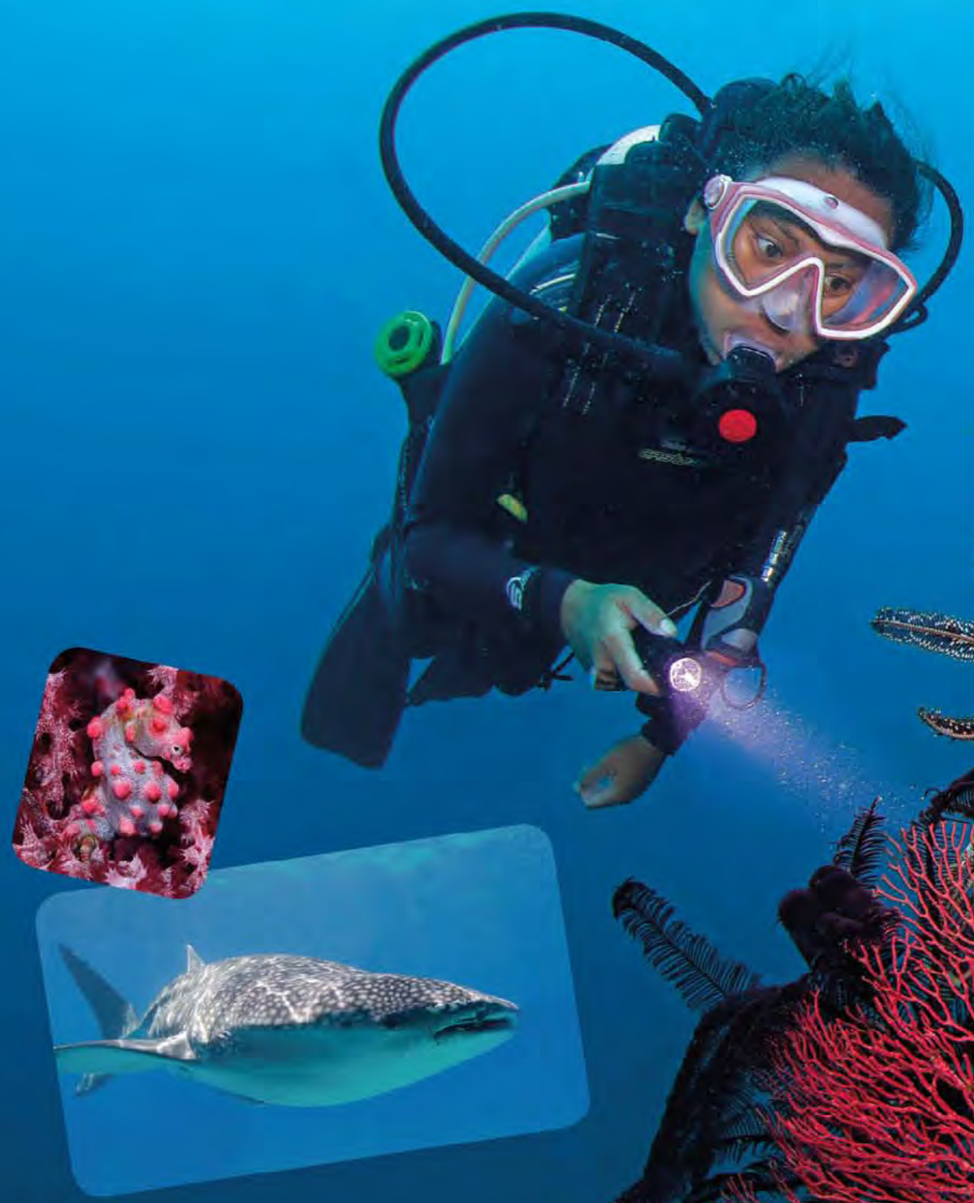

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By: Peter de Maagt

instructors ‘rodeo’ the rays around for their piece of squid. There was a constant flow of rays moving in and out and at the beginning we simply spent time watching this impressive parade of freewheeling acrobatic rays.

Until the moment that I was allowed to feed them and noticed that it takes some practice to feed them elegantly... When I was feeding them the ray simply looked like a vacuum cleaner, trying to suck the food out of my hands. Another one bumped into me, rubbed against my leg and was trying to snatch the food away.

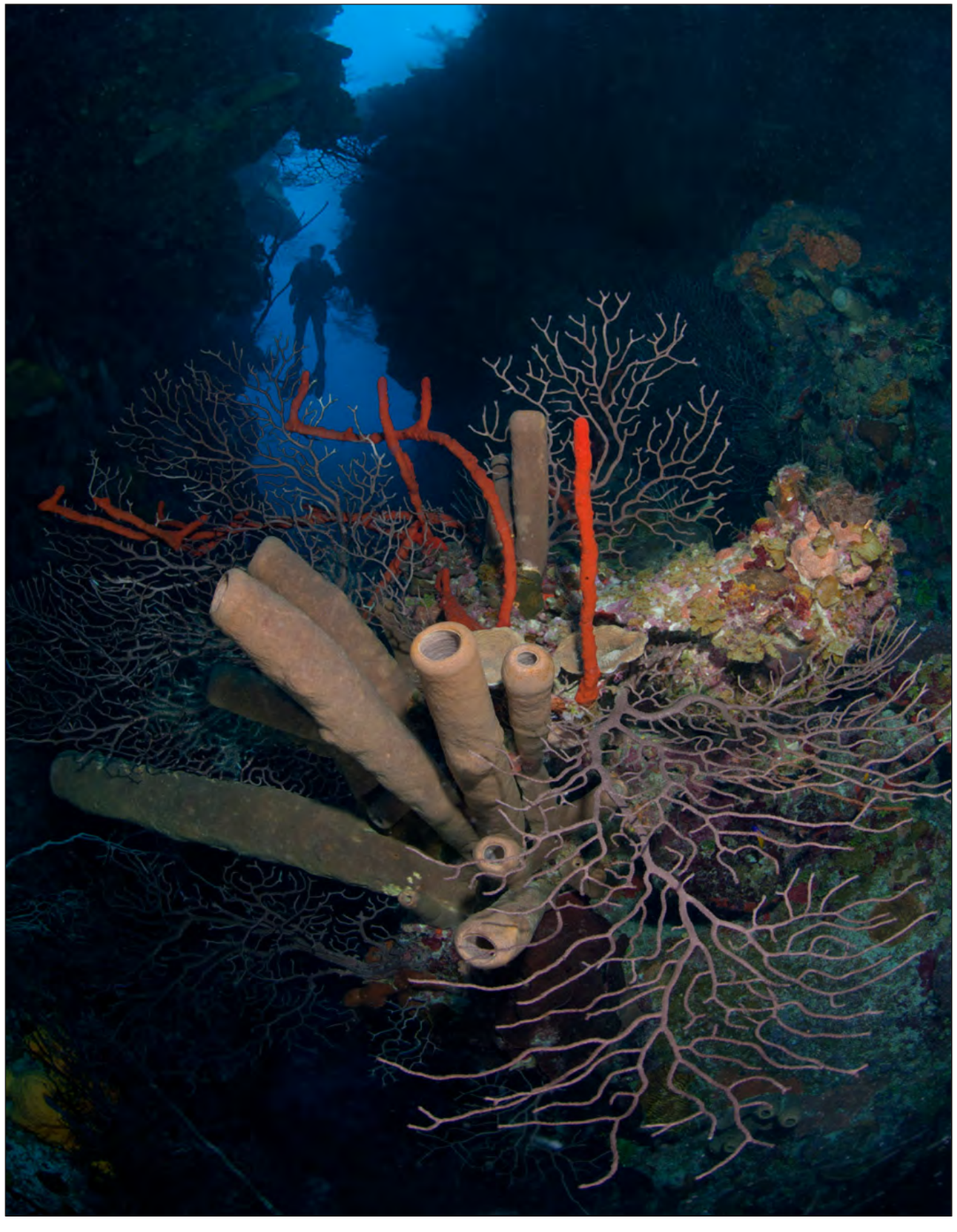
They were very excited and I was told it is quite common that they will give you a hickey if you hold onto the food too long. As the dive takes place at such a shallow depth on a sandy bottom, the water quickly gets filled with particles but it is still a spectacular sight.

At the end of the dive, our guide had a nice surprise. While we had been enjoying ourselves with the rays, he had placed a tube with squid some distance away from us.

The reason for this became obvious when he opened the tube and a large yellow moray eel came shooting out. Initially it was focused on the guide, but it then darted towards me with mouth open, apparently going for the reflection in my domeport. Afterwards we were told that they had nicknamed the eel ‘Psycho’. Even though I’m sure the moray is used to divers, I didn’t mind having my camera in between myself and his teeth!One of Cayman’s best ‘real’ dive sites is considered to be Babylon whose reputation has grown steadily. Babylon is on the North Wall, half way between Rum Point and East End.

Despite its location, Babylon is a very easy dive as the top of the wall starts at around 10m. At the very beginning

Dive the World
Grand Cayman



By: Peter de Maagt

of the dive we found a large, single barracuda just below the boat. The first few minutes were spent exploring the sandy bottom and the shallow reef.

However, the reason for its reputation is the topography of the wall; a sheer plunging wall face interrupted by a stunning pinnacle that is impressively decorated. Actually, Babylon is a site that you might expect to feature in the Lord of the Rings trilogy – barrel sponge formations that could swallow a diver. The wall and pinnacle are abundant with black coral, purple sea fans, multi-colour rope sponges and huge barrel and orange elephant ear sponges together with a large variety of other tropical marine life.

This site is extremely colourful, and to top it off, a shelter for all kinds of fish like chromis, barracuda, parrotfish and beautifully coloured angelfish. The top of the reef makes for an ideal and very interesting safety stop.

Perhaps the most fascinating site, certainly from an underwater photographer's point of view, is Grouper Grotto. This is a relatively shallow site and admittedly less colourful than some of the other sites, but it is a labyrinth of caves, canyons, tunnels and pinnacles that are all trying to get your attention and combine to provide some of the most interesting topography you are likely to see. I felt that this site was very characteristic of the rugged underwater topography on the east side.

The caves and tunnels are teeming with life. The typical cathedral light creates a special atmosphere inside the caves, while the tarpons guardthe caves and patrol the tunnels in formation. Some of the caves and swim-throughs looked a bit like a maze initially, but most of the time you could already detect faint daylight a few metres after entering into the cave.

In some of them you could find large

By: Peter de Maagt

schools of silversides followed by their ever-present companioning, the tarpons. Although absolutely harmless, tarpons do occasionally make you jump if you come round a corner and find one coming towards you. Towards the outside of the reef you find caverns filled with snappers, lots of small grunt and other small fish.

We also dived the latest attraction in the Grand Cayman. On January 5, 2011, the authorities sank the USS Kittiwake to serve as a dive attraction and an artificial reef. The wreck lies at the northern end of the famous Seven Mile Beach, virtually upright on a sandy bottom. The USS Kittiwake is a former submarine rescue ship about 80m in length and she is best known for her involvement in the search for the black box after the space shuttle Challenger disaster. Some people will say that the wreck still lacks character, but I liked the fact that everything was still relatively new and it gave you the feeling that you were diving in a big swimming pool of a film studio set.

The depth varies from 25m at the propeller to about a metre and a half at one of the masts. During the surface interval between dives we noticed a few snorkelers sticking their heads out of the water and mimicking di Caprio in the Titanic while standing on the crow's nest.

Although we didn't see too many big pelagics during the dives, there are groups of resident Caribbean reef sharks at some sites. You could assume that it's all about steep wall-diving in the Cayman, but there are also a few very nice macro sites. East Sunset Reef is a nice shallow reef area just a stone's throw away from the Ocean Frontiers base.

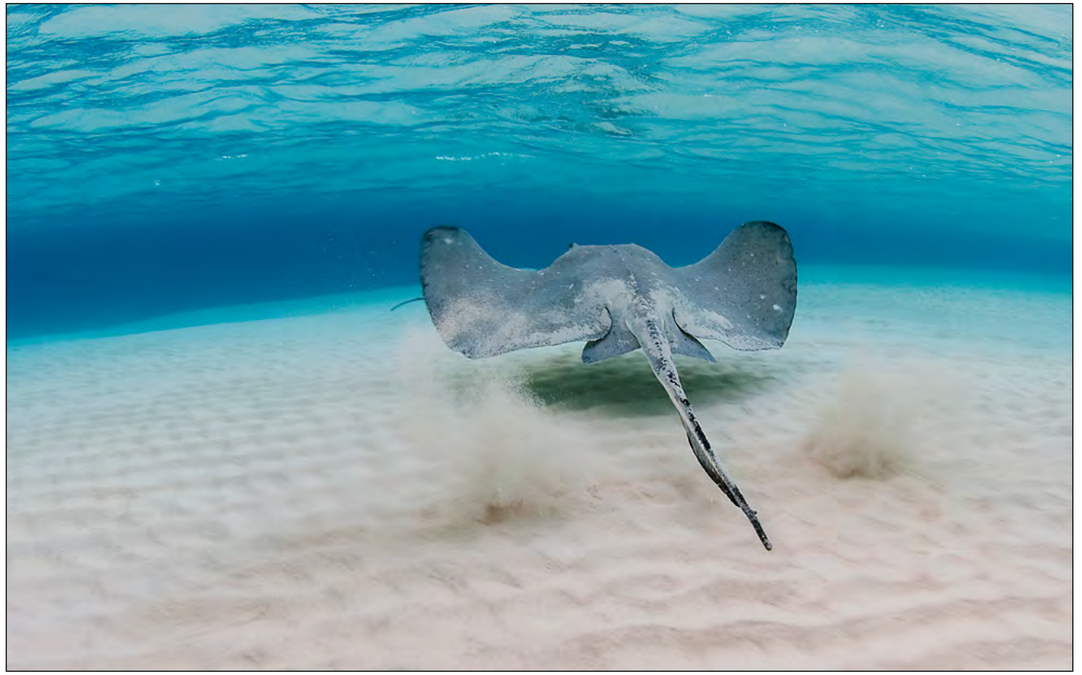
By: Peter de Maagt

They tend to use it as their standard training site and location for night diving because it is only about 6m deep. At first glance it is not really spectacular as it only features a few coral heads that nearly break the surface. There is an anchor which is claimed to be from the 'Wreck of the Ten Sails' and the history seems to be linked to some famous pirates. Sadly it is not that photogenic and because of the shallow depth the visibility is not that great either. However, after looking a bit closer it turns out to be a Mecca for macrolife.

Gobies and blennies, shrimps, flamingo tongues, sea conchs and other small critters can all be found there. Having overloaded on all the dramatic underwater scenery earlier in the week, simply critter hunting was a welcome addition.

Time flies when you are enjoying yourself and our jam packed stay came to an end all too soon. We felt sad to have to pack up and leave, but reflecting back on our stay it had been fabulous and we loved every minute. After all, the whole point of coming here is to enjoy life – and diving!

Dive the World
Grand Cayman



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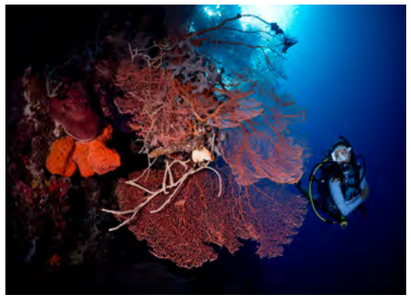


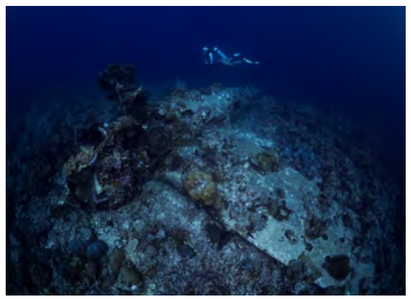


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Dive the World
Dominica

By: Christopher Bartlett

Dominica

The Emerald Isle

By: Christopher Bartlett

At last I can see Dominica in the distance, or rather the clouds forming over her mountainous peaks, the highest in the eastern Caribbean. I say at last as I am flying LIAT, aka Leave Island Any Time. I'm hoping the "Luggage In Another Terminal" version isn't apt this time.
The terrain is rugged undeveloped, wild mountainsides covered in lush forest. We haven't touched down yet but I can see the tree trunks rushing past the port wing tip.

The drive from Melville Hall airport takes me south along the choppy, windward east coast, up winding roads, through switchbacks and settlements of a few houses here and there, across some of the island's 300+ rivers, over a pass in the centre of the island, down the other side and along the tranquil west coast to Roseau, the capital.

Family-owned and run Castle Comfort Lodge and Dive Dominica are my hosts for three days, and greet me with a wicked rum punch. I will soon learn that Andrel the barman has a range of his own concoctions, some of which are award winners. (Andrel's Antidote was my personal favourite, a mix of various rums, juices, and spices that somehow tastes like you could have it for breakfast.)

With no beaches in Roseau, the hotel's bar and restaurant are right over the water, facing the sunset, and the dive centre is on site. My room, one of 17, was 30 seconds from everything so in no time my bags were in my room, my dive gear in the dive centre fffffor the following day's diving, I was perched on a bar stool chatting to fellow divers guests Martin, Joe, and Marco.

At 0845 the next morning we boarded one of Dive Dominica's dive boats, a twin hulled affair that can take 20 divers. We picked up three from the hotel next door and a group of 10 from Fort Young. With 17 of us on board, three dive guides came along to look after us. After a 15-minute ride south we were at Scott's Head Drop Off, so called as this promontory is where the British Garrison commander Scott was decapitated by the French. The island changed hands seven times in total, before the British finally wrested control of the islands for good.

The briefing was full and thorough, and then down into the clear blue Caribbean waters went I. Whilst not having the diversity of other warm water dive destinations, the Caribbean has its own unique fauna, and the reefs here are rich in sponges and endemic corals.

Schools of the strikingly blue Tomate swam past on the wall, trumpetfish lurked in wait for prey, and improbably shaped trunkfish puttered around.
It was a pleasant start. The second dive took us to Soufriere Pinnacles, just off shore from the picturesque village of the same name. A series of underwater mounds, the Pinnacles are literally covered with in stovepipe,

By: Christopher Bartlett

rope, and barrel sponges, and colourful schools of grunts and snapper.

The guiding was unobtrusive; the guides pointed out fish of interest and looked for critters, but were happy for buddy pairs to explore at their own leisure and both dives overran the intended max dive time of sixty minutes. Nitrox is available but really not necessary, there is reef from deeper than you can safely dive to the safety stop, so long dives on air are easy.

Despite the long dives and even with a surface interval over an hour, we were sitting down for lunch before 1pm. Martin, Joe and Marco were going for a shore dive later that afternoon, but I was signed up for an afternoon whale watching trip. Dominica is home to approximately 50 of the world's largest carnivores, the sperm whale. Year round mothers and daughters cruise the deep waters a few kilometres off shore and, between January and April when the sea is a little cooler, are joined by males looking to mate.

Using a hydrophone, we listened out for their distinctive clicking, like a superfast morse code. Occasionally the enchanting lullabies of passing humpback can be picked up, but not on this day. After an hour we hear d a faint sound, and 10 minutes' cruising later saw our first water spouts.

A mother and calf swam in front of us, their small dorsal fins dwarfed by their body length. After a few minutes they gave a final spurt from their blowholes, raised their tails as if to say goodbye, and dived down into the depths looking for food. Once they commence a deep dive there is no point hanging around, they can dive down to three thousand meters and go down for over an hour. Fortunately the whales tend to stay close to each other so it only took us a few minutes until the next jet of water was spotted. Over the next couple of hours we observed half a dozen pairs, and when we headed for home, the crew served sundowners n either fruit punch or a gingery, nutmeggy concoction of Andrel's confection.

The next morning we dived at Swiss Cheese, so called because of the number of holes and swim-throughs, and Champagne, which earned its moniker due to the bubbling natural warm underwater spring found on the sands at the end of the dive site.

Visibility was the same as the day before, a good 25 meters or more, and divers set off exploring the sites in small groups. The first site was fishy, with more snapper and Tomate and lots of chromis and large, solitary barracuda, the second started with a wall down to 25 meters and tapered up to a sandy slope and then plateau, dotted with coral heads. In one a small porcupinefish hovered in a window in a sponge, beautifully framed with the sun's rays beaming through the water behind it.

Dive the World
Dominica

By: Christopher Bartlett

Arrow crabs, more like large underwater spiders than crustaceans, lurked under miniature overhangs, in tiny caves, and on sponges. Whilst looking for seahorses on a small bed of seagrass, Marco briefly found a very small Octopus, and Martin found a scorpionfish in four meters of water under the boat. Another very pleasant morning all in all.

After lunch I swapped lenses and went for a macro dive in front of the dive centre. With no rivers nearby and no public access, the water was clear and reef in good shape. I merrily furtled around with my camera, finding eels cleaner shrimp with eels and small groupers, boxer shrimp and trumpetfish and juvenile angelfish going about their business.

Joe and Marco had hired a small SUV and invited me to explore part of the island with them. After a run through Roseau, a gander at the market, and lunch in a local eatery, we headed up to firstly the spectacular Trafalgar Falls, and then the ethereal Titou Gorge. Trafalgar Falls are actually two waterfalls, Mother and Father, which plummet down from on high.

Next to them lie natural pools of 30-degree centigrade mountain water, a great place to relax and take a natural spa. Though there are other places to do this too. Nearby Screw Spa has a constant stream of volcanic mineral water feeding a series of stonewalled pools. The higher the pool the warmer the water. With Joe at the wheel the more places we stopped to relax, the better.

Marco took over driving duties for the trip up to Titou Gorge, where the water was a refreshing 21 C and the

By: Christopher Bartlett

final swim to the base of the waterfall energetic with a camera housing in hand. Above the narrow gorge, barely five meters wide in parts the forest is lush and verdant, the full canopy hiding much of the cloud cover, the steamy air filled only with the sound of the rushing water below.

From the base of the Gorge it is a five-minute swim through the dark and narrow passage to the open and bright natural light of the shaft carved out by the waterfall. There isn't much to hold onto and the bottom is five meters below, so once I'd made it as close to the Falls as I could get swimming one handed, I drifted gently back to the entrance, and another warming natural spring.

The most spectacular spring of all though must be Boiling Lake. Located in Morne Trois Pitons National Park, a World Heritage Site, it is a 60-metre wide flooded fumarole at the end of a demanding but spectacular path. The hike goes past thick purples mosses and rare orchids that can only grow due to the sulphuric gasses released through volcanic vents and hot springs. The source of the heat is believed to be a magma chamber beneath the lake. The 4-km return walk takes around six hours and although it can be hard work in places, is a great way to experience pristine Caribbean rainforest.

Colibistrie sits 30 minutes north of the capital, still on the east coast, around 30 minutes south of Portsmouth, once the capital until the French had had enough of the surrounding mosquito-ridden swamps and shifted it south. The names of other settlements bear witness to the island's bilingual past, with Colihaut and Bruce's Castle being more prime examples. Colibistrie is also the nearest settlement to Sunset Bay Resort, the fruit of 17 years' dedication and graft, the dream of a Belgian couple of restauranteurs, called Marcella and Roger.

Set just back from their own beach of volcanic black sand, the 11 rooms are comfortable and spacious, with a pool, sauna, and river. The in-house dive center is on the premises, just down a short flight of steps from the restaurant terrace. I arrived in time for aperitifs, generous servings from a selection of fine rums, before fish soup and the house speciality, a huge plate of lobster, both spiny rock and slipper varieties, served with frites and croquettes, naturellement. After washing it down with a few Kubuli beers, and Roger's ritual "digestif offert par la maison" of eight-year old rum, I was ready for bed.

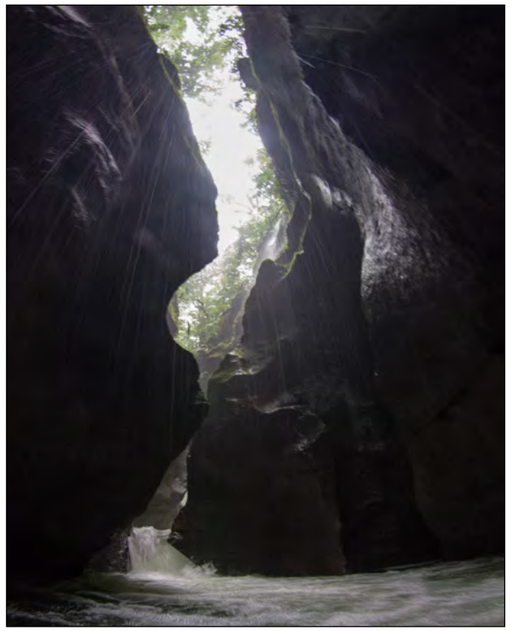
The morning birdsong was delightful, and the flat sea twinkled at me as I ate my breakfast of perfect crepes, eggs, bacon, and fruit. There were only three of us diving, and dive guide Stephan, an ex-reef scientist-cum-dive instructor, took us to Rina's Hole, which sounds even more inappropriate when said with French intonation and accent, and Coral Gardens.

Dive the World
Dominica

By: Christopher Bartlett

The reefs here are more of the sloping variety rather than the sheer walls and pinnacles of the south, but the coral and sponge life is just as good, with large coral heads and swim-throughs, fields of swaying fern-like fans, solitary great barracuda and the occasional turtle. With the amount of sponges around and Bommie to sleep under, it looked like turtle heaven, and evidence of their regular mealtime visits was plentiful.

The house reef is also excellent, dropping off surprisingly quickly, as I hit 35 meters in the afternoon with the bottom some way below me still. Yellow-tailed barracuda swam around a pinnacle at 14 meters, some jacks chased baitfish Whilst garden eels swayed mesmerically on the sandy slopes. Despite the feasting in the restaurant, lobsters were abundant and ventured further out of their hidey-holes than others I have seen elsewhere. 90 minutes flew by and only my air gauge needle made me surface, though the smells wafting down from the kitchen en as I rinsed my gear



dispelled my regrets.

There are a dozen dive sites that Sunset Bay dive regularly, some as out and back circuits from the boat, others as drift dives. Nose reef, a series of Gerard Depardieu-esque proboscii-shaped ridges starting at 40 metres and running up to 14, and Whale Shark were my favourites. Of course Whale Shark has no whales and no sharks, though I did find a partially eaten dead stingray, but was once the site of sighting, according to local lore. Stephan made an admirable but futile attempt to teach me some endemic coral names; I was finding it hard enough to remember the names of the different rums Roger was giving us.

The northern half of the island also has plenty of non-diving attractions.

I went for a rowboat cruise up the Indian River, the only navigable river in the country. It took an hour to row up to the last navigable spot (to be more precise, it took the guide an hour to row, I just sat, looked, and listened). The scene with the witch from Pirates of the Caribbean was filmed here, but the attraction for me was the lush scenery, the bird life and the crabs living in the tree roots.

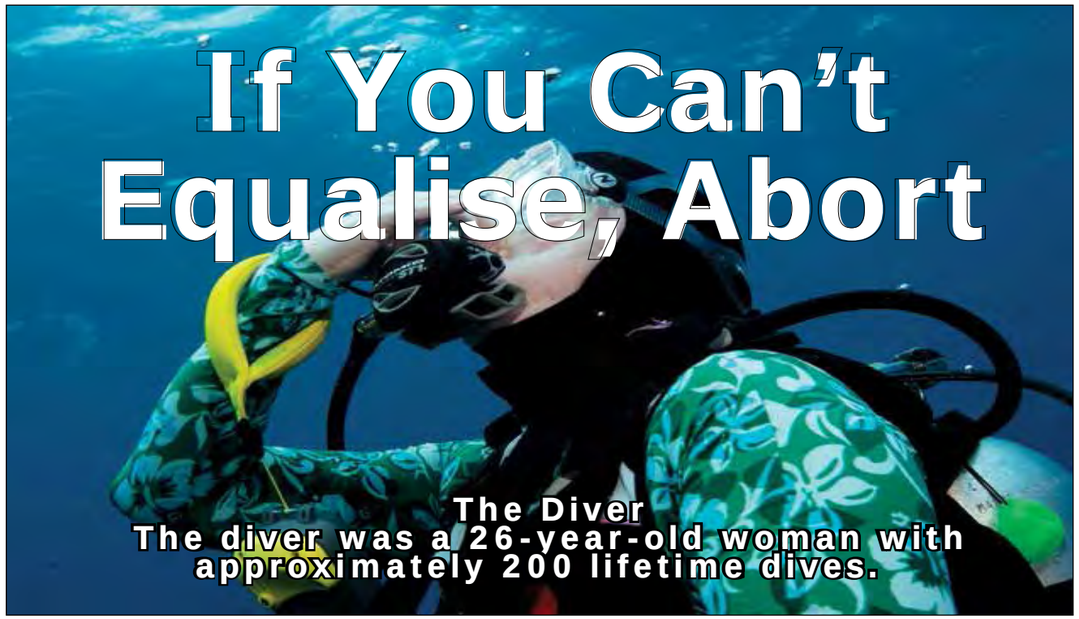
The ruins of Hampstead Estate at Hampstead beach, Red Rocks beach, and the Carib territory, where some 3000 Caribs live, are all worth a visit, too. And the island is a hiker's paradise with a 14-segment south to north trail traversing the island. One can do the whole thing in 10 to 14 days, or just a few segments, either camping or staying in guesthouses along the way. For active travelers and nature lovers, Dominica is the jewel in the Caribbean crown.

Indigo Safaris organizes tailor-made trips to Dominica covering accommodation, diving, hiking, guided walks, and vehicle rental. See www.indigosafaris.com or email info@indigosafaris.com

Dive the World
Dominica

By: DAN's Matías Nochetto, M.D. Photo: Stephen Frink

If You Can't Equalise, Abort



The Dive
She did a single, morning dive to a maximum depth of 27 metres. She reported no troubles equalising or other complications during her descent. Approaching her safety stop near the end of the ascent, however, she was struck by a sudden massive headache, nausea and vomiting. She skipped the safety stop and ascended directly to the surface. The headache and vomiting continued on the boat, and she also experienced an onset of what she called dizziness. The crew helped her remove her gear and administered oxygen. After a few minutes with no improvement, the crew recalled the rest of the divers and called emergency medical services (EMS) and the DAN Emergency Hotline.

Analysis
Further discussion revealed that the dizziness the diver reported was likely true vertigo. Vertigo is characterised by a spinning sensation and is usually accompanied by nausea and vomiting, while dizziness is a sensation of loss of balance.

In a diving context, a sudden onset of vertigo during ascent or descent is suggestive of ear barotrauma, with inner-ear barotrauma (IEBT) being most concerning. Ear pain may or may not be present. Vertigo is also common in cases of inner-ear decompression sickness (IEDCS). Symptom onset for IEDCS is usually not so sudden and dramatic, and the dive profile did not seem to be aggressive enough to immediately suggest IEDCS. Nevertheless, such a diagnosis could not be completely ruled out.

Distinguishing between IEDCS and IEBT can pose a significant diagnostic challenge, but doing so is critical because the two conditions require very different therapeutic approaches, and misdiagnosis and mistreatment could be harmful.

Headaches are a common post-dive complaint, often the result of a sinus barotrauma.

Although much rarer, another possible diagnosis was a very bad sinus barotrauma with gas leaking into the cranial cavity (pneumocephalus). The sudden onset of a massive headache associated with a significant drop in barometric pressure accompanied by nausea, vomiting and vertigo was suggestive of such a rare diagnosis.

The diver did report some difficulties equalising and what seemed to have been some sinus pain during descent as well as a sensation of pressure later during ascent. The diver's recent history of a cold increased the likelihood of a very bad sinus barotrauma.

Pneumocephalus is usually diagnosed using imaging, but small amounts of gas can be reabsorbed in a short time. Because of the relatively small window for a positive diagnostic image and the harmful — even fatal — nature of pneumocephalus, ruling it out should be a priority.

The mechanism of injury is assumed to be a reverse block of the sinuses. The presence of mucus and inflammation of mucous membranes are the most common causes of transient sinus blockage. These generally pose no greater risk than inflammation in the mucous membranes of the sinuses, but with the ambient pressure changes involved in diving, a partial or intermittent blockage may act as a valve that impairs normal gas flow in the sinuses.

Gas expansion from a reverse block can be significant enough to disrupt the thin bone walls separating the sinuses from each other and from the cranial cavity. When a sinus cavity suddenly relieves its pressure into another one, this usually manifests as pain, a headache and possibly a nose bleed. Gas leaking into the cranial cavity (pneumocephalus), on the other hand, can result in anything from headaches to life-threatening neurological deficits.

Potential consequences will depend on the amount of gas and the degree of displacement of normal anatomical structures. This sort of injury can initially manifest as a moderate or severe headache or, in severe cases, result in seizures or even death. Most cases of pneumocephalus resolve spontaneously without surgical intervention. Management involves breathing oxygen, keeping the head of the bed elevated, taking antibiotics (especially when traumatic injury is involved), managing pain and performing frequent neurologic checks and repeated CT scans.

Evaluation and Treatment
The diver's X-rays revealed subtle signs that could indicate pneumocephalus, which warranted admission to the hospital. These findings, however, could not be reproduced during a CT scan several hours later.

These diagnostic discrepancies prompted some discussions, but based on the case history, symptom presentation and initial imaging, the diagnosis was still thought to be pneumocephalus following sinus barotrauma. The patient had been breathing pure oxygen since surfacing, including during transportation, evaluation and hospital admission, which could have sped up the reabsorption of the gas.

In the absence of concrete evidence of pneumocephalus, the treatment plan was for the patient to continue to breathe oxygen, begin a course of antibiotics, undergo repeat CT scans and be observed for no less than 48 hours.

A six-month follow-up appointment revealed the diver had a very good outcome and had no complications during or after her hospital stay. She has not resumed diving.

Discussion
One of the first rules we learn as student divers is to discontinue diving when we experience difficulty equalising. This is probably the first rule we all break. Questions about the use of decongestants are among the most common asked on the DAN Medical Information Line. (Learn more about decongestants and diving at DAN.org/medical/FAQ.)

With regard to barotrauma risk, the most critical phases of a dive are the descent and ascent, during which massive barometric changes take place. When divers have difficulty equalising during descent, dive leaders often go to excessive lengths to avoid aborting a dive, encouraging divers to try different equalisation techniques and instructing them to alternate between ascending a few metres and trying again to descend. It is also not uncommon to see divers pinching their nose and blowing during ascent, presumably because they are experiencing equalisation difficulties while ascending. Both of these practices are counterproductive and significantly increase the risk of middle-ear, sinus and inner-ear barotrauma.

Problems with sinus inflammation and congestion may be amplified by the sinuses' natural responses to cold temperature. Exposure to cold triggers a reflex to limit heat that manifests as increased mucus production and swelling of mucous membranes. This is known as "cold-induced rhinitis." Sea water can also have an irritating effect on mucous membranes, further stimulating mucus production.

Normally this has no negative consequences other than copious amounts of clear mucous when we surface, but be careful when diving: If you are recovering from a cold or have other predisposing factors such as active allergies, gas movement between sinuses may be significantly more difficult. If you experience mild difficulty equalising at the beginning of a dive, chances are the increased mucus production and swelling of mucous membrane may make equalising even more difficult near the end of the dive. Remember you can always abort a descent; aborting an ascent is a lot more problematic.

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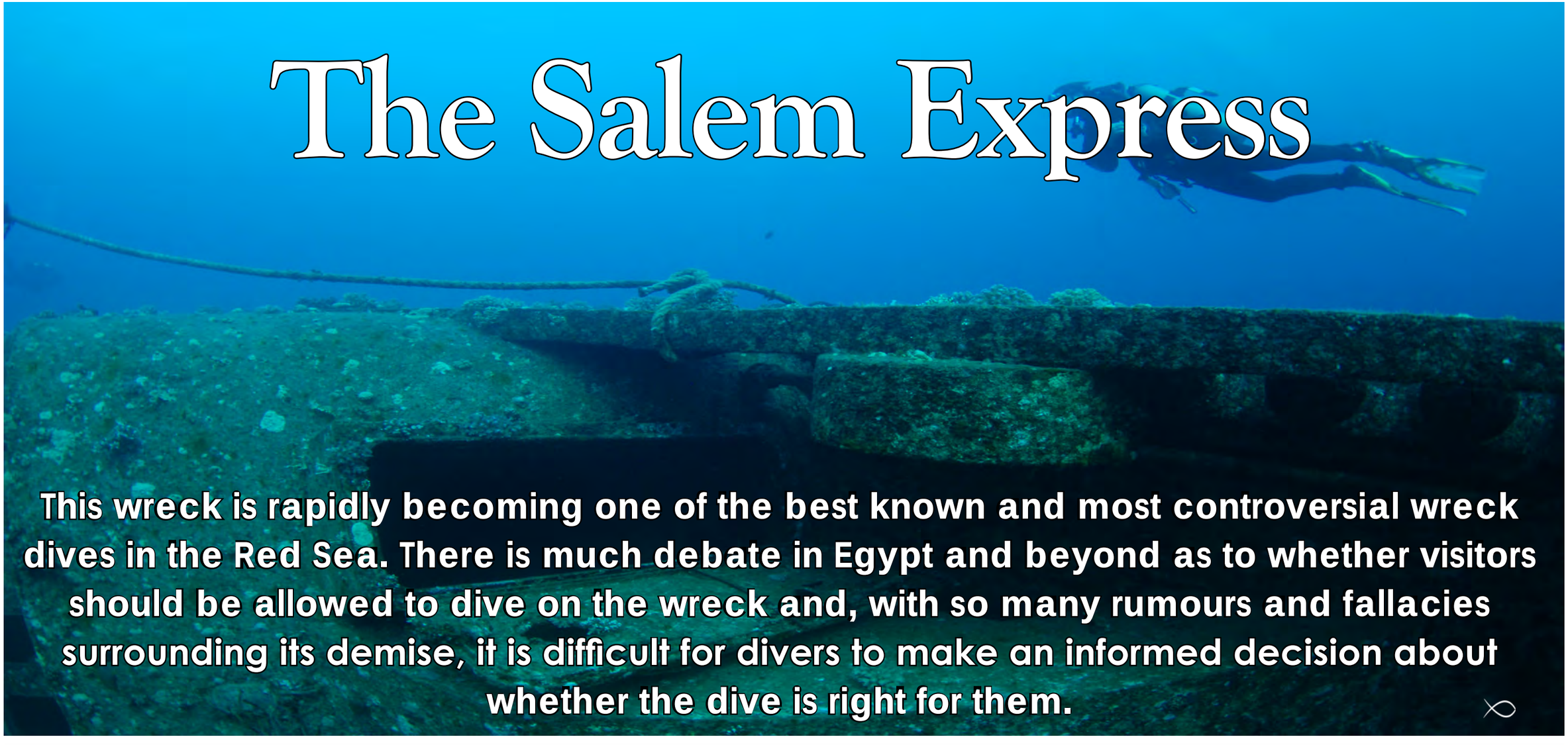
Exploration
The Salem Express

By: Chris Gooda

The Salem Express



This wreck is rapidly becoming one of the best known and most controversial wreck dives in the Red Sea. There is much debate in Egypt and beyond as to whether visitors should be allowed to dive on the wreck and, with so many rumours and fallacies surrounding its demise, it is difficult for divers to make an informed decision about whether the dive is right for them.





By: Chris Gooda

On Monday, November 30, 1964 the Fred Scamaroni, named after a Corsican resistance leader in the Second World War, was launched in La Seyne (near Toulon), France. After her first sea trials, fire ravaged the engine room at the end of June 1965 and it was only after 11 months of rebuilding that she was finally able to make her maiden voyage from Marseille on Tuesday, May 17, 1966.

She was a very advanced vessel for her time. One of the earliest 'roll-on/roll-off' ferries, she boasted liftable car decks, adjustable pitch propellers (allowing improved acceleration and better efficiency at speed) and a cutting-edge ballast system allowing the vessel to adjust to the heights of different docks.

Troubled with further engine fires and small collisions, she spent 11 years plying her trade in the Mediterranean for a variety of French shipping companies until, in 1980, she was sold to Ole Lauritzen for $4m, and renamed the Nuits Saint Georges. He planned to use this vessel to start a new shipping line and its first route was to be between Ramsgate and Dunkerque.

This venture was only to last for five months as, because the of exposed nature of Ramsgate, inadequate dredging of its harbour and blockades of Dunkerque by protesting French fisherman, the company was liquidated in September 1980. The ship was then immediately sent to Vlissingen in Holland to be decommissioned.

By: Chris Gooda

A year later in November 1981, the ship was sold to the Lord Maritime Enterprise in Egypt for 3,6m guilders, and after being renamed the Lord Sinai, she began working in the Red Sea in what was to become the final chapter in her story. From 1982 she provided a service between Suez and Aqaba (being renamed the El Tahrir in 1984).

In 1988 she was sold for the final time, to the Samatour Shipping Company, and was given her now infamous name – the Salem Express. For the following years she provided a popular service between Suez, Safaga (in Egypt) and Jedda (in Saudi Arabia) until tragedy struck on the night of December 15-16, 1991.

She departed Jedda with 578 passengers (mainly Egyptian workers returning to their families from Saudi Arabia) and 72 crew, on her 800km journey to Safaga. Captain Moro, a former teacher at the Egyptian Naval Academy and an experienced seaman, was at the helm. The majority of the voyage passed without incident despite very strong winds and high waves.

As the ship neared Safaga the captain made the fateful decision to take a short-cut through the Hyndman Reefs, which would put the boat in calmer waters and shave at least an hour from the journey time compared with the normal offshore route.

Just before midnight the ship struck the southernmost of the Hyndman Reefs, opening the hull on the starboard side. The force of the impact also opened the bow doors and the ferry’s fate was sealed. Water rushed into the undivided

By: Chris Gooda

car deck and the ship immediately began to list heavily to her starboard side. Panic quickly spread amongst the passengers and soon the engines and generators stopped, near darkness aggravating the situation.

Within 20 minutes the Salem Express had sunk, the speed of the incident and the immediate heavy listing meant that none of the lifeboats could be properly launched and other, smaller vessels in the area could only watch in horror as the situation unfolded, unable to assist due to the horrendous weather.

A total of 470 people lost their lives that night. The majority of the 180 survivors battled the storm force wind and waves to swim the 6km to shore. Many of the victims went down with the ship and, despite a valiant recovery operation, the wreck was eventually sealed with many bodies still inside. Today the wreck lies on her starboard side in 30m of water, her shallow port side just over 12m from the surface.

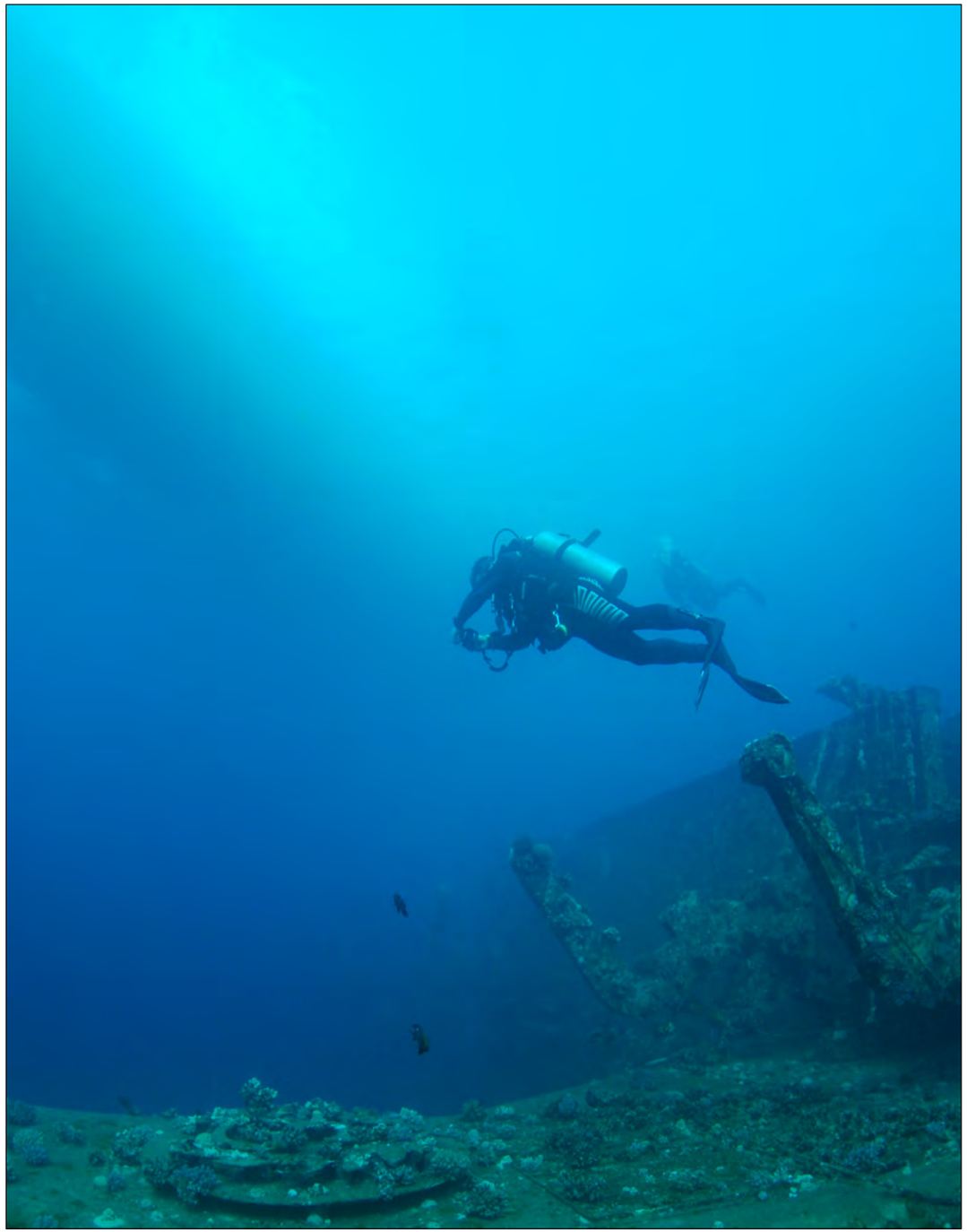
The wreck has become a haven of marine life. Frogfish are often spotted on the two masts protruding from the upper decks, beautiful red tube sponges adorn the wreck and the profusion of acropora and pocillopora finger corals shelter a dazzling array of brightly coloured coral guard crabs.

The almost horizontal port side of the ship is densely populated with many different species of pipefish and several different species of parrotfish graze on the algae covered surfaces.

When divers first explored the wreck, many pieces of luggage and personal belongings were scattered across the sea floor. Whilst over time weather and irresponsible divers have dispersed the majority of this debris, there are still tell-tale reminders of the ships tragic demise.

Currently there are no restrictions on diving the wreck and it is ultimately a matter of personal choice to decide

Exploration
The Salem Express



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By: Chris Gooda

whether you will jump in the water here. This article should provide the information you need to make that decision (which should not be taken lightly). For those who choose not to visit the ferry there is a small gotta (reef) to the east of the wreck which offers a pleasant dive and a chance to see a collection of nudibranchs and juvenile wrasse.

If you do choose to dive the wreck, please stay outside – the wreck is a grave and victims do remain trapped within. Unfortunately some disrespectful and ill-informed divers do still penetrate the ship to steal trophies and take irreverent pictures which they later publish on the internet.

Salem Express myths

*The Salem Express was filled with pilgrims returning from the Hadj – The Hadj pilgrimage had taken place in June 1991 and, whilst there will have been some pilgrims travelling outside of this time, most passengers will have been Egyptian workers returning to their families.

* An extra deck had been added to the ferry, making it top heavy and allowing it to roll over – This is simply not true, photographs of the boat from when it was first built show an identical design to the wreck that remains today. The myth probably arose from confusion with another ship-wreck.

* The ferry was massively overloaded – According to the Saudi Arabian authorities the ferry was officially carrying 578 passengers and there is no reason to doubt this figure. When new the boat was licensed to carry 1 120 passengers at night, so regardless of changes to the boat's licensed capacity the boat was undeniably not overloaded.

Statistics (as published in 1966):

Length: 115m
Width: 17,83m
Draft: 4,92m
Power 14,880hp
Top speed: 20 knots
Vehicle capacity 140/230
Cargo capacity: 192 LIM (Lanes in metres)
Passenger capacity: 1 256 (day)/1 120 (night)
Crew: 11 officers and 63 seamen

Exploration
The Salem Express

By: Karlien Euvrard

Photo School

Changing the Angle

Have you ever paged through magazines and wondered how professional photographers can take striking photographs of ordinary subjects? A few simple techniques can easily change your picture from being good to being surprisingly great.

There are a number of simple techniques which photographers can apply to significantly enhance their photography.

One of these techniques is changing the angle of the shot or switching between landscape and portrait views. Changing the angle of your shot is a simple, yet effective technique to take interesting photographs and allow you freedom to control the impact of the subject.

There are a number of different angles from which you can take pictures; these angles are those taken from an eye view, elevated heights, lowering your angle, bird's eye view and a slanted view.

Eye-level pictures are most common. It is basically the view of a subject as seen in real life. This is the normal, natural way of taking pictures. Although great pictures can be taken from this angle, it's basically the view as you would expect.

To create an interesting image with a different impact, you can take pictures from elevated heights or by getting lower than the subject. By taking pictures from elevated heights, you can make images appear insignificant or submissive.

Getting lower than the subject, especially in underwater photography, is an excellent way of creating majestic images of bigger subjects such as divers, dolphins, sharks, turtles and rays. Some of the most beautiful underwater pictures are taken from angles lower than the subject, typically a picture taken from a deeper point towards the surface. This angle creates an impression that the subject is more powerful and dominant. It can also create amazing silhouettes by using sunlight penetrating the water from the surface.

A bird's eye view is where the photographer gets on top of the subject and takes the picture from above. This is a view to give you a completely different and unnatural effect. Slanted views are any view that is purposely tilted to change the horizon to a tilted angle.

This can also give a dramatic effect. A great advantage of this technique is the fact that it gives you the ability to change the background. Often, great subject disappears or loses impact in a busy background, for example, taking a picture of a subject on a busy coral reef. You can control the background of your picture by taking the picture from different angles.

Landscape and portrait

There are two general orientation options of your camera; vertical and horizontal. When we shoot vertically, it is referred to as 'portrait' and horizontal images are referred to as 'landscape'. Camera orientation is also another very important technique to keep in mind.

There may be a number of things which you would like to do with the photographs after your trip – always bear in mind that magazine covers are mostly in a portrait layout, whereas digital photograph frames, postcards and canvas prints are mostly in a landscape layout.

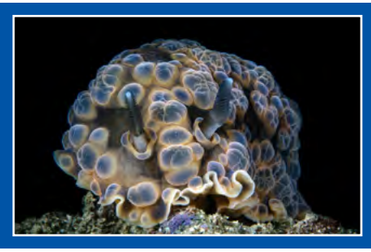
It is always good to take a picture in both the portrait and landscape format to ensure that you get the best angle and composition as well as options for photographic usage after your dive trip.

Through the Lens
Photographer

Steve Coutts

Steve Coutts

A journey through the Lens



Steve Coutts

I live on Sydney's Northern Beaches and fortunate to have such incredible diving around me.

Here is a short summary of my photography diving Sunday afternoons as a child were spent watching natural history documentaries on TV and so blossomed the fascination with the underwater world.

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

Sadly the area had been dynamite fished so there wasn't a lot to see, but the feeling of weightlessness and being an explorer in my own right was nurtured.
It didn't take long to plan my next adventure, this time to do my advanced course in Sharm el Sheikh, Egypt.

What an experience, the huge corals, the deep canyons of the Straits of Tiran, the large pelagics and schooling fish. It was then that I realised that I wanted to be able to tell my story in images and not just words.

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

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

It wasn't until I moved back to Australia in 2006 was I able to dive regularly and begin to improve my photographic knowledge and skills.

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

Most of my diving was shooting wide angle subjects and I remember telling my dive buddy Pete McGee that shooting nudibranchs wasn't my thing and you won't catch me photographing them.

Words that he often reminds me of.
I upgraded my equipment further to Nauticam housing, INON strobes (Z240 and now Z330) and Canon 5DMkIII / 5DSR cameras. I further increased my lenses to include 8-15mm fisheye and 100mm macro lens. The ergonomics of Nauticam was like a breath of fresh air, allowing control to finger tips and really helped my photography.

In order to get better at macro, I was often found hunting bugs and spiders in the garden and I soon realised how much we walk past every day and miss out on. Taking the time to slow down and look, and I mean really look opened my mind to the possibilities of capturing this tiny world in a camera.

It was then the equipment began to get more specialised with Nauticam SMC1 and SMC2 diopters, a 20mm extension tube and backscatter mini flash snoot.

My macro underwater took a little while to progress and reached out to Ken Thongpila for some mentoring. I had tried to teach myself and it was a long learning curve. Having someone to share ideas, techniques and give you feedback is so important.

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

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

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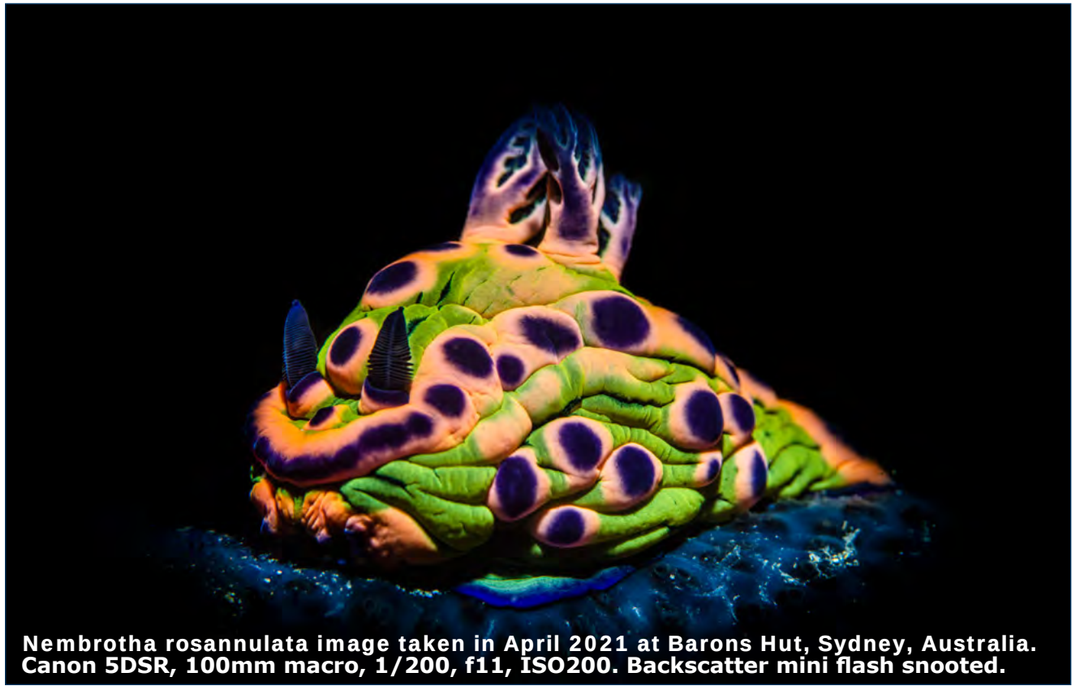
Steve Coutts

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

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

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



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

Steve Coutts

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

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

Steve Coutts

American Crocodile image taken in August 2018 at Banco Chinchorro, Mexico. Canon 5DMKIII, Canon 8-15mm (@15mm), Inon Z240 Strobes, 1/250, f8, ISO500

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

Steve Coutts

Eastern Gobbleguts brooding eggs image taken in February 2021 at Chowder Bay, NSW, Australia. Canon 5DSR, 100mm macro, 1/100 f25, ISO200. Backscatter mini flash snooted.

Ceratosona brevicaudatum image taken in July 2020 at Bare Island, Sydney, Australia. Canon 5DSR, 100mm macro, 20mm extension tube, 1/250, f22, ISO100. Backscatter mini flash snooted.

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

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

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Giant Stride
Electric Blues

By: Malcolm Nobbs

Electric Blues

It's pretty close in size and shape to a folded cocktail umbrella, barely visible in the gloom. And it's one of the most remarkable things I've ever seen underwater - once I managed to even spot it.

Electric Blues

By: Malcolm Nobbs

At 30 metres on this rubble slope it might just be another bit of sand-coloured detritus, until I wave my hand over the top of it. I know octopus skin has no blue pigment, yet those vivid, electric blue rings instantly flash like internal LEDs, outlined a little more slowly by the kind of dark patterning familiar to anyone fortunate enough to encounter other octopuses underwater regularly.

This mesmerizing light show is, of course, a warning. Smaller than my little finger, this beastie is letting me know I need to stay away. And for good reasons of self-preservation, as well as basic courtesy, I'm going to do as it suggests.

Cephalopods – octopuses, squids, cuttlefish and their cousins - are all intriguing. The alien-ness of their visual language, the incredible high-speed nervous system that turns their whole skin into a sophisticated communication system, their other-worldly senses, and how they manage to get so smart and become such impressive killers in such brief lives. But even amongst the cephalopods, the miniscule blue-rings stand apart, punching far, far above their weight, both as predators and as sophisticated visual communicators.

Twenty-six is the first number you hear. Often repeated, almost anywhere someone comments about these octopuses; one blue-ring has enough venom to kill twenty-six adult humans. The second number is 1200. Tetrodotoxin, the venom produced by bacteria in the salivary glands of blue-rings (the same poison found in pufferfishes) is 1200 times more toxic than cyanide.

Yes, blue-rings are, to an insane, ridiculous extent both venomous (to anything they bite or release saliva in the vicinity of) and poisonous (to anything that tries to eat them – their bodies have the same toxin right through their tissues). Sadly, almost

Giant Stride
Electric Blues

By: Malcolm Nobbs

all the research that has been carried out on blue-ringed octopuses has focused on the poison - it's surprisingly hard to find out anything more revealing about the lives of these splendid little creatures. We're not even sure how many species there are or the full geographical range of each species.

We can surmise from what we know a rough overview of where and how they live their lives. Different enough to be given their own genus, Hapalochlaena, blue-rings are found inshore from India to Japan and down to the south of Australia.

They like shallow water, and can often be found in rock pools, sand, reefs, seagrass and rubble down to 30 metres or more. Most species seem to be almost exclusively restricted to Australian coastlines, it being almost traditional for Aussies to have the majority of the world's deadly animals.

Blue-rings are so much easier to find at night. Diving at night in the Philippines, photographer Malcolm Nobbs won a bet with his dive guide on who would be the first to spot one. 'The flashing blue warning signals were impossible for me to miss. The tiny octopus did not back off, its tentacles unfurled into a dramatically aggressive posture, as if ready to strike like a cobra.

I knew it was a bluff; they are not an aggressive creature - but it was certainly an impressive bluff'.

The tiny blue-rings encountered from Sri Lanka through much of the Indonesian Archipelago, up to Japan and out to the west Pacific islands are treated as a single species - the Greater blue-ringed octopus Hapalochlaena lunulata.

However, it's possible that there are a few cryptic species in there that haven't yet been described. The Greater blue-ring is one of the smaller blue-rings at around 5cm mantle length and ten grammes or so; the 'greater' refers to the relatively

By: Malcolm Nobbs

large rings, not the size of the animal.

Greater blue-rings have characteristic blue lines through their eyes. Greater blue-rings seem to develop their young quickly, hatching their eggs for a brief dispersal phase in the plankton, and the whole life cycle seems to be over in less than a year. However, the individual I photographed in the Lembeh Strait has rather small rings, and no eye-line. It may be another species, or it may be simply a young Greater Blue-ring.

The Southern or lesser blue-ringed octopus Hapalochlaena maculosa is a larger octopus, growing to the size of a child's hand, with smaller blue rings (hence the 'lesser').

It is usually found in cooler inshore waters off southern Australia. Unlike its smaller, greater-ringed cousin, it seems to invest a little longer in development of young who hatch straight to the ground as tiny versions of their parents. Like greater blue-rings, these animals live less than a year.

The Northern Australian Greater Blue-ringed Octopus is, confusingly, a little larger again, and doesn't yet have a scientific name. This seems to be a larger version of the Greater blue-ring, only found off northern Australia.

The Blue-lined octopus Hapalochlaena fasciata may be one species or may be two. Medium-sized, and apparently preferring moderately warm subtropical water, blue-lines are found off eastern Australia and off the Korean Archipelago. Blue-lines have a combination of streaks on the mantle and rings on the arms. Malcolm frequently sees Blue-lined octopus in the shallow waters of Nelson Bay, north of Sydney.

His sightings are generally on night dives but in the Australian late summer, the octopus can be seen in the day time as well. He assumes this is because the octopuses are making themselves visible for mating encounters. In February this year, he counted up to 4 Blue-lined octopus on most daytime dives.

The Bengal blue-ringed octopus Hapalochlaena nierstraszi is only known from a couple of specimens from India, and seems to be a more rounded-mantled, long-armed, rather elegant little octopus.

One reason we don't know much about these octopuses is that they are tiny and cryptic – they spend most of their time a yellowish sandy colour, blending in with their backgroud. Another is that most species seem to be more active at night. They're all small, thimble-shaped octopuses, short-armed and mostly with a pointed tip to their mantle ('body'). Depending on the species, they are adult at about six to about twenty grammes, and measure eight to about twenty centimetres to the tips of their outstretched arms.

Most blue-rings only seem to have ink glands for the first two or three weeks of life, as rice grain-sized babies. Blue-lined octopuses, however, have been seen by divers in Nelson Bay, as adults using ink, and in some Greater Blue-rings have been recorded releasing their deadly toxin with the ink. From aquarium studies, blue-rings lose their ink as they grow, build up their venom in their salivary glands and start to hunt tiny crustaceans at about a month old, develop the ability to flash their warning rings a couple of weeks later at about pea-size.

They then continue to grow and mature at a spectacular rate, becoming adult four months after hatching. The rest of their lives seem to be spent hunting (mostly crabs and other crustaceans), growing and trying to mate. Most blue-rings live a few months, others in some places apparently make it into their second year.

Mating and reproduction seem to be particular preoccupations, something these octopuses take rather seriously.

Females only produce 50-100 eggs, and males about the same number of spermatophores. As they die soon after they've finished breeding, it makes sense to be focused on just where you share these precious and limited resources, so mating strategies seem to be serious business, and blue-rings seem to try and mate with as many different partners as possible during their two-month or so reproductive adult life.

Mating itself consists of a brief introductory caress followed by a pounce and a smother by the male, covering his mate for an hour, but occasionally up to six hours, before she pushes him off. It seems that at least sometimes, amorous males do not distinguish the gender of their prospective mate, sometimes mounting other males briefly before realizing their mistake and breaking off the encounter. The bigger and older a blue-ring is, the more sex it seems to have. Some males will seek out smaller and younger females to try and ensure their sperm packet is at the front of the queue, as it were.

Mating is observed from time to time by divers, and often exceeds the length of a dive. The photos here of mating Blue-lined octopus were taken in Nelson Bay by Nic Rewitt.

Fertilised eggs are either laid in batches or incubated carried underneath the female's arm skirt (as shown here in Bryan Mayes' picture, again in Nelson Bay), depending on the species, for a couple of months. As in all octopuses, just before she releases the fertilized eggs the mother stops eating, and slowly dies over the next weeks while caring for her unborn next generation.

Warning, hunting and being hunted
Small, fleshy and slow-moving, blue-rings would be easy morsels for predators were it not for the combination of the remarkable camouflage ability common to all octopuses, and of course the stunning warning coloration they can flash in a split second. The electric blue of their rings

By: Malcolm Nobbs

comes from iridescent mirror-like plates called iridophores in their skin, whose orientation is controlled by tiny muscles, and remarkably coordinated to reflect blue light in the direction of the would-be attacker.

The skin above the iridophores, unusually, doesn't have the brownish pigment cells found all over the skin of other octopuses, squids and cuttlefish, so there is nothing to cover the magnificent glow of the blue pearlescent mirrors.

The legendary venom of blue-rings is mostly tetrodotoxin, which paralyses prey almost instantly, so these somewhat soft animals do not have to struggle with shelled, clawed or toothed prey. They usually bite and inject saliva but can sometimes simply salivate venom into the water near their prey to paralyse from a short distance. The venom saliva seems to spread about the animal, and people eating blue-rings have, unsurprisingly, died from this.

The venom of these smart and canny hunters is an effective attack and defence against almost anything, although some animals are apparently not affected. I've heard reports from different sources (and there's a youtube video you can watch) of mantis shrimps – probably the smartest of all invertebrates – pummeling blue-rings at arm's length then tucking in. Cuttlefishes and filefishes have also been observed preying on blue-rings. Why these animals are not affected by the toxin is a mystery.

The anti-predator effects might otherwise be rather effective; two adult green turtles have been reported killed by bluerings, presumably nibbled by accident from the seagrass beds where the turtles feed and where octopuses like to live.

They don't always rely on their venom; Nic Rewitt in Nelson Bay has reported Blue-lined octopuses mimicking crabs and cuttlefishes to startle and confuse would-be attackers.

Tetrodotoxin, the paralyzing agent, is only one part of the venom, albeit the major one. Smaller secondary salivary glands produce a cocktail of other toxins, some paralytic to crustaceans, some which seem to soften meat and partly digest prey.

Fortunately for humans unlucky enough to get bitten (and you have to behave rather stupidly, handling or seriously harassing an octopus to earn yourself a bite), these other poisons seem to be released in such tiny amounts as to not affect a human. All you have to deal with is tetrodotoxin, one of the most deadly biological substances known.

So what happens when you get bitten by a blue-ring? Fortunately, tetrodotoxin does no tissue damage – it is solely a paralyzing agent, and also fortunately your body steadily breaks it down and excretes it after twelve hours or so. You probably wouldn't even feel the tiny bite from the tiny beak. The effects of the poison would start to appear a few minutes to a few hours later.

Your extremities would tingle and go numb, then you'd feel nauseous and achy, then start going into spasm and shutting down as every muscle in your body was paralysed. You'd be conscious the whole time, and there'd be no damage to your tissues.

Untreated, you'd die quickly of suffocation, because the muscles of your respiratory and circulatory systems would have stopped working.
There's no antivenom, but treatment is really rather simple – you just need to be artificially respirated for 12 to 18 hours, until your body breaks down the poison and you can get your breathing and circulation back.

If you make it through 24 hours, you'll probably make a full recovery, with one hell of a story to tell and no long-term effects beyond a newly healthy respect for small molluscs. Just for the record, this is not me suggesting that this might be an interesting thing to try.
Respiratory arrest and death are often reported to occur within minutes, although onset of the shutdown seems to vary rather a lot and can take several hours.
Of 12 fully documented bites, six of them showed no signs of respiratory paralysis, so perhaps the tetrodotoxin is not always released in a bite, or perhaps it's not always there.

Personally, I'm not going to take those odds, I'm going to admire and seek out the blue-rings, then watch them with glee from a respectful distance. Maybe assuming more of the exotic mini-beasts we see underwater are laced with potent paralytics is not a bad way to go about our interactions.

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Giant Stride
Fun Facts

By: DiveSSI

20 Fun Facts About Sharks

Whether you love sharks or not, there is no denying these incredible animals are awesome! To celebrate Sharks, we have 20 fascinating facts about sharks just for you. Gather your family, test your knowledge, have some fun and find out where you can go diving with sharks. Read on to find out more.

By: DiveSSI

• There are over 500 species of sharks.
Add rays to that list, which are closely related to sharks, and there are more than 1,000 species of sharks and rays in our oceans!

• The largest species of shark grows up to 18 meters long.
Whale sharks are the largest species of shark and can grow up to 18 meters (60 feet) long.

The next largest shark species include basking sharks, megamouth sharks, tiger sharks and great white sharks.

• The smallest shark species is smaller than a human hand!
The dwarf lantern shark is the smallest shark and can fit in the palm of your hand.

These tiny sharks are rarely seen, live in the deep ocean and grow to a maximum length of 8 inches.

• Sharks are vital for healthy oceans.
Sharks play a vital role in keeping our oceans healthy. They do this by preying on sick and old marine life, which helps to prevent the spread of disease and improving the gene pool.

They also help make oceans more resilient to climate change and their poop brings crucial nutrients up to the surface of the oceans – which helps phytoplankton grow. Why does phytoplankton matter? It produces the oxygen that we breathe!

• Some sharks get through more than 20,000 teeth in their lifetimes.
Great white sharks have around five rows of teeth and may have up to 300 teeth at any one time! These teeth are continually replaced, and great white sharks can get through more than 20,000 teeth in their lifetimes.

• Some sharks glow in the dark.
Researchers recently discovered three species of shark off New Zealand that

By: DiveSSI

glow in the dark. These deep-sea sharks' bioluminescence is thought to help them find food, attract a mate and hide from predators below - by blending in with the pale light above.

• Sharks can travel thousands of miles each year.
Some shark species are highly migratory and make long migrations each year between different feeding grounds.

The longest recorded whale shark migration was a staggering 12,000 miles across the Pacific Ocean, from near Panama to an area by the Philippines.

• Sharks are found in almost every ocean habitat.
Sharks can be found at tropical coral reefs, in the deep dark ocean, in the open ocean and even under Arctic ice.

• You can swim with sharks at destinations around the world.
There are numerous countries where you can go swimming, snorkelling, scuba diving, cage diving and freediving with sharks. Whether you want to encounter big iconic sharks, such as tiger sharks and great whites, or hang out with laid-back nurse and reef sharks, there is a shark diving destination for you.

• Some sharks are warm blooded, just like us.
While most sharks are cold blooded, there are 5 species that are partially warm blooded: great white sharks, shortfin makos, longfin makos, porbeagles and salmon sharks. These sharks can raise their temperature above the water temperature, which helps them move faster when hunting.

• Sharks have different personalities, just like us.
If you have spent a lot of time diving with sharks, you will have no doubt realized sharks have different personalities. Research has shown that some are confident and social, whilst others are more solitary and cautious. According to Australian research some sharks are also shy and others do not handle stress well at all.

• Sharks support our wellbeing.
Many divers list diving with sharks at the top of their wish list and rightly so! Encountering sharks when you are diving is magical and the highlight of any dive trip. As well as supporting our wellbeing by keeping the oceans healthy, sharks simply make our dives better!

• Sharks have 2 more senses than humans.
As well as having the same 5 senses as humans (smell, taste, touch, eyesight and hearing), sharks have 2 additional senses. They can detect pressure changes in the water with their lateral line (a row of pores running all the way from snout to tail), which helps them hunt, hide from predators and navigate.

They also have an electroreception system, consisting of receptors (called ampullae of Lorenzini) on their head and snout. These amazing receptors can detect even the tiniest electrical field, such as those generated by muscle contractions in prey.

• Sharks have existed in our oceans since before the dinosaurs
Sharks have been around in the oceans for over 400 million years! Sevengill sharks (also called cow sharks) are some of the most primitive sharks still alive today and first appeared in our oceans over 150 million years ago.

• Are sharks man-eaters? No, they rarely attack humans.
According to the International Shark Attack File (ISAF), there were 57 unprovoked shark bites on humans worldwide in 2020, of which 10 were fatal. There are some fascinating ISAF facts about shark attacks compared to other risks such as lightning strikes, sand holes, bear attacks and home improvement equipment. All of which demonstrates how infrequently humans are bitten by sharks.

• Sharks can live for more than 400 years.
Scientists found a Greenland shark that is around 400 years old, making it the longest-living vertebrate known to man. These enormous sharks are blind, incredibly slow swimmers and have a lifespan of approximately 250 to 510 years.

• Around 100 million sharks are killed globally each year.
This is not a fun fact, but it is an important one to highlight. Around 100 million sharks are killed each year, mostly for the shark fin trade. Sharks are also killed for their meat and liver oil, and many are accidentally caught in fishing gear.

• Three hundred species of sharks and rays are threatened with extinction.
Sharks and rays are disappearing from the oceans at an alarming rate, with oceanic shark and ray populations having declined by 71 per cent in the last fifty years. In total, more than 300 shark and ray species are now threatened with extinction.

• But....it is not too late to save sharks!

People are working hard around the world to save sharks and you can be part of the solution too! Here is what you can do to help protect sharks:
•Educate yourself and your friends about why sharks matter.
•Support shark conservation organizations.
•Minimize your plastic use.
•Avoid products containing shark ingredients, such as shark liver oil, shark cartilage and shark squalene.
•Be a responsible diver by joining the SSI Blue Oceans movement.
•Only consume sustainable seafood. There are sustainable seafood guides for many different countries online and they are very easy to use.

By: Kurt Storms

Font Del Truffe

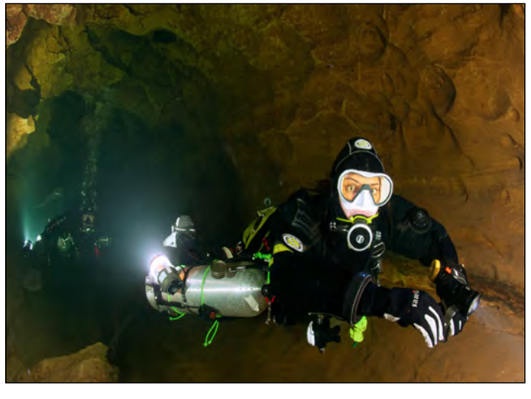
Area : Lot 'France'

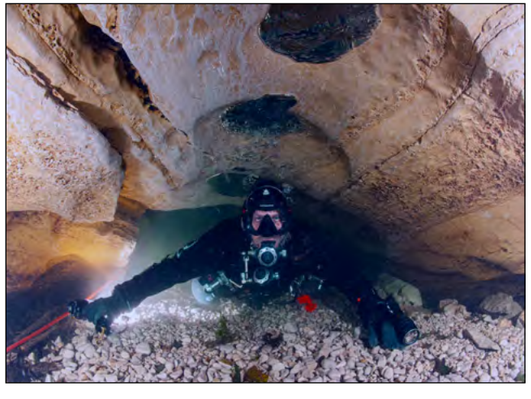
Divers : Kurt Storms, Caroline Massie, Jo Croimans

The Area:
The Lot department is an amazingly beautiful country side with a few smaller cities around but all very laid back and quiet. There is some tourism in the summer months and places can get quiet crowded. For non divers there are plenty of things to do ranging from show caves, hiking, canoeing or simply enjoying the landscape and the food.

From a supplies point of view there is no problem what so ever as there are several super markets around where you can get everything you need. Also there are plenty of nice little restaurants with great food and kind people. Speaking French of course is an advantage as one might imagine, since not too many people in the area seem to speak English.

Finding your way around meaning filling station and different caves is a bit tricky though at least the first time until you have them in your GPS
They are wide spread and if you take the city Gramat as your starting point they are between 20min and one hour driving. And lots and lots of turns!
I chose Ollivier and his filling station called "The Cave To Be" and also rented and apartment 100m from the station, fully equipped also with microwave, fridge, oven etc. There is easy place for up to two to seven divers in there and it's really affordable. There is Wifi Internet everywhere and generally the atmosphere is amazing. He can fill what ever you want and his blends are dead on to the comma. He keeps track of everything and you pay at the end which is nice as well. He can do 300 bar and has a booster for the CCR divers. An amazing set up!





Font del Truffe
When we arrived at the site the water level was very low and the water fairly murky. It did not really look inviting. But there was a group of Slovakia divers who came out of the pool, and they said, the visibility was very good once inside the cave. The First dive I did , is with a former student of me. Once down at the bottom of the pool it starts with a pretty small restriction at least from a back mount point of view and once you have past it you arrive in HEAVEN. I really miss the words to describe how much I love this cave. The colors, the configuration and the rhythm are simply amazing. S1 is only 160m with a Max depth of 15m with an average depth far shallower. Unfortunately, the water level was low so, it was not easy to go to S2, I always wanted to do some sump diving in my life and so I was enjoying a lot to take my gear of, which in side mount is super easy anyway, and to explore the second syphon.

This part of the cave is much smaller and even cooler than the tunnel before that. After some time, We swam back to the entrance and arrived there after about 50min total dive time, we looked at each other and checked our pressure gauges and made the very easy decision, to do another dive, but now with my wife Caroline. She was never in The System, so she was nervous.

I went first, so I could help here if needed. But she glides very smooth thru the restriction. I took some pics before Jo enter the cave. We also used the time to take some cool pictures in S1 and then finally surfaced after about 30 min total dive time in 12°C/water temperature. If you want to do more of Truffe, you can, there are in totally 13 sifons, with a maximum depth of -30 meter.
The cars where parked right next to the entrance and so it didn't take long for us to be back in the warm bus, eating some lovely sandwiches. After that we when back to Olli to refill the bottles and to clean my Divesoft Liberty SM-CCR.
All the Three of us had a big smile and where happy, but tomorrow we will do a other Cave.

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What are your thoughts on the Hogarthian Set-Up?

Nuno Gomes

Bill “Hogarth” Main, from the USA, was the original proponent of this technical diving equipment configuration system, back in the sixties. Since then many diving organisations, such as DIR, GUE and others, have adopted this system. Some are almost fanatical about its implementation while others use part of it to provide them with an ‘ideal’, all purpose equipment configuration. The idea is to have a system which uses the least possible amount of equipment and yet provides an adequate redundancy in the case of equipment failure. The system opposes the saying “more is better”.

My opinion is that the Hogarthian system is generally a very sound system. I think that all technical divers should understand it and know how to use it. It is also important that divers should understand that the Hogarthian system has its limitations. Technical divers should keep an open mind and use what is required for a specific dive, in terms of equipment.

There is no equipment configuration that can be used for all dives and all situations, according to me, one size does not fit all!

Barry Coleman

The Hogarthian style relies on simplicity and skill, rather than complexity. It is favoured by many open circuit cave and technical divers and lately has been included in recreational diving. It is named after William Hogarth Main, a cave diver for more than twenty years, who introduced its principles directly to the cave diving community in the 60s and 70s.
The Hogarthian style assumes:
•The best gear, maintained in perfect order.
•A highly skilled diver who is physically fit.
•A buddy who is similarly fit, skilled and with the same equipment, including the configuration.
•Gear and the divers should be a cohesive unit, and not a haphazard collection of parts.
•Less gear means less clutter, more streamlined, more comfort, therefore safer.
•Do not carry what is not needed. Reduce, reduce, reduce.
•Have nothing dangling. All accessories, hoses, etc., are tucked away.
•One long-hosed and one short-hosed regulator.
•A backplate with one continuous strap webbing (no clips).

These are just a few of the requirements and I must admit, except for one of the above items, I agree with all the others.

Pieter Smith

The Hogarthian style was founded by William Hogarth Main and further developed by WKPP divers. If one understands the work and effort behind the WKPP divers to explore the Woodville Karst Plain cave systems, then it makes sense that they had to standardise all cave diver’s equipment to ensure they keep a safe record as they had many divers signing on and leaving the project over years

In short, Hogarthian stands for: keep it simple and clean. As a SA technical diver, and not being exposed to, or under the control of the “American way”, I have found and grown into my own style over years. I see myself as an individual, capable to dive caves accessible to me, successfully and have done so over many years. I furthermore find it difficult to accept that everything must be exact according to their belief/rule. I am, for instance, a lefty and find it easier, for example, to have my instruments and slate on my right arm (I wear my watch on my right arm) where Hogarthian says it must be worn on your left arm. Hogarthian says long hose as a primary reg – I secure it under elastic bands on my right back tank, where either myself or anyone else can retrieve it by just pulling it out.

This may sound petty, but I want to dive how I feel best – as long as my buddy and / or back-up knows my configuration and is able to respond accordingly as and when needed.

Pieter Venter

I believe that Hogarthian is a good, well thought out system developed for a specific application. The main idea behind it is to standardise the equipment and to place full reliance on a buddy, no matter if you know the buddy or not. Hogarthian is suitable for countries where there are sufficient numbers of technical divers who dive Hogarthian and where there are big, team-orientated dive activities. In South Africa this is not the case but Hogarthian can still be useful if you have a few diving friends who buy into Hogarthian.

I have learnt good things from Hogarthian but I do not think it the best system for me. I do not like the use of an isolation manifold and I prefer to have some freedom to make my set-up as safe as possible and as comfortable as possible. My dive buddies know my set-up and I try to make sure I know my buddy’s set-up as well and I try and steer clear of complicated dives with people I do not know.

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By: PADI

Why It's Never Too Late to Get Scuba Certified

Are you considering learning how to dive but can't find the upper age limit on getting certified? What you might find is a minimum age limit of 8 years old for a PADI Bubblemaker Program or 10 years old for Junior programs, but there is no upper age limit on scuba diving.

Minimum age limits are in place as diving has some inherent risks and children need to be of an age where they can understand the dive theory component, and react to situations responsibly rather than impulsively.

So, if you are interested in trying scuba diving, your age won't be a barrier!

Taking up scuba diving a little later in life does come with some considerations – and it has some significant benefits too! Read on to find out more from us and from PADI Diver Tanya Dredge who completed her PADI Open Water Diver course at age 55….

1. Health and Fitness
Regardless of age, anyone who wants to try scuba diving needs to be in good health and have a reasonable level of fitness. In some countries, a medical statement from your doctor is required for all ages to confirm that you are medically fit for diving.

In other countries there is a diver medical questionnaire, and a doctor's approval is only required if you have any pre-existing medical conditions. The diver medical, asks those over 45 years old to answer questions regarding cholesterol levels, familial history of heart attack and lifestyle habits.

Generally speaking, if you are in good shape without any medical health issues, you will be good to go – and dive in!

2. Healthy, Low-Impact Exercise
If you are not someone who enjoys going to the gym, diving is a great way to maintain your fitness level. As a form of exercise, diving is low impact compared to walking or jogging. Those who have stiff joints may be granted relief by virtue of the weightlessness you experience when underwater.
If you want to keep diving then the key is maintaining your overall fitness level – regardless of what age you are!

3. Meet People and Go Places
Getting out and meeting new people who have a shared common interest isn't always easy and it doesn't get easier with age.

If you develop a love for scuba diving, you won't just be embarking on a new hobby, you'll also find a new tribe! Scuba divers of all ages are generally people who like to be active, enjoy being outdoors, have a love of travel and a passion for the ocean.

You'll meet new people on dive trips, holidays and in many areas there are local dive clubs that hold social events, gatherings and local beach clean-ups.

Being outdoors, socializing and being physically active are all well known for helping us to stay energized and feeling youthful.

By Tanya Dredge: "PADI dive shops provide an even playing field….and buddies! We all receive the same training, have to perfect the same skills and then we all continue to learn.

Diving with the PADI dive shops connects you to a wide range of people – different shapes, sizes, ages, genders and ethnicities. I have made some great long-term friends and sometimes just friends for the day. Inclusivity for all.

4. Discover a Whole New World
When you start scuba diving you'll literally be diving into an entirely different world.

It's not just the stunning coral reefs and incredible marine life that will blow you away, it's also how you can move differently, see, hear and even communicate differently.

When you're underwater, be prepared to

By: PADI

experience a sensory overload of colour and life. The excitement of spotting a fish that you haven't seen before, watching an ancient sea turtle swim by, or a majestic manta ray swoop down from overhead. These are all incredible first-time experiences and there will be many more to come!

5. Discover a New You
By Tanya Dredge: "We all travel through our lives differently, taking different paths with different priorities. Many women in their 50's are where I am.

We have raised families, pursued careers, accumulated "things", had health challenges, dealt with family crises and then we arrive here. Mid 50's with a moment to breathe and knowing ourselves slightly better than we did at 18.

We know ourselves but sometimes it's hard to know where we fit. We are wanting to be ourselves not just someone's mother, wife, teacher, employee, boss.

Finding that space can be difficult but I have found it in diving. I have found it in the exhale.

That first moment as I breathe out and slowly descend not just underwater but also deeper within. I have found me in that release.

Found me in the first inhale as I transition to another world; free of the weight of gravity and my daily responsibilities. I have found space in that pause between breaths, where I move neither up nor down, neutrally buoyant, still, complete".

6. Boost Your Self-Confidence
Scuba diving is a lot of fun, but it's not without challenges when you are learning. For divers of all ages there are often components of the PADI Open Water Diver Course that can cause anxiety before you try them.

PADI courses are designed for divers of all ages and abilities by utilizing a building block method of teaching.

The skills are broken down into manageable steps with each paving the way for the next. When you successfully complete the skills that initially made you nervous, you'll feel an incredible sense of accomplishment.

Most divers also find that after completing their Open Water Diver courses they generally feel an increased sense of self confidence in their daily lives too!

7. Just a Number
We hope that you've seen now that age is just a number when it comes to scuba diving. It's not just Tanya that has taken the plunge, each year more and more people in their 50's and over are becoming new PADI Divers.

Take a look at Jacques Cousteau who continued to dive until his death at the age of 87!
Are you feeling inspired to try scuba diving and exploring underwater? Learn more about the PADI Open Water Diver course and get started at home with PADI eLearning.

Buy your own Kit or Rent?

Most divers inevitably reach the point in their diving career where they ask themselves whether to buy their own equipment or continue renting gear. This (in my opinion) is quite an easy answer...

By: Quintin de Boer

We as humans were designed to function on dry land. Everything in our physiology supports this, hence the fact that we can't naturally breathe underwater without the use of scuba equipment.

So... if you were paying attention to the sentence above, or when you had your first swimming lesson for that matter, you will understand that when we scuba we throw ourselves into a foreign environment that can be very hostile if not respected.

This statement stays true and has significant relevance when you consider the equipment you use to enable you to scuba dive.

It always amazes me people ask about the cheapest equipment and although we will try to assist, some people (well most), tend to forget that it is this equipment that keeps you alive underwater – it literally allows us to breath, move, stay warm and return to the surface safely. Equipment is critical and is designed to enable us to pursue the wonderful sport that is scuba diving.

Considering the importance of your equipment to your own life, do you really want to rent equipment? I personally prefer not to and have bought my own. By owning your own equipment, you ensure the following:

•Availability: When renting equipment you are not always guaranteed that the equipment you require will be available – this leads to you either not being able to dive or perhaps even worse, settling for equipment that you did not in fact want or equipment that is not adequate for the type of dive you are planning to do. Having to execute a deep dive with a small cylinder and a regulator not rated to the planned depth is not a good idea.

•Fit and comfort: Your own equipment will be bought to fit you and won't be a general 'one size fits all' or 'make it fit' solution. This will ensure a more comfortable dive as the equipment will fit according to your own liking.

It really is not enjoyable squeezing into a wetsuit that is two sizes too small, and not being able to move once in the suit, not even to mention the safety concerns that go along with such a scenario.

•Reliability: When owning the equipment, a diver can personally take responsibility to ensure that their equipment is serviced on a regular basis (at least annually) or whenever more frequent services are required.

This ensures that the equipment is reliable, is in optimal condition and is functioning as intended.

•Familiarity: By consistently using the same equipment a diver becomes familiar with it and can easily utilise such equipment.

A typical example would be when a diver can effortlessly find accessories on the equipment such as dump valves, inflator hoses and diving knives. When a diver knows their equipment, and where everything is located, the diver is more comfortable during the dive.

•Weighting: Novice divers or divers that have been inactive for a while often struggle to gauge how many weights they should use when diving, leading to being either over weighted or under weighted.

This is further complicated when different equipment is used every time when diving, especially if the different equipment includes exposure suits and cylinders.

When using you own equipment, you will quickly identify how many weights to use and even get to a point when descending to certain depths where you will know the amount of inflation that will be required to maintain buoyancy.

In summary, it is important for all divers to realise that the equipment they use is their life support under water, and with unreliable equipment you are placing yourself in danger.

This does not imply that the equipment that you rent will be unreliable, and some equipment rental spots do take particular care in maintaining their equipment, but do you as a diver really want to expose yourself to these risks?

Some training agencies also require divers continuing their certification beyond open water to own their own equipment and maintain it.

If you were to think back to your open water training, I am sure that your instructor mentioned to you one of the golden rules of diving; that it is advisable not to dive with more than one new thing on each dive, as this leads to task loading and undue stress on a diver (he/she should have).

This of course is literally impossible if you hire all your equipment each time you go and dive. There is most certainly benefits in having one's own equipment, and for myself, these benefits quickly outweigh the initial investment.

So if you as a diver have not already considered buying your own equipment, or have and made a decision not to solely based on cost, it might be time to seriously reconsider by looking at all the facts.

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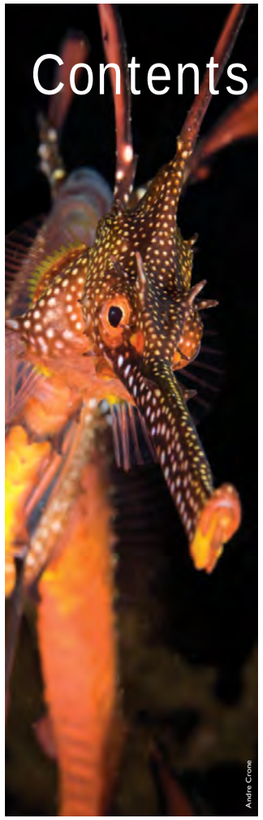

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This book can be used by scuba divers and snorkelers as a quick reference guide to help them identify and learn about the fish species they might encounter underwater.

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

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

The Eloquence of the Sardine

Humans have identified just a fraction of the 2.2 million species living in the sea. Roughly 91% of all marine species remain unknown: myths still to be written, discoveries still to be made, blank pages with room to dream . . .

In the book The Eloquence of the Sardine, already translated in 17 languages and released in August in Australia, french biophysicist and diver Bill François takes us on a global underwater tour to discover the secret life of fish, with a host of fun facts and amazing discoveries.

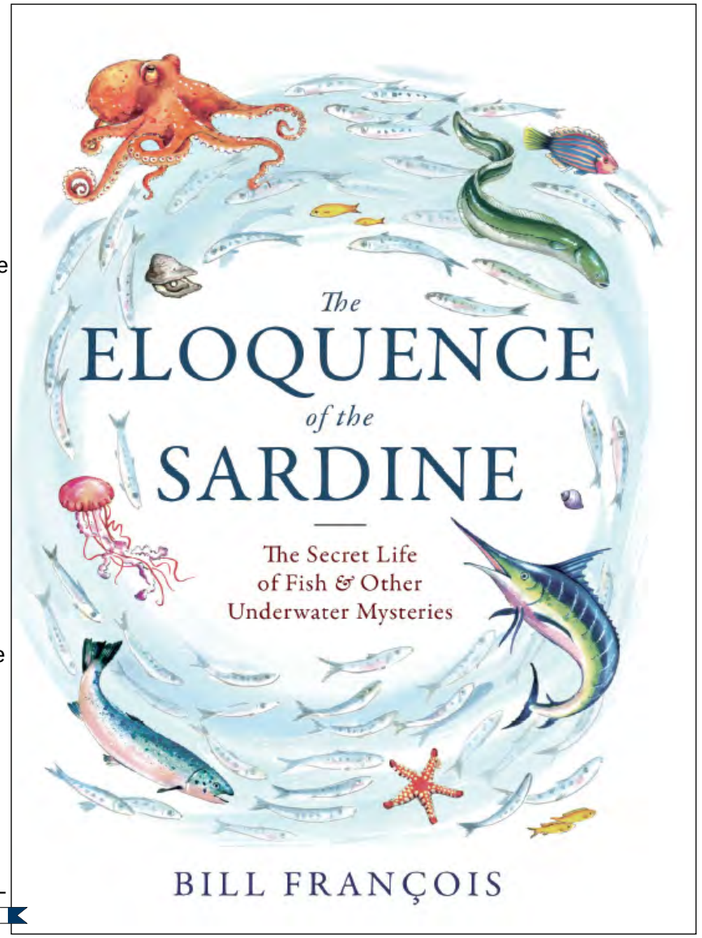
As a small boy, Bill François was frightened of deep water. Until a chance encounter with the elusive sardine set him on course for a life in marine science: a mission to better understand and preserve the underwater world, to find his place in that ecosystem and learn how to converse harmoniously with the ocean.
This is the beginning of a journey full of life and discoveries, vibrantly told in this small book of narrative nonfiction.

François unpicks the sound of the sea – an underwater symphony orchestra voiced by a choir of fish – and deciphers the latest scientific discoveries on the immunity of coral and the changing gender of wrasses. We visit the depths of underwater Paris as François delves into the mysterious world of the eel, and explore an extraordinary three-generational friendship between humans and killer whales, and the role a shoal of herrings played in Cold War tensions.

Drawing on history, myth and legend, but always grounded in science, The Eloquence of the Sardine will change the way you think about the sea in a poetic way.This book is aimed for all the ones who love the ocean and are curious about it : divers, sailors, fishos... Even experts in marine biology should find some original facts in it.

But it will also open the eyes of those who don't know this universe yet. It can thus be a nice present to introduce your friends and relatives to your passion for the underwater world.

The Eloquence of the Sardine –
Bill François
Release date : Aug. 31st 2021
Editor : Little, Brown
https://www.hachette.com.au/bill-francois/the-eloquence-of-the-sardine-the-secret-life-of-fish-and-other-underwater-mysteries



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Mandurah

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Bunbury

Octopus Garden Dive Charters

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

Geraldton

Albatroz Scuba

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

Dive Ningaloo - Exmouth / Ningaloo

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

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

Albany

Southcoast Diving Supplies

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

South Australia

Port Lincoln

Calypso Star Charters - Port Lincoln

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

ND Scuba - McLaren Vale

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

Adelaide

Diving Adelaide

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

Underwater Explorer’s Club of SA

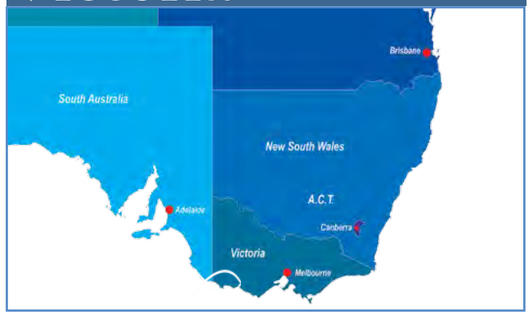
The UEC is the oldest recreational scuba diving club in Australia, established in 1954. We do regular dives at locations within metropolitan Adelaide and have frequent trips to regional South Australia. Why not come and join us for a dive.
Phone: +61 (0) 417 838 387
Mail: secretary@uecofsa.org.au
Web: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

Glengowrie

Downunderpix

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

Victoria



ausdivinginstruction- Geelong

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

Bay City Scuba

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

The Scuba Doctor Australia

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

Dive Victoria Group

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

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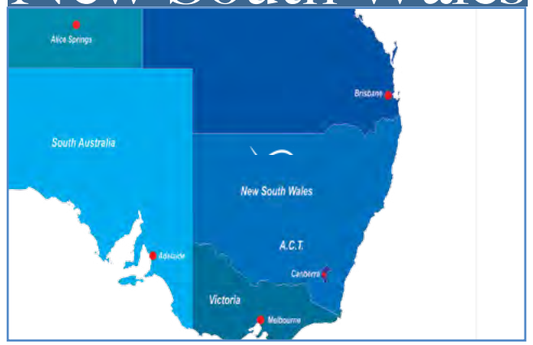
New South Wales



Sydney

Frog Dive

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

Southern Cross Divers

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

Killarney Vale

Pro-Dive Central Coast

Located between Sydney and Newcastle with daily boat dives to the ex-HMAS Adelaide artificial reef, only minutes from the local boat ramp. Online booking and dive sales available 24/7. PADI Instructor programs available.
Phone: +61 (0) 2 4389 3483
Mail: info@prodivecentralcoast.com.au
Web: www.prodivecentralcoast.com.au

Nelson Bay

Feet First Dive

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

South West Rocks

South West Rocks Dive Centre

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

Queensland

Sunshine Coast

Scuba World

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

Brisbane

Ozaquatec- Brisbane

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

Gold Coast

Devocean Dive- Gold Coast

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

Tasmania

Bicheno

Bicheno Dive Centre

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

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