

OZ DIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

LORD HOWE
ISLAND

SPONGES

DIVING
WAR
ARTEFACTS

EXPLORE
INDONESIA

SEXUAL
LIFE OF
CORALS

THE SAINTS



FREE Digital Diving Magazine - www.ozdiver.com.au





Editor's Deco Stop

Are we fighting a losing battle? Do you believe that you can save the world, yet every time you switch on the television you realise that you are fighting for nothing? Do all the people who you tell that sharks are one of the most important creatures on this planet not believe you? Would they rather believe what the Discovery Channel or the media tells them?

I worked in television for a number of years, as well as being a journalist, and I know that it is only the good stories that sell.

Do you think that they will broadcast shows on how nice and important sharks are? One morning I switched on the television and it was on the Discovery Channel – what I saw was a programme entitled River Monsters. I was intrigued. I wanted to know what monsters can be found in rivers. When it started the presenter said: "We know that it is not safe to swim in the ocean, but now it

has been proven that it is also not safe to swim in rivers and dams."

I was wondering what I had missed and what this person was smoking. Then it came out that the 'river monsters' that will eat anything that is in the water are Bull sharks. Now I have dived with most of the shark species in the ocean and a number of times with Bull sharks, but after watching that programme I was even scared to swim in a swimming pool.

Just after that there was another programme – I Shouldn't Be Alive – and believe it or not, it was also about sharks. And again they were portrayed as bloodthirsty and dangerous man-eaters. How many viewers would have seen these broadcasts and believed all the stuff that is being sold to the television stations? Do they know how many sharks they will have killed due to broadcasting this?

But who am I to say anything? Television rules the world and money talks a language that we don't understand.

The Editor & Publisher

Johan Boshoff

-it is all about the journey and not the destination

Matthew 6:33

But seek ye first the kingdom of God, and his righteousness; and all these things shall be added unto you. ☞ ☒

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In GOD I trust.

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it's FREE and it's online

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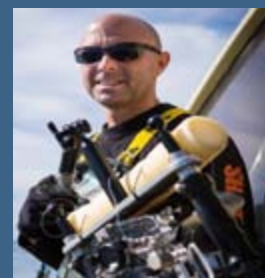
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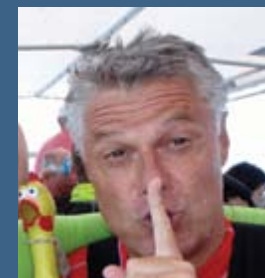
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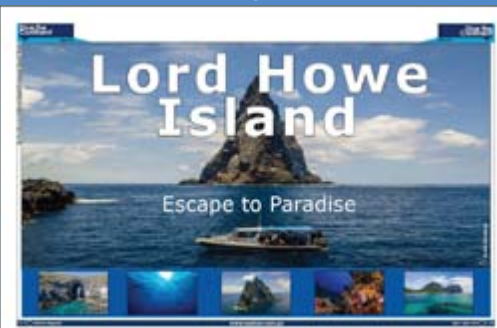
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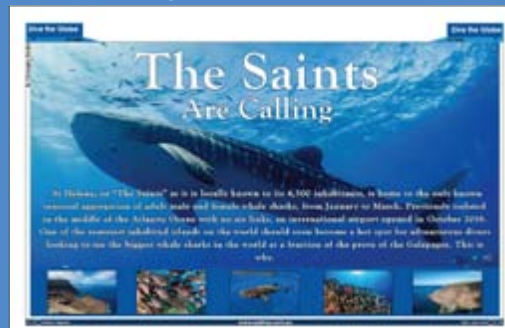
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FEATURE



Log Book

Dear Mom,

I've heard that Eskimos have 17 different words for snow, but let me tell you that divers have about 23 for vomit! You have underwater vomit, above water vomit, vomit from a boat, vomit into a boat, projectile vomit, formation vomit and many more too numerous to mention.

I have at times wondered if we wouldn't have done better at the Olympics had we sent a formation puking team, or even a synchronised vomiting team.

After all, training is easy, a huge pool of potential athletes are available, it's multi-racial, cross gender and age is irrelevant (although for volume vomiting size does matter...).

It's also a very colourful sport – no racism as in rugby – vomit comes in all the beautiful colours of a Rainbow Nation and everyone can (and does) do it.

A personal favourite of mine is the formation event – this has its roots in the African tradition of imbongi (the praise singer), who leads the singing in traditional African culture, closely followed by the rest of the band. In the diving version, the imbongi (the 'instigator'), will start proceedings with the traditional 'look' – this is often confused with a genuine interest in the horizon.

The diving imbongi then faces directly into the wind (without fail), and devoid of warning, lets go. It is believed in diving circles that warnings are for sissies and therefore spoils the surprise.

The inevitable result of this action is that everyone on the boat is covered with an even film of secondhand breakfast and coffee.

Whether it be it muesli or the more traditional bacon and eggs, the end result always seem to have the same

consistency and colour. And somehow there always seems to be bits of carrot present.

This then sets of the main event... the entire boat will now attempt to vomit into the water. This of course means that the windward group gets their own back in their faces while the more conservative leeward side gets evenly covered from behind. All of this is down to the aerodynamic properties of vomit – it flies in even the lightest breeze.

A successful team thus always has half the team with bits on their faces (their own) and the other half with bits on the back of their head (not their own).

Needless to say, a team has to have strong bonds to sustain unity – as with all sports, practice makes perfect, but


it is immensely difficult to get people committed to practicing.

Most teams do it once and get it right perfectly, however, getting the second practice round in is practically impossible as excuses range from being tired to, "I don't feel like diving" and, "I've been to that reef before." But Mom, I have not given up and will keep trying to get the perfect combination.

I really would love to see our country excel at the Olympics in at least one event.

Will write soon again,


Your son,

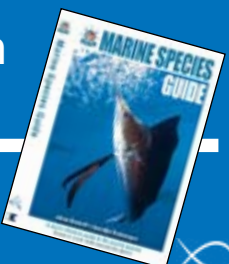
The diving instructor. 



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

Be part of AIDE 2019

After yet another highly successful 2018 expo, where we welcomed 59,753 visitors, we are once again collaborating with the Sydney International Boat Show (SIBS) to bring you an even more impressive 2019 event!

Taking place once again from 1 – 5 August 2019 at the International Convention Centre, Sydney with the same floor location and space, we invite you to explore with us the business of diving.

2018 SHOW RESULTS –

- 59,753 high-net-worth paying visitors
- 32,000sqm of expo space including marina
- Dedicated dive section of 2000sqm at the entrance of the halls.
- 53.9% are Professional attendees
- 23.7% visitors increase of interest in scuba diving compared to last year of 18.9%

WHY AIDE - SIBS and AIDE have created a platform that is unlike any other, cultivating and drawing the interests of water-lovers and scuba divers alike; and developing leads and sales for our exhibitors. Visitors to the show are high net worth water lovers. As such, we hope to match their interests with your product and service offering, or even create that interest where it may not yet exist.


BUSINESS OBJECTIVE - Brand awareness, brand engagement, lead generation and sales in both the short and long term are our main objectives for you and your business. Providing your brand with extensive exposure to the 59,753 loyal and affluent water-loving visitors not only adds to your bottom line figures, but also converts to our long-term goal of expanding the dive community. This is a great opportunity for you to bring about more brand awareness and engagement into your short and long-term sales funnel.

EXPO OBJECTIVE - Our aim is to give this niche market a boost and grow its community by inspiring, educating and encouraging more people to explore the underwater world. While dive is a thriving industry, there remains a fertile opportunity for products, services and destinations such as yours to gain from both existing divers and newbies to the sport.

OPEN FOR REGISTRATION

We warmly welcome you to explore the business of diving at AIDE2019 and how the expo can be beneficial for your brand. Exhibitor registration is now open.

CONTACT US

Email us at info@australiadiveexpo.com and visit the website at www.australiadiveexpo.com for updates. 

PADI Master Scuba Diver
Application Fee Waived in
2019 for Asia Pacific

Inspiration - Adventure - Discovery

Join the best of the best in recreational scuba diving and live the dive life as a PADI Master Scuba Diver in 2019.

The PADI Master Scuba Diver rating places you in an elite group of respected divers who have both significant experience and extensive scuba training.

To earn this rating you must log 50 dives and have your PADI Open Water Diver, PADI Advanced Open Water Diver and PADI Rescue Diver certifications, as well as five PADI Specialty course certifications.

In 2019, when you complete your training at a PADI Dive Shop in the Asia Pacific region, the usual Master Scuba Diver application fees will be waived.



If you need to any of these certifications above before you become earn your Master Scuba Diver rating, now is the ideal time to take these PADI courses at your local PADI Dive Shop. So, take the plunge in 2019, earn your PADI Master Scuba Diver rating and become one of an elite group of highly skilled and trained divers.

How to Apply

If you are interested in receiving your PADI Master Scuba certification without having to pay application fees it is simple. Simply visit or contact your local PADI Dive Shop or visit www.padi.com to find a PADI Dive Shop.

*offer only valid in the PADI Asia Pacific region. 

The Underwater Tour is hitting the road again!

Inspiration - Adventure - Discovery

Co-founders of the Underwater Tour, Tim Hochgrebe and Juliette Myers have curated the best international line-up possible for this year's nationwide touring speaker series. "Building on the success of last year's events, we're hitting the road again."

It gives us great pleasure to be able to reveal our speakers for this year" advises Hochgrebe. "And we're delighted to be supported by our aspirational Touring Partners" adds Myers.



David Doubilet and Jennifer Hayes, undoubtedly the world's most recognisable and inspirational ambassadors of the oceans, are on their way from upstate New York to Australia to headline the Underwater Tour 2019.

Revered underwater photographers and international treasures, National Geographic assignments have taken them around the globe from Africa's Okavango Delta, through tropical and temperate seas to the poles.

Recent projects have found them in the remote corners of the Great Barrier Reef, under oil and gas rigs in the Gulf of Mexico, swimming among congregations of 500-pound goliath grouper and submerged in the ice with harp seal mothers and their pups.

"Frequent and welcome visitors to our Australian waters, we can't wait to see them on stage LIVE and enjoy their stories of adventure and discovery" said Myers.

William Tan is truly the Master of 'blackro'. William's black water underwater photography niche will have you transported to another world.

A violinist with the Singapore Symphony Orchestra, between concert seasons, he leaves his prized antique Italian violin at home while diving throughout the Pacific region, judging competitions and working with scientific institutions, camera and housing manufacturers, tourism organizations, dive magazines and resorts.

"If you've seen everything and dived everywhere, William will showcase images that will pique your curiosity and have you wanting to set out on new adventures" promises Hochgrebe.

There'll be new venues in each city, and this year Adelaide has been added to the Underwater Tour dates – by popular demand.

Don't forget there's mix and mingle time in each event program for audiences to meet and chat with speakers as well as Tour Partners who'll be traveling together around the country.

For tickets go to www.underwatertour.com.au

2019 Tour Dates:

- Brisbane 9 May
- Sydney 11 May
- Melbourne 12 May
- Adelaide 13 May
- Perth 14 May



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:

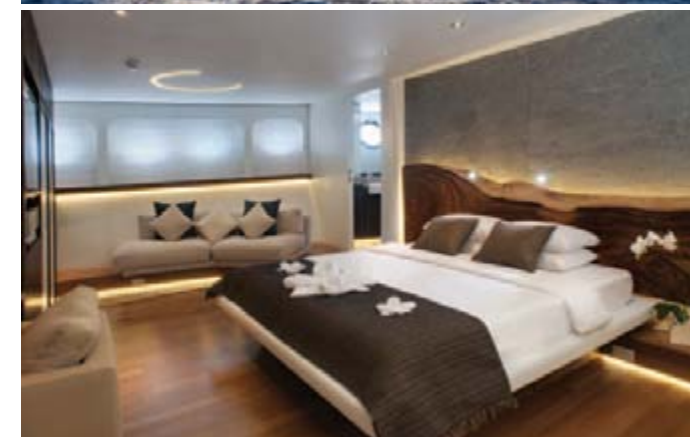
- Newsworthy stories (promotional material will not be accepted)
- Word limit: 100 words
- Text prepared in a Word document
- Accompanying high-resolution image(s) are welcome (please supply caption and image credit)

Please send to info@ozdiver.com.au



An experience without equal

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



"The reef systems here are some of the most pristine I have seen anywhere in my dive travels around the globe, and Wakatobi resort and liveaboard are second to none. The diversity of species here is brilliant if you love photography." ~ Simon Bowen



www.wakatobi.com

Lord Howe Island

Escape to Paradise

Andre Rerekura





Two blokes in a boat sit atop the world's southernmost coral reef, 640-odd kilometres from the Australian mainland, balmy 24-degree water pulsing via the East Australian Current below.

The pair take the plunge into 30-40 metre visibility and emerge an hour later with a fresh dive site.

Dave's Gamble!
The name derived from Dave Short leading the dive and Peter Gamble

accompanying.

Their roll of the dice unearths a coral table and resulting overhang at 32 metres dotted with rays, Morays, crays, and on this particular morning, a giant triton – the rare half-foot long sea snail that eats crown of thorns starfish for breakfast.

"Forty to fifty" curious, but thoroughly harmless Galapagos Whaler sharks cruise above on Dave and Pete's safety stop to boot, rounding out one of a myriad of fruitful 'exploratory dives' pursued by Pro Dive Lord Howe Island.

That was Short's third week in the gig.

Four years on, a week won't go by in season when he and Pro Dive owner Aaron Ralph aren't dragging customers out of bed as the sun rises to trawl Lord Howe's oceanic topography of trenches, volcanic pinnacles and coral enclaves in search of something new.

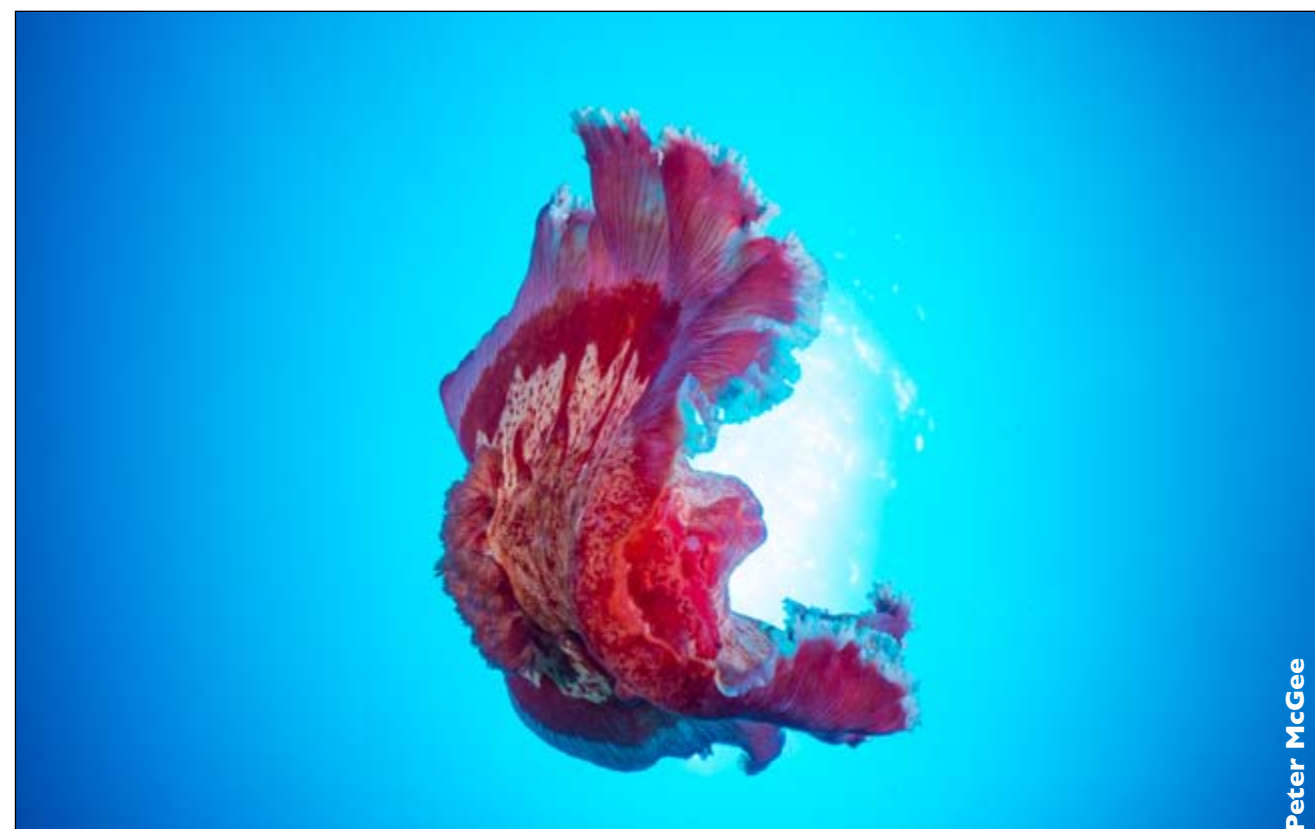
With two decades of combined professional diving know how and an



Peter McGee



Andre Rerekura



Peter McGee



Become a PADI Master Scuba Diver™

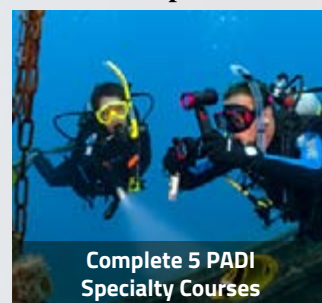
Join the best of the best in recreational scuba diving!

A Master Scuba Diver rating places you among an elite group in which fewer than 2% of divers ever join.

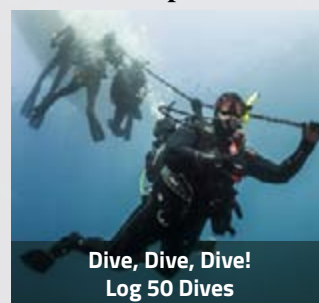
Step 1



Step 2



Step 3



FREE Master Scuba Diver Rating 2019!

For a limited time, apply for your MSD rating through a PADI dive shop in Australia and the application fee payable to PADI will be waived*.

[PADI.COM/MSD](https://padi.com/msd)

*Fee may still be payable to dive shop

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army interns past and present, Pro Dive's exploratory ventures offer experiences of a lifetime on a weekly basis.

Their discoveries would be iconic, even ground breaking, if they weren't still one of diving's best kept secrets in Australia, even with the island's World Heritage status.

"There's 149.9 square kilometres of untouched, never before dived relict reef just beyond here," Ralph grins, pointing beyond Lord Howe's outer shelf on a map.

"Until 2008 that reef out there, past the lagoon and shelf, it simply didn't exist as far as anyone knew.

"The researchers that discovered it (and subsequently published their findings in the 2008 paper Geophysical Research Letters) have data dating what is effectively a fossilised reef back to 7000-9000 years old.

"The shelf sits roughly at 50 metres, but there's the ridge of reef that's still got

plenty to it that rises up to 20-25 metres deep.

"To have that whole area that has never been dived, that potential right on your doorstep is pretty special.
"It should keep us busy for a few years."

BUCKET LIST ONE STOP SHOP

Lord Howe's relict reef sits quietly on the island's periphery begging to be explored.

But Balls Pyramid is front and centre, demanding eyeballs and ecstasy from all and sundry.

The world's tallest monolith and volcanic sea stack, all 562 metres of it, takes pride and place in every brochure and blog for a reason. It's that good. This reporter's first experience with diving the iconic rock still rings loud and clear.

"Hannah get on the float or you will end up in Tasmania".
Balls Pyramid is challenging, rewarding diving.



Andre Rerekura



Peter McGee



Andre Rerekura

Surface current pushing at up to four knots does mean you will end up in another state if you ignore the dive briefing.

The thing is reminiscent of Tolkien's Mordor in more ways than one. But like hundreds each year, Hannah did get on the float and had herself a fantastic dive. Because those same warm water surges that require a swift descent down the anchor line are responsible for a plethora of marine life to rival any site in the country.

Hundred strong schools of kingfish, trevally, amberjack, rainbow runners and silver drummers; crays, eels, rays, turtles, sharks are all regulars, along with a couple of locals endemic only to Lord Howe – the Ballina Angelfish and McCulloch's Anemonefish.

More often than not, a resident family of dolphins will pop up at some point during the 20-kilometre ride out from Lord Howe Island.



Peter McGee



Andre Rerekura



Tech Divers Trained Here



Divers promptly pop in for a quick snorkel with the ocean's most endearing inhabitants, Aaron's four-year-old daughter Liana included.

LIGHTS, CAMERA, ACTION

With action aplenty under the surface, new discoveries on Lord Howe go beyond just the sites themselves.

There's the first recorded sighting of a blanket squid in Australian waters a few years back at Malabar Landslide, one of Lord Howe's most popular and gin-clear dive sites.

The uber-rare midnight coral spawning in the island's turquoise lagoon waters, resulting in billions pink and white coral eggs and sperm exploding in an essential regeneration process.

There's 16 species of fish found nowhere else in the world, and over 400 recorded in the area.

"Because the coral reef extends further south than any other, we get tropical species that live on the edge of their habitats, and then cooler-water pelagics that live on the edge of their habitat in the same spot," Ralph explains.

"Then there's the endemic species of fish and gorgonians, and the fact we're so isolated, it all makes for a unique environment".

Which is why Ralph and famed snapper Scott Portelli teamed up to create the Land and Sea Photography Shootout three years ago.

Running in early June, Pro Dive and their fellow Lord Howe operators call out the best efforts of photographers in an eight-day competition above and below the water that coincides with a series of workshops and events on the island.

"Traditionally our season is over June,



Rachael Miles

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By Pro Dive Lord Howe Island Divemaster Daniel Walsh

but we'd find ourselves watching these perfect weather windows open up, just waiting to be dived," Ralph says. "When Scott came out the first time he was amazed with the place and the shooting, we kind of realised what we had and what we could do with it.

"Again, it's a pretty unique opportunity for beginners and fanatics alike in a very special place".

All things equal, Lord Howe Island; not a bad place to go exploring.

INS AND OUTS

Location: Lord Howe Island lies approximately 640 km north-east of Sydney and is accessible by two-hour flights leaving daily with Qantas, or twice a week from Brisbane.

Conditions: The island's dive season runs from September through to June with water temperatures ranging from 18 degrees Celsius to 26 degrees.

Diving: Pro Dive Lord Howe Island offer a range of dive options, including double and single dives every day both in and outside the island's lagoon pending conditions and demand. PADI Courses are also available.

Exploratory dives and trips to Balls Pyramid are subject to weather availability and require adequate deep diving experience. Night and sunset dives are available on request.

Contact:


Website: prodivelordhoweisland.com.au

Email:

lisa@prodivelordhoweisland.com.au

Phone: (612) 6563 2253

Land and Sea Photography Shootout with Scott Portelli

Runs from June 1-11 with a 10-dive package, SCUBA equipment, accommodation, return flights from Sydney, photography workshops and gala dinners. 



Andre Rerekura



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mares.com

Sponges

Phylum: Porifera

The name Porifera comes from two Latin words: porus (meaning pore) and ferre (meaning to bear).

Notwithstanding its plant-like appearance, the sponge is an animal, even though it does not have a heart, brain or nervous system and, as an adult, it cannot walk or swim around.

The skin of a sponge is perforated by numerous pores that lead into tunnels and finally to a vent that usually looks like a little chimney pot.

Inside this system are many hairs, each whipping around in a spiral, sucking water in through the pores and pumping it out through the vent.

A sponge has no limbs, nippers or tentacles to use for picking up food and feeding itself. Its ability to extract food and oxygen from the surrounding sea depends entirely on the water currents forced to flow through the passages in its body.

The animal and vegetable food particles filtered from the water are minute in size.

A sponge does not have gills either. Oxygen is removed from the water as it flows over

the internal surfaces, and waste products are released into the outgoing stream. The larger types of sponges have more intricate water circuits, with many interconnected branches and passages.

This increases the surface area of the sponge that is in contact with the water, and makes gaseous exchange and food absorption easier.

Most sponges prefer to grow on a solid base such as a rock or wreck, rather than in the sand. Depending on the type of sponge, the body may be vase-shaped, branched or turreted. Many grow into irregular shapes as they cover and encrust rock surfaces.

A sponge has a skeleton in order to give it its shape and to prevent its water channels from collapsing.

However, it is not an internal one of bone like that in larger animals, or an exoskeleton or outer shell like that found in lobsters and crabs. Instead, a sponge has a three-dimensional scaffolding or lattice that

supports the jelly-like body. This lattice is formed of little spikes or silica, calcium carbonate, or a tough fibre called sponging. Marine biologists identify the various types of sponges by studying the material and shape of the components of this skeleton.

A bath sponge is the skeletal remains of a sponge supported by sponging. Sponges with silica and calcium carbonate – the ones found along the coast – are too hard, stiff and scratchy to be used as bath sponges.


If pieces are broken off a living sponge, they will grow into complete new animals. Sponges may also increase in number by budding. The buds sprout and can then either remain attached to the parent or break away and become separate individuals.

Sponges can also multiply by sexual reproduction, during which fertilization may take place internally or externally.

When fertilization is internal, the product is released into the water by one sponge and is drawn into the pores of another sponge. The resulting larvae leave from a vent and swim around before permanently settling on the bottom.

As an animal, the sponge is unusual in that it has no upper or lower side and no front or back – it grows in any direction. If it is turned on its side or even placed upside-down, it will continue living in that position.

Although sponges are unable to defend themselves or flee from predators, few creatures feed on them as they are unappetizing, possibly poisonous, and the prickly skeleton is an irritant.

However, small animals such as shrimps, crabs and brittle starfish live and hide in the water channels inside the sponge with no detrimental effect to themselves or the sponge. 



The sexual life of corals

Although asexual reproduction of corals does occur (when a polyp divides itself and creates an identical daughter polyp), sexual reproduction (when half of the genetic material is provided by one parent and half by the other), is far more common.

While most hard corals are hermaphrodite, they avoid incestuous relationships and instead go to a great deal of trouble to fertilize the sex cells of other colonies.

Once a year after a full moon and when spring turns to summer, there is



a period of a few days when mating occurs. The build-up to this period takes six months or even longer, during which the eggs of the female hard corals start to develop.

At first they are white but as they mature they change colour to vivid shades of pink, red, orange and mauve.

At the same time, testes start forming in the male corals, but their spermatozoa develop later since the male matures more quickly.

When the conditions are right – the water temperature warm, the tidal variation minimal, the sea calm and the moon still full – the reproduction process moves towards a climax.

Half an hour or so before spawning, the eggs and sperm of the respective corals are held at the ready under a thin tissue in the mouth of the polyps. And

then, almost as if under some inaudible starter's gun, the polyps release their eggs and sperm in bundles which gently float up to the surface.

There, they break open and the sperm swims off to find an egg of the same coral species.

This is a time of intense activity as each sperm cell seeks out a suitable egg to fertilize, but it is also a period of vulnerability since many sea creatures prey on both the eggs and sperm. One of the reasons why weather conditions must be right for the fertilization process to occur is that settled conditions facilitate mating and also reduce the risk of exposure.

A fertilized egg is known as a planula larva, a tiny creature that is attracted to light and so swims to the surface of

the sea where it floats at the mercy of ocean currents and tidal surge.

After a period of random floating that can last from a few days to up to two months, the planula sink, hopefully to land on a place where they can settle down to assume the polyp form and to establish a new coral colony. It is almost inevitable that they will have to compete with their neighbours for that precious commodity – space.

And so a slow-motion battle commences which the casual visitor may never discern.

The extent of the damage can be measured, however, by often sizable pockets of dead corals marking the battleground of two neighbouring coral colonies. ■





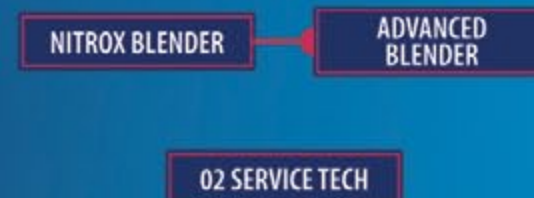
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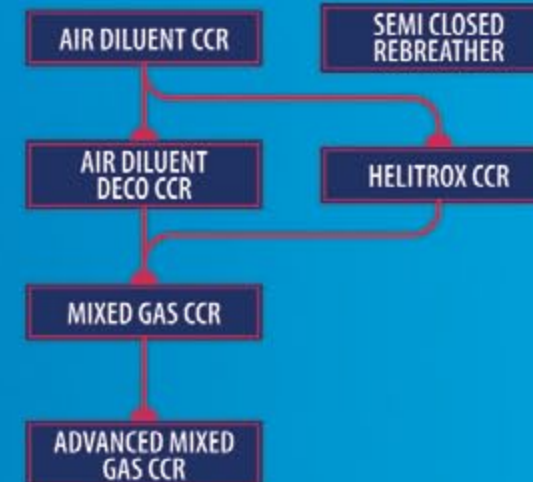
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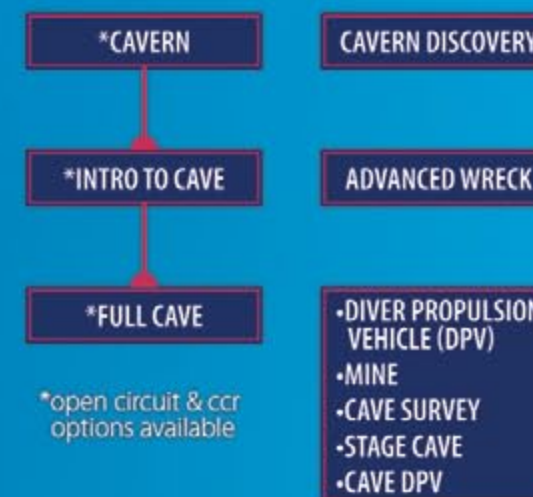
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OVERHEAD



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Alien Invasion

PART I

Aliens species have been found everywhere on our planet. They silently invade our lives and before you know it, you can't imagine life without them.

Have you heard of maize or corn?

Originally from South America, it was first introduced to the world by the Chinese who sailed around the world and planted non-native species wherever they landed.

Coconuts, sugar cane, cotton and pepper are a few more examples of plants growing in countries other than where they originated. Humans utilise most of these alien species to their advantage, but what happens when alien marine species are introduced?

Alien marine species are mainly introduced by ships, indiscriminately and unbeknown to the captains and crew.

Ships introduce them via ballast water, ballast soil, waste water and hull fouling.

Ballast water is taken in by ships to compensate changes in weight as cargo is loaded or unloaded. It is also used to compensate for fuels and other materials used during a voyage.

Ballast water usually contains materials such as plants, small marine animals, viruses and bacteria.

Waste dumped by ships is controlled by strict regulations, but remains a source.

Hull fouling is caused by marine animals like barnacles that hitch a ride on the hulls. All of the above sources are usually obtained or deposited in harbours.

The lack of natural enemies and the calm conditions make harbours excellent environments to start a new life.

Random introduction of marine species causes havoc to existing marine ecosystems.

Marine ecosystems, as with any other ecosystem, are completely independent units of interdependent organisms which share the same habitat.


They are finely balanced and the introduction of alien species can disrupt them very quickly – depending on the adaptability of the aliens.

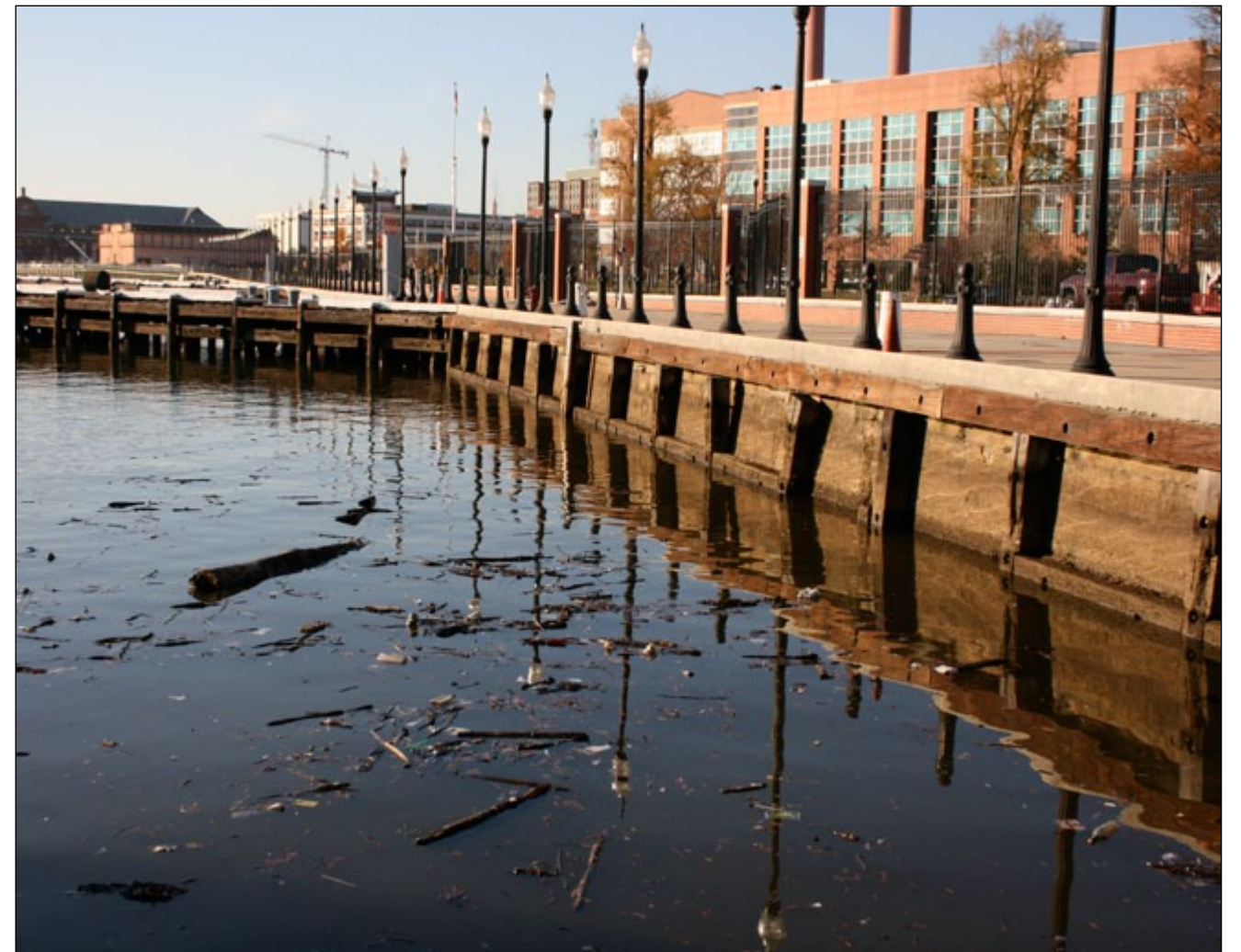
In the world we currently have three major invaders – the European green crab (*Carcinus maenas*), the Mediterranean mussel (*Mytilus galloprovincialis*) and a type of barnacle (*Balanus glandula*).

These species are adaptable to any condition and their growth rate ensures that their population establishes quickly. They foul the areas they invade by many different means, which include oxygen deprivation of the sand, over harvesting of a certain type of food and invasion of water pipe inlets.

Extensive studies have been done to control and eliminate them within the marine boundaries, but field tests must still be conducted.

The most effective current means is by physical removal, as in the case of the Mediterranean mussel.

It is currently dredged by companies and sold to local processing plants. 



Going with the Flow

Diving in a current brings different emotions to different people. There are divers that are terrified by the idea and will do anything to avoid a current and others that seek them out for the thrill of the ride and the marine life encounters they provide.

Current diving is a specialty that requires not only a sense of adventure but also careful planning and additional procedures beyond what is required for diving in still water.

Before even getting to the dive site one of the most important considerations for drift diving is to choose your dive operator carefully. You should be comfortable with the operator and confident they can run a safe dive.

Don't be scared to ask questions, such as:

- What is the procedure for locating a missing diver?
- Is a dive float used to mark a diver's position at all times?
- Are personal surface markers (SMBs) provided to the divers?
- Are there likely to be downcurrents?

It is common practice in some areas to conduct drift dives without the surface float, with the boat following the diver's bubbles.

This is not a good practice for several reasons: In the event of waves, strong winds or rain the bubbles may be obscured from view and in strong currents the bubbles may surface quite a distance from the diver's position.

When diving in current prone areas, it is always advisable to dive with a surface float. It is also necessary to have someone on the surface to watch the float and be the lookout for any divers that may surface away from the float prior to the end of the planned dive.

Equipment Checks

Pre-dive equipment checks are a necessary part of any dive, but particularly in drift dives. A broken fin or mask strap, which may normally be a minor inconvenience can provide a very challenging situation in a strong current.

All your kit should be streamlined with hoses tucked away, and you should ensure

that your air is on before you enter the water. Often the entry for a drift dive requires all divers to enter the water in quick succession.

An equipment problem could result in missing out on the dive or being separated from the group from the start.

Discuss the Plan

Discuss the plan and make sure that every diver is fully aware of how the dive will be conducted and the process for ensuring the group stays together.

The current should be assessed for strength and direction with everyone advised.

Planning should also include a provision for the pickup of divers that get separated from the group and surface earlier than expected. Importantly, if you don't feel comfortable with the dive plan or the dive itself, abort.

Pay Attention

During the dive, you need to pay attention, current diving is often fast-paced, and a moment of inattention can mean losing site of your buddies, or even crashing head-first into the reef.

It is also essential that those on the surface are paying attention. Dive operators should ensure there is a dedicated lookout on the boat to watch the float and look out for any divers surfacing away from it. The boat should follow the dive and not disappear from the area for any reason.

Personal Safety

Use the float line for your descent and ensure everyone is at the bottom before moving off. Stay within sight of the group. If you lose the group or need to surface for any reason, try to do so as close to the float as possible.

Deploy your own personal SMB and wait for the boat to come and collect you. It may also be necessary to use a whistle, air horn or mirror to attract attention if you have surfaced away from the float.

An emergency beacon or marine radio (such as the Nautilus Lifeline unit) may also be useful if you are not quickly spotted by the lookout on the boat.

General Recommendations for Diving in Currents

If the correct procedures are followed current diving can be fun and is often rewarding in terms of the marine life encountered.

Don't be afraid to ask the operator about their safety plans for current diving before you sign up for your dives, and if you aren't happy with their responses go to another operator.

- Listen carefully to the pre-dive briefing and instructions from the crew.
- Ensure the operator has an emergency management plan for locating and recovering missing divers or divers surfacing away from the float/group.
- Secure all dangling gear.
- Keep close to the dive guide.
- Carefully monitor your depth.
- Maintain neutral buoyancy.
- Do not try to go against the current by grabbing the bottom, unless necessary.
- Advise the dive guide when it's necessary for you to surface.
- Surface as near to the float as possible.
- Stay clear of the boat's propeller as the boat may need to manoeuvre in the current.
- Avoid the down-current side of the boat and hold onto any lines thrown out by the crew while waiting for your turn to exit.
- Remain calm if you are swept away from the boat.
- Deploy surface signalling devices as needed (SMB, whistle, air horns, mirror, nautilus lifeline etc.).
- Ensure the surface support includes a dedicated lookout to watch for divers surfacing, and that they will not be leaving the area for any reason during the duration of the dive.

For more diving health and safety articles, including regular incident assessments, follow our blog, DANInsider.org

Global News

Wakatobi Resort Goes Solar

Wakatobi Resort will soon be tied into a solar power station that will supply a substantial portion of the property's electrical power needs. Wakatobi's efforts to bring solar power to the region date back more than a dozen years. At that time, resort founder Lorenz Mäder convinced the Indonesian government to establish the region's first solar power plant on the adjacent island of Tomia (where the resort's private airstrip is situated). This 75-kilowatt photovoltaic installation was relatively small in scope, but it was a start. Several years later, a second solar installation was added at the village of Lamanggau on Onemobaa, the island on which Wakatobi Resort resides. Once again, Lorenz was instrumental in the process, as he sponsored the flights that brought engineers from the American foundation that evaluated, financed and installed the photovoltaic facility. The same contractor later installed two additional PV plants on Tomia, paid for by private Indonesian investors.



Most recently, and thanks to the continuing efforts and support of Wakatobi, the village of Lamanggau has established an additional kilowatt photovoltaic plant. Lorenz encouraged the village and PLN [the national power provider] to cooperate by connecting the solar installation to the island's power grid. This enabled the village to sell any excess solar-generated power during the day, and in return, receive generator-produced power during the night. This arrangement is considered more cost-effective and efficient than adding the complexity and expense associated with the use of large battery banks to store excess energy.

Thanks in part to Lorenz's ongoing work on bringing solar power to the Wakatobi region, Tomia is currently the only island in Eastern Indonesia which is entirely powered by solar power during a sunny day, with photovoltaic plants that collectively produce a megawatt of electricity. This capacity represents a third of the island's total 24-hours power requirements.

By April of this year (2019), Wakatobi Resort expects to be connected to Tomia's solar power stations. The staff is working with the national utility company, PLN, to bring grid power to the resort grounds, where it will be tied into the existing power generation system. This solution will allow Wakatobi to take advantage of clean solar energy during the day, draw power from a central generation facility during the night, and still maintain the ability to operate autonomously at full power should the grid experience a temporary blackout. Work on this connection is currently underway.

For more visit www.wakatobi.com 



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DIVERS ALERT NETWORK STANDARDIZES GLOBAL FIRST AID TRAINING PROGRAMS

DURHAM, NC – February 26, 2019 – As Divers Alert Network® (DAN®) endeavors to advance safe diving worldwide, efforts to enhance the services available in the Asia-Pacific region are well underway. Over the next six months, every DAN Instructor in the region will have an opportunity to participate in a bridging workshop to maintain their active teaching status. These bridging workshops will ensure instructors have the support and resources they need to offer top-of-the-line training courses throughout the geographically and culturally expansive Asia-Pacific region.

For this transition to run smoothly, DAN Instructor Trainers in the region will conduct numerous bridging workshops in the coming months. Earlier this month, DAN director of training Patty Seery took the first steps toward standardizing training globally by travelling to the DAN World office in Melbourne. There she ran a bridging workshop for DAN Instructor Trainers, who have now begun offering bridging workshops of their own.

Participating Instructor Trainers from Australia, New Zealand and Hong Kong reviewed DAN Instructor Qualification Course (IQC) standards and delved into the specifics of DAN's e-learning platform. To ensure that all skills are taught and in turn performed consistently, participants practiced a variety of methods of teaching first aid skills including adult, child and infant CPR with AEDs, ventilation using bag valve masks and manually triggered ventilators, managing obstructed airways, controlling bleeding, performing neurological assessments and many more.

After the skill review, participants discussed the elements of effective student and instructor candidate evaluation, and each participant then demonstrated skills for evaluation by their peers. The workshop culminated in a series of discussions to prepare Instructor Trainers to successfully conduct their own bridging workshops for DAN Instructors throughout the region.

After participating in the workshop, DAN World's Asia-Pacific regional manager, Scott Jamieson, expressed excitement about the future of DAN training in the region. "The e-learning platform is great — it will be a saviour for instructors in this region who have previously had to pay high customs duties on materials," he said. "They will no longer have to stockpile supplies for courses that may not ever happen or put students on hold for weeks while waiting for hard-copy materials to arrive. Overall, the trainers who attended left the program feeling quite positive and excited about the opportunities that will be forthcoming under this new system."

For more information, call Brian Harper at +1 (919) 684-2948, ext. 1271, or email him at bharper@dan.org.



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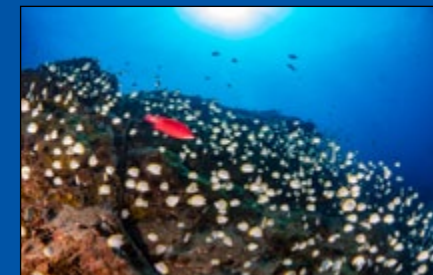
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The Saints Are Calling

St Helena, or “The Saints” as it is locally known to its 4,500 inhabitants, is home to the only known seasonal aggregation of adult male and female whale sharks, from January to March. Previously isolated in the middle of the Atlantic Ocean with no air links, an international airport opened in October 2018. One of the remotest inhabited islands on the world should soon become a hot spot for adventurous divers looking to see the biggest whale sharks in the world at a fraction of the price of the Galapagos. This is why.



By Christopher Bartlett

What looks like a microscopic, insignificant dot on a map, is in fact 122 km-squared of fascinating history, endemic birds and fish, and the only place in the world where male and female adult whale sharks are seen in equal numbers during an annual aggregation between January and March.

Coupled with regular sightings of pregnant-looking females, this has led to recent speculation that the island may be the specie's hitherto unfound breeding ground.

Other than the Galapagos, it is the only place where you can frequently encounter adult whale sharks on scuba.

In one week in February 2018, we saw a dozen on scuba and more snorkelling. The biggest we saw a 14-metre mamma-to-be. Multiple encounters on a dive are not uncommon, and on snorkel trips seeing a dozen or more happens regularly in peak season.

The limestone cliffs on the leeward side of the island host some beautiful caverns, also packed with fish, many of which are endemic, and make for superb photo opportunities. Lava fingers running into the sea attract Chilean devil rays and pinnacle sites are home to schools of Rainbow runner and jacks.

Humpback whales cruise by in winter, and three species of dolphin (Bottlenose, Spotted pantropical, and Rough-toothed) are resident year-round.

There are combined dolphin and bird-watching trips, where we get close to Black noddies, brown noddies, Red-billed tropicbirds, fairy and sooty terns, petrels, brown and masked boobies and the occasional Pomarine skua.

Bird enthusiasts also get excited about the abundance of elsewhere-rare Java sparrows, the island's endemic St. Helena plover, known as the wirebird, and the island's own moorhen.

Our favourite dive sites

Barn Cap

To the northeast of Jamestown, this is an underwater hill straight off the coast by the ridge known as The Barn. The sea can be

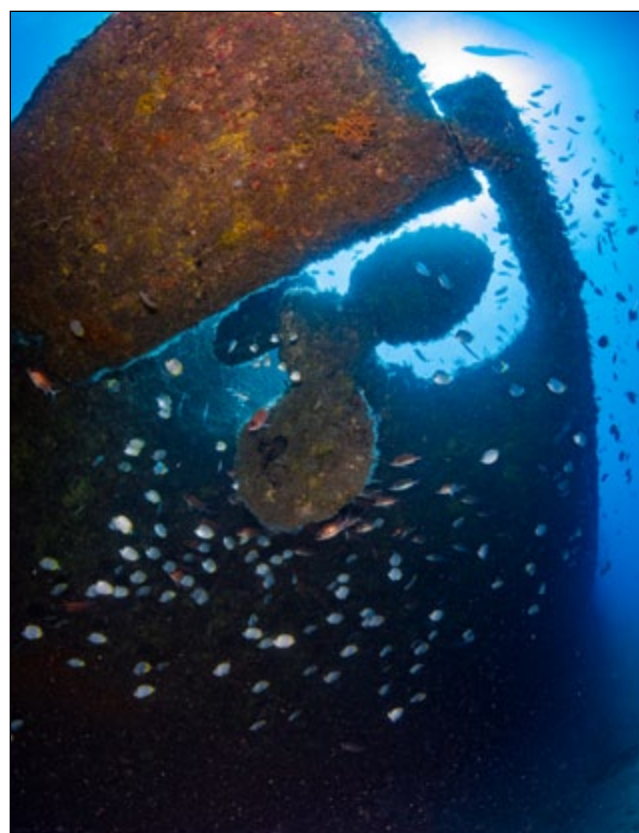
a little choppy out here, but this is one of the sites that attracts adult whale sharks in season. The nutrients coming up from the deep feed attract these ocean giants who like to ram feed here. Over 30 whale sharks have been documented here at one time. The site is also home to large schools of the endemic "cunningfish", a.k.a the St Helena butterflyfish, cavallies and jacks. The top of the cap is less than 10 metres deep, the bottom is beyond recreational dive depths.

Torm Ledge

To the northwest of Jamestown, Torm Ledge is a long narrow ledge running from the shallows out to sea, the bottom quickly descends to 40m, whilst the top is around 8 metres deep. It is covered in clouds of St Helena butterflyfish, an improbable number of trumpetfish, cavally, jacks, endemic parrotfish, and sergeant-majors. It is a popular spot for whale sharks to feed, and Chilean devil rays are often spotted here.

Long Ledge

Long Ledge is a reef that stretches approximately 75 metres out to a maximum depth of 23 metres. The dive begins at 12 metres where you enter in through several



archways that create a shelter for marine life of all species that are found around St Helena.

This site is excellent for photography in the caverns are shafts of light play on the rocks and fish filling the caverns. As you swim along the reef, you become a part of the fish that surrounds you, and with a bit of luck, a devil ray or two will cruise by.

SS Papanui

The Papanui was a coal-carrying steam vessel that visited St Helena for water and other food supplies.

On its journey to India it caught fire and ran aground in James Bay in order to save all on board. 1911 was the year that the Papanui became a monument in James Bay, lying in approximately 13 metres of water, the tiller protrudes the surface occasionally as the tides moves in and out and marks one of the most popular dives sites around St Helena for both the novice and the experienced diver.

Over the years the Papanui has attracted an abundance of marine life from Lobster,



endemics, and many other species of fish that greets you as you explore their habitat.

Artificial Reef

The artificial reef consist of old car structures and frame works that local owners has no further use for and has kindly gave their property to be a part of the artificial reef.

The artificial reef is situated just to the west of James Bay. It's has a maximum depth of 30 metres and has attracted all species of marine life that can be seen around the Island, including the Islands endemics namely Greenfish, Rockfish and many others. Chilean devil rays are also frequent visitors, however they are not seen on every dive.

Bedgellat

The Bedgellat was brought to the Island as a salvage ship and was sunk to the bottom in 1999; it sits on the bottom upright as if it was floating on the surface. The depth of the Bedgellat is approximately 16 metres and has become a new habitat to various species of fish. As you have a gentle swim towards the in land you approach a beautiful reef that is inhabited by many fish and other

Dive the Globe

The Saints

By Christopher Bartlett
marine life and it creates a spectacle to remember.

Cavalley Point

Cavalley Point is a spectacular dive that involves swimming through archways that take you down and up to various levels as you swim through them. Its maximum depth is 18 meters where Bullseye can be seen in huge numbers, Crayfish, Cuningfish, Soldiers and Cavalley. The Cavalley are seen swimming around the entrance of the archways in great numbers.

RFA Darkdale Wreck

This Royal Fleet Auxiliary fuel tanker was torpedoed in 1941 by a German submarine on a cool dark night. The Darkdale has attracted an abundance of marine life, namely Bullseye, grouper, Cavalley, as well as several endemics to St Helena such as the. Green Fish, Cuningfish, and Rockfish. Another highlight is the descent and ascent where on many occasions tuna and barracuda are encountered and the gentle giant the whale shark in season. An early morning dive would be the best time to visit the Darkdale.



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DEEP DOWN YOU WANT THE BEST

Frontier Wreck

The Frontier was a fishing vessel that came to the Island 1997 and was held in port for possession of illegal drugs. As several years passed the ship deteriorated on the surface and was sunk in 1999.

22m metres to the top of the ship as she lies on her starboard side and 28 meters to the bottom, it has now become a popular wreck dive for the advanced diver.

LAND ATTRACTIONS

St Helena's scenery is spectacular. From the clear Atlantic waters past sheer cliffs and breath-taking rock formations, through arid red desert dotted with cacti, rolling green fields and flax-covered hillsides to a pinnacle of prehistoric cloud forest, taking a drive round the island is like visiting Cornwall, Scotland, Namibia and Madagascar in a day.

Probably best known as Napoleon's last place of incarceration, albeit it in the luxuriously appointed Longwood House, and death, the island has a rich history as a key revivalling station in the middle of Atlantic.

In the heyday of the East India Company and the British Empire, this fertile, volcanic island had a 3,000-strong garrison to defend it and serviced over 1000 ships a year. The island has two large forts, a castle, and a plethora of batteries and defensive positions to visit.

For the energetic, there are 22 "post box walks" to the prominent viewpoints. At the summit of each, there is a stamp to prove you made the hike. There are also a dozen short walks that take around an hour each, from different points around the island.

If that sounds too strenuous, we organise guided 4x4 tours around the island too. If all that isn't enough, there is a quirky nine-hole golf course

Jamestown has a decent selection of restaurants and takeaways, and a couple of idiosyncratic, small bars, as well as the old Consulate to relax after a busy day.

Jamestown is home to the castle, a very informative museum, the Castle Gardens full of chattering and singing Indian Myna birds, and "Jacob's Ladder"; 699 steps rising 212

metres up to the Ladder Fort and Annie's Restaurant.

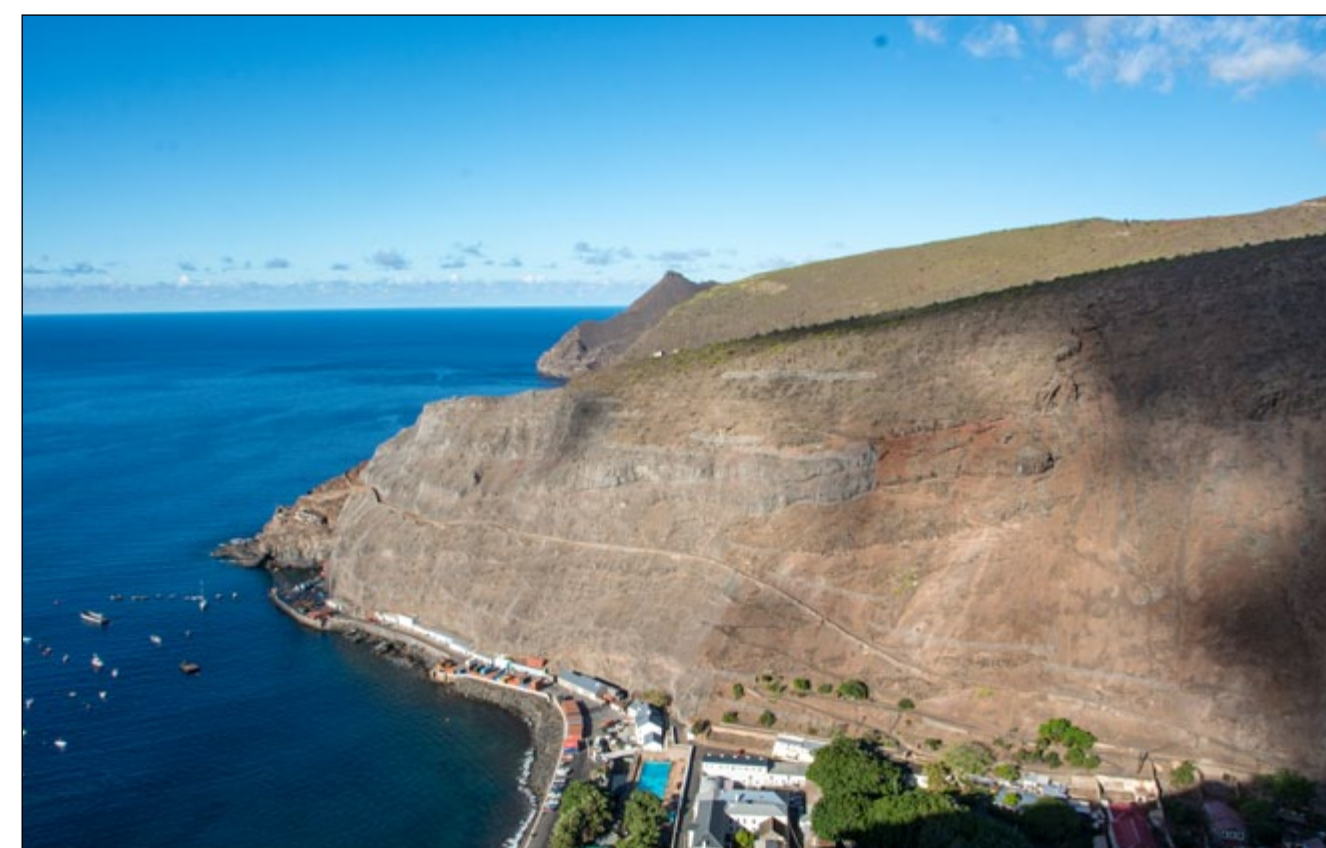
Where to Stay (prices in GBP)

The 4-star Mantis Hotel is a combination of restored historic buildings dating from 1774 and a new contemporary building situated in the heart of Jamestown, a few minutes' walk from the sea front, swimming pool, museum, Jacob's Ladder, public library, archives, shops, and bars.

The buildings originally served as an officer's barracks for the East India Company, who administered the island at the time. They served as military accommodation up until the last garrison left the island in the 1900's.

The original buildings were constructed from stone, bonded together with mud and mortar, pointed and rendered with lime which also formed the whitewash, with teak and iroko joinery and flooring.

This 30-room boutique hotel has a large restaurant, the best on the island, bar and guest lounge and two outdoor terraces. All



Dive the Globe

The Saints

By Christopher Bartlett

rooms have air-conditioning. Contemporary rooms start at £113 pp per night with breakfast based on 2 sharing, Heritage Rooms £118 pppn and Heritage Suites £125 pppn with breakfast based on 2 sharing.

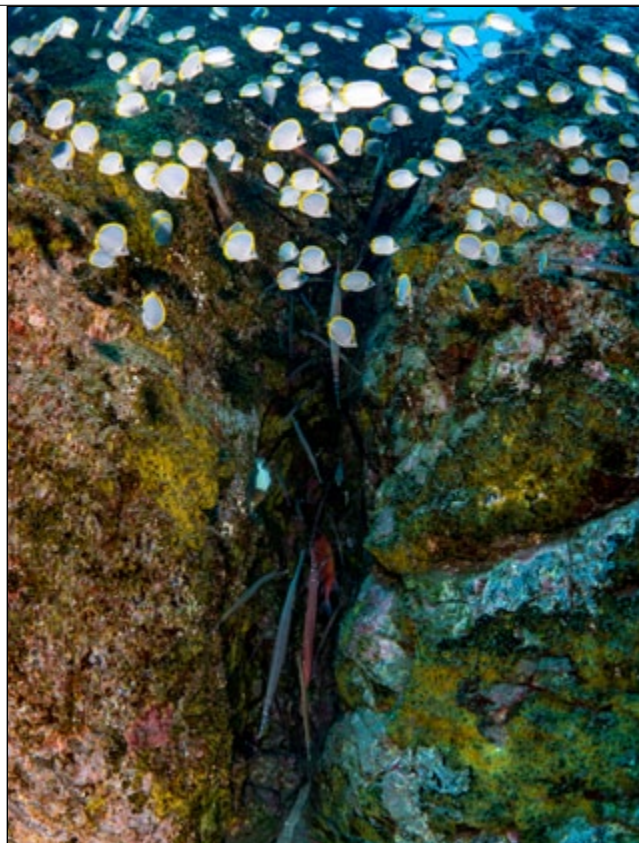
HALF-TREE HOLLOW BUNGALOWS

Five two-bedroom units with a splendid sea and sunset view, built in 2014, located above Jamestown with a magnificent view of the coast and the ocean.

Each cottage has a small lounge, kitchen and a bathroom. Each bedroom has one double bed.

There is a small supermarket in Half-tree Hollow and other food shops in Jamestown. Fresh fish can be purchased in Jamestown, a five-minute drive away. They can provide a rental vehicle (Ford Fiesta or similar too). From £60 GBP per night per bungalow with vehicle. There is also a three-bedroom unit for £80 per night.

The furniture in the bungalows was made locally by the owner himself. Some have kitchen units made from local timber, or



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some will have at least some piece of furniture made from local timber and deck chairs on the deck allow you to watch the sun go down and treat yourself to your own sundowner drinks.

THE CONSULATE HOTEL

The Consulate Hotel is almost like a museum, with numerous reading rooms and lounges and the dining and breakfast rooms full of period pieces brought across the Atlantic from Africa.

The bedrooms are cooled by moveable fans and natural ventilation. On the weekends, the street-facing rooms can be a bit noisy as two pubs are close by. Double and Twin rooms are £100 pppn sharing, with breakfasts.

Dive operators

There are two dive operators on the island. Having been out to the islands, we chose to use Subtropic Adventures, who have been diving the islands since 2000. Owner-operator Anthony is a local with unsurpassed knowledge and experience, and his ex-pat Divemaster Paul is an experienced diver leader with many

hundreds of local dives logged.

Dive boats and equipment

Diving is conducted from RIBs (Zodiacs), that can take up to 12 clients. Cylinders are steel 12-litres, with valves that can take either DIN or A-clamp regulators. The boats have an oxygen and first-aid kit in boards. Rental equipment is mainly Scubapro, wetsuits are 5mm.

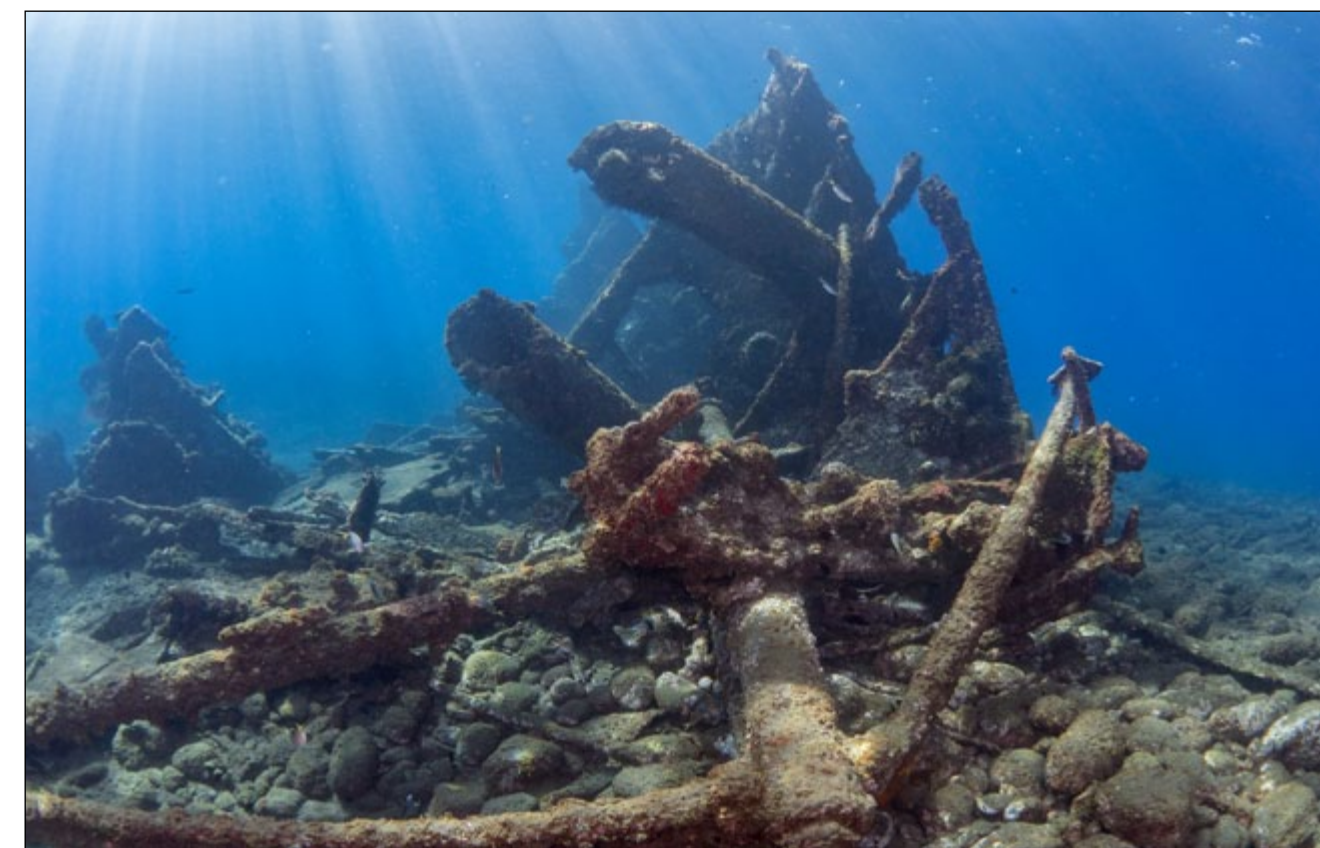
Cost

Dives cost £35 per dive, with cylinder, weights and weight belt.

Tour Operators and Escorted Trips
Diving and adventure travel specialists Indigo Safaris have set up two escorted weeks in 2020. One week is in the self-catering bungalows at Half-Tree Hollow and other at the Mantis Hotel.

You can find the dates and rates here <https://www.indigosafaris.com/saint-helena-island-963270.html>

They also arrange bespoke trips to the island and safari extensions in Southern Africa. 🇬🇧



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KuraKura Resort

Gili Meno Island - Indonesia.



Kura Kura Resort is situated in the main harbour on the paradise island of Gili Meno, North Lombok, Indonesia.

Their affiliated resort, Meno Mojo is 600 metres away with stunning water views out to Gili Air and Mt. Rinjani.

With 22 rooms, swimming pool, restaurants, Bar and salon / massage facilities it is without question one of the best resorts on the island.

The Gili Islands offer wonderful diving for beginners and experienced divers with typical visibility of 20-30 metres, water temperature ranging from 27-31 degrees and an abundance of marine life.

With more than 20 dives sites, all within a 10 to 20 minute boat journey fro Gili Meno, there is something for everyone to see. The different topographies of the dive sites, such as walls, slopes, wrecks and canyons

inhabit a large variety of marine species.

The Gili's are world renowned for the abundance of Green and Hawksbill turtles and among the many different species of tropical reef fish you will have the opportunity to spot sharks both white and black tips.

Mantas, Whale sharks and Eagle Rays are spotted from time to time and every dive ensures seeing some great macro species.

Only 50 metres from Kura Kura Resort is the Meno Dive Club (M.D.C.) which we highly recommend. They offer three dive excursions a day with the option of an additional night dive.

Their vessel the " Bubble Smuggler" is the largest and most comfortable on the island. Oxygen and a fully equipped first aid kit is on board. Knowledgeable guides supported by

western management will ensure that you get the most out of your dive and memorable experiences to bring you back again.

Gili Meno is a quiet destination with lots to keep you busy during your stay. Meno is referred to as the romantic island with pristine beaches, sensational tropical waters and plenty of private relaxation spots.

There are no cars or motor bikes, only push bikes and horse and carts. There are no noisy late night clubs are parties that flow on to the early morning.

If you are seeking a very special experience on a "castaway island" look no further than Gili Meno.

For more information visit www.kurakuragilimeno.com or www.meno-mojo.com



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It is universally recognized that proper buoyancy control is essential for diver safety and control. This is one of the primary skills you will learn in this course.

HOWEVER, THIS COURSE IS NOT JUST A BUOYANCY COURSE.

This course is dedicated to sharpening your skills to a superior level. You will learn a number of skills like advanced buoyancy and trim, propulsion, laying line, emergency procedures, and working while being task-loaded to ensure you can cope with a demanding dive situation.

The applications of the program are endless. Dives in any environment with any equipment design can be made safer, easier, and more fun by utilizing the skills mastered in this course.

IT'S NOT ABOUT WHERE YOU START. IT'S ABOUT WHERE YOU FINISH.

If you have not trained in the RAID system, we'll get you caught up and then take you forward.

- ▶ The program may be completed using modified recreational equipment, sidemount, twinset or rebreather.
- ▶ The program may be completed in a pool, confined water or open water.
- ▶ This is a course every diver from beginner to dive professional will gain enormous benefit from.

SO, WHAT ARE YOU WAITING FOR?

Suit up and get ready to lift your game!

PREREQUISITES

- ▶ Minimum 15 years old with parent/guardian approval
- ▶ Minimum 18 years old when training using a rebreather
- ▶ Minimum certification is RAID Open Water 20 or equivalent

www.Diveraid.com

BALI SEASCAPE BEACH CLUB

Is ideally located on the fabulous East Bali coastline.

A haven for boating, fishing, snorkeling, and scuba diving. It is one of the few resorts that can boast its own beach front and dive centre. The resort offers a peaceful and friendly atmosphere and is conveniently located close to shops, restaurants, and local cultural attractions.

Snorkeling from the beach takes you to a beautiful vision of coral and tropical fish.

Our SCUBA training and diving to 22 local dive sites including the famous USS Liberty dive. Join us for a wonderful relaxing holiday in the real Bali.

Bali Seascape Beach Club is an intimate Boutique Resort consisting of 23 apartments, comprising 8 One

Bedroom units, 6 Studios, 8 Hotel Rooms and a Luxury Penthouse Suite with private rooftop patio with Pagoda and Jacuzzi.

Each Apartment has a large veranda or balcony with spectacular sea views across the bay of Candi Dasa .

Our facilities:

- Swimming Pool
- Children's Pool
- Whirl Pool
- Complimentary Pool Towels
- Beautiful Landscape Garden
- Traditional Balinese Massage
- Rathbones Restaurant
- Coffee Shop
- Bar
- Live Entertainment
- Safe Deposit
- Shop



- Tour Booking Service
- Bell Desk
- Broadband wireless internet (bring your laptop)
- Rooftop patio with spectacular views and bar
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For more information visit www.baliseascapebeachclub.com

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Bali Palms Resort



Is located at the entrance to the small, but well established holiday town of Candi Dasa which provides the perfect place to chill out and relax.

The main town of Candi Dasa is just 5 minute walk away and offers a wide variety of restaurants, shops beauty salon and others amenities small coastal town.

It is the place to rejuvenate, start a new lift, make new friends and just enjoy the ambience of this special place where time just runs slower. Our area is famous for SCUBA DIVING over 22 dive sites in Candi Dasa area.

Bali Palms Resorts overlooks a magnificent clear blue sea and small islands. Private beach front sand strip with sunbeds and umbrellas where you may relax and enjoy the stunning views.

Spoil yourself with a cold beer or

cocktail served by our dedicated staff.

The Resort has 50 Luxury accommodations set round a very large pool with plenty of sun beds and umbrellas.

The resort comprises Hotel Rooms, Studio's, 1 and 2 Bedroom Apartments & Villas, many with private walled gardens.

Resort Facilities will aim to ensure our guests have a contented life at Bali Palms Resort.

- Palms Cafe Beach Front Bar & Restaurant
- Swimming Pool & Whirlpool
- Beachfront BBQ Area



- Medical Centre with Doctor & Nurse
- Shop and Deli
- Massage Centre & Spa
- Naughty Leprechaun – Irish Bar
- Free Shuttle Bus
- 24 Hours Security
- Laundry Service
- Room Telephone
- Sports Room (Pool Table, Darts, Game Machines)
- Dive Centre - Palms Scuba Divers
- Entertainments Manager for Weekly Events
- Broadband Wireless Internet
- Weekly Kuta Trip
- Trip & Travel Service
- Room Service
- Tailoring Service
- Taxi Service

For more information visit www.balipalmsresort.com

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The Getaway Planet

Nature Unleashed



A tranquil hideaway located within the protected sanctuary of West Bali National Park, Plataran Menjangan Resort & Spa offers an escape to nature at its most beautifully raw and untouched.

Experience the epitome of luxury, privacy and comfort in the traditional Joglo villas of this unique eco retreat, at one with nature in the midst of the forest or right by the ocean.

Dine along the oceanfront on a world



of fresh flavours crafted from the treasures of the garden and sea. Listen to the song of the exotic Bali Starling while exploring the beauty of the wild, trekking through the jungle, kayaking through the mangrove canal, diving in crystal clear waters, or enjoying the romance of a sunset cruise.

For couples, families, nature and adventure lovers alike, Plataran Menjangan Resort & Spa offers a truly rare and enchanting experience beyond anything imaginable, with Bali's untamed wilderness as the most incredible host.

Plataran Menjangan Resort & Spa lies within the tranquility and beauty of Plataran L'Harmonie – West Bali National Park, an integrated Eco-Development Area covering 382 hectares and with a 7 km beach line.

A nature lover's paradise covered in lush forests, surrounded by scenic mountain

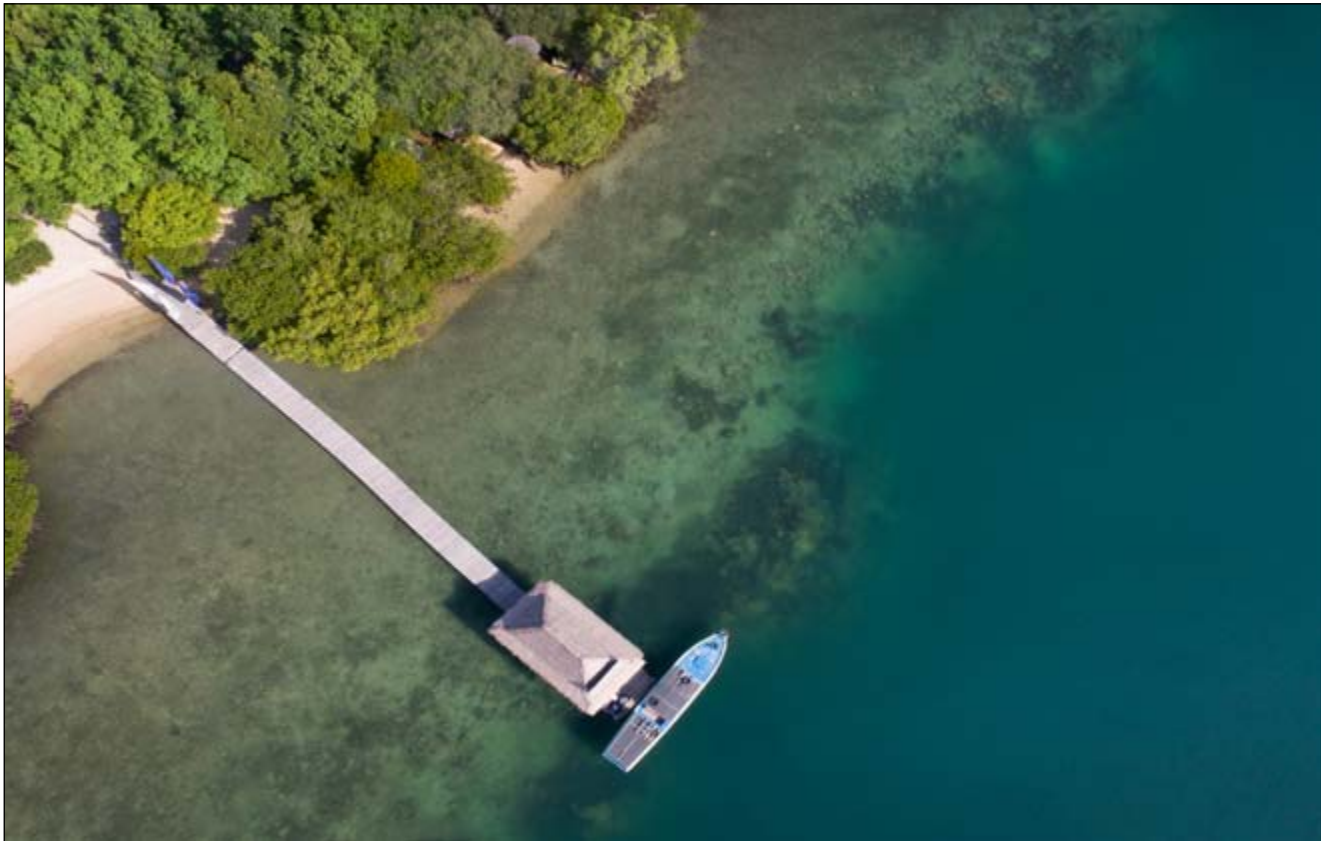


ranges, and fringed by the ocean, Plataran L'Harmonie, with a philosophical tagline of "God's Secret Courtyard", aims to encourage park visitors to unravel life's mysteries and God's answers through experiencing nature at its most candid.

The park is home to 175 species of plants and 167 species of birds. Its diverse array of mammals, birds, reptiles and amphibians includes some of the world's rarest animal species, including the Java Sparrow, Menjangan Wild Deer, and the endangered Bali Starling, which is endemic to Bali.

Just off the coast lies Menjangan Island, a popular spot for snorkeling and diving, offering majestic wall diving, dramatic drop-offs and some of the best coral reefs in Bali just metres from the white-sand beach.

For more information please visit www.plataran.com





Bali, Indonesia, Mövenpick Resort & Spa Jimbaran Bali is inviting families to spend quality time together in the "Island of the Gods" with a new programme that is intuitively designed to take the pressure off parents.

Under the "Mövenpick Family" programme, parents travelling with their little ones will be offered a wide range of complimentary extras and amenities that will keep kids happy and entertained throughout their stay.

With spacious family rooms, healthy meals for children, a great kids' club, on-demand baby essentials and more, parents will be able to relax and soak up the resort's idyllic tropical surroundings, safe in the knowledge that their children are being well taken care of.

"At Mövenpick Resort & Spa Jimbaran Bali, we understand that travelling with children can sometimes be a stressful experience - especially if your hotel is not catering to your family's needs," said Horst Walther-Jones, General Manager, Mövenpick Resort &

Spa Jimbaran Bali.

"Our Mövenpick Family programme identifies what matters most to a family - plenty of space, effortless dining and quality childcare - plus all those little added extras that really make a difference to parents. With our extensive family facilities, including lagoon-style pools, waterslides and a beach, Mövenpick Resort & Spa Jimbaran Bali is perfect for families. Our aim is to make travelling with children both easy and pleasurable, allowing families to create wonderful new memories together," he added.

Upon arrival, young travellers will be welcomed in their own private check-in area, making them feel like VIPs, and all kids under the age of 12 will receive a special turtle toy.

The most important part of the family travel experience is the Family Room - a 56m² loft-style space where parents and children can unwind over two floors with a king bed and sofa bed. These rooms are adorned with animal-



shaped towels and equipped with kids' amenities such as cookies and milk, and all children will receive complimentary access to the Meera Kids Club.

Mövenpick Family also recognises that travelling parents are often weighed down by the amount of extra luggage they need to carry. To reduce their load, the "On-Demand Baby Essentials" service allows parents to borrow childcare equipment such as strollers, bottle warmers, bath mats, child-proof electrical plugs and more, all free-of-charge.

Under the "Power Bites" programme, hungry little tummies will be kept filled with a selection of healthy dishes from a yummy kids' menu and child-friendly restaurants. Power Bites can also be ordered from room service.

A daily "Chocolate Happy Hour" is also a real favourite with children, allowing them to indulge their sweet tooth every day, and each week our Sunday Family Brunch provides a great opportunity for parents and kids to come together and enjoy a special family feast.

The resort's Meera Kids Club is a fun-filled hub of activity for youngsters, featuring a game station, mini theatre, trampoline with ball pit, and a sleeping room for tired little ones. It also offers a daily programme of activities for children aged from 4-12 years, including opportunities for parents and children to have fun together. Classes like Family Yoga, Balinese Cooking and the Meera Family Bali Package, a half-day activity programme featuring kite-making, face-painting and more, allow families to spend quality time with each other and renew their bonds.

Alternatively the resort's Kids' Pool and water slide, plus the special Toddler Pool which has a soft foam base, are the perfect places for children to make a splash.

To celebrate its love of families, Mövenpick Resort & Spa Jimbaran Bali has launched a new "Family Happiness" promotion which offers 25% off a Family



Room, free meals for young kids (up to 6 years) and half-price dining for 7-12 year-olds, plus complimentary access to the Meera Kids Club and free Wi-Fi. In addition, families booking direct on the resort's website will be offered an exclusive US\$20 restaurant voucher per stay.

With such an extensive array of amenities for families, plus this enticing new promotion, Mövenpick Resort & Spa Jimbaran Bali is giving parents the opportunity to create magical memories with their children in the spectacular surroundings of this tropical resort.

Mövenpick Family programme offers an array of amenities for children, while new "Family Happiness" offers even greater incentive to book a holiday in paradise...

For more information and reservation, please visit www.movenpick.com or contact resort.bali@movenpick.com / call +62 361 472 5777. 



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Photographic Competition



Frans Wessels



Alex Koen



Betsie van der Schyff



Daniel Fisher



Paul Read



Clive Willes



Leigh Sleight



Clint Wall



Winning Photograph

Charles Rowe

How to enter your photograph

Whether you're an amateur or professional photographer, this is a photo competition for all levels of photographers. We're looking for pictures that capture the true experience of scuba diving and the wonders of the underwater world.

Submit your photo!

- Photographs may be taken above or below the water, as long as diving remains the theme.
- The Name of the photograph must be the photographer's name.
- Photographs must not be bigger than 5 MB per photo.
- Submit your snaps in high-resolution (at least 150 dpi) in jpeg format.

E-Mail your photos to info@ozdiver.com.au
"photographic competition"



Photo School

Black and White



Prior to 1935 when Kodak introduced colour film, photographer had no choice but to take picture in black and white. Today we have sophisticated digital cameras which can even do some editing on the camera itself, so how will converting your pictures to black and white enhance your photography?

Black and white photos are still considered by some as the purest form of photography because it emphasises lines, forms and shapes. It is at the very least one of the

most expressive forms of art, classical yet unpretentious. Leonardo da Vinci said that simplicity is the ultimate sophistication.

Taking black and white photos

Most photographers do not go out to shoot black and white picture, but try visualising what your picture would look like in black and white. Not all subjects will look good in black and white, so take pictures of objects with definite and easy recognisable shapes such as dive buddies, sharks, turtles or fish. In the



absence of colour, contrast is more pertinent, therefore pay attention to lighting. Light becomes a key element because it influences patterns, textures, shapes and contrast. You will find that most often those overcast days are the best for black and white photography. Remember when shooting in mid-day or with artificial light such as strobes, shadows and highlights will become a critical feature in your picture. Always shoot with the lowest possible ISO to prevent a grainy effect.

Shooting in black and white highlights the creative side of a picture as oppose to the technical side, therefore you need to focus on your composition and be creative. The same rules which apply to normal photography also apply to black and white photography. When it comes to choosing a lens, any lens can work, but wide angle shots make some of the best black and white photos.

Fixing exposure errors and distracting colours

Photos which may be considered flops can become some of the best black and white photos. For example, if your ISO was too high and you have a picture with a grainy effect, converting these into black and white will give the picture an old, nostalgic effect.



Some exposure problems can also be fixed by converting pictures into black and white and playing with the contrast.

Getting colour combinations right in underwater photography can be a difficult task. The deeper you go, the more colour tends to fade away. Another advantage of black and white photography is that it can emphasize the object by removing distracting or dull colours.

Converting to black and white

Some cameras have the option to take pictures in black and white should you wish to see the photo in black and white immediately after taking the picture. Alternatively, make use of editing software to convert pictures in black and white. If you are using an SLR camera, try and take picture in RAW to convert to grayscale command in your photo editing software.

Next time you are playing around with your photos on your PC, convert a few into black and white and learn to recognise photos which will have the best effect with this technique. Black and white prints are still hanging on the walls of many galleries, households and corporate companies because of the timeless yet modern look and feel it can create - It will never go out of fashion. ■

Photo Editing

Finishing touches

Part II



When you have edited your photographs and are happy with them, you need to make sure they are ready for showing others on the computer or in print. When finishing off your best photographs, even if you are an amateur, you have exclusive rights to your images and you should always make sure that your photographs are marked as yours to stop other people stealing them and using them for their own use.

Quality

To change the image size, either some pixels have to be removed or new pixels must be added. The process you use determines the quality of the result. The Interpolation drop down list provides a selection of available methods of interpolating the pixels in the scaled image:

None

No interpolation is used. Pixels are simply enlarged or removed, as they are when zooming. This method is low quality, but very fast.

Linear

This method is relatively fast, but still provides fairly good results.

Cubic

The method that produces the best results, but also the slowest method.

Sinc (Lanczos 3)

New with Gimp 2.4, this method gives less blur in important resizing.

Creating a copyright watermark to add to your photos

It is important to mark your photographs for copyright. Instead of typing your name on each and every photograph individually, here is the way to make your own watermark, save it and then add this to all of your photographs with ease. It may be a little bit of a pain to get the watermark right, but when done you will not have to do it again.

Making your signature

Open up a new blank image in Gimp and set the size close to the size of the signature that you want to add to your photographs. When creating the new image, click on advanced options and select Fill with: Transparency. Set the resolution to 300PPI and then if you want you can either scale the image in pixels or a dimension such as mm or cm.

When the new image opens, click on the text icon and then write your name for the copyright. Depending on the background colour, usually white text tends to stand out nicely as a watermark.

HANDY TIP: Many people struggle to find the Copyright symbol for the signature so the easiest way to add the © symbol is to Google 'copyright symbol' and then copy the symbol (Ctrl c) from

another web page and then paste it (Ctrl v) into a new Gimp text entry. It is best to add this as a separate text entry in a new layer as normally you will need to change the size of the copyright symbol and the position related to the text.

Once you have created your watermark copyright symbol then right click on one of the layers in the layers box and then select 'Merge Visible Layers'. This will then merge the copyright symbol and name into the same layer.

Now go, Image -> Autocrop Image
Then, File -> Save As
Name it 'My-Watermarkname.gbr'; the .gbr means it will be a brush (you can then easily add it to any image from now on with one click on the brushes menu). You can also select the file extension from the Select File Type options and choose Gimp brush.


*** The tricky part now is to find your Gimp brushes folder to save this to the brushes menu (.gbr). It may not be the same as this but search around and you will find it: Gimp->2.0->brushes (C:\Program Files\gimp\2.0\brushes).

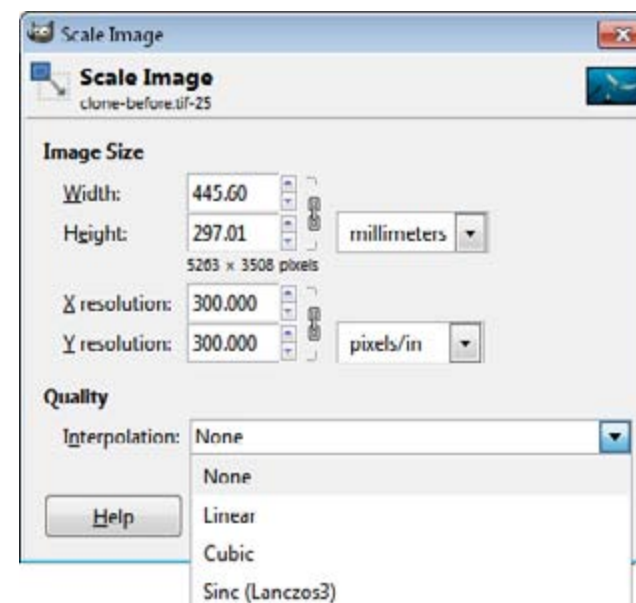
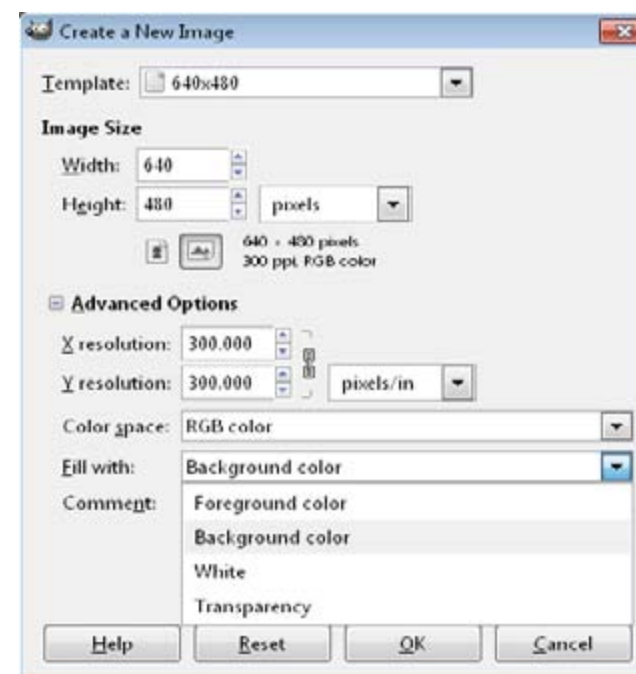
Click Save and then select 'Merge visible layers' when asked and click 'Export'. Choose spacing 25 and then add in a description/name for the signature that will show in the menu for future use, e.g. "My Signature", and click Save.

Once you have saved this it is then best to close Gimp completely and restart. Then when you open your images, click on the brushes icon and you should find this in your list of brushes to choose from. Then for every one of your photographs from now on, all you need to do to add your watermark is select the brush option and then click on your signature which should show as a small horizontal squiggle in the icon. Move it into place on the image and then click and it is there.

TIP: If you cannot find your signature with the Icons then click the 'View as list' option and you will see it there under the name you selected.

IMPORTANT TIP: Before adding the signature to your photograph, open a new layer for the signature to go on so that you can adjust the size and opacity to suit your photograph if required. Then all you do is click on the signature brush and place it on your photograph.

As mentioned, it is a pain to do in the first place and you will most likely struggle to get it right at first, but the hard work you do now to get your signature saved as a brush will save you a fortune of time in the future and make editing and finalising your photographs to show the world a breeze! Happy editing! 



Download Gimp
- www.gimp.org

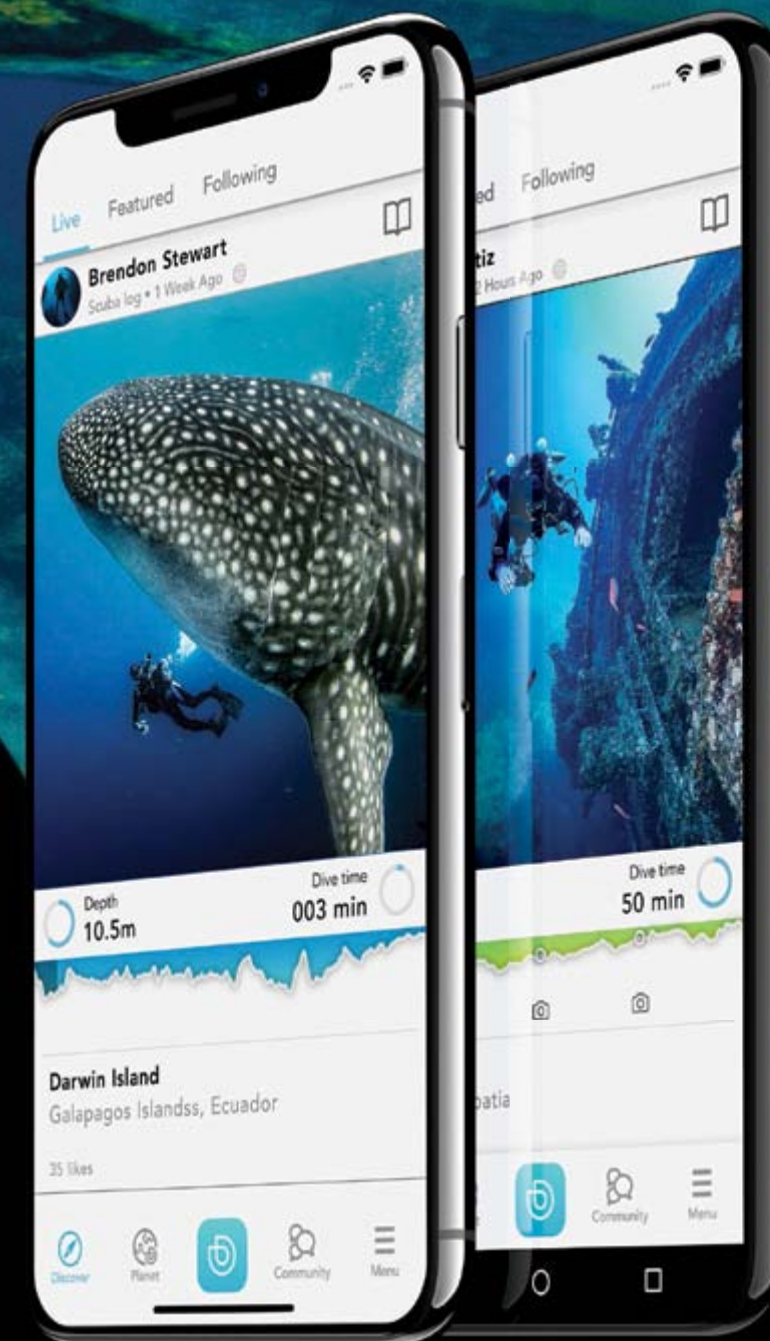


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TO WORK**



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Lake Otjikoto

Due to the extremely bad viz on its long coast line, almost all recreational diving in Namibia is done inland in one of their many deep holes, dams and caves. To quote one of the locals: "The Namibians are in essence a nation of dam divers."

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Tsumeb has been a copper mining town for ever. It was given its original name, Tsomsoub, by the earliest inhabitants that we know of – a group of Bushmen who lived at an ancient sinkhole they called Oshikoto.

They didn't do a lot of diving in the hole back then, but rather spent their time mining copper and trading it off to the local Ovambo's.

In the 1890s, whilst Namibia was a German colony, professional mining started in all earnest and by 1905 enough people was drawn to this rich ore to start calling Tsumeb a town.

It was also one of the places the colonial government thought worthwhile to defend during WWI when the South African army, as agents of the British, were sent into what was then known as German South West Africa.

However, the Schütztruppe were hugely outnumbered and decided to throw in the towel in 1915. The artillery they

didn't want to hand over to the other side was dumped into the deep waters of Lake Otjikoto. Legend has it that they dumped some gold bullion in there, and I have to admit that I was entertaining myself on the way there with a lot of what-if thoughts.

In the 1960s, people started diving the hole, and according to Wikipedia, Graham Ferreira made a pioneering documentary about scuba diving there in the 1970s.

Diving continued and in the early 1980s some of the artillery was removed from the hole. Although most of it can be seen in Tsumeb, some of it can be found on displays as far afield as Windhoek and South Africa.

One of the canons in the Tsumeb museum is named Tulio, after one of the divers who lost an arm on that expedition.

Soon after it was declared a national monument and it has been illegal to remove anything ever since. The



Namibian Underwater Federation regulates all diving. They in turn work in conjunction with their National Monuments Council.

Of the various places available to dive, Lake Otjikoto has through the years become the premier dive site in Namibia.

The three main diving groups in Namibia – Otjikoto Diving Enterprises, Windhoek Underwater Club and Skeleton Coast Divers – now control all diving in the hole on behalf of the Underwater Federation. They were all going to be there for our expedition to make sure we toe the line.

It was early in December when we set off on our epic expedition. There were nine of us, with enough personal gear, camping gear and diving gear to start our own travelling diving business.

Because we were planning to do trimix diving and we didn't know what would be available on the other side, we had

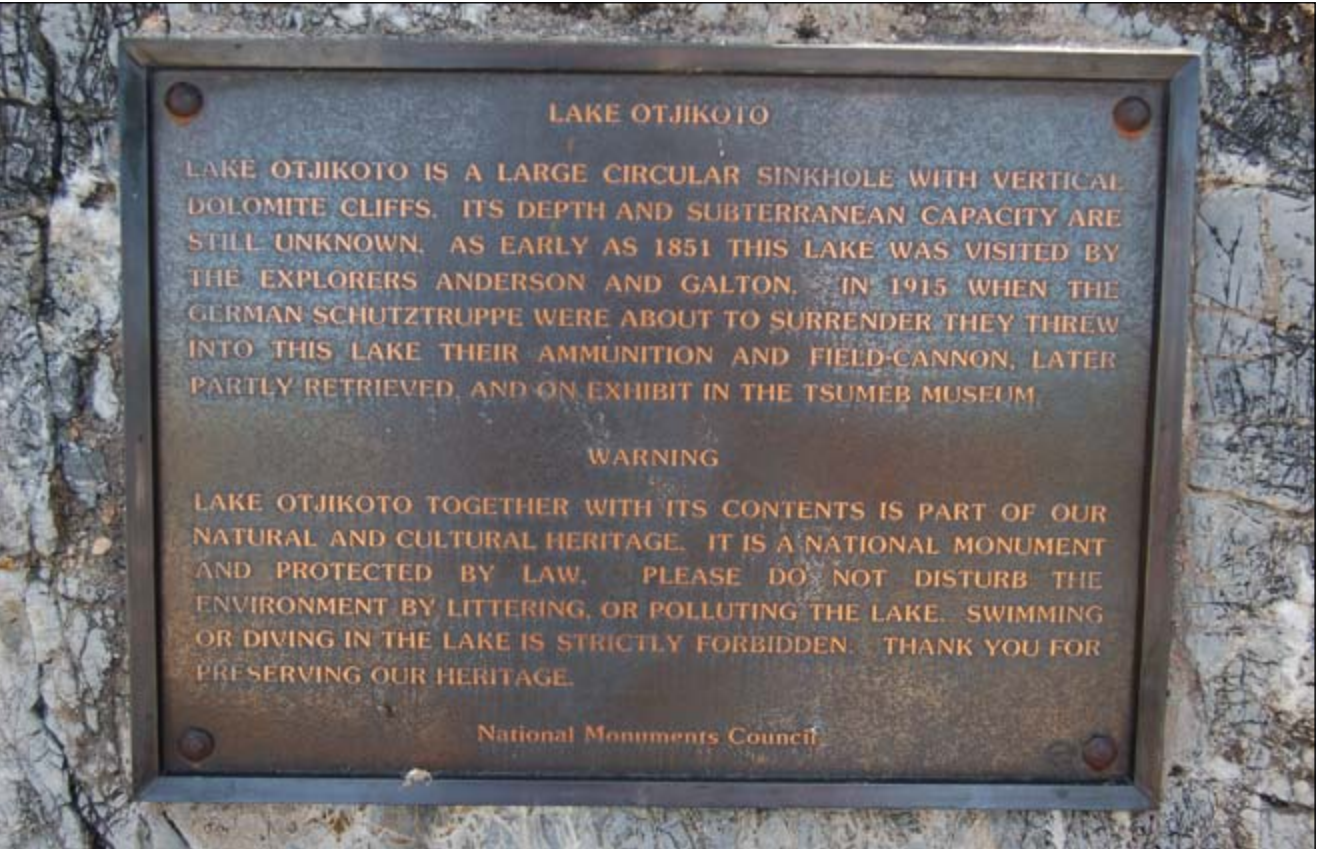
twin cylinders, side slings, front slings, stage cylinders, backup cylinders, oxy-clean cylinders etcetera.

We even had two compressors on loan from Bauer (it came with an expert operator in the form of Fritz Rhooode) and a mixing panel – all of which had to be squeezed into three vehicles and two trailers.

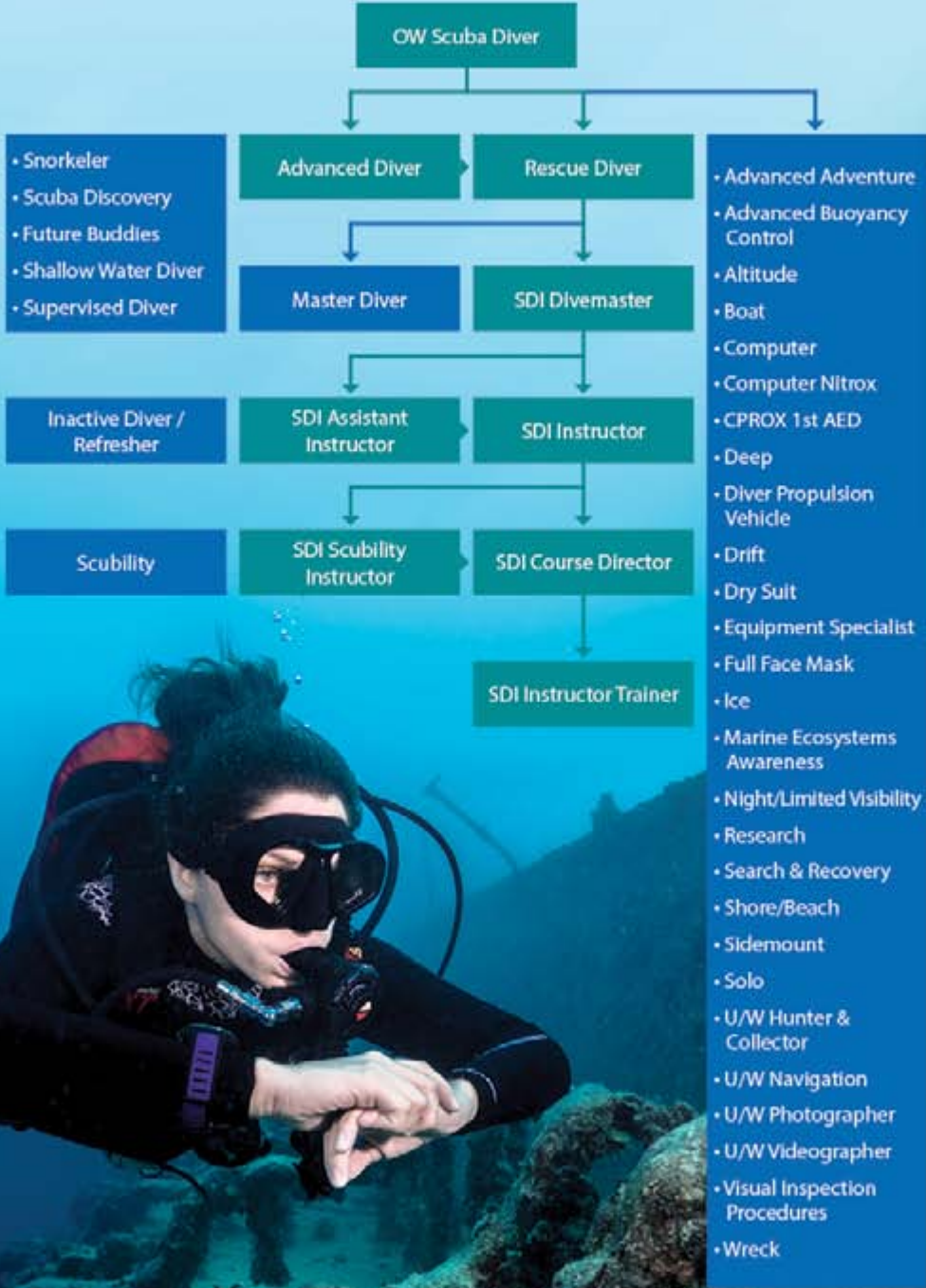
On day one we travelled all the way through Botswana and stopped over for the night on the Namibian side of the border in the sleepy little town of Gobabis. We were on the road again by sunrise and finally arrived at Otjikoto by mid-afternoon.

It was just under 40°C in the shade, which proved to be a good average for the next ten days. The Namibian side of the expedition had already arrived two days before to set up camp, and boy, did they bring a lot of stuff!

Two power points and a hut called Villa Bavaria with two long drops and



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a hot shower are the only permanent fixtures at the campsite. The Namibians brought everything else with them in a huge truck – big tents, small tents and gazebos galore.

One of the tents even had air-conditioning. There were tables, chairs, fridges (mostly full of Jagermeister), a rotisserie, dustbins and even a white board for dive briefings.

Then came the diving set-up. Not only did they bring their trusty Bauer along, but also a huge air bank with a long HP-hose running down to the water surface so that divers could fill their cylinders on the platform below, instead of having to cart it all the way up after each dive.

They also created a good area for kitting up, including lines to hang your gear and a portable shower for afterwards. They'd obviously done this before.

Before we started offloading and setting up our camp, we all went to the hole to see what it looked like – and it was a beauty!

With the surrounding cliffs higher and the water surface bigger. Getting to the water used to be much more difficult with divers and kit being lowered down in a basket.

But, thanks to the ingenuity of Tinus van Wyk, a Namibian diving legend who owns a stainless steel factory in Windhoek, it is now a lot easier. On the top of the cliff two agricultural pump pipes go down to the water, and here he built a huge platform with a swivel crane arm.

Two people manually lower the kit to an anchored floating platform below. Divers go down a narrow steel staircase and have the luxury to don their cylinders on the bottom platform in the shade of a gazebo cover.

Actually, as we would be diving with



twins and side slings, it wasn't really a luxury in the heat, but a necessity. The next day a big truck arrived with all the oxygen and helium we would need for the trimix dives we planned for both here and at Lake Guineas over the next few days.

We set up the mixing panel, checked our gear and were finally ready to start diving.

But first came the briefing. Stef Viljoen from Otjikoto Diving Enterprises made it clear that safety was key.

It is a high-altitude dive site (1500m above sea level), the hole is deep and the closest deco chamber is in Walvis Bay. Since it is a one-man chamber, you have to be conscious for them to be able to treat you. In other words, the message is quite simply not to get the bends.

The Namibians are hardcore divers.

They don't do trimix, as they are

mostly only one- or two-star divers. Strictly speaking, they are diving deeper than their qualifications allow, but this is where they learn to dive and do most of their diving and they are all capable of handling the depths.

They also have a lot of safety precautions in place. They limit their bottom time and have long SITs between dives.

There is oxygen both on the platform and on the deco trapeze at 3m. They plan the day's diving as a whole and only one team is allowed underwater at a time.

While they are down, the next team is already kitted up and in the water, acting as backup. They require that every one diving here has to be DAN member, and both DAN and SOS 911 are informed of all divers' details before every expedition.

Rightly so, they are proud of never having had a diving fatality at Otjikoto,



Giant Stride

Lake Otjikoto

and even the famous Dr. Buhlmann of the Buhlmann tables have personally come out here to see how they do it.

For the normal diver there are really two dive spots: a shallower one called The Reef at 26m to 35m, and then The Cannons which are between 45m and 55m.

The normal procedure is to limit yourself to between one and three dives per day, depending on depth, with two build-up dives on the shallower reef recommended for the first day.

Otjikoto is shaped like an upside down mushroom, with the stem the open water part and overhangs all around the hole at the bottom. According to Stef, the deepest depth that has been recorded to date is 74m.

Because of mining and agricultural pollution of the groundwater in the area, the visibility is on average between 5m and 10m, although we

were told that it can get up to 15m.

However, on our trip it was between 1m and 3m, which forced us to abandon our plans to try for 75m.

The shallower dive has a set route. You start at the shallowest point, going down a shot line to an old ceramic toilet at about 26m and then swimming along a line until you get to an old pair of kudu horns at 35m.

Here you have the option of going underneath the overhang to a small boat at about 40m, or going straight up the shot line to the surface. Keep your eyes open for artefacts on this dive, strewn between all the other junk that tourists tend to throw into the hole when they're standing on top.

Dive two is the one that made Otjikoto famous – The Canons. Both canons have chains going down to them from the surface, and they are joined together by a rope at the bottom.

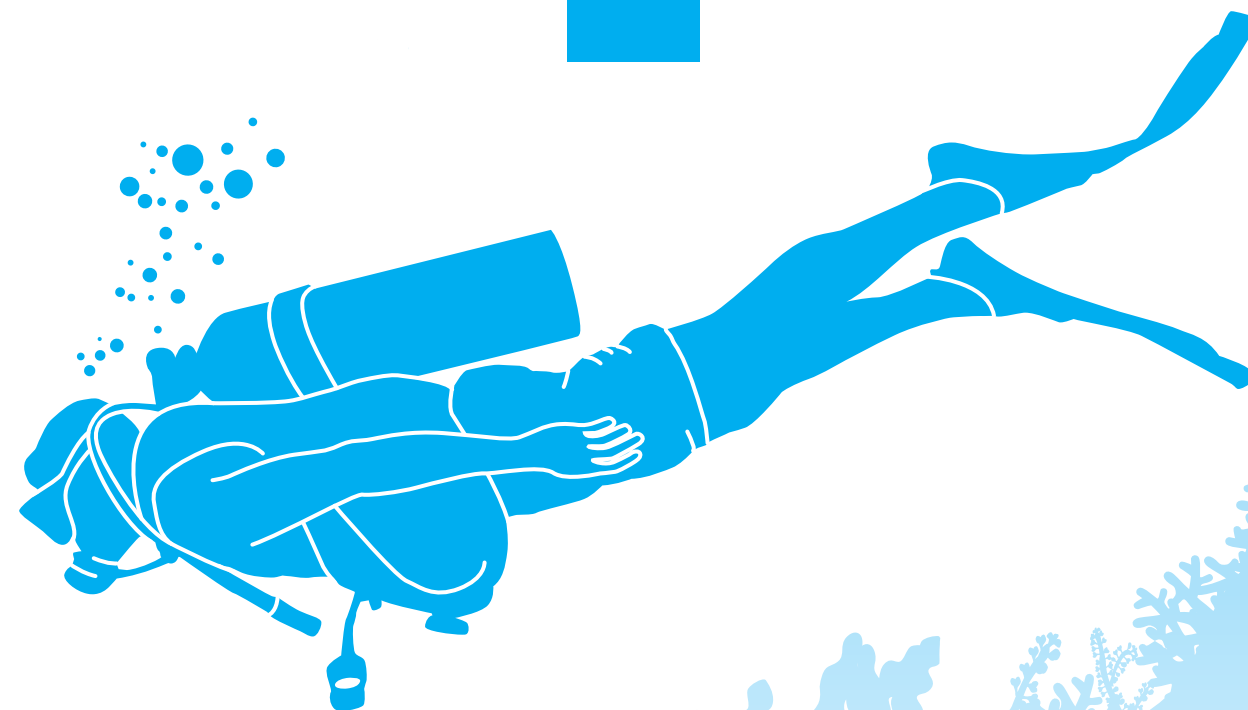


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I must say that between the low viz and narcosis it was quite eerie to see these old war relics in such a strange place.

I think it was only on my third dive to the canons that I finally saw the trigger and the ammo cases lying between the two.

The water temperature was about 27°C on top and 20°C at the bottom. The biggest danger was the silt on the bottom.

Some say it could be as much as 3m deep, therefore both your buoyancy control and your frog finning technique have be near perfect in order to not suddenly reduce your dive to a zero-viz experience. Fortunately, it also seemed to settle quite quickly after it has been disturbed.

I can't overstate how impressed I was by the way the Namibians organised the whole event. People like Stef, Tinus and Rainer, along with all the others,

made a permanent entry in my logbook of unforgettable experiences.

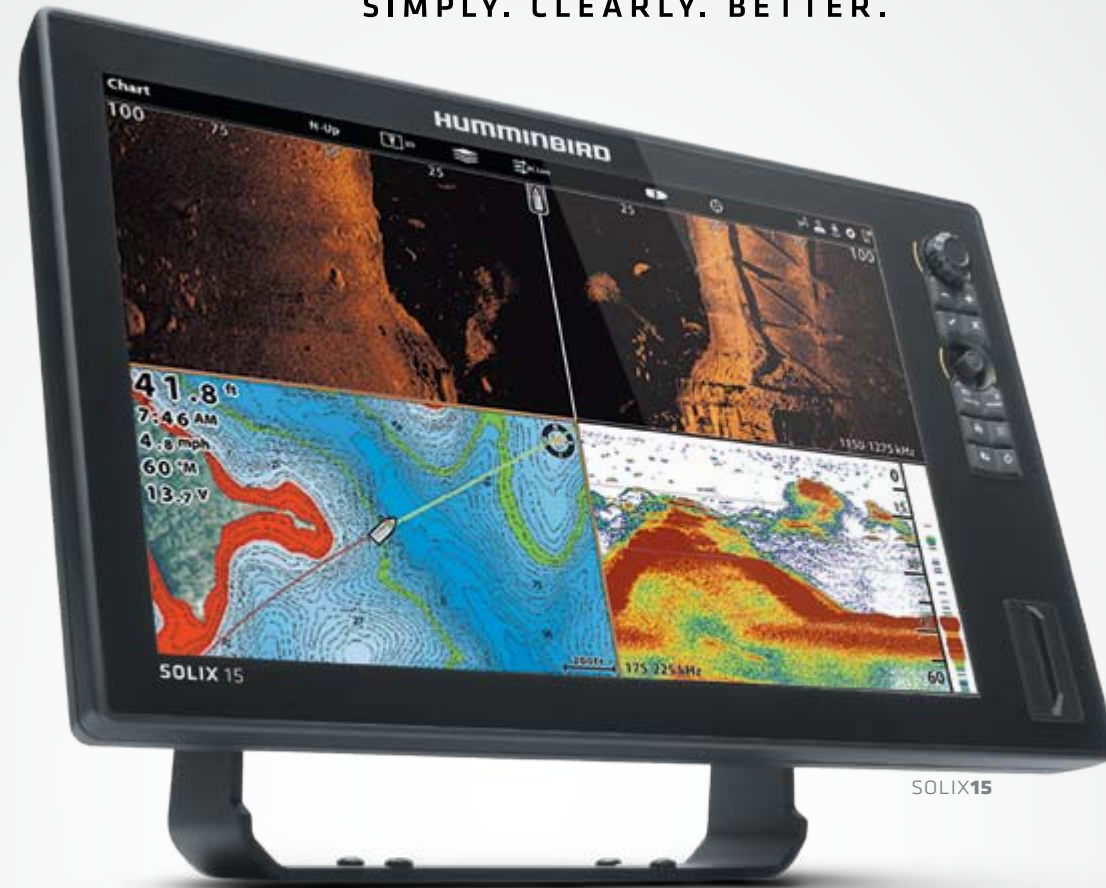
A few words of warning if you plan to go there: Although they will babysit anyone, it is really a dive for advanced or tech divers, and it's done at your own risk. Beware of the sun.

Beware of man-eating ants. Beware of stinging nettles. Beware of scorpions. Beware of the rum at the last night's prize giving party. 🍷





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Counter Diffusion

There are many simple rules that are followed in technical diving; they are simple best practices that can be used across the board, to some extent, in recreational diving.

Air is only good for filling tyres or inflating dry suits. Even then I would rather use nitrogen for tyres or Argon for dry suits. We breathe it on land because it's easy, cheap and freely available –there is no need to take the same approach underwater. When it comes to deep diving, air has no use. Yes, you may be able to breathe, but it is a poor man's gas choice. A very poor choice.

I say this because I want you to listen – there is no need to reinvent a wheel that has been tried and tested worldwide by the tech diving community since Adam was a lad. Techniques have been refined, and I want to share these with you.

Yes, I am preaching EANx (initially). It has great benefits in the shallow diving ranges – anyone that puts their head under water will benefit from its use. EANx is a very useful tool as a

decompression gas when you are diving deeper but it is only part of the equation.

You have many things to consider in gas selection – counter diffusion and decompression stop selections to name but a few. You need to go a lot further for the 'exotic gasses' of deep trimix than just simple maths.

When you go beyond normoxic the rules change – you cannot apply the shallow techniques and get away with it without problems (although you may be lucky a couple of times). As you get deeper and therefore are under pressure longer, you become supersaturated.

In this deep world a simple tight computer strap or a tight neck seal can give you DCS problems – I have seen this happen on a number of occasions. It even matters what you have eaten

that day or the day before, and it certainly matters how much water you have had to drink and how hydrated you are.

Besides all this, your physical and mental state has a high impact, so you must be dive fit in every sense of the word.

Now let's take a brief look at counter diffusion, which is a real hidden danger in terms of the gasses that we are breathing under water.

If you are diving with just oxygen/nitrogen or are using a trimix from surface to bottom and back with no switches (except pure oxygen at 6m), you will have no problems with counter diffusion. The problem comes when you switch from a high helium/low nitrogen mixture to a much lower helium/high nitrogen mixture.

The gas counter diffuses (helium diffuses 2,67 to 2,85 times faster than nitrogen) and counter dissolves (nitrogen is 4,47 times more soluble than helium).

This can cause local pressure differentials that pull a gas out of solution, resulting in bubbles in the area where the gasses come together. When you are supersaturated – as in decompression, especially on a long and deep dive – this will cause counter diffusion events.


This article is too brief to cover any one factor in great detail and it is not intended to teach you how to dive trimix. For a trimix course you usually need seven days of lectures and dives to learn what you need to know, and this is preceded by at least another 10 days of advanced EANx and normoxic trimix beforehand.

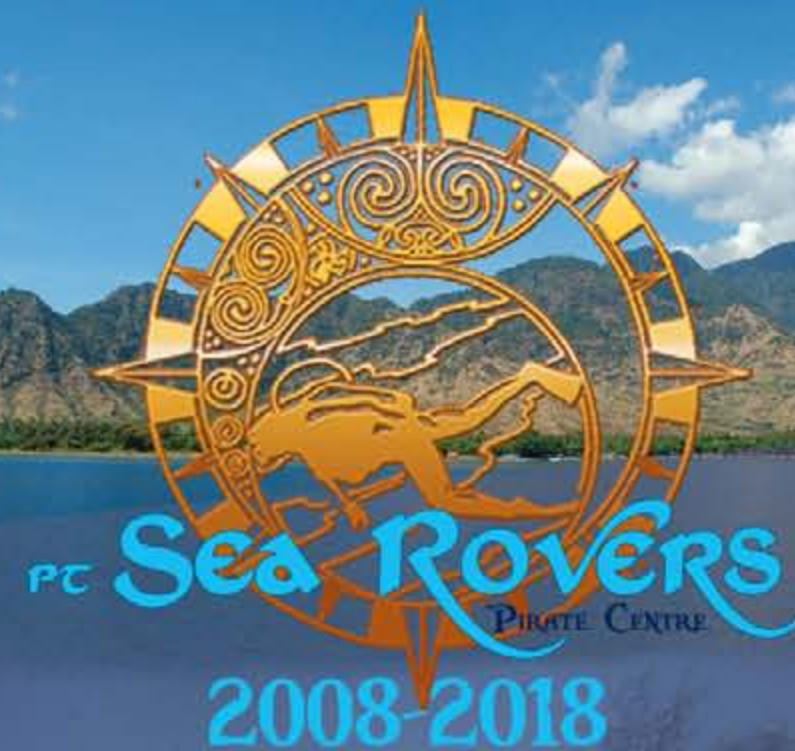
If you're not prepared to spend the time and money to do the course, do not do the dives. If you take shortcuts, you might be one of those who gets the bends and then asks, "How could this be? I did everything right." You need to learn to feel and read your

body and the training is just the start. The aim of this article is purely to say that things are not simple when you use exotic gasses or when you aim high and 'go deep'.

Yes, all the tools are available to do anything that you would like to do, but these tools are available indiscriminately to all... herein lies the problem. All may not know how to use them correctly!

Rules:

- Air is not for breathing underwater.
- EANx use to 40m, preferably Triox (more than 21% oxygen, nitrogen and helium) from 30m.
- All dives – deco or not – do your deep stops.
- When using trimix:
 - Normoxic range (+20 % oxygen with added helium): If you do not have long exposures at depth EANx for 22m is fine. If there are longer exposures, think about helium in the decompression mix, pushing oxygen to 1,6 bar and keeping the nitrogen depth as constant as possible. (Personal preference – I add 100% oxygen at 6m).
 - Trimix range (less than 20% oxygen): As per normoxic range, but now things get more critical. Use helium in the decompression gas, keeping nitrogen at a reasonably constant and elevating oxygen levels. You can use the same technique in the very deep gas switches.
- CC Rebreathers: They are much more efficient than OC in terms of decompression characteristics (and in terms of physical gas use). You need the correct OC bailout, or you can get into trouble with decompression times and potential counter diffusion issues.
- No-gas related (for all divers): Hydrate before, during and after dive. Your urine must be clear. Be fit. Exercise every day. The fitter you are the better your body will cope with the dive. Good cardiovascular exercise 24 hours before a dive will reap rewards. Decompress efficiently – body horizontal, and maintain a stop. Breathe properly – in the Eastern way – not Western! 



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CNS or OTU

Which one do you use and why?

Q & A

Nuno Gomes



Central Nervous System oxygen toxicity (CNS) generally manifests itself in the acute form – it takes place suddenly and with very little or no warning. The diver will go into convulsions and lose the ability to control his or her movements, much like an epileptic attack. This type

of oxygen toxicity may take place when a partial pressure of 1,6 Atm/Bar is exceeded – say the diver is exposed to a partial pressure of 2,0 Atm/Bar, even for a very short time. It can also take place when the time at a certain partial pressure is exceeded (according to the CNS tables), for example staying at oxygen partial pressure of 1,6 Atm/Bar for more than 45 minutes.

Chronic oxygen toxicity, which is generally measured in Oxygen Tolerance Units (OTU's), manifests itself when a certain amount of OTU's are exceeded during a period of 24 hours or over a number of days. This type of toxicity happens slowly and it can lead to damage of the lungs, sometimes permanent (it burns them).

Chronic oxygen toxicity can happen to patients in the hospital bed using oxygen for long periods of time or to divers who breathe any gas mixture with more than 21% oxygen for long periods of time. It is generally accepted that the daily maximum limit is 750 OTU's (750 minutes of oxygen at a partial pressure of 1 Atm/Bar over a period of 24 hours). If a diver uses a gas mixture which exposes him/her to an oxygen partial pressure of 0,5 Atm/Bar, he/she could then theoretically stay at that depth for a maximum of 1 500 minutes without problems.

We can thus conclude that CNS and OTU's are two different and very important types of oxygen toxicity, yet both must be independently considered for all dives by Nitrox and Technical divers.

Barry Coleman

There are many articles written about CNS and OTU toxicity, so I will relate my personal experiences. This may or may not have been toxicity, but the signs and symptoms sure felt like it! Whilst in the



Cayman Islands teaching Trimix Instructors on rebreathers and having completed 86 hours under water at an average depth of 30m over a six week period, I started with a dry cough, then felt weak and short of breath amongst other symptoms.

I sat down and wondered what the problem was and then I thought that maybe it was my OTU level? The CNS levels were always on the edge and after checking I found that the OTU level was way over the recommended limit! I could not believe that I had not kept a more accurate check.

The pressure to get everyone completed took over – I worried about my students and lambasted them for such errors and here I was in the 'sin bin', with all the signs.

So R 'n R was called and I spent some tourist time on the island. Thank goodness I have not to-date had any CNS problems, but I am very conscious of this risk because it can occur under water.

Pieter Smith



Two oxygen toxicity parameters are typically 'tracked' in technical diving calculations. The first is pulmonary oxygen toxicity which primarily concerns the effects to the lungs of long-term exposures to oxygen at elevated partial pressures (OTU). The second is central nervous system (CNS)

oxygen toxicity which primarily concerns the effects to the brain of short-to-medium-term exposures to oxygen at elevated partial pressures.

Both oxygen toxicity parameters are a function of the partial pressure of oxygen (PO2) in the inspired breathing gas and the time of exposure.

Pulmonary oxygen toxicity is generally not considered to be a problem for sport divers but it is more of a problem for divers working in a saturation environment or technical divers doing 'repetitive dives over a period' as in during an expedition. The oxygen clock is used to track pulmonary oxygen toxicity. Over time, exposure to elevated partial pressures of oxygen is detrimental to the pulmonary system. It is measured in units of pulmonary toxic dose (UPTD), commonly named as an oxygen

tolerance unit (OTU). Roughly, one OTU is equivalent to one Bar exposure per minute. CNS oxygen toxicity is usually the parameter of most concern and greatest impact in technical diving. The common method in use to 'track' CNS oxygen toxicity is to compute a 'CNS fraction' for each segment of the dive profile and then sum up these results to produce a total CNS fraction for the dive. These fractions are then multiplied by 100 and expressed as a percentage (CNS %).

A CNS fraction is calculated by taking the time spent at a given PO2 and dividing by the NOAA time limit for that PO2. When the CNS fractions from all segments of the dive profile add up to one (or 100%) then the overall limit for CNS oxygen toxicity has been reached for that dive.

Whenever the PO2 goes above 0,5 during a dive profile, either at a constant depth or during ascent or descent at a constant rate, the two oxygen toxicity parameters can be calculated. It is always best to plan technical diving properly and thoroughly, even if certain outcomes tend not to be necessary.

Pieter Venter



CNS toxicity is the immediate toxic effect of oxygen under pressure on the nervous system. Once the partial pressure of oxygen goes over a certain threshold on a dive, the consequences are normally fatal. Oxygen Toxicity Units is the expression of the accumulated effect of breathing oxygen

under pressure, typically damaging the pulmonary system.

It requires a relatively long exposure to oxygen under relatively high partial pressure and the effects of experiencing high OTU's is a slow progression from coughing to lung failure in extreme cases.

From a practical point of view, CNS needs to be managed carefully during all technical dives so that the wrong gas is not breathed at its unintended depth or that the partial pressure of oxygen never goes higher than 1,4 bar.

If this is the maximum partial pressure of oxygen during a dive, OTU's should never be a concern unless the dive is longer than six hours.

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Self-Rescue

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The more comfortable and experienced we get in this environment the more relaxed we tend to become with regard to your safety. This of course should be guarded against as this environment is not one that we are designed to function in naturally, and as safe as diving can be when done with the proper precautions, one should always remember that this is not an environment that is easily forgiving when a problem situation occurs. By Quintin de Boer

Except for enrolling in the next rescue course, which at most diving training and certifications agencies mostly focuses on rescuing other divers, it is important to realise that your safety is actually your own primary responsibility. It is thus important to consider, train and prepare to be able to perform a self-rescue if need be.

What is a self-rescue you might ask? It is the ability and action taken in a problem situation that lead to the positive outcome that could, if not performed, have led to a situation where your life might have been endangered or caused bodily harm.

There are a couple of scenarios that could occur during normal recreational diving, that with a simple self-rescue effort, can easily avoid a disaster. These include the following:

Entanglement – Getting entangled is a situation that can happen to any diver at any level of certification and also one that is quite easily corrected by asking a buddy to assist. But what would you do if your buddy is not in sight? A situation like this will require you to stay calm, remove your scuba equipment (usually only hard gear) and with your regulator in your mouth you should be able to comfortably start removing whatever caused the entanglement.

Exhaustion – This is a problem that occurs very often when diving against current and could lead to a chain of other issues that could potentially be much more serious. The first and most difficult thing in a situation like this is that you as a diver need to accurately assess the situation. You need to become aware that you are breathing too hard and that you are struggling. Slow down, stop what you are doing and relax.


If the situation doesn't improve within minutes it is advisable to rather terminate the dive immediately and return to the surface where air supply is in abundance.

Cramps – Usually one of the signs of exhaustion and overwork, but cramps could also be caused by the cold temperature of the water. When a cramp is experienced it should be attempted to be relieved immediately. The most common cramp for scuba divers is a cramp in the calf muscle, but for any cramp, position yourself in such a way as to extend the muscle involved and stretch it out. If reachable, a light massage might also assist in relieving the cramp faster. If the cramp remains or returns after repeated efforts to relieve it, it is advisable to rather terminate the dive immediately.

Vertigo – This can happen anytime during a dive. Vertigo can cause stress leading to elevated breathing and nausea. When feeling disoriented, try to make contact with a fixed object immediately. Hugging yourself might also be useful in gaining orientation again. Looking at the direction of your exhaled bubbles will give you a clear indication for up and down orientation.

Cold – Realising you are cold is one thing, admitting it (mostly for male divers) is a whole different story. When you are so cold that it is uncomfortable, it is best to terminate the dive before it leads to other problematic scenarios.

Out of air – This is one which novice divers fear but also one that should not occur at all if air supply is monitored on a regular basis. If this does occur, an ESA (Emergency swimming ascent) is advised to return to the surface where you can breathe freely. The ESA should be done within the guidelines taught to you in your open water certification course.

The scenarios above are only a small list of the scenarios in which self-rescue might play a pivotal role. It is therefore important to practise self-rescue often, keep in good physical condition, expand your knowledge and always think and be aware of your surroundings and where a self-rescue situation could come into play. Although this article deals with self-rescue it should be noted that solo diving is strongly discouraged and is never a good idea. 



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The Horizon SCR provides warm and moist breathing gas, and an ergonomic design that intuitively improves the diver's trim position and comfort.



FAIL-SAFE GAS OPERATION / MAXIMIZED SAFETY

The Horizon SCR was designed to maximize safety and ensure exceptional performance using multiple back-up safety systems and three sets of redundant electronics and power supplies. A smart, diver-adjustable HUD visual indicator informs the diver of their gas supply status using a pulsing LED light, and in the unlikely event of an electronic shutdown, the diver can switch to the BOV, ensuring a continuous and safe supply of breathing gas.

EASY TO ASSEMBLE AND PREPARE / SIMPLE SET UP

One of the key attractions of the Horizon SCR is its incredible ease of use. It is simple to set up, requires no tools, has easy access to the scrubber canisters for filling, and has non-interchangeable, colour-coded, quick release corrugated breathing hose connections.

READY FOR ADVANCED DIVERS / A WEALTH OF POSSIBILITIES

For the more advanced diver, the Horizon offers a range of advantages.



As well as a longer dive duration, the diver has dual gas possibilities – with the option of attaching a second cylinder with a higher O2 concentration for accelerated decompression.

INTUITIVE INTERFACE / INTELLIGENT INTEGRATED CONTROLLER

An integrated controller completes the Horizon, with a 2.8", easy-to-read colour display and optional wireless gas integration. This intelligent computer is effortlessly operated via two large piezo elements, especially when wearing gloves, and includes a scrubber monitoring system to keep the diver informed of their scrubber status at all times, and an audible warning alarm.

The Horizon encapsulates simplicity and safety through innovative design, like an open circuit concept, whilst boasting many of the advantageous characteristics of a rebreather system.

The simplicity and innovation of our latest collaboration means diving as we know it has reached incredible new Horizons. Become part of the SCR revolution from Mares and rEvo! 🇮🇹





OZ DIVER



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Peter Fenwick

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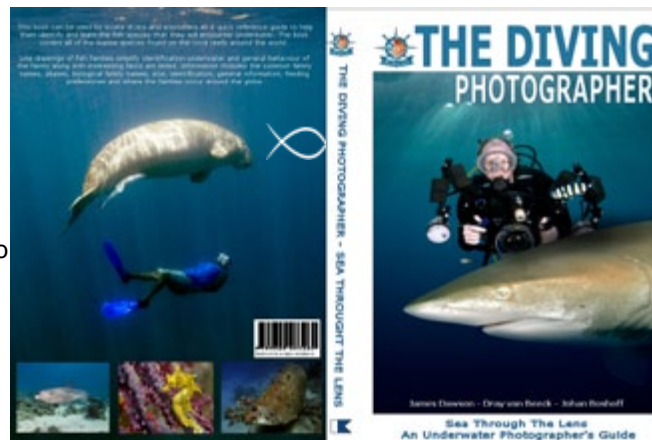
The Diving Photographer –

As scuba divers, we are not always the best photographers, but we do learn very quickly. And if we have a handy guide book, the time spent with our cameras underwater will increase rapidly.

This easy-to-use guide book for the diving photographer can be used by all levels of photographers. It helps you with choosing the right type of camera for your ability – although with all the information presented you will learn so quickly that you will have to buy a better camera after working through the book! Preparing and setting up your equipment becomes a breeze with easy pointers on how to check and replace o-rings, quick tips on keeping your housing dry and other small things we usually forget to check.

The technical advice on how to perform manual camera settings, lighting techniques and editing the not-so-perfect shot was a great help. One of the main things I took from this book was learning to back up my photographs and then trying anything and everything with them in the photo editing programmes until it looks like the professionally taken shot that you have been aiming for the whole time. Some other topics covered are strobe positioning, ambient light, photographing wrecks, long exposures and equipment maintenance.

I must say that this book has proved to be a great help in improving my photographing and editing techniques. Photographer is available in all good scuba diving and book shops or online at www.thedivespot.com.au. Cost: \$15



Marine Species Guide –

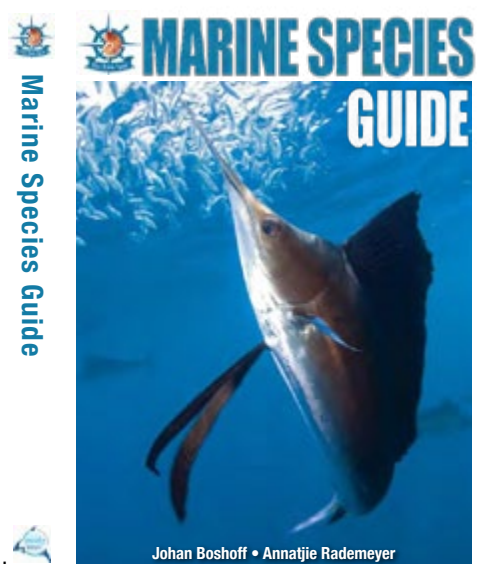
Yes, it happened...I had to buy a larger bookshelf. The latest book from The Dive Spot has landed on our shores – The Marine Species Guide.

A book for both scuba divers and snorkelers to identify and learn all about the different fish species they will come across under water. The book covers most of the marine species found within coral reefs around the world. Line drawings of fish families simplifies identification underwater, while general behavior of the family along with other interesting facts are listed.

Information include common family names, aliases, biological family names, size, identification, general information, feeding preferences and where the families occur around the globe. Photographs of the most common of the species found when scuba diving or snorkeling are included and the fish families are organised for easy reference.

The book works very well in accompaniment with the Marine Species Slate, which can be taken underwater to help with fish identification.

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



Johan Boshoff • Annatjie Rademeyer
A quick reference guide to the marine species found on coral reefs around the world

The Dive Spots of Western Australia

The Dive Spots of Western Australia is an indispensable guide for all levels of divers and snorkelers, broadening their horizons on places to visit and dive/snorkel in Western Australia. The book has more than 175 dive spots in Western Australia. Important guidelines on each coastal dive destination include accommodation, facilities, travelling tips and dive conditions. Complete with photographs and more than 100 illustrated maps of each dive site, all reefs are star rated to cover depths, marine life and other essential information for the diving and snorkelling community.



The Dive Spots of Western Australia is an indispensable guide for all levels of divers and snorkelers, broadening their horizons on places to visit and dive/snorkel in Western Australia. Through extensive travel and diving, Johan Boshoff brings you valuable information on more than 175 dive spots in Western Australia. Important guidelines on each coastal dive destination include accommodation, facilities, travelling tips and dive conditions. Complete with photographs and more than 100 illustrated maps of each dive site, all reefs are star rated to cover depths, marine life and other essential information for the diving and snorkelling community.



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

OZDIVER

The PowerRay and The PowerVision

Ever wondered what is happening under the water. Now it is possible without scuba gear using the new PowerRay. An underwater drone that allows you to go and explore the ocean secrets and to top it off, you can add the PowerVision so your underwater drone becomes a fish finder with so much more possibilities.

The PowerRay is not just an amazing good looking toy but for fishermen, videographers, photographers and underwater enthusiasts a great device to use to explore the surrounding waters.

This Underwater ROV can dive down to 30 meters in salt, fresh or even chlorinated water for up to 4 hours. With its amazing lights and camera that is situated in front of the unit the camera can capture 4K footage or 12-megapixel still photographs and stores them all on-board on its internal storage device.

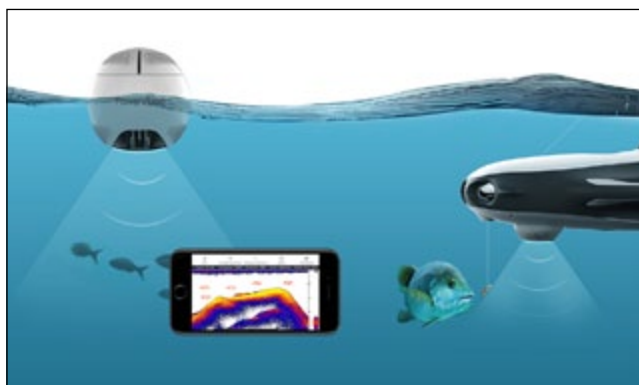
If you are a fisherman, you can add fantastic accessories like the PowerRay Angler package that was specifically designed for fishermen, accessories include Precision Remote Bait Drop which allows you to place the fish bait at a desired position and the PowerSeeker/Fish-finder can dock directly into the PowerRay or be used separately as a standalone device. This PowerSeeker provides you with detailed information on depth, fish distribution, underwater landscape and temperature. If you love fishing, you should certainly consider these added benefits to the PowerRay.

The PowerRay is really easy to operate with its PowerVision App Interface. PowerVision has included a unique live streaming. If you have an Android or iOS device you can connect directly to the PowerRay to live stream 1080P video at 30 frames per second by docking your smartphone into the remote controller that allows full range of motion and speed control.

The PowerRay also has an option to use a VR headset to have a first-person perspective of the drone and also impressive, you can connect to multiple goggles/devices simultaneously and switch between basic viewing mode and control mode. This allows you and multiple friends to all share the same first person viewing experience.

The PowerRay is a great underwater drone with so many features that gives you a spectacular real-time view underwater and allows you to capture just the right shot or fish.

For more information on The PowerRay or The PowerVision's visit: www.powervision.me 



EZYFLAG for all Divers

I first thought of the idea of ezyflag back in 2013 when I became frustrated with the current flag on the market. Finding it cumbersome and difficult to use, particularly when it came to retrieving it after a dive. So I began my search for a better, easier to use flag. I looked in Australia with no success, and then overseas, but with the same result.


There was nothing out there that I felt fitted what I was looking for and so began my journey to develop one myself. Designing the flag itself was a challenge, taking over one and half years alone, but producing the flag was equally challenging, and all the jigs and components have had to be specifically designed and engineered for the purpose, by myself. After a further year of design, engineering, testing and several prototypes, the final product is made of marine grade stainless steel, has a 600 x 500 uv resistance flag which has a cross-support to strengthen it and keep it visible even in no wind conditions.

It is also able to hold a flashing light for night divers (a glo-toob is used, you can find them in most dive shops) and an anchor weight, both of which can be supplied as optional extras. The real difference is the flag's ease of use. With the current flag on the market, the line has to be wound manually around the float, which can be difficult and time consuming. The ezyflag however has a reel mechanism allowing the line and weight to be wound up very easily. The design also means that the reel and release sit below the float, allowing the flag to stay more upright in the water, even in rough conditions. The ezyflag dive system looks very simple, but it has been two and half years in the making.

Now on the market, the flag is already proving a hit with local dive clubs and instructors alike.

Further details can be found at our facebook page www.facebook.com/ezyflag, or by contacting Kevin on ezyflag@gmail.com or call 0407589315. Look out for the new model coming out in 2017.

Testimonial

STEPHEN FOULIS. Guys I wanted to. Say a big thanks for my ezyflag. I purchased one a number of months ago now following a chance meeting with Kevin. I have used my flag numerous times, it's so easy to use and works so well. Being an instructor it's so handy to have a simple surface marker that's deployed quickly leaving me to direct students down the shot and on with their skills. Even night dives are aided as the no fuss deployment and retrieval adds to the enjoyment. Thanks Kevin, A must for all divers. 



THE ROTTNEST ISLAND FISH BOOK

Many visitors to Rottnest Island are fascinated by the amazing marine environment. The beaches, the swimming, the reefs and fish life are an integral part of the Rottnest Experience. Even the Aboriginal name 'Wadjemup' refers to Rottnest as being the 'Place across the water'.

Covering a spectacular 3800 hectares of sandy bays, seagrass meadows and limestone and coral reefs, the Rottnest Island Marine Reserve includes five marine sanctuary zones helping to protect the stunning marine life, including over 250 fish species.

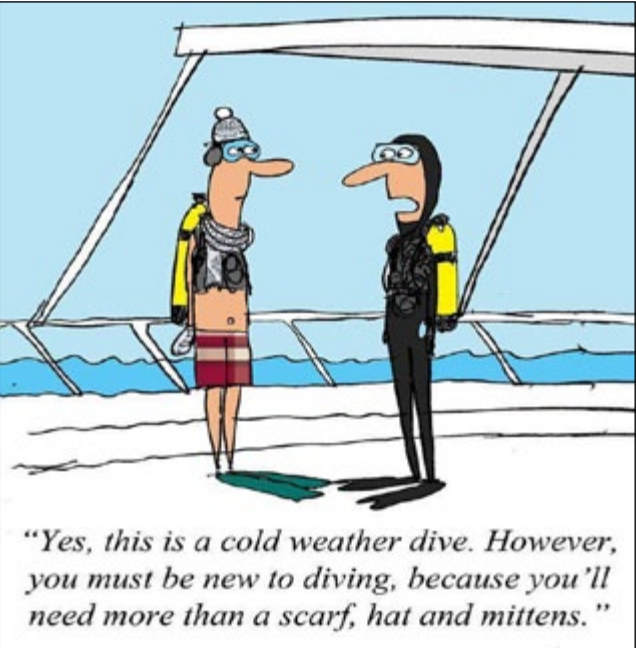
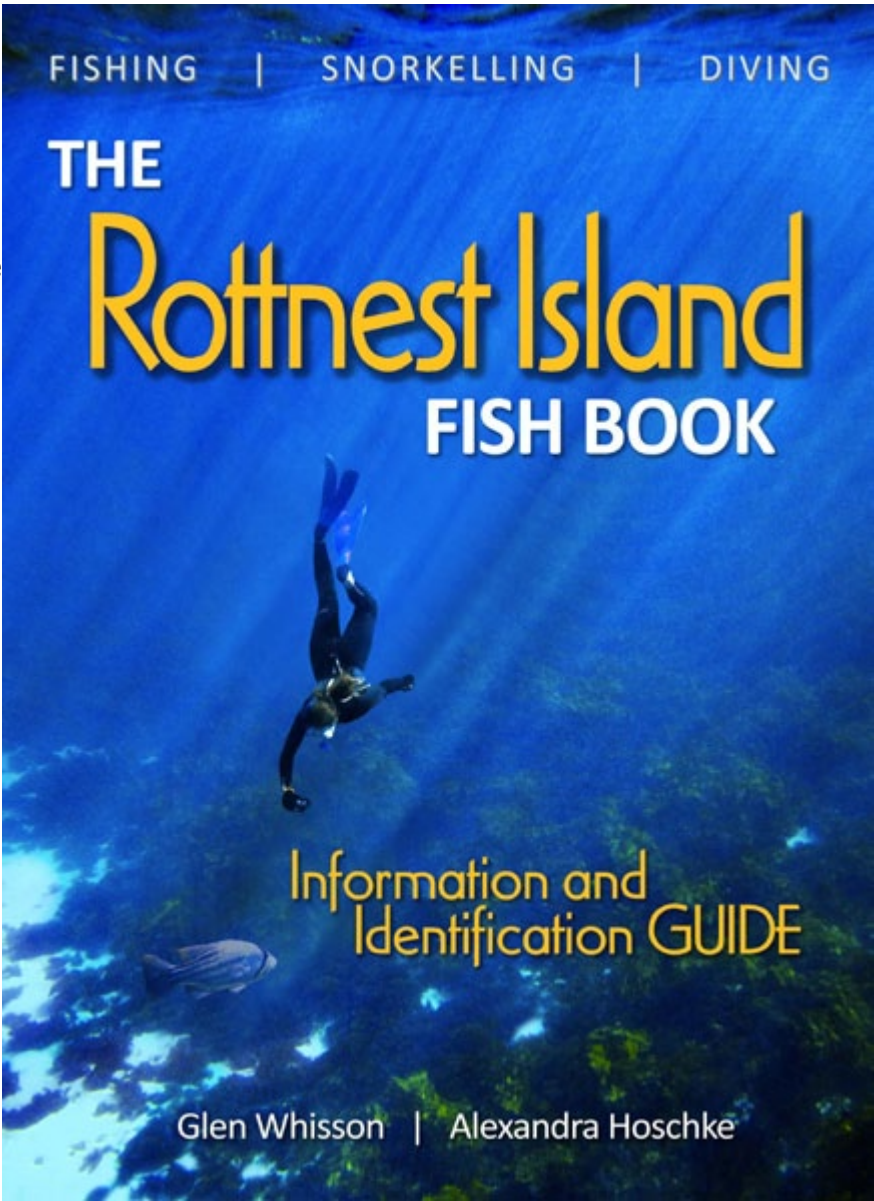
That's where this new book - The Rottnest Island Fish Book - is set to become a 'must have' addition for Island visitors wanting to enjoy the marine environment and explore the magnificent fish life through Snorkelling, Diving or Fishing.

The authors - Dr Glen Whisson and Alexandra Hoschke - are to be congratulated for producing a concise yet complete record of every fish you are likely to see around the Island. Glen and Alex are long-time marine researchers and are obviously passionate about protecting and conserving the wonderful marine landscape at Rottnest.

ABOUT THE AUTHORS:
Dr Glen Whisson and Alex Hoschke have spent many years conducting marine research at Rottnest following extensive academic careers at Curtin University in the aquatic sciences.

Their other research includes internationally published studies on Grey Nurse Sharks, ocean temperatures at Rottnest and Exmouth, and marine biodiversity monitoring programmes around WA.

DETAILS:
Title: The Rottnest Island Fish Book
Publisher: Aqua Research and Monitoring Services
Year of publication: 2017
Pages: 176
Colour photographs: 420
ISBN: 978-0-6481230-0-2
Purchasing: www.aquamonitoring.com.au





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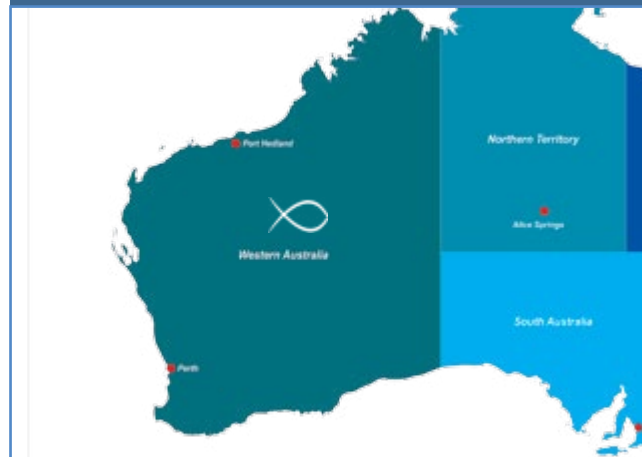
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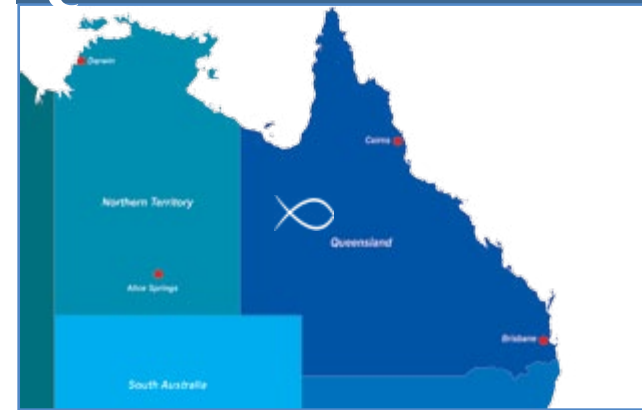
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OZ DIVER

A large school of yellow-striped snappers (Lutjanus kasmira) is swimming in a clear blue underwater environment. The fish are arranged in a dense, somewhat circular pattern around a central, rusted metal piling that extends from the sandy seabed. The piling is covered in orange and yellow rust and some green algae. The background is a deep blue, and the seabed is visible at the bottom.

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