

# OZDIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

DIVE  
NINGALOO

RED SEA  
WRECKS II

ZANZIBAR  
& PEMBA

DIVING THE  
TITANIC

DIVING  
AND  
THE  
BODY  
SYSTEMS

# DAMPIER STRAITS

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

July / September 2016



FREE Digital Diving Magazine - [www.ozdiver.com.au](http://www.ozdiver.com.au)





Diving with a buddy is always the best option. Or is it? I know that the first lesson that you get when doing open water is being taught that if you "dive alone, you die alone," but is this always true?

Let me tell you a story about something that happened to me recently on a liveboard. At the beginning of a trip you are assigned a buddy. Mine was an oldest person on board who had advanced qualification and a number of dives under his belt. He did not look like a bad diver. So on the first dive everything went well with no problems. Everything seemed okay with my buddy and I thought that we would end up having some fun dives together.

After the second dive he came to me and told me that he had a problem with his dive computer. At first glance I saw that he had not set his nitrox mixture correctly before the dive, and subsequently his computer had shut him out. I took his battery out, reset his computer and told him that for the next dives he should stay shallower and spend less time in the water so that by the end of the day he would be almost at the same profile as the rest of us.

Okay, I thought. That was easy and it looked like he understood everything. The

first dive the following day I looked back and saw that he was just dropping into the depths. Because we were diving on nitrox, our maximum operating depth was only 32m but he was deeper and still going.

I saw the dive master start chasing him down the wall before stopping – he was already past his limit on the maximum operating depth and the diver, my buddy, just continued going deeper and deeper. I realised that he was now in big trouble... so I folded up my camera and started the chase. At around 54m I caught him. I took him up to where the dive master was waiting – I knew that I was pushing the limits but if I didn't do it, what would have happened to him?

After the dive I asked him what happened, and he told me that he was going down and then he couldn't remember anything until the dive master was shaking him – he must have blacked out. He asked me what depth I had to go to fetch him, to which he replied, "I am very impressed with my heart pacer because it is only rated to 18m."

So is diving with a buddy better than diving alone? I guess it depends on who the buddy is.

*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.*

# ozdiver

**Editor-in-chief**  
Johan Boshoff  
johan@ozdiver.com.au

**Marketing**  
info@ozdiver.com.au  
+ 61 (00) 44 887 9903

**Photographer**  
Christopher Bartlett & David Caravias

**Contributing Editor**  
Irene Groenewald

**Proof Readers**  
Irene Groenewald  
Charlene Nieuwoudt  
Izak Nieuwoudt

**Administration**  
Amilda Boshoff  
amilda@ozdiver.com.au

**Creative Director**  
TheDiveSpot-OZDiver

**Web Master**  
Trianqular X

**Publisher**  
Johan Boshoff  
TheDiveSpot-OZDiver

**Distribution**  
In GOD I trust.

**Contributors**  
Christopher Bartlett, Nuno Gomes, David Caravias, R Bester, Beulah & Roland Mauz, Pieter Smith, Dr. Jean Vorster, Pieter Venter, Jill Holloway, David Holloway, Quintin de Boer, Neil Wiltshire, Pieter Herbs, Barry Coleman, Don Shirley, Andre Crone.



Johan Boshoff



Irene Groenewald



Amilda Boshoff



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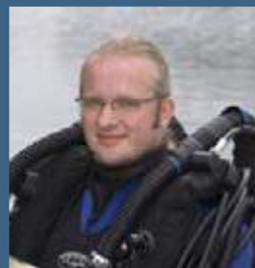
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**Primary Contributors**



Christopher Bartlett



Andre Crone



Nuno Gomes



Fiona McIntoch



David Caravias



Barry Coleman



Peter Pinnock



Gerrit Maritz

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**COVER PHOTO**  
Christopher Bartlett  
www.bartlettimages.com

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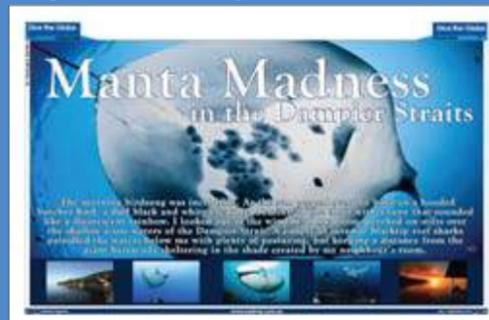
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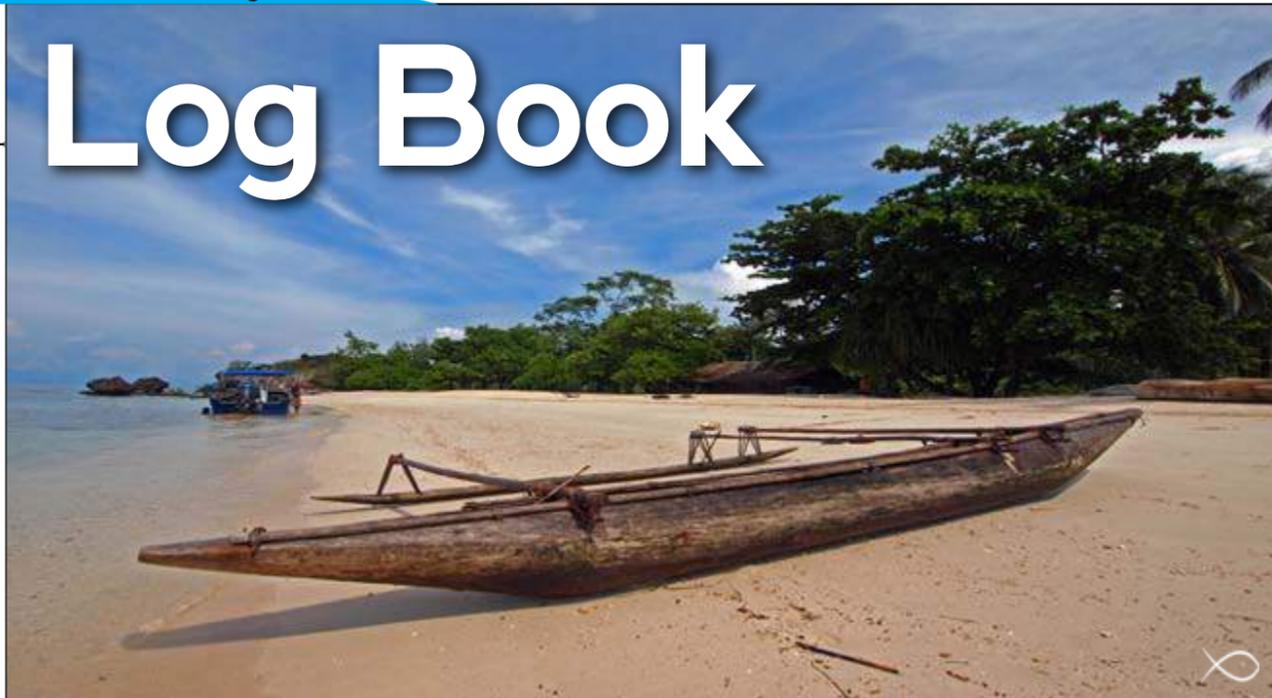
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FEATURE

# Log Book



## Don't try this on your own!

By Nicole Brower

I doubt that this truly qualifies as a close call - no sharks, no pirates, but seeing as I have ONLY JUST started my PADI Open Water 1 course, and have had limited experience, this was the closest call I have ever had!

I ordered my tailored wetsuit from Cressi, just a week before my first pool session. It was a rush for them to get it ready in time, but on the Saturday morning my suit was delivered. It was magnificent! A beautiful 2 piece, with front-zipping jacket and farmer john, in black and pink neoprene. No shark would mistake me for a seal!

I spend the day happily in the pool, learning the skills and doing the silly things that novice divers do. That evening, filled with the joys of nitrogen I decided to try on my wetsuit to see what I looked like in it. (There are no full length mirrors at dive pool).

I slipped into it. Okay I grunted and tugged my way into it, just as one is supposed to. It was great. In the mirror before me stood a 173cm telly-tubby.

Having overcome the trauma of seeing my thighs magnified by the extra layer of neoprene rubber and it being a very warm evening, I needed to get out of the suit. I tried to slip out of the jacket, one shoulder at a time. It was impossible. The fresh rubber, determined to keep me covered, kept springing back up.

I tried to use a plastic coat hanger to hook the back of the jacket and pull it down. So much for plastic coat hangers, \$10 for 10! As my frustration and exertion continued, my body temperature rose. Sleeping in the thing was NOT an option.

What if I needed the loo? I needed help to get out of the suit. What were my options, seeing that I live alone, short of getting out the kitchen scissors? Phone a friend? It was 11'30pm. Phone the police? (As if they don't have enough to do?) I was stuck.

Finally in a hot and desperate panic I got into my car and drove down to the security guard in the complex. As I neared the guard house I called out of the window, "I need help".

The eager guard grabbed a knobkerrie, ready to save my life. Embarrassed, I stepped barefoot from the car, "Can you help me get out of this

thing", I asked. "Okay" said the guard.

I asked him to tug the jacket off from behind, which he did. As the steam escaped into the night air, he asked, "What is this for?" I replied, "To swim underwater". He said, "Okay", KNOWING that there isn't a pool in the complex!

Lessons to be learnt:  
NEVER look at your thighs in a mirror when

wearing a wetsuit

NEVER try on your wetsuit when there is no-one around to help you get out of it.

NEVER try to use a plastic coat hanger to try pull off your suit

And last, but not least, NEVER do the above and expect people NOT to laugh at you! 



## 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](mailto: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



## AUSTRALIA INTERNATIONAL DIVE EXPO (AIDE) 2016

The third installation of the AUSTRALIA INTERNATIONAL DIVE EXPO (AIDE) 2016 is set to be held from 10 -11 September 2016 at the Royal Hall of Industries, Moore Park, Sydney. Staged at the precise time when divers are gearing up for the diving season that starts in September, the Expo will spare no expenses to ensure divers are aware of the Expo.

Inspiring newbies to attend the show and satisfying the thirst for knowledge and information of the thousands of active divers, while encouraging inactive divers to re-activate their diving passion will be a major focus for next year.

Australia's diving market is becoming more and more important in both emerging and developed economies. Diving tourism is rapidly becoming one of the key pillars of socio-economic development, contributing to economic growth exports and jobs. We strongly believe it is now time to generate new business in the Australia diving market.

A dedicate trade session (B2B) will be also take place in 2016 as part of AIDE's business platform to further engage and bring together industry suppliers and partners.

Activities will include a feature on the history of diving, a presentation by Disabled Divers International (DDI), a photographic display of the underwater world by various photographers from Australia including South East Asia and presentation by experts from various dive field. Free photography for Uni students will also be part of the program too. The entrance fee will be AUD\$7.00 onsite. Online registered fee will be at AUD\$5.00. Trade Visitors, Media Representatives, Disabled Divers, Senior Divers, University Students and Children aged under 17 will get free expo admission.

Exhibitors keen to participate in AIDE 2016 are advised to register their interest from 1 November 2015. Visit [www.australiadiveexpo.com](http://www.australiadiveexpo.com) for more information. 



**AUSTRALIA  
INTERNATIONAL  
DIVE EXPO  
AIDE**

## Australia's contribution to climate change worsening overall

Sydney, 21 April 2016 - Australia, the world's largest coal exporter, will export a billion tonnes of carbon dioxide in its coal this year, erasing the few benefits of meeting its weak Paris target and worsening its contribution to global climate change, Greenpeace Australia Pacific analysis shows.

Greenpeace's 'Exporting climate change, killing the Reef' briefing comes as Australia's World Heritage-listed Great Barrier Reef undergoes its worst coral bleaching in history, with almost the entire Reef experiencing some level of bleaching [1] due to warming waters, and as the country prepares to sign the Paris Agreement on climate change at the end of the week.

"The Australian Government wants us to believe it is proactive about climate change, but in reality it's sending its emissions overseas through its coal exports," said Shani Tager, Greenpeace Australia Pacific's climate and reef campaigner.

"Australia is the world's largest coal exporter [2] and is avoiding responsibility for its contribution to global carbon emissions. By doing so, the Australian Government is ignoring the most serious threat to the Reef—climate change.

"This isn't a future threat, it's one that is playing out right now before our eyes, with coral bleaching on 93 percent of the Great Barrier Reef, and severe bleaching on the most pristine northern parts.

"The Australian Government cannot say it is safeguarding the health of the Reef when it is doing everything it can to avoid tackling the greatest threat it faces, which is coal-driven climate change," said Ms Tager.

In addition to not reducing Australia's domestic CO2 emissions since 1990, coal export volumes have more than tripled in the same period to 400 million tonnes per annum.

With every Australian tonne of coal emitting 2.5 tonnes of CO2 on average wherever it is used, this means Australia's CO2 exports through coal have increased by a massive 253% since 1990, the Greenpeace briefing shows.

"Australia's climate change response and its signature on the Paris Agreement simply won't be credible as long as it sends more carbon emissions abroad than it saves at home, and pushes its coal exports.

"The future of the Great Barrier Reef is at stake. It's time for the Australian Government to be ratifying the Paris Agreement and speeding up their response to climate change, including a commitment that no new coal mines be dug and for coal exports to be phased out," she said. 



# OZTek2017 – Designed by Divers for Divers

Preparation is in full swing for OZTek2017, taking place over the weekend of March 18/19, 2017, at the Australian Technology Park, Sydney.

Find out what's new as we bring together the world's leading underwater explorers, researchers, adventurers and scientists to share their experiences and discoveries. Altogether OZTek2017 will be an awesome, action-packed week-end dedicated to diving adventure and excitement.

## OZTek2017 Conference: New Speakers announced

A dynamic program of presentations to fuel the imagination and keep inspiration alive, as well as providing a unique opportunity to meet and learn from modern diving's most accomplished and extraordinary personalities.

We've recently announced new speakers Gareth Lock and Matt Carter to the already impressive line-up of internationally renowned divers like Jill Heinerth, Liam Allen, Pete Mesley, Barry McGill, Cristina Zenato, Andrew Pitkin, Becky Kagan-Schott, Vic Verlinden, Amanda Cotton and many more. For more details and updated speaker information, bookmark the website [www.OZTek.com.au](http://www.OZTek.com.au). Please note: Topics will be announced closer to the event.



Matt Carter



Gareth Lock

## OZTek 2017 Exhibition: New Exhibitors

Running adjacent to the Advanced Diving Conference, OZTek includes a full-scale diving exhibition catering to every diving interest and featuring everything divers require; cameras to compressors, regulators to rebreathers, snorkels to scooters, facemasks to fins - awesome Australian destinations, overseas dive resorts and great liveboard trips. The world's leading brands and travel destinations will be on show.

Since our last update - please welcome Pro Diving Services, RX Dive, Professional Diving Services, Tec Divers, Mares, Wakatobi Resort, Down Under Aquatic Imagery and SSI, alongside other impressive Exhibitors like Shearwater Research, AP Diving, Fourth Element, Halcyon, Mike Ball, Spirit of Freedom, TDI/SDI, Scubapix, Dive 2000, Dive Tek, DGK, Blue Label Divers, Quest Tours, Dive Adventures, TUSA, eScuba, DAN Asia Pacific, Diversion Dive Travel, Digital Divers, Tech Asia, Waterproof, Dive Systems, Solomon Islands Visitors Bureau, CDAA, PNG Dive, El Galleon, Always Dive Expeditions, Christmas & Cocos Keeling islands ... for up-to-date exhibitor information check out the Exhibitor pages on the website ([www.OZTek.com.au](http://www.OZTek.com.au)).

The OZTek Exhibition delivers everything you want to discover about what's new in equipment, training and travel.

## U/W Photography: New Technical Workshops

OZTek2017 offers several unique opportunities for Photographers... The new OZTek Underwater Photographic Centre, sponsored by Georges Cameras will showcase the following:

1. The OZTek Underwater Photographic Exhibition with images from photographers all over the world,

on display, simply to be enjoyed.

2. A separate display of the 7th OZTek Underwater Photography Competition winners – go to the website for details. ([www.OZTek.com.au](http://www.OZTek.com.au))

3. For the first time ever, we will be offering Photographic & Videography Technical workshops for those wishing to gain valuable insights on how the professionals tackle challenging conditions. If you'd like to learn from the masters, keep your eyes peeled to the website for information as it is released. Please note: Actual Workshop topics will be available on the website closer to the event. Competition registration terms and conditions are available on the website. ([www.OZTek.com.au](http://www.OZTek.com.au))



Jill Heinerth



Barry McGill

## OZTek Gala Awards Dinner - New Venue

After an action-packed weekend devoted to the excitement of diving, OZTek finishes in grand style at the highly acclaimed Gala AWARDS Dinner held at 'Aerial Centre UTS' - overlooking scenic Sydney city - on the evening of Sunday 19th March 2017. The Gala Awards Dinner is the perfect opportunity to talk with legendary names from the world of diving, relax, catch-up with old friends and make new ones. Plus on this night we celebrate the achievements of Australia's leading Divers and Dive Industry personnel - people who have pushed the boundaries of knowledge and exploration. Watch for Award Nominations, to be called later this year.

## OZTek2017 Travel & Accommodation

Although still seemingly a long way off, folks travelling from Interstate or Overseas might need to begin thinking about travel arrangements.

For information on travel to Sydney & Australia, please visit the website's travel section.

To book accommodation at either of the two hotels offering special rates to OZTek visitors please visit the website's accommodation section.

Please note tickets to OZTek2017 will be available online from July 1, 2016 March 18/19th, 2017 Australian Technology Park. [www.OZTek.com.au](http://www.OZTek.com.au)



**OZTek** March 18-19 2017  
DIVE CONFERENCE & EXHIBITION

## 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](mailto:info@ozdiver.com.au)

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# OZ DIVER



# WWW.OZDIVER.COM.AU

# Dive Ningaloo!



Few parts of the World are unscathed by man's impacts, so when you do come across a dive site that is unspoiled, it is worth savouring it to the full. The Ningaloo reef that runs for 260km along the Western Australia coast is one of them.



By Kirsten Sheppard Photos: Dive Ningaloo



For those who are into marine life, the Ningaloo is a wonderland, every bit as rich as any in the World .

Teaming with fishes and corals, the life of this long coral reef has Indian Ocean life as its basis, greatly enriched by being located near the end of the Leeuwin Current which brings a variety of reef life down from reefs of southeast Asia and what is known as the Coral Triangle, that region just north of Australia which houses the richest biodiversity in the World.

And that is just the life on the reef. Also associated with this area are the 'Big Three' which will entertain you between dives: mantas, whale sharks and migrating humpbacks known locally and fondly as humpies, and the turtles and reef fishes such as grouper reach enormous sizes in these protected waters.

If the boat potters closer to shore when you are eating your lunch between dives, you might spot another giant too – a dugong in the shallows.

Exmouth offers this and more. Just 20 minutes north of the town are the Muiron Islands, a group of small, low islands made of emergent fossil reef that support some of the most spectacular diving of all.

Here you can drift dive between islands, or explore the fissures, caves and swim-throughs.

It was while finishing a dive in a set of swim-through caves that I surfaced just 40 m from our dive boat, to find my route

back to the boat blocked by a huge humpy, wallowing on the surface.

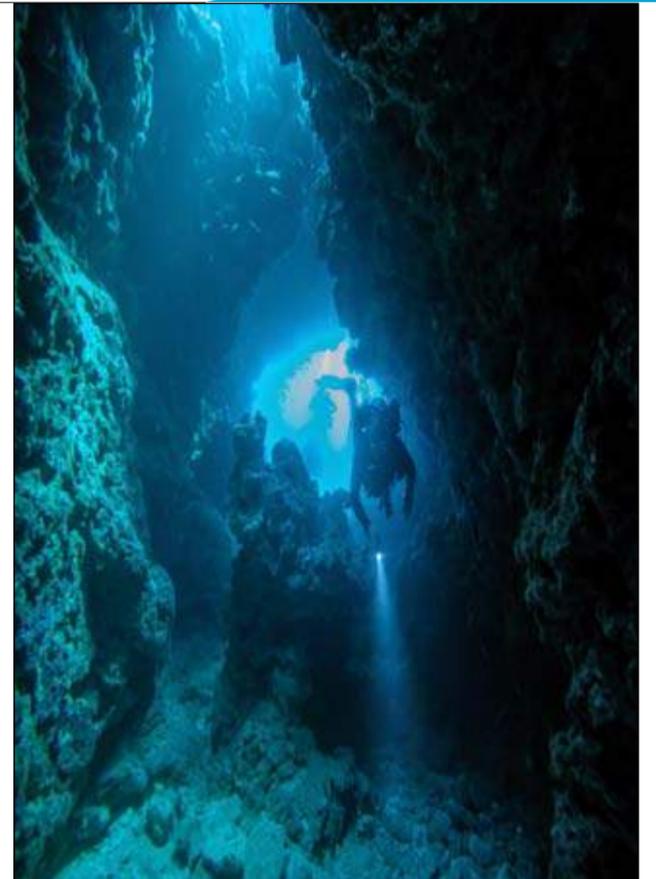
Now, you must not interfere with marine mammals of course, and anyway at 20 tons she was not to be hurried along anyway, so I waited on the surface until, in her own good time, and after several spouts of water and some fin slapping, she moved slowly on to let me pass.

Where else but on the Muiron Islands!

Some of the reefs are very exposed, forming undulations perpendicular to the prevailing waves. In these places the corals are more stubby, strongly built to face the ocean swells that can pound the area.

Behind them, the corals form more delicate branching and leafy shapes, a sure sign that conditions are calmer.

There are many convoluted shapes and curves to the reefs because they are now growing and developing on ancient





# Join Us & Explore "Business of Diving" at AIDE 2016



10-11 September 2016 | Royal Hall of Industries  
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Photo by Matthew James Smith

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ASIAEVENTS EXSIC PTY LTD  
Suite 201/272, Pacific Highway  
Crows Nest NSW 2065  
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By Kirsten Sheppard Photos: Dive Ningaloo



structures that developed over aeons. Many parts of the reef fringing the mainland have crevices, caves, pillars and swim-throughs, all offering different and varied vistas and selections of marine life.

The small animals are as varied as you might find anywhere. Nudibranchs come in a kaleidoscope of colours, as do more species of small crabs than most people know even exist.

Starfish and featherstars add further colour. You may not be able to tell them apart, but in one dive here you will pass over several hundred different species of small fishes that live in the crevices and coral branches, each with slightly different niches, feeding habits and behaviour patterns.

Many divers feel it is best not to hurry on but to swim slowly and observe closely, postponing for a bit the alluring next corner, column or cave!



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For more information:

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Enquiries contact:

[info@diveOZTek.com.au](mailto:info@diveOZTek.com.au)

By Kirsten Sheppard Photos: Dive Ningaloo

In many sites, it would be possible to spend many dives and not feel you have had enough of it.

Dive Ningaloo is also the name of the dive operator that does all this and more, like overnight camping trips on remote sandy beaches. This company's new 20 m dive boat is called Ceto, after the ancient Greek goddess of whales, dolphins and sea monsters.

Its crew have unparalleled experience of the area and its marine life, and pick the best dive sites to suit the requirements of their guests and that day's weather.

They will train divers too but they prefer to take smaller groups to areas away from the beaten paths, where life is at its most colourful, abundant and diverse, and they don't overlook the smaller and for many the

most attractive creatures, the corals and nudibranchs..

And, if you can overnight too. Sleeping on a beach under the Milky Way with absolutely no light pollution can be as memorable to someone from a city as are the dives!

And, there are more dives next day: Ceto's has built-in air banks and compressor so you never even have to carry a tank further than to the stern dive platform to jump in.

These islands are 60 minutes on the boat north of Exmouth. This part of the Ningaloo offers some of the easiest, and best adventure diving going.

Contact them on [www.DiveNingaloo.com.au](http://www.DiveNingaloo.com.au) to join a trip to the islands and reefs of the Muiron Islands. ☑



By Kirsten Sheppard Photos: Dive Ningaloo



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DEEP DOWN YOU WANT THE BEST

# The Bull shark

**The Bull shark gets its name from its stout appearance and pugnacious reputation. It is known by many different names throughout its distribution range, including Zambezi shark and Van Rooyen's shark (Africa), Ganges shark (India) and Nicaragua shark (Central America).**

The Bull shark is part of the Carcharhinidae family, also commonly called requiem sharks. Family members share similar characteristics, e.g. the origin of the pectoral fins is before the last gill slit and almost all species are viviparous (placental live birth) with the exception of the Tiger shark which is ovoviviparous (aplacental live birth). Many of the species in this family grow to a considerable size, the record holder being a Tiger shark (*Galeocerdo cuvier*) measuring 5,5m.

Bull sharks occur in tropical to subtropical coastal waters worldwide, as well as in numerous river systems and some freshwater lakes. They have been reported 3 700km up the Amazon River in Peru, and also recorded up the Zambezi River in Mozambique, hence their alternate name of Zambezi shark.

The Bull shark is the only species of shark to extensively utilise freshwater habitats. Travelling vast distances up river systems, the Bull shark also encounters a wide variety of unusual prey items, such as the sloth (*Bradypodidae*) in the Amazon. It has also been known to attack antelope, cattle, dogs and rats. In the Limpopo River,

in southern Mozambique, Bull sharks have even been known to attack young hippos. Bull sharks are equally at home in marine environments, inhabiting near shore waters less than a metre deep, as well as deeper reefs over 50m where they actively hunt game fish and other marine animals.

Bull sharks have a stocky, robust appearance with a blunt, rounded snout. This species lacks an interdorsal ridge and the first dorsal fin is large and broadly triangular with a pointed apex. The second dorsal fin is significantly smaller to reduce drag during tail movements. The pectoral fins are also large and angular.

The Bull shark has relatively small eyes compared to other members of the Carcharhinidae (requiem) family. This may suggest that vision may not be as important a hunting tool for this species, which often occurs in turbid waters. Unlike many other species in this family, the Bull shark has no nictitating membrane (a thin, tough membrane or inner eyelid that can be raised to cover the eye to protect it from damage). Bull sharks have a yellow pigment in their eyes, which filters UV light and helps to reduce light scatter and glare in bright light

conditions.

Bull sharks do not attain great lengths but are stocky with great bulk. The Bull shark commonly reaches a length of 1,8 2,8m and weighs between 120-220kg – length at birth is approximately 70cm. The largest specimens are believed to attain a length of 4m and weigh over 400kg. Like other elasmobranchs (sharks and rays), juvenile Bull sharks grow rapidly in the first year of their lives. A captive juvenile Bull shark was recorded to have grown 42cm in its first year (born at approx 70cm).

Bull sharks have on average nine pups per litter with a gestation period of approximately 10-11 months, and like other sharks, are thought to have rest periods between breeding cycles, only breeding every second or third year.

Males and females of some species of shark, such as the Tiger and Whale shark, spend the majority of their lives in different areas of the ocean, only coming together to mate. However, male and female Bull sharks can be found together in most areas that they

occur. It is thought that mating occurs during the summer months (December to May).

Male Bull sharks reach sexual maturity at 20 years (190cm), while females become mature at 21 years (193cm). This is significantly longer than most other requiem sharks. Bull sharks are estimated to live for 50 years or more.

The diet of the Bull shark consists mainly of bony fish, particularly game fish such as tuna, barracuda and Yellowtail. Bull sharks play a vital role in controlling populations of smaller sharks and rays, however, like most sharks, they are opportunistic feeders and will scavenge if the opportunity arises.

There are also commercial hand line fishermen who are entitled to catch as many as 10 Bull sharks per day. Again, this is unlikely due to the low value of Bull shark meat, however, should there be an increase in demand for Bull shark meat or fins, the species will be left totally unprotected from commercial exploitation. ◀



# Mangroves



**Mangrove trees form mangrove swamps, which are among the most important coastal marine ecosystems.**

Although mangrove swamps are smelly, muddy, full of mosquitos and generally, their tangled root systems provide havens for many small organisms, their murky waters provide nutrients for microorganisms that are in turn food for juvenile animals. Mangrove trees are not a single species, but actually a group of more than 50 species from several families of halophytic trees and shrubs.

The combination of protection and food gives young animals a better chance for survival than they would have in the open sea.

This is the reason why mangrove swamps are important to the environment: they act as nurseries for adjacent marine ecosystems, such as coral reefs.

Many of the species they nurture are commercially and economically important.

The second reason mangrove swamps are important to the environment is that they filter run-off water. By trapping run-off sediment, the mangroves protect sensitive offshore ecosystems (coral reefs in particular), that would be hurt or killed by settling sediment.

Today, many ecologists consider mangroves as transitional ecosystems from marine to terrestrial.

A third benefit of mangrove swamps is that they hold sediment in place. They slow waves and reduce erosion while retaining the nutrients used by organisms living there.

Mangrove swamps are particularly good for protecting shorelines from storm erosion by slowing down and dampening storm waves.

Although a hurricane will still cause some



# SCUBA DIVERS

TRAINED HERE



By Christo van Jaarsveld

erosion through a mangrove swamp, the sediment loss and erosion are negligible compared to the effect on unprotected shores.

The fate of mangrove swamps (commonly just called mangroves), has become an important issue related to urban expansion and bioproductivity.

To those unfamiliar with their crucial role as a haven where juvenile organisms get a change to survive to maturity, mangroves appear to be useless swampland.

Consequently, at one time developers filled in mangroves and built housing and office buildings. An even bigger threat is the conversion of mangroves into shrimp mariculture farms.

The concern is that the loss of mangrove swamps is a loss to adjacent ocean ecosystems. 



TDI



## Tech Divers Trained Here



# Oil spills and their effect on the ocean.

**From 1970 to 2009, approximately 5,65 million tons of oil has been spilt in marine waters. Oil spilled can be a variety of materials, for example crude oil and refined petroleum products such as diesel fuel or gasoline (statistics only include shipping spills that happened accidentally). These figures do not include oil spills of less than 7 000 tonnes, which means that the actual amount of oil spilt up until December 2009 is far more than 5,65 million tons.**

Luckily, the number of oil spills has declined at a steady pace from 1970 until now. Although this is good news, it's still taking its toll on the marine environment if you think of the strain the ocean has to endure because of other forms of pollution (such as sewage and toxic waste) and over fishing or climate change...

If we think of an oil spill, we imagine images of oil-covered penguins being washed by volunteers. But that is unfortunately not the extent of the damaging effect that oil slicks have on the marine environment. Apart from the many furry animals like penguins and seals that drown because of this disastrous occurrence, other fish and sea birds also come short. Marine animals can suffer in a number of ways caused by oil in the water. Apart from drowning and suffocation, animals and fish can become poisoned or consume some of the oil which can cause slow and painful deaths.

In 2000 the world saw the greatest coastal bird crisis due to the MV Treasure sinking 8km off Table Bay between Dassen and Robben Island, oiling more than 20 000 African penguins. A massive capture of non-oiled penguins was

launched in conjunction with the rehabilitation of the oiled penguins, and this resulted in 19 500 penguins being successfully relocated without oil contamination. (The number of African penguins worldwide is estimated at 180 000 and this number is becoming less and less). More than 90% of the oiled birds were rehabilitated and released. According to the International Bird Rescue Research Centre, the logistics on caring for over 20 000 birds was monumental. The penguins consumed over 400 tonnes of fish, and furthermore, 7 000 tonnes of beach sand was brought in for the temporary pens and 302 25-litre jugs of soap were used in the cleaning process. The rehabilitation efforts lasted for more than 12 weeks and the total cost of this spill operation amounted to more than R50 million. The scary part is that the MV Treasure spilled only 1 300 tonnes of bunker oil...

This is the effort and money that goes into only one oil spill. What about all the other sea creatures that were affected by that incident? We will never know the real extent of damage to the environment, because unlike the penguins and other sea birds that we can

see and which are immediately in trouble, the effect of something like this will only be seen much later and probably much too late when it has snowballed out of control and we are no longer able to fix the problem. It really doesn't matter who is at fault during such an incident – the damage is already done. We can only minimise the effect.

We haven't even touched on the subject of illegal oil dumping (which occurs on a regular basis and is extremely difficult to control) or oil rigs where their oil leaks into the ocean. Last year, the world witnessed Australia's third largest oil spill – it started on August 21 and the blow-out at the Montara well caused spillage of 2 000 barrels of oil per day into the Timor Sea. This continued for 10 weeks.

The fact of the matter is that we have created a world that relies on the black gold almost more than air. The world today uses more than 11 billion litres of oil every day! The USA and

China are the top oil consumers.

Tankers and barges will not stop cruising the oceans, and new sea-frontiers are being explored for bigger and better oil wells. And sadly there will be more oil spills. With that knowledge, we need to be prepared to give a helping hand as soon as there is danger in our waters. The quicker the oil can be removed from the water, the better the chances for that area and its marine environment. Unfortunately it is our responsibility – we cannot point any fingers. It is our everyday reliance on oil – to get to work and back, to create heat, to be entertained – that creates this demand.

We need to find a solution to the problem that we have created. Or at the very least we can be pro-active and help. One thing we can definitely do is to put pressure on our national authorities to move the 'Environment-folder' higher up on the priority-list within government. That is something we seriously need to think about. 



# Diving and the body systems PART II

Discover the implications of scuba diving with a host of common medical conditions

## Body system: Endocrine (Thyroid) Condition

The thyroid is a vital gland that secretes a hormone (thyroxin) that helps regulate body metabolism. In excess quantities (hyperthyroidism), it can increase the heart rate or produce cardiac problems, affect respiratory rate, decrease body weight and even interact with the central nervous system. Symptoms of hyperthyroidism also include discomfort or anxiety. Cardiac effects include tachycardia (fast rate), serious dysrhythmias and heart failure. Hyperthyroidism also causes muscular weakness and periodic paralysis in individuals of Chinese descent. Lower-than-normal levels of thyroxin (hypothyroidism) may cause fatigue and slow or absent reflexes. Hypothyroidism is also characterised by a slow heart rate and slow metabolism; it may cause heart failure.

The thyroid gland's output can be controlled by medication, radiation, radioactive iodine or surgery – this is to reduce the function of the thyroid, or it can reduce the amount of hormone

released. Once the hormone level has been reduced to within the normal range (assessed by blood tests), and the signs and symptoms of hyperthyroidism have resolved, then a diver with a thyroid condition may resume diving. Note: This assumes, however, that the diver has no other major health problems and the diver can achieve a suitable level of physical performance.

Individuals who are treated (by medication, radiation, radioactive iodine or surgery) may become truly hypothyroid (have reduced thyroid function) and may require supplemental thyroxine (Synthroid) to actually raise their hormone level back into the normal range. It is vital for all individuals with thyroid ailments to have their thyroid function measured regularly by a blood test. This can help check for hypothyroidism and hyperthyroidism and can indicate the efficacy of treatment. Fatigue sometimes occurs as a side effect of therapy: this may be a hurdle for a return to diving. Fatigue may lead to a decreased level of fitness, thus limiting endurance and stamina.

## Fitness and diving

Participation in recreational scuba diving is usually considered unsafe for individuals with hyperthyroidism. In untreated hyperthyroidism, thyroxin can be released in large quantities, causing debilitating symptoms for the submerged diver. Don't dive without treatment.

## Medication used in treatment

Synthroid has no known interaction with decompression illness.

## Body system: Liver (Hepatitis) Condition

**Hepatitis A** – Formerly called infectious hepatitis, it is most common in children in developing countries, but it is seen frequently in adults in the Western world.

**Hepatitis B** – Formerly called serum hepatitis, it is the most common form of hepatitis, with 300 million carriers in the world and an estimated 1,2 million carriers in the United States.

**Hepatitis C** – Formerly called non-A, non-B hepatitis. More than 3,9 million Americans are carriers of the virus.

**Hepatitis D** – Formerly called delta hepatitis, is found mainly in intravenous drug users who are carriers of the hepatitis B virus, which is necessary for the hepatitis D virus to spread.

**Hepatitis E** – Formerly called enteric or epidemic non-A, non-B hepatitis, its symptoms resemble those of hepatitis A. It is caused by a virus commonly found in the Indian Ocean area, Africa and in underdeveloped countries.

Little is known of the three and possibly five other viruses identified recently. Other viruses, especially members of the herpes virus family, including the cold sore virus, chicken pox virus, infectious mononucleosis virus (EBV) and others can affect the liver. Non-viral forms of hepatitis can be caused by drugs or chemicals, such as alcohol, or autoimmune processes. Alcoholic hepatitis is slow in onset but often fatal and cannot be reversed except by transplantation. Some parasites and bacteria can also cause hepatitis as a secondary effect.

About 26 000 Americans die each year from chronic liver diseases and cirrhosis. Deaths from liver and gallbladder diseases in 1993 reached 51 532, making hepatitis the seventh leading

disease that causes death. It is estimated that approximately 75 to 80 percent of cirrhosis cases could be prevented by eliminating alcohol abuse.

In 1994, an estimated 33 200 people were infected with hepatitis C virus (HCV). There are an estimated 3,9 million people chronically infected with hepatitis C, and about 12 000 die from it each year. The CDC (Centers for Disease Control and Prevention) estimate that annual deaths from hepatitis C will increase to 38 000 by 2010. Hepatitis B is responsible for 5 000 deaths annually: 3 000 to 4 000 from cirrhosis, 1 000 to 1 500 from primary liver cancer and 350 to 450 from fulminant or severe hepatitis.

## Fitness and diving

These diseases are serious and have variable infectivity. The fecal-oral or water-borne route can spread only hepatitis A and E. The oral route may transmit hepatitis B: the virus may be excreted in saliva. The most common symptoms are fatigue, mild fever, muscle or joint aches, nausea, vomiting, loss of appetite, vague abdominal pain and sometimes diarrhea. Many cases go undiagnosed because the symptoms suggest a flu-like illness or may be very mild or absent. As a result, individuals with acute or chronic active hepatitis should not dive.

## Medication used in treatment

Until recently, there has been no way to treat hepatitis viral infection. Interferon alpha-2b produces a remission of the disease in 30-40 percent of persons with chronic hepatitis B and 20-25 percent of those infected with chronic hepatitis C. However, once individuals stop taking the drug, 50 to 80 percent of them will suffer a relapse. Only 10 percent of hepatitis B cases are cleared of the virus.

For treatment of hepatitis C, another drug, ribavirin, is currently pending with the Food and Drug Administration. However, several available vaccines can prevent hepatitis B. They are all safe and effective, and they seem to prevent infection if begun within a few days of exposure.

Some types of cirrhosis can be treated, but often there is no cure. At this point, treatment is mostly supportive and may include a strict diet, diuretics, vitamins and abstinence from alcohol.

# Global News

## ASIA DIVE EXPO 2016 REPORT BACK

### Opening Ceremony

John Thet, Founder of the Historical Diving Society Asia and Beyond Ocean Network (BON); Publisher of Underwater360 (UW360), Asian Diver, Scuba Diver AUSTRALASIA and Scuba Diver OCEAN PLANET; Executive Director of Asia Dive Expo (ADEX); Vice President of Singapore Underwater Federation (SUF); and Vice President of the Media Publishers Association Singapore (MPAS) gave his opening address and announced the main highlights and activities of ADEX 2016.

### Guest of Honour

His Excellency Mr Arief Yahya, Indonesia's Minister of Tourism, was the Guest of Honour at the ADEX 2016 Opening Ceremony and officiated the Grand Opening of ADEX 2016 at Suntec Singapore Convention and Exhibition Centre at 3pm, Friday, April 15, 2016.

### Activity and Kids' Zone

It was all about seahorses at the ADEX 2016 Kids' Zone, with artists AG Saño, Anuar Abdullah, Gregory Burns and Van Wangye Shiming creating beautiful seahorses and finger painting art with the children. Challenging not only the children's creative minds, but also those of the adults, were the puzzles, board games and activities by Right Brain Babies, which have an extensive collection of learning toys and tools designed to enhance brain capacity in both parents and children. A total of 732 children and their family members visited the Kids' Zone over the three event days.

### Book Festival

At the ADEX 2016 Book Festival, "Celebrating Ocean Voices", visitors got their hands on the latest books from renowned writers and underwater photographers around the world. Speakers gave in-depth insights on their books at the UW360 Zone over the first two days of the event and visitors had their books signed by their favourite authors.

### Singapore Pavilion

ADEX 2016 joined in the celebration of the launch of Singapore's First Marine Park, which is organised by Singapore National Parks Board (NParks) and in association with the Blue-Green

**ASIA  
DIVE  
EXPO  
(ADEX)  
2016**

Dedicated to Seahorses



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MENJANGAN ISLAND (warm, clear water, wall dives)  
MUCK-DIVING (Puri Jati, BP, Seraya, Secret Bay)



## Beyond Bali

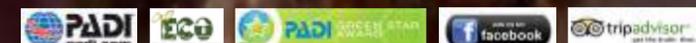
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Alliance. The Singapore Pavilion was the focal point for three days of exciting discovery, education and awareness about the conservation of marine life in Singapore.

#### **The Big Blue Party at Saint Ma Garden Dining by Indochine Group, Suntec City**

From across continents, ADEX speakers and sponsors got together at Suntec City's Saint Ma Garden Dining by Indochine. The relaxed and informal event was welcomed by overseas guests, who could relax over drinks after a hectic first day of ADEX 2016.

The event also saw the launch of the ADEX 2016 Film Festival, with teasers of the exciting, beautiful, and often heart-wrenching films on the programme, and presentations by Shawn Heinrichs, Laurent Ballesta, Leslie Leaney, Kurt Amsler and Pepe Arcos for the films "Racing Extinction", "Gombessa II: The Grouper Mystery", "Genesis: The Man Who Discovered the Sea", "The First Breath" and the premiere of "Pressure: The Challenge to Human Capacity".

#### **TekDive Conference**

Driven by curiosity about what might lie within the confines of a wreck or a cave, or what hitherto undiscovered life forms lurk in the deeper ocean trenches, paid participants of the exclusive TekDive Conference at Asia Dive Expo (ADEX) 2016 were both awed and educated by some of the most accomplished tek divers in Asia and the world.

This year's conference showcased some of the world's most compelling and challenging dives, once again demonstrating the impressive achievements of many of the planet's foremost tek divers. As in previous years, the invited speakers shared their extensive knowledge and experience, and took questions from an enraptured audience.

At the end of the TekDive Conference, a lucky draw was held and one lucky winner walked away with a 7SEAS Dive Gili 5D4N Dive and Accommodation package, while another lucky winner took home a Shearwater Perdix.

Sponsors: 7SEAS, Shearwater

#### **Photo Video Zone**

Another incredible line-up of talented underwater photographers from across the region and around the world graced the floor of this year's Photo Video Zone. As in previous years, many of the presentations drew big crowds, with plenty of the attendees obliged to stand after the available seats were quickly taken. The speakers included highly regarded contributors to Asian Diver and Scuba Diver magazines, and after the talks, several of them were surrounded by enthusiastic readers wanting to meet their idols in person. As well as soaking in the inspiring photography, participants once again came away with invaluable tips and advice for improving their images.

#### **Film Festival**

This year's Film Festival showcased an eclectic mix of features from cartoons and shorts to blockbuster documentaries, covering topics as varied as freediving, conservation, and marine exploration. Particular emphasis was placed on films centred around the ADEX 2016 Icon, the seahorse, and in many instances the filmmakers themselves introduced their works and took questions from the audience.

#### **Aquatic Activities**

The try-dives and swimming pool attracted lots of attention from day one. While children and non-divers were allowed to have their first experiences as divers under the close supervision of professional diving instructors, other dive enthusiasts took to the swimming tank to try their hand at fin swimming and underwater hockey.

Supported by: Seahounds, REN Scubaworx, Singapore Underwater Federation (SUF)

#### **Freedive Workshops**

Top freedivers, Christian Redl and Dada Li, conducted workshops for participants wanting to experience freediving for the first time, giving visitors the chance to get up close and personal with the sport's experts.

#### **Hae-Nyeo Divers**

One of the main highlights of this year's ADEX was seeing the remarkable Hae-Nyeo divers from

South Korea's Jeju Island show off their breath-hold skills in the ADEX dive tank for everyone to witness.

#### **Underwater Artist**

Holding the Guinness World Record for the largest underwater painting in the world, Alexander Belozor wowed visitors with his unique demonstration of live underwater painting at the ADEX dive tank.

#### **Mermaids**

Attendees got to watch these mythical creatures come alive as they performed in the ADEX Dive tank. Kids also met and took photos with their favourite mermaids as they swam and splashed around in the swimming pool.

#### **Exhibitors' Party**

The Exhibitors' Party was held at Suntec City's Saint Ma Garden Dining area, and exhibitors enjoyed free-flow drinks with finger food from 7.30pm to 9.30pm, and one-for-one drinks thereafter at Suntec City's Arn Nan Alfresco Bar & Bistro. A total of 420 exhibitors and visitors attended the Exhibitors' Party, the highest number ever in ADEX's history.

The winner of the Best Booth Design was announced during the party, with the prize going to the Indonesia Pavilion.

Sponsored by: Indochine Group

#### **Live Judging of the Deepblu ADEX Voice of the Ocean Competition 2016**

The annual ADEX Voice of the Ocean Photo/Video/Art Competition celebrates visual representations of the ocean and its many creatures. For this year's live judging event, we were honoured to have celebrated photographer Alex Mustard as the host as well as a distinguished panel of professional photographers, including Iyad Suleyman, Kurt Amsler, Lynn Funkhouser, Matthew Smith, Pasquale Vassallo, Rico Besserlich, Shawn Heinrichs and Tim Ho.



## *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)

Please send to [info@ozdiver.com.au](mailto:info@ozdiver.com.au)



*Breathtaking underwater world,  
magnificent marine creatures and coral formations,  
dive in Thailand.*



# Manta Madness in the Dampier Straits

The morning birdsong was incredible. As the sun peeped over the horizon a hooded butcher bird, a dull black and white creature, dominated the choir with a tune that sounded like a fluorescent rainbow. I looked out of the window of my room, perched on stilts over the shallow azure waters of the Dampier Strait. A couple of juvenile blacktip reef sharks patrolled the waters below me with plenty of posturing, but keeping a distance from the giant barracuda sheltering in the shade created by my neighbour's room.



By Christopher Bartlett

After a 50-hour journey from Paris to Sorong that involved four flights and a two-hour boat ride I'd arrived at Kri Eco Resort, a little travel weary but in time for lunch and some strong coffee before getting into the water. The dive boats were going out at 3 PM, as per usual, but I had a new housing and camera to test, and thought it wiser to opt for a quick and gentle shallow dive off the dive jetty to check out the fish congregating under there.

Given that my room was over the water, testing the empty Nauticam housing was a doddle, and I was soon in the water with a fisheye on my Olympus EM-5 testing the different settings on the school of big-eyed jacks lazing in the water in front of the dock. A fat stonefish sat at the bottom of one wooden pillar, and five batfish posed relatively unperturbed by my presence in front of some pink and white dendronephthya soft coral whilst the top of the dive centre appeared in a Snell's window framed by blue skies and fluffy clouds. A golden gorgonian fan shone in the shallow water as the sunbeams streamed through the plankton. My short test dive turned

into a 90-minute session. With a jetty like this, I wondered what the reefs were like.

With a population of only 52,000 and a surface area 10% greater than the size of Belgium (has anyone else noticed how often Belgium is used as a yardstick for the size of a place?), the Raja Ampat Marine Conservation Area was a sparsely populated place. The majority of the inhabitants live in Sorong, leaving the myriad islands occupied only by tiny villages. Fishing by any means other than spearing and individual lines is banned, and the abundance of fish life is one of the Raja Ampat's big draws.

However, abundance isn't the only string to the area's bow. In 2012 Dr Gerry Allen, a reknowned marine biologist and extremely well-published author broke his own dive site fish count world record. On the Cape Kri dive site, in front of Sorido resort (Kri Eco Resort's newer and more upmarket sibling), he counted 374 different species of fish in one dive. That's almost the same number of species that exist in the entire



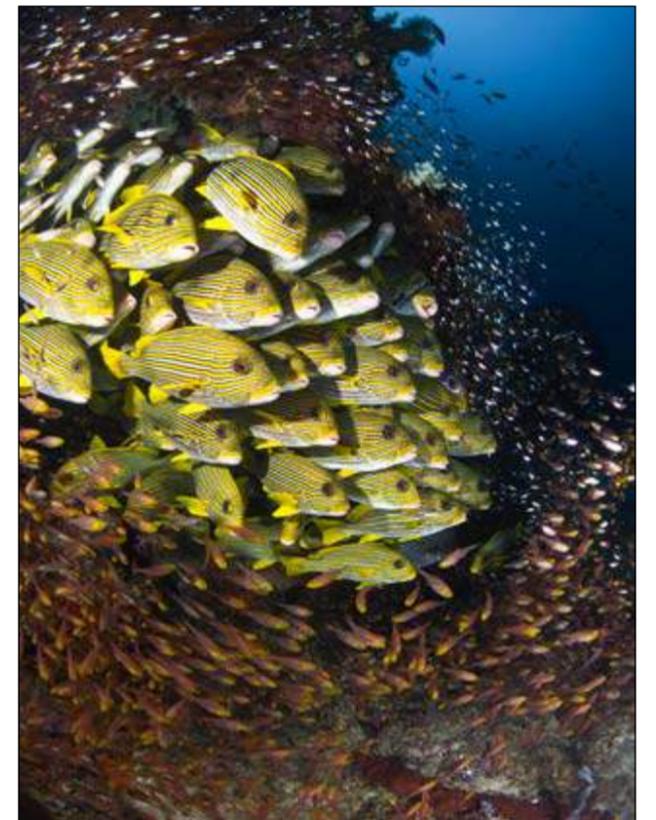
Caribbean (many times the size of Belgium) and close to a quarter of the 1432 species of fish found in the Raja Ampat area.

That evening, Bintang lager in hand, I sat on the chill out deck halfway along the jetty, ideally positioned to catch sunset and sunrise, and got to know the eclectic bunch of fish fans that had made it to this far-flung diving outpost in the centre of the Coral Triangle. a retired English couple and an English doctor, two Australian comen (I mean an insurance broker and investment banker), four French (another banker, a teacher, and two civil servants), two Spanish air-traffic controllers, a Namibian lodge owner and his Polish wife, a Chilean charity fund-raiser, and an Austrian hotelier.

The following morning the 16 of us were assigned a spot in one of three boats, each one diving one of the 30+ dive sites within 20 minutes of the resort. Teamed up with the two Antipodean friends and the southern Africans, we headed off to a site called Mios Kon in our twin-outboard, shaded banana boat with two boat crew and two dive guides.

After the usual briefing and buddy checks, we backward rolled over the side in to the blue. It was a rather milky blue, with viz of 15 to 18 metres, due to plankton in the water. Whilst this wasn't ideal for the wide-angle photography I'd had in mind, the reef was teeming with fish, all coming in for a chow. Mios Kon is a typical Dampier Strait dive site; starting at around 30 metres deep on a sandy bottom, the roundish reef slopes up to around five metres below the surface. We dived the side being hit by the current, dropping in where the current hit the reef. We entered at the point where the current splits, as this is where the fish action is, the fish at the lower end of the food chain feeding on the nutrients borne by the current, and the fish above them in the pecking order of who-eats-who coming in for their meal too.

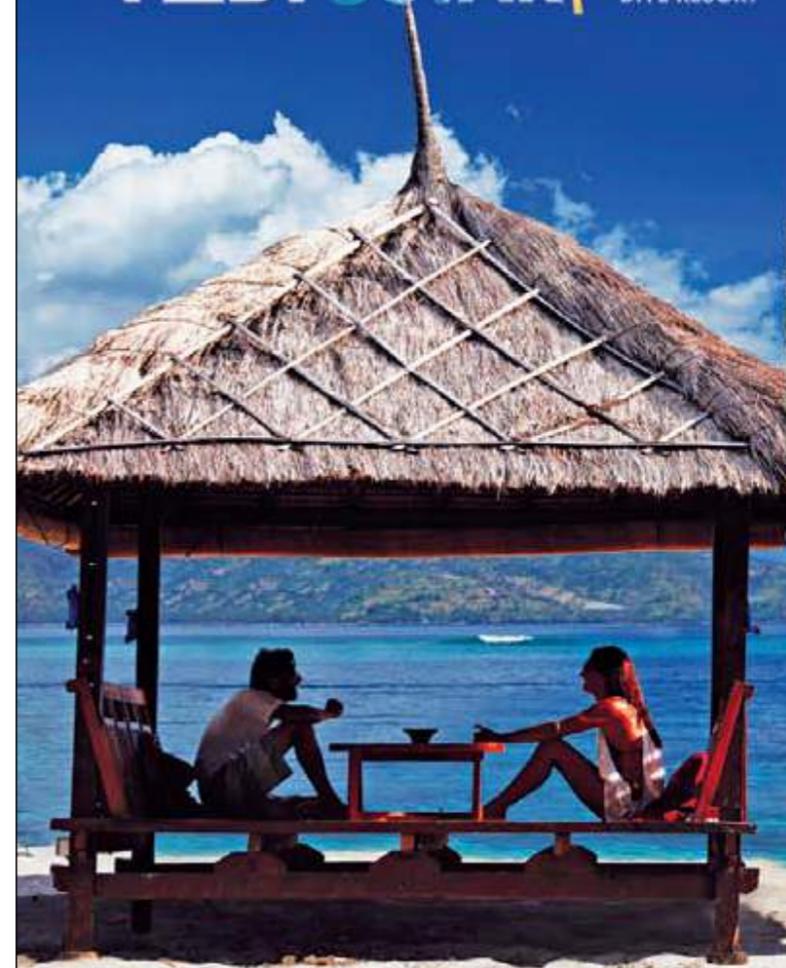
On a typical dive one first goes with the current from its centre point, then you swim into it a couple of metres higher, till you reach the centre point where it splits and stops and then goes in the other direction until the guide turn the group back into the current to return to the split line etc...In effect, you move up the reef in a meandering S-pattern, all the while surrounded by fish of various sizes, from schools of brightly coloured anthias, silvery fusiliers, horse-eyed and bluefin jacks, Spanish mackerel, batfish, and some solitary dog-tooth tuna. Whitetip and blacktip reef sharks patrol the lower areas and a





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resting wobbegong can often be found.

Other sites with a similar set-up are Chicken Reef (no feathered fish but regular schooling bumphead parrotfish sightings), so called as one of the but the Grey reef sharks that sometimes put in an appearance here scared a dive guide many years ago), Sardines, Cape Kri, and Sleeping Barracuda. One post-breakfast dive at Sardines was particularly fishy and I found myself spoilt for choice. Anthias swarmed around a bommy, moving to and fro like waves on a beach, until bluefin jacks cruised right through them. Batfish hung parallel to the reef top in unison in a perfectly lopsided formation, a school of barracuda lingered at the edge of my field of vision. A Napoleon wrasse showed considerable interest in the smaller of the Aussies, and just out of serviceable range of my fisheye, but well within view, a blacktip and whitetip crossed heading in different directions, like two execs on their way to business lunch.

Whilst these sites and their abundant life were great for wide-angle photography, they also had plenty for the macro enthusiast, with some of the rarer reef weirdoes living here, such as Pontoh's pygmy seahorse, one of the smaller hippocampus species, which hangs out on hydroids. Not only

are they smaller than their cousins the Barbigant and Denise pygmy seahorses, they are also even shyer, continually turning their back to the lens. These red-topped yellow tailed buggers are one of the most challenging macro subjects going.

The local sites are really quite varied in their underwater offerings and Mike's Point turned out to be a favourite. It's a tiny island in the middle of the straight, with current washing round either side of it. Starting off on the back in the lee of the current for a change, we swam alongside, in round, and sometimes through its crevices, overhangs, nooks and crannies. A blue-spotted ribbontail ray sought peace and quiet under one rocky shelter, Harlequin sweetlips stopped off for a dental clean from a cleaner wrasse, and a wrasse-mimicking fang blenny mistook my bare forearm for lunch, giving me quite a shock. The grinning, cheating little parasite didn't even bother to try and con me by disguising itself as a cleaner wrasse beforehand. On the current washed reeftops and on the sides, the coral coverage is pretty much 100 per cent, with a range of anemones too, patrolled by various schools from the fusilier family. Once halfway round, the shallows that get most of the stronger current are littered with stunning yellow and orange gorgonian fans with pretty anthias and damsels milling



around them ditzily like living sequins.

Tuesdays are Manta Sandy days. Rather than return to the resort between dives, given the distance to Manta Sandy (around 30 minutes) the boats stay east and do two dives before returning to the resort for lunch. On the first dive near the extra-picturesque island of Arborek, Ross, the client relations manager, saw me lining up some sweetlips posing and pouting under an arch before beckoning me onwards with a double-arm flap manta signal. They were sitting pretty going nowhere, and made me think of a David Doubilet shot from Raja Ampat, but we were here for manta, so I left them after getting a couple acceptable images. A minute later a colour-morphed, almost entirely black reef manta swooped straight over us in one low-flying pass so close she more than filled the frame of my fish-eye.

Post-dive we had our surface interval on the dock at Arborek with the two other boats and naturally those who had been to Manta Sandy already were extolling the joys of watching a pair of manta get cleaned for an hour. "Lovely sweetlips" I said to one of the Aussies. "It's his lip balm, mate" replied his mate. "Bah" said Ross, "I can show you better than that tomorrow". "Fair dinkum, mate?"



I asked, getting into the whole Antipodean vibe.

Before that of course was our dive at the cunningly named Manta Sandy, as it is on a large sandy patch home to two cleaning stations. It is so popular with divers that an NGO has marked out a line with dead coral blocks for divers to stay behind so as not to scare the manta. This allows for hour-long manta observation, though is too far away for decent photography. I ended up turning the camera off, sitting on the sand, and watching the ballet unfold. Manta Sandy and Arborek are not the only manta sites in the area. Close by is Manta Drop Off, a current-swept corner reef on two deep walls. When we approached pre-dive I thought we were seeing mobulas cruising the ripping currents around there were so many. I was so gobsmacked by the numbers that I forgot to take my reef hook. Oops. The current was pumping, but keeping very low and holding on to substrate with my hand I could stay in position, and kicking hard with my freediving fins I could even move into the current, albeit it very slowly. This site was frequented by giant mantas, and there were droves of them. I counted at least fifteen at one given moment. But they were facing away from us, into the sun, and after 25 minutes I wanted to attempt something more than a distant arse-shot.

As I tried to move round the corner I could feel another, even stronger current come into play, but I was in a better place. Or so I thought. As I turned sideways to line up an approaching manta the new current caught me with its full force and I was ripped off the reef. I tried a couple of big kicks but I was going backwards at an unprecedented rate of knots, faster than ever in my 1600 odd dives. I just had the time to wave goodbye to Ross and give him the OK sign before my ears started to squeeze - I was also going down. A glance at the depth gauge told me I'd dropped from 15 to 25 metres in a matter of seconds. Then I remembered the whirlpools I had seen from the boat. "OK F--- wit" (my nice nickname for myself when I sense some self-created sub-optimal situation arising) "inflate a bit and fin like a demon". I got vertical, held my inflator and concentrated on the depth reading on my computer (also on my left wrist and importantly facing inwards) through the near horizontal stream of my bubbles breaking over it. I started to rise and dumped air to avoid a rapid ascent. I got to my safety stop depth and whizzed along on an exhilarating ride, passing at least another dozen manta gracefully cruising into the current as if it was not there. But there it was, as when I broke the surface I was over a kilometre away from the boat, closer to a couple of liveboards and most of the way to the side of Arborek. In the 10 seconds it took for me to get my bearings, I could already hear the twin outboards and saw the banana boat flying towards me. Two worried Papuan faces peered over at me, till I let out a raucous pirate's laugh and their faces split with wide grins. I only had one half-decent silhouette shot, but I'd had a fantastic ride.

The next day Ross took us to Otdima. Nathan was going for more macro, but if this is where David Doubilet's sweetlips were, I was going as wide as I could. After finding some seahorses and shrimps to keep Nathan happy, Ross puckered up his lips and pointed "this way" till we got to an overhang covered in glassfish and pointed again. I gave him a nonplussed shoulder shrug more commonly seen in a Parisian bistro when you complain to a waiter. He pointed animatedly again, and then swam off, probably giggling. They were very pretty glassfish, so I swam closer to illuminate them correctly. And then they parted. Like the waves of the Red Sea before Moses. Actually more like a strippergram removing her drab raincoat to reveal a full set of classic lingerie. It was the jackpot of sweetlips, a school maybe 100-strong, the crown jewels surrounded by a thousand glittering gems. I snapped away for 10 minutes, in bliss. The

end results were not DD, but I really like them. Colourful, plump, sexy pouting fish.

But Otdima's visual delights didn't end there. A broadclub cuttlefish posed perfectly under a large table coral, presenting itself to best highlight itself, the coral, the reef, and the ocean, a magic combination of the rule of thirds and the use of diagonals. And then there were the hard coral gardens in the shallows, and more cave sweepers hanging around gorgonians, that I failed to fully appreciate at the time, being in a sort of visual and photographic overload

There are too many good sites to eulogise and wax lyrical about them all. Mayhem on an incoming tide was suitably named for the swirling reef fish and corals, Arborek had reef mantas, more sweetlips, and a cool surface interval promenade along its picturesque jetty, or you could snorkel and spot the odd passing manta. The Passage is an ethereal, other-world dive site with moderate current gently taking you along a coral-strewn shallow wall, the trees above clearly visible and shafts of sunlight penetrating the canopy and illuminating dead tree trunks on the bottom of the narrow channel. It feels like diving in a river, until you glide past a large barrel sponge or gorgonian fan, or a blacktip reef shark cruises by.

The stand out site for me though has to be Blue Magic. In season, from December to April, this underwater hump is a giant manta magnet. If mantas wore leather miniskirts, this underwater hill would be a special edition Harley Davidson Fat Boy. You can dive down to 30 metres and see Barbigant's pygmy seahorse (again), or another decent school of big-eye jacks, spot a wobbegong or two, but once I had been to the top of the site, on subsequent dives I just went to the reef top at 10 metres and stayed there, hanging back from one of the cleaning stations. Within a few minutes, the giant cartilaginous gliders turned up and just kept circling. When one was done, another pulled up, sashayed around for a bit like a model on a catwalk, often hovering over my bubbles for a tickle. After the first dive here, I just wanted to keep coming back.

I managed to dive it three times in the last two days, and would gladly have done more. It's the sort of place I just want a floating house over the top of with a surface supply of gas. I've spent a fair bit of time up close and personal with their toothier cousins, but this place was an almost extra-terrestrial elasmobranch experience, truly mantatastic, a must-do site for any manta fan.



**Kayaking from Kri**

Kri's aquatic offerings aren't limited to diving. It is also a start and finish point for kayak expeditions around the region, with routes ranging from three to fourteen nights. Accommodation is in village homestays, and routes vary in difficulty from a gentle (ish) half-day paddling every day to some more endurance testing itineraries.

**Homestays**

Of course, if you can't be bothered with muscle-straining and sore bum-inducing paddling, you can get a lift on one of the dive boats to one of many homestays available in the area. These cost from 50 USD a night full board, and can either be arranged in advance through the resort or through an agent. The accommodation is simple, the food wholesome, and the welcome typically warm and West Papuan. There are stilt houses in the sea or huts on sandy beaches under palm trees. Sawinggrai on Gam island is in a particularly paradisaical spot, has three guesthouses, and is close to Kri Island, facilitating transfers.

**Getting there:**

Kri Island is located about 75 km northwest of Sorong, at the tip of the Bird's head seascape in West Papua. To reach Kri by boat will take approximately two hours from Sorong. The main ports to Sorong are Jakarta, Makassar or Manado. Sriwijaya Air and Express Air operate regular flights to this region. Lion Air flies to

Sorong via Ambon. Kri Eco Resort and Sorido provide free boat transfers on Sundays for guests on 7 and 14-night stays, and on Wednesdays and Thursdays for guests on 10 night stays.

**Time Zone:**

Indonesia has three Time Zones, please be aware of this when booking domestic flights. Eastern Indonesia (Raja Ampat): GMT +9

**Marine Park Fees:**

1,000,000 Indonesian Rupiah (about 100 dollars) per person payable in cash on site. You receive a tag to attach to your BCD and it is valid for one calendar year.

**Climate:**

Raja Ampat has a micro-climate due to its proximity to the equator and being protected by several mountainous land masses. The equatorial weather makes for good diving all year round; however from June to August it is slightly windier which brings some larger swells.

**Water temperature:**

27C to 29C

**Contacts:**

Indigo Safaris organized this trip for us with a week in Komodo. They can also organize diving in Ambon, Maluku, Bali, and Papua New Guinea, and land tours in West Papua to meet different tribes such as the Dani in the Baliem Valley. [info@indigosafaris.com](mailto:info@indigosafaris.com) 





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**SUPERFLEX HOSE**   
Extreme light weight and exceptional softness guarantee the maximum freedom of movement



**mares**  
just add water

# Zanzibar & Pemba

The spacious, purpose-built dhow slid through the calm Indian Ocean. Sitting under the shade area of the deck, we were briefed, kitted up, and went through our buddy checks before a giant stride took us into the 30°C sea. Looking down I could just make out the dive site, an old British lighter, 27m below me. It was 9:30 am and the day was going fantastically.



By Christopher Bartlett

I'd started the morning in Dar-es-Salaam and caught a Zanair Cessna Caravan for the 20 minute early morning flight to Stone Town on the west coast of Unguja, more commonly known as Zanzibar, for some low-level sunrise shots of the outlying reefs. Ten minutes in a taxi and I was kitting up at One Ocean Divers, a mug of coffee steaming next to me.

One Ocean started 14 years ago, and in 1999 it was taken over by Aussie Gary Greig and his South African wife, Gail. From one dive shop in Stone Town they now operate from four other resorts around the island. More coffee was brewed and then consumed, before we walked onto the waiting motorised dhow. On the leisurely cruise out to a reef near Bawe Island acquaintances were made and the loudmouth been-there-done-it-all-in-25-dives Harvard business blah-blah post-grad diver was quickly identified and avoided as a buddy.

The wreck itself was a tad disappointing. Although the briefing by Amani had covered all the essentials and had been thorough in terms of safety procedures, no indication of the size of the wreck had been given. Hence my initial thoughts of, "With a lifeboat that size, it must be a huge wreck" soon



turned to disappointment when Amani went straight for it. It was host to a large school of Striped eel catfish and long strands of whip coral (that numbered one less after some unusual buoyancy 'skills' from across the Atlantic). Following the dive plan we then finned away following the contours of the sandy bottom up to some outcrops of reef, home to a Bearded scorpionfish and an assortment of Triggerfish, Butterflyfish and Coachmen.



By the time we'd started puttering along to the Aquarium at Murogo Reef (how many Aquarium dive sites are there around the world?) bellies were grumbling and the crew laid out a spread fit for an Omani Sultan, once the rulers of Zanzibar and the most successful slave and spice traders in Africa. After samoosas, spring rolls, chapattis, fresh fruits and a leisurely spot of digestion during which we tried our best to convince our American expert that a Stonefish sting really would spoil his day, it was time to pull on our shorties again. The visibility was around 20m and the site deserved its moniker. Table and plate corals adorned the reef and we spotted Common lionfish, lots of nudis, an Undulate moray, a Hermit crab, huge gorgonian fans, a giant clam and two Bluespotted rays. However, the highlight of the dive was the large remora that took a fancy to Captain Fantastic's bare leg, his squeals being vaguely reminiscent of dolphin chatter as he thrashed around trying to avoid its attempted love bites. Back on the dhow he was informed that remora like to live on sharks, and that one is never very far from the other. "I could've been killed then," he shrieked. "If only," I thought.

The reefs around Stone Town are fairly plentiful and other larger wrecks exist too. And whilst any



aficionado of Gauteng's quarries would gawk in amazement at the coral formations and the fish life, the reefs have suffered from Crown of thorns starfish robbing the coral of colour.

Back on shore in Stone Town there is a bit of sightseeing to do – central Stone Town is a labyrinth of narrow streets and alleyways, flanked by crumbling mansions and mosques. The main attractions are the massive Zanzibari wooden doors,





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*"A fantastic and unique location with some of the best dive sites we've ever experienced. The sites are great at 100 feet, 50 feet and 15 feet. So perfect for any kind of preference. The service and support was downright luxurious!"*

T. Marshall Marcon



[www.wakatobi.com](http://www.wakatobi.com)

By Christopher Bartlett

an after-dinner drink (the food is poor value for money) at Mercury's Restaurant and Bar (Freddy of Queen fame is Unguja's most famous son) by Big Tree, the House of Wonders, the Omani Fort, Tippu Tip's house, the Persian Baths and the fish market (conservationists beware: you will find sharks here).

**Matemwe Beach Village and Mnemba Atoll**

Situated close to Mnemba Atoll, a shallow expanse of coral reef with a tiny heart-shaped island on its western fringe surrounded by some steep drop-offs, Matemwe is the 'must-dive' of Unguja. With viz 20m or better, there are a multitude of sites to dive, and its calm conditions make it suitable for novices and experienced divers alike. One Ocean's centre here was on the premises of the Beach Village, where standard rooms are comfortable and clean, the Shamba suites are huge and charmingly decorated. Located next to the beautiful infinity pool a few paces from the beach, it also had excellent equipment with friendly and efficient service.

If it was a haven of peace and tranquility on the boat, under it the ocean was buzzing. West Bank started at 6m and then rolled down into a 40m drop-off, and was covered in reef fish, hard and soft corals and large schools of Fusiliers. There were the intriguing juvenile Black snappers, Damsels in the Staghorn coral, Royal and Emperor angelfish, Chocolate dips, Bluespotted rays, and Two-bar clownfish. Thumbing through the fish book back on the dhow it was a case of "Saw that, saw that, saw that, loads of them, two of them, a few of those..."

After another dhow-diving lunch taken anchored over a snorkelling site that had several divisions of sergeant majors flitting over it, it was time to visit Turtle Reef. The site was not one unbroken reef, but rather coral mounds interspersed with sand, where unusual sightings included two Left-eyed flounders, a large octopus in some rocks and a grand total of zero turtles between eight divers. However, Lionfish fans were delighted; there was an abundance of these delicate-looking but venom-carrying members of the Scorpionfish family.

Back at the ranch, beers were cracked around the poolside bar and new arrivals greeted like distant cousins, before dinner and a relatively early night under the sleep-inducing whir of the strategically positioned fans. If you want to treat yourself, the Shamba suites are well worth the extra 50 dollars, and for a special romantic night for two, the honeymoon suite is even more secluded and has its own plunge pool, beach access and chef.



**Kendwa**

I caught a ride across the top of the island where there are two resorts to choose from. Nungwi was a dusty village that has rapidly grown into the most frequented and fashionable (read promoted) resort on the island. It has the liveliest nightclubs and the greatest selection of restaurants, but is also overrun by tourists and has poor swimming beaches.

For divers, there are a few local sites, but the best dives involve a long dhow trip to Mnemba.

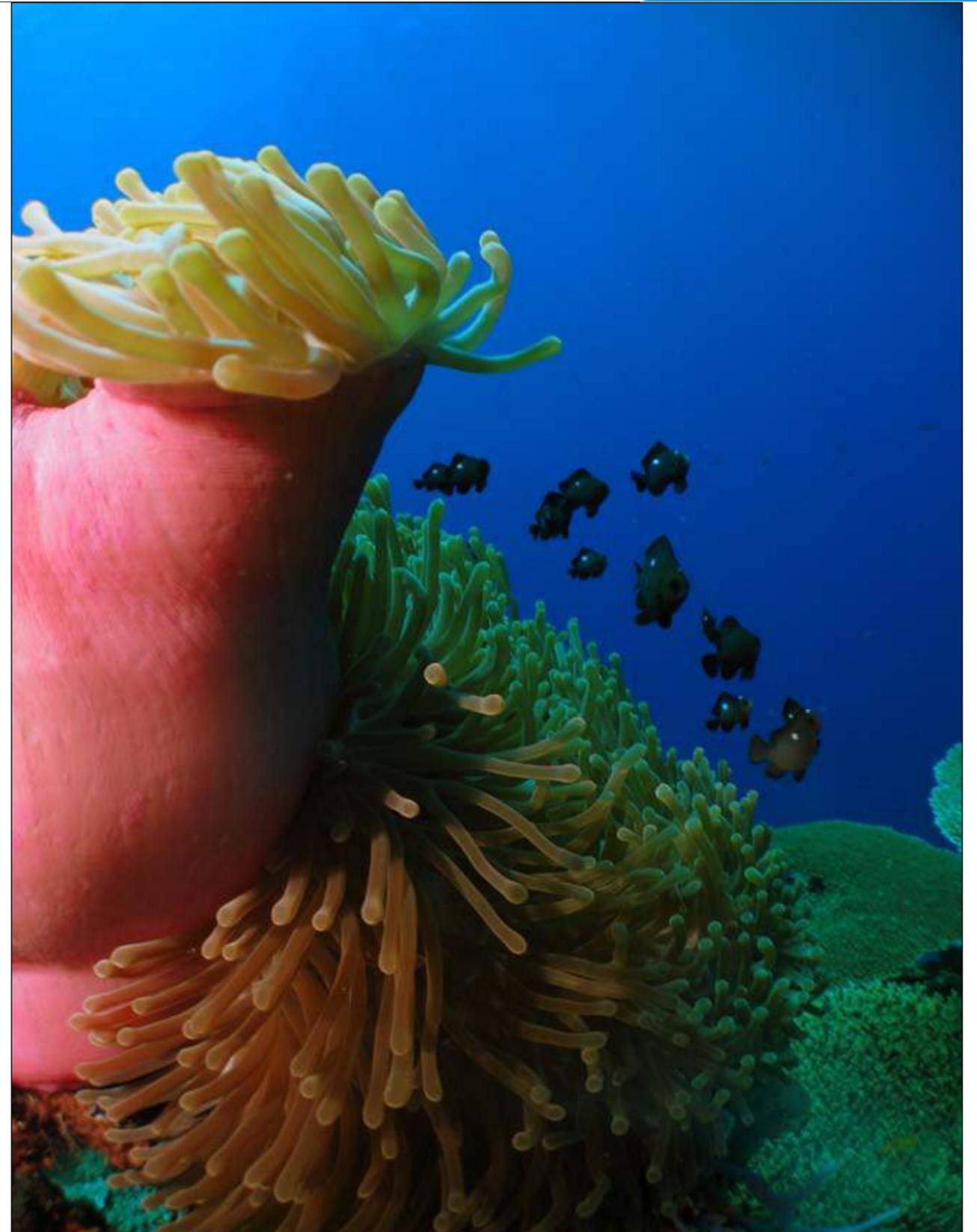
The less-publicised resort of Kendwa has a huge beach that is ideal for bathing, even at low tide, and offers a array of places to stay, ranging from thatched bandas (huts) to air-con en-suites and numerous restaurants. The Bikini Beach Bar is popular and can get quite lively, and it is next to the Scuba-Do dive centre, with the Sunset Bungalows (50 USD for a spacious en-suite double with a traditional Zanzibari bed that could sleep four) on one side and on the other Kendwa Rocks with accommodation at similar prices and some cheap beach bandas at 30 USD for a double.

Zambian-born Christian Moohouse-Chilcott, who

set up Scuba-Do in 2001, has discovered some excellent local reefs and runs the only dive centre in the north using RIBs, allowing Kendwa-based divers to get to Mnemba quicker than on a dhow from Nungwi. Jumping in a RIB one morning, we skirted round Nungwi and the north of the island, bouncing in the light chop, and onto Mnemba atoll in just under 30 minutes.

Wattabomi, in the channel between the atoll and the main island, started with lattice corals carpeting the seabed and was itself carpeted with fish. Moving north from bommy to bommy we came across three Green turtles having a snooze, heads tucked in a crevice before gently profiling upwards over a sandy patch for our safety stop, with hundreds of Garden eels swaying to the tune of an invisible snake charmer.

Local sites include Kichafi and Haji Reefs and their extensive lattice coral formations, Peacock mantis shrimp, magnificent anemones and resident Skunk anemonefish and Leafish, Nankivell with its giant plate corals in fascinating formations, rays, Napoleon wrasse, Groupers and the stunning Hunga Reef with its interconnected bommies and a huge variety of hard and soft corals, reminiscent of a fantasy world, and a monster rock lobster hiding in a cave, only its giant antennae visible.



## Dive the Globe

Zanzibar & Pemba

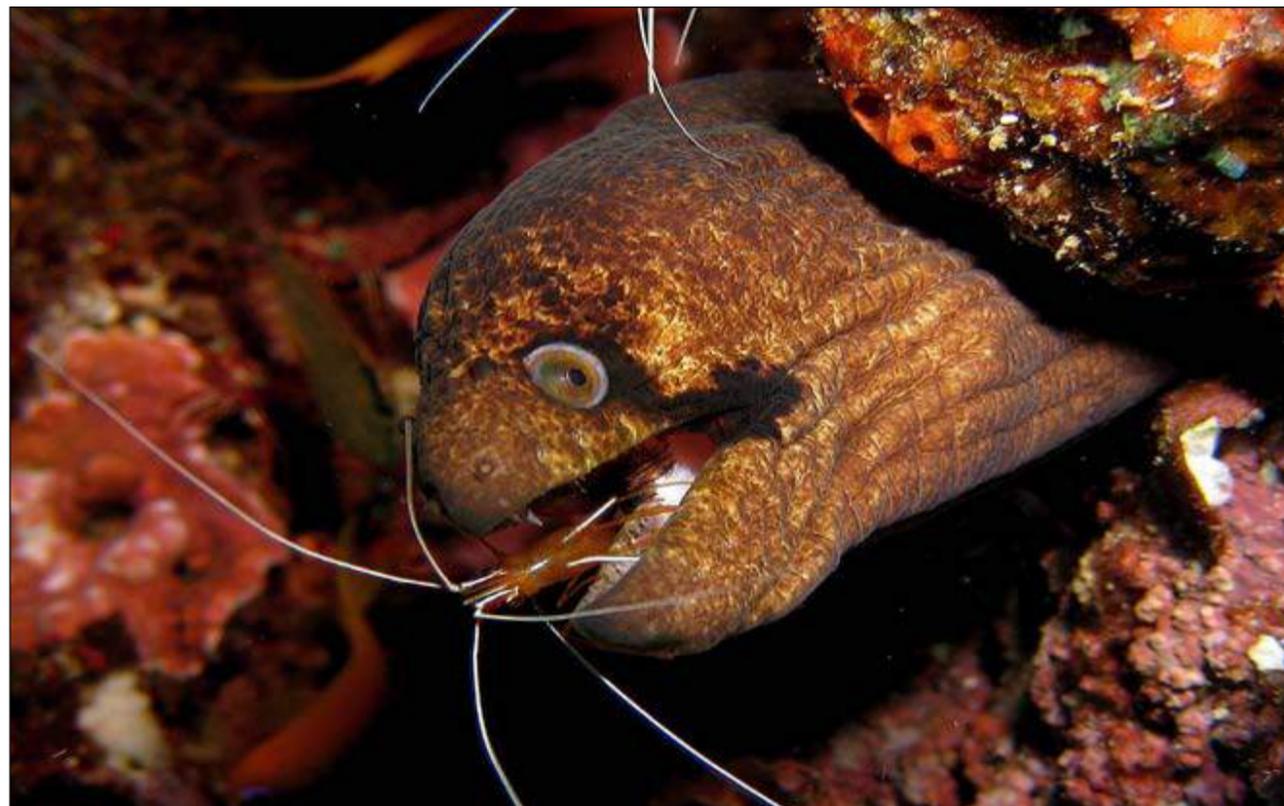
By Christopher Bartlett  
Hunga was the home to even bigger schools of snapper, and the impressive Crocodile flathead that can be found in significant numbers resting on the sandy bottom in gullies and between bommies. Rare finds included Seahorses, a Mauritius scorpionfish and a Weedy scorpionfish, and all this in 20m viz, 10 minutes from the dive centre.

With short travelling time to dive sites, and the possibility of morning and afternoon dives with a long shore-break in between, Kendwa is also suitable for mixed parties made up of divers and non-divers, children and adults. Aviation fans can also take a trip back in time on Indigo Aviation's Douglas DC3 Dakota which flies between Dar and Stone Town several days a week.

If you're lucky you'll get to spend a few minutes in the third cockpit seat of this low-flying beauty, which flew missions on D-Day!

### Contacts:

Indigo Safaris organized this trip for us with a week in Komodo. They can also organize diving in Ambon, Maluku, Bali, and Papua New Guinea, and land tours in West Papua to meet different tribes such as the Dani in the Baliem Valley.  
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# The Roundhouse



Gansbaai South Africa is rightly famous for Great white sharks, but did you know that it is also a hotspot for land-based whale watching? There are consistently more whales in this area than in Hermanus and some days you can count 40-plus whales in one sighting.

This special place doesn't draw the crowds and it is not uncommon to find yourself sitting alone on the edge of a rock perched above a family of whales only 5m away.

Stunning, style and comfort are words that spring to mind as I settle down in my luxury room at the 4-star graded Roundhouse Guesthouse. My suite is exquisite with all the touches expected of a 5-star hotel. The living



room is complete with a stereo and plasma TV with surround sound which swivels through the wall into a large bedroom with a king-sized bed and stunning en suite bathroom with a stone walled shower and a Jacuzzi bath. The Roundhouse has undergone a year long refit and it is easily one of the top three guesthouses that I have ever stayed in.

The building alone is beautiful and one of the most photographed in the area, but the interior will simply blow you away.

The Roundhouse features an entertainment area with a huge screen and surround sound and a whale watching deck with stunning views over the town and Walker Bay, not to mention a Jacuzzi. A full range of breakfasts are included and personal service and attention are assured to all guests.

All suites have tea and coffee facilities, a twin/king-sized bed and a bathroom with both a shower and a bath. They also have a new health spa on site which offers massages, body wraps, facials, pedicures and manicures to help you unwind at the end of an exhilarating day!

**The total package**

The Roundhouse Guesthouse is part of a total package that Dave and Elna Caravias offer to visitors to the area. Dave and Elna also own the Great White Adventure Centre in Gansbaai



## Dive the Globe

### The Roundhouse

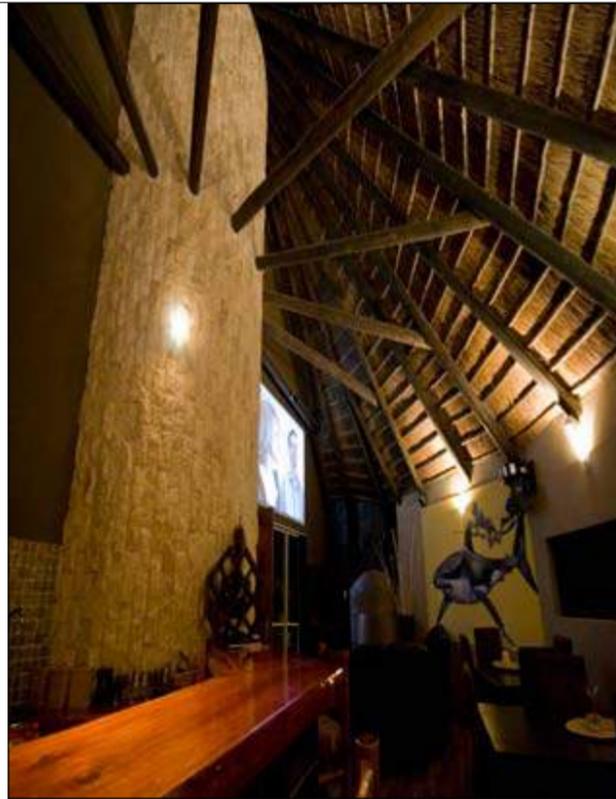
By Resort Photos: Mark Snyder

which is the main booking office and tourism booking centre in Gansbaai. They offer their own activities – [www.eco-adventures.co.za](http://www.eco-adventures.co.za) – including kayaking, cave tours and rugged 4x4 mountain trails in their Landrover Game Viewer.

For those wet weather winter days they also offer tours to Cape Agulhas (the southernmost tip of Africa), the Betty's Bay penguin colony and even day trips to Cape Town. When staying at the Roundhouse you will never be left high and dry with nothing to do.

Dave and Elna have extensive experience in the shark cage diving industry, and apart from owning the Great White Adventure Centre, they also run and own the website, [www.sharkbookings.com](http://www.sharkbookings.com), which is the central bookings office for the White Shark Cage Diving and Shark Diving worldwide.

Dave and Elna are experienced travel agents and will do their best to ensure that your visit to Gansbaai and the Western Cape is a memorable one. For more information, call 082-466-4519 or 028-384-1741 or visit [www.sharkbookings.com](http://www.sharkbookings.com)



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(COMMENT FROM ONE OF OUR GUESTS...)

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# Wrecks of the Northern Red Sea - Part II

As you swim above and through the majestic ships which came to rest at the bottom of the Red Sea, you can only imagine the panic and woes of those onboard the sinking ships which are now encrusted with beautiful, colourful corals and tropical reef fish which complete the picture. Instead of following the 'normal' Red Sea route, why not discover the treasures beneath the azure blue waters of Egypt's Red Sea?



**Name: The Dunraven**

**Type of ship:** Iron Screw Steamer – planked, capable of being powered by either sail or steam

**Location:** South of the Beacon Rock lighthouse on Sha'ab Mahmud on the Strait of Gubal.

**Date built:** December 1873

**Length:** 79,6m

**Weight:** 1.800 tons

**Date wrecked:** April 24, 1876

**Date discovered:** In 1977 by Howard Rosenstein and Carl Roessler. Geologist Arye Keller discovered a wreck at these co-ordinates but didn't know that it was the Dunraven and gave vague directions to Rosenstein

**Port of origin:** The Dunraven was owned and operated by W. Milburn of London, and after successful sea trials, was used on the Bombay run

**Destination:** Liverpool, England  
What was the ship carrying? General cargo which included timber, steel and cotton

**Average depth:** 22m

**Maximum depth:** 30m

**Access:** Day or safari boat normally from Sharm-El-Sheikh, occasionally from Hurghada

In January 1876, 27-year-old Captain Edward Richards Care supervised the loading of the Dunraven in Liverpool.

It consisted of general cargo which included timber and steel for India's fledgling heavy industrial ambitions. The trip out to Bombay was without incident and by the end of March they were loading her for the return leg. Eventually, the Dunraven left Bombay on April 6, 1876 loaded with 'valuable general cargo bound for Liverpool.' The ship made good time across the Indian Ocean and continued on and up through the Red Sea.

At 2:15am, the Master went below leaving orders to be called in one hour, but at 2:40am the beacon light was lost to view – as though it had simply gone out – but the Master was only called sometime between 3:30 and 3:40am.

When Captain Care arrived on deck, land was plain to see some six or seven miles off the starboard side in a northerly direction. It was now 3:40am and he immediately altered

course. Ten minutes later the look-out saw a large dark object in the water which he thought was a buoy and called this out to the bridge, but he got no reply.

That instant, however, the Second Mate also saw the object but, thinking it was a boat, only casually reported this to the Master. Care immediately ordered the engines to be stopped but before this could happen the Dunraven struck rocks which immediately penetrated the fore compartment. The steam pumps were immediately set to work and a fruitless attempt was made to heave her off by means of a kedge anchor.

By 7am, the water reached the engine room and put out the fires and by noon the starboard side of the upper deck was under water and the Master and crew took to the lifeboats. They remained with their doomed vessel and at 4pm an Arab Dhow came along and took the shipwrecked mariners on board. It was only at this time that the Master of the Dunraven was made aware of his actual position – off the southern tip of the Sinai Peninsula.

At 5pm, the Dunraven slipped off the reef and sank in 27m of water. For three days the Dhow lay at anchor over the Dunraven until Captain Care and his crew was transferred to the passing Italian steamer, Arabia, which conveyed them to Suez. The Peninsular and Orient steamer, Malwa, later transported them all back to England.

In 1977 Howard Rosenstein began to investigate some information about the wreck given to him by local Bedouin fishermen and geologist, Arye Keller. He took a chance and by luck jumped into the water right on top of the wreck. He had a group of American divers led by Carl Roessler of Sea & Sea fame as witnesses. In November 1979, the name Dunraven was found engraved on some fine porcelain after which researchers tried to determine precisely which Dunraven it was.

Confirmation was obtained when Howard and his divers cleaned off the lettering on the stern of the vessel using a pneumatic wire brush.

The Dunraven is almost completely upside down and she lies with her port side resting along an adjacent reef. At a depth of 17m,



By Johan & Amilda Boshoff  
the upside down bow is the shallowest part of the dive, with the stern resting on the seabed at 30m. One can gain access through the three main openings at the stern, centre and the bow. The dive begins from the stern, the deepest point of the wreck.

After swimming for a few dozen meters, you can penetrate the hull which is populated by large groupers, Lionfish, swarms of Glassfish and multicoloured Alcyonarians.

It is best to exit through the opening by the engine room so that you can explore the outside of the bow area and the nearby coral garden. A group of Batfish is almost always present just outside the bow section.

On top of the hull, the rudder and propeller are still in place, although one of the four blades is missing.

It is best to dive the Dunraven when the sea is calm and the weather is good. Preferably book your dive for the morning before the wind picks up in the afternoon – the good light also makes for stunning photographs.

There is often a current moving to the north, and even though visibility may be good, it is advisable to take a torch.

**Name:** Kingston (Sarah H)

**Type of ship:** British merchant

**Location:** West coast of Shag Rock

**Date built:** 1871

**Length:** 78m

**Weight:** 1 449 ton

**Date wrecked:** 22 February 1881

**Port of origin:** London, England

**Destination:** Aden, Yemen

What was the ship carrying? Coal

**Average depth:** 12m

**Maximum depth:** 17m

**Access:** Day or safari boat from Sharm-El-Sheikh or Hurghada

On the morning of January 20, 1881, Captain Cousins sailed from London in charge of the Kingston – the destination was Aden in Yemen. Sailing via the Mediterranean and the Suez Canal, the Kingston finally cleared Suez on February 20, 1881. The diligent captain took charge of the ship for the entire trip through the Straits of Suez which meant that he was awake for two straight days in a

row – this caused more harm than good. As the Kingston neared the open Red Sea in the dark, Captain Cousins felt that the immediate danger was over and that he could relax. He gave instructions to the First Mate and went to his cabin for a much needed rest. In the early hours of February 22 the Kingston struck Shag Rock. Within moments, the Captain was back on the bridge to find out what was going on. For 48 hours the crew fought to keep the Kingston from a watery grave but to no avail. Captain Cousins and the crew stayed on the Kingston until the last possible moment when the Kingston suddenly settled by the stern and gracefully slipped backwards from the reef until only the masts were visible. No injuries or loss of life occurred.

Your exploration of the ship starts at the stern at a depth of 15m where the intact propeller can be seen. The route continues inside the easily accessible hull as the wooden bridge is no longer there. This area is well lit by sunlight. Of special interest is the remains of the engine room with the boilers still visible, whereas the bow area situated at a depth of 4m is destroyed. To the right of the wreck one can see the remains of the mast on the seabed.

The marine life here is particularly interesting and comprises Surgeonfish, Rabbitfish and Nudibranchs. From here you continue the dive either to the east or west to explore the reef which is populated by rich fauna inhabited by Jackfish, Groupers and Snappers, Turtles, White-tip reef sharks and Eagle rays. Schools of Dolphins are regularly also spotted in this area.

This wreck and the area around are home to beautiful hard corals. It is advisable to only dive the Kingston when the sea is calm as the wreck is quite shallow and tides also influence the amount of current present. No torch is needed when exploring the wreck. There are no artifacts to be seen except for the visible propeller, but the framework encrusted with corals and marine growth is exquisite.

The wreck offers spectacular opportunities for photographers as visibility is good and beautiful silhouettes can be shot when the sun is shining from above. It is a beautiful and relaxed dive which is highly recommended.



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**Name:** Giannis D

**Type of ship:** Cargo vessel

**Location:** North west corner of Sha'ab Abu Nuhas Reef

**Date built:** 1969

**Length:** 99,5m

**Weight:** 2 932 tons

**Date wrecked:** February 19, 1983

**Port of origin:** Croatia

**Destination:** Jeddah, Saudi Arabia

What was the ship carrying? Timber and coal

**Average depth:** 15m

**Maximum depth:** 27m

**Access:** Day or safari boat normally from Hurghada, occasionally from Sharm-El-Sheikh

The Greek cargo ship, Giannis D., crashed into Abu Nuhas Reef on its way to Jeddah while carrying a cargo of timber and coal. Sha'ab Abu Nuhas is a magnificent coral plateau that barely reaches the surface and, from a distance, is not easily seen at all. Unfortunately, as far as shipping is concerned, it lies right at the very edge of the busy shipping lane called the Straits of Gobal which is found at that extreme North West corner where the Red Sea begins to narrow before it becomes the Gulf of Suez.

This unfortunate accident happened on April 19, 1983 when the Captain went to his cabin for much needed sleep leaving his crew to navigate the treacherous waters.

Having been built in 1969 in Japan she was first called Shoyo Maru before being sold in 1975 and renamed Markos. In 1980 the Greek company, the Dumard Shipping and Trading Corporation, bought the ship and renamed her Giannis D. The owner of the ship added a big D to the name (his initial). This beautiful vessel did not sink immediately after striking Abu Nuhas Reef, and the crew members were able to be rescued by the Santa Fe, an Egyptian ship.

The Giannis D. now lies on the sandy seabed at 27m in a north east/south-west direction with the bow separated from the stern section. Both lay on the port side and are covered with splendid soft corals – the centre section has collapsed but the bow and stern structures of the wreck are perfectly intact. The dive needs to be done in calm sea conditions starting from the

stern section. This is the most beautiful and interesting part of the whole wreck and it is dominated by a big winch shaped like an upside down U that reaches up to 6m below the surface – in calm seas it is sometimes visible from the diving boat.

The command bridge has wide openings and is well illuminated, easily accessible and represents one of the most interesting points of the wreck – in the centre you will find the wheel house with the binnacle (scuba divers may feel disorientated inside the bridge due to the incline of the ship). One can enter the engine room through an opening in the funnel which has light rays filtering through from above and is inhabited by a school of Glassfish. Inside it looks like nothing happened at all – the machinery, engines, pipes and instruments are still in perfect condition. You then exit the stern section and continue your exploration towards the bow, crossing the middle part of the hull which is completely destroyed. Pay close attention and you can find numerous wooden planks that were once part of the ship's cargo.

The bow of the Giannis D is cut off and bowed to its left side at a depth of 18m, but it is still perfectly intact. During the exploration of the wreck covered in red soft corals, small Table corals, Raspberry corals, sponges and anemone with their Clownfish, you come across numerous schools of Goldies and Glassfish.

Lionfish are common on the upper bridge and huge Groupers and Batfish are ever-present along with many kinds of Parrotfish. In the crevices of the hull many Giant morays have found their home. Always be on the lookout for Dolphins in the midwater and on the surface as they like to play in this area.

The best time to dive is midmorning with full sunlight. The wreck is reached by zodiac, so be prepared and always take a torch to explore the inside of the wreck. The Giannis D. makes for great shots, with clear visibility and beautiful coral coverage. Overall, the Giannis D. is an excellent dive and one that can be enjoyed by every level of diver. Thankfully, no lives were lost during her demise, but shipping's loss is definitely diving's gain. 



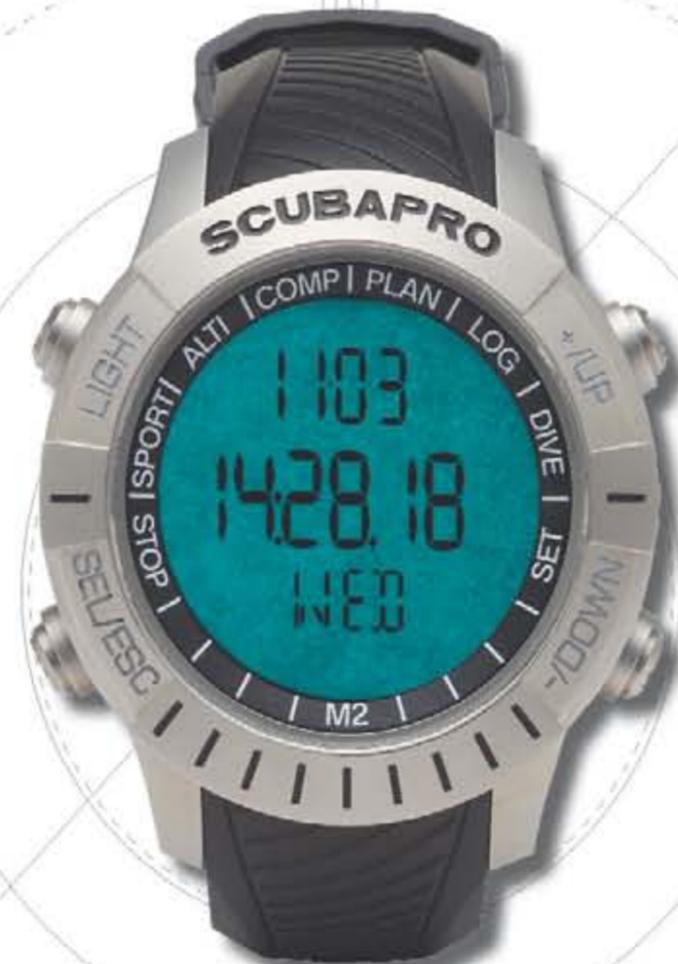
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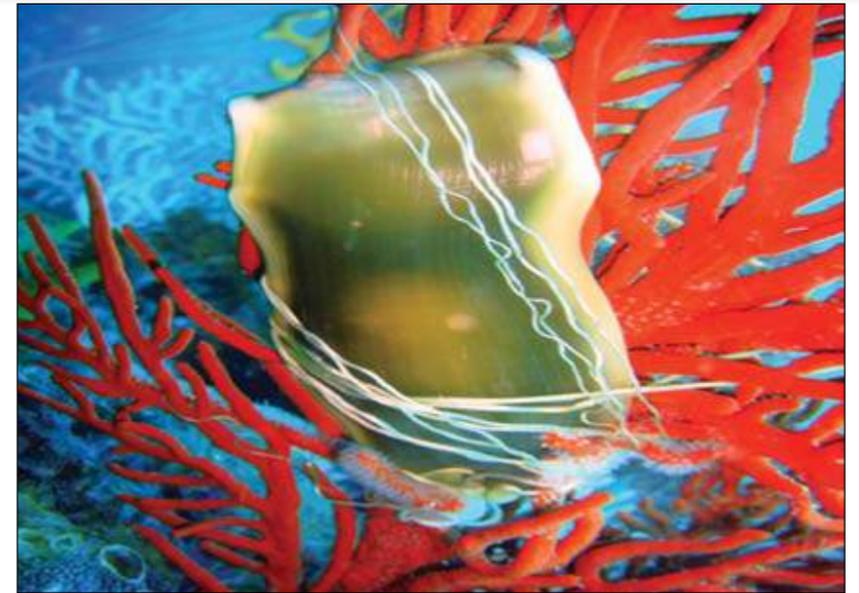
# Photographic Competition



Riaan Rossouw



Peter Locworth



Steve Wilson



Travers Andrews



Wayne Potgieter



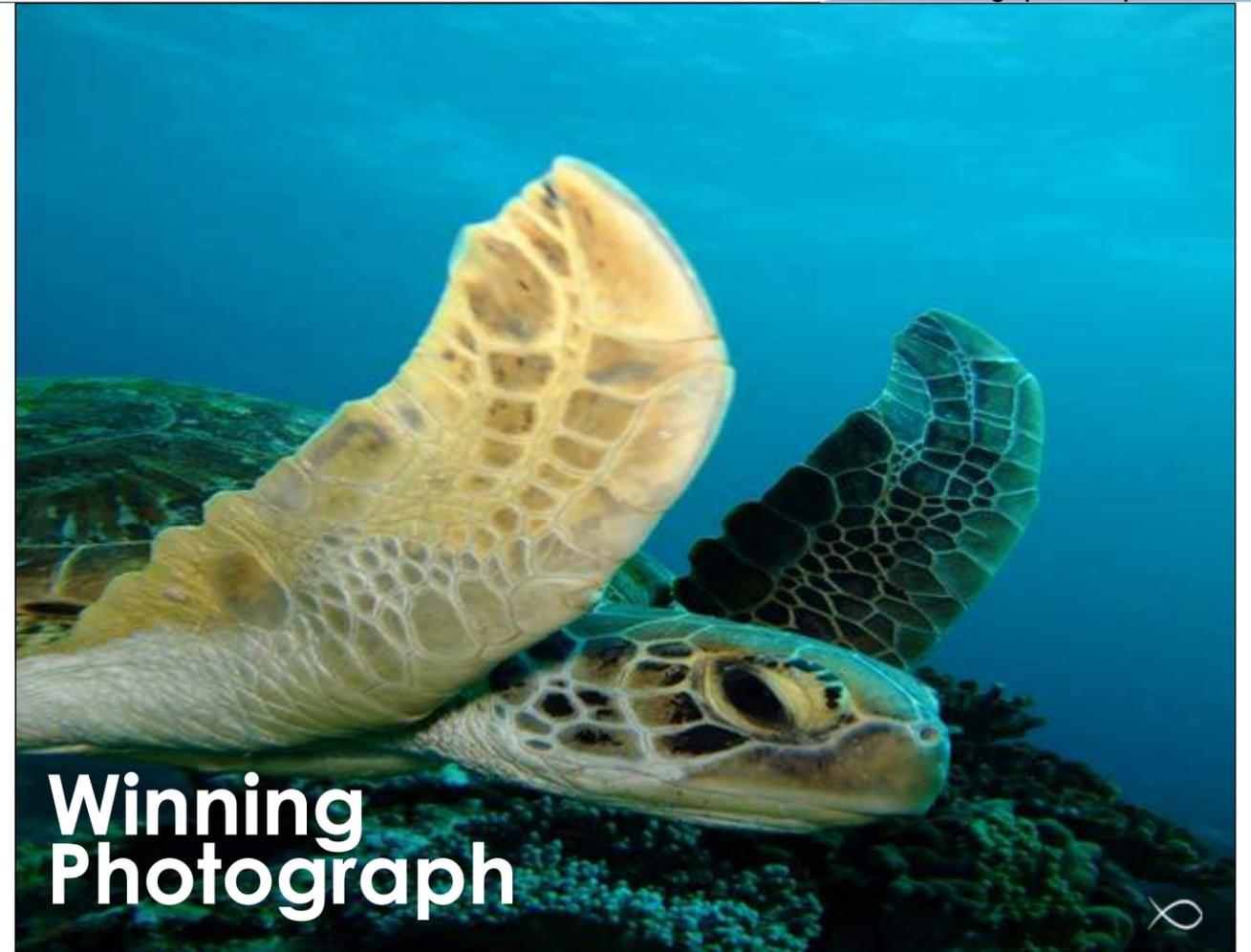
Werner Vermeulen



Robert Schouwstra



Willem Kuperus



## Winning Photograph

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## How to enter your photograph

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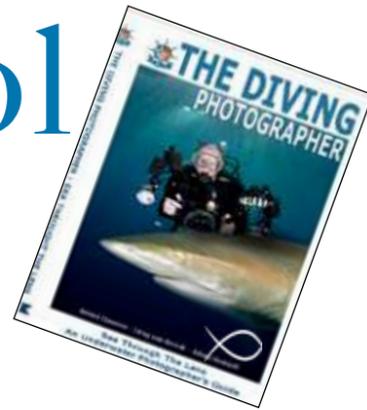
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# Photo School

## Filling the frame (Part III).



When taking picture, get closer to your subject; if you think you are close enough, get ever closer. There are a number of simple rules you can follow to enhance your photography, filling the frame is one of the most effective and simple techniques.

Often the subject loses impact or is lost in the detail, leaving some doubt as to what the intended target was. When taking pictures, you tend to focus on the subject so much that you feel as if you are closer than what you really

are. It is only when looking at your printed picture or on your PC that you realise you could have been closer.

### Filling the frame

By getting closer to your subject, you are filling the frame and cutting out unnecessary detail which may cause your viewers eye to wander.

This is easier to do in normal photography as opposed to underwater photography due to

the drag and subjects which may be moving faster than you. If, however, you manage to get closer, the amount of water between you and your subject is reduced, an added benefit of this technique underwater.

Start wide and work your way closer. If you can get really close, consider adjusting you camera to macro to capture the detail of your subject.

Unless you are cropping your photograph slightly with editing software to align a subject or focus point to the rule of thirds, cropping to enlarge a subject may result in a grainy effect. Rather use a zoom lens to pull the subject closer if you can. Another mistake people make is thinking that they need to include the entire body of the subject.

It is generally the rule not to cut off parts of the object, but by breaking this rule, you can create interesting picture.

For example, filling the frame with the body of a fish and focusing the eye on one of the focal points will create an attractive abstract picture with captivating results.

So does filling the frame overrule the rule of thirds? It is important to remember that a

number of techniques can be combined when taking pictures. The rules can also be broken but generally the rule of thirds combined with filling the frame by adding some negative space can create the most striking pictures of them all.

### Negative space

Negative space refers to a part of the picture which does not contain any shapes or objects. This is normally just one colour. In underwater photography, this will typically be the blue, green or blackness of the water in the background.

Negative space can also be cheated by blurring the background with a large aperture.

A large aperture will darken the background, blurring out unnecessary detail. Moving closer to your subject and filling the frame with negative space will definitely emphasize your subject.

Next time you are taking pictures, get closer to your subject and see the difference it makes. You will be surprised at how much a simple technique such as getting closer to your subject can greatly enhance your photography. ◀



# Photo Editing

## Finishing touches Part I



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.

You may not think that this is a big issue, but one day you may find your favourite photograph on a brochure without your consent, and even worse, someone making money from it.

In this article we will show you how to enlarge your photographs for printing and also how to make a copyright watermark for your photographs that you can save and then easily add with one click to every image.

### Printing high quality photos

It is best practice to set your camera to the highest resolution when taking photographs. The higher the pixels of a photograph the larger you will be able to print your images without too much distortion. The standard range for a camera these days is from 8-10 megapixels and up which allows you to print quality photographs without distortion for large prints. The table below shows a list of the size of photographs per megapixel.

As you will see, unless you want to blow up an image to a huge size then you do not actually need a camera with very high megapixels. For the standard size prints you could even use a 3 megapixel camera for perfect prints at high resolution.

Cameras these days are reaching extremely

high pixel counts, but for most of us we do not actually need to go so high for normal use.

Camera companies are using the number of megapixels as a marketing tool to sell cameras and fooling people into believing that the higher the megapixel the better the quality of the camera, but this is false. You can actually take a better photograph with a 3 megapixel camera than a 16 megapixel camera as the megapixel count does not improve the sharpness, colour and contrast of the image – it just allows the camera to create the same photograph in a much bigger format.

So the average photographer who will never want to print huge photographs should not be too concerned with getting a camera with the largest pixel count, but rather focus on the quality of the brand of the camera and the type of camera that they are using.

### Choosing the correct resolution for your images for print

Automatically most people think that the more PPI (pixels per inch) a photograph has the better the quality of the print. The most common setting for a photograph for printing is 300PPI, but this may not be the best option for printing

for some applications. A high PPI, for example 300PPI, is mostly used for printing in glossy magazines, flyers or photographs and you may be shocked to hear that when printing very large images, then around 100PPI is actually the best resolution.

So if you ever have to enlarge a photograph to print on a large banner then you do not have to use all of your computer memory and hard drive to create a huge file with a high PPI.

When thinking about this it is obvious as the larger the image or print is, the further away you will have to stand to see the whole image, so the larger the pixels per inch can be.

When looking close up the image will not look too great, but from far away it will all pull together and will look clear and sharp. Anyone who has ever stood too close to a large TV screen will know this as the closer you go, the more pixelated and distorted it will look, but the further you stand away, the clearer it will appear.

You will most commonly though only have to enlarge your photographs for a printing no larger than A4-A1 size, so you should be able to enlarge most of your photographs without causing too much distortion when setting the resolution at 300PPI.

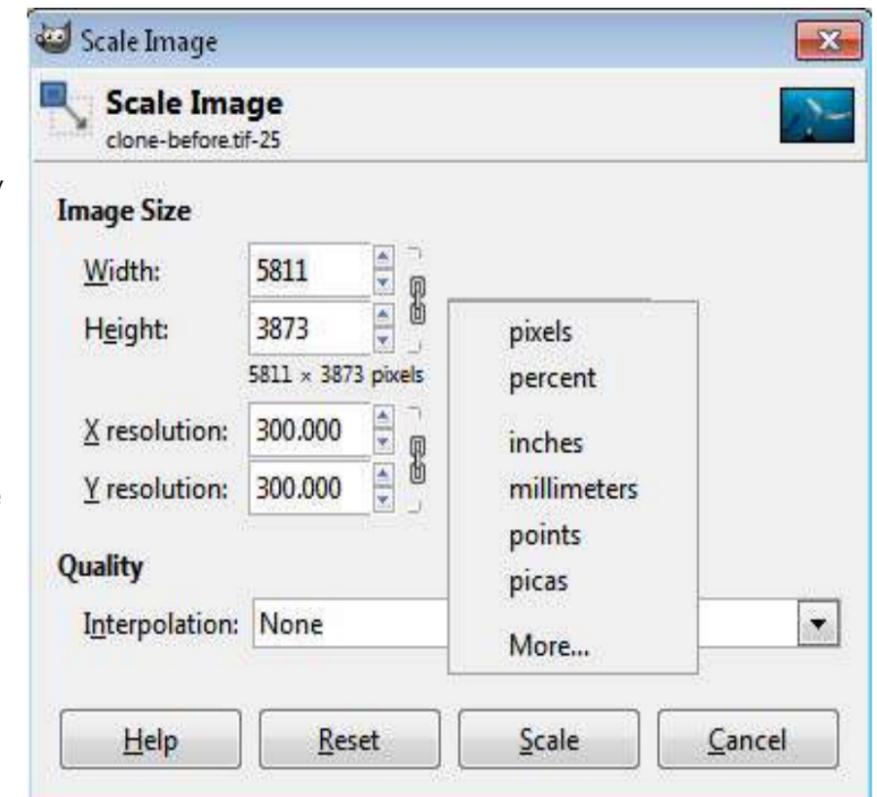
### Enlarging images in Gimp

Should you wish to enlarge a photograph more than the default size, then you are able to do this in Gimp by using the 'Scale Image' tool. The Scale tool allows you to change the number of pixels in the photograph and then resizes the image accordingly.

If you enlarge an image beyond its original size, Gimp calculates the missing pixels by interpolation, but it does not add any new detail. Be careful though as the more you enlarge an image, the more blurred it will become, but always remember that the larger the image is, normally the further away you will be from the image when viewing it. So do not be too concerned by the quality of the image at 100%

scale when viewing on the computer if it is for large banners.

### Selecting the Tool:



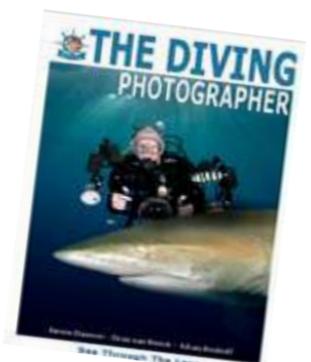
The 'Scale Image' box will pop up. In this box you can change the resolution of the image (PPI) to your desired amount for the print you want to do and then also change the size of the image.

The default option is pixels for the image size and if you click on this box then you can choose different sizing options from inches, mm or more.

When changing the size of the photograph it is important to also select the quality of the change by clicking on the interpolation. 



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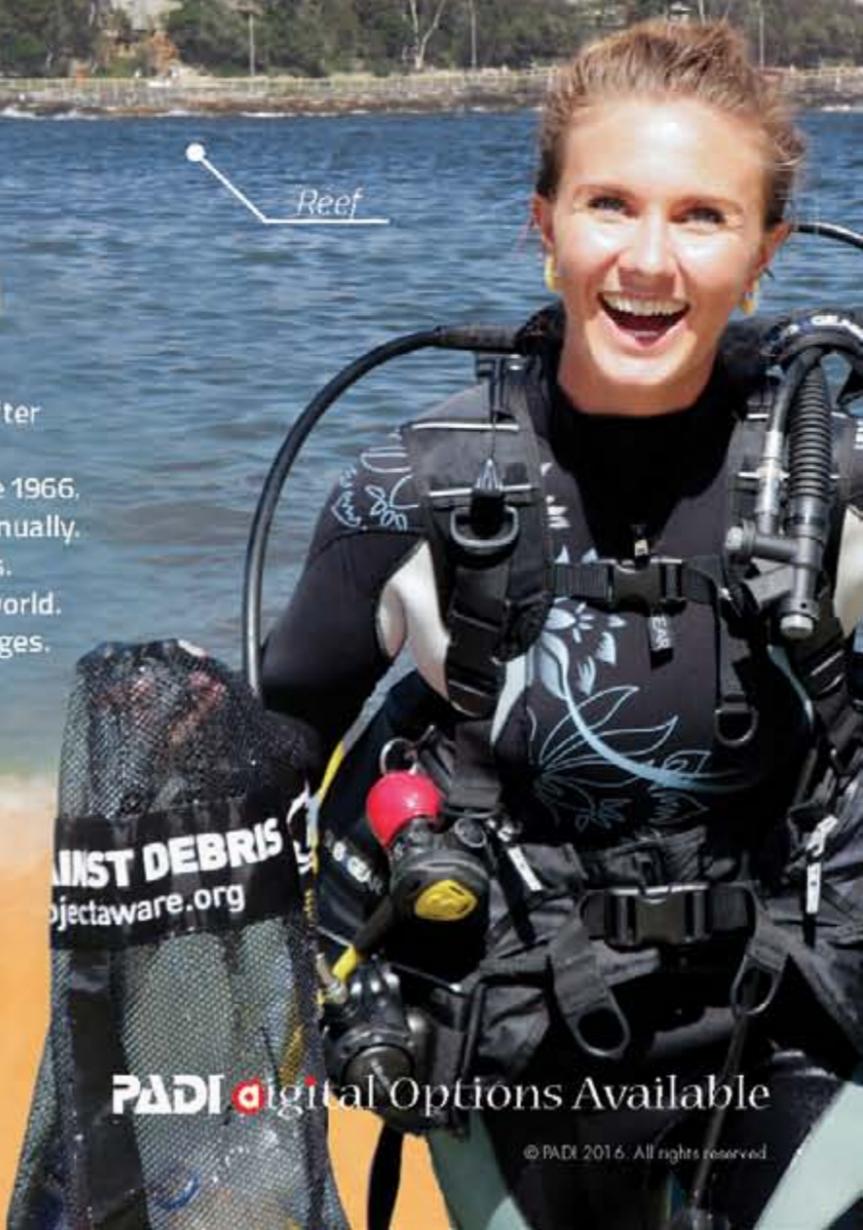
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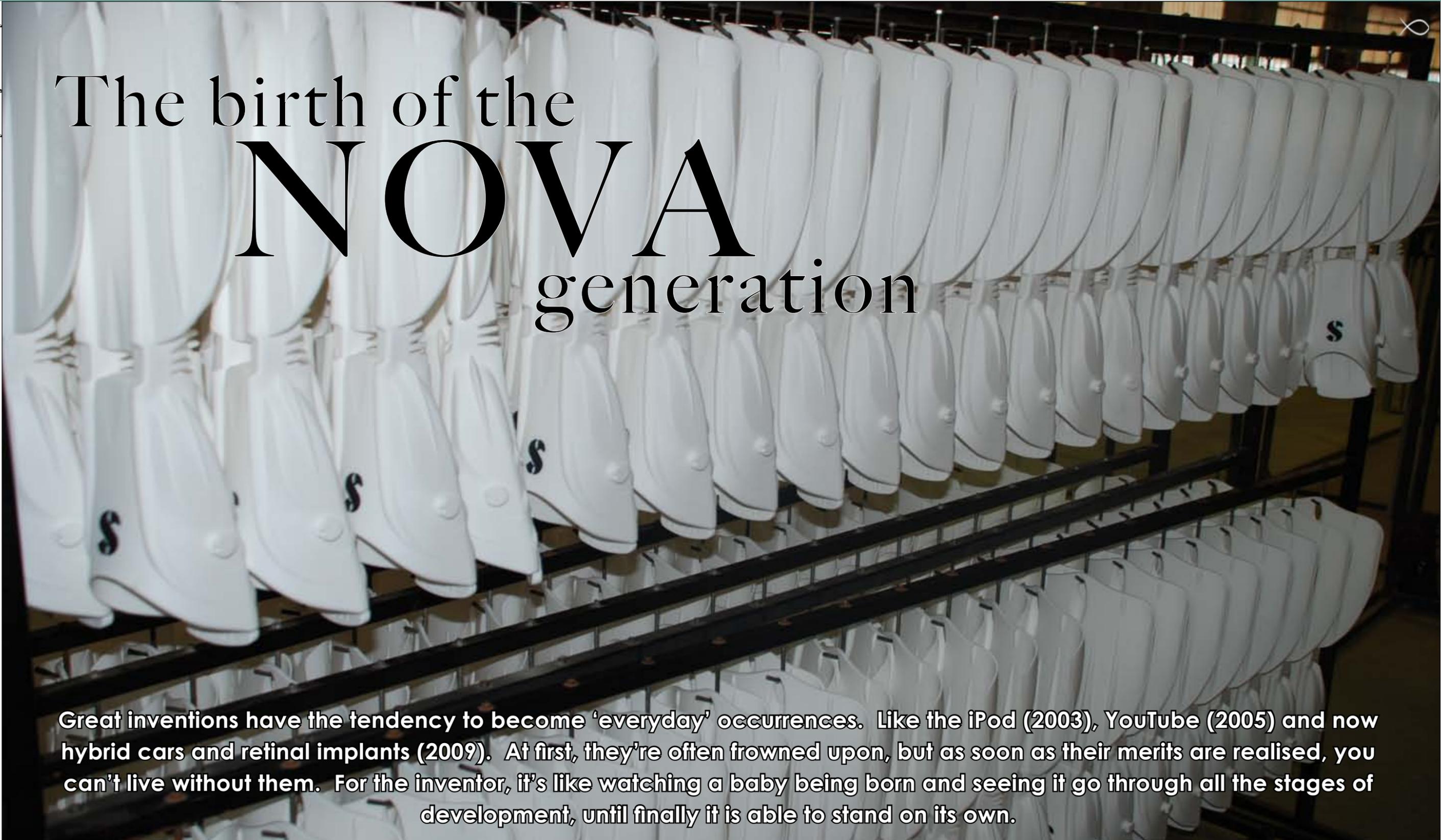
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# The birth of the NOVA generation

Great inventions have the tendency to become 'everyday' occurrences. Like the iPod (2003), YouTube (2005) and now hybrid cars and retinal implants (2009). At first, they're often frowned upon, but as soon as their merits are realised, you can't live without them. For the inventor, it's like watching a baby being born and seeing it go through all the stages of development, until finally it is able to stand on its own.



Great inventions have the tendency to become 'everyday' occurrences. Like the iPod (2003), YouTube (2005) and now hybrid cars and retinal implants (2009). At first, they're often frowned upon, but as soon as their merits are realised, you can't live without them. For the inventor, it's like watching a baby being born and seeing it go through all the stages of development, until finally it is able to stand on its own.

The Seawing Nova fin from Scubapro is just such an invention. Like all good inventions, this one is an accumulation of ideas from previous designs together with some fresh thinking, which, with the help of modern technology and a lot of hard work have been streamlined to make the perfect fin. Rhys Couzyn wanted to take the good attributes of all the best fins on the market and combine them in a single design that was capable of giving you the 'perfect kick' all of the time, in any conditions.

Couzyn started his scuba career as an Instructor and shop assistant in 1992. Shortly thereafter, his family was awarded the Scubapro agency for Southern Africa, and in 1995, after a few years of teaching and a few seasons spent in dive resorts, he joined Scuba Equipment Africa on a full-time basis. Here he learned the ins and outs of scuba gear, helped in large part by receiving technical training at Scubapro in Europe.

At the time, Scubapro (worldwide) were characteristically strong on hard gear (BCD's, Regulators) but were not so strong on soft gear (wetsuits, fins, masks). In the late 1990s split fins came on to the scene and Scubapro were one of the first to embrace the technology. Their easy-

kicking nature made them an instant hit, especially in the USA where they could turn lazy Caribbean divers into speedsters, and sales skyrocketed. However, split fins are not for everyone and many people, notably the Europeans, still preferred a traditional paddle type fin, leaving Scubapro without a contender in those markets.

Couzyn felt that split fins and paddle fins each had their own strengths but that equally, they had their own weaknesses and therefore required a compromise. He had an idea for a new style of fin that he felt could solve this problem, and in 2002 he discussed the concept with an experienced Italian engineer with the hope that it could be developed as a Scubapro product. The engineer felt the concept was too radical and therefore too risky, leaving Couzyn with the decision of what to do with the concept. In the end, he decided to develop it locally, although he is the first to admit that if he had known how long it would take or how much it would cost, he may not have done so!

The first step was to decide what attributes this 'hybrid' fin should have, with Couzyn's intention being that it should have the benefits of both splits and paddles but without the drawbacks. He wanted the ease of kicking, comfort, efficiency and good sustainable speeds that split fins provide, but he also wanted the instant power, acceleration, maneuverability and sprint speeds that only a good paddle fin could provide. In addition, the fins should be simple to pack and easy to doff and don. They should also be lightweight yet durable. Lastly, if the fins were going to work differently, they should look striking and exclusive, even if the radical look meant that they were a 'love it or hate



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Nova

By Annatjie Rademeyer



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it' design.

With the goals set, the next step was to obtain fins from the major competitors and to test them on dives and in a specially constructed water flow chamber. This process confirmed what many had suspected: in general, soft fins work better when kicked softly while stiff fins work better when kicked hard. Soft fins over-bend when kicked too hard, losing power, while stiff fins under-bend when kicked too softly, causing excessive leg strain.

Couzyn enlisted a small team to help make the fin a reality, with much of the early CAD (Computer Aided Design) being done by Nolan Couzyn, a CAD specialist and Couzyn's brother. Glyn Ogden, a qualified divemaster and industrial designer was next to join the team, with the bulk of the final design, fine tuning and testing being done by Rhys and Glyn. Mark Trevethan, also an industrial designer, was the final team member, adding further expertise to the design and testing process

Slowly the concept was taking shape, with the main crux of the concept being to use a hinged blade that pivots to the correct angle of attack every time, regardless of how hard it is being kicked. Scubapro had used a hinged blade design before (with the original Seawing of the 1980s) and another prominent Italian fin manufacturer had started using them in the late 1990s. What made this new design so different and effective was that specially designed 'limiters' were used to

control the exact angle of attack.

The second standout feature that gives the Seawing Nova its unique shape is that the blade has been completely separated from the footpocket. This removes the 'dead section' of blade that is found on most fins and the so-called Clean Water Blade reduces drag dramatically. While the pivot and blade design drew inspiration from marine mammals, further cues were taken from aircraft wing design. The blade arcs upwards like the wings of a passenger plane, (it's called Dihedral and it improves stability) and the blade tips form winglets (to prevent what's known as Vortex-Tip-Loss, thereby improving efficiency). There is no doubting that a lot of thought went into this design.

Material selection was the next obstacle, with a super-elastomer called Monprene being selected for its incredible mechanical properties. A special grade of Monprene was engineered for the Seawing Nova and the decision was made to use only one material throughout the fin to avoid any splitting or delamination issues. Next up came the final tooling stage and it is interesting to know that each mould weighs over 1,2 tonnes! Final prototypes were made and tested in-water against competitors for speed, comfort and efficiency. Once the results were to the team's liking, a battery of fatigue tests were conducted. This consisted of repeated fin-kick cycles on a special machine (nicknamed Robo-Fin) that racked up millions of kicks over a few-month period. Some minor adjustments were made and the fin was ready for production.



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In July 2008, during the final stages of development, Couzyn had taken a flotilla of fins over to Italy to test dive with the Scubapro engineering, marketing and sales teams. The Seawings got the unanimous thumbs-up and were added to the 2009 Scubapro global range.

Since then, they have been extremely well received all around the world, winning multiple awards such as the ScubaLab (USA) – Tester's choice 2010, SABS Design Award, Popular Science USA – Best of What's New 2009, Sport Diver (USA) Editor's Pick June 2010, and most recently, a German red dot design award for 2011.

ScubaLab had the following to say: "The Seawing Nova is fast. It easily outpaced this year's competition... But the beauty is you get all this turbo power without any leg strain or ankle stress. The notched stabilizing ribs and flexible blade combine to deliver a very propulsive snap on the down stroke. The fin is stable on straightaways and highly maneuverable, including backing up. It's the only fin this year to earn top scores in "Power vs. Stress," "Acceleration" and "Alternate Kicks" categories"

Sales have also exceeded expectations, and that's good news because they're made right here in South Africa! We visited the factory and witnessed the intensive process. Firstly the Monprene is heated to around 250°C and injected into the mould at extremely high pressure. Because of the size of the mould and the injection pressure, a clamping force of 350 tons is required just to keep the mould closed! The total moulding process takes almost five minutes per fin, after which the fins are hung on special racks to cool and cure completely for 24 hours. From there it's on to Quality Control where each fin is individually checked.

Finally, the fin moves to the assembly line where the specially designed Bungee straps are fitted. These straps were designed specifically for the Seawing Nova and they use a special Marine Grade Bungee cord that allows for adjustment-free operation, yet they still have a breaking strain in excess of around 80kg! Lastly, foot pocket protectors are inserted and then it's just final bagging and boxing and the fins are ready to be shipped around the world. 



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# The Titanic dive expedition

They said that it would never be dived... but we are doing it. What is it you might ask? We are going to dive the RMS Titanic, arguably the most famous ship (and wreck) of all time. The expedition date is set for 1 April 2017.

The RMS Titanic was a passenger cruise ship (the largest at the time) that sank on April 15, 1912 on her maiden voyage as a result of colliding with an iceberg in the North Atlantic. This resulted in the death of 1 517 people, of which some were very famous at the time. After many years searching for the wreck it was finally discovered on September 1, 1985 by Jean-Louis Michel and Dr. Robert Ballard at a depth of about 3 700m.

That might be deep for your average scuba diver, but for a hard core technical diver, any depth can be managed with proper dive planning. For what it is worth, cave penetration to far greater distances (Leszek Czarnecki did a cave penetration of 17 000m in 2009), have been completed very successfully. The first question you might have is why? I want to dive the wreck? Diving the Titanic has been a boyhood dream, cemented in my mind ever since I viewed the place/building (not sure what was seen) where the Titanic's tickets were

sold), and being your typical enthusiastic diver having visited the local dive spots, I figured that I am ready. How difficult can it be? I might have limited experience, but where there is a will there is a way. So how are we going to do this?

Stick to a simple dive profile. Descend to the wreck, spend time exploring the wreck for 30 minutes and then start the legendary ascent. As with any expedition, other than the dive team, we will need good support people so we will start with the skipper.

The Akademik Keldysh operates out of St. John's Newfoundland, and has been taking tourists to the site via submarine for years. Not that I would need the sub, but the skipper has firsthand experience of the location of the wreck because there will be nothing worse than hitting a sand patch upon descent, only to surface months later, that's right, months.

But we will get to that later in the plan)

and not be able to find the culprit skipper to give him a piece of my mind. So accuracy on the part of the skipper will be essential. That brings me to the shot line - we will need in the region of 4 500m (as no shotline is ever truly vertical - even relatively short ones). The shot line will weigh a 122.7kg, that is 0.02727 kg per metre, heavy I know but it is the lightest rope with the required strength I could find.

I am starting to consider dropping the shot line from the boat due to its heavy weight but thought we could decide this as a team. You never know, one of the other divers may just be willing to carry the rope down for 4 500 metres and back up again. Remove At this stage.

I must admit, I am very thankful for the little thing called gravity and the controlled buoyant ascent as my calculations showed that scooters will not have the required battery life.

That and I have also been told by my recent dive buddy during my advanced scuba course that, Real divers don't touch scooters, they fin

all the way." I would start a new paragraph here instead. The descent should take me about 150 minutes. Using my current surface air consumption rate as an estimate to calculate my gas/air consumption I reckon I will use 149, rounded to 150 cylinders. That is if I use 15 litre cylinders. I figure I will use 149 (I will round this to 150) cylinders if 15 litre cylinders are used.

These cylinders as well as the valves will have to be custom made. Ordinary 200 bar cylinders will not be of much use as they will most certainly cease to work at 2000m something I am sure you are well aware of.

The good news is, developed by a private engineering company, these custom made cylinders are already in the final stages of production.

Manufactured from titanium laced with platinum it is expected to be pressurised to 600 bar.

# Giant Stride

Titanic

As for gas consumption, on the wreck itself it will be a little less than 6000 litres per minute resulting in me having to swap cylinders every 30 seconds.

My best guess for a gas mix is hydrox, a blend of hydrogen and oxygen. The advantage of using hydrox is it has been breathed successfully by a man at 700m, it is however, potentially explosive.

Not that it matters really, everything else will be lethal at these depths, it is a necessary risk. Hydrogen and oxygen combined is used as rocket fuel, which is another hidden advantage as it should not be too difficult to come by as most space agencies should have this in supply. Four of those custom made, 15 litre, 600bar cylinders filled with hydrogen should be enough to provide diluent to keep the loop filled and still inflate the wing at depth to ensure buoyancy as a silt out would not be nice.

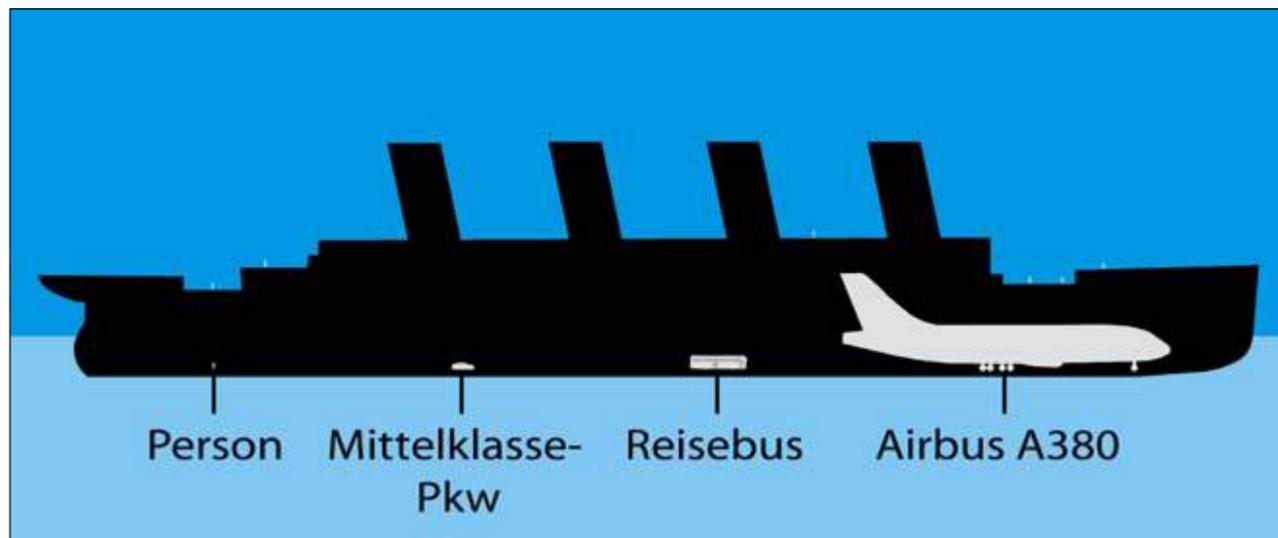
For the deco plan the following was taken into consideration – according to Haldane, I can halve my depth pretty much instantaneously at any time during the dive without provoking decompression sickness, so in theory I could make a direct ascent to 1 850m for my first stop. Oh yeah, this is going to be the buoy ride of a lifetime.

That may be the theory, but at 10 metres per minute it will take me 185 minutes in reality, which is quite a lot longer than theory suggests is safe. In fact, I'm willing

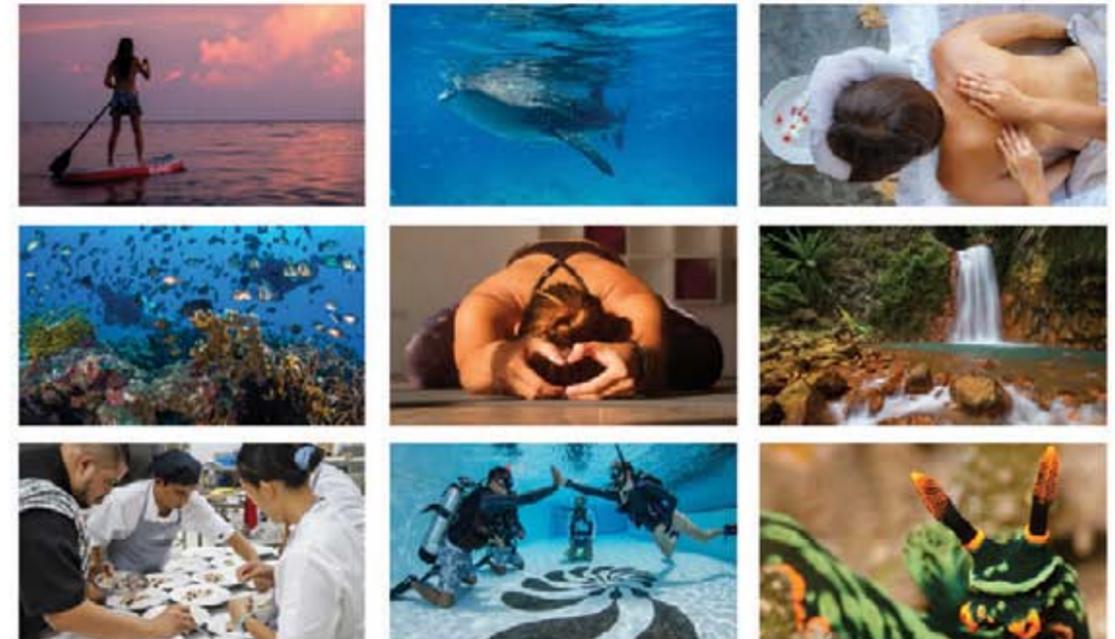
to bet that I can ascend at 10 metres per minute until I'm quite shallow before I have to worry too much about making any stops. How shallow you might ask? To be honest, I'm guessing, so I decided to take some expert advice (though I suspect the experts will be guessing as well), but let's say I can ascend directly to 200m at 10 metres per minute, using another 75bar of oxygen from my three litre cylinder, then enter a pressurised habitat to bring me the rest of the way to the surface over a few months. During these months I will do some video editing of the dive, write a book and be available via Skype for any interviews by the press.

What will I do while I am down there? I don't know about the rest of the dive team, but I am interested in doing a lot whilst on the wreck. Firstly I want to check out the Titanic's triple-expansion engines, each about four storeys high and which should by now be completely exposed where the ship broke into two.

Next on the agenda will be to collect the following: the JW ray telegraph, a book from the library, scissors from the barbershop. Then I'll go to the front of the ship to spread my arms in order to feel the freedom (just like Kate and Leonardo in James Cameron's Titanic movie), backstroke down the marvelous main staircase and grab a weight from the gym (only about a kilogram maximum as I don't want to be overweight and overcomplicate the ascent). All of this while obviously



## SALAYA BEACH HOUSES



taking constant video footage.

By Loof Liripa  
Other things to consider? Well, a full-face mask, so that I can still breathe when I convulse from the inevitable CNS oxygen toxicity hit, would be good. It might even help when the HPNS twitches start. Then a drysuit of course as there was a reason the Titanic struck an iceberg (the water is freezing). This will still not burden me too badly as I will just add a third pair of 15 litre stage cylinders, filled with argon to offset the squeeze and help me retain warmth.

I know that exposes me to an increased risk of counter-diffusion bends, but that'll be the least of my worries, so what the heck! I'd also like a pee valve if the dive is going to stretch to nearly 10 hours, though I'll need to practice using it – a jet of water at just above freezing point powered back into the valve by 370 bar of pressure isn't going to be comfortable.

And before I forget, I will need a torch. A typical C-Cell-powered holiday jobbie gives five hours of light, so two should do it, plus a glow stick to mark the line when I swim

off to explore the wreck.

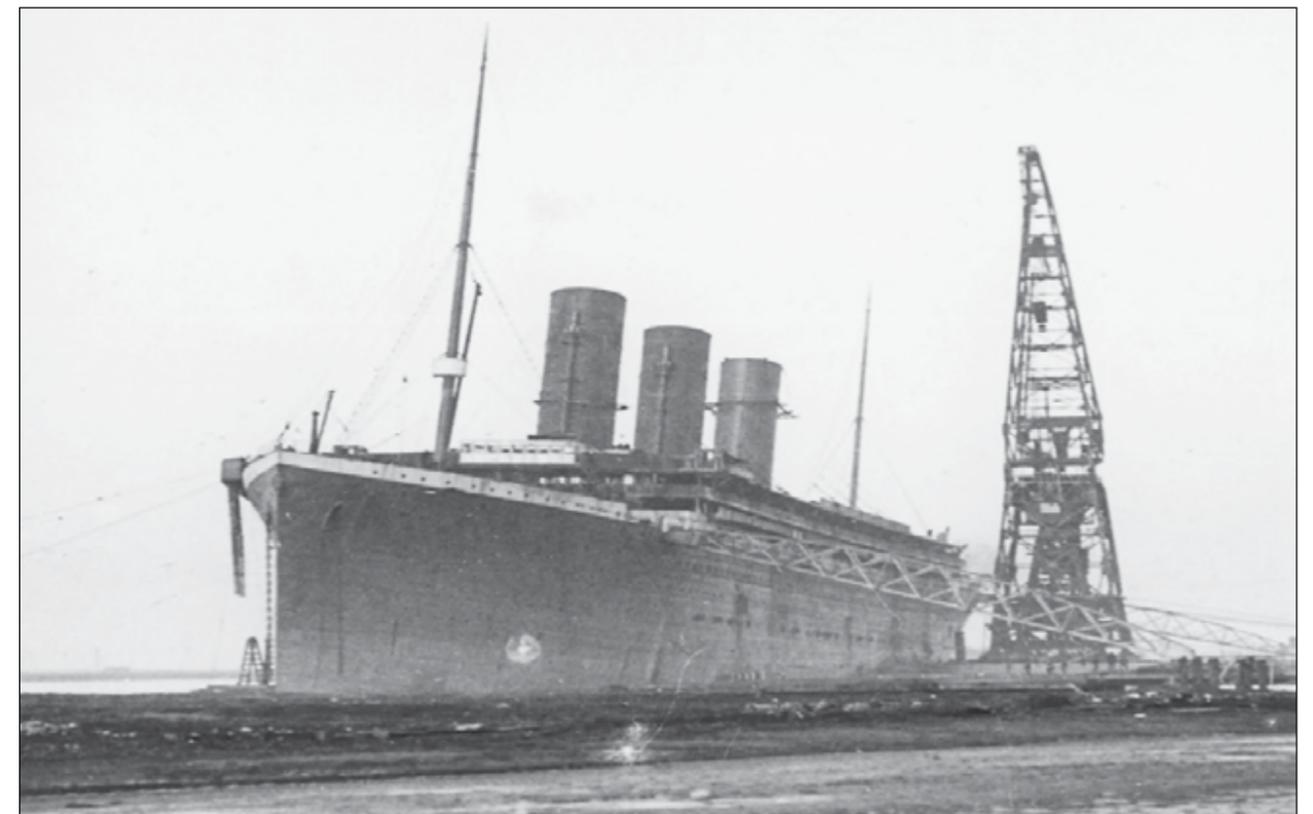
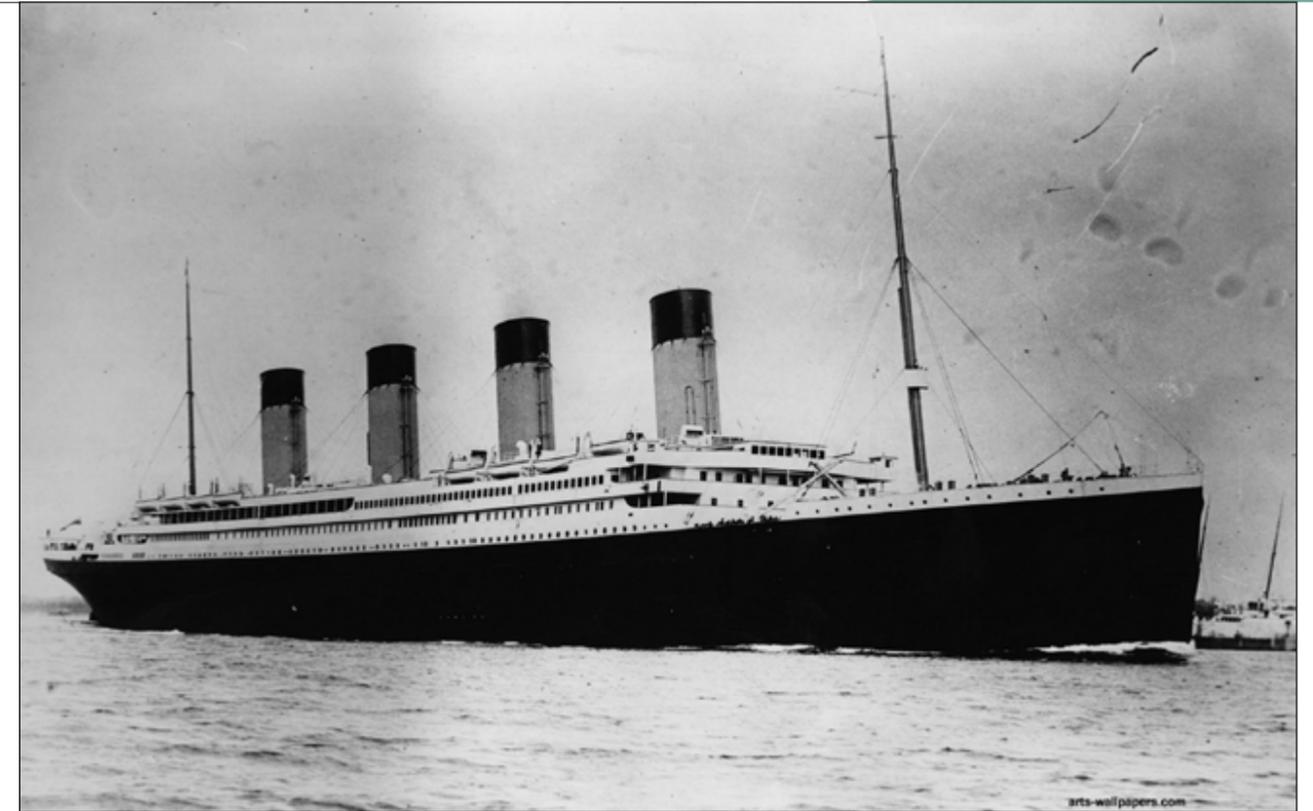
Lastly, all the gear is going to have to be able to withstand 371bar of ambient pressure. That sounds simple, but it's probably not – it's more than two tons per square inch, but I'm sure it won't be a major issue. And that is about it. The upside is that I (well, me and the team) will be the only people ever to have dived the Titanic on scuba, and if that does not make me famous, then nothing will. Admittedly, the downside is almost certain death, but nothing ventured, nothing gained.

It's time to now get the team assembled and the rebreather ordered. If successful we might one day return to raise the wreck – who knows?

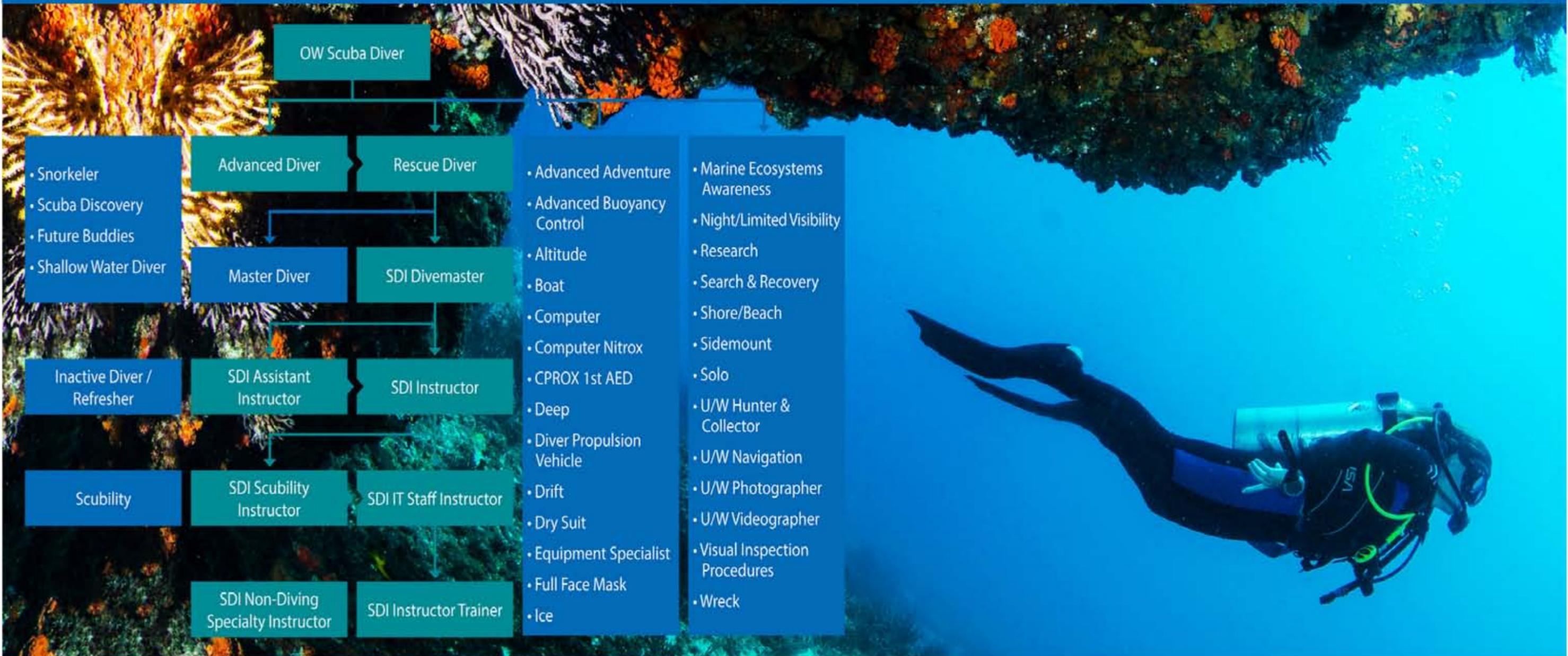
The expedition

team will fly from Australia on the first of 1 April 2017 to start this epic quest. Yes on April Fool's day. The dive team is very experienced and this is a once in a lifetime opportunity.

So if you are interested in joining the expedition, email [johan@ozdiver.com.au](mailto:johan@ozdiver.com.au) 



# Scuba Divers Trained Here



By Barry Coleman

# Gas supply management



**Gas supply for all divers, from entry divers to technical diving, is an important part of dive planning. Neglecting this may be life threatening.**

There are two different approaches to gas management supply, with the first being the uncomplicated basic form. You have a cylinder full of gas, how long will it last and will you have enough to complete a dive?

Most recreational divers work with this straightforward method, although some do not even ask the question –they just dive until the gas runs low or the NDL is at the limit and then they ascend.

As one develops a higher comfort zone and exploratory interest develops more adventurous diving, so gas management skills must be improved to a level which will ensure safe diving. The first method as earlier explained may still be used although with more careful calculation, taking into consideration such facts as respiratory minute volume (RMV) at the following basic stages:

\* Descent.



By Barry Coleman

- \* Time at the planned depth (Target Operating Depth/TOD).
- \* Ascent rate and time.
- \* Required stop/s and time.
- \* Safety reserve.

By taking all these basic factors into consideration one can estimate the amount of gas used on the dive. Knowing the amount you have you simply ensure that the above factors are within the limitation of the supply.

The other method not yet mentioned is working from the opposite direction, where you plan the dive for the times that you want and then work out how much gas you require for the dive. This method is used more with technical divers who dive with an objective and include gas supply management as part of the overall planning requirements.

Whichever method is used there are always the 'what if?' scenarios, even when using computer generated software. Some of the questions that should be considered and taken into account

are:

- \* What if we descend deeper than the planned depth?
- \* What if we descend deeper than the planned depth and stay longer than planned? The extended time and depth will be penalised by extended ascent times, needing more gas.
- \* What if a buddy has a gas failure at the end of the dive and both have to ascend using only one gas supply? Will the reserve be enough?
- \* What is the best gas to use for the dive? A different gas may shorten the ascent and /or extend the bottom time – either will affect the possible gas supply.
- \* Will the diver have the same (RMV) at depth and on ascent?

Gas supply management is an essential part of diver education and is generally introduced in the open water course and developed to a broad understanding at Instructor level with any respectable diver education. 



# The buddy system is an important aspect of diving. What should a sport and technical diving buddy know before diving with you?

## Q & A

### Nuno Gomes



The buddy system is extremely important for any dive. The primary purpose of the system is to have another diver in close proximity to you, who can supply air in an out of air situation or help with any other issue while underwater. This means your buddy is more than just a companion – they are a vital part of the dive

plan and could mean the difference between life and death! Your buddy is there to assist with many other emergencies besides just being out of air. Choosing the correct dive buddy is extremely important and the following should all be considered:

- Experience – they should be on the same level as you
- Equipment configuration – it should be similar, if not identical, to yours
- Physical strength – dive buddies need to be able to rescue one another. A 50kg diver will not be able to rescue a 200kg diver!
- Fitness levels – both divers should be fairly fit and be able to dive with little hassle
- RMV – your buddy should have an RMV in a range that matches yours

By following these guidelines when choosing a buddy, the system as a whole can be greatly improved. Remember to dive safe and dive smart – have fun!

### Barry Coleman

From Tech divers all the way through to



newbies, all divers talk about this system. And I for one believe in it. We all preach about how good the buddy dive system is and about how many accidents could have been avoided if this system had only been followed. It's all good and well to talk about it, but the reality is that when most divers

hit the water, the buddy system stays onboard the dive boat. "Not me", you might say. There is a little exercise you should try. In a pool, in water shallow enough for you to stand, turn your air off, descend underwater, take one breath from your regulator and swim horizontally as far as you can go without coming up for air. When you do surface, that is the distance (halved when in sea water) that you should be from your buddy at any time. I'm willing to lay a bet that most, if not all of you, have been well outside that safety distance! Just being able to see your dive buddy is not the answer! Being able to swim across to your buddy after trying to breathe in and getting no air, is the only answer.

### Pieter Smith

With technical diving, you need to accept that you dive alone, that you are responsible for sorting out your own problems and that you need to be mentally and physically able to do the dive. This means having to dive within your own limitations.

Due to technical dive conditions (depth,



overhead environment, etc), it's extremely difficult, if not impossible, to save or rescue a dive buddy. We are diving companions who plan and simulate a dive together before heading out for the dive. We have backup divers who fill the role of regular dive buddies – their primary mission

is to check on each deep diver on their way back and during deco obligations, to make sure the deep diver is physically okay and has enough gas to reach the surface.

Given the above, it's logical to say that deep or technical diving is similar to solo diving by definition. However, the buddy system (in the form of backup divers) is extremely important and has proven its success by saving many lives underwater.

To improve on the buddy system in technical diving, you need to choose the correct backup divers to assist on deep dives. They must be as competent and well-versed as the deep divers themselves. The backup diver must be able to take over or fully control the deep diver's deco obligations and be able to alter such obligations according to the current situation.

As the "buddy", backup divers must know the deep diver well and must have dived with them before. They must know the diver's behaviour and must be part of the planning, briefing and emergency procedures from the start. The backup diver must also be fully equipped to handle any situation that may come up from the abyss below.

In all essence, the backup diver is a dive buddy, waiting for their technical diver to return from the depths.

### Pieter Venter

Sometimes it's a pleasure, other times it's annoying. It can be a relief, but it can also be dangerous. Which ever way you look at it, the buddy system is important in any form of diving!

There are two important parts to the buddy system. The first is to do a pre-dive equipment check. The second is even more important – you



need to be on hand when underwater and be able to deal with situations that may arise. It's important that both divers are able to contribute to the dive buddy system. When one or neither brings nothing to the "safety table", there can be disastrous results.

When it comes to sport diving, it's quite annoying to be paired up with an unfamiliar and newly qualified diver just before the launch, but that is part of something that makes sport diving safer and more enjoyable in the long run. The sports diving buddy system may not be perfect, but it does work. However, when it comes to technical and cave diving, things become a little more complex and ethically blurred. In many cases, the wrong actions or equipment failure of a dive buddy can kill either divers, or even an entire team. For technical or cave dives, your buddy should be someone you know well and trust, as well as being someone you can communicate with underwater.

The buddy system should be "rinsed" regularly, where all safety equipment, procedures and systems are given the once over and the buddies know them inside out. It's a great idea to discuss the duties and role of the buddy regularly, especially before a dangerous technical or cave dive. Another way to improve on the buddy system is more of an attitude change than anything else. The system should be viewed as a duty – not a privilege or luxury. The correct attitude to have is not only that you're ready to help a buddy, but also that you will do everything possible to avoid a situation where you may need help in the first place. The buddy system should not be a solution to an avoidable emergency scenario, a replacement for competency, a backup to stop you from checking and maintaining your own equipment, a replacement for readiness for the dive or provide the fuzzy warm gangster feeling of safety in numbers. Each dive should be approached as if there was no one there to help you, but you should always be ready to help your buddy at all times and vice versa. If all dives are approached this way, the system will work just that little bit better. Who knows, it could save your life!

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# Instructor Diaries

Technical diving is a sensitive topic, not only for those who practise it but also for those who are misinformed about what technical diving really is. These people include fellow divers and family members. One thing is certain... technical diving is a step above the norm and I feel that in some aspects it is safer than recreational diving. I once heard someone say that with technical diving you challenge yourself, and in recreational or sport diving you amuse yourself. It depends on the diver I suppose.

What do people hear when someone speaks about technical diving? Perhaps deep diving, cave dives, heavy decompression times, massive amounts of cylinders, the 'bends' and gambling with your life each time you do a 'technical' dive. These are all true depending on what you are prepared to do as a technical diver, and of course, this is heavily dependent on your skill, experience, qualification level and what you see as the ultimate risk.

It's not as easy as getting into your twin set, slinging three cylinders and going down Mariana's Trench. No, training more training and yes, even more training and actual dive experience will get you to a level where depth

or distance can be explored fully prepared and safely. These dives and skills cannot be rushed and only certain instructors have the know-how to get people trained in these courses and they must have the confidence in their own ability to ensure safety and best practise methods.

Did you know that to dive deeper than 40m you must first complete quite a few courses within the technical diving arena and gain the necessary experience before you are allowed to dive deeper? The first step into technical diving will teach you how stay longer at depth and get more out of those 40m dives than the normal recreational dive. Instead of eight minute dives you can do a 25 minute dive and still come out

at around 50 minutes.

Various organisations offer technical diving courses and these courses are usually well geared with ample information arming the diver with plenty of knowledge to make the dives as safe as possible.

To give you an example where I feel technical diving is safer than sport diving, is doing a 40m dive. Guys are going down to that depth with single 10-litre, 12-litre and 15-litre cylinders and pushing low on air as far as they can go. What happens if something goes wrong, if a sudden gas loss occurs? You are going to have serious problems. Technical divers will descend to that depth with two 12-litre or 15-litre cylinders strapped to their back, along with a decompression gas sling. The dive plan will make use of rules assuring low on air for yourself and your buddy if required, meaning that the chances for you losing all your gas when a sudden gas loss occurs will be greatly reduced because of planning and you can actually isolate your cylinders.

Technical diving is about goals and what you

need to do to achieve that goal. The risk involved can increase depending on what you have as your goal. Diving into complex cave systems or diving to great depth chasing the triple digit handshake increases risk, but this is again reduced as far as possible by proper professional training and planning. I think of these dives as extreme scuba diving – technical diving is left behind when you go places where few have been and others have actually paid the ultimate price because of situations spiralling out of control.

When things go wrong at 20m, you can get out quickly without any significant problems. When they go wrong at 100m, training, experience, planning, team work, self control and nothing else will get you out. Divers enjoying these types of dives usually have huge amounts of respect for the sport and for living life, and therefore, these type of dives will continue and become safer as skills and equipment evolves.

Consider technical diving if you want to increase your skill and diving knowledge and have clear goals set. Get in contact with a technical instructor – you will be greatly surprised by the 'other' side of diving. 



# Equipment checking before a dive



Almost all scuba diving certifying agencies advocate and promote the use of the 'buddy system' while diving. This of course is due to the added safety aspect that comes along with the fact that two divers will be able to assist one another while diving.

This assistance can range from helping to get loose from entanglements all the way to sharing air in an out of air emergency, but very few divers even realise the real value of a 'buddy diver'.

A buddy is useful from the kit up process itself as it provides an extra pair of eyes to search for equipment anomalies that might be the cause of a dive going wrong. So with that in mind, what equipment can you expect your buddy to check and what equipment should you check?

Firstly, I would like to remind you of what you were taught when you did your scuba diving course, that being that you are primarily responsible for your own safety when diving and that you should never assume that someone has checked your equipment for you. That being said, I do expect my buddy to assist me in ensuring

that my kit is ready before a dive. If you think about it, he/she also benefits from assisting in this regard as it will enable me to assist in an emergency or would put an end to their dive if I have to surface because of my equipment.

Going back to the point that you should not trust or assume that a buddy has checked your gear, the best advice would be to actually ask your buddy to check specifics, or if it is a buddy you dive with regularly, I would recommend that you have a sit down discussion with them in order to come to an agreement of what you would like them to check and vice versa.

In my opinion, the following could provide you with a guideline of some points where your buddy can assist in checking after kit-up and before going for the dive:



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By Quinton de Boer

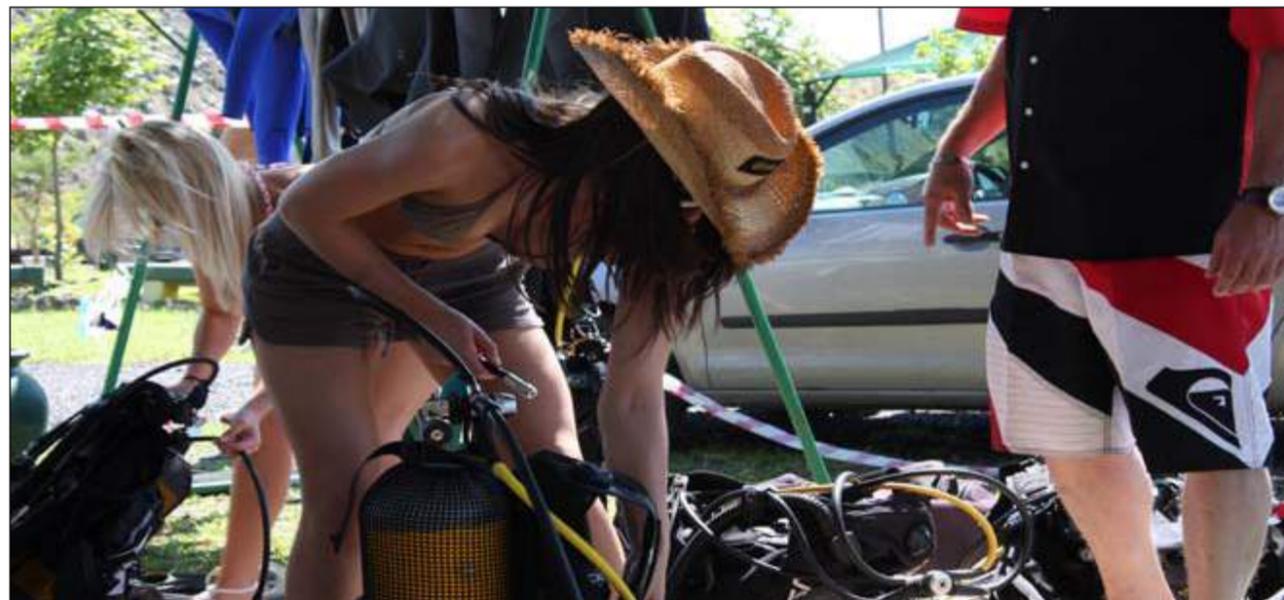
- Is the tank secured to the BC – check that the tank strap is tightened to such an extent that the tank will not come loose during the dive. The placement of the tank is also important to consider here, because if it is too low it might slip out from the strap as well as be unreachable should you need to access the valve under the water; if it is placed too high it might be uncomfortable and could bump your head.
- Regulator is properly connected and tightened.
- Air supply is turned on and there is enough air in the cylinder for the planned dive.
- Inflator hose is connected and latched into place.
- Correct weighting for the dive and weights are placed on the BC or the weight belt. Knowing this may also assist in an emergency situation.
- Bubble check (in-water check usually done by technical divers just before a dive) – this involves dropping your first stage just below the water line before descending and making sure that there are no leaks originating from the regulator system. In addition to the above list of suggested points, I also believe that there are some points that you should take responsibility for and check yourself on a regular basis (your

buddy may not be able to assist you with these checks). These include the following:

- Comfort and fit of your exposure suit and other soft gear such as your mask and fins. Unless very oversized or undersized it is usually very difficult to see if your buddy is indeed comfortable. One thing to remember is that no soft gear should restrict your movement.
- Regular service of your regulator. A regulator is a very sophisticated piece of equipment that should be serviced at least annually by a certified service technician as it has various unseen parts that are prone to failure if not checked and maintained.
- Batteries of dive computers as no dive buddy I have ever had, had the ability to measure the battery life of my dive computer.

The above should only provide you with guidance and the best recommendation I can make in terms of checks before a dive is to come to an agreement with your buddy of what he/she will check (if you dive with a regular buddy).

It is also highly advisable to develop a systematic approach to checking your equipment in order for you to become familiar and fall into a rhythm when checking before the dive as this will ensure that you do not overlook some points. 



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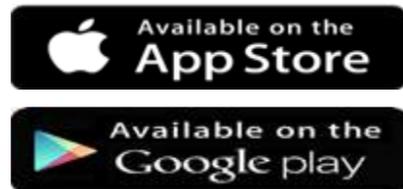
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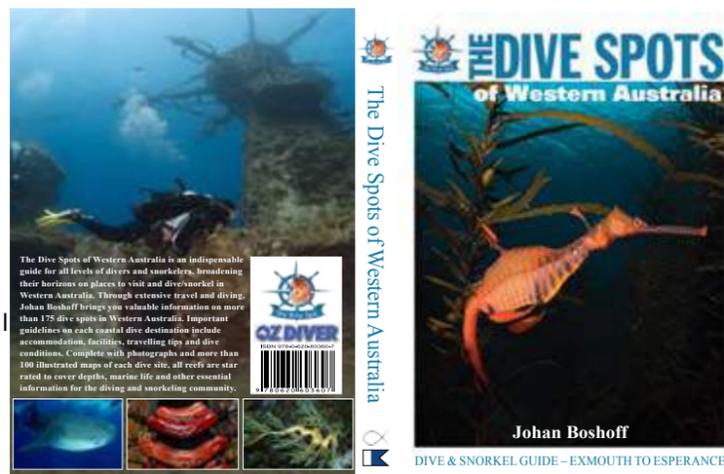
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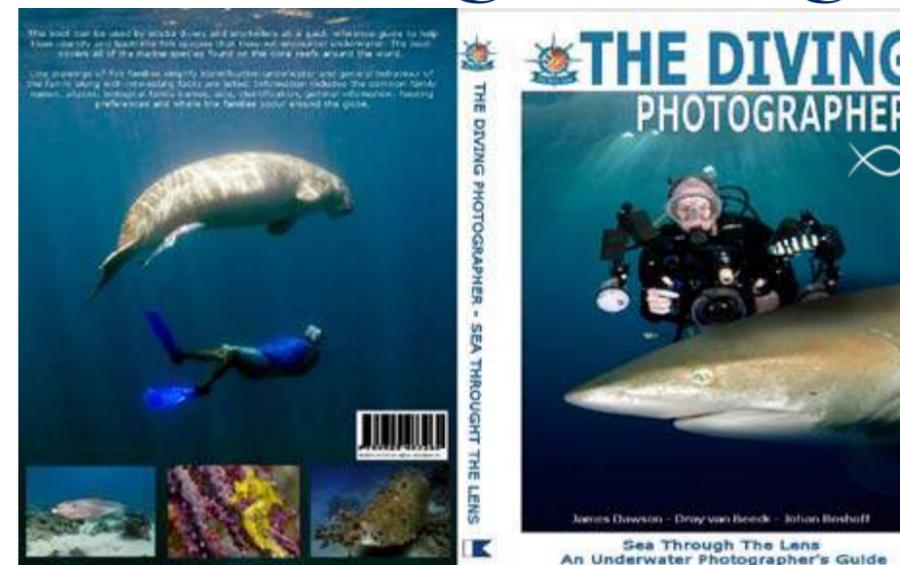
# The Dive Spots of Western Australia

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](http://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](http://www.thedivespot.com.au). Cost: \$20



## FREE gear, books, software, apps and scuba diving gadget reviews.

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



# Marine Life app



A user friendly app designed to assist divers with marine life identification and at the same time learn more about the fascinating lives of our ocean dwellers.

Learn about your favourite sea animals at the swipe of a finger, with more than 4000 full colour photographs of sharks, rays, eels, nudibranchs, hagfish, snails, crabs, lobsters, sea weeds, sponges, cineraria, turtles, snakes, dolphins, whales, worms, crustaceans, shells, cephalopodan, urchins, sea cucumbers, starfish, birds and many more. Displays information such as common names, aliases, biological names, identification, families, gender, size, life stag and much more.

A leader in marine life identification and used in education programs all over the world, now available to you from Apple App Store for only \$6.



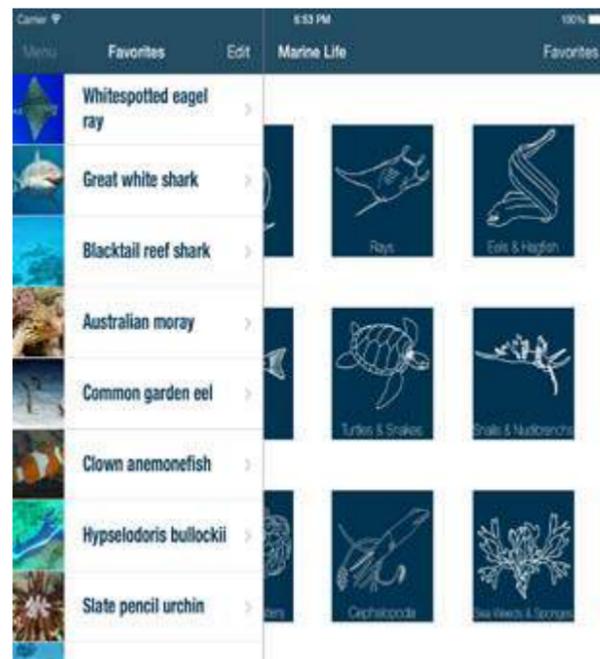
**Biological Name**  
Caretta caretta

**Identification**

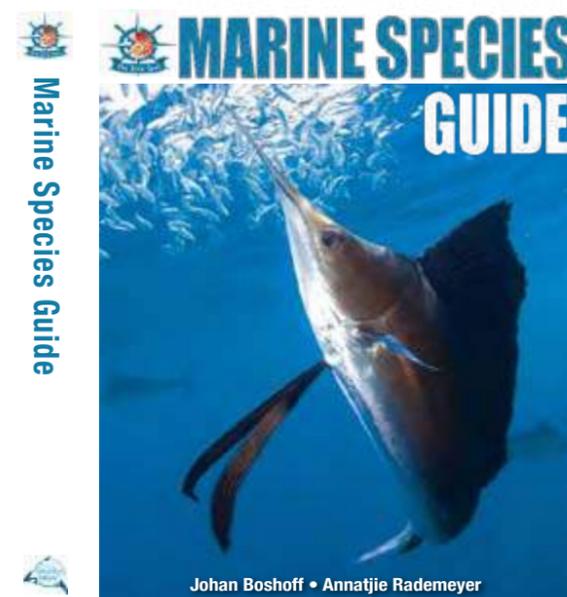
Five plates on either side of the central row on the carapace, unhooked bill and large eyes.

**Information**

Loggerhead turtles the second largest turtle on the South African coast and can be found on coral reefs. The huge head and neck that is much bigger than the Hawkehill and the Green turtles identifu



# Marine Species Guide -



Johan Boshoff • Annatjie Rademeyer

A quick reference guide to the marine species found on coral reefs around the world

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](http://www.thedivespot.com.au) or email [info@thedivespot.com.au](mailto:info@thedivespot.com.au)



# Ezyflag Dive System

I first thought of the idea of the Ezyflag back in 2013 when I became frustrated with the current flag on the market, finding it cumbersome and difficult to use, particularly when it came to retrieving it after a dive. So, I began my search for a better, easier to use flag.

I looked in Australia with no success, and then overseas, but with the same result. There was nothing out there that I felt fit what I was looking for and so began my journey to develop one myself.



Designing the flag itself was a challenge, taking over one and a half years alone, but producing the flag was equally challenging, and all the jigs and components have had to be specifically designed and engineered for the purpose, by myself. After a further year of design, engineering, testing and several prototypes, the final product is made of marine grade stainless steel, has a 600 x 500mm UV resistant flag which has a cross-support to strengthen it and keep it visible even in no wind conditions. It is also able to hold a flashing light for night divers and an anchor weight, both of which can be supplied as optional extras.

The real difference is the flag's ease of use. With the current flag on the market, the line has to be wound manually around the float, which can be difficult and time consuming. The Ezyflag however has a reel mechanism allowing the line and weight to be wound up very easily. The design also means that the reel and release sit below the float, allowing the flag to stay more upright in the water, even in rough conditions.

The Ezyflag dive system looks very simple, but it has been two and a half years in the making. Now on the market, the flag is already proving a hit with local dive clubs and instructors alike.

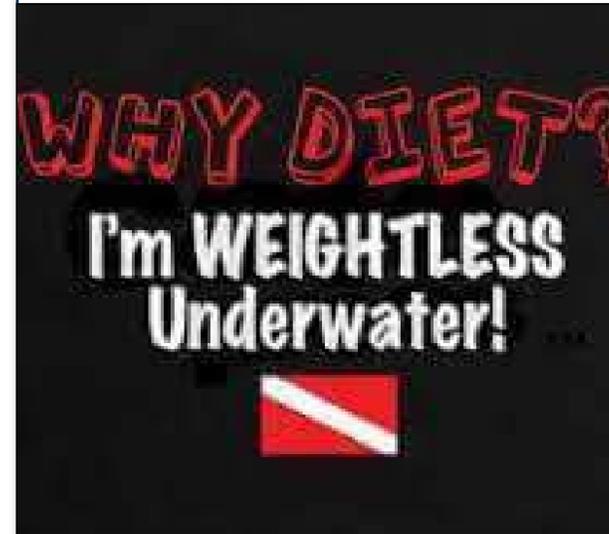
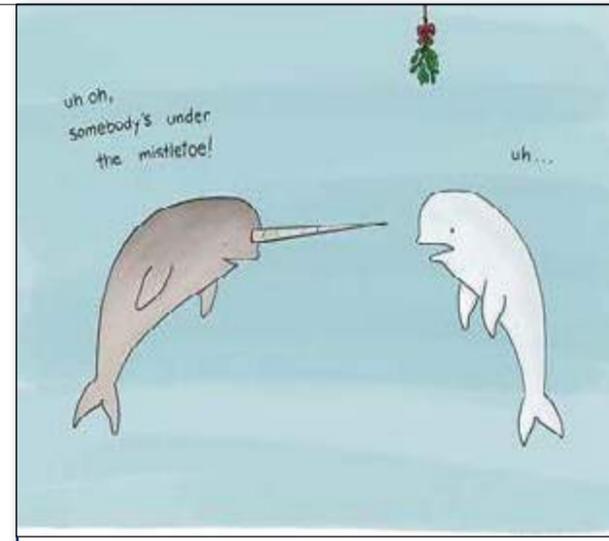
Further details can be found at our Facebook page [www.facebook.com/ezyflag](http://www.facebook.com/ezyflag), or by contacting Kevin Morcomb on [ezyflag@gmail.com](mailto:ezyflag@gmail.com) / 0407 589 315.

### Spearfishing

Two divers go spear fishing. They catch a lot of fish and return to the shore. The first one says, "I hope you remember the spot where we caught all those fish." The other answers, "Yes, I made an 'X' on the side of the boat to mark the spot." "You idiot!" cries the first, "How do you know we will get the same boat tomorrow?"



Send your funnies to [johan@ozdiver.com.au](mailto:johan@ozdiver.com.au)



# Western Australia



## Perth Region

### The Dive Spot - South Perth



We specialise in a wide variety of dive related activities. Our scuba training range from beginners to the more advanced including specialities and professional courses.

Phone: +61 (0) 44 887 9903  
 Mail: [info@thedivespot.com.au](mailto:info@thedivespot.com.au)  
 Web: [www.thedivespot.com.au](http://www.thedivespot.com.au)

### Australasian Diving Academy



Australasian Diving Academy have 2 convenient locations in Nedlands and Rockingham where the water is right on our doorstep. We have a huge range of top quality diving and snorkelling equipment to suit all requirements.

Phone: +61 (0) 95279211  
 Mail: [info@ausdiving.com.au](mailto:info@ausdiving.com.au)  
 Web: [www.ausdiving.com.au](http://www.ausdiving.com.au)

### Perth Scuba - Canning Vale



WA's largest dive shop, best range of snorkelling, free diving and scuba equipment. WA's PADI Career Development Centre offers courses from beginner to professional and TDI technical training. Perth Scuba has a free dive club offering twice weekly guided dives.

Phone: +61 (0) 8 9455 4448  
 Mail: [info@perthscuba.com](mailto:info@perthscuba.com)  
 Web: [www.perthscuba.com](http://www.perthscuba.com)

### Perth Diving Academy - Hillarys



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) 89 448 6343  
 Mail: [troy@perthdiving.com.au](mailto:troy@perthdiving.com.au)  
 Web: [www.perthdiving.com.au](http://www.perthdiving.com.au)

### OZDiver Dive Group - Perth



We focus on scuba diving at all levels and explore locations. We welcome any qualification level of divers including snorkel divers wanting to learn more about diving, and get onto club diving events to meet likewise divers.

Phone: +61 (0) 450 800 238  
 Mail: [izak@ozdiver.com.au](mailto:izak@ozdiver.com.au)  
 Web: [www.ozdiver.com.au](http://www.ozdiver.com.au)

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Since 2007 to service the Australian Dive Industry with the best scuba equipment available. We offer high-end gear, including recreational, technical and commercial equipment. Wherever possible we'll price match any online dive store to ensure you get the best deal!

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 Web: [www.dolphinscuba.com.au](http://www.dolphinscuba.com.au)

### Scubanautics Diving Academy- Rockingham



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Phone: +61 (0) 8 9527 4447  
 Mail: [info@scubanautics.com.au](mailto:info@scubanautics.com.au)  
 Web: [www.scubanautics.com.au](http://www.scubanautics.com.au)

### Wizbang Diving Solutions - Perth



Technical Training for divers. The development of safe and technically competent divers through specialized training. Rebreathers, Mixed Gas or even just Nitrox, we will help you develop the skills and confidence that will carry you into a safe and enjoyable future.

Phone: +61 (0) 41 876 1727  
 Mail: [diving@wizbang.com.au](mailto:diving@wizbang.com.au)  
 Web: [www.wizbang.com.au](http://www.wizbang.com.au)

### Western Blue Dive Charters- Mindarie



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 Mail: [info@westernbluedive.com.au](mailto:info@westernbluedive.com.au)  
 Web: [www.westernbluedive.com.au](http://www.westernbluedive.com.au)

### Underwater Explorer's Club of WA



Our club has a 12m purpose-built aluminium dive boat which can take 14 divers comfortably and is equipped with all appropriate safety equipment. We dive almost every weekend and have over 150 recorded dive spots around Rottnest and surroundings.

Phone: +61 (0) 402 310 854  
 Mail: [committee@uecwa.com.au](mailto:committee@uecwa.com.au)  
 Web: [www.uecwa.com.au](http://www.uecwa.com.au)



Mandurah

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**Web:** www.oceanosunsandsea.com

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**Web:** www.ateamdivers.com

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**Web:** www.diveningaloo.com

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**Mail:** info@snorkelningaloo.com.au  
**Web:** www.snorkelningaloo.com.au

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**Phone:** +61 (0) 89 8417 176  
**Mail:** whale@divealbany.com.au  
**Web:** www.divealbany.com.au

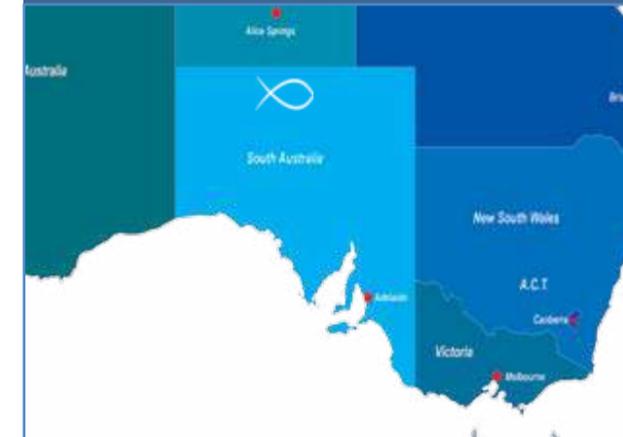
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Esperance Diving & Fishing



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  
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**Mail:** info@sharkcagediving.com.au  
**Web:** www.sharkcagediving.com.au

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**Mail:** barrettn80@hotmail.com  
**Web:** www.nbscuba.com.au

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**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

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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

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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.

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 Mail: info@baycityscuba.com  
 Web: www.baycityscuba.com

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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.

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 Web: www.extremewatersport.com.au

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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

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 Web: www.divevictoria.com.au

Rye

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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.

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 Web: www.scubadoctor.com.au

New South Wales



Sydney

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 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.

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 Mail: info@southwestrocksdive.com.au  
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 Web: www.scubaworld.com.au

Brisbane

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Gold Coast

Devocean Dive- Gold Coast



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 Web: www.devoceandive.com

Brisbane

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 Mail: info@tech-dive-academy.com  
 Web: www.tech-dive-academy.com

**List your Dive School or Dive Company here.**

For a listing in OZDiver Magazine contact us at info@ozdiver.com.au

Tasmania



Bicheno

Bicheno Dive Centre



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Christopher Bartlett

