October / December 2017

OZ DIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

TRUK LAGOON PART III

SOLOMON ISLANDS

SARDINE RUN

MOLLUSC SPECIES

JELLY FISH LAKE

KOMODO

WHERE DRAGONS STILL ROAM




IT IS THE JOURNEY AND NOT THE DESTINATION - WWW.OZDIVER.COM.AU

October / December 2017

Johan Boshoff

Editor's Deco Stop

Surely with any dive qualification there has to come some skills and knowledge? The other day I was on a liveaboard, and after a hectic schedule I decided that the one day I was going to take it easy and wasn't going to dive. I sat and watched the divers returning, and after a couple minutes everyone was back on the boat and was kitting off. One of the divers though was looking for his buddy to sign his log book but he couldn't find him.

One of the instructors on the boat asked him when he last saw his buddy, to which the reply was, "Ten minutes into the dive, but not after that." Now how it works on some boats is that if you have a dive master qualification you can jump off the boat and lead your own dive.

The next question that the instructor asked him was after he lost his buddy, what did he do next. The answer was that his buddy was also a dive master so he just continued the dive. So now his buddy, the dive master, was gone. No one knew where, when or why. We immediately sent two divers down on the site and took the boat out and started searching the ocean.

We eventually found the diver around four kilometres from the site. When I think back, with only his head sticking out the water, it was a miracle that we found him. When I asked him where his deploy buoy was he told me that he forgot it on the boat. Then I asked him why he didn't take off his bright yellow fins and wave them in the air for us to see? Or use his mask as a mirror in the sun? Or drop his weight belt so he would stick further out of the water?

This diver, who was supposedly a dive master, had never heard of any of these basic techniques. He had never thought this scenario through so had no idea what to do when it happened to him. I asked him what happened and he told me that he lost his buddy in the first 10 minutes of the dive and then looked for him for more that an hour – this was a dive master who could be proud of his qualification.

I think that instructors and dive masters must realise that they can kill someone with bad training and that they have to start taking responsibility for the safety of their divers – they need to teach them how to survive in situations like this and I think that this particular person is very lucky that he is still alive. But at the end of the day, I think that anyone who dives without a deploy buoy or a signalling device is an fool.

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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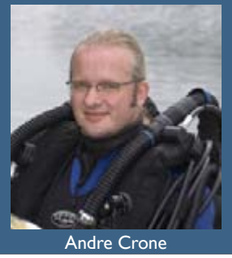
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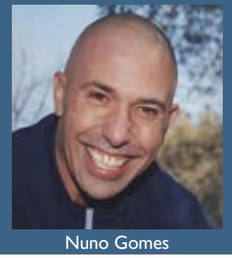
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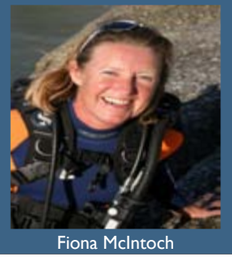
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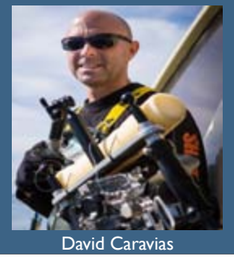
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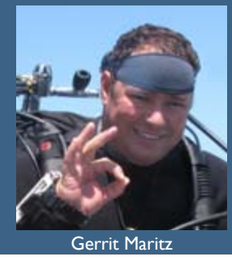
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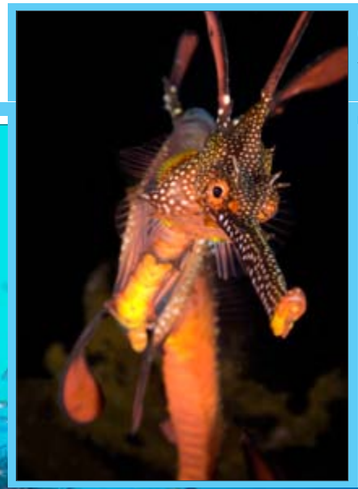

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Andre Crone

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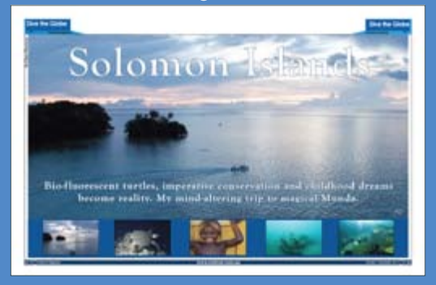

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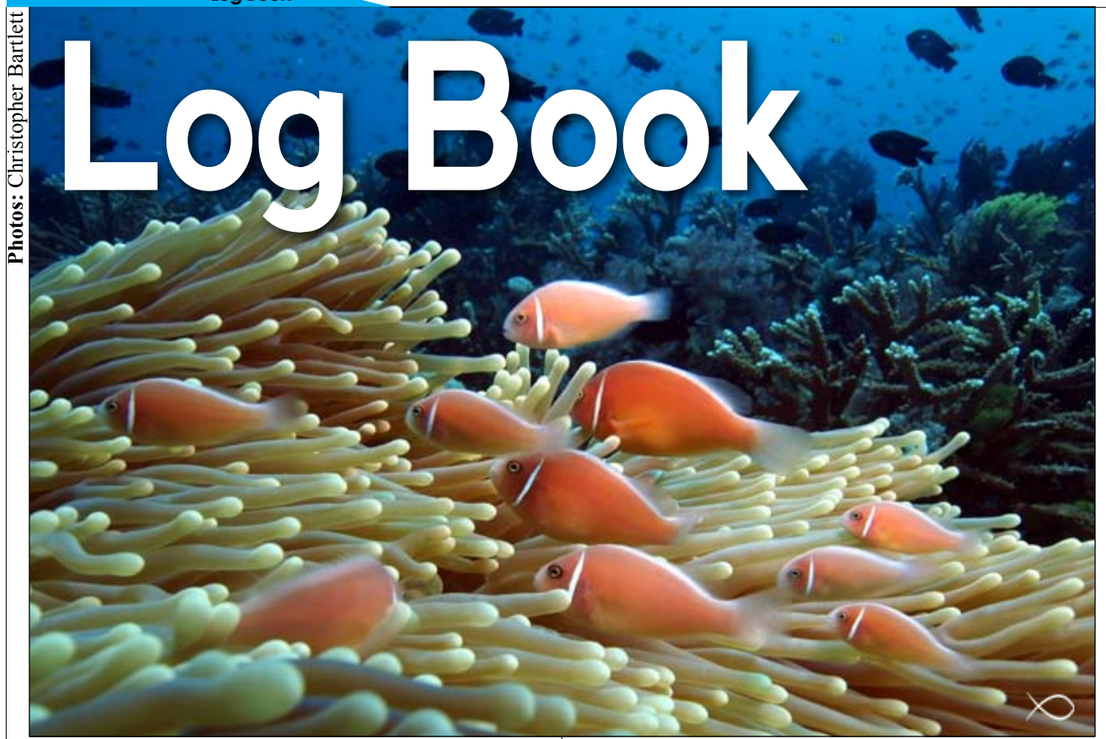
Photos: Christopher Bartlett



Dear Mom,

It's always said that the older you are the less money you had and the further you had to walk to school. I think it's the same with old divers – they always seem to have dived deeper and longer than anyone else.

I had such a group on my boat the other day – every single one grey (well those with hair in any case). It was like a Sunday morning at the old age home. I was extremely surprised to find that they could actually lift their own equipment on to the boat and then managed to help push it into the water! Now these guys invented diving (according to them).

The one had an odd sounding French surname and the others had enough tools and spares on their boat to build at least two regulators each – I'm sure by using spare parts and old weigh belt buckles lying around on the boat they would have done just that given half a chance.

Of course I was prepared for the worst… during the briefing I was asked to shout since two forgot their hearing aids and three others were deaf in either the left or right ear. It is very strange doing briefings for people that never look at you but seem to stare in the distance at some point far, far away. At the same time you get strange looks from the other instructors and skippers since the old people you are shouting at don't seem to be giving you the slightest attention.

And the equipment…Mom, you have to understand – they had stuff I've never seen before – a BC that blows up around your neck, and an orange one at that! Regulators that weigh a ton, shiny, chromey stuff, pink wetsuits, massively huge masks and the strangest collection of weight belts you can imagine. No two were alike and in shapes you cannot imagine that lead can be poured into. Small cylinders connected to each other – and they talk about "Bottles"….and "DV's"…and "taps"… truly a scary experience.

My job was to keep them safe and I planned to do just that. After shouting the briefing and a geriatric push of the boat, we were off through the surf, holding on for dear life as one should. I glanced over my shoulder and saw two of the ancient ones merrily discussing the world economic crisis, shouting over the noise of the engines, and of course, into each other's left ear. No one was even holding on! Two others were quite happily fiddling with their (film) cameras and the rest just couldn't be bothered.

At least I knew that the dive would be mercifully short, since they all had small cylinders and ancient equipment.

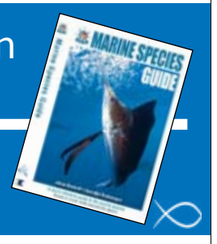
An hour later I was sipping the dregs of my 15 litre cylinder, praying that one of them would give me the thumbs up to get out…

Well Mom, I have discovered that you cannot beat 20 years worth of experience, even if it's deaf and grey and dives with glasses.

I will write again soon.

Your loving 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

OZTek2019
Dates Announced

Finally, the dates are set, the venue booked, the creases ironed out and the new speaker selection begins. After a hugely successful event earlier this year, the new dates for OZTek2019 are official ...

OZTek2019 will be held at the International Convention Centre Sydney, Darling Harbour on March 16/17, 2019.

Continuing to be the premier dive show in Australia and New Zealand, OZTek covers all aspects of diving including technical, travel, training and photography. No matter your diving level, OZTek has something to ensure your imagination is fired up.
The 2017 speaker-based event with over 40 speakers, brought together over 650 prepaid pass holders and another 1500+ enthusiastic divers to listen to the presentations and enjoy the exhibitions and photography. OZTek is a unique opportunity to hear incredible adventurers, explorers and scientists - from those at the forefront of diving - as well as seeing all the new technology first hand. In 2019, OZTek will be the first conference of its kind to use Silent Conferencing, enabling both speakers, listeners and exhibitors to co-exist without disruption.

If you are interested in adventure, exploration, excitement, new technology and listening to amazing feats of diving – OZTek will not disappoint. It is a genuinely awe-inspiring weekend of talks, films, debate and laughter with diving's international A-list.

Block out the dates and bookmark the website as we gear up to another awesome event. http://diveOZTek.com.au

Dive the Continent
OZ News

DEEP SEA DIVER'S DEN TAKES ON PORT DOUGLAS

Ask any scuba diver to name their dream dive destinations and there's one place that's sure to make the list: The Great Barrier Reef.

Queensland's northern coast is a haven for divers wanting to explore one of the world's natural wonders. With 2,900 reefs and a size of 344,400 km2, there's definitely lots to see!

The team at Divers Den have been making dive dreams come true for almost 45 years, and are one of the longest running dive centres in Tropical North Queensland.

Offering day trips and liveaboards to the Great Barrier Reef, they are able to teach all levels of dive courses, from Open Water and Discover Scuba Diving, right through to Dive Professional and Instructor, with in-house Gold Rated Instructor, John Radmall. They also have a reputable dive workshop that's able to fix and service almost anything, a definite pit stop for many local divers!

This year, the crew at Divers Den have started a new and exciting chapter in their scuba story: opening a dive shop in Port Douglas. Because the reef sits much closer to the coast near Cairns and Port Douglas, they are sitting right at the gateway of the Great Barrier Reef, meaning customers experience shorter boat rides

and more choice of dive sites. Soon to be running trips on new purpose built dive boat AquaQuest, they will be only the second company to operate out of both Port Douglas and Cairns, as well as the only Port Douglas dive operator to offer nitrox on their day boat, so divers can explore the depths of the reef for longer.

Until AquaQuest arrives in the region, the Divers Den team will be offering great service at the new location, which is located right in the middle of Macrossan Street in Port Douglas. Unlike many other dive stores, Divers Den only employ instructors, so customers have the advantage of knowing that when they purchase gear, the advice they are given comes from people who know exactly what they're talking about.

Divers Den are excited to have teamed up with MARES and carry a huge range of MARES dive equipment, including the famous MARES QUATTRO and VOLO fins, MARES DRAGON, QUANTUM and PURE BCDs, a great range of MARES wetsuits, as well as the MARES X-VISION and ONE VISION masks. They can also accommodate specialty orders, and if you're a dive professional, then don't worry – they'll sort you out with some great industry rates.

Maybe you're geared up already and just looking for a place to blow bubbles? Well, the store boasts a full information and tour booking centre, so when you are working out what to do with your time, you can be confident that you're in the hands of a real diver with a wealth of local experience - no more being recommended trips by someone who doesn't know their SPG from their SMB!

Diving on the northern Barrier Reef is truly spectacular and has something to excite divers of any

experience level. With so many reef locations to choose from there's a huge variety of creatures just waiting to be found! There are spectacular coral formations, pelagic sharks and, naturally, Nemo's left, right and centre. Divers are also often surprised to learn that six of the seven species of marine turtle call the reef home, so it's unusual to have a day without making an awesome new, turtle shaped friend.

One of the many benefits of visiting Tropical North Queensland is the year-round diving season. Summer sees warm water and lower winds, although there is the chance of some occasional tropical "liquid sunshine". Even during the winter months the water temperature rarely drops below 23C, and there is a fairly large reason for visiting in winter too – whales!

A favourite diving experience amongst visitors to the area happens during the months of June and July. This is when the dwarf minke whales come to swim along the ribbon reefs. It is the only place in the world that you can have the opportunity to swim with them! What makes the minke so special is their curious nature - they are the only known whale to actively seek out human interaction. This means that in-water encounters can sometimes last for hours, with the curious creatures swimming past and giving you a really good eyeball! Each year, Divers Den run the Minke Whale Explorer, sending their liveaboard OceanQuest up north in search of these amazing whales. Taking in famous dive sites like Steve's Bommie, Snake Pit and Challenger Bay, this life-changing trip is popular with whale enthusiasts and divers alike.

Divers Den attribute their many decades of successful business to an outstanding team of staff. With a work environment that feels more like a family, the team regularly celebrate all sorts of significant milestones - General Manager, Sonjha, has just celebrated 15 years with the company! This team of passionate divers make it their mission to impart their passion onto their clients - whether they are experienced or total beginners, equating to heaps of fun and smiles all round, from both the staff and many, many happy customers every day!

Contact Divers Den on 07-4099 6419 or visit the website www.diversden.com.au

Dive Schools / Operators / Organisers / Instructors

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

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

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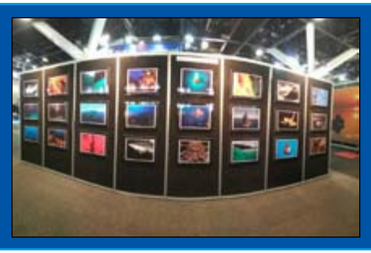
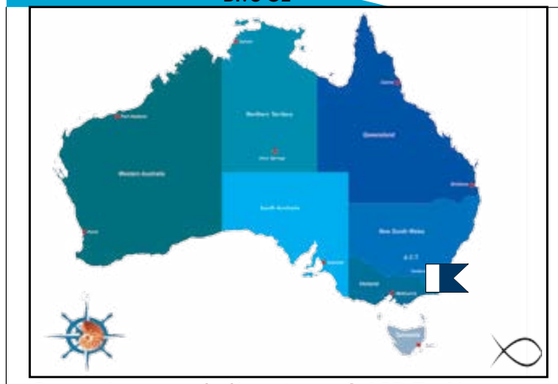
AIDE 2017

The Australia International Dive Expo (AIDE) predicts that scuba diving will not remain a niche market for too long as interest continues to grow rapidly year after year.







Organiser and director of AIDE, Ness Puvanes, says recreational scuba diving is a sport that is widely accessible to people of all walks of life, young and old and even the disabled; and it continues to open up a host of opportunities to those who are ready to take the plunge.

In recognising the continuous growing interest and potential of this sport, she observes that not only are there more

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I love the biodiversity of reefs most. There is nothing better than hovering weightlessly about a reef and seeing things like a clown fish darting in and out of an anemone or a moon wrasse hovering around a rock looking for something to eat.

Kailash Cook

Marine Warrior, Coral Conservationist & PADI Junior Advanced Open Water Diver

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tourism bodies promoting their pristine underwater destinations and more dive tour operators on the radar today than ever before, but there are also more dive schools and classes available. Evidence of this consistent growth was again recorded during the fourth installment of AIDE this year.

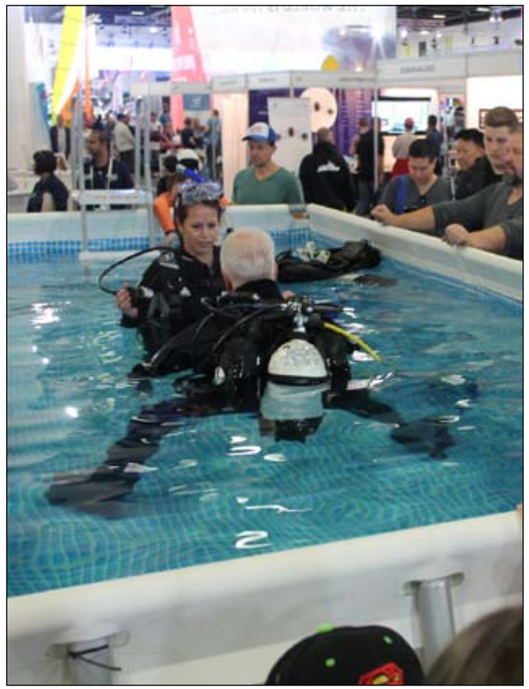
During their first ever collaboration with the Sydney International Boat Show (SIBS), Ness Puvanes notes that the number of water lovers expressing interest in learning and exploring new activities both above and below the water is undeniable.

Welcoming more than 63,000 visitors over the five-day event from 3-7 August, event exhibitors across four floors of the ICC and on the marina shared their latest and greatest products, services and experiences with the ever-expanding water-loving community.

AIDE recorded a 30% increase in individuals and families participating in this year's try-dives at the Expo's on-site pool.

That along with the number of new dive holiday destinations and hi-tech underwater gadgets being introduced to the market present a small but significant sample of proof that interest in underwater related activities is increasing.

For dive education, the Expo's long line-up of speakers enjoyed wide attention from visitors hungry to learn about marine life, conservation practices, photography and filmography, art, spearfishing, cutting-edge underwater technology, disabled



diving, dive destinations and a host of other underwater-related topics. Visitors have also reportedly asked for more shark and marine education to be included in next year's program.

"It's well known that Australians are explorers and adventurers, often enjoying discovering new, lesser-known or emerging destinations," says Ness. "This no doubt contributes significantly to the increasing interest in scuba diving and other underwater related activities including snorkeling, photography, marine conservation and others, as there is a lot more areas to explore underwater.

"Our key objective to grow this industry remains a priority". We observed from this year's show that enthusiasts and exhibitors from both the boating and diving sectors are interested in each other's prospects. Not only is this great business opportunity for our exhibitors in terms of reaching a wider market, but it's also a great opportunity for our visitors to learn more about both niches.

"As such, together with SIBS, we hope to further encourage more people to explore this sport and grow a deeper love for our waters, marine life and also see the diving world from a different perspective."

AIDE will once again be part of the SIBS show next year at the International Convention Centre in Darling Harbour from 2 – 6 August 2018. Bookings for AIDE2018 will be available from 1 November 2017 to 31 May 2018. Please direct all booking inquiries to info@australiadiveexpo.com

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Who is the culprit?

By JP & AP Marais Photos: Valda Fraser

Life in the ocean is tough! For living things to survive in such a hostile environment, suitable strategies to reduce the chances of falling prey to potential enemies are essential.

Predators, in turn, must be able to outsmart their prey by developing powerful jaws, paralysing toxins, or by simply using brute strength. Most mollusc species have developed hard shells to protect their soft bodies against injury and predation. In the intertidal zone where they are exposed to strong wave action, these molluscs additionally strengthen their shells by drastically increasing their thickness. Similarly, the shells of mollusc species naturally exposed to predation typically are thick-walled, reinforced by strong ribs or large nodules, or have long spines preventing predators from getting a firm grip on the shell.

Recently Valda Fraser, an experienced diver and underwater photographer, came across some of our largest shells that had fallen prey to some marine animal. The shells were a Cypraecassis rufa, a strong shell approximately 140mm in length, a Charonia lampas pustulata, a similarly strong shell reaching a size of well over 200mm and a Murex species equipped with strong spines. It is therefore clear that the predator must have been of considerable size and strength.

Shells have been recorded from the gut contents of many fish species, most of which are relatively small and incapable of doing the damage shown in the photographs. Molluscs form part of the diet of certain grouper species, but they tend to swallow prey intact. The most famous large mollusc-eating fish along tropical coastlines is without any doubt the Musselcracker. It reaches a size of about 120cm, with a powerful jaw and large blunt teeth, ideal for crushing its prey. Strangely enough, and to the delight of shell collectors, it tends to swallow shells without fragmentation. Many a rare shell in mint condition has been retrieved from the gut contents of this deepwater fish. However, it preys largely on medium sized shells less than 10cm in length. The adult Charonia photographed is probably too large to be handled by a Musselcracker.

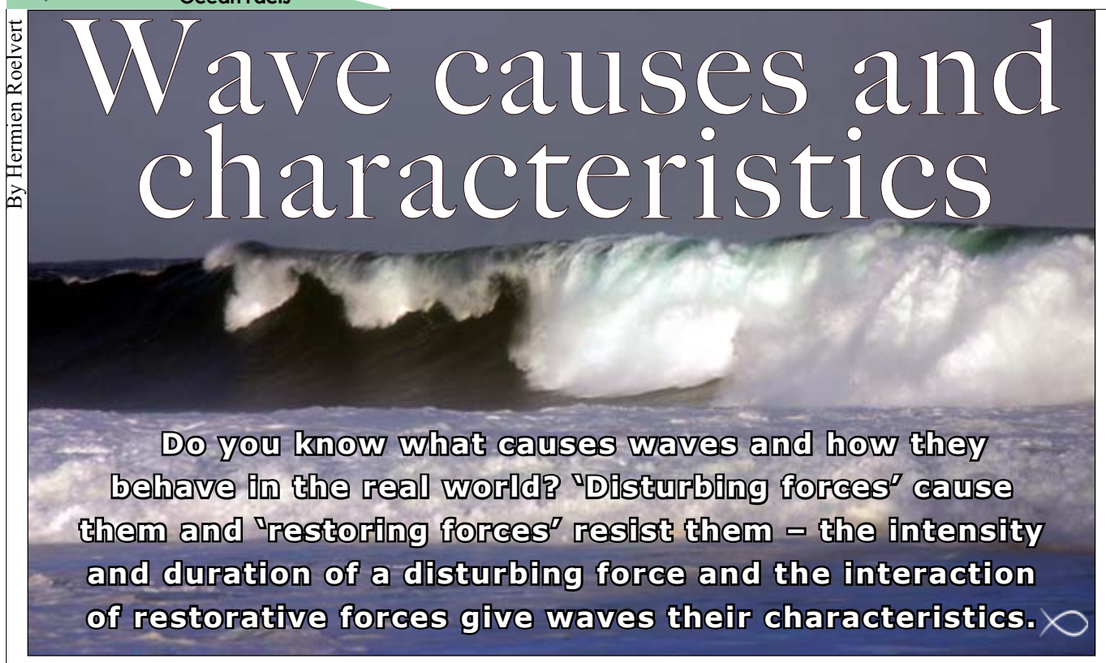
The remains of molluscs have been found in the digestive tract of the Tiger shark, but its usual diet consists of fish, birds, seals, crustaceans, smaller sharks and turtles. It is not known whether molluscs form a significant part of its diet, or whether it is capable of crushing large shells.

Loggerhead turtles are generalist feeders known to prey on a large variety of bottom-dwelling invertebrates, such as crabs, fish and molluscs. Molluscs appear to form a large portion of their diet. Although they only reach a length of about 90cm, their heads are massive and equipped with powerful jaws capable of breaking barnacles from the rocks. Leatherback turtles also occur along our coastline and grow much larger than Loggerhead turtles, reaching lengths in excess of 180cm. However, they have delicate beaks only capable of feeding on soft-bodied animals such as jellyfish.

The Loggerhead turtle appears to be the most likely predator capable of crushing and feeding on some of the largest shells– or are there perhaps other strong-jawed predators out there!

Wave causes and characteristics

By Hermien Roelvert



Do you know what causes waves and how they behave in the real world? 'Disturbing forces' cause them and 'restoring forces' resist them – the intensity and duration of a disturbing force and the interaction of restorative forces give waves their characteristics.

Fluids tend to remain at rest on the earth and they only move when something imparts energy to them – thus disturbing them. Disturbing forces that cause ocean waves include wind, changes in gravity and seismic activity. Wind is the most common disturbing force through the friction of air passing over the waters surface.

Changes in gravity cause a wave you probably don't think of as a wave – the tides. These have characteristics that distinguish them significantly from what we normally think of as waves, so we will look at them separately. Seismic activity includes earthquakes and volcanic eruptions, which can cause tsunamis.

Each kind of disturbing force tends to produce waves with distinct wavelengths. Wind commonly creates wavelengths of about 60 to 150m, the wavelength of the tides is about the size of the ocean basins, and tsunamis have wavelengths of about 200km.

Gravity is the main restoring force for large waves and seismic waves and it tends to flatten waves by pulling water back to level. Gravity and the Coriolis Effect are the primary restoring forces for the tides as their wavelengths are so long. Surface tension is an important restoring force for the tiniest waves, called 'capillary waves', which have a wavelength of about 1,7cm or less. Surface tension is caused by the strongly polar nature of bonds in water, which resists surface disturbances.

You can classify waves based on which restoring force has the most effect. Capillary waves are classified as such because the primary force countering them is surface tension. Capillary waves are the first to form as wind blows across still water. As waves grow larger, however, surface tension becomes relatively insignificant as a primary restoring force.

Gravity – the weight of the wave – takes over, so we call large waves gravity waves. For practical purposes, most of the waves that concern us while diving are gravity waves.

Although disturbing forces can be

By Hermien Roelvert

somewhat random in their intensity, duration and place of origin, waves tend to organise themselves into patterns – waves that are not so organised travel at different speeds and the longest waves outrun the smaller ones. Eventually only waves of similar wavelengths are left travelling together and they are called swell, which is simply the rise and fall of a uniform wave pattern on the sea. Groups of swells with similar characteristics tend to travel together in 'wave trains'.

The first wave in the train gradually loses energy, which is picked up by the new waves forming in the trailing portion of the train. As the leading waves dissipate, the trailing waves form and join the train. The entire train moves at half the speed of individual waves through this process of dissipation and reformation. When the wave train reaches shallow water, the individual and group speeds become the same. This is because depth affects wave characteristics, leading to the concepts of 'deepwater waves' and 'shallow water waves'.

Deepwater waves occur in water that is deeper than half their wavelength. Water motion in orbital waves decreases very quickly with depth. If the water is deeper than half the wavelength, then no interaction with the bottom can affect the wave characteristics.

A fish swimming at 20m wouldn't notice effects from a wave passing overhead if the wavelength is 40m or less. Because the bottom doesn't affect deepwater waves, their orbital motion progresses unaffected.

When the water is shallower than one-fourth of the wavelength, the bottom creates drag that affects the orbital motion which tends to flatten the circular motion into an ellipse. When the depth is about one-twentieth of the wavelength, the wave becomes a shallow water wave.

In depths between one-half and one-twentieth the wavelength, waves are transitional, progressing from deepwater to shallow water characteristics.

Weird and Wonders
Environmental Affairs

By Annatjie Rademeyer

Ocean-based food threat by sea acidification

A billion people live on or near the coasts and are directly reliant on fish and seafood for survival. Most of these people live in some of the poorest countries in the world.

Why is the sea so acidic? Human activities such as the combustion of fossil fuels and land use changes have led to a new influx of CO2 into the atmosphere. About 45% has remained in the atmosphere while most of the rest has been taken up by the oceans, with some also taken up by terrestrial plants. This is part of the carbon cycle.

Carbon cycle
The carbon cycle involves both organic as well as inorganic carbon compounds such as carbon dioxide and carbonates. The inorganic compounds are particularly relevant when discussing ocean acidification for it includes the many forms of dissolved CO2 present in the earth's oceans.

When CO2 dissolves, it reacts with water to form a balance of ionic and non-ionic chemical elements (CO2, H2CO3 and HCO) which is dissolved inorganic carbon. The ratio of these elements depends on factors such as seawater temperature and alkalinity. So if the seawater is warmer, the ratio of the elements change and the water becomes more acidic.

The current acidification rate is 100 times faster than any changes in ocean acidity in the last 20 million years, making it unlikely that marine life can somehow adapt to the changes. The pH shows an increase from the 18th century – 8.179 – to the current levels of 8.069, of more than 28%. In the 15-year period between 1995–2010 alone, acidity has increased six percent in the upper 100 metres of the Pacific Ocean from Hawaii to Alaska.

One of the most important repercussions of increasing ocean acidity relates to the production of shells and plates out of calcium carbonate (CaCO3). This process is called calcification and is important to the biology and survival of a wide range of marine organisms.

Calcification involves the precipitation of dissolved ions into solid CaCO3 structures. After they are formed, such structures are vulnerable to dissolving unless the surrounding seawater contains saturating concentrations of carbonate ions. Therefore, even if there is no change in the rate of calcification, the rate of dissolution of calcareous material increases

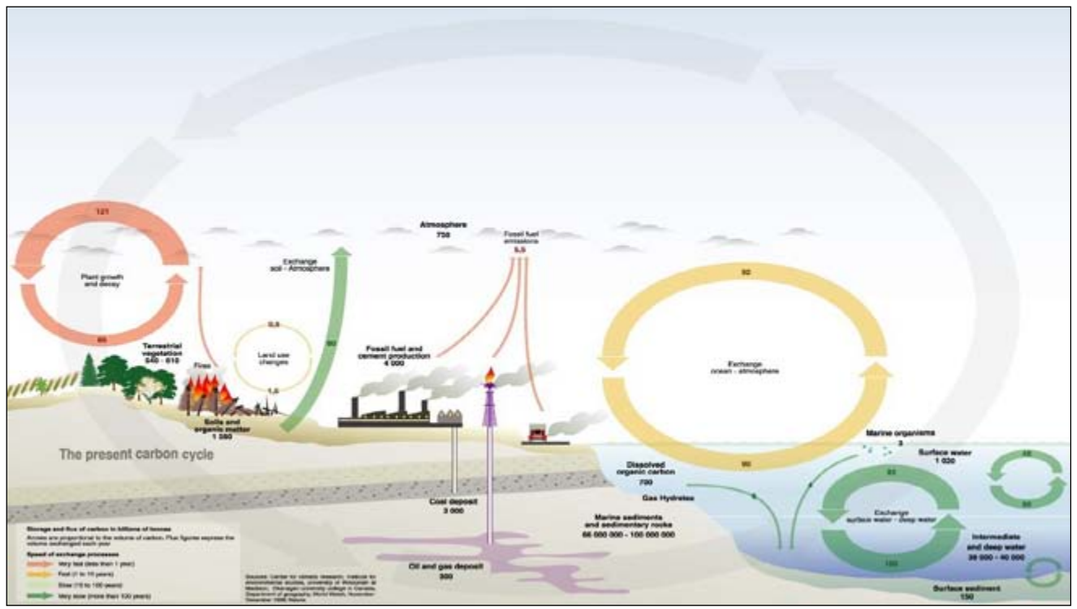
Impact on marine animals
It is believed that the resulting decrease in pH will have negative consequences, primarily for oceanic calcifying organisms. Marine species and their prey are adapted to a certain temperature range; as temperatures change, their habitable ranges can change as well.

Rising temperatures are shifting the locations where a given fish species can live and find food. In general, these changes are pushing many species into deeper and colder waters towards the poles and away from the tropics. Not only does this redistribution of species put the tropics at risk, but these climate-induced invasions of new habitats could have serious ecological consequences, including the extinction of native species toward the poles.

Another example of increasing acidity has been observed to: it reduces the metabolic rates in jumbo squid, depresses the immune responses of blue mussels and makes it harder for juvenile clownfish to tell the smells of non-predators and predators apart and hear the sounds of their predators.

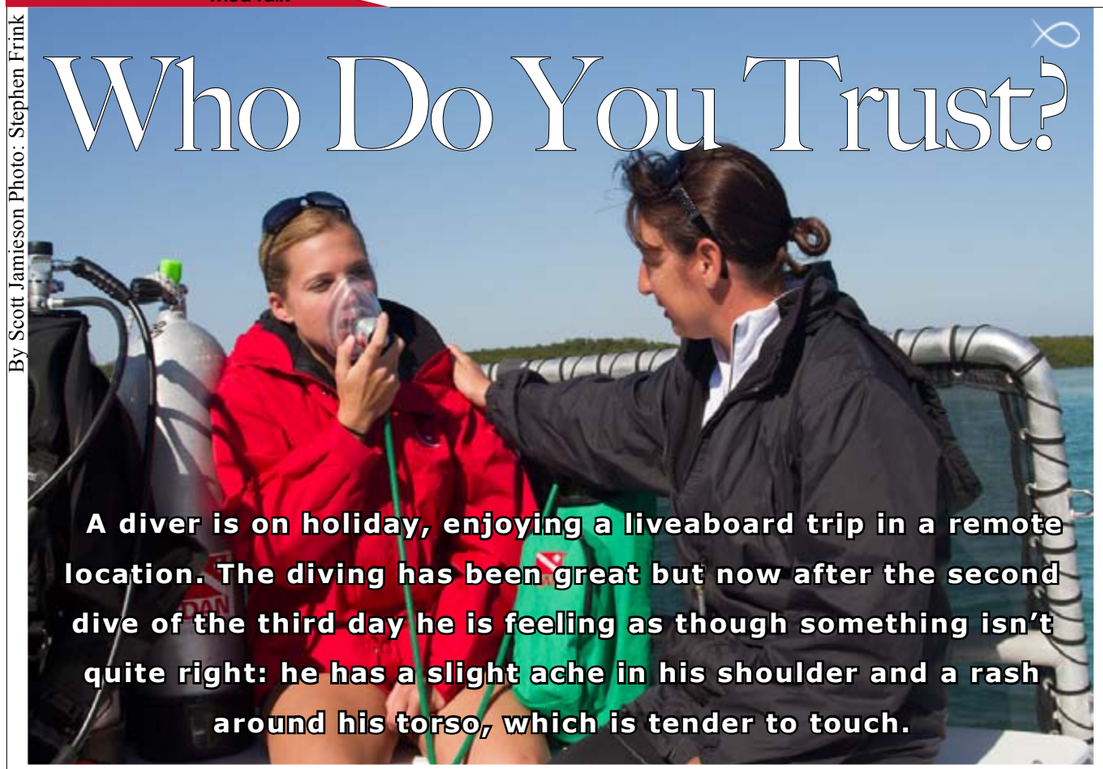
This is possibly because ocean acidification may alter the acoustic properties of seawater, allowing sound to spread further, and increasing ocean noise.

This impacts all animals that use sound for echolocation or communication.



Who Do You Trust?

By Scott Jamieson Photo: Stephen Frink



A diver is on holiday, enjoying a liveaboard trip in a remote location. The diving has been great but now after the second dive of the third day he is feeling as though something isn't quite right: he has a slight ache in his shoulder and a rash around his torso, which is tender to touch.

He knows from his dive course and DAN Oxygen training that these could be signs and symptoms of Decompression Illness (DCI) so he speaks to the dive leader. The dive leader takes a quick look at the rash and tells him not to worry; it's only a heat rash, which is common in the tropics.

The dive leader also dismisses the ache in the shoulder as strain from lifting heavy gear. And besides all that, he has dived within the limits of his dive computer on every dive, so it can't be DCI.

The diver is not convinced, but he trusts the dive leader. Still not feeling well he sits out the next dive and has a restless sleep. The following morning, he dives again, despite the persistent ache and still-present rash.

After the dive the symptoms are worse and new symptoms have appeared. The dive guide finally agrees they should give the DAN Diving Emergency Service (DES) hotline a call for advice.

The DAN on-call Doctor instructs:

- Immediate oxygen first aid to commence, with the diver breathing high concentration oxygen;
- No more diving; and
- If the symptoms do not resolve completely in a couple of hours the diver will need to be evacuated to a facility for evaluation and recompression in a chamber.

If lucky, the symptoms may disappear after breathing oxygen, if not, the diver may require treatment in the recompression chamber.

What was wrong with this scenario?
The dive guides in most dive locations do not have medical training – they should not be diagnosing whether or not a diver has DCI, or denying the diver oxygen first aid.
The diver in this story was correct in identifying that anything abnormal after diving should be considered as possible DCI and he should have insisted on DAN being contacted.

Next, the dive guide should have taken action based on the worst scenario:
Why not give the diver oxygen and see if things improve? There is no negative effect from a diver receiving oxygen first aid, even if they don't have DCI.

Divers do get DCI while following their dive computers. In fact, these days, most divers treated for DCI have been diving within the limits of their dive computers.

Continuing to dive with symptoms can cause symptoms to worsen, making them more difficult to treat and may require more chamber treatments than if they had been treated quickly.

By delaying treatment, the diver may end up with residual symptoms that may involve a longer journey to the full resolution of symptoms. In some cases, there can be permanent injury.

Calling the DAN/DES hotline provides immediate medically qualified advice. DAN should always be called as soon as a diver becomes aware of DCI symptoms after diving.

All divers should be familiar with the signs and symptoms of DCI and should always feel confident that they can call the DAN Hotlines for advice if any of these appear after diving.

Symptoms Not to Ignore When Diving
Common Signs and Symptoms of DCI

- Numbness
- Headache
- Dizziness
- Nausea
- Pain
- Weakness
- Unusual fatigue
- Difficulty walking

Other Signs & Symptoms of DCI

- Difficulty breathing
- Visual disturbance
- Decreased skin sensation
- Restlessness
- Itching / rash
- Paralysis
- Muscle twitching
- Unconsciousness
- Speech disturbance
- Personality change
- Altered level of consciousness
- Bladder / bowel problems
- Convulsions
- Hearing loss / ringing ears

If you experience any signs and symptoms of DCI following diving, be sure to call the DAN Diving Emergency Service (DES) Hotline for advice (1800-088 200 toll free from within Australia or +61-8-8212 9242 outside Australia).

For much more diving health and safety content visit "Diving Safety" at danap.org

Global News

Why Demo Days are Important

By: Pete Nawrocky Publisher & Photo: TDI

The concept of the DEMO day is not a new idea, dive manufacturers have used this concept for years. The advantage is using equipment before purchasing, "try before you buy". The customer gets the experience of diving a new configuration or technology. Advantages and features not only are explai ned but the experience is worth the time. This works if you are the manufacturer. Dive educators are not in the primary business of selling gear, the first hurdle is acquiring demo gear. Not every manufacturer has the ability to ship equipment all over the country and it's impossible to answer every request.

The secondary factor is the liability issue; the educator must have a certification to teach the equipment in question. Drysuit diving, sidemount, CCR, and other equipment require this certification to have liability coverage. Demos are about selling gear, a part of the sales process. Personally, I have had the advantage of both sides, working for manufacturers performing demo dives and still an active educator. Over a number of years I've noticed more questions on technique coupled with the gear used on the demo. Any instructor skillful in the use of a drysuit actually initiates the sale and can have the student work with them in a drysuit class. Ultimately, the DEMO is about YOU!

DEMO vs. Mentoring

Let's approach this from another angle, we have established that demos are a sales process. So this begs the question, who wants a commercial? If there is a demo event setup and the plan is to demo Sidemount and Drysuit, a separate liability form is required for each demo. Since both require specialized training, doing both at the same time is ill advised and you may not be covered if there is an incident. So what is the angle? Instructors are Dive Educators, the object is to have students want to take training with you. Therefore, let's look at creating a "DEMO" that applies to your

forte'. When creating a Mentor day, the concept is to showcase your skills and abilities; students want to "Learn from the Master." Although students were taught many skills in dive classes an event that reinforces the rudiments will always be welcome. Therefore, the target audience is EVERYBODY.

Proper Trim

Buoyancy control is a skill that needs practice and reinforcement. The educators ability to maintain trim and handle equipment is the first building block in building a level of confidence. Maintain proper trim in a drysuit sells a drysuit class without having to say much of anything. Demonstrating bailout/demo cylinder while remaining neutral is an eye opener for the novice. Fin kicks the students haven't used and the reason for the use. These may have been introduced in the class but working on the frog kick, helicopter turn, back kick and others are a part of a mentoring program. There are exercises that can be used to build on more skills without even realizing it.

Kick Cycle Drill

One example would be time/kick cycles over distance: the concept is having a 100 foot line placed on the bottom, students are to count the number of kick cycles it takes to cover the distance. It is to be swam 4 times and an average is taken, the drill also includes timed swims. To save time, some instructors like to use a tape measure secured to the bottom. That works but it is possible to add a number of learning experiences to this drill. First use a reel, mark the starting point with three knots or any number of other techniques, colored thread, coloring the line etc… and mark the 50 foot spot and finish with three marks at one hundred feet.

Have the class run the line, show them how to hold the reel and then hand it off. At the starting and ending marks install line arrows, the 50 foot mark gets a non-directional marker. Demonstrate installation then hand it off to the students. As simple as this sounds having this done while maintaining neutral buoyancy becomes a learning experience. After performing the swims have the class take up the line. You have just introduced a few basic skills to advanced, intro to tech and wreck/cavern classes.

Lift Bags

This is one of the skills that can be worked as a team project.
You will need the following:

- Lift Bag (50 lb. lift will do)
- 4 uneven pieces of line thick enough to work with dry or heavy gloves
- Milk carton or reasonable facsimile

The first skill is to introduce three knots; here are a couple of suggestions: the bowline, clove hitch and the sheet bend. Explain the function of each knot, practicing on the surface first makes this easy underwater. The bowline and the clove hitch are used to secure the lines to the milk carton. The sheet bend is used to tie one line to another. The drill is to create a 4 point cradle to attach the lift bag.

Each team member is assigned a knot and one member to inflate the lift bag. This entire exercise is performed underwater. Putting rocks or bring weights down to fill the milk carton. Not necessary to overfill, just enough to make the lift bag functional. The entire drill is to be accomplished while neutral. Additional skills include proper storage of the lift bag and other items on the divers kit. A slate helps for any communication issues. This dive builds on search and recovery and Public Safety skills for those on this path.

The Mentoring Day Program can be approved by SDI/TDI headquarters. This will cut down on paperwork as the student folder is used for student registration and liability forms. A certification card will be issued upon successful completion. Students can participate in diving with the kit they currently use. Contact SDI/TDI for registration as an Instructor.

Mobilising Divers to Be a Force for Good: PADI's Four Pillars of Change

The health of the oceans is dependent on our actions and it plays a vital role in the wellbeing of communities across the globe. With our network of PADI® divers, PADI Instructors and PADI Dive Centres and Resorts around the world that share a common passion for the ocean, we aim to make a significant impact on key issues facing our oceans and our quality of life by forging partnerships with organisations that are making a positive impact on the ocean planet. In alignment with global efforts, such as the United Nation's Sustainable Development Goal 14, Life Below Water (to conserve and sustainably use the oceans, seas and marine resources) we hope to amplify divers voices and drive change.

"The PADI organisation is committed to acting as a force for good. We're privileged to have a powerful legacy to inspire us," says PADI President and CEO Drew Richardson. "By empowering divers and connecting them to the PADI family and global issues relevant to our industry, we can help people make the world better and be an even more powerful catalyst for change. If we can engage divers more effectively at the local level globally, global change is inevitable."
PADI is committed to supporting global efforts and to being a catalyst for change through its Four Pillars of Change corporate social responsibility program.

Ocean Health Pillar: Forge partnerships with organisations that support the establishment of more marine protected areas (MPAs) and the reduction of human pressures that threaten the future of our blue planet like marine debris. Continue to partner with Project AWARE® in its efforts to remove marine debris, mobilising divers to get engaged through the Project AWARE specialty courses and programs like Dive Against Debris® and Adopt a Dive Site™ from dive sites.

Marine Animal Protection Pillar: Protect marine life biodiversity by elevating our voices on shark and ray conservation and by bringing awareness to the issue of marine entanglement. Support Project AWARE® in its efforts to defend sharks and rays and encourage divers to get involved through the AWARE Shark Conservation Specialty.

People and Community Pillar: As the world's leading diver training organisation, do more to support diving infrastructure and diver education so that we foster a sustainability mindset and encourage growth of the local community.

Health and Wellness Pillar: Spotlight amazing stories of triumph over adversity, illness and hardships that testify to diving's healing power. In diving, many people have found hope for their futures and we aim to inspire others to find similar personal transformation and healing, both mentally and physically.

The Four Pillars serve as a platform to empower divers with information to get involved with causes they care about in a tangible way. Creating synergy with other specialised change-agents will provide more opportunities for global impact and lasting change.

Do you know any PADI divers that are making an impact? Share your stories by emailing fourpillarsofchange@padi.com.

- Word limit: 150 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

ONE APP
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THEM ALL

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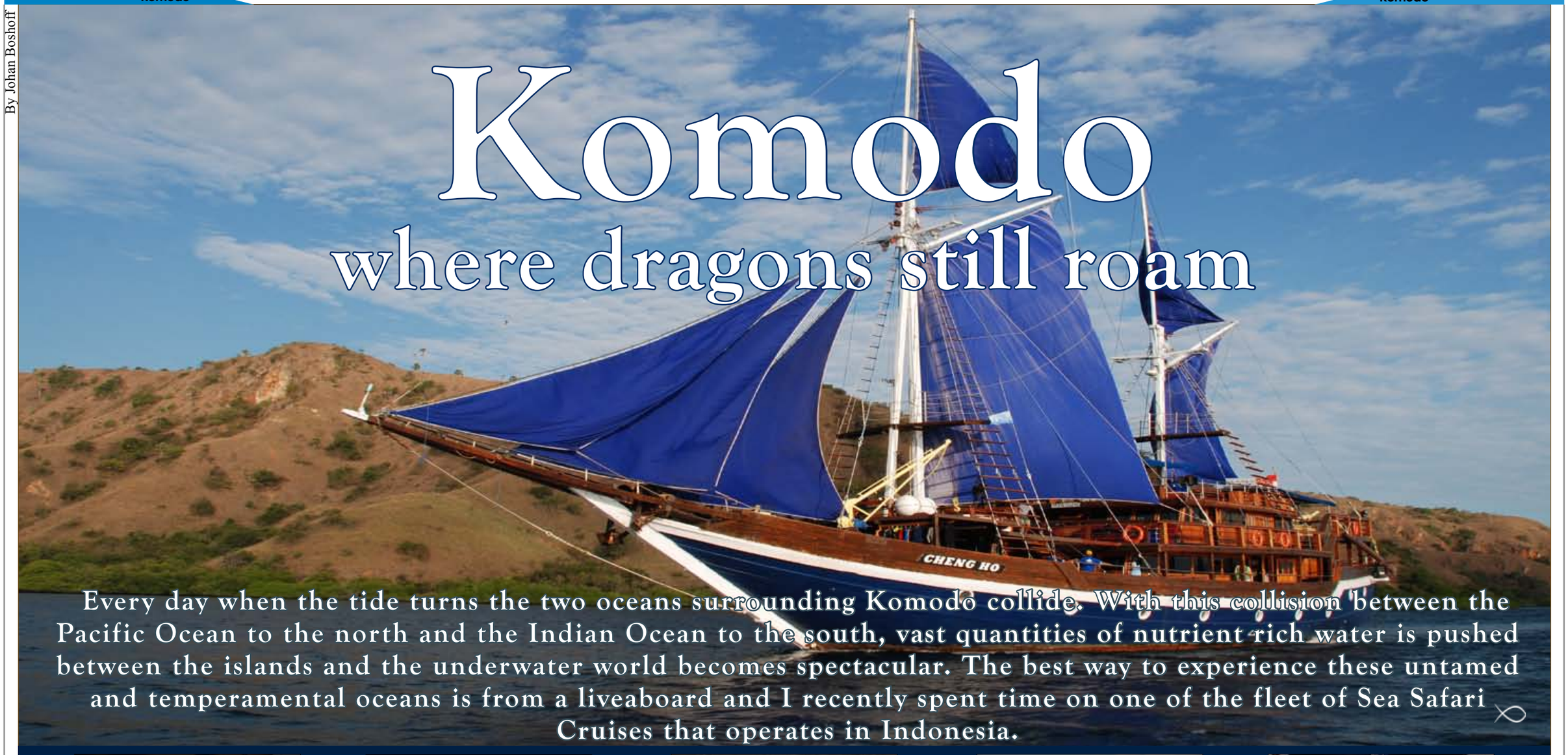
Dive the Globe
Komodo

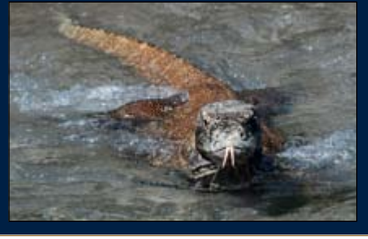
By Johan Boshoff

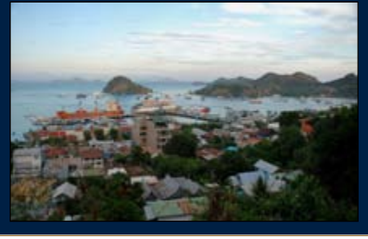
Komodo

where dragons still roam



Every day when the tide turns the two oceans surrounding Komodo collide. With this collision between the Pacific Ocean to the north and the Indian Ocean to the south, vast quantities of nutrient rich water is pushed between the islands and the underwater world becomes spectacular. The best way to experience these untamed and temperamental oceans is from a liveaboard and I recently spent time on one of the fleet of Sea Safari Cruises that operates in Indonesia.





By Johan Boshoff

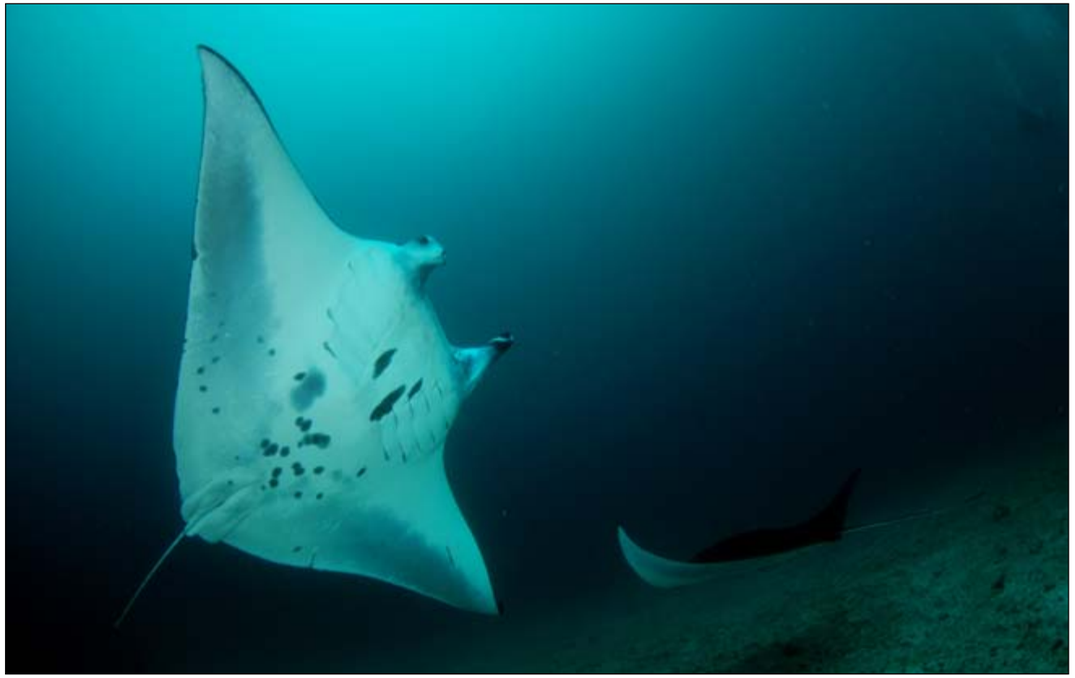
Komodo islands is a set of volcanic islands that is located approximately 450 kilometres east of Bali, and a short flight from Denpasar will get you to Labuan Bajo/Komodo Airport. Komodo National Park consists mainly of the islands of Komodo, Rinca, Padar, Gili Moto, Nusa Kode and other numerous smaller islands together totalling approximately 600 square kilometres of land.

It's a part of Indonesia that feels slightly forgotten; the islands have beautiful panoramic views of savannahs, rain forests, white beaches, beautiful corals, and blue seas. A variety of animals can be found on the islands and there is very little habitation in the park (transport infrastructure is virtually non-existent on most of the islands).

There are many activities for visitors on these tropical islands where temperatures on land average around 28 degrees throughout the year. With this in mind you can engage in many activities such as, scuba diving, snorkelling, kayaking, hiking and sightseeing or take a cruise ship or fisherman's boat to roam around this spectacular part of the world. Around the islands you can also find horses, wild water buffalo, deer, wild boar, snakes, monkeys and various types of birds. But the main thing that most people that come here want to see is the Komodo dragon. And this is the only place in the world where you can see them.

The Komodo dragon, also known as the Komodo monitor, is one of the largest species of lizard found in the world with the larger dragons usually approximately three metres in length and weighing up to 90kg. As a result of their size, these lizards dominate the ecosystems in which they live. Komodo dragons hunt and ambush prey including invertebrates, birds and mammals. It has been claimed that they have a venomous bite; there are two glands in the lower jaw which secrete several toxic proteins.

The biological significance of these proteins is disputed, but the glands have been shown to secrete an anticoagulant. Komodo dragon group behaviour in hunting is exceptional in the reptile world. The diet of big Komodo dragons mainly consists of deer, though they also eat considerable amounts of carrion.



Mating begins between May and August, and the eggs are laid in September. About 20 eggs are deposited in abandoned nests or in a self-dug nesting hole. The eggs are incubated for seven to eight months, hatching in April, when insects are most plentiful. Young Komodo dragons are vulnerable and therefore dwell in trees, safe from predators and cannibalistic adults. They take 8 to 9 years to mature, and are estimated to live up to 30 years. They are protected under Indonesian law, and the Komodo National Park was founded to aid protection efforts.

Yet the best thing about these islands is the underwater world and it is definitely one of the best places that you will dive in your life.

And the main thing that makes the diving here so spectacular, is the currents where most dives are planned around the turn of the tides. The Komodo Ocean is not a tranquil ocean. It is constantly moving. In the northern section of the park the Pacific Ocean pushes in the warmer waters that bring in excellent visibility while in the southern section of the park the Indian Ocean brings a cold, plankton-enriched soup of nutrients. Between the islands of Komodo and Rinca a bottleneck forms with a passage between the Indian and Pacific Ocean currents to pass through.

During tidal changes, vast amounts of water move from south to north during rising tide and vice versa at falling tide. Limited numbers of passages exist resulting in peculiar currents with whirlpools, downwellings and upwellings and absolute calmness between tides. All types of currents can be experienced here – sometimes all in one dive – and on the surface you can clearly see in some places where the water turns and swirls.

Most of the good dive sites are not accessible by day-boat and the best way to explore Komodo and its surroundings is on a liveaboard, and one of them is Sea Safari Cruises that operates in Indonesia. Sea Safari Cruises is one of the top operators in the area and has the largest fleet of luxury liveaboard vessels in Indonesia.

By Johan Boshoff

The diving with them is really easy with experienced dive guides and crew. There you will kit up once when you get on the boat and then they sort out your gear and equipment until your adventure is finished with them. They even use the ENOS satellite tracking system for safety for all divers, so if you lose the dive guides or group, the boat can find you wherever you are.

The boat is spacious and well-looked after with everything that you need to enjoy your adventure, while the crew are really helpful and friendly and always try to make your stay as pleasant as possible.

The itinerary for the week is really packed full with three dives a day and a night dive to finish off the day. There are also enough meals during the day; during our first briefing they told us that if you can't remember the itinerary, just remember, "if you hair is wet then it's time to eat, and if your hair is dry then it's time to dive."

Komodo supports a wealth of biodiversity – at least 253 species of hard coral, over 1 000 species of fish along with endangered,

By Johan Boshoff

charismatic mega fauna such as dugongs, whales, dolphins, turtles and mantas. Sharks and dolphins predate on the vast schools of fish that thrive in these rich waters.

There are literally hundreds of dive sites around the park with many small islands with small bays and larger islands such as Komodo, Rinca and Padar. Some of the dive sites plunge down into the depths with steep walls and pinnacles covered with coral and marine life surrounded by schools of fish numbering in the hundreds of thousands, while some dive sites are muck diving and others are home to huge fields of sea grass where Dugongs can be encountered.

Diving around Komodo can be divided into three sections, namely north, middle and south.

Northern Section
The northern section of the marine park, also known as Gilli Lawa Laut, experienced average temperatures between 27-28 degrees C and visibility of about 25-35 meters. Wall and pinnacle dives are mainly dived here where walls are covered with colourful combinations of hard and soft corals with schools of Anthias, Wrasses, and the majestic Angel Fish. In the bluer waters the larger predators and schools of big pelagics are to be seen, such as Reef sharks, Giant Trevally, Dogtooth tuna and schools of Barracuda. These are the hunting grounds for the big pelagic fish, and at the precise point where the current hits the rock face, schools of reef fish congregate in small huddles. The marine-life is similar to that found in most tropical seas.

Generally speaking, the best season for diving conditions in the North is from April through to December and some of the well-known dive sites are Chrystal Rock, Shot Gun, Spanish Steep.

Middle Section
The middle section is between the eastern shore of komodo and Padar/Rinca islands. This area creates a channel between the islands that is famous for its currents due to the daily tidal flow of the ocean pass. With this you get a perfect place for migratory species to move between the two oceans.

By Johan Boshoff

The reef is pristine and undamaged due to the strong currents that sweep over it. The sites here are one of the best in the park. The pinnacles and walls plummet vertically into the depths below. Every inch of the exposed reef face is covered in hard and soft corals, sponges and invertebrate life. You can expect to see White-tip reef sharks, Grey reef sharks, Napoleon wrasse, Sweetlips, Dogtooth tuna and Rainbow runners with Giant trevally patrolling the sides of the pinnacles and reefs. Clouds of shimmering Goldie's and Dominoes hover in the shallows.

This area is also well known for manta ray and whale sightings.

Southern Section
The southern section of Komodo National Park is normally the colder section with plankton rich water upwelling from the depths of the Indian Ocean with average water temperature of 23-24 degrees and visibility between 10-20 meters.

The invertebrate life here is amazing with reefs filled with vibrant soft coral life, large branching corals and sea fans.
Around Kode Island in the south the nutrient enriched waters are covered with lavish marine life. Hard and soft corals compete with anemones, squirts, sponges and tunicates for a foothold on the reef. It is an explosion of colour; sea apples, pink and purple sea fans, orange and yellow sea whips, white, green and yellow bushy hard corals sway gently in the underwater breeze.
Even the fire urchins are seen in vivid colours of lilacs, cerise, magenta and cobalt blues. Sunshine yellow cup corals cover the reef walls and a yellow Rhinopias scorpion fish is so confident of its camouflage within the yellow fields that it sits out on an open slope.

Many of the thousands of crinoids are host to tiny crinoid shrimps, each matching the colouration of their hosts. Frogfish are aplenty, ranging from the funky coloured Clown frogfish to the drab grey Giant frogfish. Then there are the goldies, glassies, wrasse and other colourful reef fish, all feasting off the reef.
Around Lang Koi is Manta Alley, a nanta cleaning station run by hundreds of Butterflyfish. Three small, rocky islands funnel turning tides through narrow gaps forming currents with sufficient strength to provide the manta rays with the lift they require to be stationary yet still have water flowing over their gills.

As the gentle giants hover at the cleaning station, Butterflyfish dart into action preening their expansive wings and bodies. Mantas with white bellies, black bellies and dotted bellies materialise as if from nowhere, and are preened and cleaned, then tilt their vast wings and melt into the distance.
Komodo diving is unlike anything you've ever encountered with a drift dive faster than any you've ever experienced! It is one incredible adventure.

How do you get there?
For Denpasar (Bali) it is just over an hours flight to Lebuan Bajo, also known as Komodo Airport.

How to see the Komodo dragons?
On the trip, Sea Safari Cruises will organize two interactions with Komodo dragons.
First you observe the wild Komodo from the boat and the second one is a trip to Rinca Island.

On Rinca Island you will be greeted by a group of rangers, who divide you up into groups of no more than 5 people who are assigned two rangers, one to walk ahead of you and one to walk behind. The rangers are armed only with a long wooden stick, which they use to bop the dragons on the nose if they get too close as the nose is the most sensitive part of the dragons.

There are a few different hikes you can do on the island, of varying lengths and difficulties, where you will have many encounters with wild Komodo dragons.

Best time to visit
Komodo is an all year dive destination where the rainy season is from December to March.
April to June is the end of the rainy season, when you'll find the mountains alive with lush greenery. The weather is a bit cooler and the scenery on point after all the wet weather, though you may still get the odd rainy day.
July and August is the high season, where you'll find it hot and packed with tourists.

Dive the Globe
Komodo

By Johan Boshoff

From September to November is the best time to visit as you're still spoilt with great weather and warm days.

Electricity
2 pin standard plugs, 220v in every cabin, in the lounge, dining area and dive deck. 110v sockets are available at the tables/ counters in the restaurant area.

Minimum requirements
Because of the currents, Komodo is considered an advanced diving destination. Average depth: 10-25m

About Sea Safari Cruises
Sea Safari Cruises provide leisure expeditions to all of the out-of–the-way islands to the east of Bali.

From the very moment that you step aboard one of their wooden schooners you will know that you made the right decision.

There vessels are luxurious 35+ meter Phinisi style wooden schooners. They offer you plenty of choice to visit Bali's neighbouring islands for land tours including bird watching, trekking, waterfalls, volcanos and world class snorkelling.

The formula of Sea Safari is as simple as it is attractive. Your home-away-from-home is a spacious sailing vessel and you have a comfortable cabin with your own en-suite bathroom.

Sit back and relax while their attentive but discrete crew take care of everything.

Destinations Sea Safari Cruises Offers
Komodo, Raja Ampat, Nusa Lembongan, Labuan Bajo, Lombok, The Gili Islands, Sumbawa, The Spice Trail, Ambon, The Forgotten Islands, Flores, Alor or suggest an itinerary and they will work on it for you.

Sea Safari Cruises Contact Details
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Mobile (WA): +62 821 44 856 979
Email: mark@seasafaricruises.com or bali-ssc@indo.net.id
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Dive the Globe
Komodo

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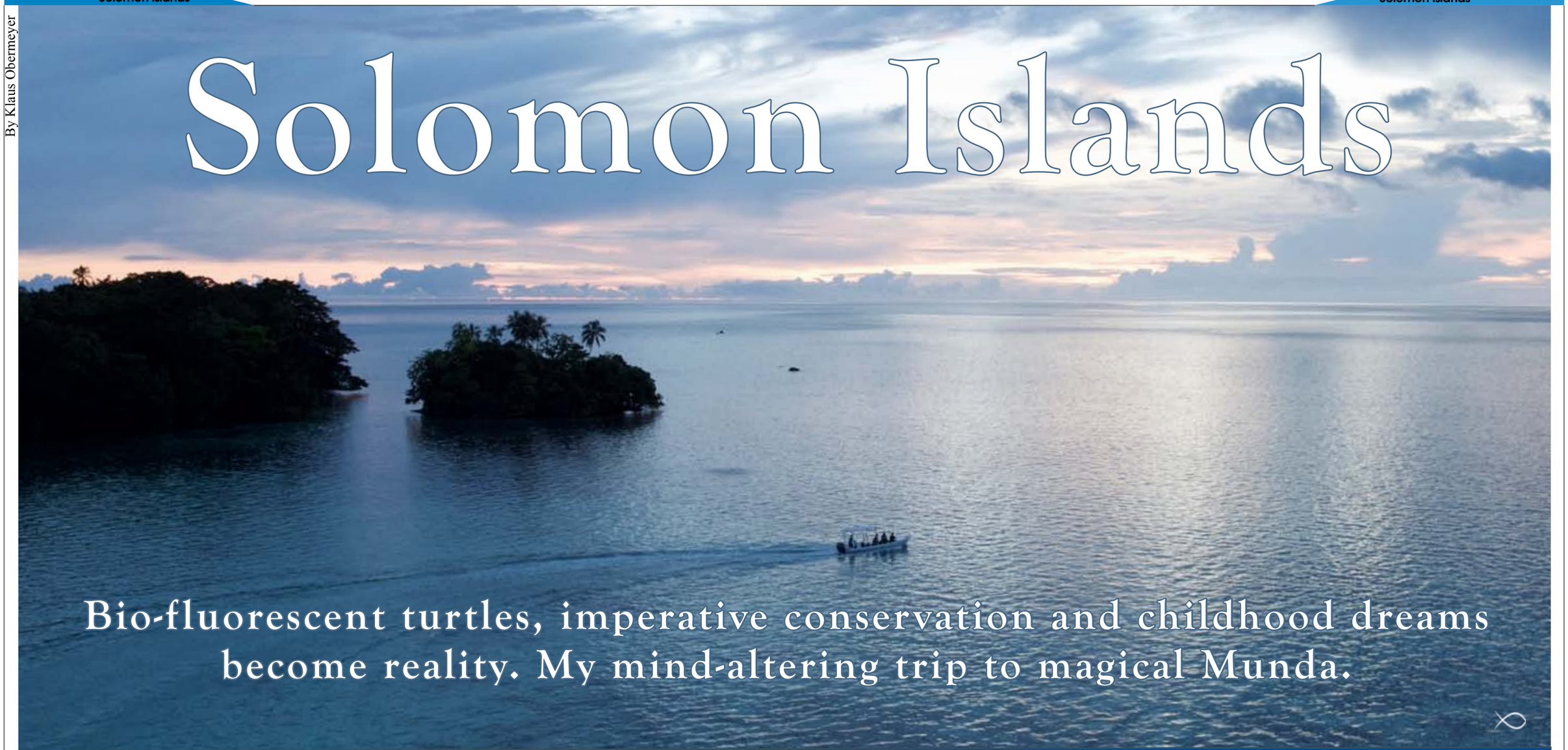
Dive the Globe
Solomon Islands

By Klaus Obermeyer

Solomon Islands



Bio-fluorescent turtles, imperative conservation and childhood dreams become reality. My mind-altering trip to magical Munda.

By Klaus Obermeyer

"The more I fly over vast untouched regions of our globe, the more clear it becomes what an incredible accomplishment it is when human beings do absolutely nothing."
Robert Edison Fulton

This quote kept resonating in my mind as I flew from Honiara over the Solomon Islands to Munda on a film/dive expedition I was directing for Canon and their ME20F-SH low light camera. Renowned biologist Dr. David Gruber had stunned the world when he discovered the first bio-fluorescent turtle at night during an expedition to the Solomons the previous year. Canon wanted to shoot something amazing underwater that showcased the low-light capabilities of their technology and I suggested to Grey (Canon's advertising agency) on the idea of filming the bio-fluorescent turtle Dr. Gruber had discovered. To my delight, they got excited about it.

It is not everyday that I convince a large multinational company to travel 45 people for multiple days from around the world to gamble on the chance of finding and photographing a bio-fluorescent turtle somewhere at the end of the Earth.

Needless to say, I was already feeling quite lucky and honestly still enjoyably inebriated in quiet disbelief.

As a very young boy I often spent my time rotating the globe around and around in our living room and trying to determine what the most interesting places on Earth would be and I distinctly remember imagining that the Solomon Islands must be incredible because of their isolation, the vast number of islands and their proximity to the warm equator. I sensed that the Solomons were still wild and largely undiscovered and I was right.

I had often travelled to Hawaii as a young child and experienced how beautiful warm water and tropical South Pacific islands could be, however, I would always imagine and deeply contemplate what it must have been like to be the first ever to discover them, before people had ravaged them. Since then I have always yearned longingly to get that opportunity of

true discovery somewhere and sometime in my life.

All those memories were playing in my mind as I excitedly watched countless untouched islands and healthy reefs fly by from the window of the only Dash 8 aircraft in the entire 1000 Solomon Islands as we began our descent into Munda. I was excited and ever so slightly stressed for many reasons not the least of which was the risk of not finding competent dive professionals or even seeing a turtle after I had gotten everyone excited about this crazy idea not to mention all the hype on the internet of malaria, dengue, crime and saltwater crocodiles (that theoretically hunt the same turtles at night that we would be trying to film) but all that just contributed to the euphoric adrenaline high that was building as we touched down.

Within the first steps off of the airplane I was introduced to Belinda Botha who had taken over a small dive shop the year before and had trained a team of locals into a powerfully competent and passionate group of dive professionals. I immediately felt relieved meeting Belinda as her confident introduction and radiant smile melted away any doubt about the dive team upon whom the success of the entire job would be depending. We then all walked a few hundred yards from the dirt strip through a tiny town center to Agnes Gateway Hotel, which would become our charming new home and our base of operations.
It became immediately clear to me that Munda and the Solomon Islands in general were on a knife edge that would either fall to the side of continuing to exploit their resources to rapacious logging companies and succumb to shortsighted greed, or they would take a path of eco-tourism and resource conservation which would preserve the natural beauty and magic of the islands for generations to come by bringing prosperity and long term employment to their people.

It became instantly clear that Belinda and her brilliant dive operation were the key to that bright future as divers in search of real adventure have the resilience,

passion and disposable income to travel the extra mile for an amazing experience and they deeply appreciate untouched natural beauty and underwater wildlife. The past year had already shown proof of concept in that Agnes Gateway Hotel had seen a huge bump in occupancy from Belinda's dive tourism and she had employed a team of ten locals in her dive shop alone, not to mention the extra housekeepers, cooks, hotel staff and business to local shops, artisans, fisherman and farmers that benefit from dive tourism.

I knew that by providing film and photography of the amazing dive sites, WW2 wrecks, healthy coral reefs and unspoiled islands; those images could be used as a powerful tool for Belinda to increase sustainable tourism, which would ultimately lead to a path of conservation and long-term economic success for the local people. So we decided to shoot during the day to capture images of her awesome dive sites and use our nights in order to accomplish the job of filming a bio-fluorescent turtle for Canon. It turned out to be the most amazing diving adventure of my life, by far.

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By Klaus Obermeyer

Besides the completely otherworldly coral reefs and wall dives, the Solomon Islands were the site of the most ferocious air, land and sea battles, which changed the course of WW2 and multiple hundreds of aircraft and ships, remain missing and undiscovered in the surrounding area of just Munda alone. Belinda guided me on several dives, one of which was my deepest dive ever, at 170 feet. We went on to dive multiple World War II wrecks, including airplanes and a Japanese supply ship, the Kashi Maru, that had been sunk right off shore. We also dove the coolest cave that defies the imagination.

The entrance of the dive is situated within a small island 40 feet inland from the shore; we hiked our equipment in over land to get to the small entrance and dove down through a spectacular cave opening with photogenic cavernous sections to a depth of 100 feet. The dive ends up leading back out into open ocean through a vacuous underwater cave exit. Once you are birthed back into the light and into Open Ocean (at a depth of 100 feet) the dive then transforms into an incredible shear wall dive for Pelagics. This location and dive profile are completely unique in the world and currently in danger of being destroyed by a Chinese shrimp farm if the government approves it. We must share this incredible dive with as many divers as possible and get this unique treasure protected.

At night we would dive Mbigo Mbigo for its amazing clarity, unmatched coral formations and turtle population. By shining blue light on the corals and turtles combined with using a yellow filter on the camera we were able to see incredible bio-fluorescent life forms and uncover the mystery of how turtles see their underwater world at night. Using the Canon ME20F-SH, we ended up shooting the most incredible bio-fluorescent turtle footage ever captured on the first and second night, which completely released stress for the entire team and allowed us to focus calmly on telling the rest of our story with brilliant night cinematography of our expedition team. Happily, our clients left the island with revolutionary footage and resounding success as a reward for their faith in our

Dive the Globe
Solomon Islands

By Klaus Obermeyer

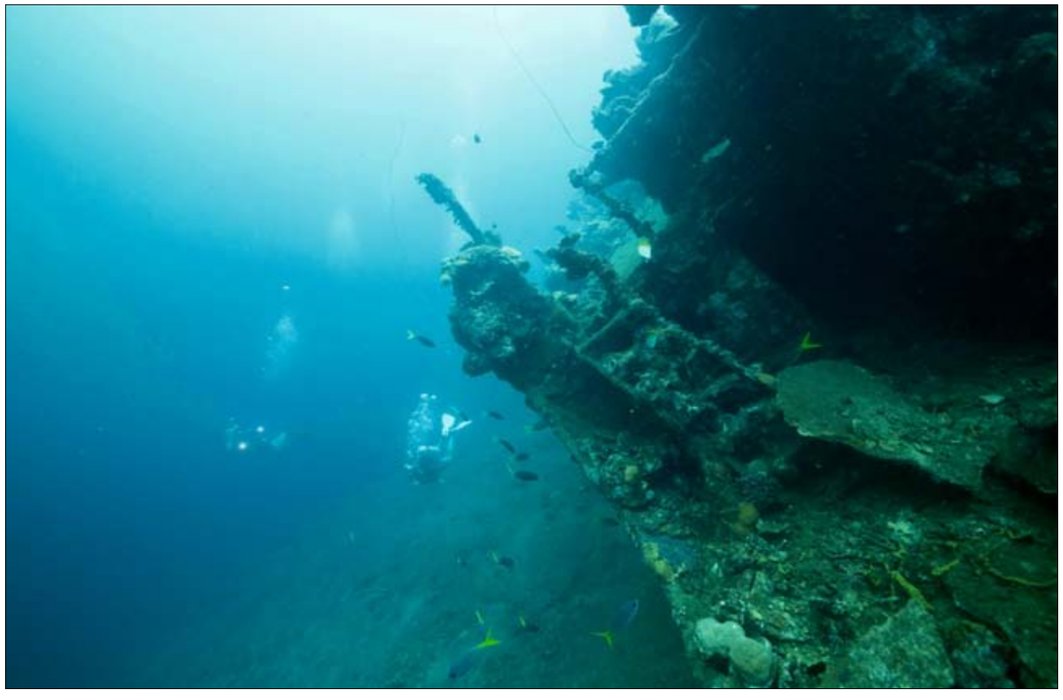
expedition.

I could not bring myself to leave Munda with the group and decided to stay to make a subsequent expedition to the remote island of Tetepare a few hours from Munda by boat. Tetepare is the least developed and most remote island in the Solomons and is home to vast untouched jungle, monitor lizards, Dugong, crocodiles, leatherback turtle nests, green and hawksbill turtles and countless species of fish, butterflies and frogs just to name a few. It is also the home of a conservation group that focuses on helping leatherback and other turtles successfully hatch and Tetepare is one of the only bright spots in the future of those endangered species.

Its remoteness is both a blessing and a challenge to conservationists who brave the elements to carry out their year round work but desperately need funding support to continue. We shot a short film to help communicate their mission to donors. Tetepare has a very small eco-resort that is designed to let tourists participate in turtle tagging and nest protection to create a sustainable source of income to power their conservation efforts in the future. Our overnight stay there was amazing, with inspiring people and stellar food.

Most profoundly for me personally was that I was truly able to realize my childhood dream of being the first to discover and dive completely virgin and never before explored underwater landscapes thanks to Belinda and her team. We established three new world-class dive sites together around Tetepare that she insisted I name.

Our first was "Tangerine fields," inspired by the Beatles song "Lucy In The Sky With Diamonds" written about a psychedelic journey to an otherworldly place, which is exactly what that amazing dive felt like. Then "Magic fingers" which is a dive through tight fingerlike canyons that extend out from shore and provide a brilliant labyrinth of discoveries and amazing photographic opportunities and finally "The Blue Wall," which was my



By Klaus Obermeyer

personal favorite as the picturesque wall descends into the abyss, where tides move massive amounts of water from deep open ocean into and out of an epic island chain. We saw a large Hammerhead shark, and many others feeding at dusk. The wall itself was covered in amazing coral structure and felt healthy and teaming with life. I wish I could dive it everyday!

The untouched natural beauty of the Solomons is felt in the people I met, as well as in the landscapes themselves. We stopped in the small remote village of Sasavele and were greeted by many smiling children and villagers who were open and playful. They were happier holding their hand made sling shots and playing hide and seek than any kids I have seen in the "civilized world" who all seem to sit alone in a room full of people, glued to their smartphones like digital Zombies.

These kids were connected to each other, the natural world around them and to their entire multi generational families who would all be living under one roof. It made me question why the modern world considers living separate from your family to be progress.

Skull Island is where Headhunters would deposit the skulls of their enemies and revered local tribal leaders in the not so distant past. The conch shells on the gravesite are in perfect shape and still create the same haunting signal that the headhunters made to boast the number of skulls that they harvested on their journey. When I was invited to set foot on to this exotic and sacred island, I was moved by a palpable sense of how recently some of those skulls had been brought there and by the violent axe wounds visible.

It was a reminder of how far off the beaten path we were and how special it was to be one of very few people ever to be in this place.

I have been fortunate to travel the world directing commercials. I have made a career of finding rare beauty and being the very first to capture it, however, I have never had an opportunity like this, for my work to help create a lasting and positive impact on a magical place like Munda in the Solomon Islands. My hope is that by sharing my experience and images of our expedition with the dive community, that we will all help Belinda on her quest to preserve one of the last healthy underwater eco systems on the planet for future generations, by simply visiting Munda and diving this underwater paradise. Each person who books a trip gives strength to the theory of sustainable tourism and can be a powerful force at this crucial time in Solomon Island history.

By the way, I only saw one mosquito and oddly it was on the airplane back to Brisbane. I used repellant and took no malaria meds. The people of Munda were open, friendly and delightful and crocodiles don't like coral reefs because they have soft bellies and they stick mostly to the swampy mangroves, but they do add exotic dimension to the stories and keep out meek vacationers, which I see as a total benefit.

Kuda Laut Boutique Dive Resort

Sulawesi (Indonesia)

Celebes Divers hat opened mid of July the newly built Kuda Laut Boutique Dive Resort on the island of Siladen, North-Sulawesi, Indonesia. The resort offers a variety of outstanding accommodations, from superior rooms to beach cottages, a state-of-the-art dive centre, a beachside pool and Indonesian-European fusion cuisine for a perfectly relaxed, stylish island experience. The resort is managed by Oli Hofer, an experienced Dive Instructor and Resort Manager. With this expansion on Siladen Island, Celebes Divers is strengthening its position as a top quality dive resort provider in the uprising region of North-Sulawesi.

After over a year of construction works, Celebes Divers hat put into operation mid of July its newly built Dive Resort Kuda Laut on the island of Sulawesi – the official opening ceremony will be held beginning of September. "We have been waiting for this great moment and we are delighted to expand our resort portfolio in this premier diving destination by opening our third and so far, best resort. Celebes Divers will deliver a contemporary boutique diving resort experience with its professional and friendly service philosophy.

This is a very special resort with fantastic views, excellent diving and comforts for our guests, and perfectly complements our existing offering in this beautiful piece of diver's heaven," says Klaus Schnappenberger, shareholder of Celebes Divers.

Designed in a typical Minahasa-refined style, the rooms are finished with a wooden colour palette for a warm and cosy feel. Free wifi, a minibar, spacious raindrop showers and space to lounge and relax feature as standard for each accommodation option. "The Kuda Laut Boutique Resort combines luxury and unspoilt nature as well as focusing on environmental friendly and sustainable development of local tourism. We make for example big efforts to avoid plastic bottles by replacing it with glass material to be used several times", say Andi Arbenz, shareholder of Celebes Divers.

Those looking to unwind in the sunshine have the choice of the swimming pool with a breath-taking view, the lonely beach in front of the resort, hammocks and a spa featuring treatments to soothe and relax.

Divers will enjoy excellent diving both in the Bunaken National Park and at the Manado Coast with Celebes Divers' comfortable boats and eagle-eyed guides.

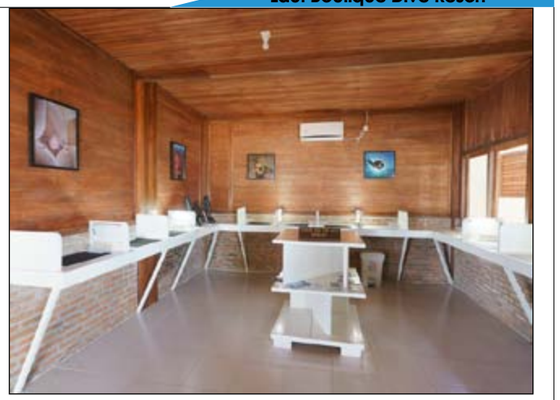
Famous for its warm climate, the islands of Sulawesi are best known for its rich scenery comprising volcanic landscapes and lush tropical forests, beautiful sandy beaches and a unique bio-diversity, both on land and underwater.

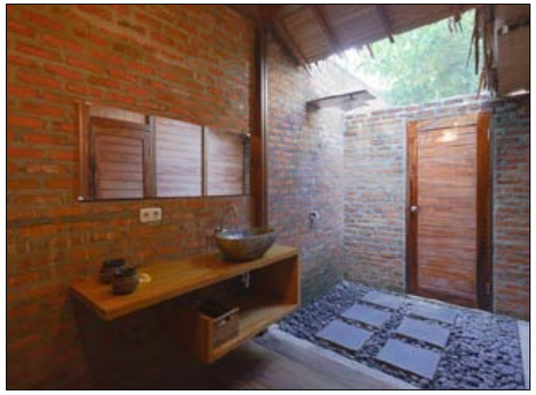
In parallel with the soft opening of the resort, Celebes Divers has also engaged two experienced professionals in diving and tourism: Oli Hofer, a 33 years old Swiss Citizen, is managing the Onong Resort on Siladen as well as the Kuda Laut Boutique Resort. Oli Hofer has been working in management positions in several dive resorts on the Philippines, in Egypt and in the Caribbean.

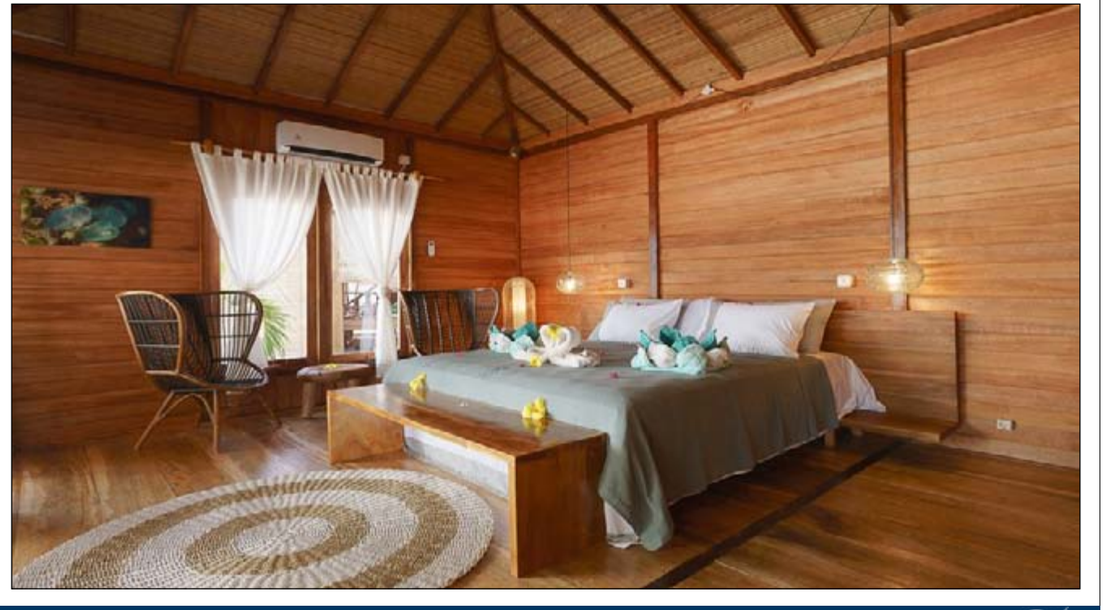
Anissa Schadrack (25) has taken over the management of Celebes Divers' Mapia Resort. Anissa was raised in Ibiza and has been working in Australia and as a supervisor in the Catering Business in Barcelona.

The overall direction of the three resorts remain in the hands of Yurij Barrettara. Yurij is an experienced marine biologist and dive instructor. Originally from Italy, he works and lives in Indonesia for over a decade.

For further information please visit: www.celebesdivers.com







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Wreck Explorations
Truk Lagoon

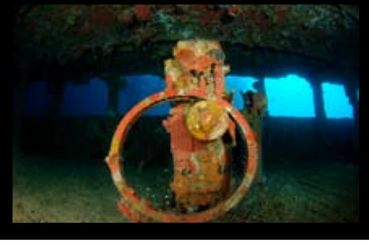
By Johan Boshoff

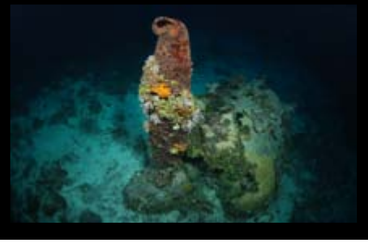
A backward role into history

Part III

On the other side of the earth in the middle of the Pacific Ocean you will find an underwater world that is full of artefacts and historical events. If you look closely on a map, in the middle of all the blue water you will see a range of islands called Micronesia, and then in the middle of these islands you will find a place known as Truk Lagoon. Truk Lagoon is the burial ground of hundreds of army and naval vessels full of historical facts of the World War II that found their final resting place on the bottom of the ocean floor.







By Johan Boshoff

Rio De Janeiro Maru
The Rio de Janeiro Maru was built in 1931 by the Mitsubishi Zosensho Company of Nagasaki as a passenger ship for the Osaka Soshen Kaisha Line.

Her peacetime duties consisted of passenger and cargo carriage on an around the world route from Japan via Hong Kong, Singapore, South Africa, South America, the US west coast and finally back to Yokahama, Japan.

The Japanese Navy took control of her in 1940 and converted her into a submarine tender. She was attached to the Combined Fleet and was responsible for the servicing and supply of six submarines.

After 1943, the Japanese had lost most of their submarines, so Rio de Janeiro Maru was reclassified as transport and based in Truk.

During the 'Hailstone' attack, the Rio de Janeiro Maru was attacked by aircraft from the carrier USS Essex and hit with at least one bomb. She was reported on fire and thought to have sunk on the first day.

She now lies in 9-30m of water.

Gosei Maru
The Gosei Maru was built in 1937 by the Tsuromi Iron Works Dockyard as a medium coastal freighter for the Koun Kisen Line. Her lines are unconventional, but were adopted as the Standard D Freighter built-in quantity during the war.

The Japanese Navy took control of her and utilised her as a supply ship for Sixth Fleet submarines. She carried torpedoes and depth chargers.

In 1976, many of the torpedo bodies were destroyed to reduce the chance of unpredictable explosions and danger to divers.

During the 'Hailstone' attack, Gosei Maru was attacked by aircraft from the light carrier Monterey and sunk by a torpedo.

She now lies on a slope with her stern at 3m and her bow at 30m.

Kansho Maru
The Kansho Maru was built in 1938 by the Mitsui Dockyard Company as a passenger/cargo carrier for the Mitsui and Kawasaki Lines.

The Japanese Navy took control of her when the war began and she was put to work shuttling supplies between Japan and the Marshall Islands.

Eventually she was retrofitted with a deck gun and augmented with a Naval gun crew and medical staff for transporting wounded.

Just prior to the 'Hailstone' attack, Kansho Maru was in Kwajalein Atoll delivering supplies, when she was bombed by carrier aircraft and took a hit to her engine room.

Unable to get underway, Kansho was towed to Truk by the Momokawa Maru and arrived around January 5, 1944.

Both ships were located in the repair anchorage when the 'Hailstone' attack began, and being unable to help defend themselves, they were both sunk.

The Kansho Maru was sunk by at least one bomb and an aerial torpedo.

She now lies in 12-35m of water.

Sankisan Maru
The Sankisan Maru was built in 1942 by

Wreck Explorations
Truk Lagoon

By Johan Boshoff

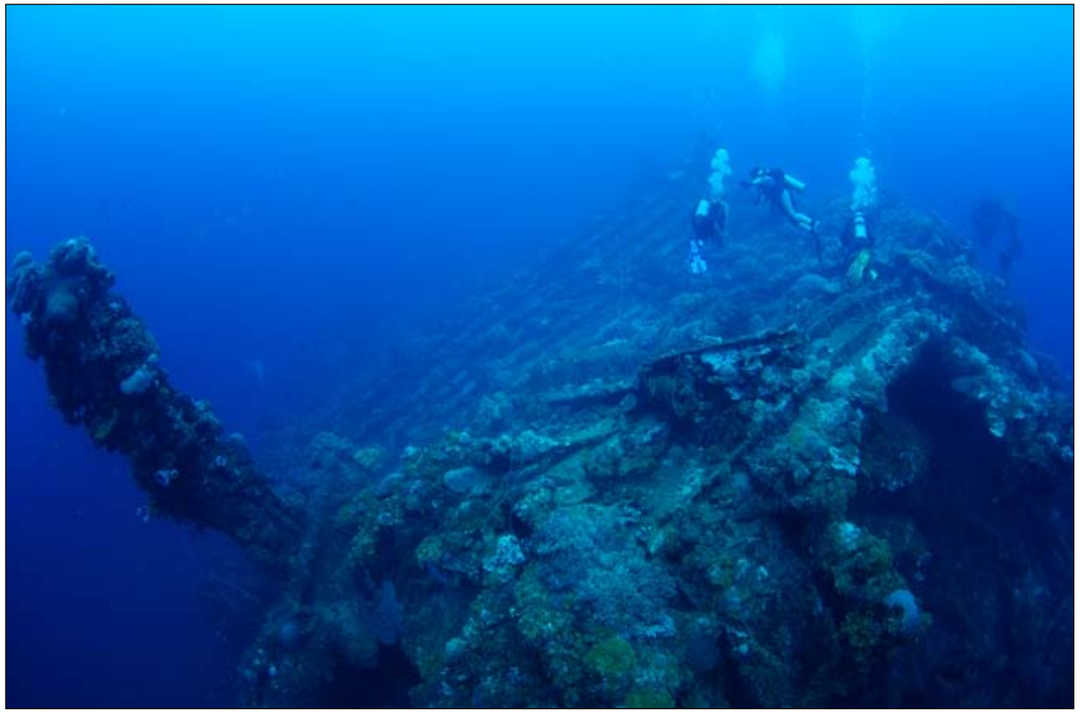
the Harima Dockyard for the Kaburagi Kisen Line as a passenger transport. The Japanese Navy took control of her in October 1943 and converted her into a military transport ship for use in moving special cargo.

The Sankisan Maru is one of the most interesting wrecks in the lagoon, but little is known of her short history.

The entire aft section of the ship is completely gone and it is thought that a bomb, in her ammunition laden aft hold, led to her sinking.

She now lies in 3-27m oof water.

Nippo Maru
The Nippo Maru was built in 1936 by the Kawasaki Dockyard as a passenger and cargo freighter for the Okazaki Kisen Line.



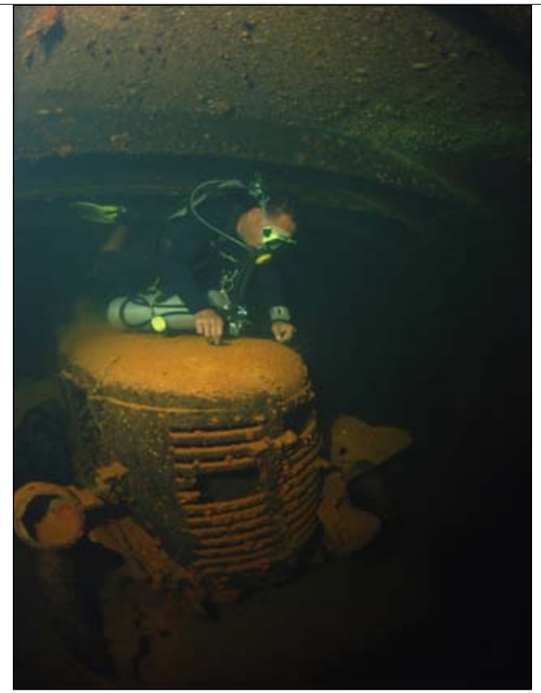
By Johan Boshoff

Her peacetime duties consisted of carrying bananas from Taiwan to Japan.

The Japanese Navy took control of her in late 1941 and utilised her as water transport, and as such she was stationed in Truk to carry water from Dublon Island to the outlying islands where fresh water was scarce.

During the 'Hailstone' attack, Nippo Maru was attacked by aircraft from the carrier USS Essex, who dropped a salvo of bombs around her.

The Nippo Maru is a very interesting wreck with highlights being a Japanese light tank and artillery pieces on her deck. She was found by Klaus Lindemann in 1980 and lies in 28-47m of water.



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Through the Lens
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Photographic Competition

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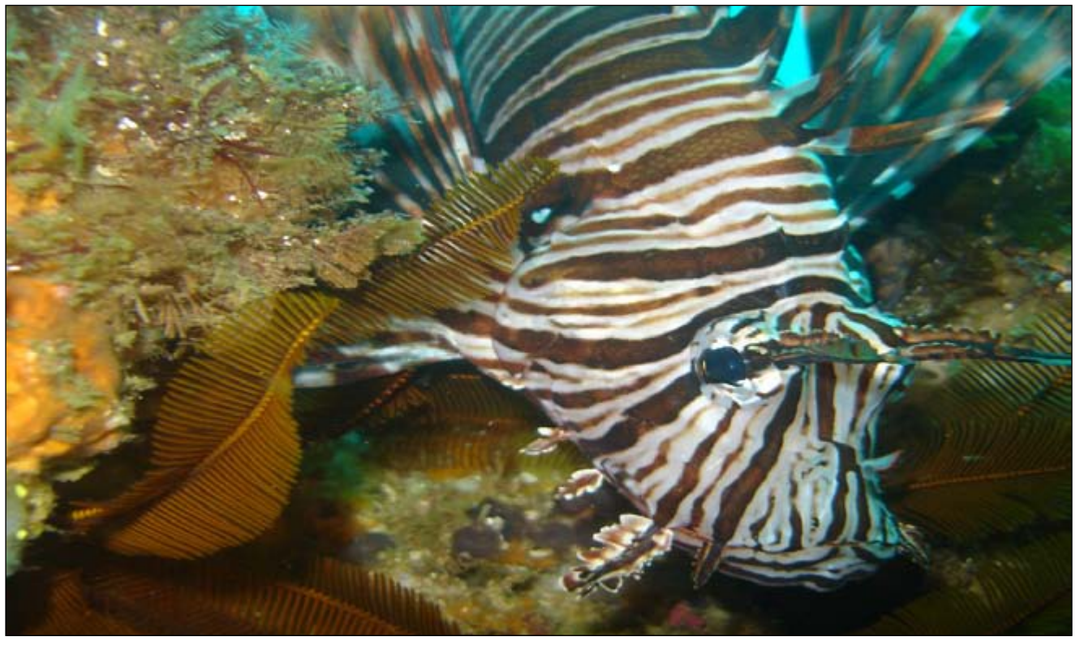

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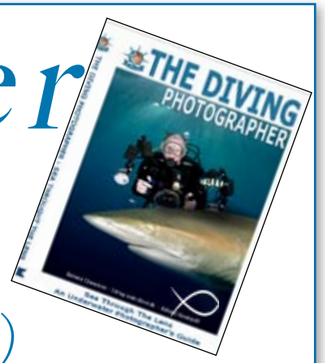
Underwater Housings (Part II)



By David Caravias

Underwater housings for cameras are solid, well built and sturdy and appear somewhat indestructible. Don't be fooled as this could not be more from the truth as housings are extremely fragile and need all of the TLC that you can give them. By David Caravias

The outside case of an underwater housing is thick and solid but one small knock could lead to flooding and catastrophe ruining your opportunity to catch those magical diving photographs you so desperately wanted to get on your holiday. No one wants this to happen but it is very easy to flood a camera and many have done this, from amateurs to professionals. Below are a few tips to follow to prevent flooding as much as possible.

On the boat
Never leave the housing in direct sunlight. Make sure that your camera is packed in a safe place for the launch and ride to the site. Normally there is a box supplied for cameras and if put into this box make sure that your camera is not sitting in the sun.

Kit up for the dive then ask for the camera to be passed to you when you are ready. Never put the camera on the floor by your feet when kitting up.

When rolling off, if you can, ask for your camera to be passed to you when in the water. Sometimes the camera can take quite an impact when you are rolling off the boat, either with the impact on the water surface or other divers entering the water at the same time. Sometimes this is not possible with negative entries (direct descent) so make sure that you are at the back of the boat and away from other divers when rolling off with your camera and keep your camera tucked against your body.

When descending, carefully look for bubbles coming from your housing, listen for the alarm or look at the leak detector if there is one. If you spot something wrong then angle the camera so that any water getting in does not go over the electronics, stay calm and make an urgent but safely controlled ascent to the surface and call for the boat. When on the boat open the housing immediately and dry out the inside and hope for the best. After your dive make sure that you clean all of the salt away from the inside if there is any.

After the dive make sure you pass the camera to a responsible person on the boat who knows how to handle cameras. It is always worth waiting in the water to let others get on the boat if you are not comfortable giving your camera to the person collecting the gear. If the housing has a domeport then make sure that the person collecting the camera puts this immediately on to protect the dome, otherwise this is the first thing to do when you get onto the boat.

After the dive
Put the housing in the camera rinse tank – there is normally a dedicated rinse tank for cameras and dive computers. Do not rinse the camera in the wetsuit tank as there will be a lot of sand inside. It is best for you to stand with your camera and not leave it unattended as people tend to throw anything in these tanks and many cameras have been flooded in the rinse tanks when unaided.

When rinsing, make sure that the whole camera is submerged and that the salt water and salt deposits are washed off. Be sure to press all of your buttons and twist the knobs to release any salt build-up. If you fail to do this you will notice over time that the buttons will start to stick.

Following your holiday
Fill a bath with cold water and a small amount of washing up liquid. Don't let your guard down and make sure that you follow all of the same pre-dive steps with the o-rings and cleaning the housing groove before you immerse the housing. Wash the outside and clean all of the joints and buttons thoroughly. Push all of the buttons in and out to release any build up of salt. Ensure that the camera is rinsed in fresh water and then is completely dry before packing away for storage. Store in a cool dry place.

How to prevent fogging
Make sure that you assemble the housing inside, away from direct sunlight, wind, dust and sand. Try to work with the housing at room temperature and away from a humid environment. The camera and housing needs to be sealed in a dry environment to prevent any moisture or condensation build up during the dive. Smaller compact cameras tend to fog up easier than the larger SLR housings. Put one or two Silicone Gel Packs (Desiccants) in the waterproof housing to neutralise any moisture inside the housing. Do not leave the housing in direct sunlight at any time as the direct heat will create condensation inside the housing.

Condensation occurs when the temperature is much colder underwater than on the surface so try to minimise this difference by possibly putting a wet towel over the camera when in the boat.

Photo Editing

By David Caravias

Depth of field
Depth of field is a very important part of a photograph. This can make a photograph dynamic and eye-catching rather than a flat standard image. Depth of field is the area in a photograph that is in focus with the rest of the photograph out of focus. This is especially effective with extreme close-ups with wildlife when the depth of field is clearly defined and small with a blurry background making the image look three dimensional. There are two ways to achieve depth of field; the preferred method is by using the correct settings on the camera when taking the photograph. If you do not manage to do this then Gimp can come to the rescue again!

What to consider when taking the photograph
When taking the photograph the user must change the camera settings to manual to achieve an effective depth of field. Compact cameras have a much bigger depth of field due to their smaller sensors which means that it is more difficult to get the blurred background effect in a photograph. There are settings you can use, however, to improve your depth of field.
1. Set your aperture large (Lower F number, e.g. F2.8)
This will heavily blur the background giving you the desired effect, but if the aperture is set too small (F22) then most of the background will be in focus.

2. When using a wide angle lens get very close to the subject and focus on the eyes of the subject as the eyes are an important part of a photograph, especially a macro (close-up) photograph.

3. If talking a close-up photograph with a busy background, keep your aperture as low as possible. This will aid with blurring the background and projecting the subject in focus on the photograph.

Editing the depth of field in a photograph
If you have a photograph and it is too busy in the background or you want to create a main, small focal point on the face of the subject, then we will show you how to do this in Gimp. There is a very handy tool in Gimp called the Blur/Sharpen Tool which allows you to 'paint' over areas on your photograph where you need to sharpen or blur. You select, for example 'sharpen' and then move the cursor over the area you want to sharpen, and it is as easy as that. Below is a demonstration of this handy tool.
In the photograph of the turtle I wanted to give more emphasis on the turtle's head. The best way to do this is to decrease the depth of field in the photograph, making the head sharp and the background blurry. This gave the picture much more depth.

How to add depth of field
1. Open your photograph in Gimp.
2. Select in the toolbox the 'teardrop' Blur/Sharpen Tool (Add teardrop.jpg) . When clicking this, the options menu will open below this. Add the image "bstoolbox.jpg" down the left of page

3. There are a few options to select to help you with the blur/sharpen.

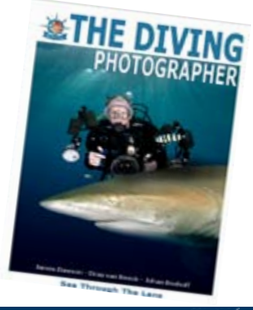
a. Opacity – This sets the opacity of the effect when brushing over the area you want to sharpen/blur. This is like a fine tuner and works well when used in combination with the Rate function (Described below).
b. Brush – You can select different types of brush ends to work with but the circle tends to be the easiest and most effective to work with.
c. Scale – This sets the size of the brush head. You will use this a lot when editing as you will need to adjust the size of the brush end to work accurately around your subject.
d. Brush Dynamics – You do not have to worry about this as this mainly applies to users who will work with a tablet (electronic pen and pad).

If you have one of these then you can use this like a pen and choose the strength of the effect related to the pressure of the pen on the pad.
e. Fade Out – This option causes each stroke to fade out over the specified distance. It is the equivalent to gradually reducing the opacity along the trajectory of the stroke and is good for blending the blur, for example, into a sharper section of the image.
f. Convolve Type – These are the two options of the Blur/Sharpen Tool. Gimp have made this very user friendly and easy to use. If you select blur, then to switch to sharpen all you need to do is hold down the Ctrl button on the keyboard.
g. Rate – This is the main tool to use to adjust the strength of the effect when brushing over the area you want to sharpen/blur
To sharpen or blur simply move the paintbrush head over your desired area, holding the left button down on the mouse. Remember, thats as you are working from the far blurred background to the sharp foreground you must adjust the rate of the blur so as to blend the two together evenly and realistically.

Sharpening around eyes
Insert image "using the sharpen.jpg"
Eyes on an image must nearly always be very sharply focussed. To sharpen the eye select the sharpen tool and hold down the left mouse button and work over the eye until the desired sharpness is reached

Blurring the background
Insert Image "using the blur.jpg"
To blur the background, select the blue option, and using the setting explained above, click and hold the left mouse button whilst working around the desired area of the image.

Download Gimp - www.gimp.org



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Giant Stride
Sardine Run

The Sardine Run

By Johan Boshoff Photos: Lesley Rochat

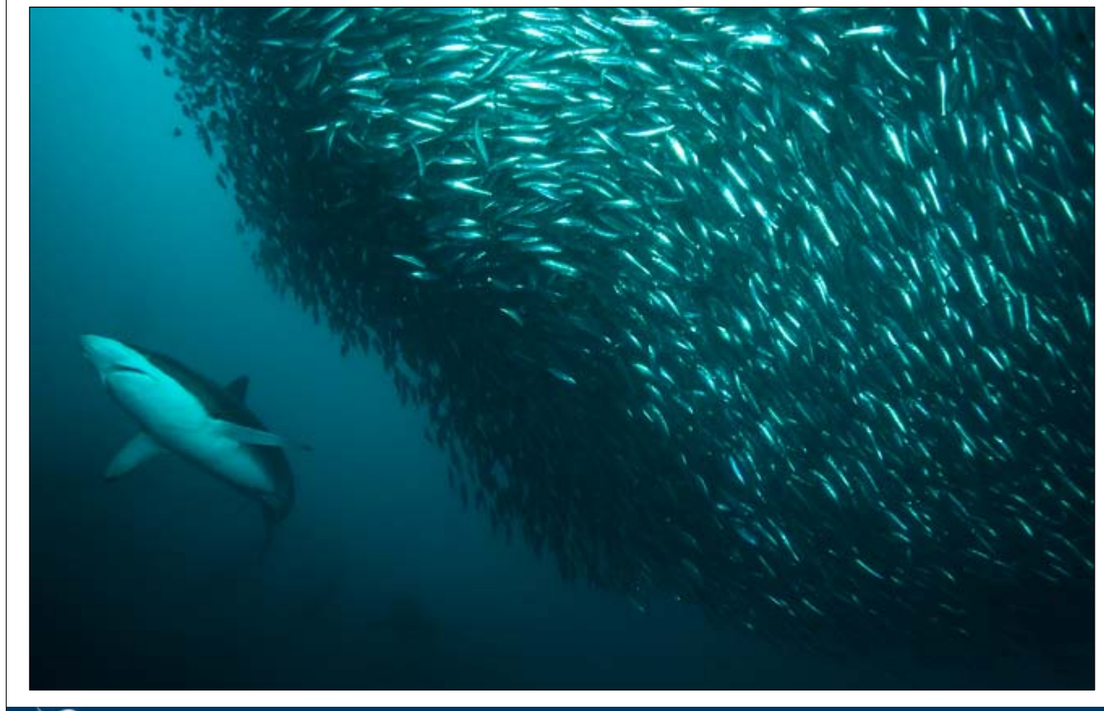
Divers spend thousands of dollars travelling all over the globe to find good dives sites, yet one of the biggest diving events happens every year in South Africa.

By Johan Boshoff Photos: Lesley Rochat

Every year between mid-June and mid-July, sardines make their way up along the South African coast in various schools, before disappearing into the deep after swimming for thousands of kilometres. Some people call sardines the kamikaze fish, others call them bait balls, and for many they are breakfast, lunch and dinner.

The sardine run can be divided into three stages. The first stage will start in the Port Elizabeth area, where the sardines come off the Agulhas banks. Because the banks are very deep with so-so visibility, it is very difficult to see them while diving here. Predators are not very active in this area and the sardines do not come to the surface often.

The second stage is the best one for experiencing the natural migration of the sardines and their swimming with predators. This stage takes place in the former Transkei – now the Eastern



By Johan Boshoff Photos: Lesley Rochat

Cape – and if you want to be right in the middle of the action, Mbotyi is the place to be. Since the continental shelf is very close to land, the waters close to shore are very deep, making it easy for predators to trap the sardines and bring them up to the surface.

This is also the place to be if you want to see dolphins, sharks, whales and birds feasting on these bait balls.

The third and last stage cover the area from Transkei to Durban, where the sardines get trapped in shallow waters and can be found in the surf or just behind the back line. This is where you will see sardines wash out on the beaches and the conditions are usually not good for diving.

After swimming all this way, the sardines that survive will return to deep waters.

Mbotyi area in Transkei is about a two-

Giant Stride
Sardine Run

By Johan Boshoff Photos: Lesley Rochat

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hour drive from the Wild Coast Sun. A day on the sardine run will start off with an early breakfast, while skippers will give a briefing of where to go and look for the sardines. A micro-light provides eyes in the air and will scan the waters.

If there is action, divers will get on the boats and rush to the site, which makes watching the sardine run here more successful.

On the water, skippers look for certain behaviours in the dolphins and birds. Sometimes it is very obvious that there are sardines, while at other times skippers – especially untrained ones – will pass all the action without realising it. It is therefore crucial that you use skippers with experience in order not to miss a thing.

The birds that give away the action are Cape gannets. They fold their wings back like F16 fighter planes, before

By Johan Boshoff Photos: Lesley Rochat

diving into the water like bullets. This is the sign for getting all your kit on and jumping into the water too. Once your head is under the water, you will find thousands of sardines around you, with hundreds of dolphins and sharks feasting on them.

The dolphins start their attack from the bottom, pushing the sardines up with their bubbles and noise.

In-between the birds swimming past you at 10m, you will find sharks attacking the sardines, swimming straight through them to take bites. As soon as the sardines split up, the birds again attack from the top and the dolphins from the side.

It is almost impossible to describe what happens as you sit there and see how each and every sardine in this bait ball gets eaten.

Not a single sardine can survive this type of attack. And, when the last one in the bait ball is gone, the action moves on to the next ball.

The people in the micro- lights see thousands of bottlenose, common, humpback, spinner and spotted dolphins.

They then contact the skippers to tell them where to go, and you end up on the boat surrounded by thousands of dolphins swimming past, jumping, playing and hunting. It is all very impressive.

You also see migrating humpback whales, although they are not part of the feeding frenzy. If you are really lucky, you could see a brutus or minkie whale taking a big bite out of the bait ball.

Southern right whales and pilot whales are also commonly seen in the ocean while driving from one dive site to another.

After a day of excitement all the boats return to Mbotyi River Lodge, where the divers sit around a fire or at the bar and tell stories about their day on the sea – just like fisherman bragging about the biggest fish.

Spare the sardines a thought. They travel more than 1 000km, only to be eaten by predators.

During their entire journey they are chased by sharks, seals, dolphins, whales and birds. And then, at the end of their journey, man catches them from the beach.

For more information on the sardine run you can contact

African Watersports on watersports@icon.co.za or visit ww.africanwatersports.com.

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Just Jellies

By Jeanne Liebetrau and Peter Pinnock

"Start swimming towards the sun in the middle of the lake. At first you will see one jellyfish and then another. Swim a bit further and you will see a few more. Swim further and you will see even more. Swim until you are one with the jellyfish." The dive master is briefing us on Jellyfish Lake. "There are millions of jellyfish in this lake. You will feel them touch and bump you. You may feel a slight sting on sensitive skin but they are mostly harmless. This is an experience you cannot miss." He mentions a few more facts about the jellyfish and then we are off, armed with masks and snorkels for an adventure of a lifetime. What he fails to mention in his briefing is how to survive the slog to the lake

By Jeanne Liebetrau and Peter Pinnock

Jellyfish Lake, or Ongeim'l Tketau (OTM), is one of many marine lakes in Palau, Micronesia. OTM means Fifth Lake in Paluan. It is one of 10 such lakes on the island of Eil Malk alone. A 45 minute boat ride from the capital Koror, heading south towards Pelilieu, takes us to Eil Malk on the famous Rock Islands.

These picturesque islands are densely covered in emerald green jungle. At sea level the limestone rock is continuously eroding creating uniquely shaped islands resembling mushrooms with green tops balanced on white stalks.

Although marine lakes appear to be isolated bodies of water they are still connected to the ocean through tunnels and fissures in the limestone rock. The limited exchange of sea water between tides is so gentle that no movement is noticed in some of the lakes.

This results in stratified layers of water as is the case in Jellyfish Lake; where the top layer of 15m is oxygenated but below this lies a lethal chemocline layer rich in poisonous hydrogen sulphide. There is no movement of ocean dwellers and thus no renewable food source for creatures living in the lake.

Essentially the jellyfish living here are trapped and doomed. But nature is incredible – these once-carnivorous jellyfish have evolved and adapted to this seemingly barren environment and are thriving.

The almost sheer hill is taxing. I struggle on the steep slippery sections holding on to a rope handrail. I am not the only one using it. The rope jerks awkwardly as each person tugs hard to haul themselves uphill. Once past the slippery section, the terrain changes to sharp craggy rocks. I tread gingerly over this section as I pass tourists sitting on benches along the trail replenishing their energy. Before long, we reach the summit and begin the descent which is pretty similar terrain. It is swelteringly hot despite the dense vegetation. I curse the weight of fins, masks and cameras. As I vow to myself never to do this climb again, the lake comes into view.

It is serene and still. I forget to cuss as I hear the squawk of parrots resonating across the calm water. There is a babble of bird chitter-chatter. It is incredibly peaceful. Eager to cool down, I don my mask and snorkel and slip off the pier into the inviting water.

Remembering the master's words I start swimming towards the middle of the lake. It's only 160m wide. In the shallows I spot some white anemones.

These anemones are predators of the jellyfish but today there are no jellyfish near them. After a few metres I see one jellyfish close by. It is bobbing along on its own, heading diagonally towards the surface. I swim further. I see another jellyfish and then a few more. Suddenly there are so many jellyfish I can no longer see my buddy.

It is a jellyfish stew and I am in the middle of it! One brushes past my lips. I feel a mild tingling sensation. There is no time to panic as another jellyfish brushes off my thigh and yet another glides over my stomach. There are jellyfish bobbing in every direction – up and down, left and right, horizontally and diagonally. It's a silent, pulsating mass. The jellyfish range in size from marbles to golf balls to melons.

I reach out and gently touch the bell of a large one, thinking my finger may pierce its delicate surface but it is firm and rubbery. The jelly gives a few feeble attempts to continue on its path but my hand is in the way. It simply changes direction and continues on its mission, thrusting water in and out of its bell to propel itself. Fascinated by the apparent delicateness of these gelatinous masses I reach for another and another. I am at one with the jellyfish.

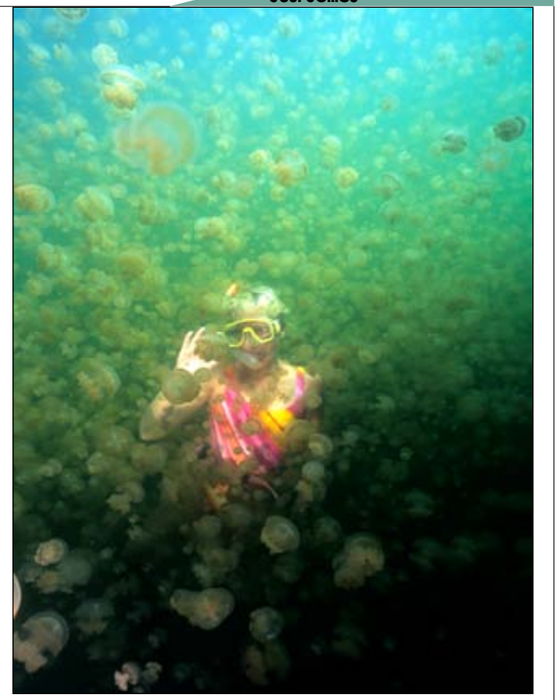
Jellyfish Lake has two species of jellyfish – the golden jellyfish, Mastigias papua etpisoni and the less common moon jellyfish, Aurelia sp. The moon jellyfish are plankton feeders spending their day feeding just below the surface. The golden jellyfish have a symbiotic relationship with microscopic algae living in their bells.

The algae convert sunlight into energy for themselves and the jellyfish. These jellyfish spend their day heading towards the sun, rotating all parts of their bell domes towards the light to allow all the algae to fully reap the benefits of sunlight. As soon as the sun's rays infiltrate the valley, the jellyfish start migrating towards the light.

In the morning they swim eastwards and at midday they congregate in the middle of the lake. By now light is penetrating the first 10m of water and jellyfish are found dispersed throughout this depth. As the sun heads west, so to, do the jellyfish.

Late afternoon as the sunlight falls the jellyfish congregate in mass in the shallower water vying for that last ray of sunshine.

Finally the sun dips behind the mountain casting a shadow on the lake. The jellyfish immediately stop their migratory progress.



By Jeanne Liebetrau and Peter Pinnock

They do not venture into shadows. At night the jellyfish will move up and down between surface and the chemocline layer where they replenish minerals.

Meanwhile, living securely on the edge of the lake, the white sea anemone (Entacmea medusivora, meaning medusa-eating) wait for stray jellyfish. These anemones are capable of eating jellyfish larger than themselves.

They are the only predators of jellyfish in this lake, however, they don't seem to be making an impact on the jellyfish populations.

The Coral Reef Foundation in Palau undertakes monthly estimates on the quantity of jellyfish in the lake – the highest number recorded was in January 2005 with 31 million jellyfish.

This is phenomenal, considering that between May and December 1999 there were no jellyfish at all. El Nino was attributed to this collapse.

Fortunately jellyfish medusae were able to tolerate the higher temperatures and once the temperature in the lake subsided they started to grow. During this time the moon jellies were unaffected.

As the jellies continue to bob in all directions I head back to the pier. I fin gently, careful not to let my fins tear these fragile water-filled creatures apart.

The sun-seeking jellyfish avoid shadows but I spot a lone jellyfish that has wandered off course. I wonder if the white sea anemones will capture it, but I don't wait to watch. I am jellied out!
As I trek back over the mountain to the waiting boat I vow that I will return again and again, even if my legs feel like jelly.
As our dive master rightly said – this is an experience not to be missed.

For more underwater images and stories, visit peterpinnock.com

Giant Stride
Just Jellies

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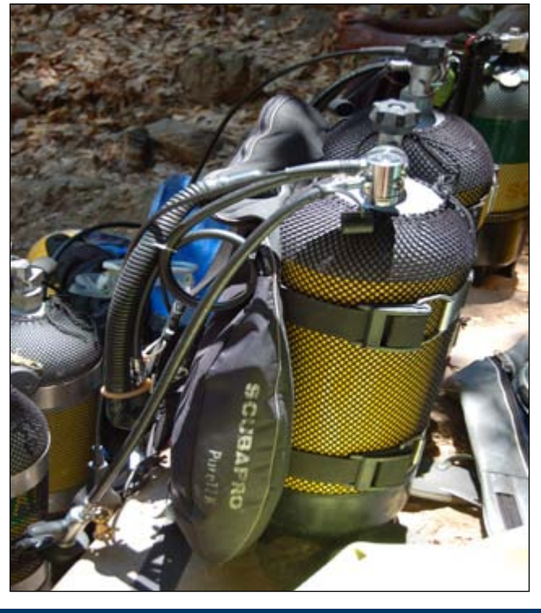
By Vandré van Vuuren

In-Water Recompression

Any technical diver will agree that there are certain risks involved in the sport of scuba diving, but will add that it is even more dangerous when doing technical diving.

The deeper we go the higher the risks of decompression sickness (DCS) and likelihood of barotrauma. Any diver should also agree that early oxygen therapy and evacuation to a hyperbaric facility (recommended by DAN) is necessary if DCS symptoms are experienced after a dive.



As a paramedic and technical diver I am always concerned with the treatment and evacuation options available if something should happen to a fellow diver or myself. My concern is mostly brought on due to the type of locations that we travel to in order to do our exciting sport.

The remoteness of certain technical dive locations can make it difficult to provide appropriate emergency care and fast evacuation transport. It is thus challenging to have a medical plan that is safe, efficient and that addresses the recompression needs of a patient.

Over the past few decades, in-water recompression (IWR), has emerged as a field treatment (at the scene) that is used by technical divers in remote locations. IWR is used as an alternative or extra method to recompress a diver with DCS.

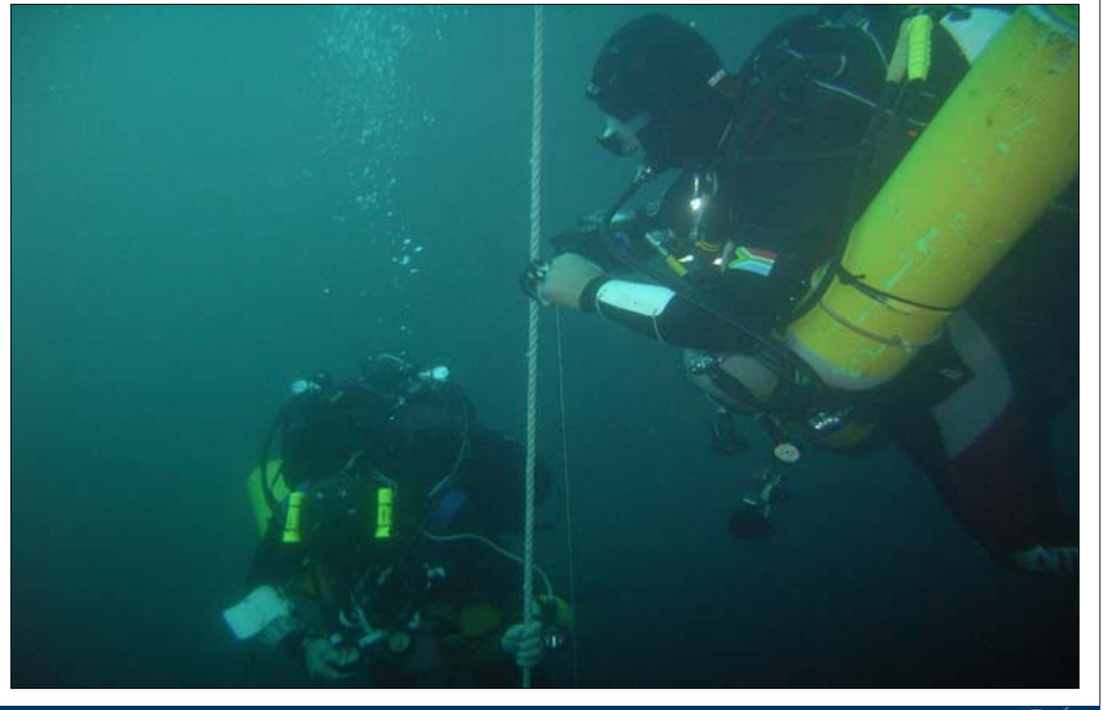
This practice is, however, seen as extremely controversial by some in the diving community and is heavily criticised by dive medical experts all over the world. So be warned if you try to use IWR as a 'curveball, at a cocktail party!

What is IWR?
IWR is defined as the practice of treating divers suffering from decompression sickness (DCS) by recompression underwater after the onset of DCS systems. Others add that the recompression is immediate and that it occurs in remote locations where no recompression chambers are available.

In practice there are three well-known methods of IWR that have been published, namely: the Australian method, the US Navy method and the Hawaiian method. There may also be others that have been developed for a specific purpose or region.

The most commonly used is the Australian method which was first published in 1976. It is described as the surface supply of 100% oxygen to a diver with a full face mask at 9m. According to the symptoms of the diver he would spend between 30-90 minutes at 9m and would thereafter ascend at a rate of 1m every 12 minutes.

The US Navy method is described as being used when 100% oxygen rebreathers (with full face mask) are available and only in an emergency. This method was developed for military use and does not seem to be used by civilians. It is suggested that the diver breathes 100% oxygen at 9m for 60 minutes for type 1 DCS (pain only) or 90 minutes for type 2 DCS (neurological symptoms). This will be followed by an



By Vandré van Vuuren

additional 60 minutes at 6m and again at 3m.

The Hawaiian method is a modification of the Australian method. The diver breathes air during a 10 minute descent to a depth of 9m deeper than the depth at which symptoms disappear.

The maximum depth is 50m after which the diver will return from this "air spike" to 9m to breathe 100% oxygen for at least an hour.

The basic requirements of all the IWR methods are large amounts of oxygen whicht must be delivered with a full face mask. A tender diver is needed to monitor the diver all the time and a heavily weighted line for reference of depth is required.

Some form of communication between the diver, tender and the surface support crew is also necessary.

Advantages and disadvantages of IWR
In theory there are several dangers and risk factors associated with attempting IWR. There is a possibility that more nitrogen will be added to the already saturated tissues (if air is breathed) and thus worsening the DCS.

There is also the risk of drowning due to DCS and also the time of exposure to cold water that can lead to hypothermia. At sea, strong currents can cause exertion and certain marine life can pose a threat to diver safety.

The weightlessness experienced by the diver underwater can also make it difficult to assess if the DCS symptoms are getting better or worse.

There are, however, two distinct advantages of IWR that cannot be overlooked.

The first is that it allows for immediate recompression and the second is that an elevated partial pressure of oxygen is breathed if 100% oxygen is used. Several cases of IWR were published and of 527 reported cases, 87,7% had complete resolution of symptoms. 9,7% Improved symptoms that no further treatment was sought and in 2,7% of cases symptoms persisted after IWR and further treatment was sought at a recompression facility.

In all of these cases air was used as the recompression gas. Although this evidence can seem very compelling for using IWR, it must be recognised that this data does not necessarily include all attempted IWR cases. It was discovered that most of the IWR cases were attempted with no formalised knowledge of published IWR methods – they were basically 'winging it' so to speak. It also came to light that no one visited a diving physician after their recompression therapy.

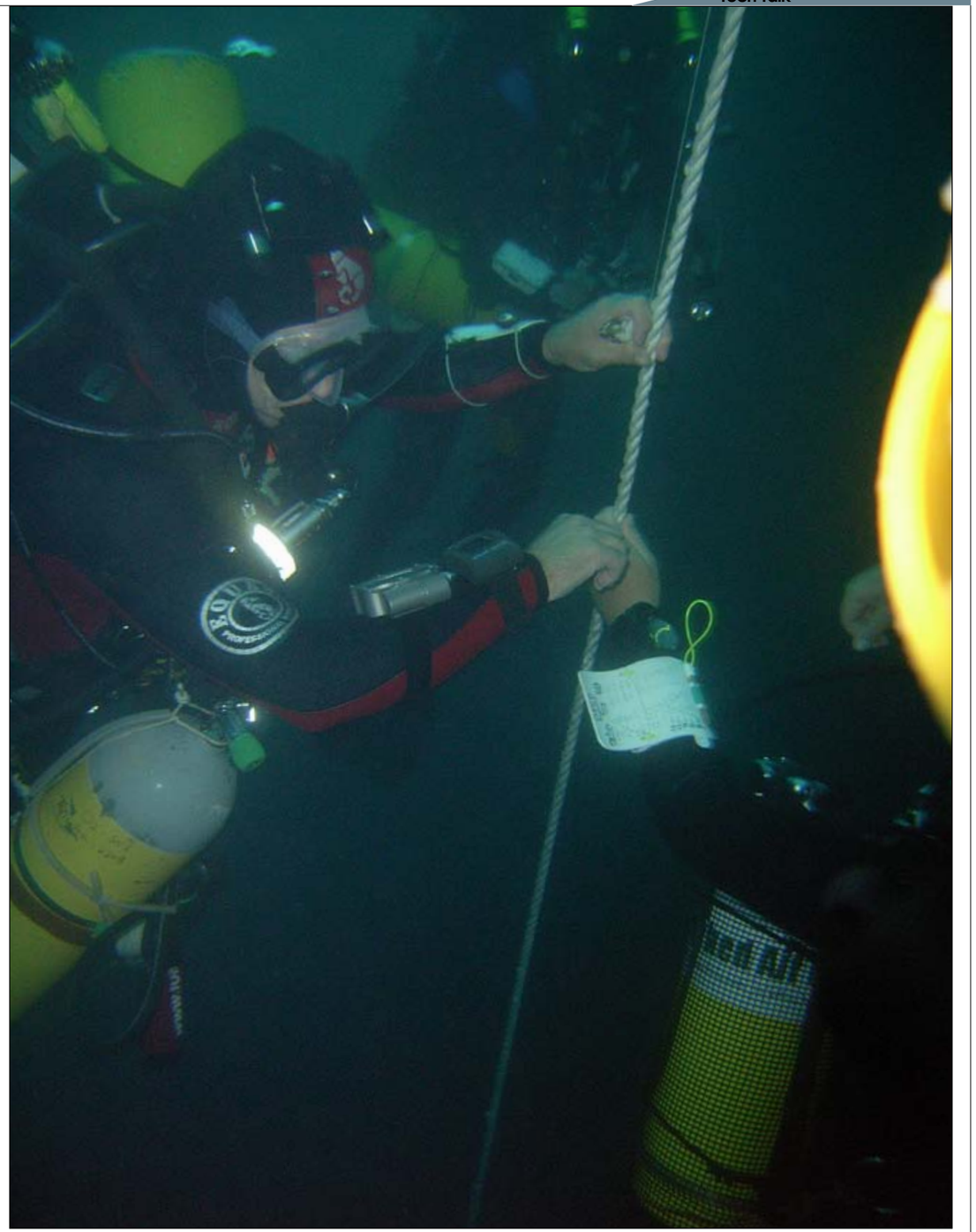
The Divers Alert Network (DAN) suggests that IWR should not be attempted at all. It must be remembered that the ideal would be to have a portable chamber than can allow recompression early at the scene without going back into the water.

This can also allow you to do recompression while transporting the patient to a hyperbaric facility. The problem with this plan is the cost implication when compared to IWR.

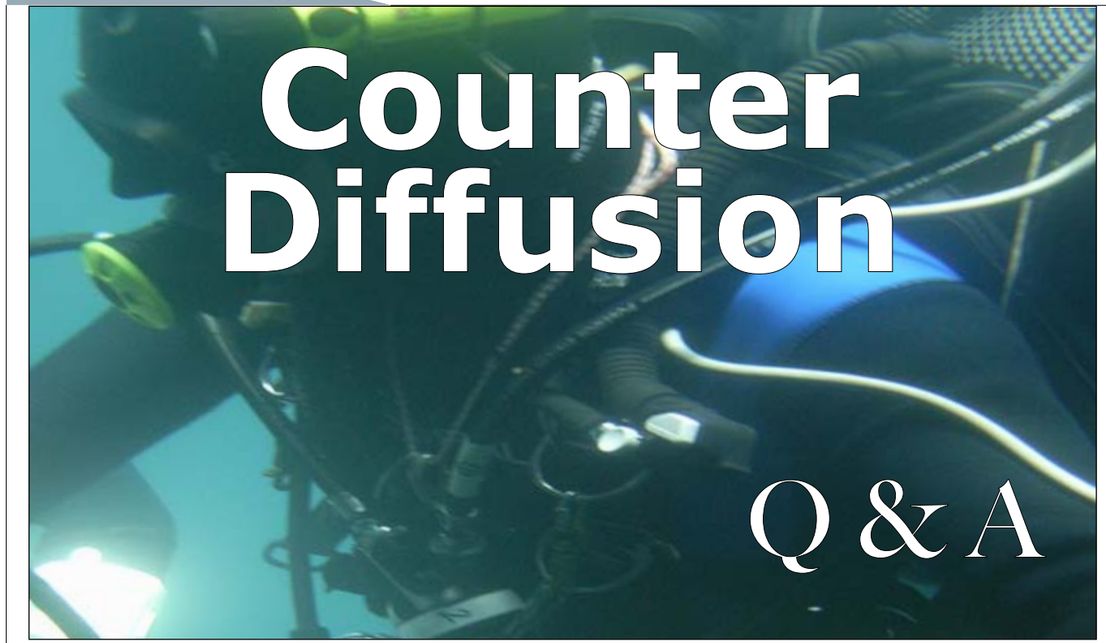
It seems that the controversy surrounding IWR can only be lifted once certain issues are cleared up. Are there any circumstances under which IWR can be done safely?

And if so, which method should be used? It is evident that IWR has worked for some and the establishment of a formal database for these cases will certainly be a step in the right direction.

IWR should never be a substitute or replacement for proper treatment in a recompression chamber. It is also not a 'poor man's' cure for DCS. It is therefore imperative that a diving physician is visited after the treatment has occurred.



Technically Speaking
Tech Talk



Counter Diffusion

Q & A

Nuno Gomes

Isobaric Counter Diffusion (ICD) is not necessarily as bad as many divers might think – in 99,99% of cases it occurs during every technical dive without any side effects. As a diver goes deeper the percentage decreases, especially dives below 100m.

ICD takes place when a diver descends and switches from a gas rich in nitrogen (e.g. air – 21% oxygen and 79% nitrogen) to a gas rich in helium (e.g. trimix – 10% oxygen, 30% nitrogen and 60% helium). It also takes place when a diver ascends and changes gas from trimix to air or nitrox – this is when problems might occur.

Basically ICD is the movement of inert gases in opposite directions; one gas is in-gassing while the other is out-gassing. It takes place between the alveoli and the blood, in the lungs, and between the tissues and the blood, in the organs.

The inner ear is of particular interest because it is very sensitive and because the decompression sickness symptoms are very dramatic.

Insufficient decompression for the tissues of the inner ear may result in some or all of the following: loss of balance and vertigo, loss of hearing and tinnitus, dizziness, nausea and vomiting.

These symptoms are particular life threatening because they occur while the diver is still underwater decompressing.

The damage, if untreated, could become permanent and even with treatment it could result in permanent residual damage to the inner ear.

All decompression models, tables and computer programmes have identified the inner ear as a tissue that requires particular attention during decompression.

For example, Bulhlmann's ZH-L -12 model (developed specifically for deep diving) addresses the problem in compartments 10, 11 and 12 (with half-value times of 55-90 minutes for helium and with half-value times of 146-238 minutes for nitrogen).

Barry Coleman

The problem is real having experienced the effects first-hand some years back, as a result of switching loop gas via a procedure known as a 'Diluent Flush' whilst diving a closed circuit rebreather between 60m and 70m range. The effect felt was almost instantaneous followed by disorientation, nauseous and gagging.

The only way I could get over this and continue my assent was by pure concentration, very similar to my earlier trauma in life when I lost both feet in a train accident.

Either due to the concentration, or the fact that the actual damage to my round window was not too severe – my disorientation reduced, after some time, to a level I could work with and complete the required deco time.

After 10 days in and out of hospital the dizziness subsided. In order not to repeat this experience, I no longer switch the loop gas with a Diluent Flush and spend much time working on the OC gas mixtures to try and ensure they do not have more than a 20% difference from the gas I am breathing on rebreather loop and the open circuit bailout gas at any given depth.

Pieter Smith

Counter diffusion is real! It is when the diffusion of different gasses occurs in opposite directions at constant ambient pressure. When switching back from a trimix to a travel gas (nitrox/air) the inert gas, helium, in the trimix gas mix, diffuses into body tissue more quickly than nitrogen.

The result is supersaturation in certain tissues and consequently the formation of bubbles. A very common area of the body that is more sensitive to this effect is the inner ear. The switch from trimix to nitrox or air takes place during decompression stops as the diver ascends.

The risk of counter diffusion increases significantly with increase in the combination of depth and time (at depth/on trimix). As with DCS, it differs from diver to diver.

We have done many trimix dives in the 90-140msw level with bottom times of up to 20 minutes without any counter diffusion hits. A very simple and effective method (also used by the late Sheck Exley on his depth record dives at Mante, Zacaton) is to switch breaths between the trimix gas and the decompression gas at the point of switch.

Dives deeper and longer than mentioned above become progressively more risky and need special attention and planning.

Pieter Venter

The way I understand counter diffusion is that it is what happens when two different gases are separated from each other and counter diffuse to become a homogenous mix.

A problem can arise when the two gases diffuse at different rates into our out of tissues. Helium diffuses into and out of tissue much faster than nitrogen, for example, which means that the helium will equalise much faster than nitrogen and this can cause a situation where the tissue is saturated with nitrogen and is filling up with helium before the nitrogen can get out.

That tissue can then get supersaturated and bubbles can form. This situation can cause inner ear trauma when a diver ascends and changes from a helium rich mix to a nitrogen rich mix.

It is a real concern on deep and/or long exposure dives where high helium mixes are used at the bottom and a switch to a high nitrogen mixture is made for decompression.

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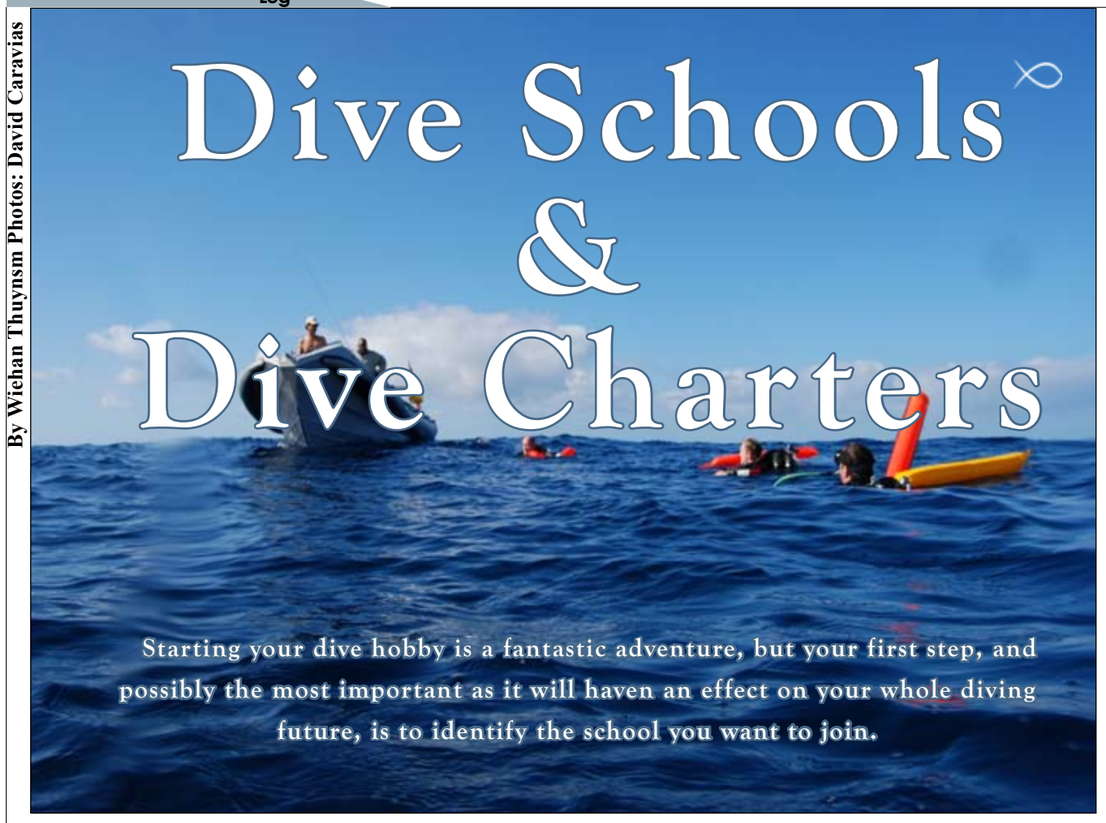
By Wichan Thuynsm Photos: David Caravias

Dive Schools & Dive Charters



Starting your dive hobby is a fantastic adventure, but your first step, and possibly the most important as it will haven an effect on your whole diving future, is to identify the school you want to join.

My advice is chat to friends that already dive and find out how they experience their dive school or club – this can give you a better idea of what your expectations might be. Visit the school if you can and check out the facilities for yourself before making the final decision.

Do a bit of research too and if you are already a diver and want to move on with your career find the school that can meet your requirements, for instance, if you want to go a more technical route make sure your school is capable of presenting this course.

Now I have been harping on about dive schools but more often than not, potential divers or current divers choose a particular instructor rather than the school. The school does not offer the skill, the instructor does, and the school plays a supporting role proving clients with advice about gear sales and also helps the instructors with gear rental and the like.

If you are not happy with your school or club, move on, there are quite a few great instructors and clubs out there that will go the extra mile, so leave the ones who don't, they deserve to go out of business.

Now that you are qualified you want to go diving somewhere along the coast. Check the internet for charters or read through magazines to find out more details. There are a few sharks out there, excuse the pun, who don't really care about your wellbeing, they only see the rand's and cents. Compare a few places before making the final choice – remember that you want a great experience at the charter as you are after all paying for the service. Make sure the guys you are diving with can cater for your needs, such as gear and perhaps enriched air services.

I have been to a few places along our coast where the managers, dive masters or owners were very arrogant and I can tell you now that I will never refer any of my friends or students to any one of these charters.

The same is true of excellent and well-oiled charters that just work because the people are friendly and go the extra mile. Try and track these down and again speak to your fellow divers at your club or chat to your instructor.

As a charter or dive school you must strive to deliver great service to everyone who walks through your doors. Don't be arrogant and a know-it all just because you have a boat and five regulators. I can promise you, you will close your business in a very short space of time.

Make diving enjoyable for all and go the extra mile as this will get you more referral business, which is, after all, what you want. Now what is this extra mile I am on about? You can do a few small things which will help your business in a big way.

When new clients arrive, welcome them and give them a 'site survey', explaining where they can drop their gear, when the dive briefings take place, where kit-up in the mornings will commence and where the restaurant and shops (if any) are located.

These little information pieces will go a long way towards making newcomers feel welcome and at home. Now just add in your top quality service and you have your mix ready.

By Michael Meller

Masks

When it comes to diving equipment, there is no such thing as one piece being more important than another. Each individual unit must function as required and when combined together as a whole, should allow for safe and enjoyable diving. In this article, we will be taking a closer look at the face mask.

It not only allows divers to see the underwater world more clearly, but also protects the eyes from anything harmful in the water (eg, sand particles, bacteria). In Open Water 1, divers are taught that when the eye comes into direct contact with water and not air (its normal environment), the light entering the eye is refracted at a different angle and the eyes can't focus the light properly.

The mask provides an air cavity between the eyes and the water and allow light to enter normally, giving the eye the ability to focus correctly.

Although each manufacturer has their own ideas about the construction of masks, there are certain elements that in principle remain the same.

The lens

A mask's lens should be made from tempered glass which is hard and able to withstand the pressure that is exerted by water.

Masks are available in two models – those with two lenses and those with one lens running the entire length of the mask. Prescription lenses are available from some manufacturers and it's always best

By Michael Meller

to enquire about this at your preferred dive shop. However, some divers prefer to simply wear their contact lenses while diving.

When masks are new and still unused, they have a layer of preservative lubricant that the manufacturers use to ensure that colour and flexibility are not lost during storage. If this is not removed correctly your mask will fog up on each and every dive until you do remove it. Wash the new mask in warm soapy water and then take toothpaste and rub it onto the inside of the lens to "scour" off any preservative lubricant that has remained.

This scouring should be done for about five minutes on the inside part of the lenses, and can be repeated once more for the best effect.

Even when this is done properly, the mask must still be cleaned and "treated" before each dive to prevent a fog up. Treatments include numerous anti-fogging agents that are available at dive shops, baby shampoo and lastly, some good old spit. (The latter being slightly controversial as human saliva contains over 500 types of bacteria).

The frame

Frames differ in shape, size, configuration and colour. The shape is an extremely important factor as this determines whether the mask is a normal or low-volume mask. A low-volume mask has very little space between the eyes and the water, allowing for better peripheral vision and less drag when diving. A low-volume mask is also a lot easier to remove water from when mask clearing.

The shape will determine what type of lens can be used - specially shaped lenses allow better upwards, downwards or sideways vision. Some frames even have side, top and bottom windows to assist with this. Certain masks don't have frames, so the lens fits directly onto the body and creates a very comfortable fit. Most frames are stocked in a variety of colours so that they can be colour-coded with the rest of the diving kit.

The body

The utmost care should be taken when selecting this part as this section of the mask seals the air pocket to your face and is incredibly important. To start with, you should decide on whether you want a clear silicone mask or a black one.

The clear option is good for light penetration but may become slightly discoloured after prolonged use. The black mask will not allow such effective light penetration but will also not fade in colour. Fitting a new mask is a vital process. You place the body (also called the skirt) over your face and while making sure that the strap does not interfere, inhale slightly through your nose. If the mask stays on and no air gets in through the skirt, the test has been passed. While the mask is on your face, also test to see that you can easily squeeze your nose closed for equalising purposes. These are only two of the many important criteria that need to be checked when selecting a mask.

You'll know that you have found the right one after fitting it and it sits both comfortably and correctly on your head.

The strap

No points for guessing that the strap holds the mask securely to your head. When selecting a mask pay special attention to the type of buckle method that is used to hold the strap in place. You may find that one particular kind is easier to adjust and use than the others and suits your needs better.

The strap should be adjusted so that it holds that mask comfortably on your face. Over-tightening can cause headaches and sinus blockages that will result in discomfort and possibly cause an accident while diving. A correctly adjusted mask should allow you to easily exhale through your nose and allow the bubbles to escape without restriction.

Strap protectors are a good idea, especially for ladies with longer hair, as they prevent the silicone strap from pulling against the hair and causing more unwanted pain. With the strap being the most flexible part of the mask, it is also the most likely part to break, so keeping a replacement as part of your standard kit is a dive-saving idea.

Imagine having to abort a dive because your mask strap broke and you couldn't go on because there was no replacement!

Just like with any other part of your equipment, the cleaning, drying and correct storage of the mask after use is essential. Once you have found the mask that you are most comfortable diving with, take great care in looking after it because it's not always easy to find an exact replacement.

Gear Talk
Kitting Up

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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.

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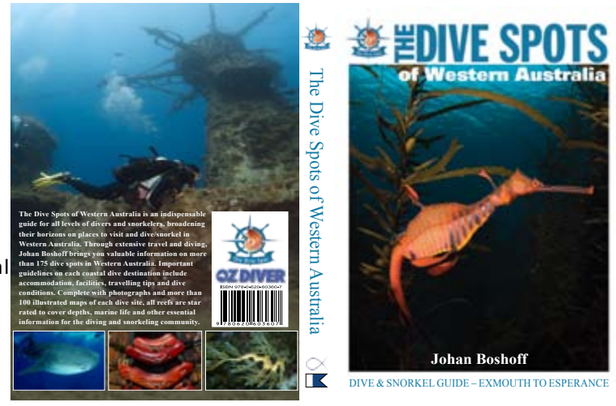
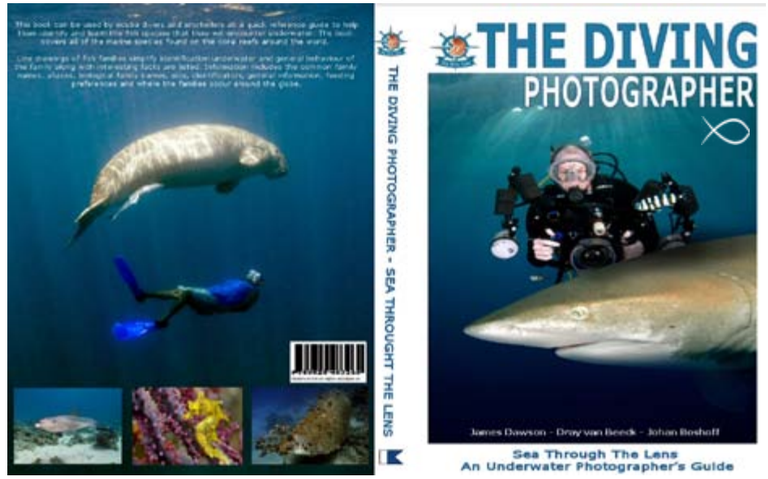
The Dive Spots of Western Australia

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.

For more information visit www.thedivespot.com.au



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 programes 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: $20

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

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

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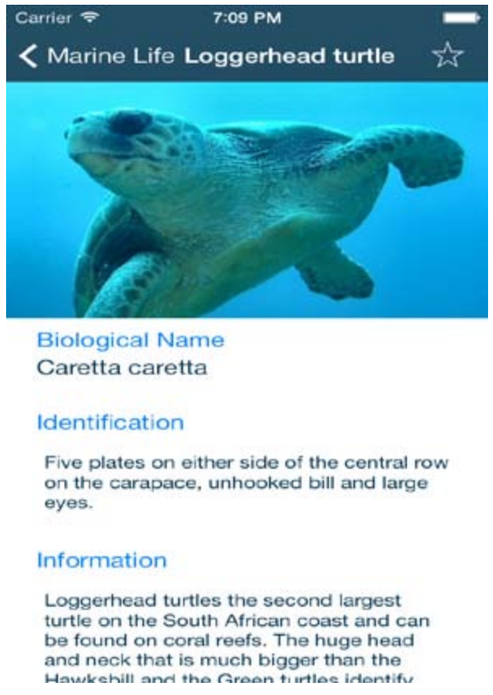

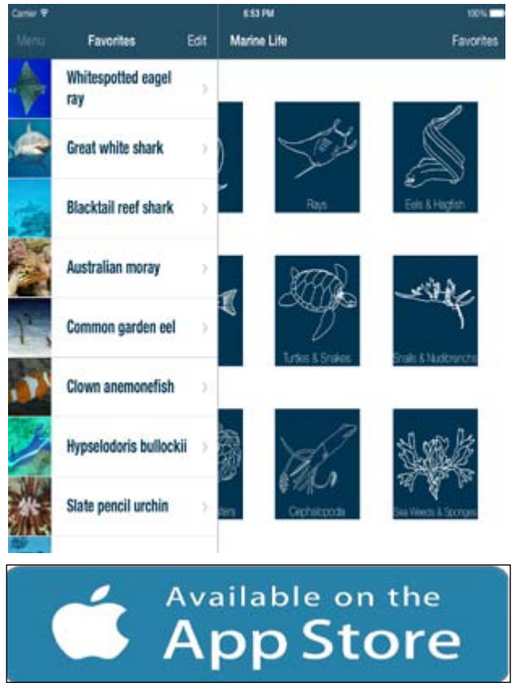

EZYFLAG for all Divers

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 come 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.

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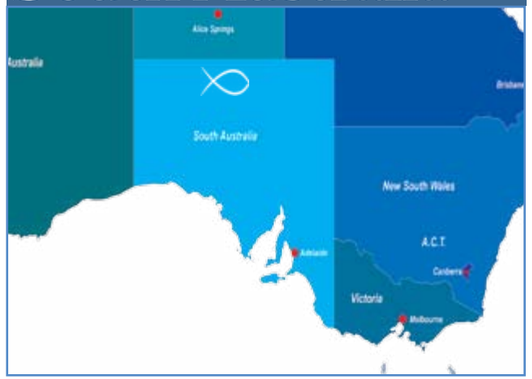
South Australia



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New South Wales

Sydney

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