October / December 2016

OZ DIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

PAPUA NEW GUINEA

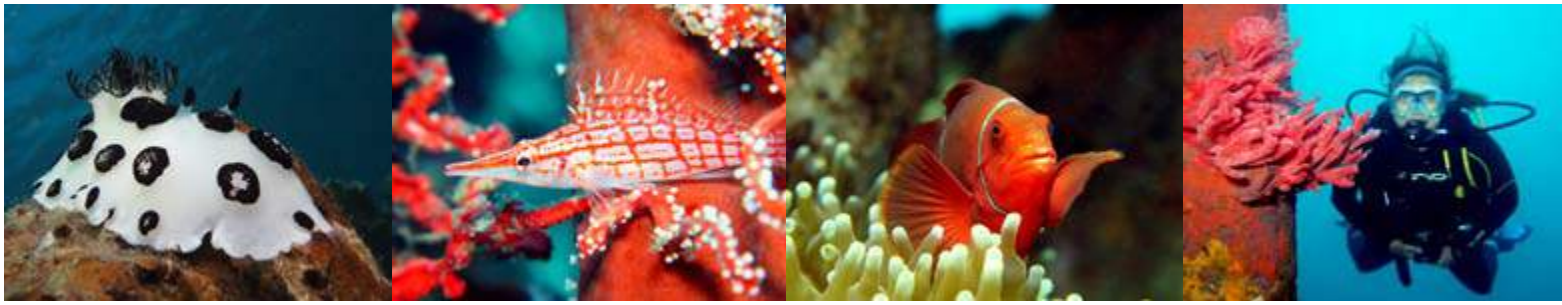
DIVE MEDICALS

DIVING WITH SHARKS

HISTORICAL DEEP DIVING

BIKINI ATOLL

BONAIRE



Christopher Bartlett

Editor's Deco stop

Having met many interesting people on my dive travels, I've realised that divers are an unique breed. It doesn't matter what language they speak or what culture they hail from, they stand out in their behaviour, interests and lifestyle.
However, I believe there's a big difference between actual divers versus people who have diving qualifications. For some, diving is a hobby. A couple of times every year they will dust off their diving gear and go and do a couple of dives. Their holidays aren't planned around diving, but around the place they choose to stay. If there is a dive site nearby, the gear is brought along, but if there's no diving in the area, so be it and the gear stays at home. For these people diving remains a hobby and not a lifestyle.
Then you get the real diver, the person who lives, breathes, thinks and eats diving. Some of them even worship it. Their entire life is planned around diving. I sum up these divers as follows:
They work to dive; it's a top priority in life.
They plan their holiday destinations around dive sites.
Dive gear is the first thing they pack for holidays.
Most of their friends are also divers.
They don't care what they eat on the trip, as long as the diving is good.
They don't care how far they have to travel in order to blow some bubbles.
They care for the environment.
They will dive, no matter how big the party was last night.
They become grumpy if they haven't dived for a couple of weeks.
Believe me, I meet interesting divers in my line of work – divers who go and sit in a swimming pool once a week just to blow bubbles, because the ocean is too far. Who take better care of their diving equipment than most other possessions they own.
Diving is the only lifestyle they know and they live every day to dive.
I'm like that, too. Putting on my diving gear and doing a backward role, life stops for me. There's no more running around and worrying budgets and politics. For the hour I'm underwater, I'm free from everything. For those 60 minutes, life on the surface is in pause mode and I enjoy every second of it.
I think there's no place on earth that can give me the freedom and quietness that I experience on a dive, where the only sound I hear is the sound of my bubbles. I won't ever give it up.

The Editor & Publisher

Johan Boshoff

-it is all about the journey and not the destination

Genesis 1:1
In the beginning God created the heaven and the earth. 2 And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters.

Primary Contributors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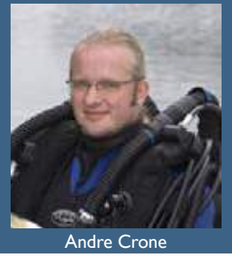
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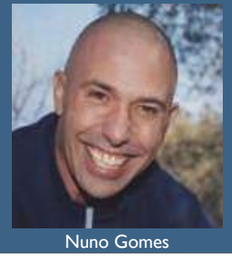
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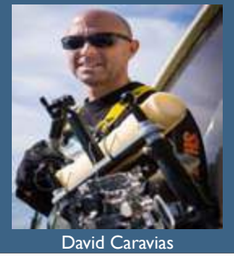
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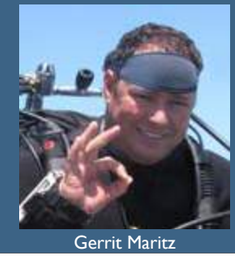
Gerrit Maritz

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www.bartlettimages.com

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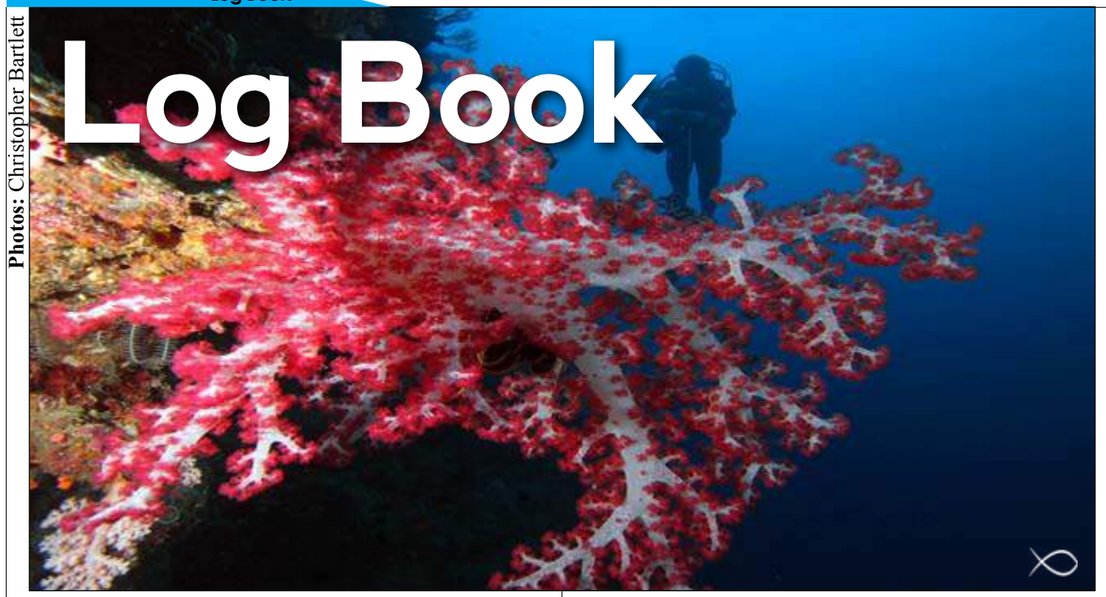
Log Book



Photos: Christopher Bartlett

Concerned cave diver

When all else fails start swimming to the bright light

About 8 years ago I was an advanced Nitrox diver. I was qualified to dive up to 50 meters and thought that diving was easy and what could go wrong?

So I heard about a new cave system and I had to dive this dive site. When arriving at the hole we heard that it was 40 meters deep and that there was a cave that goes down to 60 meters. This was not too bad. So we kitted up and went down. I had a 15-liter cylinder and a back inflation BC.

At 40 meters we saw the entrance of the cave. The entrance was big and dark and we decided that a torch would be needed to go into this cave.
So on the next dive I took my torch. As we got to the entrance I switched on my torch and realised that I needed a bigger one, but I was with an experience diver and decided to go in. As I was swimming I realized that I was going deeper in depth but not into the cave. I had the opening at my back and time and again looked over my shoulder to make sure that I could see the exit.

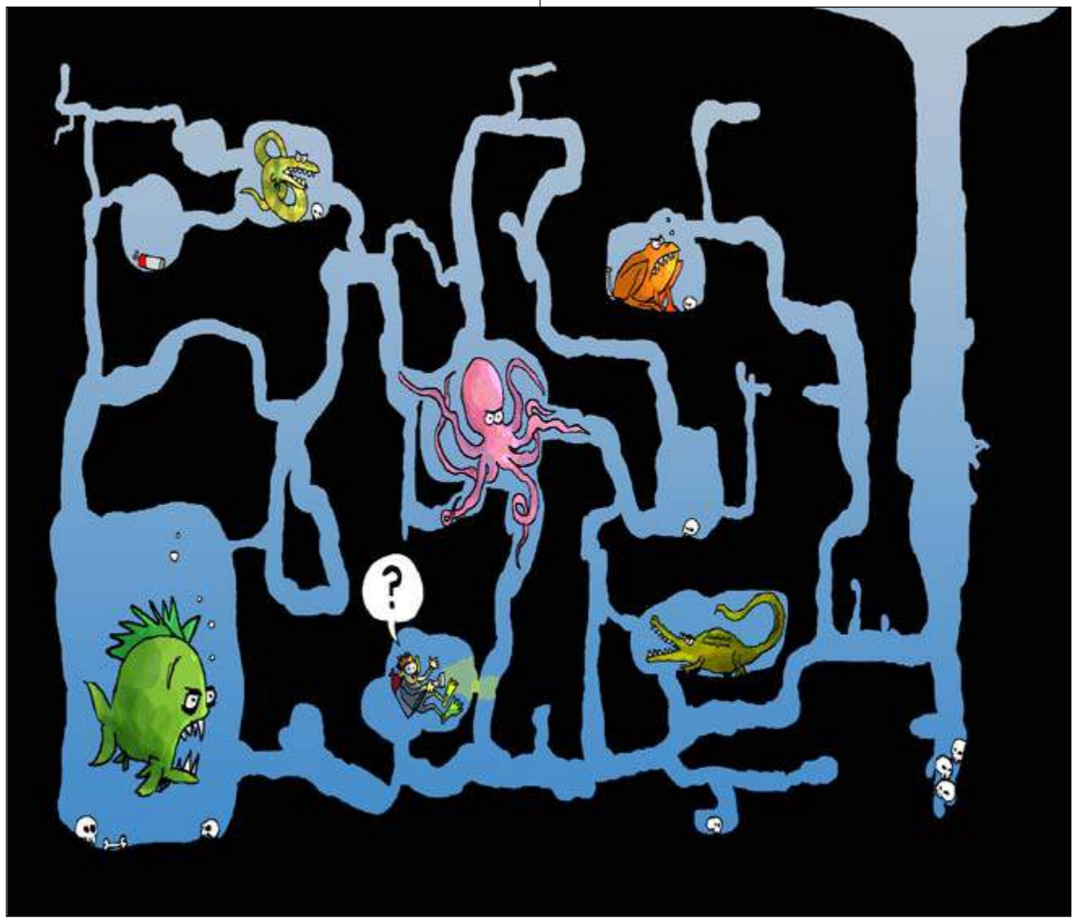
Without any cave experience I had everything under control. So I just kept on swimming and concentrated on this little beam of light in my hand. And with my friend with me, "Mr Nitrogen Narcosis", I was on top of the world or almost 75 meters in a cave.
Then at 60 meters I came to a dead end, looking over my shoulder there was no light and the entrance of the cave was gone. Now it was me, my buddy and "Mr Nitrogen Narcosis" at 60 meters, 75 meters in a cave in total darkness with one flash light that looked like a match.
We had to find the exit or we would have stayed there for a very long time. We had 75 bar of air left in our cylinders.
The only thing that I could do was to get the cave wall on my left hand side, start swimming and breathe slowly.
After a couple of minutes I saw a light. Was this the light at the end of the tunnel or the cave? But it was 75 meters from me and I had 55 bar of air left. My buddy was on 60 bars. As we started getting shallower, "Mr Nitrogen Narcosis" left us and stayed behind. And we knew that we were in big trouble.
When we got out of the cave we were still 40 meters deep and had a Deco time of 23 minutes. I had 35 bars left. That works out to almost a bar a minute. At that stage it felt like a cricket game, need 40 runs off 40 balls but the price is to live one more day.

So we started ascending. I got out with no air in my cylinder to inflate my BC. I decided to do the last 4 minutes of my deco stop on the surface where there was air to breathe.

Luckily I had oxygen on the surface. I got on it immediately and was sitting and waiting for the bends, but nothing happened.

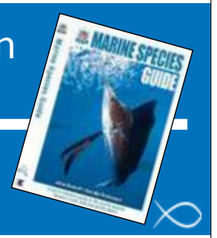
Like the road sign says "Speed Kills". Take your time to get there, get the experience and the qualification and come back safely.

Now I am a qualified cave diver and thinking back on this close call, I was MAD to do this dive without the necessary training.



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 johan@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

OZTek2017 – Designed by Divers for Divers

OZTek Announces Nikon Dive Portfolio of the Year Award

OZTek and Nikon have teamed up to introduce an exciting new portfolio category to the OZTek2017 Underwater Photographic Competition.

Nikon Dive Portfolio of the Year will be a chosen collection of six (6) images to be displayed at OZTek2017 on 18/19th March 2017 at the Australian Technology Park, Sydney.

Competition entrants can enter up to 10 images from the existing competition categories, from which six (6) shots will be chosen by the Judges for the Nikon Dive Portfolio of the Year.

Our competition judges will be looking for the following criteria when choosing the Nikon Portfolio of the Year:

'The portfolio needs to demonstrate clarity of vision and artistic intent to produce an inspirational body of work from three out of the five standard OZTek Underwater Photography Competition categories. Portfolio images should show breadth of skill with different underwater photography styles (e.g. wide angle, macro etc.), lighting techniques and subject matter while illustrating the passion, dedication and expertise needed to create a consistent collection of captivating images'.

Nikon Dive Portfolio of the Year Award rules:
The Nikon Dive Portfolio of the Year is for ages 18 and over.

Entrants can submit between six (6) and 10 images from which our jury will select a maximum of six (6) images for the final portfolio.

Each entrant may submit one (1) portfolio only.

Images provided need to represent three (3) out of the existing five (5) general competition categories.

The five categories which need to be represented are:

- Cave Diving
- Wreck Diving
- Marine Life – wide angle without diver
- Marine life with Diver
- Macro marine life

The same, or substantially similar, entries may not be entered in more than one (1) section of the competition.

All images are subject to the overall competition terms & conditions

Nikon Dive Portfolio of the Year Prize
The winning portfolio will receive:

- a Nikon D500 camera and 60mm micro lens; and
- be exhibited OZTek 2017

Competition registration are now open and will close on January 31st, 2017.

Details on the OZTek Underwater Photographic Competition, including terms & conditions, are available at www.oztek.com.au

I am luminous by Matthew Smith

New book 'Swallowed by the Sea' explores Australia's most famous shipwrecks, includes photos & dive notes

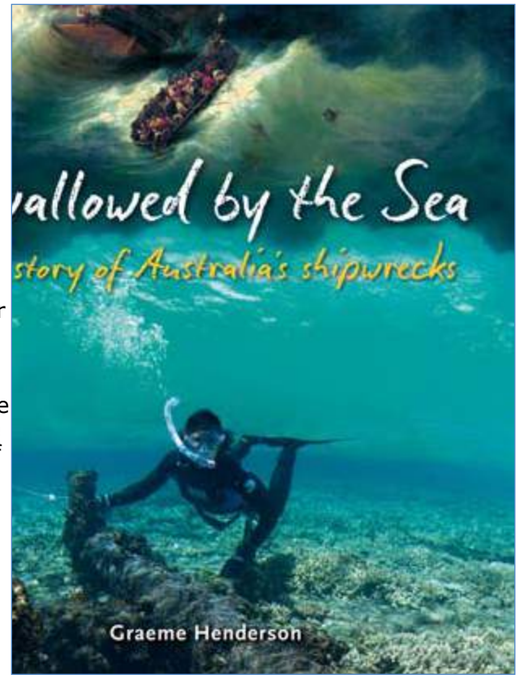
The story of Australia's shipwrecks

Over the centuries, Australian waters have become the final resting place for many ships lost in raging storms, on jagged reefs, under enemy fire, or through human error.

In the forthcoming book, Swallowed by the Sea (NLA Publishing $44.99, 1 October 2016), maritime archaeologist Graeme Henderson explores the most famous wrecks from across Australia, dating back to 1622 and as recent as 2010. Readers learn about the oldest known wreck in Australian waters, the Tryal, driven into sunken rocks by the inept Captain Brookes, and the loss of emigrant barque Cataraqui, which struck a reef off King Island in the middle of a stormy night, drowning more than 400 people.

Henderson sets the scene for each disaster, describing how the ship came to be in Australian waters, the people involved, the dramatic circumstances of the actual wrecking and the aftermath.

He has also personally located and dived at many of the wrecks featured, and describes what it's like to swim the length of the HMS Pandora wreck, to dive in heavy turbulence raising artillery pieces from the Batavia, and the eerie experience of viewing the undercut cliffs that witnessed the drowning of asylum seekers on SIEV 221.



Alongside historical paintings and photographs of the ships themselves, Graeme's accounts include recent underwater photographs of the dive sites with recollections by members of the diving crew.

From English and Dutch trading vessels in the seventeenth century to emigrant ships in the nineteenth century and the great warships of the Second World War, Swallowed by the Sea provides a fascinating insight into how each ship was wrecked and discovered, and what remains of the wrecks today.

Additional Information

- Published in association with the Western Australian Museum
- Text & photographic extracts available for media use
- Author is good media talent and available for interview

About the Author

Graeme Henderson AM is a maritime archaeologist, former museum director and the 2002 Western Australian Citizen of the Year.

His discovery at age 16 of the wreck of the seventeenth-century Dutch East India Company vessel, Vergulde Draeck, sparked a life-long interest in shipwrecks. He went on to develop the colonial shipwrecks program at the Western Australian Museum, to contribute to the UNESCO Convention on the Protection of the Underwater Cultural Heritage and to serve as director of the Western Australian Maritime Museum for 13 years.

Graeme has published widely on individual shipwrecks and those found off the coast of Western Australia; this is his first book on shipwrecks that occurred Australia-wide.

For more information

Vissit www.quikmarkmedia.com.au or contact author on scott@quikmarkmedia.com.au

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.

Through extensive travel and diving, Johan Boshoff brings you valuable information on more than 175 dive spots in Western Australia.

Important guidelines on each coastal dive destination include: accommodation, facilities, travelling tips and dive conditions.

Complete with photographs and more than 100 illustrated maps of each dive site, all reefs are star rated to cover depths, marine life and other essential information for the diving and snorkelling community.

For more information visit www.thedivespot.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)

Please send to info@ozdiver.com.au

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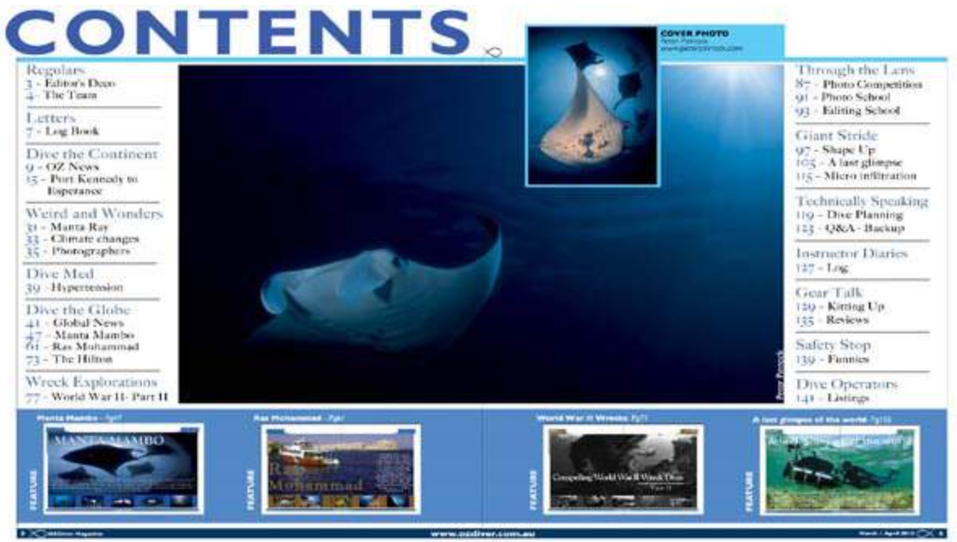

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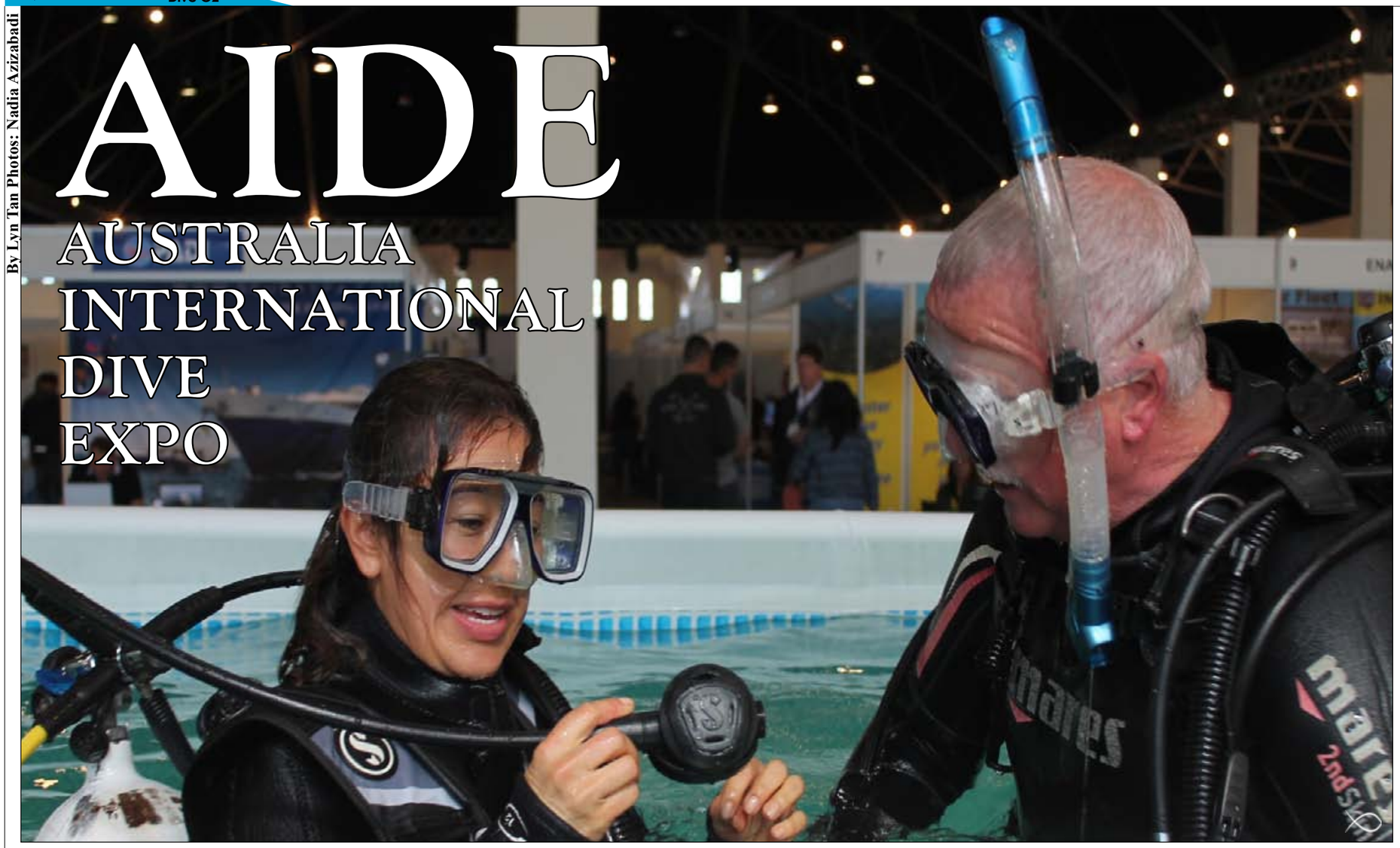
By Lyn Tan Photos: Nadia Azizabadi

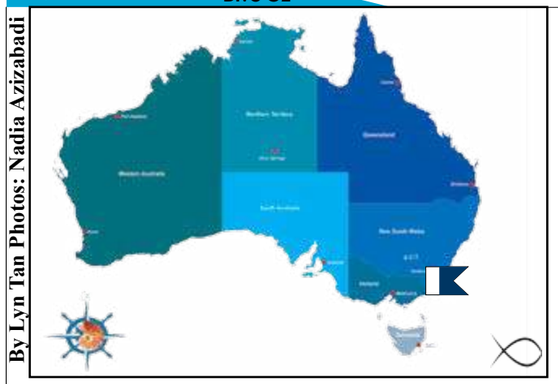
AIDE

AUSTRALIA INTERNATIONAL DIVE EXPO



Based on the growing interest in the marine world, the Australia International Dive Expo (AIDE) has announced their collaboration with the Sydney International Boat Show in 2017 to bring marine lovers a bigger, better and more omprehensive event.

By Lyn Tan Photos: Nadia Azizabadi



AIDE2016, which took place at the Royal Hall of Industries in Sydney's Moore Park from 10-11 September, not only saw another year of growing interest in underwater sport activities, but for dive travel and discovery as well.

Organiser and Director of AIDE, Ness Puvanes, said the interest in activities such as scuba diving and underwater photography is consistently on the rise.

Over the last three years, the Expo has not only been welcoming a healthy growth in visitor numbers at about 12% each year, but in exhibitors as well.

Ness said, "105 exhibitors kept our show abuzz this year with their products and services including dive tours, destinations, dive gear and gadgets, photography and the range of equipment, and also dive classes."

She also made note that a number of international trade visitors from Hong Kong, China, Malaysia, Germany and Taiwan were also present that weekend to meet and network with the exhibitors.

Activities wise, a number of non-divers including three participants under the age of 12, had a go at the sport in the indoor pool. "We are definitely seeing more families coming to the show and learning about the sport and discovering new travel destinations.

There's no doubt scuba diving opens up a whole new world of experience for families looking to embark on new adventures together," said Ness.

While some children wanted a taste of scuba diving, others were kept entertained by the Australian Maritime Museum where they had face painting, drawing and other activities.

Some adventurous visitors were also seen participating in the longest breath-holding games, where the winner recorded a 3.06 minute breath-hold.

Throughout the weekend, a series of speakers kept visitors abreast of the latest dive destinations, underwater discoveries, marine life, disable diving, dive safety issues, photography and film, and the latest sustainability efforts.

Ness added that some very pertinent information on marine conservation came from CoralWatch, which involves the participation of divers in keeping the organisation informed on the health state of the corals around by sending in photos of

INSIDER NEWS 2017!

The Sydney International Boat Show and The Australia International Dive Expo are joining forces in 2017 to bring together people who love being ON the water as well as IN the water!

By Lyn Tan Photos: Nadia Azizabadi

By Lyn Tan Photos: Nadia Azizabadi

the corals. The information gathered is then used to helped the organisation decide how best to manage the reefs. Divers will also learn about the colour coded charts and what they mean, while contributing to the global coral bleaching database.

Representatives from Disabled Divers International (DDI) and Scuba Diving International (SDI) shared some valuable insight and guidance on learning and becoming a diver or an instructor.

Visitors also heard from experts operating from OpenROV, to the importance of gear maintenance, while shark attack survivors, cinematographers and underwater photographers kept the audience in stiches with their overwhelming yet inspiring presentations.

University students were treated to a free five-hour professional photography course by Johan Boshoff on the Saturday Topics

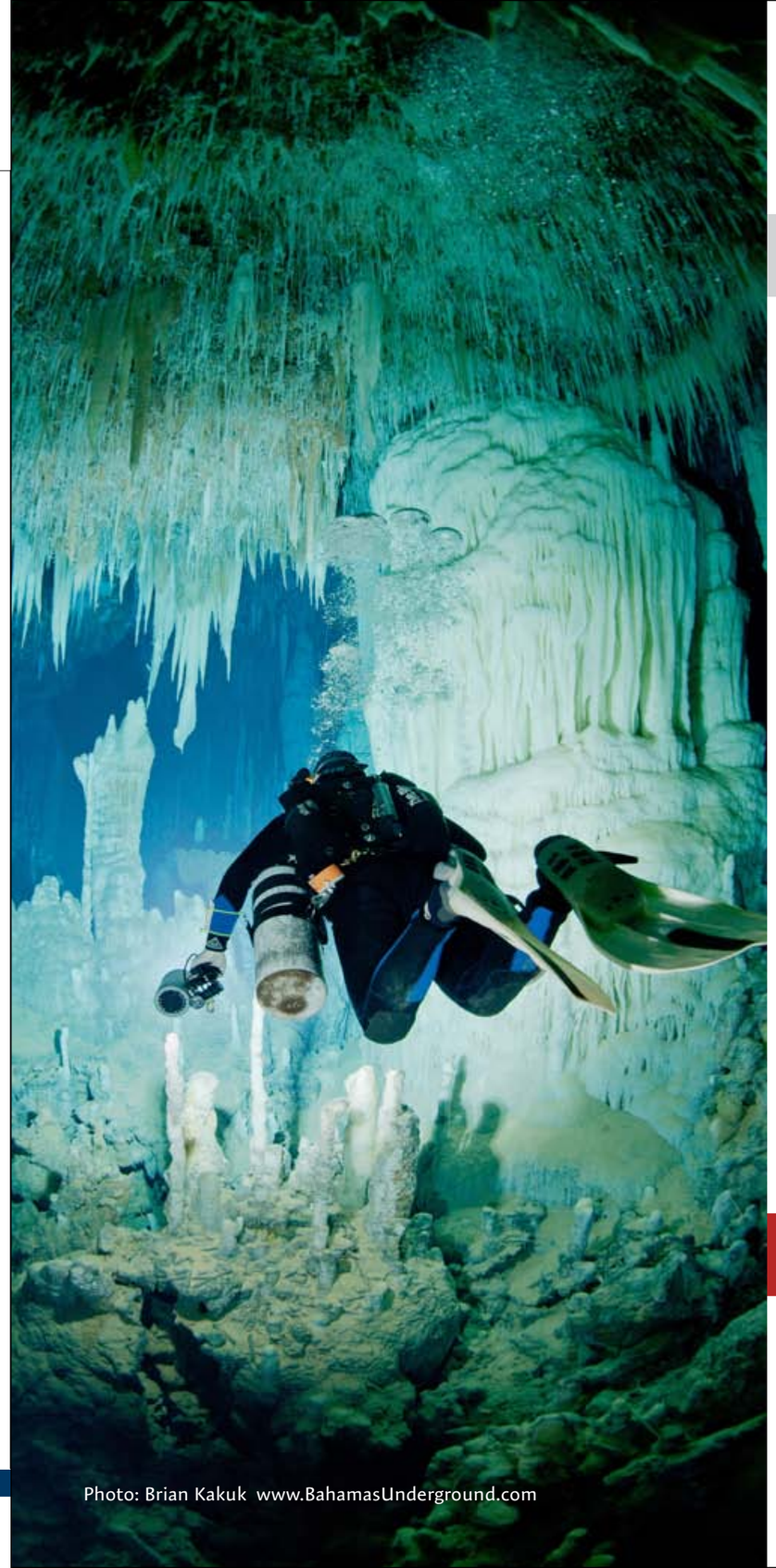


Photo: Brian Kakuk www.BahamasUnderground.com

By Lyn Tan Photos: Nadia Azizabadi

covered included the basics in photography, the use of colour temperature, space and white balance; flash photography, the selection process for print publications and photo editing.

Finally, the two-day event saw eight lucky winners take home a series of prizes including:

- A 7D/6N holiday for two to the Maldives, courtesy of Plumeria Hotels & Resorts Pvt Ltd;

- A 7D/6N stay for one at the Atmosphere Resort & Spa, courtesy of Philippine;
- A return flight (SYD-MNL-SYD) courtesy of Cebu Pacific;

- Two return flights (MNL-Domestic-MNL) courtesy of Cebu Pacific;

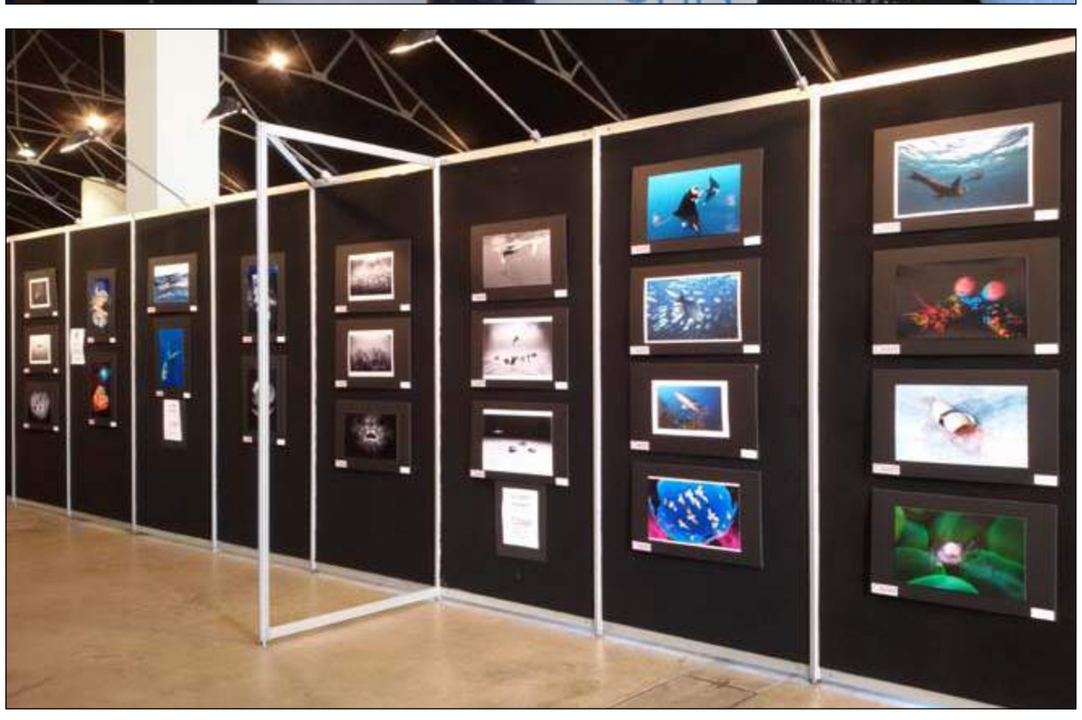
- A 4D/3N stay for one in Bali, courtesy of Ena Dive Centre, Bali, Indonesia;
- One PADI eLearning voucher with PADI pack courtesy of PADI; and
- Michael Aw (underwater photographer) books.

Next year, AIDE will join the Sydney International Boat Show at the International Convention Centre at Cockle Bay Wharf at Darling Harbour from 3-7 August 2017.

Exhibitors keen to be part of AIDE2017 are advised to register their interest from 1 November 2016 onwards.

Visit www.australiadiveexpo.com for more information at the new website that will be launched next month.

Dive the Continent
Dive OZ



By Lyn Tan Photos: Nadia Azizabadi

DEEP DOWN YOU WANT THE BEST

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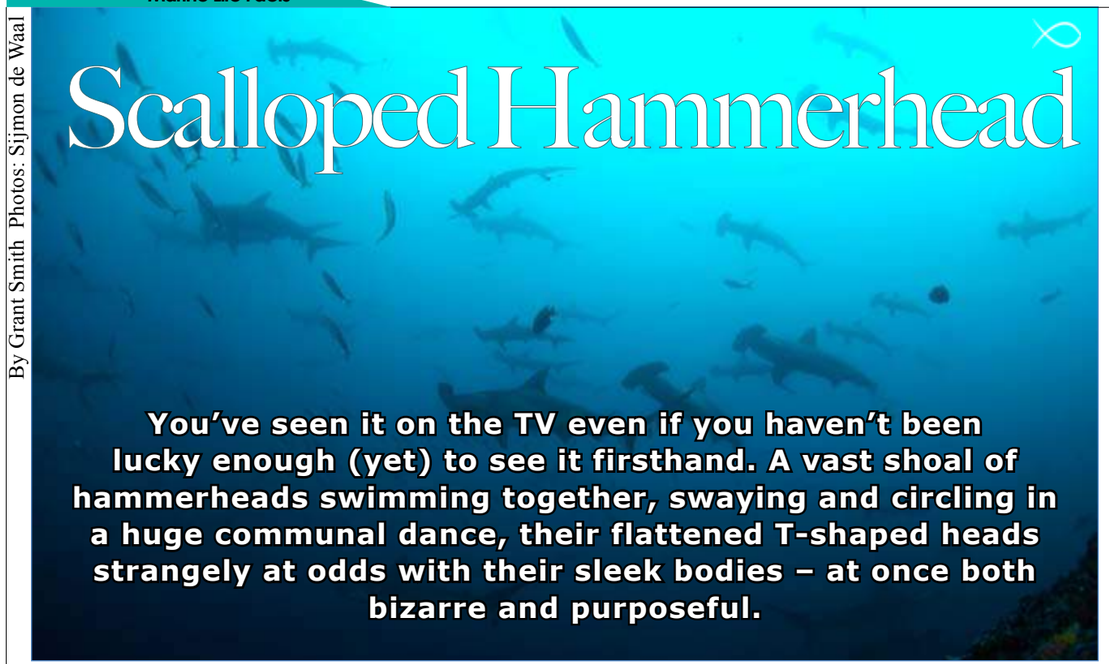
DEEP DOWN YOU WANT THE BEST

Scalloped Hammerhead

By Grant Smith Photos: Sijmon de Waal



You've seen it on the TV even if you haven't been lucky enough (yet) to see it firsthand. A vast shoal of hammerheads swimming together, swaying and circling in a huge communal dance, their flattened T-shaped heads strangely at odds with their sleek bodies – at once both bizarre and purposeful.

Chances are that those big shoals of hammerheads are Scalloped hammerheads – Sphyrna lewini – thanks to its habit of big schools. The name 'sphyrna' simply means hammer and there are eight different hammerhead species (Sphyrnidae) in the world's oceans. Of the three that visit our waters the Scalloped is the one you're most likely to meet, and it can be distinguished from the others by the scalloped shape of the front edge of its hammer and the indent right in the middle. The bronze colour of the shark's upper body has also earned it the name of Bronze hammerhead in some parts of the world. Of the other two types the Great hammerhead (Sphyrna mokarran) has a much more regular 'T'-shape to the head and is a bit bigger, at up to 6m. More easily confused is the Smooth hammerhead (Sphyrna zygaena) which is roughly the same size at 4m (the Scalloped grows up to around 4m with females being much bigger than males), and also has a slightly scalloped edge to the head but doesn't have a central indent to the hammer. The hammer means that while you might mistake one type of hammerhead for another, you're never going to confuse them with any other type of shark.

The Scalloped hammerhead spans the globe but prefers coastal warm temperate and tropical seas. The films we see of big shoals are usually taken in the Gulf of California or around sea mounts where they sometimes congregate.

All the hammerheads are viviparous, meaning that the eggs hatch inside the body and the shark pup is nourished through a yolksac placenta. Like most of the big sharks reproduction is a slow process and after a 9-10 month gestation the Scalloped hammerhead female gives birth to a litter of 15 to 30 or more pups. They're not considered dangerous to divers but like any large predator they should be treated with healthy respect and not harassed. The fact that nursery areas tend to be shallow and inshore means that we're much more likely to see young sharks, with the bigger adults staying further off shore.

Although the Scalloped hammerhead is found around the globe, DNA testing shows that there are genetically distinct populations including those from the Northwest Atlantic, Caribbean Sea and Southwest Atlantic. Left to their own devices they can reach an estimated 30 years of age, but while healthy adults Scalloped hammerheads have no real predators (the small and weak are taken by other large sharks) their habit of coming together in large shoals can make them vulnerable to being bycatch for trawls and purse-seine netting. In addition, they, along with pretty much anything else that swims, fall victim to the wasteful and undiscriminating technique of longlining and their pronounced curved dorsal fin makes them a target for the unspeakable horrors of the shark-finning trade.

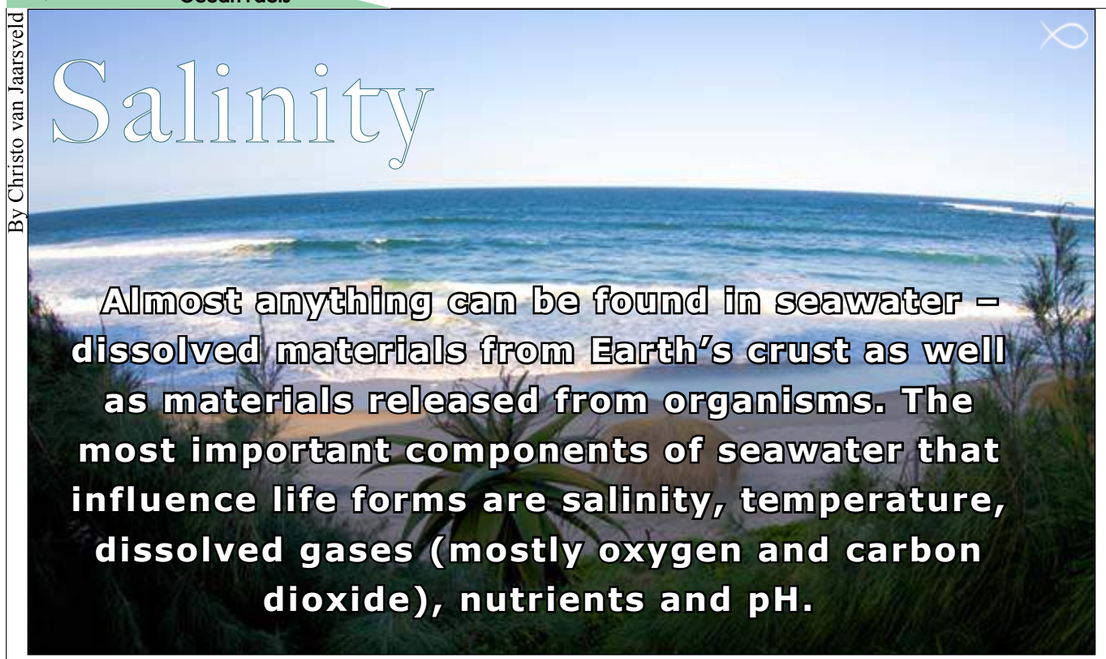
The species faces heavy fishing pressure in this region, and similar declines in abundance are also inferred in other areas of its range in this region. Given continued high fishing pressure, observed and inferred declines, the species is assessed as Endangered in this region." So for any sports fishermen out there please put them back.

The bright news in all this is that Scalloped hammerheads are one of the species that have benefited from conservation scientists borrowing techniques more familiar to the world of CSI. Given that there are a number of distinct populations of the animal around the world, it has proved to be normal for fish markets and soup sellers to claim that any Scalloped hammerheads they trade in come from less threatened groups. It's now possible, however, to DNA test pretty much anything from soup to sushi and identify where it came from.

Seeing your first hammerhead is one of those unforgettable moments of anyone's dive career. Let's hope we have the sense to ensure that our kids and grand kids also get the chance to experience this thrill.

By Christo van Jaarsveld

Salinity



Almost anything can be found in seawater – dissolved materials from Earth's crust as well as materials released from organisms. The most important components of seawater that influence life forms are salinity, temperature, dissolved gases (mostly oxygen and carbon dioxide), nutrients and pH.

The salinity of seawater is usually 35 parts per thousand (also written as o/oo) in most marine areas. This salinity measurement is a total of all the salts that are dissolved in the water. Although 35 parts per thousand is not very concentrated (the same as 3.5 parts per hundred, o/o, or percent), the water in the oceans tastes very salty. The interesting thing about this dissolved salt is that it is always made up of the same types of salts, and they are always in the same proportion to each other (even if the salinity is different than average). The majority of the salt is the same as table salt (sodium chloride) but there are other salts as well.

Variations occur in ocean salinity due to several factors. The most common factor is the relative amount of evaporation or precipitation in an area. If there is more evaporation than precipitation then the salinity increases (since salt is not evaporated into the atmosphere). If there is more precipitation (rain) than evaporation then the salinity decreases.
Another factor that can change the salinity in the ocean is a very large river emptying into it. The runoff from most small streams and rivers is quickly mixed with ocean water by the currents and has little effect on salinity. But large rivers like the Amazon River in South America may cause the ocean to have little or no salt content for over a mile or more out to sea. The freezing and thawing of ice also affects salinity. It is estimated that rivers carry up to 16 billion metric tons of sediment into the sea each year, of which about 2.9 billion metric tons are dissolved salts. The thawing of large icebergs (made of frozen fresh water and lacking any salt) will decrease the salinity, while the actual freezing of seawater will increase the salinity temporarily. This temporary increase happens in the first stages of the freezing of seawater, when small ice crystals form at about minus 2 degrees Centigrade.

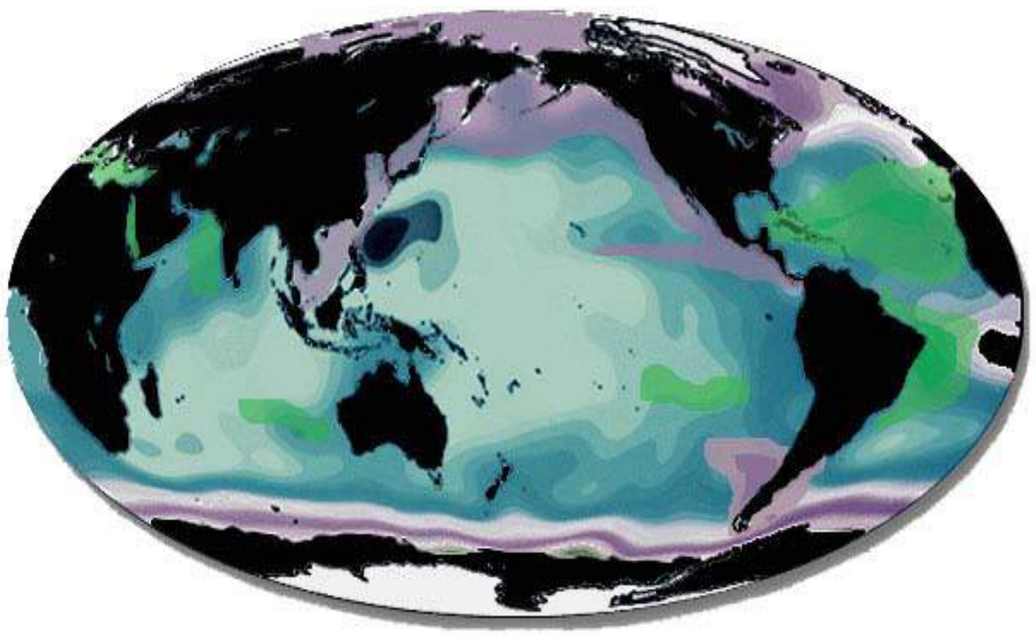
These tiny, needle-like ice crystals are frozen fresh water and the salts are not part of them, so the liquid between these crystals becomes increasingly salty, to the point of it being brine. Eventually though, as seawater freezes, the ice crystals trap areas with brine and the entire large piece of frozen seawater (ice floe) is salty. Dissolved salts also enter the ocean through deep sea hydrothermal vents

By Christo van Jaarsveld

– cracks in ocean floor that spew forth mineral rich, extremely hot fluids – and contribute to salinity.
Many marine organisms are highly affected by changes in salinity. This is due to a process called osmosis, which is the ability of water to move in and out of living cells in response to a concentration of a dissolved material, until equilibrium is reached. In general, the dissolved material does not easily cross the cell membrane, so the water flows by osmosis to form equilibrium. Marine organisms respond to this as either being osmotic conformers (also called poikilosmotic) or osmotic regulators (or homeosmotic).

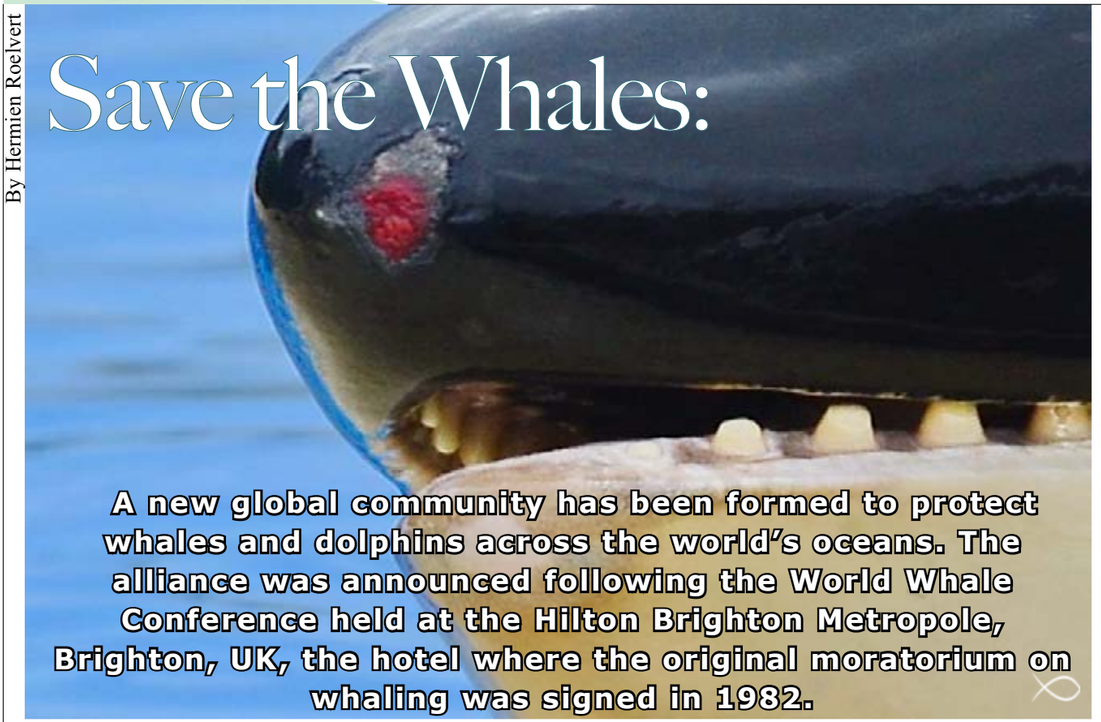
Osmotic conformers have no mechanism to control osmosis and their cells are the same salt content as the liquid environment in which they are found (in the ocean this would be 35 o/oo salt). If a marine osmotic conformer were put in fresh water (no salt), osmosis would cause water to enter its cells (to form an equilibrium), eventually causing the cells to pop (lysis). If a marine osmotic conformer were put in super salty water (greater than 35 o/oo salt) then osmosis would cause the water inside the cells to move out, eventually causing the cells to dehydrate (plasmolyze). These marine osmotic conformers include the marine plants and invertebrate animals, which do not do well in areas without a normal salinity of 35 o/oo.
Osmotic regulators have a variety of mechanisms to control osmosis and the salt content of their cells varies. It does not matter what the salt content is of the water surrounding a marine osmotic regulator, their mechanisms will prevent any drastic changes to the living cells. Marine osmotic regulators include most of the fish, reptiles, birds and mammals. These are the organisms that are most likely to migrate long distances where they may encounter changes in salinity.

An excellent example of this is the salmon fish. The fish is about 18 o/oo salt so in seawater it tends to dehydrate and constantly drinks the seawater. Special cells on the gills (called chloride cells) excrete the salt, so the fish can replace its lost water. When a salmon migrates to fresh water its cells start to take on water, so the salmon stops drinking and its kidneys start working to produce large amounts of urine to expel the water.



Save the Whales:

By Hermien Roelvert



A new global community has been formed to protect whales and dolphins across the world's oceans. The alliance was announced following the World Whale Conference held at the Hilton Brighton Metropole, Brighton, UK, the hotel where the original moratorium on whaling was signed in 1982.

Over 75 leading environmental and animal protection groups and businesses have committed to Save the Whales: Reloaded, including World Society for the Protection of Animals (WSPA), Ocean Alliance, Earthrace Conservation, the American Cetacean Society and many more. The new global alliance will identify and work together to protect whales and dolphins in all of the places where they most need help.

The news was announced by whale and dolphin specialists Planet Whale which orchestrated the alliance, with environmentalists including Bill Oddie and Jean Michel Cousteau already flagging up sites requiring urgent action. Dylan Walker, co-founder of Planet Whale says, "Today marks an historic move forward as we galvanise the passion and commitment of the original Save the Whales campaign with Save the Whales: Reloaded. As an active and influential global community we will be using our collective energy and expertise to identify and ring fence new 'Areas of Concern' for whales and dolphins across the globe."

Identifying key locations where whales and dolphins are currently under threat, the alliance has announced the first three sites targeted for immediate action. These are:

1. The Southern Ocean Whale Sanctuary
Whale and Dolphin Conservation (WDC), Canadian Marine Environment Protection Society, and Cetacean Society International have come together with some 20 other NGO and business supporters from around the world to re-affirm the need for whaling to end in the Southern Ocean Sanctuary and to make it a true sanctuary for whales.

The call came in a week when the world's eyes were trained on the Southern Ocean where, in Hobart, Australia, the fate of the proposed 2.4 million km2 Ross Sea Region Marine Reserve and Antarctic reserve network was being decided by CCAMLR — the Commission for the Conservation of Antarctic Living Marine Resources.

Save the Whales: Reloaded supporters will campaign against the ongoing slaughter of whales within the sanctuary by the Japanese whaling fleet, and for the creation of an Antarctic reserve network by signing the Southern Ocean petition at: www.avaaz.org/en/save_the_southern_ocean_7/

2. New Zealand's Coastal Waters
Twenty two conservation groups and businesses from around the world have joined NABU International in a collective bid to save the Maui and Hector's dolphins as part of the Save the Whales: Reloaded campaign.

Maui and Hector's dolphins are the smallest and rarest marine dolphins on earth and live only in New Zealand. Over the past four decades, gillnetting and trawling have decimated them almost to the point of extinction. A ban on gill and trawl nets across the species' full range in all waters up to 100m deep is crucial if these dolphins are to recover.

Save the Whales: Reloaded supporters will petition the New Zealand government to increase the ban on trawling and set nets along the coastline to extend to the species' full range at: www.hectorsdolphins.com

3. Loro Parque, Tenerife
Captured two years ago, wild orca Morgan languishes in Loro Parque, a privately owned entertainment park in the Canary Islands. Now, forty seven charities, businesses and delegates at the World Whale Conference have added their support to the Free Morgan Foundation to save Morgan from captivity as part of the Save the Whales: Reloaded campaign.

Morgan has been subjected to attacks and bullying from other orcas and is showing signs of severe stress and abnormal behaviours as a result of being subjected to inhumane conditions.

Save the Whales: Reloaded supporters will join the Free Morgan Foundation in campaigning for a boycott of the park and the release of Morgan back to the wild by signing the petition here: www.freemorgan.org/help-morgan.html

The global community behind Save the Whales: Reloaded was formed at last week's World Whale Conference which brought together members of the public, whale and dolphin charities, government agencies and businesses from around the world to share ideas and best practice. A total of 44 charities and 34 whale watching businesses have committed to Save the Whales: Reloaded, representing 27 countries from every continent apart from Antartica.

"Despite the vote in 1982, the world's whales have not been saved and they are still not safe," continued Walker. "Whilst whaling is much reduced, it still remains, and these beautiful creatures are also losing ground to a whole plethora of destructive issues, including over-fishing and drowning in nets, pollution, habitat destruction, climate change and being held captive for entertainment in aquariums. As a community we are committed to our cause and our message today to all those involved in cruelty towards cetaceans and destruction of their natural habitats is clear: we will not stop until you stop."

By Dr Allen Kayle

Dive Medicals

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

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

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

This is where the problems creep in. A fit young student may feel this is unnecessary expense and look for another, less strict dive school. The first school then loses both a student and income.

Some dive instructors require an initial diving medical for each new student and this is to indicate a possible contraindication to diving and ensure that no unnecessary risks are taken. A few are driven by cash flow alone and don't bother to screen for medical problems. They should be overlooked.

Annual diving medicals are legally mandatory for commercial divers, even for 9m of water certification. Despite the same or greater risks, no such requirement exists for sport diving. One cannot prohibit anyone from taking up diving as a sport, but the consequences of diving with known or unknown conditions affecting blood circulation, the lungs and the brain may be crippling or even fatal.

I highly recommend that every new diving student has an initial medical prior to doing their course. About 10 percent of divers I consult fail their dive medical and there are many reasons for this. By far the most common is the total inability to equalise the middle ear.

Following adequate treatment and guidance, the vast majority of these divers are then able to start their dive course.

Without their medical examination, they would have completed their pool training and then failed their open water sessions because of persistent middle ear barotrauma during descent.

I have also failed numerous students for known conditions, varying from inadequately controlled asthma, high blood pressure and diabetes to previously undiagnosed lung cysts, cancer, tuberculosis and heart disease. The majority of these were younger than 30 years of age.

Many overseas dive sites have already experienced serious underwater problems and simply will not permit a sport diver to join without an up-to-date medical diving clearance.

I recommend that every diver has a repeat medical after two years and that every diver older than forty has an annual medical.

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

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

The examining doctor should be a dive doctor and know what is to be expected.

Global News

Why the Great Barrier Reef is Dying

By Justin Hawk

Fish of every imaginable colour race between the corals as the sun's rays dance through the ocean's surface. A stingray slowly drifts by, taking its leisurely time. I encountered this breathtaking scene last month and it reminded me of how extraordinary the natural world truly is. Yet, coral reefs could soon be gone forever. The Great Barrier Reef, the largest living thing on the planet, is deteriorating at an alarming rate. Over the past 30 years, we have seen it lose about 50% of its coral. We must act now if it is going to survive through future decades.

Understanding what is actually causing the reef to die can seem overwhelming given all the various reasons. So what is actually threatening it? The coal industry, coral bleaching, and poor water quality are among the ways that humans are hurting the Great Barrier Reef and it is becoming clear that if we plan on keeping the reef around for future generations, we must protect it now.

Coal
The "little, black rock" is playing a huge role in threatening the reef's existence. For unexplainable reasons, the Queensland government has continued to support expanding coal mines and ports. Coal is considered a dying industry and it also damages the Great Barrier Reef's health.
The craziest part, though? Just recently, the Queensland Labor Party approved Adani's Carmichael megamine – set to be the largest in Australia. The mine will have a footprint ten times larger than the city of Sydney and consume an olympic swimming pool of water every two hours. Given the poor state of the coal market, the mine has been called "economically disastrous" by experts.
Expanding the coal industry means more pollution and more ships. Coal is a "dirty" energy source that is accelerating climate change.

The quickest shipping routes to Asia go right near the Reef, which is why coal companies have drafted plans to dredge nearby areas. This puts the turtles and clown fish we love at risk. The Abbot Point Coal Terminal expansion includes digging up 1.1 million cubic metres of spoil near the reef and disposing of it next to nearby wetlands. While this has changed from the original plan of dumping the dredge into the ocean, coastal ecosystems will now be severely damaged.

Bleaching
The brightly coloured corals are quickly turning ghostly white as the reef

experiences the worst bleaching event in its history. The Great Barrier Reef Marine Park Authority (GBRMPA) has issued the highest bleaching response level for the northern part of the reef, indicating "severe regional bleaching." 516 of the 520 reefs Professor Terry Hughes, the Director of the Australian Research Council Centre of Excellence for Coral Reef Studies, recently surveyed were experiencing bleaching and may not be able to ever recover.

Coral bleaching occurs when the ocean stays at higher than normal temperatures, causing the corals to expel the algae, zooxanthellae, that live on them. Losing this algae puts stress on the coral and causes it to turn completely white. While it is possible for coral to recover from a bleaching event, the severity and length of the bleaching determines whether the coral will recover or die. It is estimated that up to 50% of the currently bleached coral will die.
As the globe continues to warm and ocean temperatures increase, bleaching events like this will become more frequent and could occur annually as soon as 2030. The current bleaching is due to abnormally high ocean temperatures, partly influenced by the El Nino weather system, and is the worst instance we've ever seen on the reef. Soon we could be losing Nemo, rather than finding him.

Acidification
As we pump more and more greenhouse gases into the sky, the oceans too have become poisoned. Oceans absorb carbon dioxide and it is estimated that they have soaked up over 25% of the excess CO2 that has been released by humans.

When they absorb this carbon dioxide, the oceans actually undergo chemical changes and become more acidic. Fragile locations like the Great Barrier Reef feel the effects the most and even a slight increase in acidity can lead to death for areas of the reef. It takes about 50 years for the effects of acidification to reverse so if climate change is not addressed now, the reef may never be able to recover.

Poor Water Quality
The water is also becoming dirtier and dirtier as human-caused pollution and runoff continues. Approximately 80% of Queensland coastline is used for agriculture, causing pesticides, fertilisers and animal waste to enter the ocean and degrade the water quality. This cloudy water makes photosynthesis difficult, resulting in less of the algae that coral desperately need.
A new paper published by the Australian Institute of Marine Science (AIMS) shows that the Great Barrier Reef's water quality is unlikely to meet the sediment and nitrogen targets outlined in the Reef 2050 plan. Experts say that more regulations must be implemented in addition to voluntary and incentive-based approaches.

Natural Disasters
Cyclones and other natural disasters break coral and seagrass meadows become wiped by flood plumes. Over time, dugong and turtle populations are impacted by the damaged meadows. The frequency of these extreme disasters will increase as climate change worsens. With wind gusts of up to 285 km per hour, Cyclone Yasi tore through the reef in 2011 and damaged about 13% of the reef.
Crown-of-thorns starfish
The crown-of-thorns starfish, a consumer of over a dinner plate's worth of coral daily, has been responsible for 42% of the lost coral. The starfish have been known to cyclically outbreak, with this latest

event beginning in 2010.
The starfish play such a large role that it is estimated that over the past 30 years the reef would have actually increased in coral cover had it not been for the crown-of-thorns. The short-term strategy is for teams to control the starfish populations using various injection methods, while in the long-run the goal is to be better prepared to respond quickly to future outbreaks.

The Reef 2050 Plan
The state of the reef caused the UNESCO World Heritage Committee to debate listing the site as "in danger." In response to this, the Reef 2050 Long-Term Sustainability Plan was produced by the Australian Government Department of the Environment. The plan includes emission-reduction goals, government commitments to controlling pollution and limiting the effects of nearby dredging.
The plan is inadequate, though, as there are not many concrete actions listed but rather only broad guidelines and goals. It pays little attention to the threats associated with climate change and allows for the expansion of the coal industry near the reef.

What should we do?
The question then becomes what must be done to protect the reef? Fighting against climate change is the most meaningful way since many of the threats to the reef are related to human emissions. We must move towards renewable sources of energy, not coal, and reduce our footprint on the environment as much as possible. Regulations must be created that bring our emissions to the needed levels.

Tell your family, your friends and your government officials that you don't think we should have more coal mines near the reef and that the current bleaching event worries you. Stand up for the Great Barrier Reef, because if we don't fight to protect it, soon it will become a thing of the past.

Send us your news.

Do you have any interesting, newsworthy info to share with the diving world? If so, we would like to invite you to send us your Global News section for possible inclusion in the magazine (Inclusion is FREE of charge).

Here's what we need:
- Newsworthy stories (promotional material will not be accepted)
- Word limit: 150 words
- Text prepared in a Word document
- Accompanying high-resolution image(s) are welcome (please supply caption and image credit)

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Dive the Globe
Bonaire

By Christopher Bartlett

Bonaire
- beach and boat -

Lying in the southern Caribbean just north of South America, Bonaire is blessed with warm seas year-round, low rainfall, and an abundance of coral and sponge covered dive sites. With 67 of them accessible without a boat, Bonaire's specialty is shore diving, generally self-guided, though the island of Klein Bonaire has 20 sites that can be dived on guided boat dives, and the rougher East coast waters also have four dive sites and is definitely worth a visit.

By Christopher Bartlett

The beauty of shore diving here is that there is no schedule to adhere to, you just pick up cylinders from the dive shop, stick them into the back of your rental pick-up and off you go for the day. There are numerous guide books describing the different sites and they are all well marked on the road side, the furthest ones being no more than a 20 minute drive from Kralendijk, the capital of this laid-back island of 15000 souls.

For solo travellers dive centres have boards that you put your name on to find a buddy for the day, or there are boat dives. On my first morning at the excellent Wannadive, after the mandatory check out dive to get my Bonaire Marine Park tag, I headed out for a boat dive near Klein Bonaire and found myself a buddy that way.

Not sure what the viz would be like, I'd put my macro lens on. Smart move, the viz was a clear 25 metres and the sea ferns and rope sponges swayed enticingly in front of me as I snapped blennies, arrow crabs and shrimps. In 10 days of diving the worst viz I had was 15 metres, so macro photography was a conscious choice rather than an enforced necessity. With lots of colourful sponges and fish, the 8mm fisheye got a lot of use.

The dive guides at Harbour Village Resort were very accommodating; those that wanted to be closely guided and supervised were well looked after, whilst buddy pairs who were happy to bimble around were free to do so. Around the island the sites are good for spotting turtles and eagle rays, and there is a reef manta that is quite often seen cruising around.

Most of the boat dives are around Klein Bonaire, but they also go to sites on the main island, most notably the wreck of the Hilma Hooker, and the Salt Pier to the south, and Town Pier to the north. The dive centres make a point of going to each one at least once a week or you can arrange to go diving with East Coast Diving for a morning double-tank trip.

On the east coast the seas are pretty lumpy, but East Coast Diving`s giant RIB with twin 250s is more than a match, and even has a removable pontoon section allowing a proper dive ladder to be used. It's a great place to see eagle rays, stingrays, and turtles. The dives here are well-named. I have never seen as many turtles anywhere in 1800 dives around the world as I did at Turtle City. There must have been 30 hawksbills on our route over the shallow reef.

The White Hole was a 10-metre deep sand-filled amphitheatre home to several stingrays and a school of imperturbable tarpon. These silvery, metre-long armoured predators lazed unfazed by our presence.

The Hilma Hooker has a colourful past. Launched in 1951, the 70–metre long vessel sailed under five other names and owners before becoming the Hilma Hooker in 1979 under Colombian ownership.

In the summer of 1984, whilst under surveillance of drug enforcement agencies, she suffered engine problems at sea and was towed to Town Pier, Kralendijk, where local authorities boarded her. The captain was unable to produce any of the registration papers, a false bulkhead was discovered, concealing 25,000 lb (11,000 kg) of marijuana. The ship and her crew were detained while the local authorities on Bonaire searched for the vessel's owners, who were never found.

Under detention as evidence for many months she began to take on considerable amounts of water through general neglect of her hull. Fearing she would sink at the main dock and disrupt maritime traffic on September 7, she was towed to an anchorage near the Angel City dive site. On the morning of September 12, water began

By Christopher Bartlett

By Christopher Bartlett

entering through the lower portholes and at 9:08 am she rolled over on her starboard side and went to the seabed in under two minutes.

Now she lies in 30 metres of water, her open hold facing away from the reef. Her hold and superstructure have impressive sponge growth and barracuda like to hang around her stern. Her prop is still in place and is very photogenic, and is also an easy wreck as there is very little penetration.

Salt Pier is still a working pier, but cargo boats come to load infrequently. The site can be dived from the shore with a guide, but is best done from boat as a drift dive. The six sets of pillars are a favourite hangout for large schools of striped grunts, the occasional, well-hidden frogfish, French Angelfish, and a kaleidoscope of sponges, and should be high on anyone's must-see list of Bonaire.

The southern end of the island also has an interesting double reef system that covers several dive sites. Angel City, so named for the numerous angelfish that frequent the two parallel ridges, Invisibles, were the fishiest that I tried, and one was the home of the friendliest trumpetfish I have ever encountered, allowing me to get so close with my fisheye that I could give it a gentle stroke.

1000 Steps is also right by the shore, but due to the vertical topography of the coastline, clambering down and back up again with cylinders is not a wise move, and the site is best visited by dive boat. Just next door is Karpata. The entry can be a tad precarious with a large camera when the sea is a little choppy, but is well worth the effort. The reef slopes down at a near-vertical angle, with a series of steep ridges and gullies, again covered in a variety of coral and sponges, with schools of grunts, goatfish and creolefish. The site is big enough to occupy two dives, one going left, one going right after entry.

Harbour Village's house reef is arguably the best on the island, and is accessed from unqestionably the best beach on the

island. In fact only Harbour Village and the neighbouring Eden Resort have a beach, the other resorts either have rocks or are built up to the water.

Straight off the Harbour Village Resort Resort beach is a small wreck with plenty of macro subjects hosted by the decaying timbers. It's worth a look but the best part of the large site, aptly called "Something Special" lies to the south. Following a rope land across the sand at 12 metres down, you pass in front of the entrance to the marina until you hit the reef on the other side. I did the dive several times, with macro and wide angle lenses as there is a lot to see there between the arrow crabs and Pedersen shrimp in anemones, eels, and groupers getting a clean and the usual reef fish that are numerous here. The trick on this site is to make sure you have enough air for when you inevitably get distracted on the return.

Coming back at around six metres, in the mouth of the marina, you will encounter schools of blue surgeonfish, more angelfish,

By Christopher Bartlett

and often a giant barracuda. I even spotted a tarpon and a turtle. If you surface by the rocks, there is a fair chance you will be greeted by one of the local iguanas, or you can follow the sand in, cruise right up to the beach next to the bar, and order refreshments before you have taken your fins or BCD off.

The ship-shaped restaurant and bar is more than ship-shape, the location and views are perfect for sundowners and the food there is excellent and the full breakfast huge. along the seafront downtown there are plentiful options too, and there is always somewhere with a special on every night of the week. The Dive Shack is the hangout of choice for dive crew and Thursdays they have a cheap BBQ. Wednesday night is DM night at the fancy French restaurant next to Harbour Village where gourmet burgers French-style (the best burger and fries anywhere) are $8 and rum and cokes $1.50 a drink. I had such a good time I'm going to have to Google its name..... (Bistro de Paris) or maybe I'll just have to go back.

Where to stay
Captain Don's Habitat
The pick of the cheaper resorts with a range of accommodation and room styles, on the sea front but with no beach (liken the vast majority of the resorts on the island). Pool and restaurant and dive centre on site Vehicle required to get to Kralendijk.

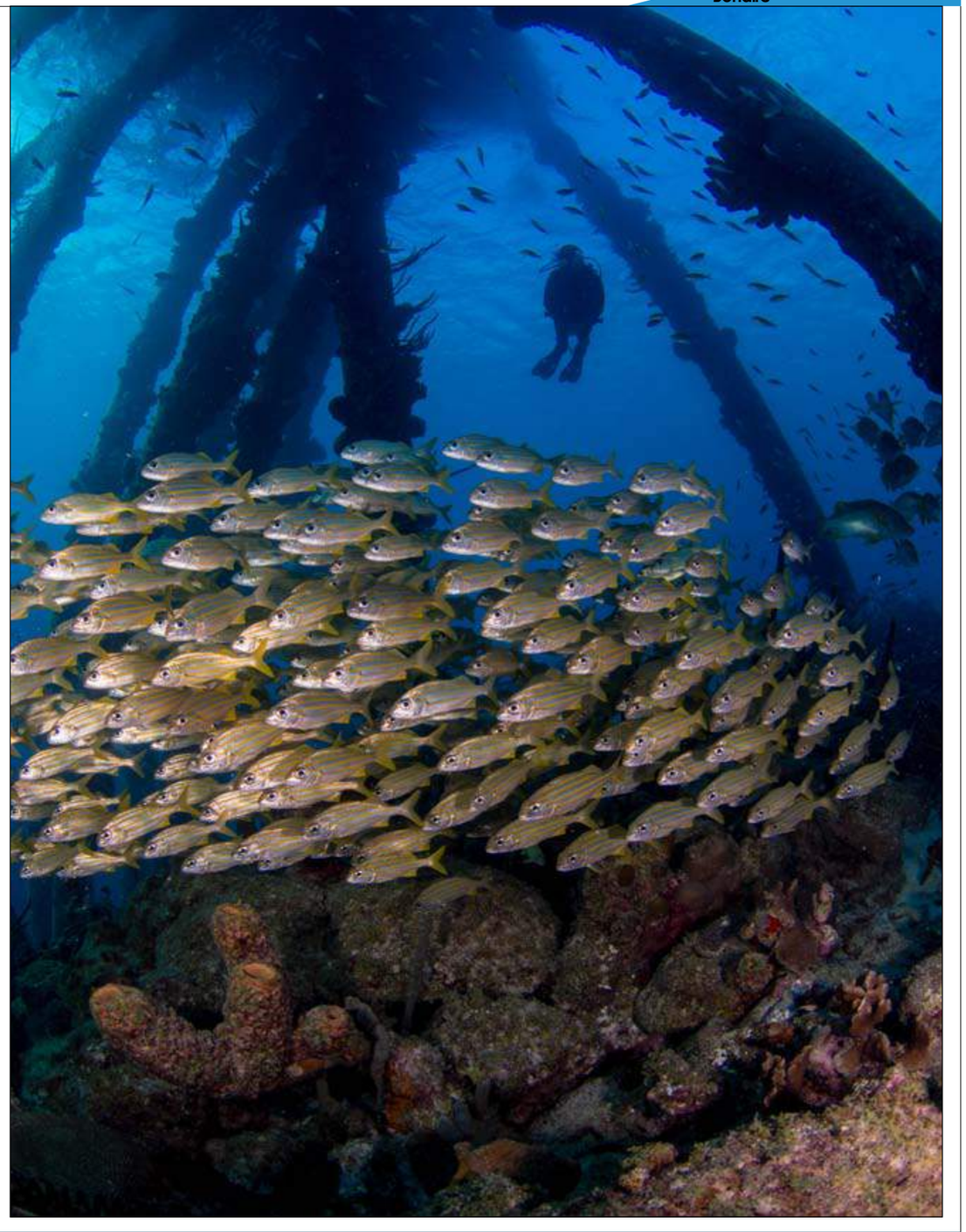
Harbour Village Resort
The best resort on the island on the best beach. 40 well-appointed rooms and suites, with garden, marina, or sea views. Comes with an almost unused pool, excellent staff and service. Dive centre on site. Harbour Village Resort is excellent value for money. Also within walking distance of restaurants in Kralendijk.

Rental cottages
With enough notice, it is possible to rent a cottage for a week or two, though the best ones are taken quickly, and none have a sandy beach frontage. If you do, then it is best to book diving and car rental separately.

Independent dive centres
I dived with Wannadive, who have several cylinder depots on the island as well as a full service dive shop, and East Coast Diving, who dive on the east coast – obviously. Indigo Safaris seamlessly put the trip together for me.

Indigo Safaris (www.indigosafaris.com, info@indigosafaris.com) organize tailor-made trips to Bonaire covering accommodation, dive packages and vehicle rental, as well as other Caribbean diving hotspots like the Bahamas, the Turks and Caicos, Mexico, and Dominica.

Dive the Globe
Bonaire



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Dive the Globe
Bonaire

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Dive the Globe
Papua New Guinea

By Christopher Bartlett

Papua New Guinea

Is there another country anywhere with so much diversity? The six million inhabitants of this nation of mountains and islands are spread over 463 000km2of mountainous tropical forests, and speak over 800 different languages (12% of the world total). Papua New Guinea occupies half of the third largest island in the world and 160 other islands and 500 named cays.





By Christopher Bartlett

Located just south of the equator and to the north of Australia, Papua New Guinea is a diver's paradise with the fourth largest surface area of coral reef ecosystem in the world (40 000km2 of reefs, seagrass beds and mangroves in 250 000km2 of seas), and underwater diversity with 2 500 species of fish, corals and molluscs. There are more dive sites than you can shake a stick at, with many more to be discovered and barely a diver on them. The dive centres are so far apart that there is only ever one boat at any dive site.

It is one of the few places left in the world where a diver can see macro critters, pelagics and big stuff, as well as fantastic soft and hard corals. The often misused and abused adjective "pristine" is actually appropriate here, due to low fishing pressure in the area in comparison to other areas of the Coral Triangle – no dynamite fishing, and thanks to a system implemented by dive resorts whereby local reef 'owners' receive a small fee for every diver that visits 'their' reef. As a result elders make sure that the reefs are not fished.

So, where to go? We set of on a four-resort tour to the north and the south taking in the provinces of Milne Bay, Oro and New Ireland.

Tufi

Sitting at the back of the De Havilland Twin Otter with my partner Imi and an American mom, dad and teenage son combo in front, I peered through the misty clouds at the swath of trees below, occasionally cut by the hairline crack of a path or the meandering swirls of a river. The jagged peaks of the Owen-Stanley range that run down the spine of the island weren't that far away as we headed east from Port Moresby to Tufi. The landscape was rugged to say the least, and it was easy to understand why both Australian and Japanese troops had struggled during the Second World War battles there.

As we approached the east coast of Oro province the spectacular fjords of Cape Nelson came into view, a strange mix of glacial action now topped by lush tropical forest, with aqua coral reefs surrounding the headlands clearly visible in the cobalt blue of the Solomon Sea. Banking steeply, we lined up with the gravel airstrip and touched down. Two 4x4 vehicles were waiting to take us on the one-minute drive to the resort.

With a fruit juice in hand, we whizzed through the usual paperwork and were asked to leave our dive gear outside our rooms in 20 minutes and meet in reception from where we were taken down to the dive centre. Less than 90 minutes after landing, the five of us, plus instructor Glen and dive master Alex, were in a boat and heading off across the flat sea to Bev's Reef, part of the mid-distance reef system and one of the several Tufi reefs with a manta cleaning station. Using a well-drawn dive site map, Glen laid out the plan for a drift dive, and off we went.
Imi hadn't dived for four months and I had a new camera so we were planning on just chilling and getting comfortable again, and a wall dive seemed ideal. Rolling in we both burst into grins. This was not just from the simple pleasure of being in the water again, but because of the clear blue water filled with corals, reef fish and colourful purple, yellow and white sea squirts. There were nudibranchs and schools of fusiliers and snappers, white-tip reef sharks and three of the nine species of anemonefish found in Papua New Guinea.

Winding our way slowly at the back of the group, coming over the top of a coral outcrop to have gander for big stuff that might be hanging out in the current I had to do a double take. Sitting there next to a crinoid was one of Papua New Guinea's underwater marvels, a black Merlet's (or lacy) scorpionfish (Rhinopiasaphanes), that has the peculiar habit off shedding its skin every three months or so. Photographers search for these for days and days, and here I was pointing an unfamiliar camera at one after barely 30 minutes in the water. It turned out to be the first of two that I saw, but it was the start of a long list of new sightings for me.

One of Tufi's signature sites is Veale's Reef, often dived on the same trip as Bev's. Veale's is often frequented by an albino hammerhead, but not on this occasion. Still, it was hard to grumble with

schools of baitfish, barracuda, black and white snapper, batfish, some Spanish mackerel, as well as a swift-moving green turtle and a couple more white-tips around. We certainly had enough to talk about over a late but delicious lunch on the veranda.

Some reefs are just a short trip away, such as Blue Ribbon Reef just around the runway headland that we dived during a tropical storm. The sea turned an atmospheric deep blue as we searched for, you guessed it, ribbon eels. Not all ribbon eels are blue, far from it in fact. They are all born black with a yellow dorsal stripe. Adult females are yellow with a black anal fin with white margins on the fins and only adult males are blue with a yellow dorsal fin.
The outer reefs are a 30-minute boat ride away and Cyclone Reef is one of them. The story goes that it appeared from nowhere after a severe storm in 1972, brought up from the depths by the elements. It's very top breaks the surface of the sea and it is a haven for mating seabirds. Over the edge it drops away into a wall dive, once again buzzing with reef life, and out in the blue we spied two hammerheads cruising past. Minor Reef is nearby and often dived in tandem with Cyclone.

The reef top sits a few metres below the surface and its plate and staghorn corals bask in the sunlight, illuminating the damselfish that adorn them, making it a great spot for no-flash photography. It is named after the large, bright yellow and black Notodoris minor nudibranch that is often found there.
Back at the resort, looking at the maps on the walnut-panelled walls gives one a better sense of the remoteness and the size of the area. Whole swathes of the Solomon Sea, starting where

Cyclone and Minor Reefs are, are marked as uncharted. There are basically reefs everywhere out there. Jack Daniels and Nuggets are two recently discovered ones, and Glen and his brother Archie

By Christopher Bartlett

were keen to get us out to them. Armed with a small plastic bottle with a little water in it, Archie began crunching and rolling it between his hands as soon as we were down JD's slope and onto the wall. Within a couple of minutes he had attracted the attention of four grey reef sharks. They didn't seem very used to human interaction and kept their distance, as did a couple of turtles, the sharks occasionally darting a bit closer to recce these odd, large, bubble-blowing creatures, and a couple of white-tip reef sharks came by for a look too.
With our appetites for diving well and truly whetted, we went for an afternoon dive off the public wharf. It is talked up as a photographer's delight and one of the best spots in the world for so-called muck-diving. Muck-diving gets its name from apparently uninteresting sites that can be either silty, sandy, muddy or just rather barren-looking, but that are actually home to a large number of small, weird and wonderful creatures.

Tufi's wharf dive site is more of a junk dive than a muck dive, the sloping wall of the fjord being littered with debris from the harbour's previous life as a torpedo patrol boat base during WW2, and the dumping of old bits of machinery, the odd fuel drum and some girders that were no doubt formerly part of the jetty. There are also the remains of PT boat and its torpedoes down at 45m, but there was more than enough along the fjord slope and wall to keep us occupied with ornate and robust ghostpipefish, frogfish, ringed pipefish, common seahorse, loads of nudis, crab eye gobies, anemonefish, mantis shrimp, cleaner shrimp, lionfish, and 50m past the remains of the torpedo boat wharf, walls, little caves and tons of sponges on the corner of the harbour. If you fancy a fourth dive in a day, dusk dives are available, and Alex and Archie, the eagle-eyed guides, are experts at finding nocturnal action right by the wharf, including brightly-patterned mandarinfish.

If three or four dives a day is a bit too much, there is plenty to do to fill your time on land. On the Sunday we were paddled up McLaren Sound in an outrigger and advanced into the forest until it became too shallow to make further progress. After a short walk we were given an insight into village life, traditions, the uses of various plants and trees and demonstrations of tattooing and sago-making before being paddled back to the dive boat that whisked us to a white sand beach on the headland opposite the resort for a barbecue lunch and afternoon swim.
In the afternoon you can also walk through the village or amble down to the dock and watch the locals from the surrounding area come in on their outriggers for a trip to the store by the wharf or

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to trade in the village. There is a steady trickle of comings and goings if people watching is your thing, but the main event is the Saturday evening wharf market that springs up when the weekly ferry comes in from Popandetta. That said, I would have gladly dived the sites we did over and over again; every dive was 'wow dive'.

On our final afternoon we took a two-seater canoe and paddled up the fjord, hearing the sounds of the forest as we went. We canoed the deep blue in the centre of the fjord, apparently bottoming out around 200m below, and would pop over to the shallow reef tops for a dip and a snorkel. At many of the small beaches we'd see an outrigger parked up and hear voices in the distance, mainly children whooping with laughter, frolicking unseen in the trees. It is certainly a place that should inspire happiness.

New Ireland

A two hour flight north-east of Port Moresby, with a 10-minute stop in West New Britain near the site of Papua New Guinea's last volcanic eruption, lies Kavieng, the capital of New Ireland province. Located at the northern tip of a 380km long island, sleepy Kavieng and its 11 000 inhabitants hold few attractions for most of the trickle of tourists who venture here to dive and to surf, and there is no accommodation worth staying in. Yet if you like wandering around dusty betel nut-stained streets and dim and musty shops, an afternoon in town after a dive is an interesting experience and was another opportunity to experience the friendly nature of the locals.

New Ireland's diving has a reputation for pelagics and sharks that are attracted by the fresh, deep water that is flushed between the multitude of small islands and passages making up the area –dogtooth tuna, Spanish mackerel, trevally, barracuda and black-tip, white-tip, silver-tip and grey reef sharks all came out to play. New Ireland also has a good mixture of vibrant and colourful reefs, a few interesting muck-diving sites and WW2 plane wrecks aplenty. Dorian Borcherds, joint-owner of Kavieng Scuba Ventures, has a wealth of knowledge of both the Japanese and Allied planes found in the area. Picking us up from the doorstep of our villa on the water's edge, under the palm trees at Nusa Island Retreat opposite Kavieng harbour in the morning, he and his wife Cara took us to sites in both the Bismarck Sea and South Pacific Ocean. Some of the South Pacific sites such as the trevally and anemone festooned Echuka Patch and the Der Yang shipwreck were less than a ten-minute putter away. The Japanese Pete and Jake float planes, stationed here when Kavieng was under wartime occupation, were so close we'd arrived before we could kit up, as were the remains of a Catalina flying boat and several unexploded bombs.

The Bismark Sea sites were a little further, closer to half-an-hour away, but are well worth the trip through the islands and mangroves. Albatross passage has stunning soft coral coverage and a wide range of fish, with pygmy seahorses, cuttlefish, dogtooth and sharks. On an incoming tide it is a truly excellent dive, down by the wall and on the sandy shelf it is calm but ends with a safety stop on reef hooks watching the action below as the current pumps past. On the way back the B-25 Stubborn Hellion awaits in 12m of water on the edge of the mangroves. 68 years after crashing into the sea after sustaining damage in a bombing raid on Kavieng, she is in remarkably good condition, with a spinecheek anemonefish manning the twin-machineguns in the top aft turret. The current can also adversely affect visibility on occasion and we caught what was described by both dive centres as unusually poor viz. It is all relative though and a measure of how good it usually is – the very worst we had was 15m!

Dorian is a positively affable chap with a fun sense of humour, a John Holmes moustache, and will, at

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some point, have you laughing until your mask fills and you can barely keep your regulator in, but he takes his diving seriously. It was only after we'd been diving together for three days that he asked if I'd like to do an afternoon freshwater cave dive half an hour inland. You bet! Despite having well over a 1 000 dives in my logbook, I'd never done a penetration dive, so I was a touch nervous as we clambered carefully down inside the mouth of a cavern.

With two torches each, we carefully slipped into what appeared to be nothing much more than a large puddle, mindful of not disturbing the fine silt on the bottom, and followed an orange safety line down and in. After an initially narrow section we emerged into a series of huge caverns draped in stalactites and stalagmites full of gin clear water, only troubled by the odd halocline.The environment and total stillness were enthralling in their own right, but it was even more thought-provoking with the knowledge that the water level was once much lower and the caves surely inhabited. Close to the entrance and exit, in six metres of water, lie the remains of Japanese rice bowls and a clay bottle made in the late 1800s in the Netherlands. It begs the question what older relics might lay further in.

As well as being home to Nusa Island Retreat, Big Nusa is inhabited by a local community who chat happily with visitors taking a walk around the island. During the windy months from October to March the multitude of small islands and channels are dotted with apparently excellent surf breaks and the accommodation is often taken up by surfers, the owner Sean being a keen wave rider himself, as well as the provider of a good yarn and even better tucker. He also likes a party, and night owls will feel at home.

The other accommodation option is Lissenung Island, an even smaller island twenty minutes boat ride towards the Bismarck Sea. Owned by Austrian ex-engineer Dietmar Amon and his wife Ange, it's seven rooms are ideally located for diving the Bismarck sites like Peter's Patch and its batfish and pelagics, Helmut's Reef, the leaffish and white-bonnet anemonefish at Danny's Bommy, the long wall at Kavin II, Matrix and its whip and soft branching coral, and of course Albatross. They are all excellent sites with varied topography, amazing tiny critters like halemeda and orangutan crabs, abundant longnose hawkfish, schools of one-metre humphead parrotfish, more pygmy sea horses, tiny crinoid-dwelling squat lobsters, horned shrimps and panda anemonefish. We dived some of them several times and would happily return to them repeatedly, although if a choice had to be made, Albatross and its wall overgrown with big fan corals, black corals and sponges just pips the others.

Several times a year Lissenung's twin-engined 26-foot Ozycat heads northwards to New Hanover on expeditions to explore virgin reefs, a Japanese two-man submarine and Chapman's Reef and its resident giant groupers, divers staying in guesthouses on different islands depending on the itinerary.

Contrary to Nusa, Lissenung Island is only occupied by the seven-room resort, has a 'no guests under 12' policy and can be walked around in ten minutes. Basically guests share Dietmar and Ange's private island paradise, with sandy and well-kept gardens, a small but perfect white sand beach with several seahorses basking in the shallows and each room facing the sea.

The staff live on the neighbouring island of Enuk and tours can be arranged to the village and school, whose development the philanthropic owners have been heavily involved in. In the evening the office doubles up as a clinic as locals come in to have a variety of minor injuries dealt with. The usual routine sees the dive boat leave after breakfast and return for lunch. Afternoon and dusk dives leave daily and a secret location is home to more mandarinfish mating after sunset. Afternoon dives on the house reef that goes two-thirds of the way around the island are free, and much of the best stuff is in three metres of water, making it ideal for snorkelling too. It doesn't take too much luck to get

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By Christopher Bartlett

a glimpse of juvenile black-tip reef sharks around the far side of the island.

Milne Bay

Purpose-built Tawali Resort is hidden in the tropical forests on top of limestone on the eastern cape of Papua New Guinea, a two-hour drive and ten-minute boat ride from Alotau airport. A wooden walkway leads up from the jetty to the smart reception area, restaurant and rooms. Milne Bay province got its reputation as a premier dive site through liveaboards started by Bob Halstead, one of the pioneers of Papua New Guinea diving with the MV Telita. In 2004 Rob Van Der Loos, owner of the MV Chertan liveaboard, and Bob Hollis, the owner of Oceanic, starting building a resort to cater for divers who prefer a more luxurious between-dive setting. Arriving late in the afternoon and only having three days for diving, genial dive centre manager and instructor, Alfred, organised a house reef dive as soon as we had dropped our bags off. The house reef is large enough to occupy curious divers for several days. As with Tufi's house reef, a plethora of the ocean's most intriguing creatures can be found very close to the jetty. Warty frogfish, a rather bold octopus and another mandarinfish inhabited coral head were all within 15m of the ladder.

Diving is conducted from a converted tuna fishing boat and seemed like considerable overkill when we walked down the next morning with two other divers – it could have comfortably taken five times our number. Still, it soon proved its worth in the chop as we ploughed along for an hour to Crinoid City. The surface current was pretty strong, but a judiciously placed rope running the length of the hull and down to the mooring point made hand-over-hand progress easy. The aptly named site is a good place for Merlet's scorpionfish as it likes to hide amongst the crinoids, and Alfred soon spotted a green one. Dinner at Tawali had a slightly more formal feel to it than the other resorts, partly because it is the only one where couples have their own table, and partly because the topside staff, on the contrary to their dive crew counterparts, were more reserved than at the other resorts. They paid less attention to detail, with the drawing pin in my soup that I almost swallowed being the most memorable.

The next day the sea was totally flat, like an oil bath, though the current still made for fast drift dives and challenging photo composition. It was clear to see where the area got its reputation with more fish-and-coral-covered reefs. Local guides Jacob and Charlie also had a keen eye for pygmies and pointed out three different sub-species that morning before spotting a bamboo shark snoozing under a small coral head.

Whilst these reefs were all good, Deacon's Reef was, due to its unique topography and more sheltered nature, the stand-out site that we visited. Located next to the shore of the mainland it starts as a sheer wall dive that ends in a series of shallow stone gullies and passages and gives a feeling of flying through a mini underwater mountain range or a moonscape dotted with clumps of long whip coral strands.

Just around the corner lies Lauadi, Tawali's best muck-diving site. Devoid of any coral, the anthracite grey volcanic sand slopes down into the depths on a 30 degree angle. Lurking in the sand, hiding behind tiny bits of rubble and sitting on wood debris, a Pacific seahorse, a 1-cm wide squat lobster, an emperor shrimp, a pasta-like flabellina nudibranch and several more anemonefish allowed themselves to be digitally captured. It was the last dive of the trip and it was ending with another great dive. The other three divers and two guides had gone, and even Charlie was starting to look a little bored. I had been down 65 minutes already, it was time to go back to the boat. Unfortunately, close to the shore at a depth of five metres, we went past a three metre by three metre patch of rubble and coral. I tried not to look at it. I failed and a zebra dwarf lionfish caught my eye, and then so did an eel and a peacock mantis shrimp that scurried under two more lionfish. I shrugged apologetically and Charlie emptied his BC and lay down on the sand. Papua New Guinea had turned out to be highly addictive.

Multi-resort itineraries and visits to Goroka can be organised by Indigo Safaris - email info@indigosafaris.com

Or for more information, email the author at cb@christopherbartlett.com

By Fiona Mcintosh

Pestana Inhaca Lodge

If you're in need of a tropical island getaway but can't afford to take any time out of the office, the tiny island of Inhaca, in Maputa Bay is just the ticket. A 10 minute flight from Maputo and you're on the verge of the tropics, among palm trees and golden beaches, making your way to the only resort on the island, the Pestana Inhaca Lodge.

Although it has 40 rooms, the Pestana has an intimate feel about it with a big open bar and out side tables on an esplanade around the large salt-water pool. There is plenty to amuse – a tennis court, games room, the Pestana Kids Club – as well as two conference rooms, which can accommodate 90 delegates. Improvements are planned for the end of the year – the lodge will undergo an upgrade to it's current facilities to the value of R5 million, delivering larger rooms with new showers and revamped common areas.

The rooms are simply furnished but very comfortable – with bright bedspreads, fans and mossie nets that are set up each night when your bed is turned down, satellite TV and coffee making facilities. In a nutshell it is perfect base from which to enjoy the delights of the island. The food is superb (well, this is Mozambique after all) with fresh salads, fish, prawns and curried crab as well as the staple prego rolls and chips. Try to be there for the Saturday night buffet if you can when clams, seafood kebabs and huge steaks usually feature large. And if you're planning a full day of diving – rest assured, the buffet breakfast will sustain you.

Diving is managed by the Gone Fishin watersports centre, which is well equipped, and very well run, with friendly, efficient staff and a variety of activities ranging from parasailing to windsurfing as well as whale and dolphin watching trips. Land based excursions include those to the lighthouse and to the interesting little biology station which houses a collection of marine specimens – including the skeleton of a dugong – put together a by the University of Maputo. Snorkelling in the Santa Marie Channel is superb and there are day trips to

Dive the Globe
Inhaca Lodge

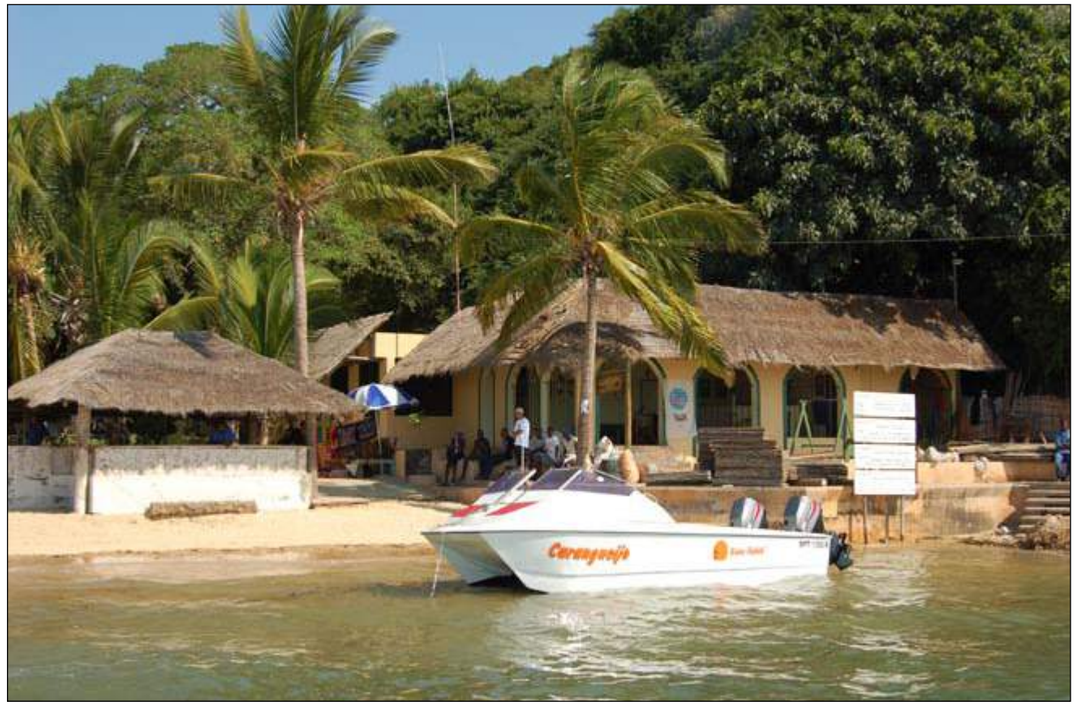
By Fiona Mcintosh

neighbouring Portuguese island and other quiet spots. Inhaca is best known for its fishing – the game fishing is excellent with dorado, barracuda, king mackerel, tuna and kingfish the main prizes and salt water fly fishermen are spoilt for choice when it comes to idyllic spots to cast a fly.

The best diving is a 40 minute boat ride away at Baixo Danae. Outside the bay, the seven kay long reef offers a choice of dives including Boiler's Point and Raggie. On a good day the diving is world class – in season you'll often see manta rays, whales and other big pelagics as well as stunning reef life – but you can also be unlucky. Diving in the open ocean is weather dependent - though even if it's howling you can always dive the sheltered site of Santa Maria. It's not a patch on the outer reefs but is great for novices and trainees. Our best dive was at Raggie (known for the seasonal proliferation of ragged tooth sharks). We dropped on to a wreck with vast boilers and cannon-like ribbing adorned with black coral. A shy potato bass ventured out from its lair in a tunnel, nudging away the curtain of sweepers at the entrance but retreated at the sight of divers. Next to the wreck was a magnificent amphitheatre adorned with plate corals, with colourful shoals of yellow and blue fusiliers clothing the reef. Surgeon fish thronged the mid-water, their distinctive shapes silhouetted against the sun. And as we began our ascent a big sharp nose ray cruised by.

If you're only going for the weekend the best plan is to fly or drive down to Maputo on Friday evening and overnight in the Pestana Rovuma, only 15 minutes from the airport. The central, modern, business hotel is luxurious, with all mod cons including satellite TV and free Wi-fi internet access so if you haven't quite finished the week's tasks you can always tie things up before heading for the island. An early morning flight gets you to Inhaca by 8.15am ready for a couple of dives. If you want to dive on the Sunday take the boat back – it's a fun one and a half hour journey across the bay. The Rovuma is close to the marina – and the downtown bars and restaurants.

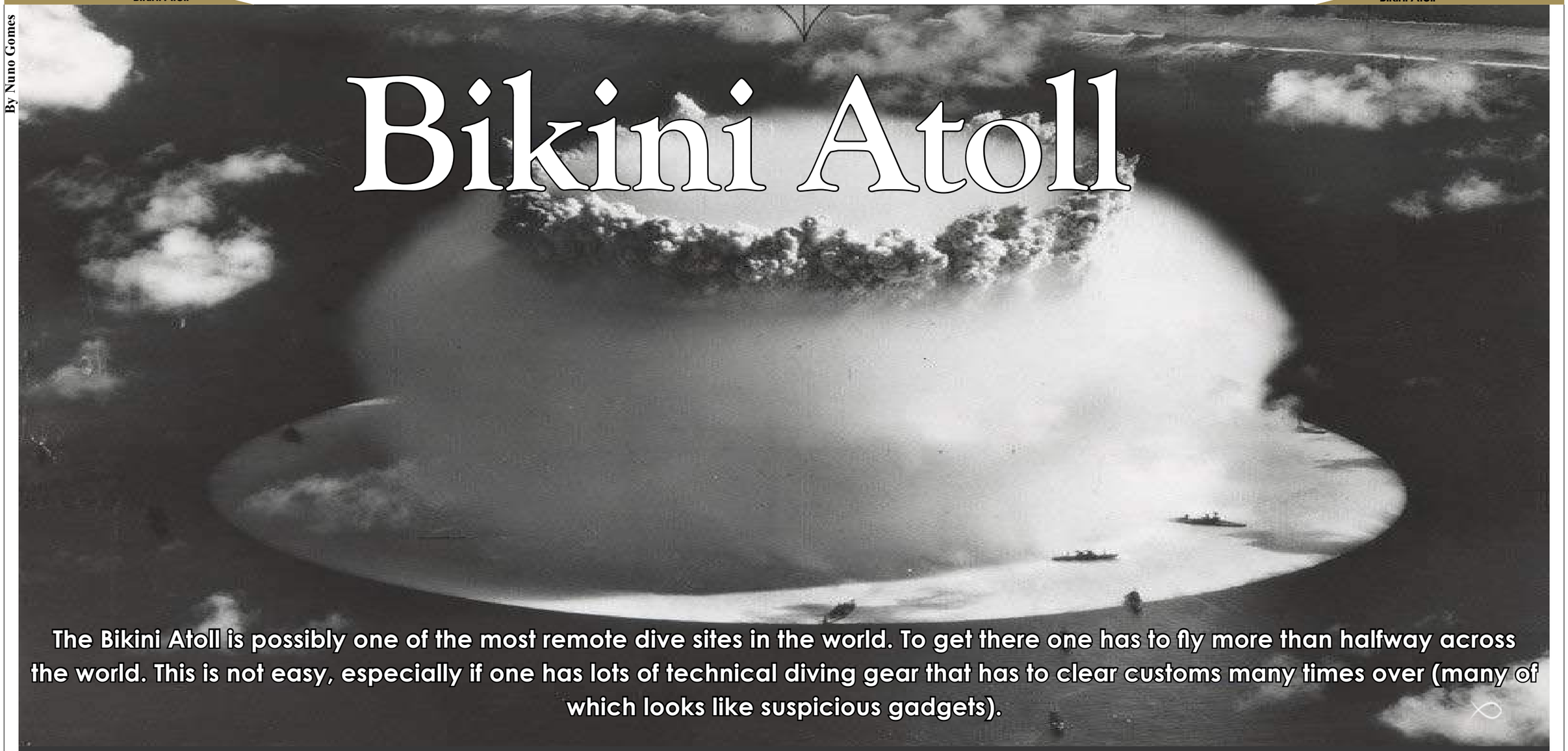
For more information and reservations visit www.pestana.com.



Wreck Explorations
Bikini Atoll

By Nuno Gomes

Bikini Atoll



The Bikini Atoll is possibly one of the most remote dive sites in the world. To get there one has to fly more than halfway across the world. This is not easy, especially if one has lots of technical diving gear that has to clear customs many times over (many of which looks like suspicious gadgets).





By Nuno Gomes

The journey starts when you fly to Manila (in the Philippines) and finally to Guam, where we met with Leszek (the dive leader), Kris and Balinski from Poland. We also met Mirek, the trip coordinator, from the USA.

From Guam, the entire diving team flew to Truk and then to Pohnpei, followed by Korsae, and finally to Kwajalein, a US military base. We had been flying for two and a half days, with some short layovers in between.

Our traveling was, however, not yet over. It was time for a sea voyage aboard the Windward. This ship took us from Kwajalein to the Bikini Atoll, a distance of 215 nautical miles. It took approximately one and a half days, but it can take longer depending on the sea conditions. Some of the divers suffered from sea sickness, so it felt very long at times.

Finally, we arrived at the Bikini Atoll. There was not much to see on the surface, but the reason why we were there lay underwater. Shipwrecks. Lots of them – ten in total.

After the Second World War, in December of 1945, President Harry S. Truman issued a directive to the army and navy officials that testing of nuclear weapons would be necessary to determine the effect of atomic bombs on Japanese and American warships.

The Bikini Atoll, because of its location away from regular air and sea routes, was chosen to be the best nuclear testing ground for the United States government.

The two atomic bomb blasts, the Able and Baker detonations, were both about the size of the atomic bomb dropped on Nagasaki, Japan.

The experiment had been successful, and we were about to discover what the effect on the war ships had been. The sea was clear and warm in the calm waters of the Bikini Atoll.

Wreck Explorations
Bikini Atoll

By Nuno Gomes

We did eight days of non-stop diving, two dives per day per diver. The dives to the wrecks located at an average depth of 54m were mostly done on trimix. There was not much to do on the boat so we spent about 4-5 hours underwater each a day. No one was complaining.

We managed to dive the three most important wrecks; the wreck of the USS Saratoga, the wreck of the imperial flagship of the Japanese Navy, The Nagato, and the wreck of the submarine USS Apogon. We also dived the wrecks of many war planes.

The size of the wrecks was impressive. It is very easy to get lost inside and even outside of these immense wrecks, some of which are in excess of 300m long. Wreck diving and deep diving experiences are a must, and scooters are very useful indeed.

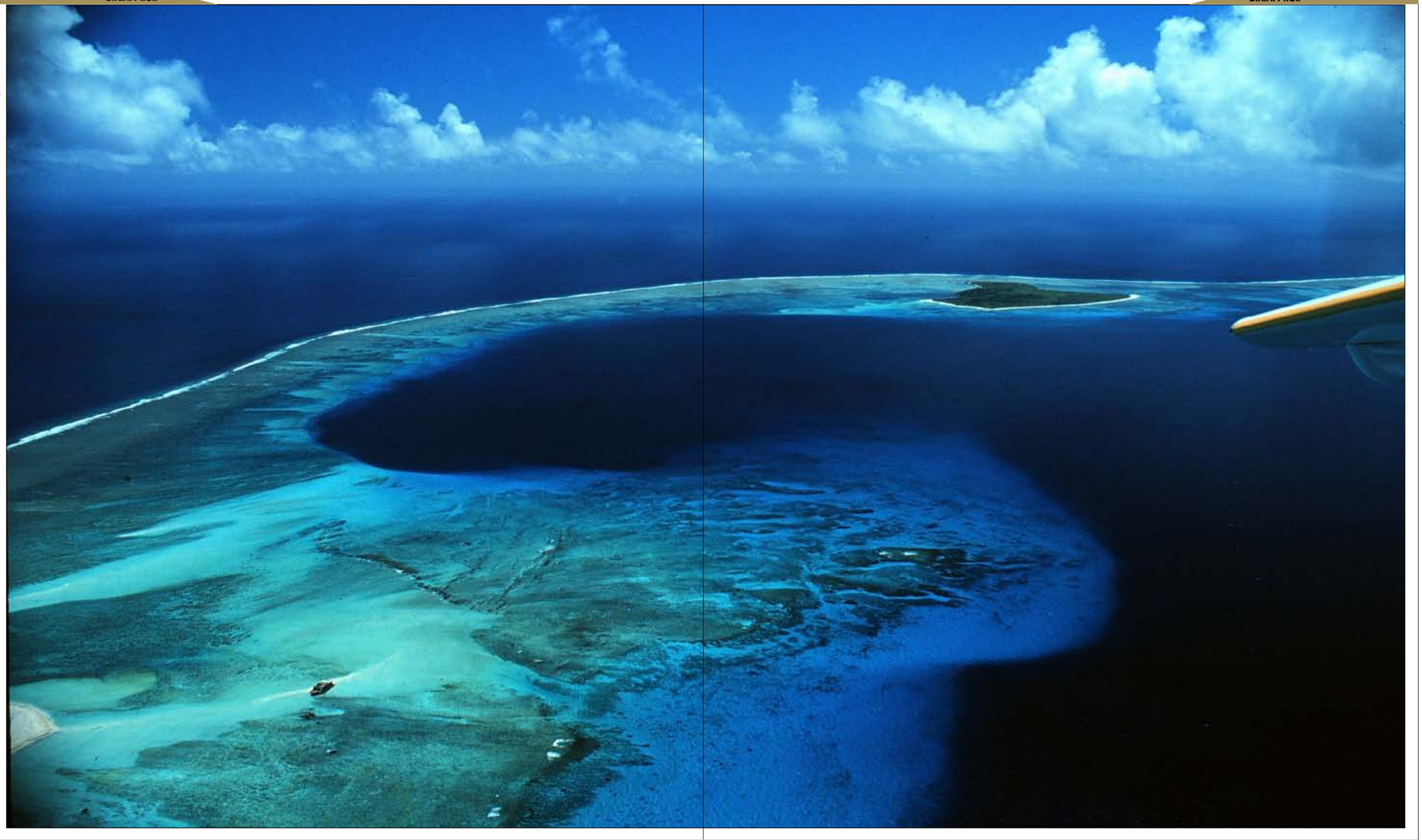
Living aboard the Windward, a fully equipped commercial diving boat with a re-compression chamber (which was tested, but not used) and oxygen generator, was comfortable.

The food and wine (in moderation) were excellent. The crew was very knowledgeable and always ready to help.

Going back in history made this diving expedition a memorable and unique experience. It was a once in a lifetime experience and the wrecks were amazing with lots to see, both inside and outside.

Wreck Explorations
Bikini Atoll

By Nuno Gomes



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DEEP DOWN YOU WANT THE BEST

Through the Lens
Photographic Competition

Photographic Competition

Frans Wessels

Alex Koen

Betsie van der Schyff

Bill Hall

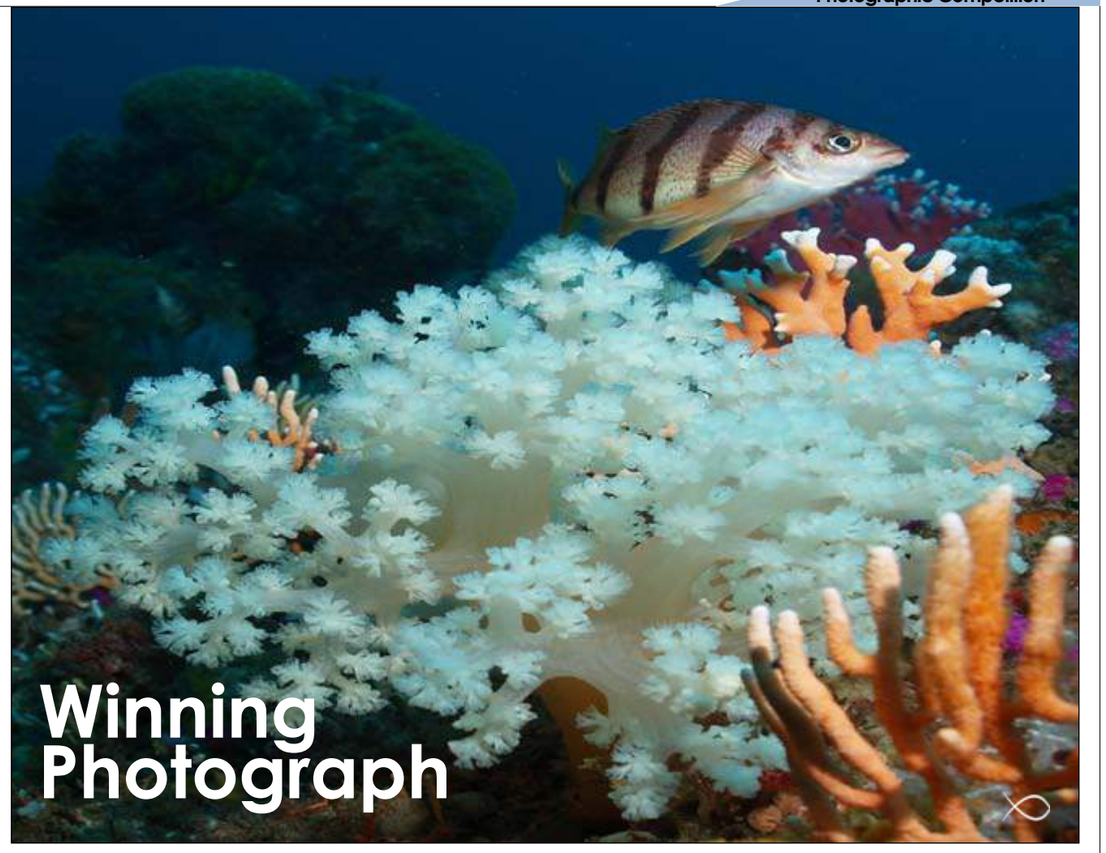
Brent Cairns

Gavin Chamberlain

Leigh Sleight

Clint Wall

Through the Lens
Photographic Competition



Charles Rowe

How to enter your photograph

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

Submit your photo!

-- Photographs may be taken above or below the water, as long as diving remains the theme.

-- The Name of the photograph must be the photographer's name.

-- Photographs must not be bigger than 5 MB per photo.

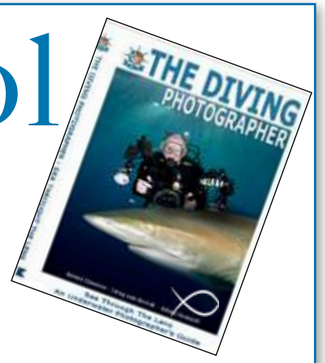
-- Submit your snaps in high-resolution (at least 150 dpi) in jpeg format.

Visit www.ozdiver.com.au, click on the "photographic competition" link and follow the steps.

By Karlien Euvrard

Photo School

Black and White (Part 5)



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

Black and white photos are still considered by some as the purest form of photography because it emphasises lines, forms and shapes. It is at the very least one of the most expressive forms of art, classical yet unpretentious. Leonardo da Vinci said that simplicity is the ultimate sophistication.

Taking black and white photos
Most photographers do not go out to shoot black and white picture, but try visualising what your picture would look like in black and white. Not all subjects will look good in black and white, so take pictures of objects with definite and easy recognisable shapes such as dive buddies, sharks, turtles or fish. In the absence of colour, contrast is more pertinent, therefore pay attention to lighting. Light becomes a key element because it influences patterns, textures, shapes and contrast. You will find that most often those overcast days are the best for black and white photography. Remember when shooting in mid-day or with artificial light such as strobes, shadows and highlights will become a critical feature in your picture. Always shoot with the lowest possible ISO to prevent a grainy effect.

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

Fixing exposure errors and distracting colours
Photos which may be considered flops can become some of the best black and white photos. For example, if your ISO was too high and you have a picture with a grainy effect, converting these into black and white will give the picture and old, nostalgic effect. Some exposure problems can also be fixed by converting pictures into black and white and playing with the contrast.

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

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

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

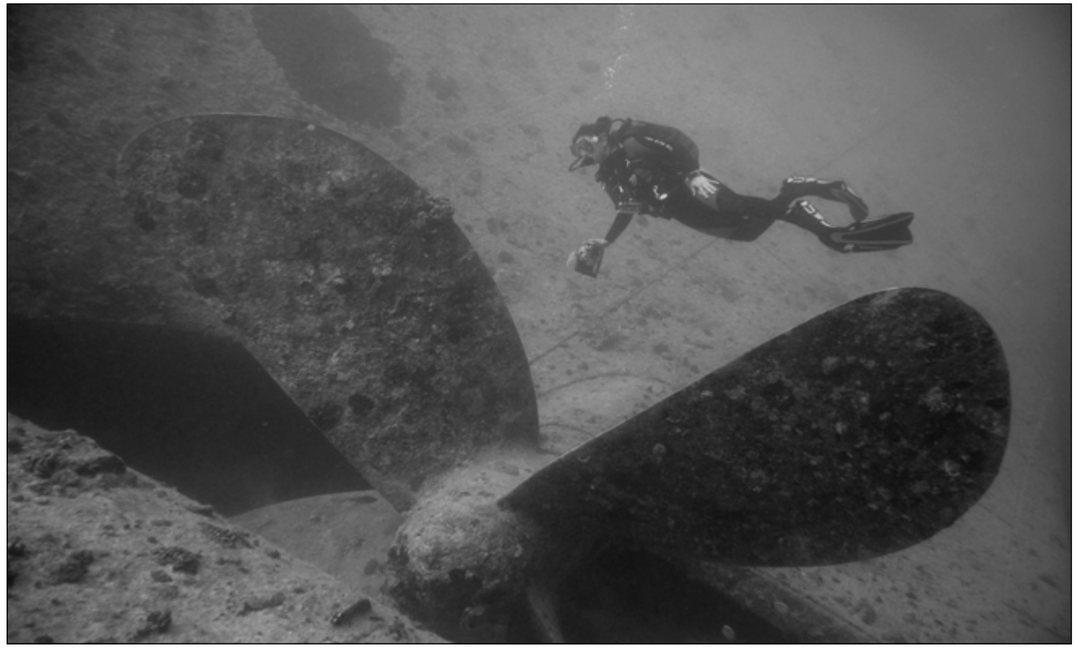


Photo Editing
Finishing touches
Part II

By David Caravias

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

Quality

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

None
No interpolation is used. Pixels are simply enlarged or removed, as they are when zooming. This method is low quality, but very fast.

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

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

Sinc (Lanczos 3)
New with Gimp 2.4, this method gives less blur in important resizing.

Creating a copyright watermark to add to your photos

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

Making your signature

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

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

HANDY TIP: Many people struggle to find the Copyright symbol for the signature so the easiest way to add the © symbol is to Google 'copyright symbol' and then copy the symbol (Ctrl c) from another web page and then paste it (Ctrl v) into a new Gimp text entry. It is best to add this as a separate text entry in a new layer as normally you will need to change the size of the copyright symbol and the position related to the text.

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

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

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

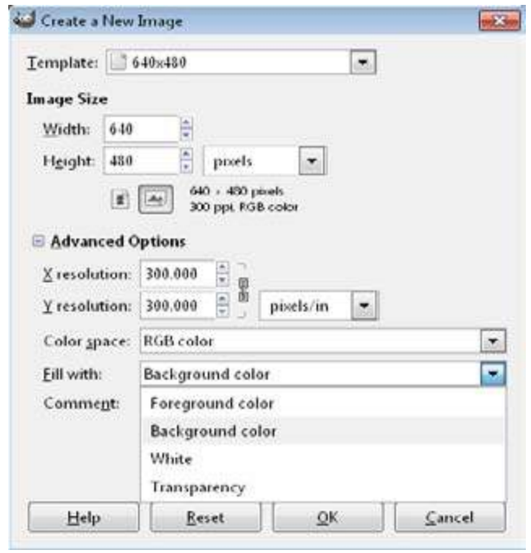
Click Save and then select 'Merge visible layers' when asked and click 'Export'. Choose spacing 25 and then add in a description/name for the signature that will show in the menu for future use, e.g. "My Signature", and click Save.

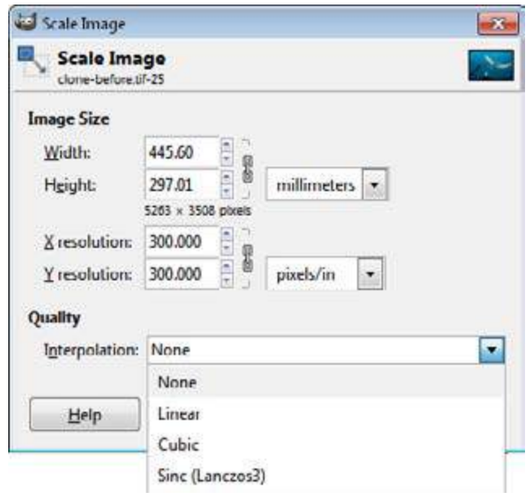
Once you have saved this it is then best to close Gimp completely and restart. Then when you open your images, click on the brushes icon and you should find this in your list of brushes to choose from. Then for every one of your photographs from now on, all you need to do to add your watermark is select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

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

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

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





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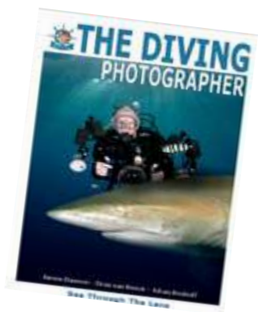

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I love the biodiversity of reefs most. There is nothing better than hovering weightlessly about a reef and seeing things like a clown fish darting in and out of an anemone or a moon wrasse hovering around a rock looking for something to eat.

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

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Giant Stride
Deep Diving

By Nuno Gomes

Historical Deep Diving

Deep diving and the science and technology associated with it has evolved slowly over the years. Many courageous men and women have risked and given their lives in the quest to go deeper and advance our knowledge base.

By Nuno Gomes

Today sport diving is a very safe sport as a result of the knowledge that we have today. Deep technical diving is still not fully understood, and in many instances it still remains experimental.

But what is it that attracts us to want to go deeper and out of our comfort zone? I am sure that it is very much the same motivation that attracts us climb to the top of Mount Everest or to want to go to the moon –we are dreamers and we like to pursue our dreams and sometimes they become a reality. Science and technology has benefited from our dreams and so has human kind.

People have been diving for a very long time. The first dives were primitive and not very deep, only a couple of metres. Today we can go to depths in excess of 300m. It has not been easy though and it is still difficult, hazardous and sometimes fatal.

How did we get there?

While the first dives were reported to have taken place as far back as 300 BC, in the times of Alexander the Great for military purposes, it was not until 1715 that the first regular salvage working dives took place using the "Lethbridge's diving apparatus". Using his apparatus he carried out salvage dives down to 20m with dive times of up to 30 minutes.

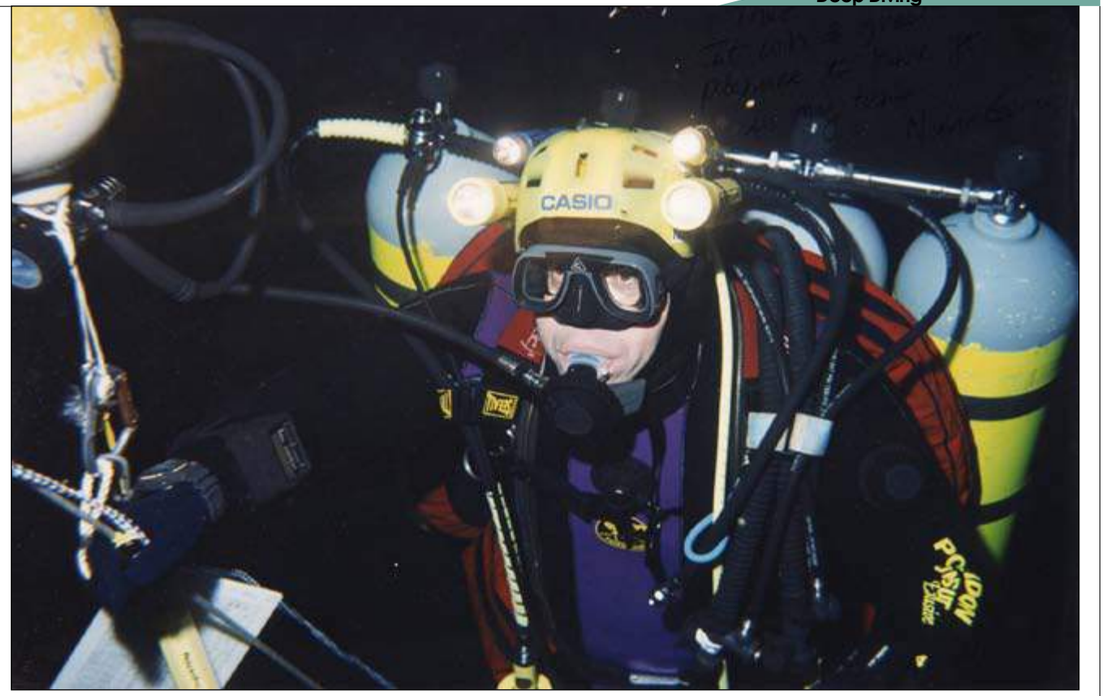
In 1837 Siebe started using a brass diving helmet together with a rubberised canvas dry diving suit. A few years later, in 1850, Green dived in Lake Erie, in the USA down to 20m using diving armour. He also dived close to 50m on the Silver Banks.

A major leap in diving occurred when the first diving school was established, by the US Navy, in 1882. This was followed, in 1904, by the British who carried out working air dives down to 64m using the brass helmet with a rubberised diving suit. In 1905 the US Navy introduced their Diving Manual to assist in the training of divers down to 60m. Soon after, in 1906, Haldane also published his diving tables for air diving down to 60m. By 1915 the US Navy pushed air diving down to 90m, using their standard hard hat (brass helmet) with a rubberised diving suit during the recovery of the U.S.S. F4 submarine.

Some years later, in 1918, a Japanese company invented the "Ohgushi Peerless Regulator" for self-contained air dives – it was used for dives down to a depth close to 100m.

Realising that they had reached the absolute maximum practical depth for air, diving the US Navy started research into Heliox (Helium and Oxygen) diving in 1920. It was not until 1927 that it had the capability to carry out dives with Heliox (mostly 80/20) in conjunction with the US MKV MOD 1 (this was a modified US MKV air diving brass helmet) down to 90m.

Oxygen toxicity issues were a problem associated with deep diving and long decompression times. Behnke in 1935 determined that times and depth were important factors. He also established the importance of the Oxygen Window in decompression. In 1937 Behnke performed an experimental dive, in a chamber, down to a depth of 150m, at the United States Navy Experimental Diving Unit (NEDU). Soon after that Max Nohl



By Nuno Gomes

By Nuno Gomes

dived to 128m, in Lake Michigan, using heliox.

In 1939 the first submarine crew, to that date, was successfully rescued from the U.S.S. Squalus, lying at a depth of 74m. The Davies rescue bell was used in conjunction with divers using standard dress (US MKV brass helmet and rubberised canvas suit) and heliox.

After the Second World War in 1942, Cousteau, together with Gagnan, perfected the two stage regulator. This was the birth of Self-Contained Underwater Breathing Apparatus (SCUBA) as we know it today. Dumas used the scuba regulator to dive to 94m on air. During the deep air experimentation period a number of experienced divers lost their lives.

The first ever dive using hydrox (hydrogen and oxygen) was carried out by Zetterstrom, in Lake Maggiore, in 1945. Unfortunately he died during the ascent of the bell from 160m due to problems related to his inability to change over to decompression gases with sufficient oxygen.

The 160m barrier was successfully broken in 1956 when the Royal Navy performed an heliox dive, using the brass helmet and rubberised dry suit, down to 183m. This was a major achievement for the time… it still is today.

Two years later, in 1958, a dry chamber trimix (helium, nitrogen and oxygen) dive to 304m was performed by Hannes Keller. The theoretical tables

for the dive which went down to 400m had been developed by Keller and Buhlmann.

By 1961 Keller and Buhlmann were ready to do actual dives. Keller and MacLeish dived to 220m in Lake Maggiore using a diving bell and heliox, which was a major breakthrough. Keller wanted to break the 300m barrier and he and Peter Small reached 310m, using a secret mix (trimix), in 1962 off Catalina Island in the USA. The dive was made with the use of a diving bell to descend to the deepest point. The same bell was also used for the ascent and decompression. The US Navy supplied a support ship but the dive did not go well – Peter Small and Chris Whitaker (a support diver) died.

In southern Africa, divers Roly Nyman, Ian Robertson and the brothers John and Danny van der Walt made a world record scuba dive to 102m using scuba and trimix at the Sinoia Caves in Zimbabwe in 1969.

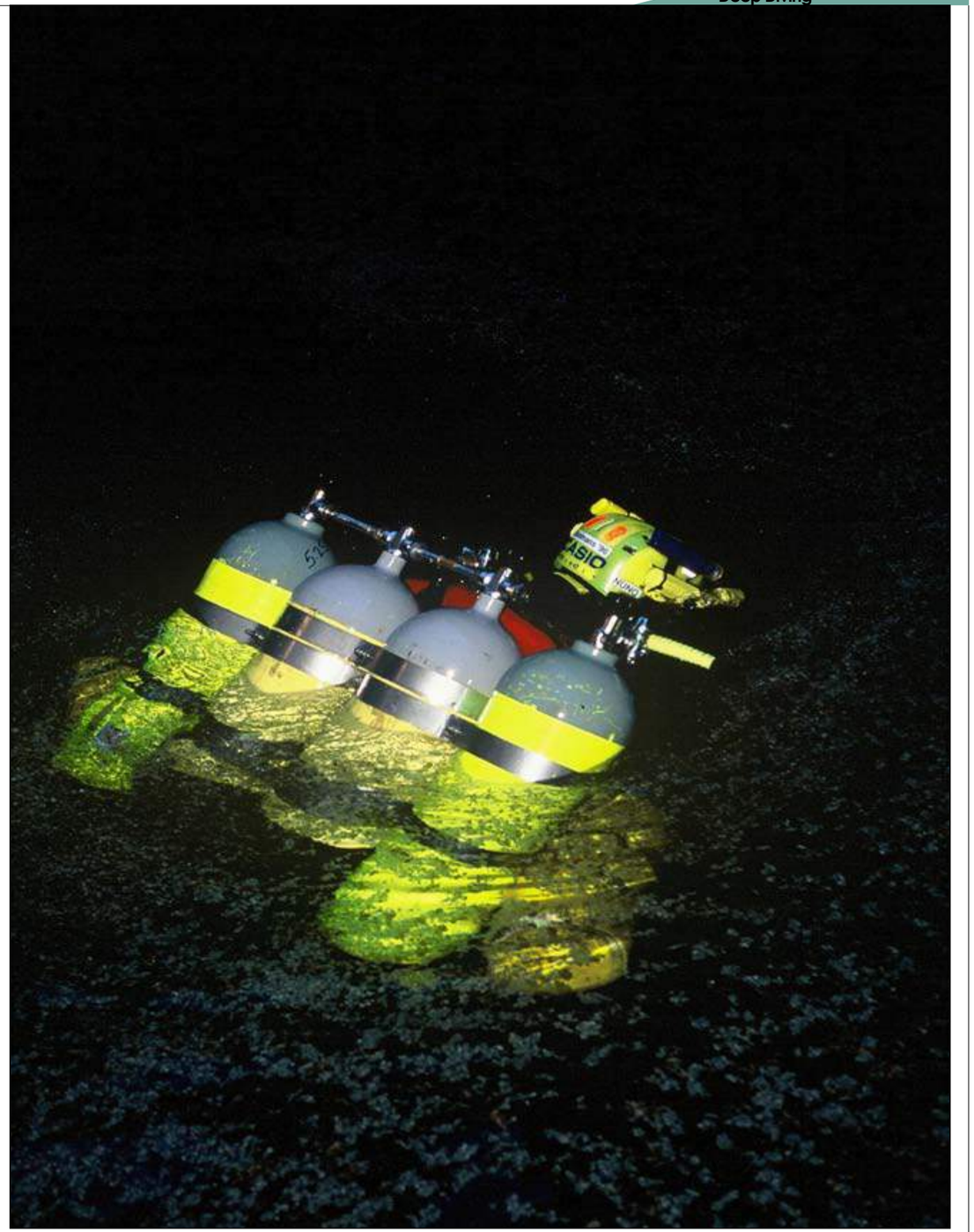
A major breakthrough took place in deep diving when the US Navy performed a series of experimental saturation dives, in a wet chamber, and reached a depth of 548m in 1979. This was followed in 1981 by more wet chamber experimental saturation dives, at Duke University, to a depth of 685m (this is still the world record for a simulated dive in a wet chamber/saturation system). They used a gas mixture composed of hydrogen, helium and oxygen (hydreliox).

The deepest salvage dive in the sea took place in 1981. The United Kingdom based divers operating from the salvage vessel "Stephaniturn" dived to 244m using a bell/saturation system with trimix to salvage 431 Russian gold bars from the wreck of the Edinburgh.

Swiss diver Hasenmayer, reached 205m in 1982 in the"Fontain de Vaucluse" cave, in France, using scuba and heliox (helium and oxygen). He used the Buhlmann algorithm to determine his decompression. He was, however, paralysed from the waist down in a subsequent shallower dive and unfortunately did not recover after recompression treatment.

It was not until 1988 that the French salvage company "Comex" did actual experimental sea bell/saturation dives with hydreliox (it is though that the gas mixture was 49% hydrogen, 49% helium and 2% oxygen) to a maximum depth of 530m (this is still the world record for an actual bell/saturation dive in the sea).

In 1988 Sheck Exley from the USA broke the world record for deep cave diving by diving to a depth of 238m with scuba using trimix, in the "Nacimiento del Rio Mante" cave. The following year he went on to break his own world record with a dive to 264m



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By Nuno Gomes

in the same cave.

Exley's dream was to break the 300mbarrier on open circuit scuba using trimix. Working up to that, in 1993, Anne Kristovich supported by Jim Bowden and Exley broke the world record at Zacaton cave in Mexico, when she reached a depth of 169m. The following year, in 1994, Bowden and Exley dived the Zacaton cave in Mexico, once again. Their intention was to surpass the 300m barrier, yet only Bowden returned from the fatal dive. The world had lost one of the best divers ever at a depth of 271m. Bowden became the new world record holder having reached a depth of 281,9m.

Southern Africa, after a break of 27 years, in 1996, became the focus of attention for scuba diving, once again. The author, with the assistance of his diving team, reached the bottom of Boesmansgat cave in South Africa, measured at an average depth of 282,6m using trimix. The total dive time was in excess of 12 hours because, with the high altitude, the equivalent sea level depth was 339m. This was a new world record in terms of cave diving and altitude diving.

The year 2000 placed women divers at the forefront of diving once again. Claudia Serpieri from Italy broke the 200mbarrier when she reached the depth of 211m in the Mediterranean Sea, on open circuit using trimix.

In 2000/2001 southern Africa was in the news once again. Pieter Venter found living Coelacanths in the sea, off the coast of Sodwana Bay in South Africa, at a depth of 115-120m. The dives, on open circuit, to film these fish (living fossils) had bottom times of 20 minutes.

History was made, in the sea, off the coast of the Philippines in 2001. John Bennett from the UK performed the first ever dive below 300m on open circuit scuba, using trimix. John, assisted by his team, reached an incredible depth of 307,8m.

In 2003, three German divers, Chris Ullmann, Volker Clausen and Manfred Fuhrmann, did the deepest dive on a rebreather. They reached 224,5m in the Red Sea off the coast of Egypt. This was the first dive on a rebreather below 200m.

The year 2004 will be remembered as the year in which two world records were broken. Verna van Schaik from South Africa reached 221m on open circuit (supported by Dave Shaw and Don Shirley) and Shaw from Australia reached 270m on closed circuit. Both dives were conducted at Boesmansgat in South Africa at an altitude of 1 550m above sea level.

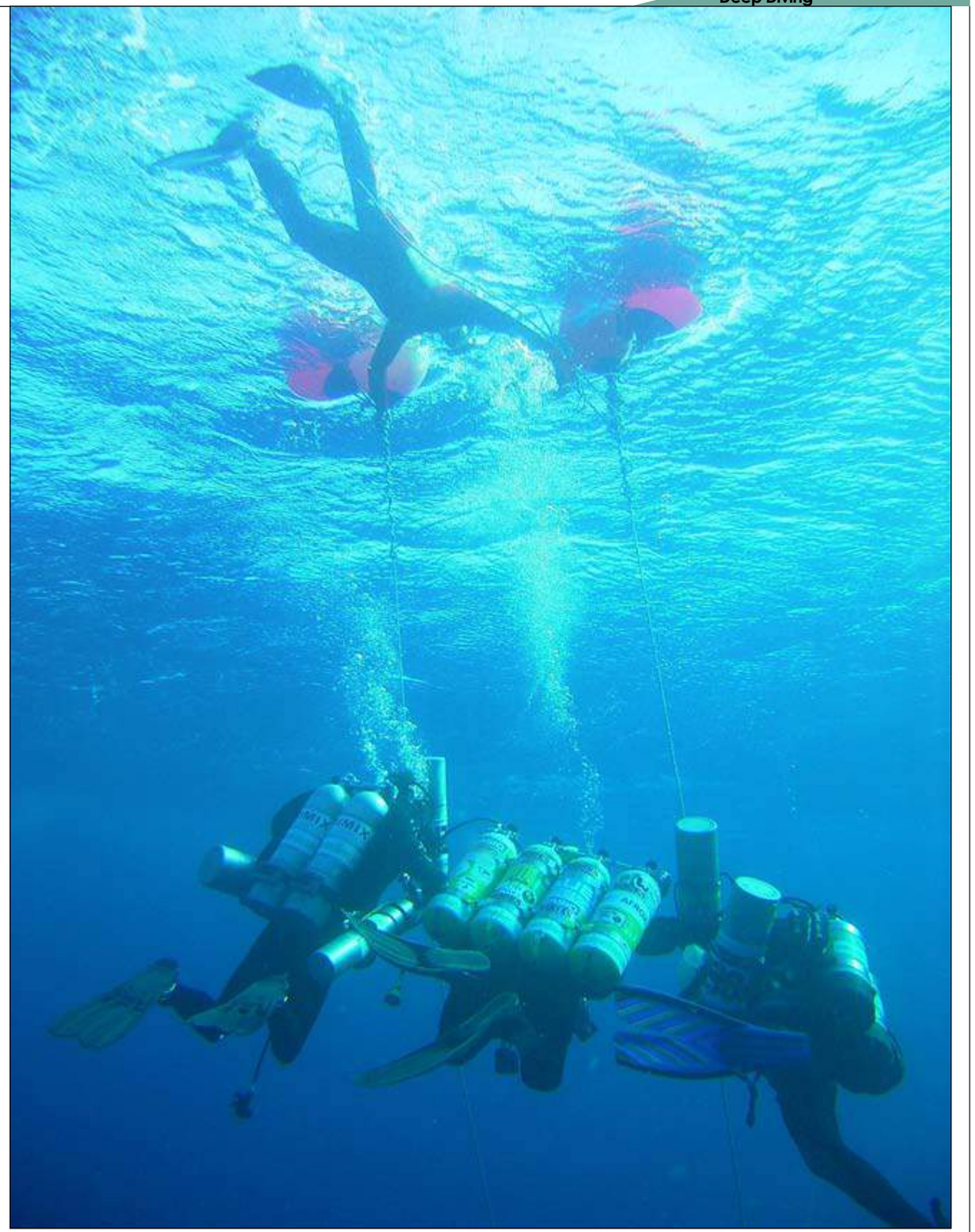
The following year, 2005, would be one of the most tragic in South African diving history. Shirley from the UK (now a permanent resident of South Africa) together with Shaw attempted to recover the body of Deon Dryer from 270m, at the bottom of Boesmansgat. Only Shirley surfaced, suffering from severe decompression sickness following his dive to an estimated depth of 240-250m. Boesmansgat had now claimed the lives of three divers

Later in 2005 the author would go on to dive to a new world record depth of 318,25m (excluding any rope stretch), off Dahab, on the coast of Egypt. He was assisted by a South African and international team of divers and film makers in his quest. The twelve hour and twenty minute dive was an unqualified success. With the required proof the dive was and still is the official Guinness World Record for the deepest scuba dive in the sea.

The wreck diving records held by divers such as G. Dominik (Poland), L. Cunningham (UK) and M. Andrews (UK), on the wreck of the Yolanda would be broken in 2008. Divers A. Scuotto (Italy), P. van der Horst (Netherlands) and M. Marconi (Italy) dived to the wreck of the Milano lying at a depth of 236m on the bottom of Lake Maggiore, in Italy. They use closed circuit and a commercial diving bell for decompression purposes.

The history of deep diving spans many years and there have been many divers who have contributed and died in the process that I could not mention here. Some could not prove their feats and others never published them for whatever reason. The fact remains that deep diving should not to be taken lightly – the consequences can be near or even fatal. Treat it with the respect that it deserves and never become blasé.

Giant Stride
Deep Diving



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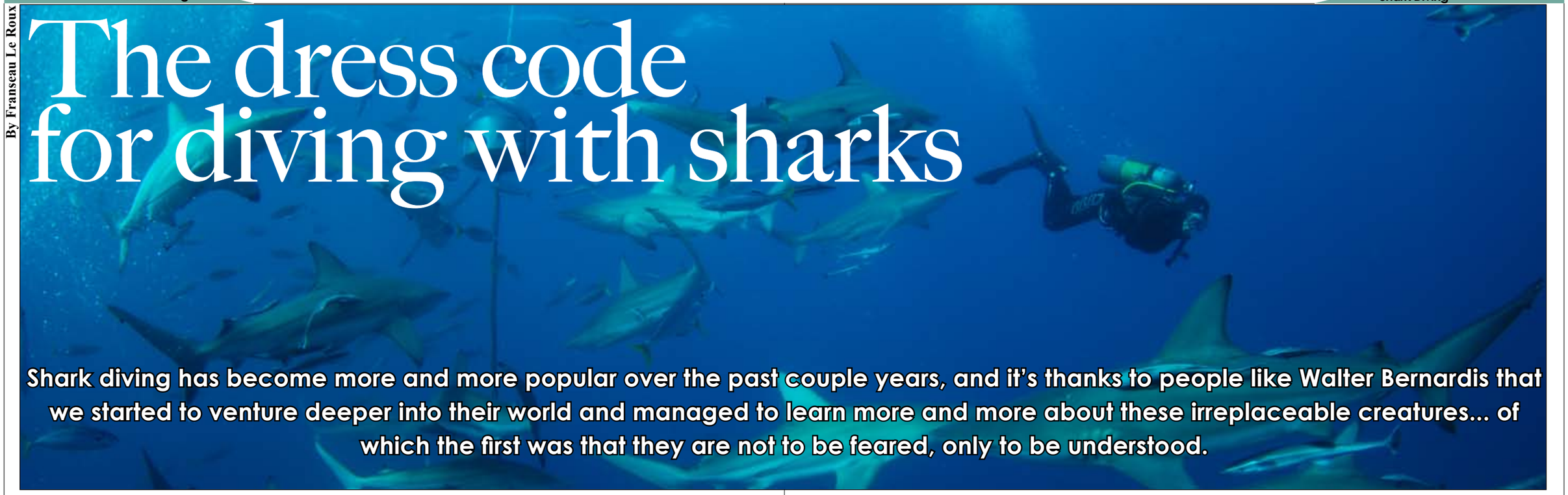
Giant Stride
Shark Diving

By Franseau Le Roux

The dress code for diving with sharks



Shark diving has become more and more popular over the past couple years, and it's thanks to people like Walter Bernardis that we started to venture deeper into their world and managed to learn more and more about these irreplaceable creatures... of which the first was that they are not to be feared, only to be understood.

Now, before I get carried away with the importance of sharks and how incredible they are, today we are talking about how to dress for a shark dive. And instead of trying to sound like some kind of shark guru, I will rather approach this in a more commonsense kind of way.

As we all know, sharks are predators... and very prehistoric ones at that. Adding these factors together equals a creature that firstly needs to hunt for its food, and thus was issued with a proper set of machinery in the front which makes them dangerous. And secondly, one which has no real ability to think about things too much... or consider life in general, No, they need to feed and breed. If confronted they will either fight or flight.

Sharks, like any other predator, patrol their liquid landscape in search of food, and at certain times mating opportunities. They detect and track them down with some of the most finely tuned senses known to man. Their eyes, for example, with most sharks, have something called a 'tapetum' which is a layer of cristaline and basically consists of silvery plates that can either be set to reflect even the slightest bit of light entering the eye (in very low light conditions, such as sunset to sunrise), basically giving them actual 'night vision, or in very bright conditions (swimming up into the sun to make an attack) the silvery plates can migrate back and absorb most of the light.

This means that they are able to switch from night vision to a proper pare of skiing goggles, in a matter of moments, meaning consistent vision in any light condition... making sight without a doubt one of their most important senses.

If we want to enter their world we need to have a very good understanding of what it is we are dealing with and make adjustments on our side so that we fit in. The aim for every successful shark dive is to be able to not be seen as food, nor as a threat. This unfortunately doesn't always happen, and most of the time it's because we are seen as a threat, and thus don't see as many sharks or maybe a specific specie like we were hoping for.

Obviously sharks cannot but react to what they see. They run through their check list to see whether something sighted could be food or not. If it behaves like food and looks like food, they will go and investigate. If we, for example, enter an environment where things are seen in contrast, with bright colours like lime yellow or silver fins, we are inadvertently creating attraction to predators that hunt things that reflect light in a very similar way.

Please understand that different sharks in different areas react differently. They hunt different looking prey and will react to different visual stimuli, and there is just not enough research to prove what is best at each location. Now, on normal dives most of the time divers travel in little 'schools' themselves as they cruise along the reef. And there is always safety in numbers, so most of the time sharks in this case will see you way before you know about them. They would have already made their verdict as to either get a closer view and monitor our behaviour, or as is mostly the case, decide that this could be a threat and to not proceed.

In the case of diving with sharks on an event like the Sardine Run, as well as baited dives, these can be very different scenarios. The sharks in this case make their way to the baiting station knowing that there is food... that's why they are there. Exactly what the food is though, they might not know yet. They will react to what they see, and along with their other senses, try and figure this out.

This means that a brightly striped fin, the silver on your BC, the first stage and valve on the cylinder, the front and back of your hands that change from light to dark as you move around, silver camera housings

By Fransceau Le Roux

and strobes, all could possibly be the food they are smelling. This means that they will, to the most extent, swim up to it and try it. Sharks are not maneaters – that is a fact. Sharks have without a doubt scavenged on dead bodies which have started to rot after a shipwreck, but they do not hunt humans.

On the baited dive we should change our behaviour and general look in the water. Firstly we need to get rid of all the shiny and bright colours... on fins, BC's, wetsuits, and in this case, black is best, but reds and the rest of the dark spectrum are normally not a problem either.

Make sure that dive computers are turned facing in and gauges are tucked away so that they don't reflect any light off the glass faces. Gloves are very important... and ones with white palms or silver stripes on top are completely redundant. Cameras and strobes should also be blackened or covered with some dark neoprene to prevent them from reflecting any light.

Also, when taking stills/video, always keep the camera at least a foot in front of you so that you have a clear peripheral view of what might come from the side – sharks might not be the most intelligent creatures but they know very well where your eyes are and what your back looks like.
Your posture and position in the water is just as important – once again, trying to not look like potential food, we act the opposite of what food does, i.e. we always stay upright in the water and don't swim horizontally, like fish do.

And most importantly, never try and swim away from a shark –you will lose that race and end up in trouble... stand your ground and always face the shark. The urge you might have to scream at that moment will come in handy if the shark still continues and enters your personal space – the sudden burst of bubble and noise will create an immediate threat which will make the shark choose the flight option and turn away.

Unfortunately people have died because of sharks, and the main reason is because we as humans are way too fragile to survive out in the ocean... we seem to sometimes completely forget that when we enter the

By Franseau Le Roux

water we are actually the intruders – we are the ones to whom this is a hostile environment, and like anything else in life, you need to assume that risk every single time before you play with sharks.

You need to make the effort from your side to not look like food and to not create an attraction which you do not want to deal with. Simply stated, it boils down to commonsense. If you walk into a bull ring with red you need to pay attention.

10 things to consider when joining a shark dive:

1.Make sure all your 'danglies' are tucked away, such as gauges and octos.

2.Avoid the 'butterfly effect' with your hands as you try and maintain buoyancy. Have your hands crossed in front of you.

3.Acting like prey will result in you being treated like prey... stand your ground and never run away!

4.When confronted with an inquisitive shark, always maintain eye contact, and if he does move into your personal space, yell loudly through your regulator.

5.Avoid gear such as fins with bright colours or silver stripes – anything that reflects light well. I would even go as far as to advise anybody with bright silver/ grey hair to wear a hoodie.

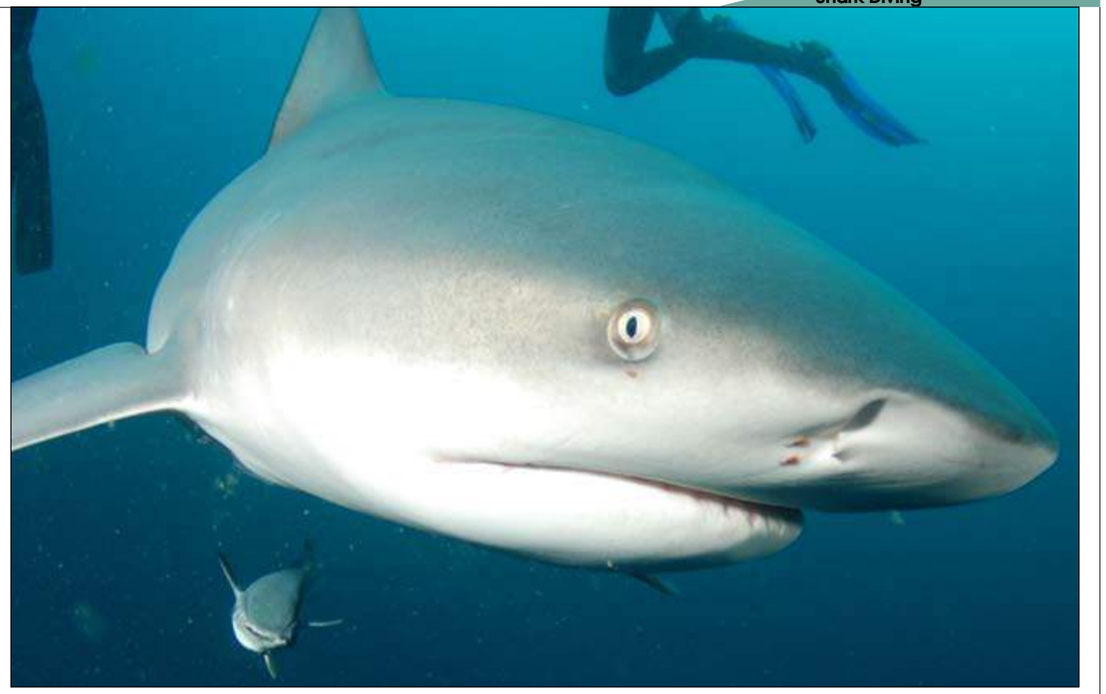
6.Always stay with the group as safety is in numbers. It's the individual that strays away from the group that will be targeted every time.

7.Body posture is very important... swim like a fish and you might be taken for a fish – so keep your position vertical in the water, which is very unlike any other animal in the sea.

8.Panic will always make things worse... it doesn't matter what scenario. Try and always stay calm and don't make sudden, irrational movements.

9.Be aware of what is going on around you. Look behind and below you more often than not, and don't get fixated on one point only.

10.Always dive with a properly qualified and experienced guide who knows the behaviour of the species in different areas.



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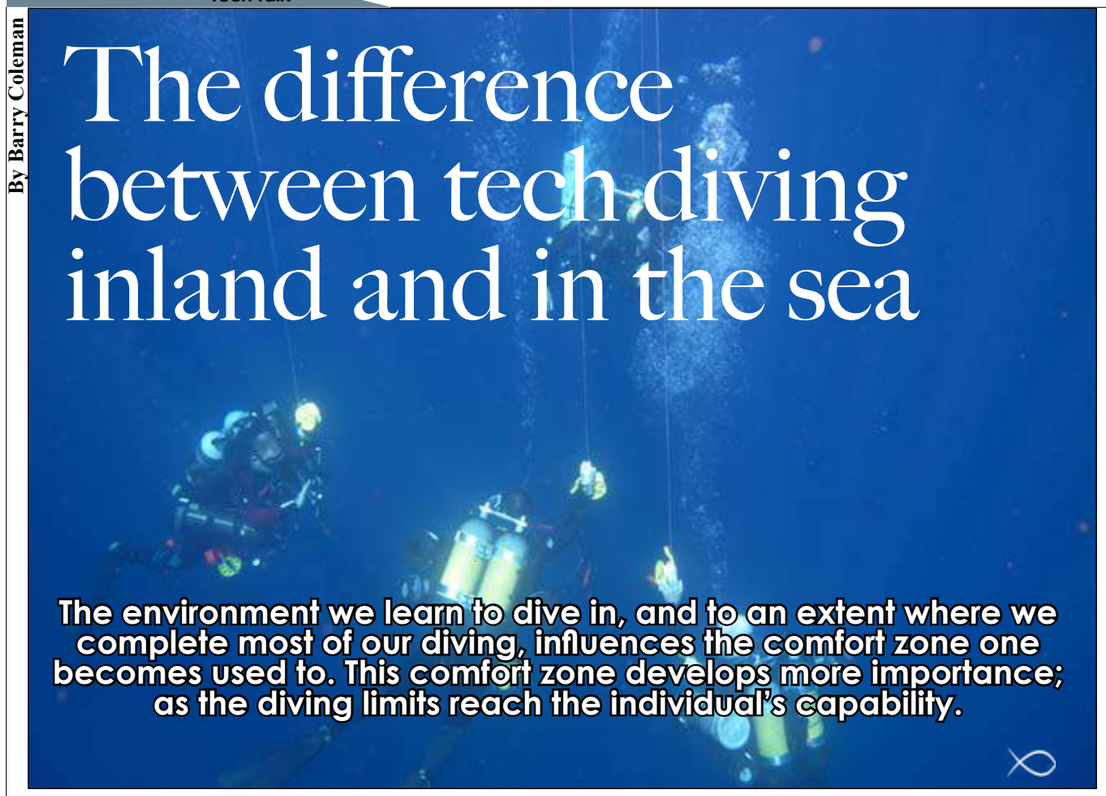
By Barry Coleman

The difference between tech diving inland and in the sea



The environment we learn to dive in, and to an extent where we complete most of our diving, influences the comfort zone one becomes used to. This comfort zone develops more importance; as the diving limits reach the individual's capability.

This 'comfort zone' importance may be referenced to an exponential scale; if you change any aspect near the limit of the scale, the results would not be proportional, and in the case of diving, may be fatal.

From recreational to technical diving, if one changes the environment from diving inland waters to the sea or the other way round, do not expect to be able to be at the same standard and comfort zone as you were. This risk is so important to understand and to accept, but many think that they are beyond this and can jump in without any further thought.

The intangible risks that have a 100% probability of occurring are ignored due to the lack of identification ability when changing the environment/situation.

For example, when deficient knowledge is

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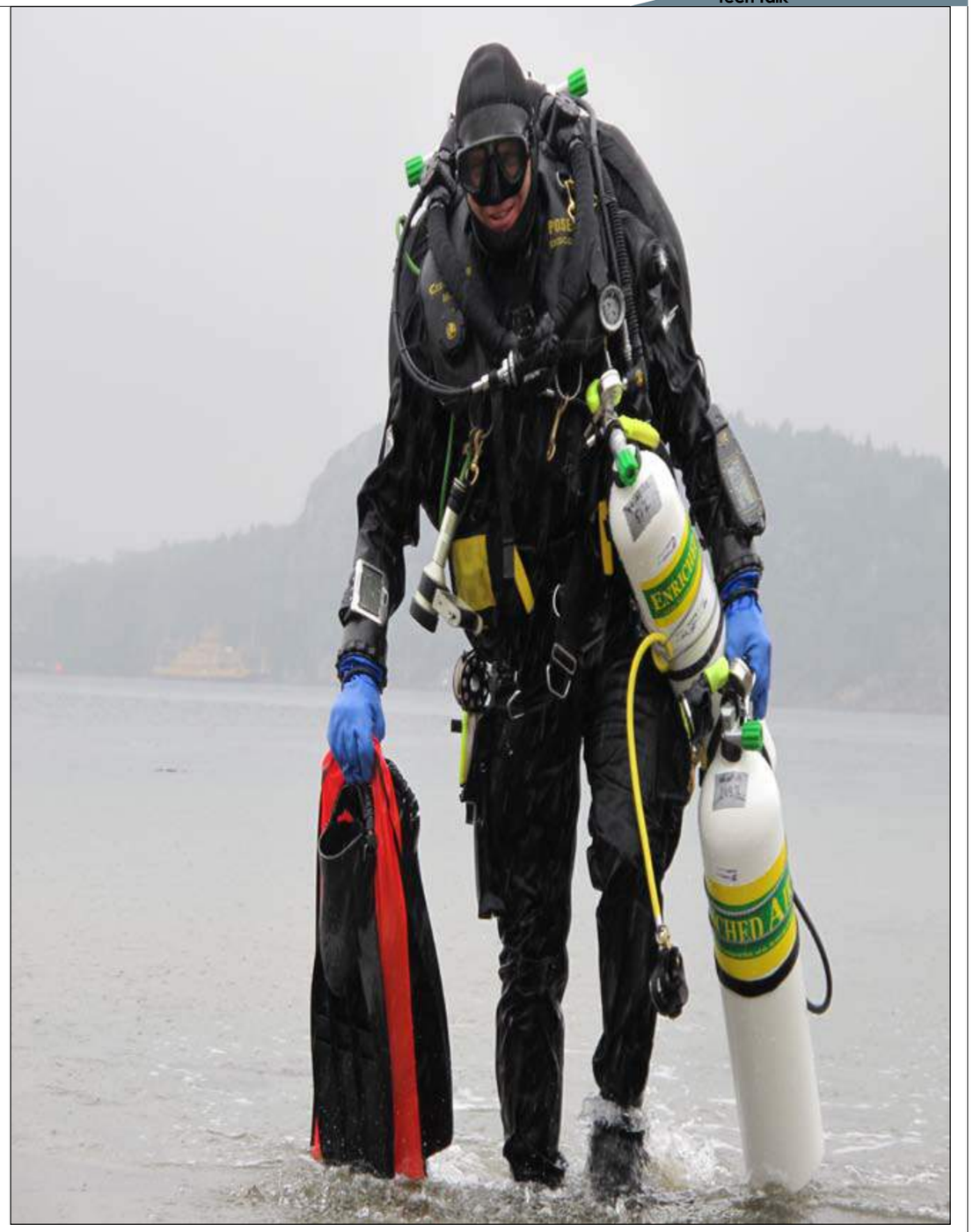


By Barry Coleman

applied to a situation where the diver is diving beyond his/her comfort zone, ineffective diving procedures are applied.

In practice this process can be very difficult and balancing between risks with a high loss but lower probability of occurrence versus a risk with a high probability and a lower loss can often be mishandled, especially when not understood, ignored, or due to lack of experience, mishandled.

These intangible risks not only directly reduce the potential for a safe dive, but also reduce the ability to perform self-rescue and/or a safe rescue by other divers or emergency services. Managing intangible risks on an ongoing process of 'dive and learn' would create immediate value from the identification and reduction of risk when applied to the next planned dive.

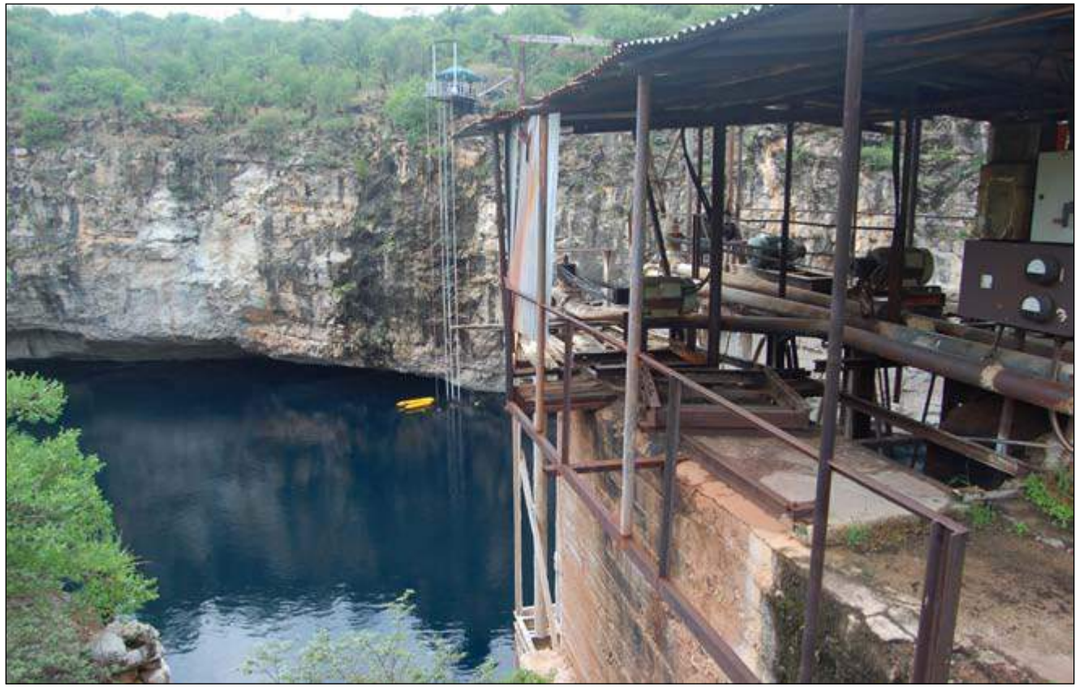
I have so far generalised because there are many factors between technical diving inland waters and open sea that to attempt to list them all would take more space then I am allowed for this article and I would be at fault to try and prioritise them. Strangely enough, from my experience, the real problem are the small issues (intangible) which trigger the events that lead to big problems. These small issues are mostly always passed over with a wave of the hand if at all recognised.

Sea sickness can creep up and bite you, and this was the case not so long ago; a tech diver who had done all his training/diving inland decided that he wanted to dive a well known wreck. He forgot to mention that when he did dive recreationally in the sea he was prone to sea sickness; qualified as a trimix diver inland he just thought this would no longer be a problem! During his one hour ascent we literally held him the entire time whilst he fed the fish and we kept watch on his profile as he could not do this for himself.

You get sea divers going inland who ignore the issues with altitude correction or fresh water buoyancy changes, and the opposite where inland divers have not changed their dive computers from altitude and incur extra long deco obligations during a sea dive without gas supply considerations and run low or completely out whilst still at depth. This actually happened; the actual injury was lung barotraumas from holding their breath on emergency ascent. Had they ascended normally they would have been fine with no risk of DCS from missed deco. Another issue is buoyancy with tech divers, who for the most part are generally over weighted, due to equipment, but sea water affects buoyancy and sometimes with drastic effects.

The biggest difference is surge, currents and water temperatures in the sea and this plays a big part for tech divers (for all divers actually!) From descent to ascent, and the techniques to diving the particular ocean site, it is different not just for inland divers, but also for sea divers from one site to another. For example, diving in warm, clean waters to diving cold, dark waters with strong currents is worlds apart!
Before pushing the limits in any new environment, first get used to the conditions – dive and learn – not dive and burn!

Technically Speaking
Tech Talk



Do you use long hoses? When and why?

Nuno Gomes

For me it all revolves around a technical diver's choice of equipment configuration:

1)Independent twin cylinders.
2)Manifolded twin cylinders (with isolation manifold).

If the diver chooses the independent twin cylinder configuration then he/she must use two regulators with 90cm length hoses, the standard 70cm length hose would be too short for buddy breathing comfortably. The 90cm length hoses allows the buddy to breathe from either of the regulators in case of an emergency.

In that case the diver will hand over the regulator that he/she is not using to the diver in need of air/gas.
Each diver will then have his/her own cylinder.

If the diver uses an isolation manifold twin cylinder configuration then he/she must use a long hose with a length of 120-150cm on his/her main regulator and a short hose with a length of 70cm on the emergency regulator.

In the case of an emergency the diver will hand over the long hose regulator to the diver in need and he/she will change to the short hose regulator.

In both of the above cases the dive will be aborted. Both systems have advantages and disadvantages and do require specific training in order to adequately deal with an emergency.

However, I feel that the independent twin cylinder configuration is safer in the long run because it is impossible to lose one's total gas/air supply in the case where, for example, one of the cylinder valve 'O' rings fails during the dive (I have seen this happen on more than one occasion).

Barry Coleman

I dive with a long hose off the right pillar on a twinset or primary port of an 'H Valve' for a couple of reasons. One, the inhalation temperature of gas through a long hose is about 100C warmer than a short hose, which on any long dive is a big bonus towards retaining body heat.

Secondly, most 'out of air' divers, in the real world, will generally go for the regulator in the donor's mouth, because he sees it, knows it is working and is a safe gas to breathe.

There are training agencies who train their students this method and it does make sense in many ways. There are a few arguments against this but they are less than the arguments for this method.

Another reason for a long hose is that if worn correctly, it can be set up in such a way that the hose is more streamlined and does not protrude out the side of the diver's head, which reduces drag and mouth fatigue when operating a DPV.

Pieter Smith

Long hoses have developed from cave diving in that they can be used as a shared gas facility between two divers swimming in a restricted area (like a tunnel) and specifically behind each other.

The hose must therefore be long enough for two divers to swim 'comfortably' in a straight line on the same level in an emergency situation.

It is also in line with the general cave diving rule of thirds – where you use one third of your available gas and reserve two thirds for return and emergency (one third as reserve for your buddy where the long hose will come in).

This has been adopted by the technical diving community internationally as a general configuration requirement for technical diving.

Configuration of equipment for technical diving must be done in close consideration to diving conditions and the dive team and for that reason long hose configuration may not be suitable for all technical diving and can become more of a risk (risk of gas loss) than a safety feature.

Pieter Venter

The main reason for using long hoses is to allow a buddy breathing pair to pass through a constriction in a cave behind one another.

A further advantage of a long hose is that it allows some freedom of movement during buddy breathing.

If your diving gear is set up according to the DIR prescription, then you should always dive with a long hose of a specific length stowed in a specific way.

If you dive with independent cylinders then two hoses of octo length are sufficiently long to pass most restrictions and to allow for comfortable buddy breathing.

Apart from a comfortable set-up, the other advantage is that any hose can be used in an emergency to provide gas in an out of gas situation without a deployment sequence. If a restriction is anticipated then a long hose should be considered.

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Scuba & Sharks

By Wichan Thuynsm Photos: David Caravias

Enjoying your dive in crystal clear water, drifting over the reef checking out Nemo you notice the dive master signaling with his hand above his head in a fin type of illustration. Following his finger you see what he is pointing at… it's a shark!

What kind you are not sure of, but who cares, this is not what you wanted to see because now you are at risk. As the shark circles around the group you notice that it's not really coming any closer, it's just staying on the outskirts and the next moment it's gone. Usually one of my first questions or comments when training an open water course is, "Will we encounter a shark? And if we do will it attack?" Personally I have not heard of shark attacks on divers, ever!

So yes, if you encounter a shark on a dive, get the group close together and stay together. This is not protect to each other, this is because you want to create a bigger mass in the water which will trigger the sharks' curiosity, causing it to come in closer, investigating.

You want the shark to come in closer – these creatures are majestic and strike awe into every diver's soul when encountered in their domain. The way they move and react is incredible and this is one of the main reasons why I dive.

Why are the boats loaded when a Pinnacle dive is scheduled? It's because you as a person get to be close to an untamed predator on its terms.

It's the thrill, the respect, the passion and the opportunity few people on earth have.

I believe shark diving should be encouraged. People must start understanding that these creatures have a place in our seas and they play a critical role to our being. I don't want to go into the whole debate around chumming and whether it's right or wrong because people have very strong views on both sides of the argument.

The only thing that I want to state is that shark finning must be stopped! There is no place on planet earth for those people who don't care about our hugely valuable resources.

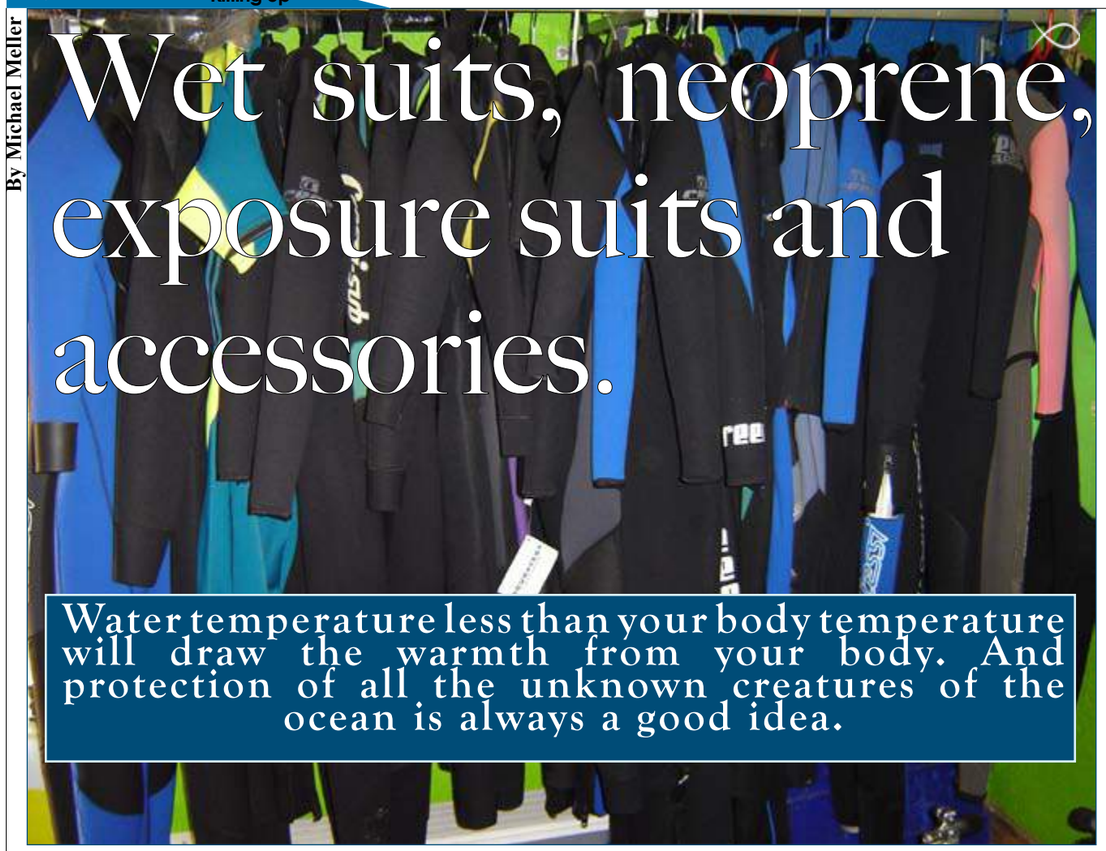
I want to conclude by saying that shark encounters are rare – appreciate them, know your place and enjoy them.

It's an incredible opportunity where memories will be created. If you do get the opportunity to swim with a whale shark, treat it with respect, leave it alone and do not hang on its fin like an idiot.

Happy and safe diving. Enjoy all your shark encounters and take photographs!

By Michael Meller

Wet suits, neoprene, exposure suits and accessories.



Water temperature less than your body temperature will draw the warmth from your body. And protection of all the unknown creatures of the ocean is always a good idea.

Water temperature less than your body temperature will draw the warmth from your body. And protection of all the unknown creatures of the ocean is always a good idea.

When buying wet suits most divers always look at the colours and how the wetsuit will blend in with their fins.

So the next time you have to buy a wet suit here are some tips and what to look for in a wetsuit.

The biggest source of heat loss is when water flows over your skin, so when you buy a suit make sure that you have good neck, ankle and wrists seals. This will stop continuous water flow in your wetsuit.

Water likes to get in through the zips so a shorter zip can be better. Make sure that the zip has a flap on the inside so that the zipper is not directly on your skin and to stop the water flowing in to your suit. Front-zips and Back-zips has their advantages and disadvantages.

A front-zip is difficult to undress and back-zips are difficult to get dressed if you are alone. Then you get men and woman, we are build differently (make your own conclusions here)

Kneepads and shoulder pads will extend the lifetime of your wetsuit, so this is definitely worth looking out for.

Wet suits are available in a few different categories:

1.One piece wetsuit – this is one of the easiest suits to put on and is usually available from 3mm to 7mm depending on your diving needs.

By Michael Meller

2.Semi-dry one piece – this suit is generally used for colder water and divers who prefer constant temperature while diving. It seals on the neck, ankles and arms, so once the water is in, it tends to stay in keeping the water in the suit at a constant temperature.

3.Farmer Johns – this suit is a combination of two pieces of neoprene, one with long legs ending in a vest over the shoulders, and a long sleeve with short pants that gets pulled over the bottom piece. The idea behind this is to provide extra insulation to the body in colder conditions.

4.Shorties – as the name suggests, this is a short sleeved, short legged suit. Neoprene thickness varies from 2mm to 5mm. It is best suited for warm water conditions and is very convenient to get in and out of.

5.Dry suits – used for diving in very cold conditions or for diving for prolonged periods with the need for your body to maintain it's temperature.

They say that most of you body heat is lost through your head so a hood can help you to maintain your body temperature. But remember that hoods can make mask clearing and equalizing more difficult.

Booties and gloves will also help you to keep warm. And the same rules on zips applies here for the booties. So make sure that it has a flap on the inside or buy one with out a zip. When buying gloves you need so know for what purpose and always remember that with thicker gloves it is difficult to work with small objects.

How to care for your wet suit

Before diving look for tears on the suit and on the neck, ankles and wrists seals. Make sure that your zipper has no broken teeth and treat your zipper with wax or silicone spray.

After diving make sure that you wash your wet suit to get all the salt out of the suit and the zipper. You can use fresh water and wetsuit shampoo then hang it to dry on a big hanger and turn it around so that both sides can dry.

Don't store wet suits in sealed containers as there might have been some moisture left in it and this may cause damage to the suit.

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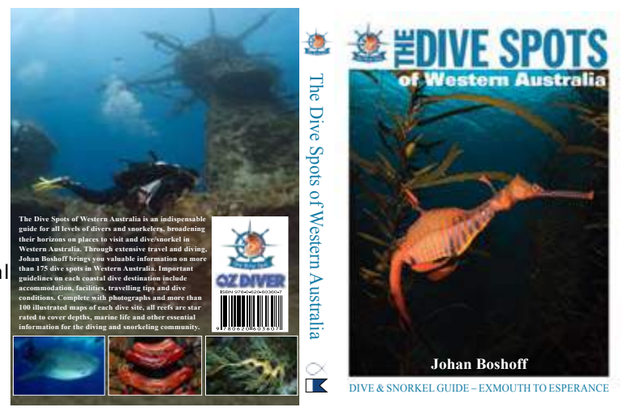
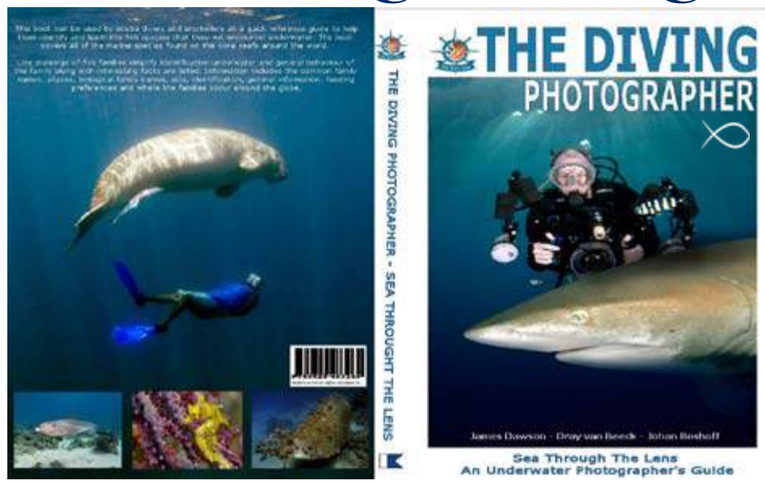
The Dive Spots of Western Australia

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 programmes until it looks like the professionally taken shot that you have been aiming for the whole time. Some other topics covered are strobe positioning, ambient light, photographing wrecks, long exposures and equipment maintenance.

I must say that this book has proved to be a great help in improving my photographing and editing techniques. Photographer is available in all good scuba diving and book shops or online at www.thedivespot.com.au. Cost: $20

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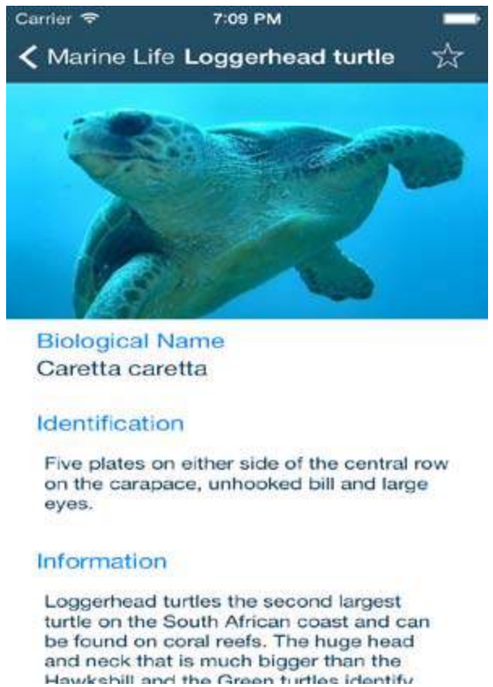
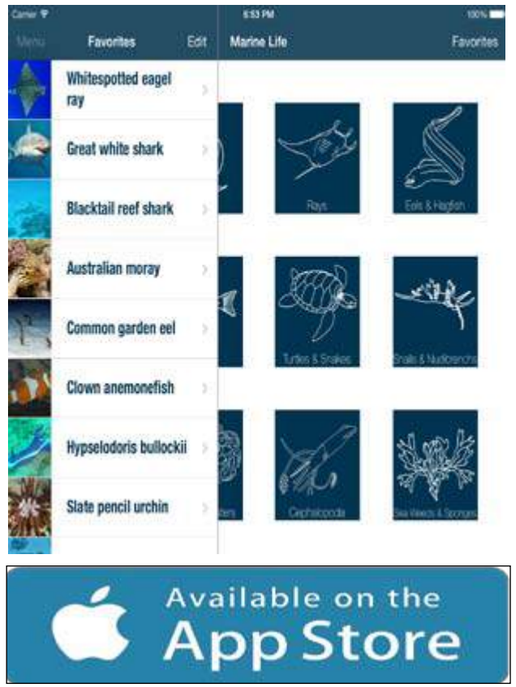
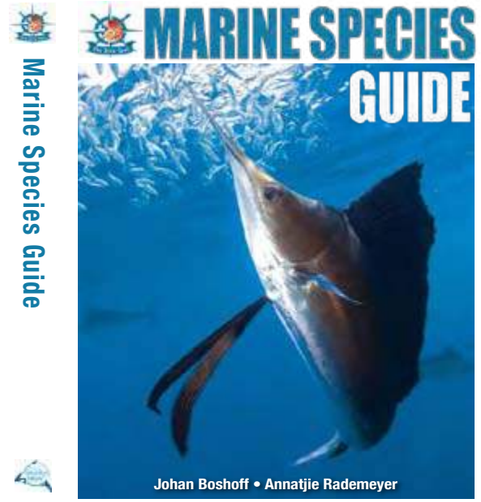




Marine Species Guide –



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 behaviour of the family along with other interesting facts are listed.

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

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

To buy your copy for $ 22, visit www.thedivespot.com.au or email info@thedivespot.com.au

Dive n Dry

Like many SCUBA divers, we spend quite a bit of money on equipment. We also seem to spend a lot of time looking after that equipment. Often after a dive we like to sit and enjoy the fresh air, maybe fill out the log book and chat about the dive. Then of course we get home and out comes all the damp, salty equipment. Piece by piece we pull out the various components, wash them with down with the garden hose and then hang them over our outdoor furniture to dry. Yes, the outdoor table and chairs is a cheap and convenient solution but two sets of equipment uses the whole outdoor entertaining area and of course, there's no where to sit.

We've heard of other people using coat hangers, even SCUBA specific hangers to dry out a wet

suit here and BCD there, perhaps even taking up a bathroom space instead of an outdoor area. There's also the issue of travelling to SCUBA dive, staying in a hotel where there's even less space or staying at a remote location where there are no hanging points.

That why we went looking for a solution, something we could take with us, that would hold one full set of equipment so that we could hang it, wash it and leave it. When we couldn't find the solution we set out to create it ourselves. Weighing it at a little over 2kg and folding down to under 90cm, its portable.

When folded out, it doubles in height to almost 1.8m tall. At the top is a wide hanger, designed to hold and open out the wet-suit to allow for increased air-flow.
There's a couple of hooks at the top that can be used for a mask and snorkel. In the middle are fold out hooks for a set of fins. Three arms extend out at the bottom to hold a BCD vest and at the top of these arms are fold out hooks, designed to hold boots in a toe up position for proper drainage. The arms also have cut-outs to securely hold regulator lines and keep them off the ground.

The Dive n Dry will make the washing and drying of diving equipment, quicker, easier and neater. For more information visit www.divendry.com

The real Low on Air

The trip to the Maldives had been a year in the planning to celebrate two anniversaries I had reached the ripe young age of 55 and had been encouraged to do an open water course by my brother-in-law so that I could enjoy the splendours of the Maldivian underwater world and he could have a dive partner.

My wife and I had arrived a day before my dive partner, and not wanting to miss out on any diving experience, I set off to partake in the compulsory initiation dive required by the dive school on the island.

The dive master was from the east and the other five divers from Eastern Europe. English was spoken because that was the only language that was common, although I'm not sure if anyone really understood the accents.

This was to be my sixth dive. The Cape Town dive school had said that if you had dived in 10°C water with a visibility of less than 5m, then the Maldives with 30°C water and visibility of over 20m would be a piece of cake. When handing in our dive cards, it became apparent that the five European divers had done more than 1 000 dives each. Full of Cape Town dive school confidence, why should I worry?

I was paired off with a guy of similar age to be my dive partner. I was the only one who rented all my kit. After a weighting and a mask on, mask off check and agreeing that 50 bar was the ascent value, we proceeded over the reef's edge for a tour of the house reef. Up front was the dive master, then my 'dive buddy' and I brought up the rear. The average depth was around 18m.

Around 35 minutes into the dive and marvelling at the splendours around me, I remembered to recheck the pressure. 50 bar! I approached my 'dive buddy' and asked him how much air he had left? 130 came back the reply. I asked him to repeat. 130. I showed him that I had 50 bar. A look of disbelief crossed his face. He took my gauge, looked at it and gave it a few taps, then indicated that the gauge was faulty. By this time the rest of the group had disappeared around a coral out crop. We set off in pursuit. 40 bar!

A discussion ensued between the dive master and my 'dive buddy'. 30 bar! The rest of the group had swum on. Of we set again in pursuit. 20 bar! More

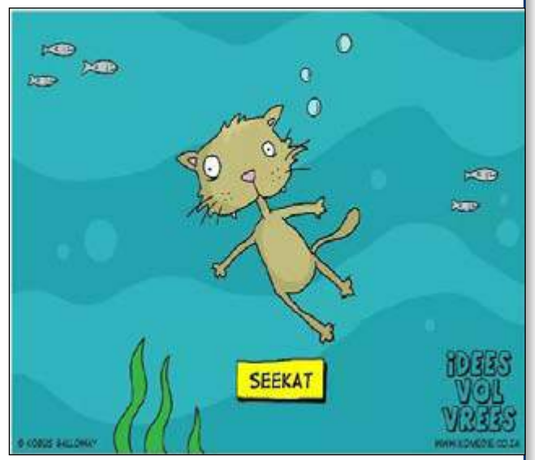
Send your funnies to johan@ozdiver.com.au

discussion, shaking of heads, taping of my gauge. 10 bar! The dive master wanted all of us to ascend. The Easterns' were not interested. 5 bar!

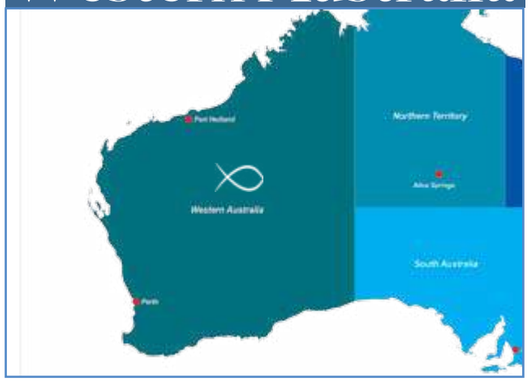
At this point one is really sucking on the regulator to get air. Eventually the dive master relented, the Easterns' swam off and we started our ascent. 0 bar! Not funny when you are 20m below. A frantic sawing motion across the throat indicating to the dive master that I was out of air. Surprised, he passed me his alternative. Sweet joy ,as air flowed once more. I am sure he also believed the rented equipment was faulty!

With my regular dive buddy the rest of the trip was fantastic. The moral of the story is, dive with a buddy you know and knows how fast you suck air and useequipment you trust.

Richard Lomax



Western Australia



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Web: www.octopusgardendivecharters.com.au

Geraldton

"A" Team Divers

A - Team Divers offers internationally recognized NAUI and SSI scuba diving courses. Small groups ensure personal attention during your training. We also have an active social club for after course adventures!
Phone: +61 (0) 45 828 5497
Mail: geoff@ateamdivers.com
Web: www.ateamdivers.com

Exmouth

Dive Ningaloo - Exmouth

Dive Ningaloo pride themselves in taking small groups to only the best dives on the Ningaloo Reef, Murion Islands and more. All courses welcome. With over 20 years experience diving in the Ningaloo, we know where the best diving is!
Phone: +61 (0) 4 567 02437
Mail: info@diveningaloo.com.au
Web: www.diveningaloo.com

Snorkel Ningaloo - Exmouth

Take your snorkeling experience to a new level! Using your own Seadoo underwater scooter, you'll be propelled effortlessly through the beautiful Ningaloo, where you'll see the tropical fish and coral that makes Ningaloo one of the world's top snorkeling destinations.
Phone: +61 (0) 45 670 2437
Mail: info@snorkelningaloo.com.au
Web: www.snorkelningaloo.com.au

Albany

Southcoast Diving Supplies

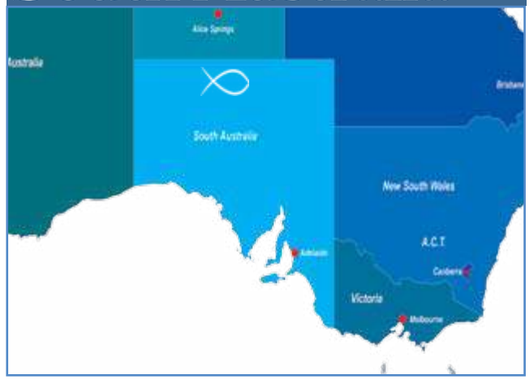
Diving Albany means experiencing anything from Wrecks to Reef. The "Perth and Cheynes 3 are two well known dive wrecks and the spectacular reef dives ranging from 3-50 M plus offers a diverse choice to a wide variety of divers
Phone: +61 (0) 89 8417 176
Mail: whale@divealbany.com.au
Web: www.divealbany.com.au

Esperance

Esperance Diving & Fishing

We operated since 1983 is Esperance's only dive store. Servicing locals and tourists with hire, sales, equip service, training and charters. With over 104 islands the dive sites are endless. Also offering guided dives to view Leafy Sea Dragons.
Phone: +61 (0) 89 071 5111
Mail: jaimen@esperancedivingandfishing.com.au
Web: www.esperancedivingandfishing.com.au

South Australia



Port Lincoln

Calypso Star Charters - Port Lincoln

PDA Hillarys for all of your dive and snorkelling requirements local and friendly staff to help you make the right choices open 7 days come and see us down at the Hillarys Boat Harbour just north of the boat ramp see you there
Phone: +61 (0) 86 82 3939
Mail: info@sharkcagediving.com.au
Web: www.sharkcagediving.com.au

ND Scuba - McLaren Vale

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

Adelaide

Diving Adelaide

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

Underwater Explorer's Club of SA

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

Glengowrie

Downunderpix

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

Victoria

Geelong

Australian Diving Instruction

Australian Diving Instruction is a PADI 5 Star IDC facility Offering everything for the Diver from Learn to Scuba Dive to Instructor including PADI Tec 40,45,50, Equipment Sales and Service National and International Dive Trips and Dive Holidays also Dive Charter Boat.
Phone: +61 (0) 40 836 5216
Mail: adigeelong@optusnet.com.au
Web: www.ausdivinginstruction.com.au

Bay City Scuba

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

Extreme Watersport

Extreme Watersport Specialises in all recreational, educational and technical SCUBA diver training, charters and tours. Extreme Watersport is Melbourne's premier 5 Star SDI/ TDI Instructor Scuba Diving Training Centre. We are also house a wide range of scuba gear for sale.
Phone: +61 (0) 3 5982 3432
Mail: info@extremewatersport.com.au
Web: www.extremewatersport.com.au

Dive Victoria Group

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

Rye

The Scuba Doctor Australia

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

New South Wales

Sydney

Plunge Diving

We are the only PADI and TDI dive center located on the waters of Sydney Harbour. We teach courses from Open water to Instructor level, and provide technical training. The Plunge dive boat offers dive trips for all certification levels.
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Mail: info@plungediving.com.au
Web: www.plungediving.com.au

Southern Cross Divers

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

Underwater Research Group of NSW

URG is a not-for-profit scuba diving club with a regular boat & shore dive schedule in Sydney and surrounds. Join our club to explore local dive sites and if you like, get involved in research projects to help marine conservation.
Phone: +61 (0) 418 257 462
Mail: info@urgdiveclub.org.au
Web: www.urgdiveclub.org.au

Killarney Vale

Pro-Dive Central Coast

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

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Feet First Dive

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Web: www.feetfirstdive.com.au

South West Rocks

South West Rocks Dive Centre

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

Queensland

Sunshine Coast

Sunreef Mooloolaba

Sunreef Mooloolaba offers the ultimate water experiences on Queensland's Sunshine Coast. From diving the HMAS Brisbane and local reefs, to Swimming with Humpback Whales from July to November, to stand up paddle boarding, kayaking and bubblemaker kids programs.
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Mail: dive@sunreef.com.au
Web: www.sunreef.com.au

Scuba World

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

Brisbane

Ozaquatec- Brisbane

Brisbane's largest dedicated scuba service centre, Ozaquatec has all of your servicing needs in one place at competitive rates. Our fast, friendly and professional customer service gives you, the diver, complete peace of mind.
Phone: +61 (0) 404 043 869
Mail: admin@ozaquatec.com
Web: www.ozaquatec.com

Gold Coast

Devocean Dive- Gold Coast

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

Brisbane

Tech Dive Academy- Port Douglas

You deserve the multi-award winning service of the ORIGINAL bespoke private diver training company - Serving Port Douglas since 2003. First for Bespoke Diver Training, the Dive Centre offers all levels of Recreational and Technical Dive courses.
Phone: +61 (0) 422 016 517
Mail: info@tech-dive-academy.com
Web: www.tech-dive-academy.com

Tasmania

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Tasmainan diving at its best 32 different boat sites 16-40 meters 8 different shore dives with max depth of 20mtrs Boat travel time under 5 mins. Home of the weedy sea dragon.
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Web: www.bichenodive.com

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Christopher Bartlett