

July - September 2019

OZ DIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

SHARK
DIVING

CAMOUFLAGE

DIVING
ICELAND

RESPIRATORY
INFECTIONS

OXYGEN
MASKS

GOZO-MALTA



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

OZDIVER

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

July - September 2019





Editor's Deco Stop

Every edition the magazine is doing better and better, it has a huge amount of readers from all over the world, but mostly from Australia.

As the magazine is available online at www.ozdiver.com.au and through apps for both Apple and Android devices, it is really easy for readers to access: now you can read it anywhere!

Every edition the magazine is full of interesting stories and articles for the diving community of Australia and for divers all over the world. This edition is once more full of articles for everyone, from the beginner diver to the more advanced.

If you want to publish your articles or photos in OZDiver magazine do not hesitate to contact me.

I hope that you enjoy this edition of OZDiver.

The Editor & Publisher

Johan Boshoff

-it is all about the journey and not the destination

Matthew 6:33
But seek ye first the kingdom of God, and his righteousness; and all these things shall be added unto you. 

OZDIVER

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it's **FREE** and it's online

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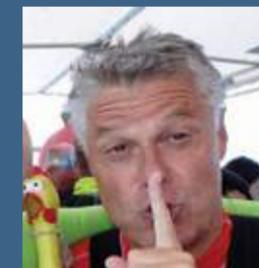
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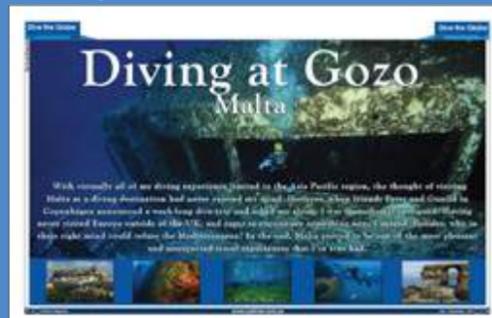
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FEATURE

Log Book



Dear Mom,

Me again. I still haven't got the car back, must be something seriously wrong for them to take so long with the service.

Well Mom, as I was saying, there I was dodging the dangers of the deep, keeping an eagle eye out for my divers, buoyancy perfect, breathing rate slow, hands flapping in unison – a study in diving perfection – when suddenly a menacing black shape appeared in the blue haze and the primeval fear of every human that ever walked this earth was realised... shark!

This is what I've trained for! Honed myself with hours spent in the pool drawing and sheathing my knife, the heavy duty titanium blade glistening dully in the pool lights as I was practicing this exact scenario over and over, slashing and stabbing, parrying and thrusting. These divers came to me for training and protection and this

is exactly what they were gonna get! Protection!

Mom, you've always said that your sons run to danger, not away from it. I went into overdrive, my feet thrashing as I accelerated, whorls of cloudy sand chasing me like small dust devils. My plan was working – the shark turned and started chasing me.

Of course, by this time it had to play catch up as I was by now quite far away from the group and going to the surface, knowing that sharks don't like sunlight. This is of course known by only a select few...

The shark ignored the divers, swimming right past them and coming straight for me. I was leading it up and away, my divers were safe but I was not out of danger yet.

As it got closer the giant jaws gaped – all I could see was a cavernous mouth

and I knew this was it...my training took over again and with a mighty heave I got hold of the guide ropes on the boat and pulled myself on to the vessel, muscles bulging and fins thrashing the water to a maelstrom – I was safe, and so were my divers – my cunning dash leading danger away from them.

The strange looks I got from the divers when they surfaced must have been because they didn't really know how to thank me.

The skipper did mumble, while he was patching the pontoon where my knife barely scratched the surface, that he had never seen a diver climb on board with full gear – only a finely honed diver can do that – he also apparently only saw a very small whale shark close to the boat.

The thing with these skippers is that you

can't really believe anything they tell you as sitting in that hot sun bobbing up and down the entire day does strange things to people.

Well Mom, that's just a taste of my exciting life as a Diving Instructor. Don't worry too much about me though as I have been well trained and my senses are razor sharp – I am practically an animal of the deep. I have to go now as my bank manager has been calling. He must want to do his diving course badly as I have seven missed calls from him. Business is good!

Only one thing still bothers me when recounting this experience – why did you plant that new azalea bush so late that night?

More about diving later.
Your Loving son,
The Dive Instructor. 



WIN

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

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



OZ NEWS

PADI Awards Medal of Valor to Australian Divers Instrumental in Thailand Cave Rescue

Sydney, Australia – 7 June 2019 – Australian rescue divers instrumental in the rescue of 12 boys and their soccer coach from a flooded cave in Thailand in mid-2018 were presented with the PADI Medal of Valor. Dr. Richard Harris and Dr. Craig Challen, 2018 Australian of the Year recipients, accepted the PADI Medal of Valor at the PADI Asia Pacific office on 7 June 2019 in Frenchs Forest, Australia.

Dr. Richard Harris and Dr. Craig Challen are among the first-ever recipients of PADI's Medal of Valor, which was awarded to the leadership and rescue divers involved in heroic rescue effort. This distinguished group also includes Rick Stanton, John Volanthen, Jason Mallinson, Chris Jewell and Jim Warny. The courage, strength, honour and dignity displayed during the rescue operation propelled the PADI organization to create the medal to formally recognize their contributions to one of diving's greatest moments in history.

In June and July 2018, the world watched as top cave divers and other experts from around the globe converged in Thailand to find and save the "Wild Boars" soccer team, which had become trapped deep inside the Tham Luang cave system. For 18 days, the international effort involved more than 1,000 men and women, who combined their collective talents for the extraordinary recovery of the team.

"It was an awe-inspiring example of humanity at its best, focused on a single noble purpose," said Drew Richardson, President and CEO of PADI Worldwide. "This complex rescue operation demonstrated action and focus propelled by the unshakable conviction that those boys would not die on diving's watch. Everyone who was part of this effort faced and accepted the difficulties, dangers and risks inherent in the rescue. On behalf of the entire PADI family, it is an honour to recognize these heroes and extend our immense gratitude for representing diving's finest hour."

Dr. Richard "Harry" Harris played a critical role in the rescue, administering sedatives to the boys to facilitate their extraction. Working in anesthesia and aeromedical retrieval medicine in Adelaide, South Australia, Harris has expertise in cave diving, wilderness medicine and remote area health. Dr. Craig Challen, an Australian cave explorer, assisted with medical checks deep inside the cave and under extreme and complex conditions.

"Their daring mission exemplified what can be accomplished through a combination of proper training, trust, courage, passion and perseverance," said Richardson. 



Mares SSI proudly welcomes Michael Aw as a new international Ambassador

Internationally acclaimed wildlife photographer, explorer and conservationist Michael Aw has become the new Mares SSI Ambassador. Author of 37 books about the ocean, his essays and pictures have been published in BBC Wildlife, GEO, National Geographic, The Smithsonian, Nature, Ocean Geographic, Asian Geographic, Nature Focus, The Times, and Discovery to name a few.

His accolades include winning more than 67 international photographic awards and being named as one of the world's most influential nature photographers by Outdoor Photographer.

Since 2010, Michael has been the project director of the Elysium Epic expeditions. From the Antarctic (2010) to the Arctic (2015), he brought 66 team members comprised of the world's best image makers and scientists and tasked them with documenting the flora and fauna of these regions with the goal of creating a climate change index.

His most recent work was in September of 2018 when he led a team of 49 using three vessels, for an expedition across the heart of the Coral Triangle for a first-ever baseline survey of the biomass of corals and fishes in the region.

He has proudly received five awards from the Natural History Museum Wildlife Photographer of the Year Competition, and in 2006 and 2015 he was the Winner of the Underwater Category.

Michael AW is the founder of Asian Geographic and Ocean Geographic magazines, as well as OceanNEnvironment, a charity organization registered with Environment Australia. Beneath Bunaken (1993) was his first book and Elysium – Heart of the Coral Triangle, is his 37th.

The Mission Deep Blue initiative, the project created by Mares to raise awareness and take action to protect our oceans, gains with Michael a global advocate to promote the responsible use of resources.

Michael also this way returns to his origins when he was one of the first SSI instructors in Singapore, back in 1985, swimming around with his then favourite Avanti fins. 



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- **Free Media Access**

For the third consecutive year, the Australia International Dive Expo (AIDE) will once again take place at the International Convention Centre Sydney as part of the annual Sydney International Boat Show (SIBS), the largest recreational boating event in the Southern Hemisphere.

While AIDE will continue to promote the fun and recreational side of the scuba diving, promote new travel opportunities, dive destinations, introduce new gadgets and gizmos to enhance any underwater experience, and encourage interests such as photography and videography, a significant focus for AIDE 2019 will be on marine conservation.

It is AIDE's key objective to not only help grow the diving community, but also educate the community and general public on the importance of marine conservation.

A major part of the Show, this year visitors will be able to hear even more about this topic during the Marine Rescue Forum, a session organised by marine conservation organisations Elasmo, a Newcastle based company founded by Joni Pini-Fitzsimmons, and Ocean Tidings, headed by Sarah-Jo Lobwein.

"There are many individuals and organisations around the world working towards a cleaner ocean and planet," says organiser Ness Puvanes. "And right here in Australia we have many high-profile divers and conservationists including Sarah-Jo, Joni, Terry Cummins, Dr Scott Wilson, Fiona Merida and others who will all be sharing with our nature and water-loving visitors their experience and expertise on the subject.

This includes how we can contribute to the ongoing ocean clean-up, eradicate single use plastics, help restore our reefs, keep our marine friends healthy and much, much more."

Other highlights this year include the Free Diving Forum, organised by renowned photographer, Lucas Handley; marine educational program for school children; try-dives; a fun-filled kids' corner and the latest high-tech underwater equipment.

As usual, there will be lots of entertainment, live presentations, door prizes, a competition to win holidays and dive equipment, and a bunch of exclusive travel deals not to be missed!

With more than 60,000 visitors expected at this year's Show, visitors are encouraged to register their interest and purchase tickets online to avoid long queues.

The Australia International Dive Expo will be running from 1 - 5 August 2019 as part of the Sydney International Boat Show.

Opening times will be 10am to 7pm in the halls, with the adjoining marina display closing daily at 7pm.

For further information about AIDE including the list of exhibitors, presentations, activities and workshops, go to www.australiadiveexpo.com. To find out more about the boat show, visit www.sydneymboatshow.com.au.

Media interested in attending the show can get their free pass upon registering. Admission for the travel trade and dive industry related companies is also free upon registration.

Media Enquiries

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Dive Schools / Operators / Organisers / Instructors

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

Here's what we need:

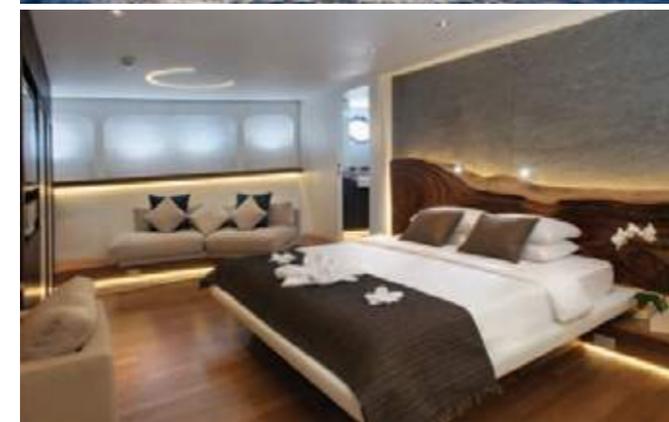
- Newsworthy stories (promotional material will not be accepted)
- Word limit: 100 words
- Text prepared in a Word document
- Accompanying high-resolution image(s) are welcome (please supply caption and image credit)

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www.wakatobi.com

OZTek 2019



All Over bar the Memories

Paul Morral





Another great weekend done and dusted. OZTek2019, once again, proved itself to be the premier dive show in the Oceania Region, covering all aspects of photography, travel and technical diving. And, for the first time, freediving.

The second year at the ICC Sydney, Darling Harbour venue, OZTek made the following changes for 2019:

- All theatres in the same hall - rendering any movement outside the Hall

unnecessary

- Created more time between sessions to ease potential congestion and enable more time for conference delegates to enjoy the OZTek Dive Travel, Training & Photography Show running concurrently to the conference

- Because of possible noise pollution, all theatres were equipped with conferencing headphones, which, were extremely successful and liked by all.

- A ticket scanning system provided a smoother registration and entry.

- Water bottle filling station. According to OZTek, 735,000 litres of water was drunk over the weekend, SAVING 1225 plastic bottles!! Part of OZTek's 2020Mission.org

Over 2000 visitors flocked to Darling Harbour – a unique combination of a speaker-based event with over 50+ amazing speakers and the more conventional 'OZTek Dive Travel, Training & Photography exhibition-style show' with over 80 stands displaying



Viviane Matson-Iarkin & Lindsay Preece



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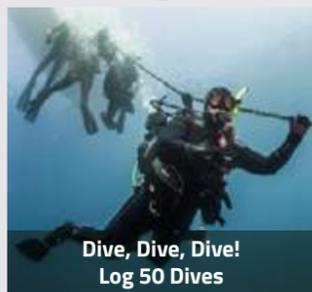
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scuba equipment: both recreational and technical, training agencies, travel destinations and liveboards, photography etc.

Workshops from professional photographers and exhibitors were available to Show ticket holders, making it extremely good value for money at \$25.

Included, was Australia's first Virtual Cave Dive – a 3D virtual experience of Tank Cave in Mount Gambier, one of Australia's most celebrated caves.

One big difference this year was the inclusion of Richard Harris and Craig Challen, our Australians of the Year, who brought their real-life Thailand Cave Rescue experience to OZTek.

The theatre was packed to overflowing and OZTek organisers had to stream the presentation into other theatres to ensure everyone was able to see and hear the presentation.

Richard and Craig did not disappoint,



Viviane Matson-Larkin & Lindsay Preece



Viviane Matson-Larkin & Lindsay Preece



barely a dry eye in the house - it was an extraordinary presentation and a real privilege to hear first-hand.

As a conference-based event dedicated to all underwater activities, and achievements, OZTek2019's aim is to provide something for everyone: technical, history, physiology, wrecks, caves, photography ... and inspire. With that goal in mind, there was an incredible variety in the talks presented at the show

At any one time during the course of the two-day symposium, there were up to five conference sessions/workshops running simultaneously.

As far as was possible, presentations were scheduled so people with specific diving interests could concentrate on those topics of particular appeal.

Freediving and OZTek TV: In 2017 OZTek introduced photography, with workshops and exhibitions. In 2019 they also included a full program of freediving



Sue Crowe



Viviane Matson-larkin & Lindsay Preece



Tech Divers Trained Here



tdisdi.com

topics - made possible by sponsors RAID International & Deeper Blue.

Take a look at the OZTek YouTube Channel featuring the outstanding work of Dean Laffan and Adrian Davis (Real World) in some fun and inspiring OZTek TV videos.

With some surprising crossovers between diving and freediving, interest was apparent in the numbers - with scuba divers attending freediving sessions to learn more about this growing segment of the industry.

Dive Travel, Training & Photography show was vibrant and fun, with a good mix to admire and learn about.

Some of the larger equipment manufacturers were sadly missed, with many visitors commenting that they'd like to see more equipment on display.

The gap between each speaker session allowed delegates more time to move around and visit the stands.

And keeping all the main theatres in the hall, made it easy for delegates to smoothly move around the hall and not waste any time.

It was nice to see the return of The Australian Dive Marketplace; this space enables Australian dive stores to meet face-to-face prospective new customers and establish an immediate connection.

This year the Underwater Photographic Competition underwent a significant re-vamp and became a primarily OCEANIA competition - with only ONE category open to international photographers.

The aim is to encourage more Australasian and New Zealand photographers. OZTek reported the highest number of entries to date.



Viviane Matson-larkin & Lindsay Preece

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Winners were announced in the Scubapix Imaging Centre at OZTek and can be seen on the OZTek website.

The Nikon Dive Shot of the Year has morphed in conjunction with the Nikon Surf Shot of the Year and other series and as always, created huge interest.

Note: Nikon Dive Shot of the Year will be held annually with continued support from Nikon Australia. A sell-out affair, the Gala Awards Dinner was held in the Lighthouse Gallery, Australian National Maritime Museum, Darling Harbour - a fitting grand finale to the weekend.

Great fun, a lovely collection of industry; great people and a wonderful celebration of all that is good about diving.

See all the competition entries on the website

Sponsor: Blancpain, Blancpain Ocean commitment, Shearwater Research, Scuba pix, Nikon, RAID & Deeper Blue



Macro
By Crispin Middleton
2019 Photo Competition
OZTek 2019



Marine Life
By Crispin Middleton
2019 Photo Competition
ADVANCED DIVE CONFERENCE & EXHIBITION
OZTek 2019

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mares
just
add
water

Camouflage

While gliding over a reef the diver is often dumbstruck by the abundance of life in the ocean. Apart from the myriads of fish darting around, each square centimetre of reef is usually occupied by seaweeds, barnacles, sponges and soft corals, while every crevice or hole is home to reef dwelling creatures such as crabs, sea urchins, eels and shrimps.

Seashells, with their striking colour patterns and interesting shapes, do not appear to form a significant part of the underwater scenery.

Colourful seashells are usually associated more with beach drift and displays in curio shops than with underwater reefs.

In fact, most underwater reefs appear totally devoid of any shell life. However, nothing can be further from the truth. Most reefs teem with molluscan life and they certainly outnumber reef fish.

Their apparent absence is simply due to the fact that they are masters in the art of camouflage.

Some shells, like members of the cowry family, have bright, smoothly polished shells visible from a considerable distance. However, they are all endowed with a thin

membrane called a mantle that covers or partly covers the shell most of the time. The mantle usually blends in with the background, making the mollusc exceedingly hard to detect.

Most shells have intricate colour patterns that have been interpreted as a form of camouflage against predators or perhaps to sneak up on prey.

However, in life most mollusc shells are covered in a thick horny or fibrous layer, masking the attractive colour pattern of the underlying shell.

This fibrous layer, furthermore, tends to accumulate mud and debris from the surrounding water, causing the mollusc to blend into the background completely.

Seaweeds, barnacles and sponges also tend to invade any available firm, hard surface

on the reef, including shell surfaces. These often brightly coloured organisms tend to break the typical outline of the mollusc shell, rendering it almost invisible to the diver floating by.

The function of the often exquisite colour patterns of sea shells has intrigued many a conchologist.

In the pitch black depths of the ocean, colour seems to be of little significance. The inside of shells are often brightly coloured, but are only exposed after the death of the mollusc.

It has been speculated that the coloured compounds in the shell may be a way of storing waste products, or may serve a structural function, such as adding strength to the shell, yet it seems more likely that shell colour serves no particular purpose at all.

To spot a well camouflaged mollusc in its natural surroundings requires a very close approach to the reef, preferably remaining

stationary for a sufficiently long period of time. Searching and admiring these cryptic inhabitants of rock pools and underwater reefs will add a new dimension to your diving or snorkelling activities. 



Currents

The rivers in the sea

The ocean's water is constantly in motion, but there is a pattern and direction to this seeming chaos – currents. Surface currents are currents present in the upper 10% of the water and derive mainly from wind patterns. When wind blows over large areas with reasonable consistency of direction and



strength, significant volumes of water move horizontally across the oceans. In the northern hemisphere, the trade winds (near latitude 15 degrees N), blow from the northwest to southwest; the westerly's in the mid-latitudes blow primarily from the southwest.

At very high latitudes, the polar easterlies blow from east to west. A mirror image set of these wind belts exists in the southern hemisphere.

The energy from these wind systems drives the major surface ocean currents. Some of these currents transport more than 100 times the volume of water carried by all of the earth's rivers combined. As with a wind-driven wave, surface current speed diminishes rapidly with depth, becoming negligible at depths around 190m.

The earth's rotation also affects the

major ocean currents. This is termed the 'Coriolis effect', and explains why objects in the northern hemisphere deflect to the right of the direction of the force acting on them (in this case, the wind is the force and the object is the water's surface).

The opposite is true in the southern hemisphere. There, objects deflect to the left of the direction of force. The result is that water tends to pile up in the middle of the ocean basins as the major currents travel along their edges according to the Coriolis Effect.

These circular water movement patterns are called 'gyres' and they play major roles in the global heat and marine life distribution. There are six major gyres – the North Atlantic and the North Pacific in the northern hemisphere and the South Atlantic, the South Pacific, the Indian Ocean and the Antarctic Circumpolar Current in the southern hemisphere.

Currents also persist below the upper layer of the ocean and are driven primarily by thermohaline circulation. This process is responsible for most

vertical water movement and eventually circulates the entire ocean. This circulation starts because equatorial regions receive more heat than polar regions.

Simplistically, water is cooled and made denser and less salty at the poles. This water then sinks and drifts towards the equator.

As the water moves towards the equator, it is warmed and made less dense, therefore rising to the surface. Once on the surface it is pushed again towards the poles where it is cooled and the process begins anew.

Currents occur in oceans, but also to some extent in large lakes, seas and even smaller water bodies. However, the smaller the water body, the stronger the wind needed to develop a current of a given strength because there is less surface area across which to transfer energy.

However, many large lakes have sufficient area to generate significant currents (and waves). ◀





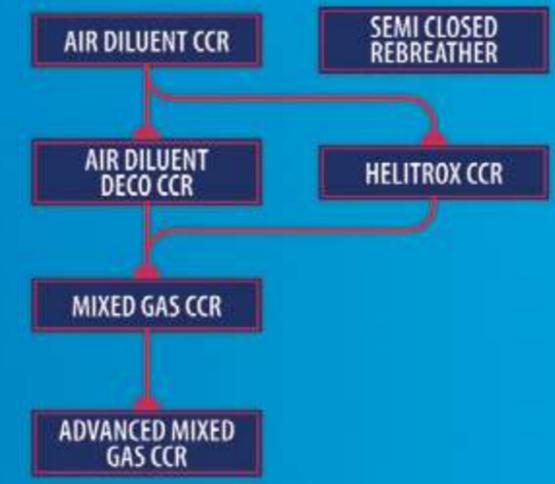
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DIVERS
TRAINED
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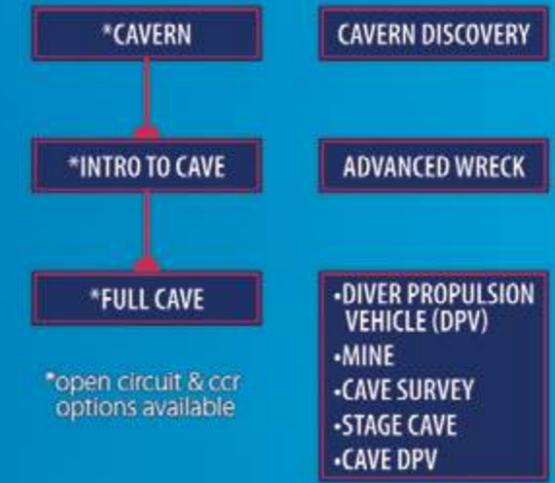
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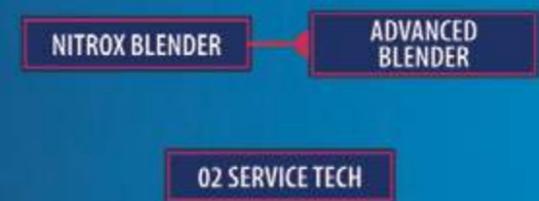


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Alien Invasion

PART II

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

Special traits that invasive species have are their ability to produce both sexually and asexually, a fast growth rate and dispensability, tolerance to a wide range of environmental conditions and the ability to live off a wide range of food (generalist).

They are sometimes introduced several times before they start to establish and dominate a new habitat, because they have to survive in that habitat first before they can start to adapt to it.

Marine aquaculture (Mariculture) is another method of introducing alien species to the ocean.

Wasted food and excretion can cause decreased dissolved oxygen in the water.

In certain instances, up to 6kg of wild fish is used to cultivate 1kg of maricultured fish. Fish that escape from the marine pens can also introduce and spread diseases to the wild population.

Intensive research reduced most of these causes and new technology such as vaccines also helps to improve these fish farms.

Our fish population is rapidly declining and it needs all the help it can get from maricultured species to survive.

Yet alien species are not limited to the ones we can see.

Smaller marine organisms such as the algae that causes 'red tides' are such an example.

They excrete a toxin into the sea water which makes filter feeders highly toxic to humans, sea animals and birds. Then there are other micro algae, macro algae, phytoplankton, diatoms, sea grass, worms and gastropods to name but a few.

Each one has its own unique method of invasion and impact on the ecosystem, with an even wider range of preventative measures.

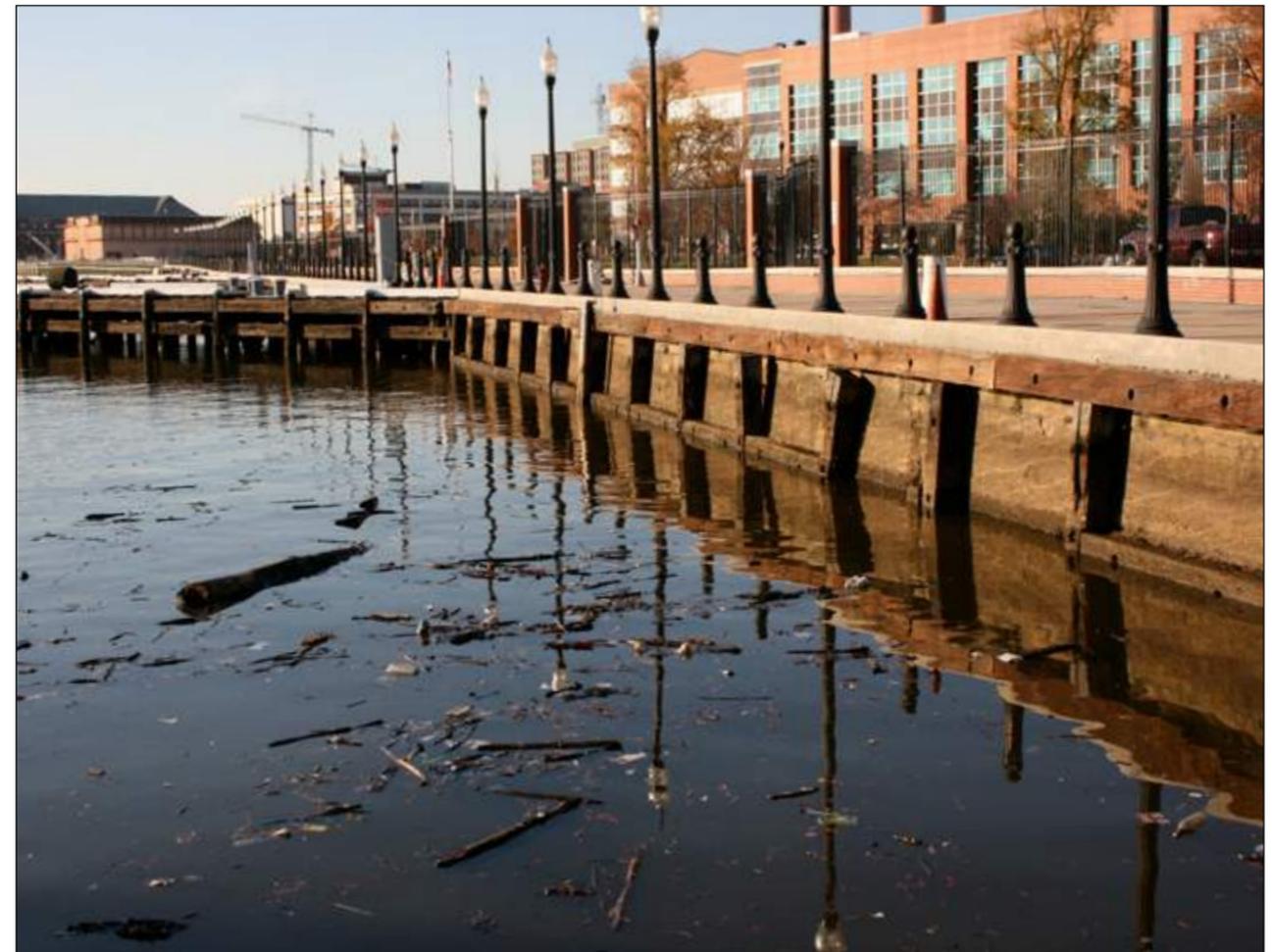
Preventative measures include that ships are forced by law to dump their ballast water in mid ocean and not taking water in during a 'red tide' period. F

Furthermore, chemical treatment of the ballast and grey water tanks at regular intervals reduces planktonic larvae in the water.

Physical removal of hitchhikers from hulls and chemical treatment of the paint used for painting of the hulls is another method of prevention. People handling and exporting fish or marine products must ensure that no accidental hitchhikers are included when transporting marine products worldwide.

Marine invasive species are one of the four biggest ecological and economic threats to the oceans and well-being of the planet. They can alter ecosystems, change the biodiversity of areas, transport diseases and be the cause of huge social and economic consequences for mankind.

Humans must take responsibility for their actions.
Stop the alienation. 



How do Respiratory Diseases Affect your Diving?

Influenza, coryza (the common cold) and bronchitis are familiar winter ailments.

They all affect the respiratory tract, but they differ in their symptoms and how they should be managed.

Influenza produces a classical syndrome of fever, shivering attacks, sore throat, headache, generalised body aches, a feeling of weakness and cold in the limbs, and a cough that may produce clear phlegm.

In most cases, the patient recovers after a week to 10 days. In a few cases, especially in the elderly or those with compromised immune systems, complications such as bacterial bronchitis, inflammation of the heart muscle, pneumonia or even cardio-respiratory collapse and death may occur.

Each year, vaccines to immunise the population to the prevalent different strains are readily available, and these are highly recommended. Antibiotics are totally ineffective in the treatment of the influenza virus.

Although commonly prescribed, they play a role only in the management of complications such as an associated bacterial respiratory infection. Treatment is purely supportive in terms of pain and fever relief, bed rest and nutrition.

How do these ailments affect diving? The common cold affects predominantly the upper respiratory tract. Sneezing, a red runny nose, sinus congestion and watery eyes are regular presentations and often mimic acute nasal allergy.

No vaccine exists and antibiotics are ineffective. Treatment is again purely symptomatic – oral and nasal decongestants and the use of analgesics such as paracetamol for pain.

Despite popular belief, Vitamin C, even in very high doses, is totally ineffective in the prevention or treatment of either influenza or coryza. Bronchitis affects the lower respiratory tract

– the tubules leading directly to the air sacs or alveoli.

The infection is commonly bacterial in origin and causes swelling, discoloured mucus production and spasm of the bronchial musculature with wheezing, cough and breathlessness.

It is often aggravated by exercise, with a worsening of symptoms, or even progression to pneumonia. Acute bacterial bronchitis and pneumonia do respond to the correct antibiotic treatment.

Diving requires normal health of the entire respiratory tree – the nose, sinuses, throat, larynx, trachea, bronchi and alveoli.

The presence of inflammation, mucus plugs and swelling will certainly affect nitrogen degassing, and may predispose to acute decompression illness following a normal dive profile.

Physical narrowing and obstruction may lead not only to ascent or descent squeeze involving the Eustachian tubes, middle ears and sinuses, but also to the very great diving danger - pulmonary barotrauma of ascent.

How long must I wait before I can dive again?

In the vast majority of these winter ailment cases the patient recovers within 10 to 14 days and diving can then recommence.

In the case of bronchitis or pneumonia, healing should be confirmed via an X-ray of the chest.

The radiological presence of residual bronchial swelling and thickening, or lung congestion, means that healing is incomplete and additional surface time is needed for full recovery.

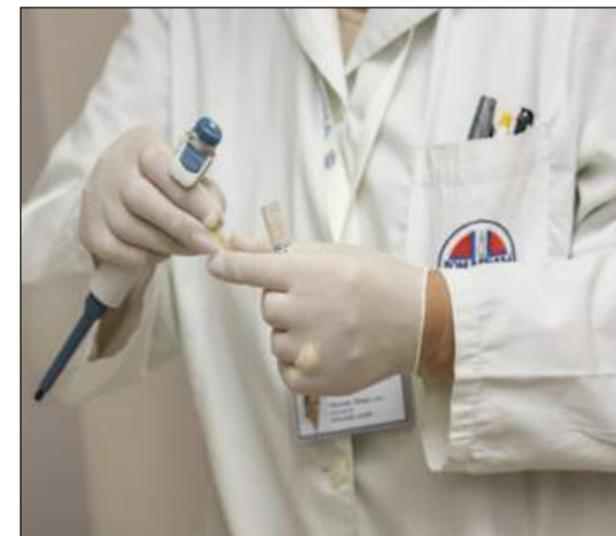
The question of commercial divers needing medical clearance before diving after a four-week layoff is certainly a valid one and applies to sport divers too.

Both are human and physics does not distinguish between professionals and amateurs.

The point is that four weeks is a long time to be booked off diving and means that the diver suffered from much more than a stuffy nose.

It would require full-blown bronchitis, pneumonia or influenza complicated by these to warrant a month's prohibition from diving.

A repeat X-ray chest, electronic lung function test and full clinical assessment become mandatory upon recovery. 



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Global News

DIVERS ALERT NETWORK® (DAN®) WELCOMES NEW INTERNS AS INTERNSHIP PROGRAM EXPANDS BEYOND RESEARCH

– Divers Alert Network is proud to provide internship opportunities to four accomplished individuals this summer. The DAN Internship Program was created more than 20 years ago to give qualified candidates valuable experience in dive safety research. While the program is still research-oriented, its scope has expanded over the years to include projects that focus on other facets of DAN's mission to help divers in need of emergency medical assistance and to promote dive safety through education. This summer the selected candidates have been invited to spend three months at DAN Headquarters in Durham, North Carolina, working with the directors of DAN Research, DAN Medical Services, DAN Injury Monitoring and Prevention, and DAN Training.

Hannah DeWitt, a recent graduate of Ball State University in Muncie, Indiana, has been selected to work with Frauke Tillmans, Ph.D., in DAN Research. Hannah has a B.A. in biology and a minor in aquatics with a concentration in scuba diving. Hannah is an advanced open water diver and a rescue diver who is eager to learn more about the dive industry as she pursues dive physiology research with DAN this summer.

Elizabeth Helfrich, a McDermott Scholar and rising junior at the University of Texas at Dallas, is currently completing her degrees in biology and historical studies. This summer she will work with Matias Nochetto, M.D., studying children and diving. Her background as an EMT and divemaster along with extensive shadowing experience in pediatric medicine make her especially qualified to work on this project. Elizabeth hopes to one day practice undersea and hyperbaric medicine.

Andrea Filozof is a post-baccalaureate student at Meredith College in Raleigh, North Carolina, where she is currently completing prerequisites for medical school. Prior to this internship Andrea spent eight years serving as an active-duty officer in the United States Army. During this time she focused primarily on civil-military operations and foreign humanitarian assistance but made time to become a certified diver as a member of an Army dive club. This summer she will be working with Allan Uribe, Ph.D., DAN's director of injury monitoring and prevention. Andrea plans to eventually return to the military to practice medicine.

Abigail S. Dias is a rising senior majoring in biology and minoring in chemistry at Whitman College in Walla Walla, Washington. A rescue diver, Abigail is committed to promoting marine conservation and preservation as well as safe diving in the Seattle-area diving community. This summer she will work with Patty Seery, director of training at DAN, to improve dive safety education materials. Following her internship Abigail will give a presentation about her experience and accomplishments at the Our World Underwater Scholarship Society's Annual Scholar Weekend in New York.

"Each summer, DAN interns come through the door with unique skill sets and long lists of remarkable accomplishments," said DAN vice president of mission Petar Denoble. "It is inspiring to work with these bright young students who have clear and personal missions to make the world a safer place to dive. It is even more inspiring to see what they accomplish after their internship with us. We are so grateful for the opportunity to foster future generations of dive safety leaders, year after year." 

New Service Brings Solomons Dives Closer

By Allan Leibowitz

A new direct flight from Brisbane to Solomon Islands' pristine Munda dive mecca should boost the profile of the remote Western Province tourist hub.

The first Solomon Airlines international air connection to Munda landed in 2019. Belinda Botha, Dive Munda operations director, is excited about the new service which, she said, should triple her business by making it quicker and cheaper for foreign visitors.

"This new flight means we can have visitors in the water four hours after they leave Australia," she said. Using the current domestic connection via Honiara takes around six hours from Brisbane to Munda. "When we launched Dive Munda in 2016, we saw around 200 guests come through. We have since been able to double that number every single year and with this wonderful new flight, we're hoping to triple that this year."

Botha believes the new service will raise the profile of her region and make it a more competitive destination which goes head to head with Australia's Barrier Reef and rival islands, including Fiji.

Dive Munda and Solomon Airlines have rallied the local tourism operators and Botha said local accommodation capacity has already been increased by around 40 percent to meet the anticipated growth. "Obviously, much more accommodation options are needed, but we are all aligned and we're working on it," she said.

Brett Gebers, chief executive of Solomon Airlines, says he is hoping the new service will bring an additional 80 visitors to Munda each week – a figure he based on estimates from operators like Botha. However, Tourism Solomons Tuamotō is far more ambitious, looking towards as many as three direct flights a week. This, he said, would boost tourism's economic contribution and reduce the island nation's reliance on fishing and resource exports.

For Gebers and Solomon Airlines, the new service is not about huge revenue growth or profits, but rather about supporting sustainable tourism development.

The sustainability motive is also a priority for Dive Munda's Botha: "Tourism is still in its infancy and every visitor has the capacity to make an impact and help us make positive changes and protect and preserve this destination."

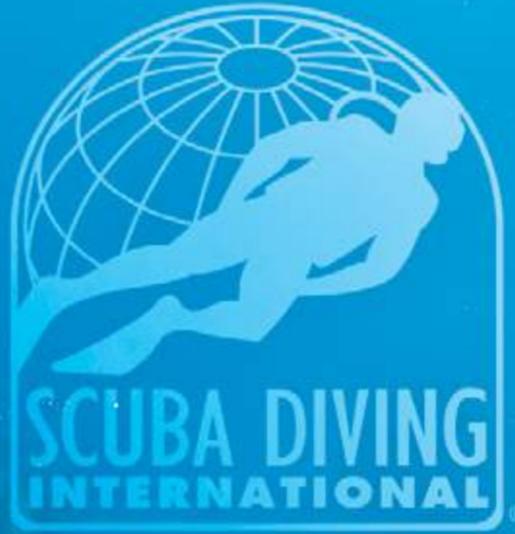
The new service, according to Tourism Solomons chief executive Josefa 'Jo' Tuamotō, was long overdue.

"We are hopeful this new service will act as a catalyst for increased confidence in the Western Province's tourism future, in the process attracting major investment in much needed infrastructure.

"In particular, we hope the new service will stimulate investment in good quality accommodation inventory which the Western Province and for that matter, the entire destination, so desperately needs." 



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Diving at Gozo

Malta

With virtually all of my diving experience limited to the Asia Pacific region, the thought of visiting Malta as a diving destination had never crossed my mind. However, when friends Peter and Gunild in Copenhagen announced a week-long dive trip and asked me along, I was immediately intrigued. Having never visited Europe outside of the UK, and eager to experience something new, I agreed. Besides, who in their right mind could refuse the Mediterranean? In the end, Malta proved to be one of the most pleasant and unexpected travel experiences that I've ever had.



By Scott Bennett
Positioned at the crossroads of the Mediterranean, the Maltese Archipelago occupies a strategic position on the trading route between Europe and Africa.

Comprised of the islands of Malta, Gozo and Comino, the tiny nation has been conquered and occupied by numerous civilizations during its 7 000-year history, from Bronze Age Neolithic people to the Phoenicians, Arabs, Turks, French and British. Brimming with history, the islands showcases an eclectic fusion of cultural, culinary and linguistic elements to create a distinctive character all its own.

Boasting spectacular caves, wrecks and drop offs, the islands are renowned for some of the best diving in the entire Mediterranean. While Europeans have long known of Malta's bevy of attractions above and below the waves, to the average North American, it's terra incognita. Not only had some of my friends never heard of it, those that had couldn't place it on a map!

From Copenhagen, a leisurely three and a half hour flight delivered us to one of the furthest outposts of the European Union. Glancing out my window during our final descent, I was immediately struck by how small the country was. I could easily discern its entirety without so much as craning my neck!

From the airport, it was then an hour transfer by road to the ferry terminal at Cirkkenwa where we boarded an inter-island ferry to Gozo. Dry and stark, the rocky landscape couldn't be more different than the soft green of Denmark we had left behind.

Our home for the week was the small resort town of Xlendi, occupying a magnificent position at the end of a long, narrow bay hemmed in by imposing limestone cliffs. After a late dinner of seafood marinara and Gozo wine overlooking the 'Med', I was instantly won over!

The next morning, Peter and I headed over to the St. Andrews Dive Centre to sort out our gear. On hand to meet us was manager Mark Busuttil, who quickly gave us the rundown on our week's activities. When I discovered we would only be doing two dives a day, I was initially disappointed, however,

Gozo soon proved to be a dive destination unlike any I'd experienced before.

Part of the adventure was just getting to the dive sites! While a number of the island's 54 sites can be reached by boat, the majority are shore dives accessible by road. With up to 10 divers or more per trip requiring several vehicles for transport, some serious co-ordination was required. We were then introduced to Dino, who was to be our guide and driver for the remainder of the week. An affable Chilean boasting a broad smile and silvery hair flowing from beneath a woolen cap, he would be chauffeuring us around in a battered Land Rover that soon proved to be the Maltese equivalent of the Energizer Bunny.

The island's compact size ensured dive sites were never more than a 20-minute drive or boat ride away. A trio of Gozo's best can be found in the vicinity of Dwejra Point on the island's southwest coast. The Blue Hole features a circular formation of limestone creating a large, clear rock pool.

Dominating the horizon is the Azure Window, a colossal natural arch that is one



of the country's most photographed natural attractions. It can also be tricky to access, especially when sea conditions are rough. It took us three separate attempts before conditions were calm enough. Just getting to the pool proved to be an adventure! After traversing a flat shelf of rock and descending some metal stairs, the going got rougher.

Clambering over a multitude of unpleasantly jagged rocks through a cleft in the limestone, I didn't wish to contemplate the results of a misplaced foot. Finally reaching the pool, we descended 8m to an archway mirroring the Azure Window above. The actual size was difficult to comprehend until a group of divers passed directly beneath it. The scale was simply jaw dropping! Nearby, a massive undersea cave at 21m was home to a pair of hefty groupers. Our 50 minute dive simply wasn't long enough.

The adjacent Inland Sea was created millions of years ago when an immense limestone cavern collapsed. The shallow lagoon is linked to the sea via a 100m long tunnel through a nearby cliff. Gearing up by the Land Rover, we strolled to the jetty and



slid into waist-deep water. Dino remarked that this would be the week's easiest shore dive, a statement that bore decidedly ominous undertones.

Finning to the entrance, an immediate descent proved necessary to avoid the relentless stream of tour boat traffic. Upon entering, we were greeted with an amazing sight. Dwarfed by the sheer immensity of the tunnel, a procession of divers passed, silhouetted by a narrow ribbon of blue leading to the exit beyond. At a depth of 18m, there was certainly no danger of colliding with anyone in here!

Continuing onwards, we entered the open ocean with visibility easily reaching 30m. To the right and left, vertical fissures scarred the cliff face, while lush green growth and sponges shrouded the walls. During calm conditions, it's possible to swim all the way to the Blue Hole.

Crocodile Rock isn't one of those fancifully named locations where one has to strain their imagination; it really does resemble a crocodile's head! From the anchor point on the reef top, we descended to a rock

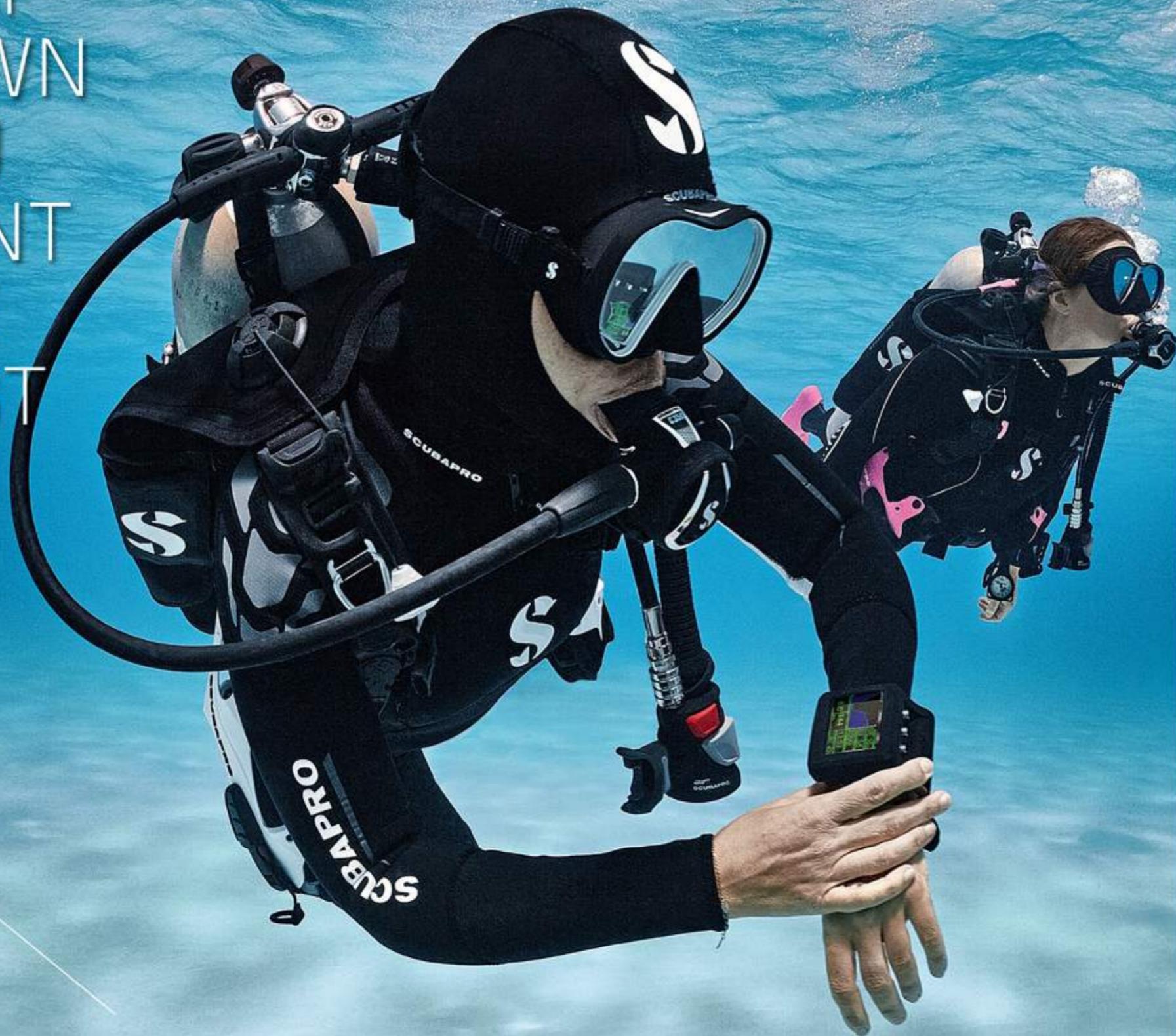
By Scott Bennett
platform at 7m. Following the reef to the rock's southern edge revealed a sheer-sided natural amphitheatre plummeting to the depths. We also had company; swimming in the blue was an impressive school of Mediterranean barracuda.

Unfazed by our presence, they tolerated a close approach, allowing for endless photo opportunities. Continuing our circumnavigation, the vertiginous walls coupled with the 30m and more visibility made for a truly spectacular dive. Immense undersea formations towered above distant divers as sea bream, rainbow wrasse and parrotfish flitted past. Enroute, we chanced across a diminutive jellyfish, pulsating white against the vivid blue. We later discovered it to be a juvenile Portuguese man-o-war, making me grateful that I didn't get too close!

Wedged between Malta and Gozo, tiny Comino Island features some exceptional sites. At Lantern Point, the reef's appearance was quite different than anything I'd see in the tropics. Stubby corals and lush green vegetation carpeted the



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terrain, resembling grassy terrestrial hills.

Mirroring the rugged coastline above, a series of imposing boulders have created a network of huge caverns and swim-throughs made for a contorted albeit fascinating dive. From a large cave at 16m, a chimney ascends dramatically through the limestone plateau, offering plenty of maneuvering room for divers.

Comino Caves consists of a large system of caves and of tunnels extending in excess of 30m through a limestone headland. It also proved to be the week's 'fishiest' site. Within moments of entering the water we were immediately besieged by a shimmering entourage of saddled bream, two-banded bream and damselfish eager for a handout.

While the majority of Gozo's dive operators frown on the practice of fish feeding, it doesn't deter the undersea residents from giving it their best shot. It was also colourful; the walls shrouded with a profusion of corals, sponges and neon-coloured algae. A number of the passages were a bit on the tight side, but we all managed to squeeze through without any difficulty. However, a few errant fins resulted in a blizzard of fragmented algae!

Ringed by cliffs, Comino is also home to the dazzling Blue Lagoon, where a combination of powder-white sand and clear water combines to give the appearance of an immense swimming pool. The beach, however, was quite possibly the smallest I have ever seen. Crammed full of sunburned holidaymakers in beach chairs, I was reminded of an overcrowded penguin rookery.

Over on the Malta side near the Cirkkenwa ferry terminal, the Roszi is a tugboat sunk in 1992 as an attraction for tourists on submarine tours. Although the tours have ceased, it has become a popular dive site, sitting upright on a broad expanse of sand at 30m.

Descending to the wreck, the visibility was easily 30m, with vivid blue water right out of the tropics. Colourful marine growth has already colonised the wreck, while scores of fish swarmed about, including chromis, bream and sand smelt. Back on the boat,

Dino informed us that the visibility was merely average, as it sometimes extends to up to 50m!

Another interesting wreck is the MV Karwela, situated west of Mgarr Harbour. Turning off the immaculate main road, we headed down a bone-jarring track that would have mortally wounded the suspension of an average vehicle. The views were dramatic, offering uninterrupted views of farmland sloping to the rugged shoreline below.

Resting upright at a depth of 32m, the vessel is a former passenger ferry sunk in 2006. Although barren in the growth department, it was nonetheless a fascinating dive and home to the week's first nudibranch, a beautiful pink flabellina. Ascending the nearby slope, healthy meadows of sea grass hosted abundant populations of fish. On the seabed, small ridges of overhanging rock lining proved to be a popular hangout for an array of critters, including red scorpionfish, flatworms, octopus and even a tiny cuttlefish.



Dive the Globe

Malta

By Scott Bennett For our last dive at Xlendi Bay, I finally switched to macro after a week of wide-angle shooting. At the northern corner of the bay, a tunnel leads through the headland to the outer reef beyond. Compared to the practically barren limestone walls outside, the tunnel walls featured a rich tapestry of golden zoanthsids, sponges and green and purple algae.

Colourful fireworms were especially common, with some nearly a foot in length. Afterwards, we were told of a hapless Swedish diver who was so captivated that he placed one on his forearm for a photograph. The following day it had ballooned to Popeye the Sailor proportions and required serious medical attention. So remember, look but don't touch!

With history literally bursting from the islands' seams, there's plenty to see after diving. A short bus ride from Xlendi is Victoria, Gozo's principal town. Constructed by the Arabs, Victoria's citadel hosts a cathedral and several museums.

A walk around the citadel's bastions is a must, offering stunning panoramas of the entire island with the Mediterranean visible in each direction. Just outside the village of Xaghra, the temple complex of Ggantija is the largest and most complete of Malta's megalithic shrines. One of them, estimated to have been constructed between 3600 and 3000 BC, is the oldest stone structure in the world, predating the Great Pyramids of Egypt by hundreds of years.

Over on the main island, the city of Mdina is a UNESCO World Heritage site that is not to be missed.

Entering the old city walls is like stepping into a time capsule, its enchanting labyrinth of meandering laneways crammed with churches, palaces and stately houses. Fronted by a large square, the impressive Cathedral of the Conversion of St. Paul is the centrepiece of the old city. Constructed between 1697 and 1702, it replaced the original Norman church destroyed by an earthquake.

Occupying the rugged Mount Sceberras peninsula, Malta's diminutive capitol of Valletta is a treasure trove of European art and architecture regarded as one of the most concentrated historic areas in



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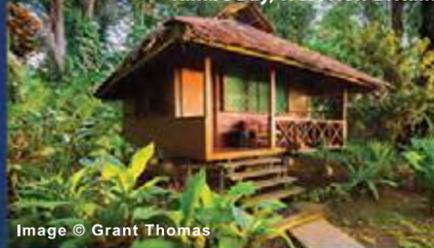


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Image © Scott Bennett

By Scott Bennett

the world. Named after its founder, Jean Parisot de la Valette, Grand Master of the Order of St. John, its alluring jumble of ochre-hued buildings contrasts sharply with the harbour's vibrant blue. Numerous attractions include the Grand Master's Palace, seat of Maltese government since the time of the Knights and St. Paul's Co-Cathedral, whose lavish interior is a riot of Baroque splendour.

A short drive away is the charming fishing village of Marsaxlokk, famous for its multi-hued fishing boats ornamented with the distinctive 'Eyes of Osiris' to ward off evil spirits.

During our stay, we did a total of nine dives, each offering a broad array of environments. While fish life was less than I've encountered in Asia, the spectacular undersea landscapes and tremendous visibility made for some truly enjoyable diving experiences. Along with the remarkable history, friendly people and sumptuous food, I'd go back in an instant. While small in size, Malta is big on attractions.



Getting there: Malta is just a few hours' flying time from most major European cities and has excellent intercontinental connections. The national airline, Air Malta, operates flights to and from all the major airports in Europe, North Africa and the Middle East.

When to Go: Malta's climate is typically Mediterranean, with mild, rainy winters and hot, dry summers. The best time to visit is Spring (April to June) and Autumn (September and October). It's best to avoid the summer months of July and August when temperatures can soar to 35°C. Diving is possible year-round.

Electricity: 240V,50Hz is the standard. The electrical outlet has three flat pins as in the UK.

Health: No vaccinations are required. High standard health care is readily available.

Language: Maltese. As a former British Colony, most residents speak English.

Currency: Euros 



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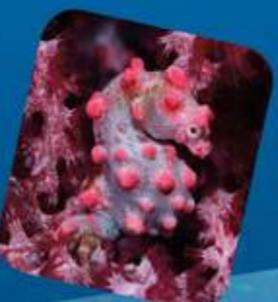
Far away from the touristy areas, you find a secluded 4* boutique dive resort: Magic Oceans. With 17 kilometers of coastline full with healthy reefs, big schools of fish and loads of critters and nudibranchs, this is the perfect destination for your dive vacation!



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Shark Diving South Africa



Sharks are not always accompanied with a good name. Films such as Jaws would like us to believe that all sharks are hardline killers. We have been travelling around the world to meet different types of sharks and to find out whether all prejudices about sharks are true and to see how dive operators around the world work with these beautiful animals. In this search we had to visit the city of Cape Town, as this area is well known for its sharks.



As our visit to Cape Town was on a tight schedule, we really had to work together with Sharkbookings to see as many sharks as possible.

We started our tour around Cape Town in Simon's Town. As this town was named after the Dutch governor Simon van der Stel, it was very special for us to start here as we are Dutch ourselves.

This Dutch governor surveyed the bay of Simon's Town from 1677 to 1699. The town grew fast when it became the base of the Royal Navy in 1806 and today Simon's Town is a nice little village at the opposite of the peninsula of Cape Town.

As we were staying in Cape Town itself, we have to drive to Simon's Town early in the morning. With the sun rising we could see the town from the opposite side of the bay – a beautiful sight as early morning light gives everything

such a beautiful hue.

For our first dive we met in the harbour of Simon's Town. The plan was to go out into the open sea to search for the blue shark and the mako shark. Whilst preparing for this dive we did some reading about these sharks.

The blue shark is a species of requiem sharks that inhabits the deeper waters. They prefer water that is cool so they will stay deeper when in the warmer oceans and stay in the shallows in colder seas.

From the information we gathered, we noticed that this shark is considered to be dangerous to humans. We also found out that the mako is also considered dangerous for humans – diving with these sharks is mostly done in cages, but on clear days it is possible in open ocean. We were thus a little nervous while waiting for the boat.



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By Andre Croné

The blue and the mako sharks do not swim very close to the shore.

This meant that we had to sail for more than an hour to the open sea before we could start our dive. While we relaxed on board the staff prepared a large bin with fish trash. This bin was used later on to attract the sharks.

Soon after we arrived at the place of our dive it appeared as if luck was on our side. The visibility was good enough to do our shark dive so the bin was lowered into the water and we prepared for our dive.

Soon afterwards the first blue shark was spotted. What a beautiful animal it is. It has a long, thin body and is extremely well streamlined.

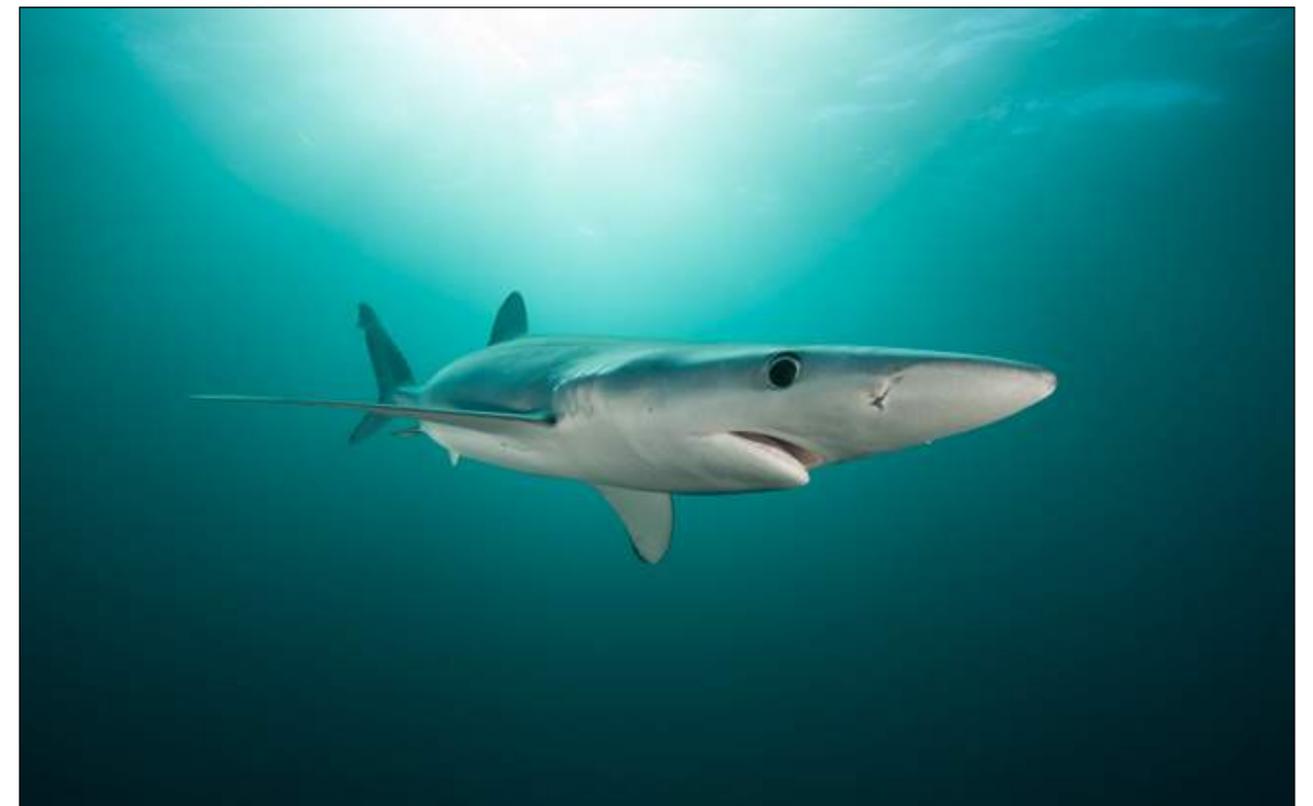
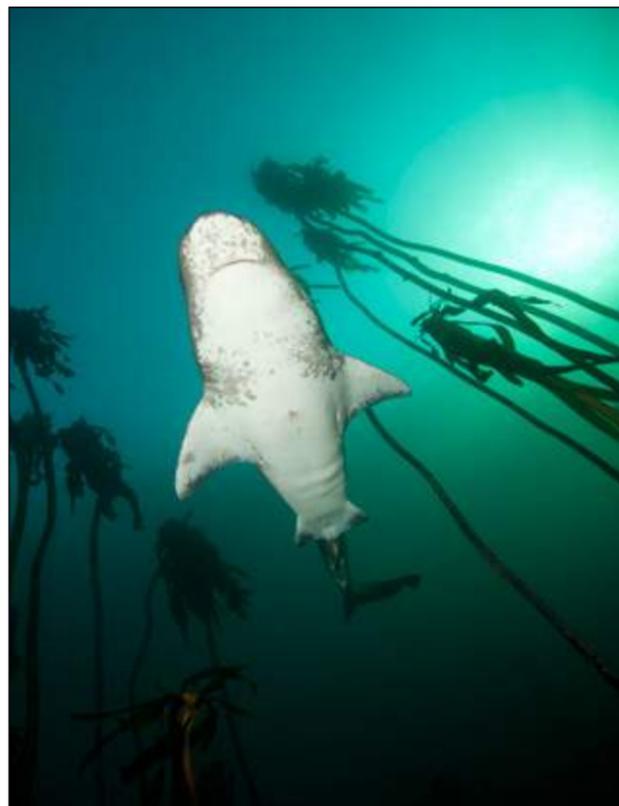
The nose of the shark is quite long and pointed. There is no question how this animal has got its name – the top of its body has a beautiful blue colour while its belly is white.

The structure of its skin is amazing as it is almost as if it has a silk coating over its body. From the body come long pectoral fins, and from its shape it is clear that this shark is a quick swimmer and can move around extremely quickly.

The major part of its diet consists of squids, but besides this it will basically eat anything it comes across. It is a real scavenger. For us it was an awesome experience to swim next to this very beautiful creature.

It also didn't take too long before the mako shark passed by. While the blue shark didn't look too dangerous to us, this was definitely different with the mako.

We were shocked by its aggressive look and began to think that diving with these animals might not be such a good plan, but as we were already in



By Andre Croné

the water, we would stay and see what was going to happen. The mako shark belongs to the species of mackerel sharks.

Currently there are two species, the more common short-fin mako and the rare long-fin mako. Where the blue shark is a very slim and streamlined shark the mako is more like an athletic animal – everything in its body expresses strength and speed.

The nose is quite pointed but the most frightening thing about this shark is the teeth. In its mouth it has a number of long teeth that look really shark.

And the worst part is that these teeth are visible all the time, as if it could strike at any moment.

Fortunately for us, the makos during our dive were not interested enough in us to use their teeth.

On our way back to Simon’s Town we stopped near the coast to finish our full day of diving with a more relaxing dive. Biologically, the shark we were looking for was a very special shark as it is the only remaining shark of the genus notorynchus. It is as if this shark stopped evolving where other species continued changing.

The most stunning proof of this is the fact that this shark still has seven gills whereas other sharks lost two gills in evolution. It was like diving with a pre-historical animal.

These sharks live in a special area between large kelp, and as the sharks we had seen earlier in the morning looked like real killers, the seven gill shark looks like a very cute animal! Its round snout gives it a very friendly face, and although it does have teeth in its mouth, they are not as pointy and in-your-face as the mako – with the



By Andre Croné

seven gill shark it looks more like an old person missing his fake teeth.

Diving between the kelp was fascinating, and from all over these gentle giants sneaked passed us.

Their spotted bodies give them a perfect camouflage between the kelp and on the rocky bottom. Apart from the seven gill sharks, we also found different species of small cat sharks between the rocks.

Back on the boat we were still speechless about all the different species we had seen in just one day of diving. We never thought that we would be able to accomplish this much on our tight schedule!

For our second day of diving around Cape Town we drove to the famous Gansbaai. Here we wanted to meet

the dangerous great white shark. This shark has perhaps suffered the most of all due to horror stories such as Jaws.

In South Africa this animal is being protected to prevent the great white from extinction.

From the base in Gansbaai we sailed to Dyer Island where the sharks were expected to be. On board we brought a big cage – diving with the great whites is not done without this.

The great white is an enormous animal that is powerful enough to be completely airborne when jumping. The teeth in its mouth are nothing more than frightening.

Once near the island the cage is lowered and bait is thrown into the water. Then it is time to wait for the first shark to enter the area.

And we didn't have to wait long.



By Andre Croné

In groups we entered the cage and soon the first great white approached us. This really was an astounding experience.

Unfortunately the visibility was not good enough to make pictures; but just being there was enough for us.

In between the dives we also had some time to discover the topside of the Cape Town area and soon we realised that our three day visit to Cape Town was really too short to enjoy everything that Cape Town has to offer.

We saw an amazing number of different sharks in just a few days and were touched by the beauty of this area, both beneath and above water.

I think we will need to return soon and do this trip all over again.

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By Fiona McIntosh

Iceland

Pangs of nausea suddenly hit me as I realised that it had been a while since high school math.



By Fiona McIntosh
I had been quite pleased with my discovery of a cheap excursion relative to the baseline \$100 to see a puffin, irritate a whale or stare at some geologic anomaly. With my rudimentary arithmetic I quickly converted the 24 000 Icelandic krona to the equivalent of \$35.

I was wrong and I had just noticed the mistake. I was standing at the tourist information in Reykjavik, having just paid \$350 for a two tank dive. Inside I was laughing – hilarious... I wanted to vomit. This had better be good diving was my only thought.

Iceland had always conjured up some misplaced romantic appeal... abandoned in the Arctic, a blackened island filled with volcanoes, glaciers, geothermal pools nestled in lava fields, an insane Scandinavian party circuit, the rare opportunity to eat grilled Puffin.

One has to admit that it is a strangely unique place. The prospect of diving the island simply lent to the appeal. The dive site is that of Silfra, in the unpronounceable Thingvellir National Park.

A little background is necessary to understand why this site may be slightly different from any other on the planet.

Iceland has the dubious honour of sitting on the mid-Atlantic ridge, constantly being torn apart at an incredible 2cm per year as the two tectonic plates, home to the continental masses of Eurasia and America respectively, battle each other.

Ignoring for a second that my knowledge of the fundamentals of geology are probably second only to that of my math, this translates to the constant rupture and healing of a terrestrial fissure, passing through Iceland's western peninsula. "Who cares?" would be my knee-jerk response.

However, land-based tourists arrive at the World Heritage site everyday (probably less in number during the two months of perpetual winter darkness) simply to marvel not only at this geologic spectacle but at the incredible landscape.. .a glacial lake dotted with islands, a horizon littered with dormant volcanoes, glaciers and lava fields, and of course, evidence of the plate activity as fissures carve their way up the mountainside.

Bearing in mind that the geological activity is not merely limited to the landscape, but rather extends underwater, this should pique a little more interest from the diving community. The prospect of venturing between the continental plates of Eurasia and America (poetic license now tending towards scientific sacrilege) was enticing.

The pick-up and transfer to the dive site had been smooth and professional



Exploration

Iceland

By Fiona McIntosh (although I was still trying to justify the cost). We picked up another diver, a British tourist, irked by the fact that one could probably fund a dive trip to South East Asia for the price of a weekend in Reykjavik, together with an Icelandic yoghurt and a banana (I should qualify the latter as my own, and to their credit, it was a very nice banana).

Thingvellir is a comfortable 40 minute drive from Reykjavik. The weather was perfect... a rare cloudless blue sky and a hellish 10°C outside.

It was at the dive site that we met Hedinn Olafsson, instructor and owner of Dive Iceland.

A comprehensive briefing detailed the plan for the two dives. We subsequently kitted up in immaculate Poseidan crushed neoprene drysuits, 7mm gloves and hoodies, and top of the range coldwater dive-gear.

Have I mentioned that the water temperature hovers between a refreshing 1-4°C? Entry was off a fixed metal platform overlooking the fissure. Even from the surface one can appreciate the crystal-clear water – being glacial in origin, the viz is constant and never falters below an incredible 50-100m! It is truly perfect.

Descending the ladder, filled with excitement and trepidation, we entered the underwater canyon.

The first emotion was intense pain as an 'ice-cream headache' threatened to implode my skull. 4°C water for those complaining about 19°C (reminiscing back to my previous weekend) is very cold ('very' can be more aptly substituted by your expletive of choice). Fortunately, the pain settled down to a low-grade grumble.

The canyon is truly spectacular... framed in it's entirety by immaculate visibility, you really gain the sense of flying

through the rock falls with a gentle current helping you along.

The depth was set at a comfortable 10-15m... no real need to test the 70m+ depth. I'm still uncertain as to what extent this marvel has really been fully explored; gazing down one can see stone bridges and swim-throughs snaking their way through the chasm.

Negotiating some of the shallow rockfalls we descended again to a surreal sand steppe, guarded by the sheer walls of the canyon.

A simple detour brought us to Hedinn's 'Blue Lagoon (alluding to the contrasting milky blue waters of the designer geothermal spa near Keflavik International Airport), a pool of water only experience can describe. Of course, by this point in the dive, my hands were so cold it felt like some one had deep-



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By Fiona McIntosh

frozen the digits and was now gnawing away at them.

Sorry, I'll get back to the graphic depiction of beauty and natural wonder now... Within the floor of the pool, one could see evidence of the constant geological activity as new cracks and fissures are forming. Hedinn maintains that these cracks have increased in size since he started diving Silfra. The viz in the pool is even better than that of the canyon.

After 31 minutes I surfaced, greeted by glaciers and a volcanic ice mound with snow on the horizon. I bobbed clumsily on my back while attempting to dispense with my fins using popsicles as instrumentation. Thus began the hike back to the vehicle. I could only smile. No, really, I could only smile as my face had adopted this disturbing, fixed-frozen clown-face.

After an hour surface interval spent discussing Icelandic adventure options, a seemingly endless list of extreme activities, we returned to the same entry point for our second dive. This would, however, be different, having now acclimatised to the frigid water. Initially following a similar path to that of the first dive, the road less travelled soon diverged, and we found ourselves traversing tunnels and swim-throughs, snaking into some of the collapsed rockfalls within the chasm. Emerging after 28 minutes, I have to say that I was not done – it was fantastic – the rockfalls have created a near-labyrinth. In contrast to many other dive sites, one is unrestricted in one's view of the spectacular surrounds.

The experience was certainly unforgettable, and one which I will repeat in a heartbeat. The dive site, boasted by Hedinn to be one of the world's greats, really lives up to it's fabled reputation. My only regret is not having stayed longer to take in the many wonders of this strange island. 



Photographic Competition



Hannes Burger



Lydia Moncrieff



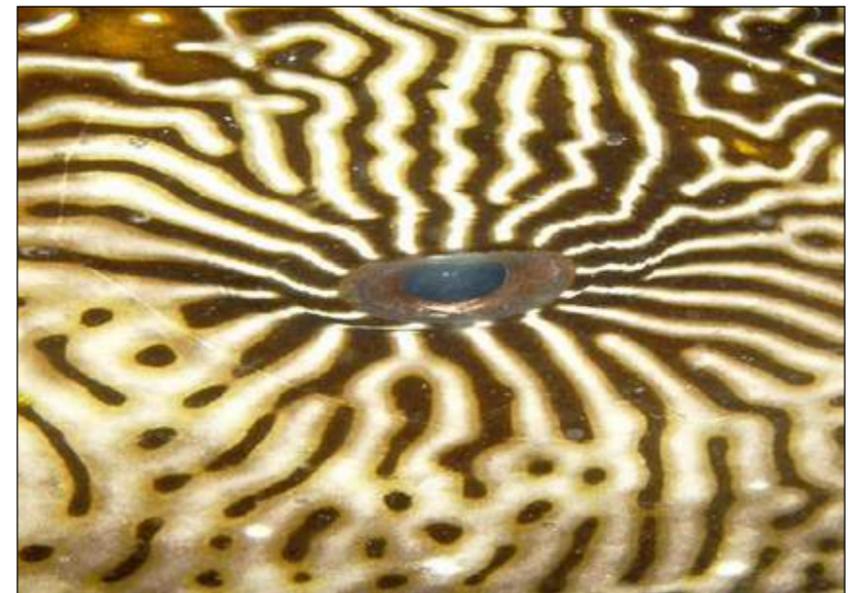
Piet van Rensburg



Martin Bow



Nick Turner



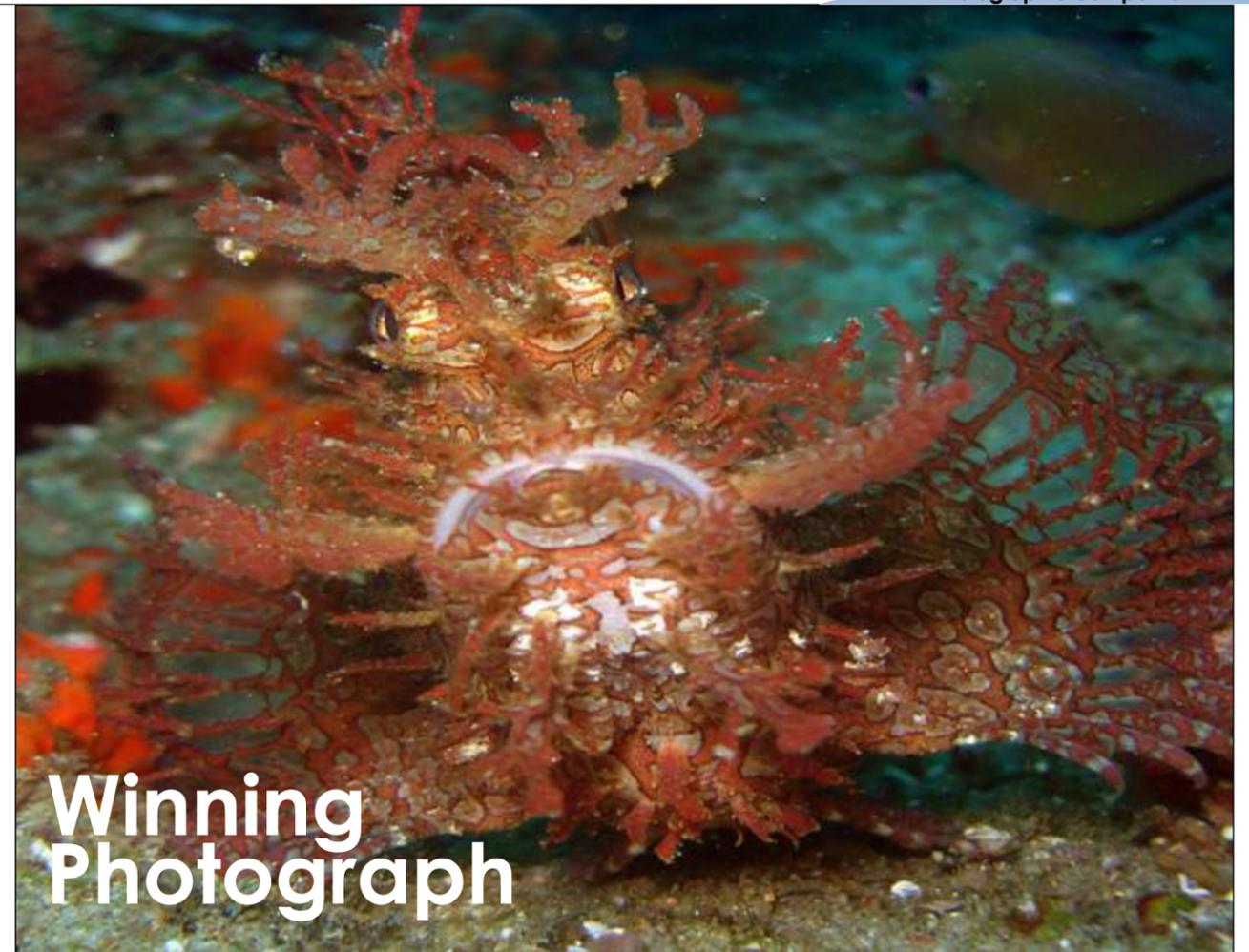
Jacques Vieira



Hein Waschefort



Leon van Niekerk



Winning Photograph

Nicky Olckers

How to enter your photograph

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- Photographs must not be bigger than 5 MB per photo.
- Submit your snaps in high-resolution (at least 150 dpi) in jpeg format.

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



Photo School



Composing techniques

As most people realise after buying a camera and exploring the world of photography, there is more to photography than just point and shoot. By applying a few simple techniques, you can easily increase the impact of your photographs.

Photography skills can almost be broken into two main categories; the technical side which deals with understanding aperture, shutter and ISO settings, and the artistic side which deals with the composition of the photograph.

Composition is basically playing with different

elements in a photograph to create images with a more striking effect. There are many different techniques of which only a few are mentioned in this article. It is important to note that a number of the techniques can be combined to achieve a specific composition.

Subjects placed off centre

Placing your subject off centre can be a great aid in focusing the viewers' attention on a subject. The rule of thirds combined with negative space is a great aid in balancing your subject and placing focus on detail of the subject.



Leading lines

Leading lines create an interesting effect in a photograph as the eye is naturally drawn to the line. If the viewer can find the start and end of the leading line, the image becomes visually interesting and attractive. It can also be used to focus attention on a subject at the end of the line. These lines can be straight, curvy, radial, diagonal or zigzag.

Cutting off subjects

You should attempt not to cut off parts of a subject as the image will appear incomplete. If you wish to cut the subject, do so deliberately and strategically during a macro photography shot where the frame is filled or where a creative or abstract view is desired from a specific part of the subject.

Framing

This is a great technique underwater, since pictures taken of subjects in open water can become boring. Use natural elements such as coral, reef overhangs, a ship wreck or a plant to frame the subject. Framing can apply to an element enclosing the subject or simply filling the top and bottom, left and right or any two sides of the picture. Framing can also be achieved by leaving darkness around a subject when using natural or artificial light to lighten up the subject.

Colour and colour combinations



Sharp or contrasting colours will always guarantee a striking image. Red, orange and yellow underwater with a blue background are some of the best colour combinations provided by underwater photography. Red is, however, the colour that disappears first underwater, so try and use artificial light to restore reds if you are taking photographs on deeper dives.

Symmetry and patterns

These are all around us. It is recognising them which is slightly more difficult, but if you manage to work with symmetry and patterns, you can create the most interesting photographs.

Other techniques include playing with the depth of field, orientation, size and scale of subjects, backgrounds and the like. It must be said that photography is very much like art where each photographer develops his or her own style. There are no hard and fast rules, only a few techniques which can make photographs visually more attractive.

Composition techniques are mostly the same for underwater and normal photography. Remember, practice makes perfect, so practice these techniques outside of the water to ensure that you can easily and naturally apply these underwater. Take lots of pictures and play around with the different composition styles to develop your creative side. 

Photo Editing

Most underwater photographs taken are predominantly blue or green due to the loss of the longer wavelengths of red which are quickly absorbed through the water. The deeper you go the more the colours look monotone. To overcome this you must get as close to the subject as possible and also use a strobe/flash – you will be able to regain the colours and get as much definition out of the subject as you can. An excellent tool to use to bring out the colours and contrast of your photographs afterwards is by using Curves.

We will show you an excellent way to enhance the contrast and colours of your photographs using Curves. This tool basically allows you to control the tonal balance within your photograph and adjust the contrast and colours dynamically and visually when manipulating the curve. Once you have tried and played around with the Curves function then you will not look back. In the last edition we covered how to use Levels to enhance your photographs and this has a similar purpose to the Curves function. The 'Curves' function uses the same principal and then so much more to adjust the fine detail in your photograph. It does look complicated to work but it is actually simple and you just need to take time and have patience to get the most out of your underwater photographs using this tool.

In Gimp go to the top menu select: Colors - Curves.

The Curves box will pop up and you will have the following options to play with:

Channel:
Value – This is to adjust the brightness of pixels as you can see them in the composite image. This option allows you to adjust the image as a whole with all of the colours.

Red; Green; Blue channels – This allows you to adjust the quantity of colour in each of the three RGB channels independently. Here, dark means less colour and light means more of the colour.

This is quite temperamental to use with and the Hue Saturation function is much more accurate to work with if you want to adjust colours in your photograph.
Reset: It does what it says and resets the changes to the default values in each individual channel.



Before adjusting



After adjusting



Editing curves

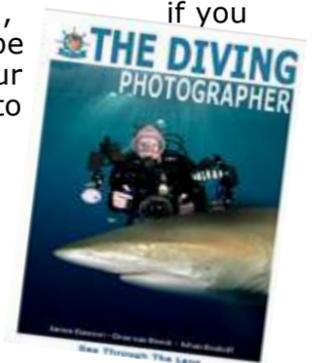
The graph represents the brightness of the pixels through the photograph. The horizontal gradient represents the input tonal scale from 0 (Black/Shadows) to 255 (White/Highlights). The vertical scale represents the output tonal scale from 0 (Black/Shadows) to 255 (White/Highlights). When you open the curves you will see a straight line running from the bottom left (0) to the top right (255). The line is straight because at that moment the output has not been altered to the input. To adjust the tone of your image you simply click anywhere on the diagonal line and a dot (anchor) will appear. Now you can drag this anchor around, mostly up and down, to adjust the tone of your image. You may find it easier not to drag the anchor but to use the up and down arrows to move the anchor in fine increments. When you move the anchor you will see that a curve is created between the two points (hence its name).

You can add as many anchors as you wish

along the curve and play at adjusting all areas of the photograph. Should you want to delete an anchor then simply click on it and then drag it to the right and overlap the next point to the right and the anchor will disappear.

The default curve type is 'Smooth' but you can also select 'Freehand' and draw where you want the curve to go but most of the time this is not necessary as working with smooth curves is easy to work with and manipulate. After you have drawn your freehand, if you change the curve type back to 'smooth', your freehand will turn into a curve.

Play around with this tool and you will find that editing and enhancing your photographs will be a breeze once you get used to it. 



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By Andre Crone

Humboldt Squids



Years ago we became fascinated by large squids and octopuses. Almost five years ago we were diving in Papua New Guinea in Asia.

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While we were preparing for a normal day of diving along the reefs of this area, we were called over to another pier by one of our dive guides.

Here we met our dive guide in discussion with a local fisherman who was showing the catch of the day in his self-made boat. At first this seemed not to be anything special, but when we looked closer we found that this fisherman had a very special catch.

In his boat this fisherman had a huge octopus. A little bit later the squid was placed on the dock and we got to really see how big the animal was. It was a bit larger than us and had huge suckers on its arms.

Most impressive was the enormous mouth of the animal; it looked like a mega-sized parrot's beak. This is not an animal you want to meet during a night dive...

Yet this animal intrigued us. During our previous dives we had seen quite a few different squids in all shapes and sizes, but we could hardly believe that an animal of this size actually lives in the sea. Once home we were still intrigued by large squids so we began searching the internet.

One of the most often described big cephalopods is the giant squid, which is known by the scientific name *Architeuthis*.

Yet not much is known about this animal as it lives at great depths and are not often seen by humans. The only information that is known comes from dead specimens which have been found.

Most of the squids found had a length of around 10m, but some scientists believe that an adult specie can reach up to 50m long and should weigh more than three tons.

Proof has nevertheless not yet been delivered. The body of the giant squid makes up about a third of its length while its long tentacles form the rest.

The tentacles are also seen as its main weapon. Scientists believe that the arms of this octopus can kill a shark or a whale.

The first living specimen is known to have been filmed in 2005. A group of Japanese scientists were able to film a living giant squid at a depth of 900m.

And that's where a little problem arises for us... We really wanted to find the giant squid, but a depth of 900m was a bit too much for us.

Another animal that we noticed during our internet search was the colossal squid, known by the scientific name *Mesonychoteuthis hamiltoni*.

This squid is known as the largest species, which is mainly due to the length of the body or the mantle which is wider and more muscular than that of the *Architeuthis*.

Little is also known about this species. This animal lives in the southern polar region and is also found primarily at



Giant Stride

Humboldt Squids

By Andre Crone

large depths. From the dead species that have washed ashore or have been captured, besides the suction cups, this species has a kind of hook on its tentacles with which it can catch prey.

After having read all this we realised that it would be impossible to see these animals in real life. And besides, it probably wouldn't be a fun aquatic animal encounter meeting these giants.

But an animal that could be reachable, is the Humboldt squid. Over recent years, more and more stories of big schools of Humboldt squids off the coast of California have been heard.

This animal lives in a wide area of the eastern Pacific, reaching from Tierra del Fuego to the coast of the California. Images shown on one of the BBC nature series really seized our attention.

Seeing these animals might be possible for us. In the scientific world, the

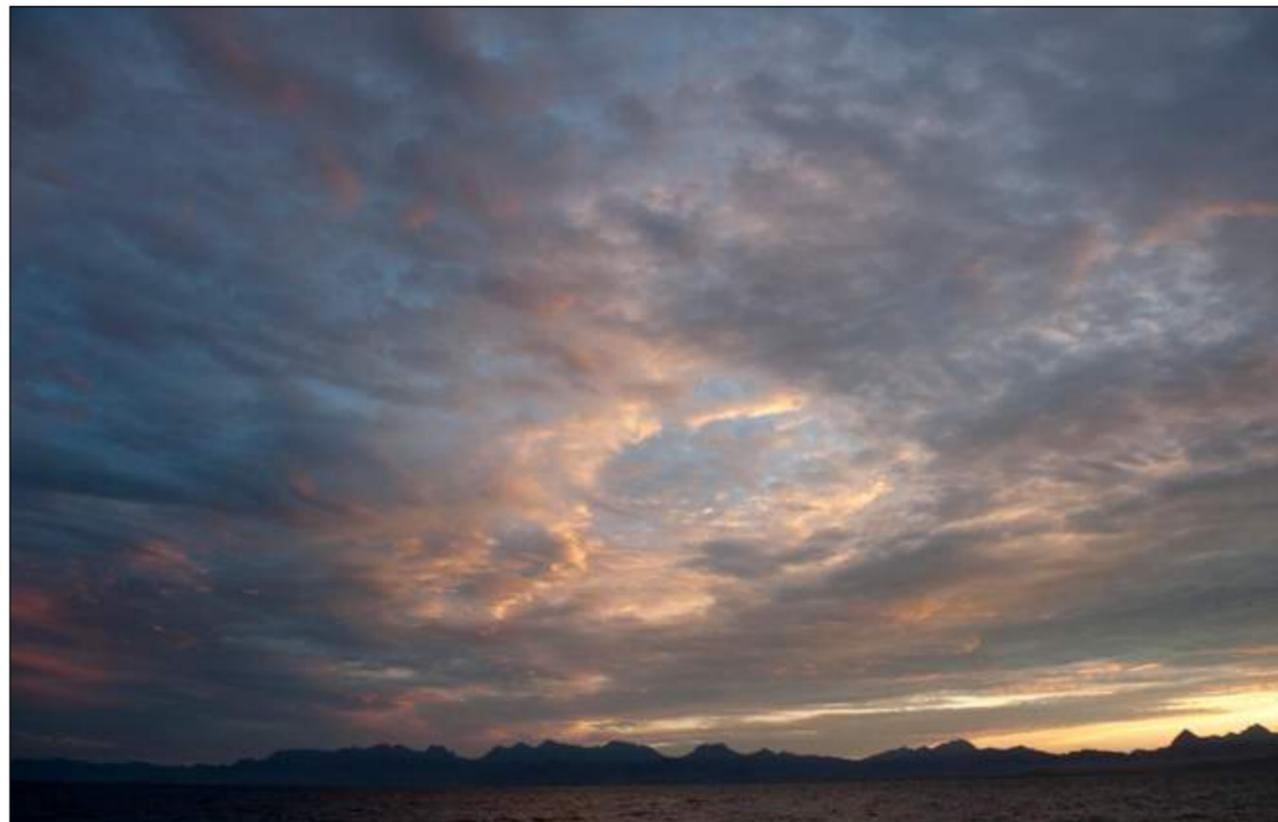
animal has received several names, but the most common scientific name is *Dosidicus gigas*.

The English name Humboldt squid is given to it because of the Humboldt Gulf Stream where the animal lives off the coast of South America. Generally the Humboldt squid lives deeper than 200m.

Groups of Humboldts travel enormous distances in search of food. Every year in August the Humboldts seem to reach the sea of Cortez.

Club Cantamar from near La Paz organises a number of trips over this period with the main goal of finding the Humboldt squid. So we went for it... Unfortunately this is not an easy task.

First you have to sail a few days to reach the area where they are, without having the guarantee that you will meet the animals.



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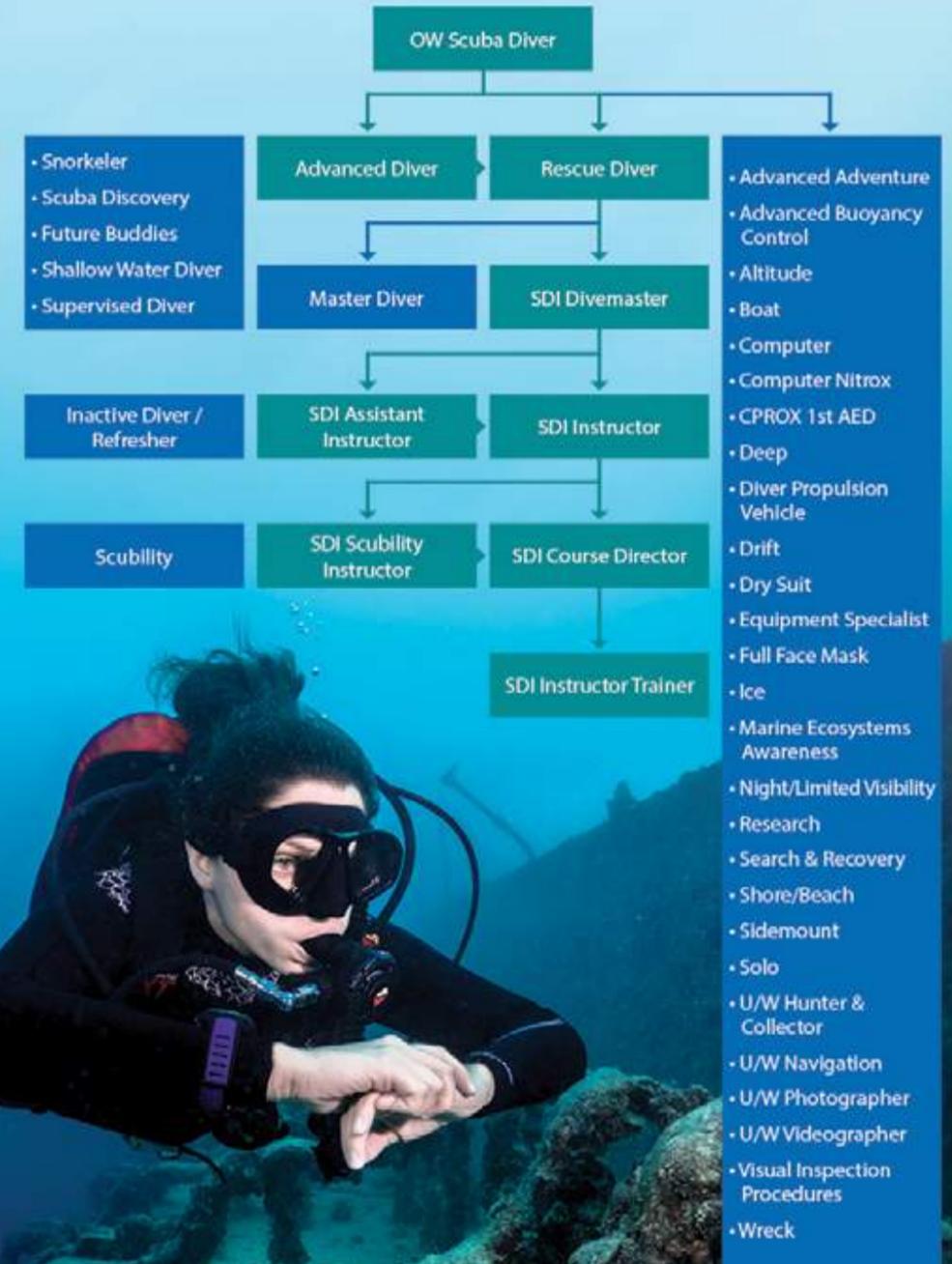
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Humboldt Squids

By Andre Crone



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By Andre Crone
To kill some time during the trip we looked at some images the BBC has taken of these animals. The images of large groups of squids swimming by in the dark sea stuck in our memory. If only we could see a little piece of this action.

Finally we made it to the right spot. As the only chance to see the animals comes at night, the staff knocked on our cabin door at 2am stating that it was time to dive.

Normally this is not really our most favourite dive time, but in this case we made an exception.

A night dive is necessary because Humboldt squids come to shallower water to chase mackerel, sardines, shrimp and other fish and crustaceans during the dark hours. They generally hunt in large groups of up to 1 200 animals.

Besides feeding on fish and crustaceans, the squids are also known

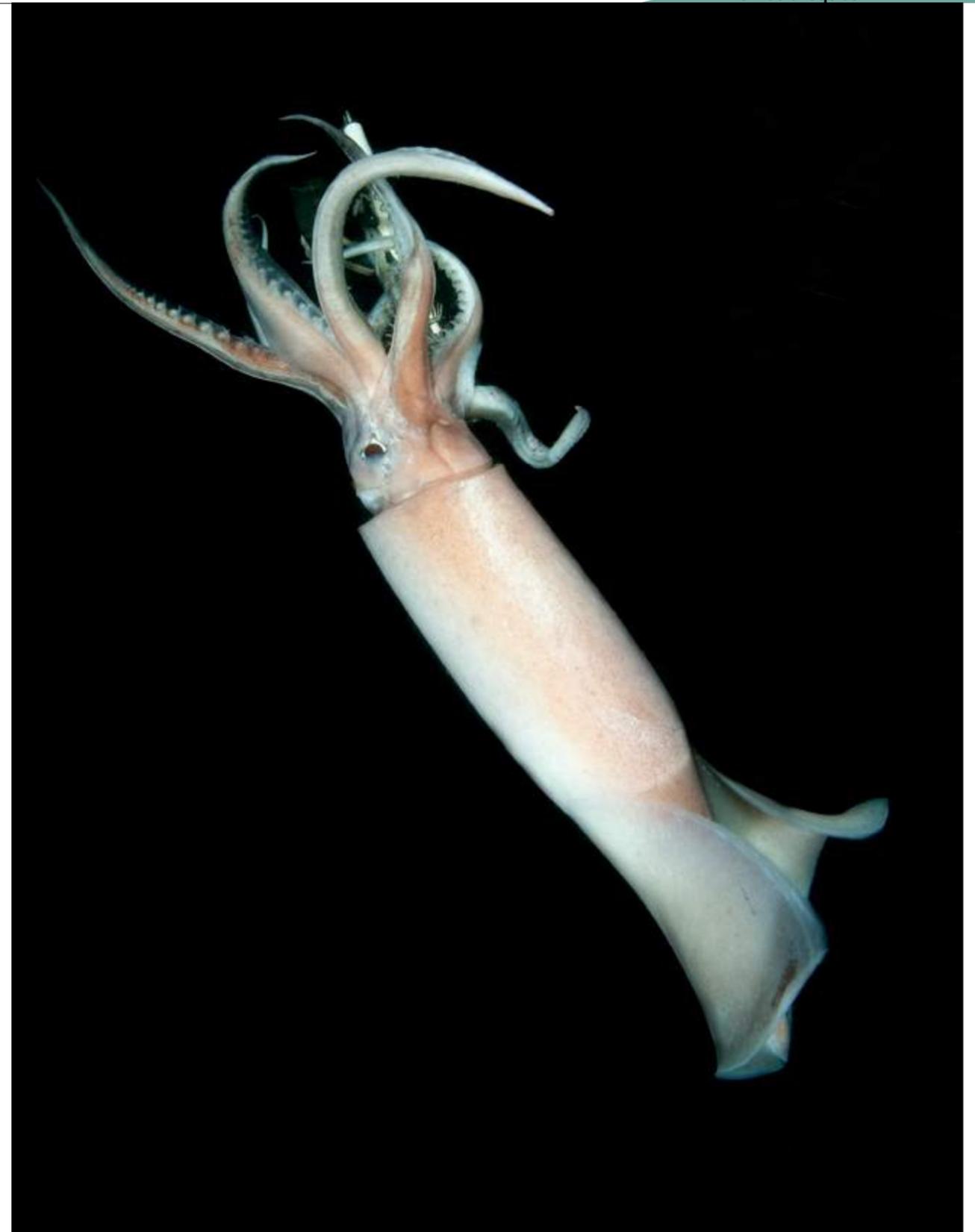
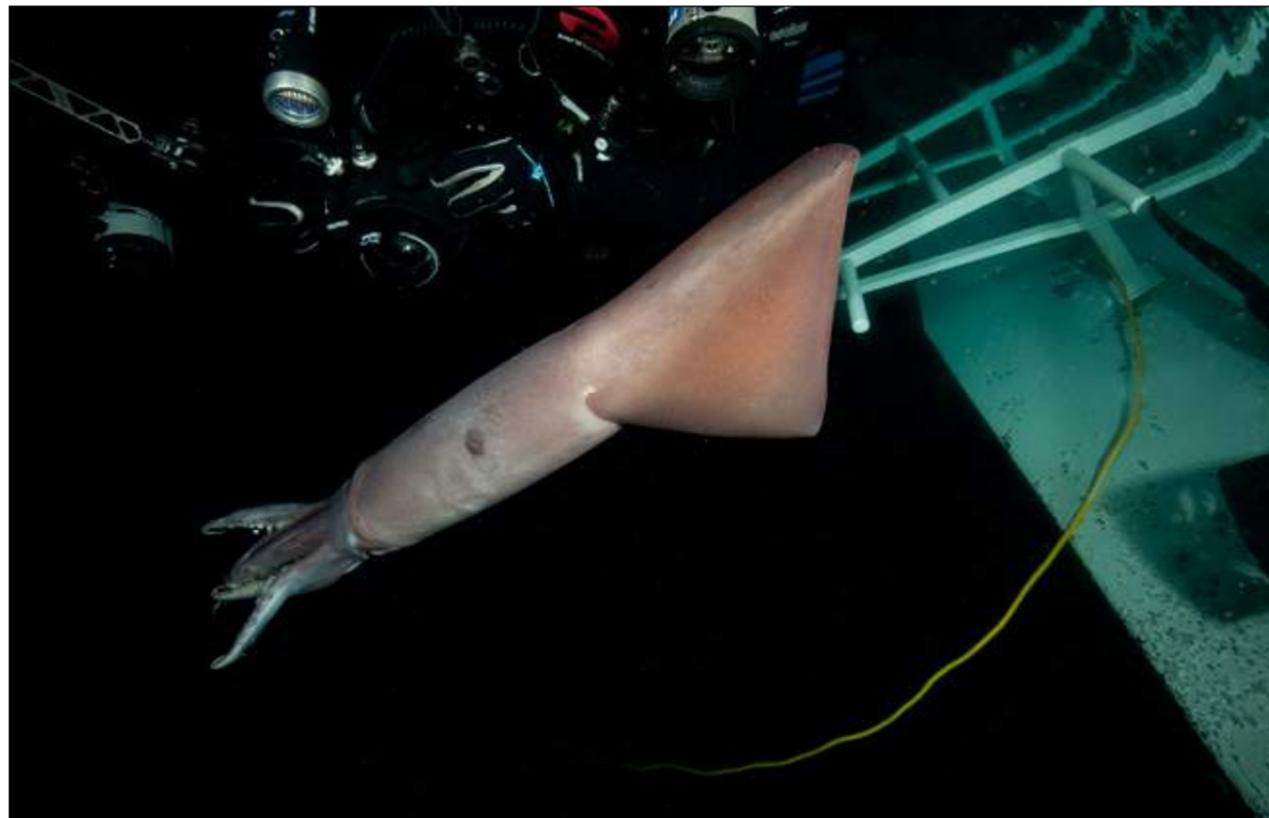
to be cannibals. An injured squid or one caught in a net can easily fall prey to its peers.

Just after entering the water we saw a group of squids swimming deep below us. How impressive. Despite the fact that they were much shallower than normal, there was still quite a distance between us and the squids – too far for a good picture.

In order to get the animals closer to us, we needed some additional tools, namely a 'catch and release' system. With a large hook, a Humboldt was caught and brought to the surface.

From there it is gently released so that he can descend into the deep again. This catch and release system makes it possible for us to see these huge animals and take some nice images.

The size of the animal is almost frightening. They can reach a length of 2m, and that combined with



Giant Stride

Humboldt Squids

By Andre Crone

the dark of night diving makes for enormous tension.

The animal seems to be very forcefully – the mantle of the squid looks strong and tough as if it is made of sturdy leather.

Attached to the body he has long tentacles, and on each tentacle, more than a hundred suckers, including a hook-like appendage. And when you then realise that this is notoriously the most aggressive squid, you tend to get a bit scared.

Fortunately, they are generally not aggressive towards people. Like most octopuses they can change colours quickly. From white to dark red or almost purple, and all shades in between.

If the animal is caught or feels threatened it turns dark. Scientists suspect that it does this because animals at great depths cannot see the colour red which means that it becomes almost invisible.

Humboldt squids grow very rapidly if enough food is available. They have a lifespan of about one year and within that period they grow to their maximum length of 2m.

The details about the reproduction of these animals are virtually unknown, though it is assumed that, like other cephalopods, they only reproduce once. The eggs of the Humboldt squid have never been found, probably because they are laid at great depths.

While Humboldts hunt small to medium sized fish, they find themselves hunted by sperm whales, sharks, seals, swordfish and sailfish. Young Humboldts need to also be wary of other medium-sized fish.

In recent years, more and more stories about growing numbers of Humboldt squids have appeared.

According to a number of scientists, the group will continue to grow due

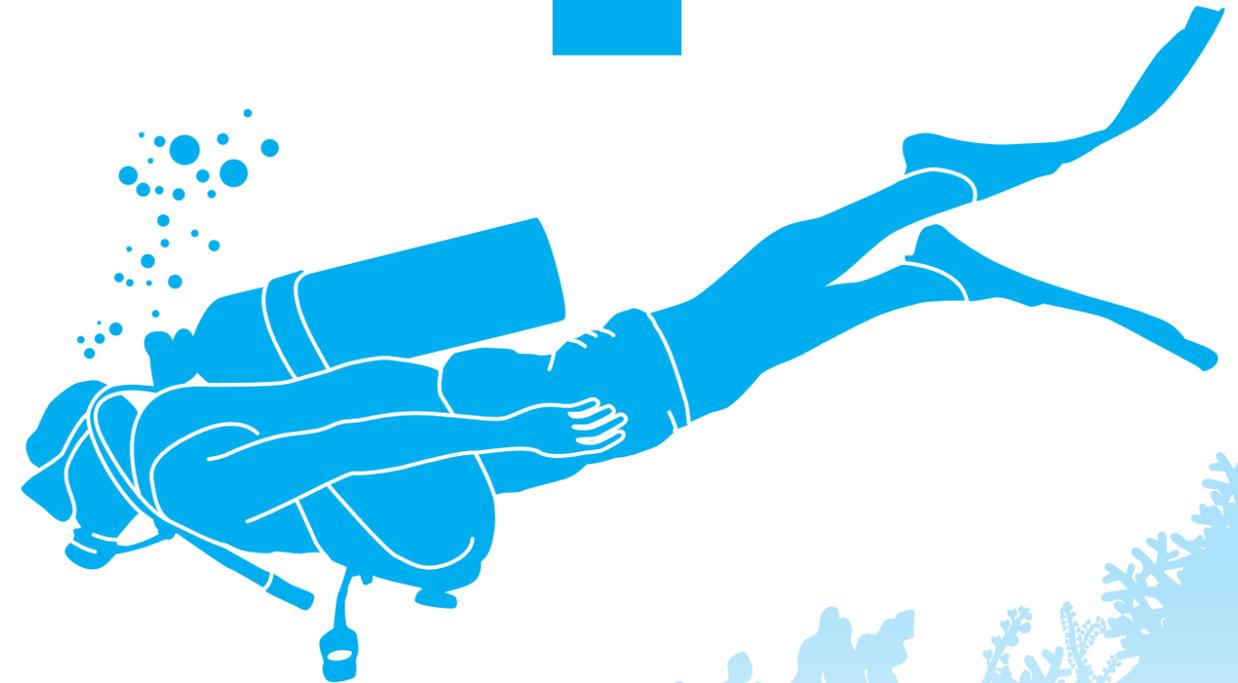


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By Andre Crone
to changes in the Pacific. It has been observed that many of the big animals are struggling, yet the Humboldt squids have not only grown in numbers, but they have also seemed to have expanded their living grounds.

Scientists suspect that the advance of the squid has to do with changes in climate, currents and changing oxygen levels in water that has harmed other animals.

These squids seem to have unearthed more opportunities to develop, however, much remains unclear about this animal, especially because of their deep living area.

After a few dives, it was time for us to leave this mysterious animal. With a little help we were able to see the Humboldt squid at very close quarters. In the depth below us we saw huge groups swimming by and we felt quite small there in the dark. It was a long sail but we really wouldn't have missed this experience for anything. 





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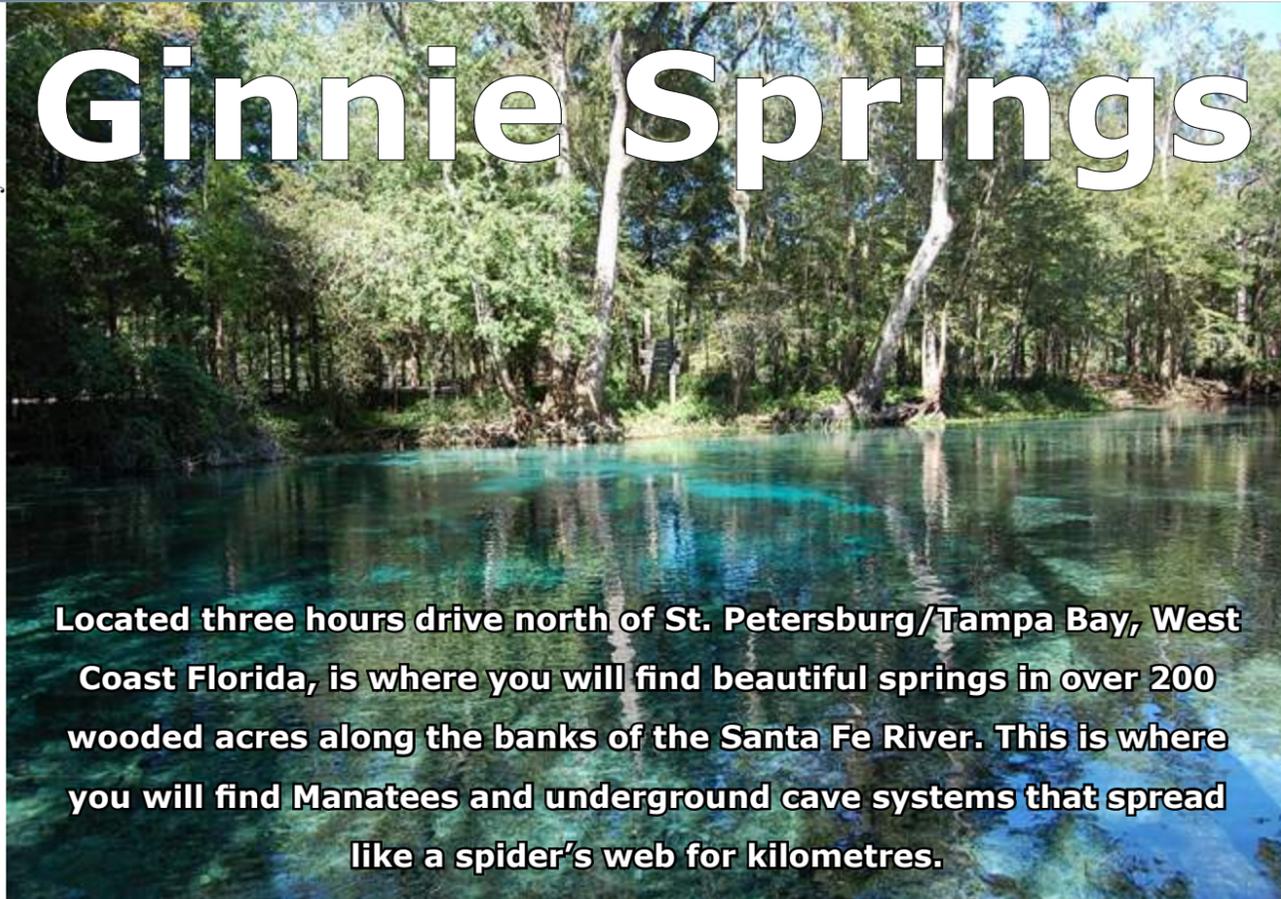


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Ginnie Springs



Located three hours drive north of St. Petersburg/Tampa Bay, West Coast Florida, is where you will find beautiful springs in over 200 wooded acres along the banks of the Santa Fe River. This is where you will find Manatees and underground cave systems that spread like a spider's web for kilometres.

Ginnie Springs has often been called 'the world's favourite freshwater dive.' Over the years, thousands of divers from around the world have marvelled at the crystal-clear water and startling natural beauty of Ginnie Springs. Jacques Cousteau, in fact, characterised Ginnie Spring as "visibility forever." The water bubbling up in the springs is 25°C all year round.

Experienced cave divers take lights into the caves and explore the underwater systems in a surreal three dimensional world. Where the roof has collapsed over the years, the cave's room is illuminated by light from the entrance. Looking back toward the entrance from darkness provides a breathtaking view. Like most of the cave, the walls of the upper rooms are composed of an extremely light and highly reflective limestone, which adds to its natural beauty.

The Devil's Eye/Ear Cave System also has the potential to expose cave

divers to the widest possible array of conditions, including high and low flow, large and small passageways, and silt and silt-free bottoms. Paul Heinerth, our guide from Tampa Bay, has been diving these caves for many years and has intimate knowledge of them. With rebreathers and scooters we transversed the systems like kids. As they are not particularly deep, a three hour dive is the norm.

Whilst Barry and Paul explored the caves, one of my environmental aims on the dive expedition was to film the endangered Manatees. They are very easy to see as they grow to 3m and weigh on average 500kg. Like most South African divers, the Manatees prefer waters of 20°C and above and are often located at the centre of the warm water spring in winter time. We wandered all over hoping to come across these gentle, almost tame herbivores. Even though the species has been around for 45 million years, they are now quite rare, and only have one calf every 2-5 years once the

female reaches the age of four (they live until about 60 years of age). After about a few hours of searching we figured they were probably out of sight down river vegetating. The largest population of about 2 500 are found in Florida, so we would have to try and dive another day.

We did, however, manage to dive with Florida's cute soft back turtles. They have elongated, soft snorkel-like nostrils with a leathery and pliable carapace. Being carnivores they like to eat fish, crustaceans and snails. They are very friendly, and although they can make a fast getaway with their webbed feet, they are quite inquisitive, especially if they think you have food for them. Unfortunately about one ton of them are exported each week from the Tampa international airport to East Asia for human consumption, reputedly an Asian delicacy!

What is so nice about Ginnie Springs is that the area is left much as it was when the native Timouquan and other tribes used the area for fishing, hunting and extracting flint from the

Santa Fe River, leaving the trees, water and animal life much the same as they appeared to the first European explorers in the early 1500s. The area was subjected to heavy logging in the late 1700s and few, if any, of the giant trees remain, although there are so many small trees that had you not known about the giant trees you would never have guessed.

At the end of the day's diving and photo shoot for RAID (www.DiveRAID.com), we enjoyed an excellent meal around the braai (no turtle meat!) and had a good rest at Cathy's Dive Outpost.

Ginnie Springs does though have more to offer other than cave diving - there are great forest walks, snorkelling along the river rich with fresh water aquatic life (and with a sharp eye you may even find a Meglodon shark tooth or other fossil remains). Canoeing or just floating down the Santa Fe River in a tube, passing between the shafts of sunlight under the canopy of overhanging trees on a hot day is a great way to pass the time in a haze. 





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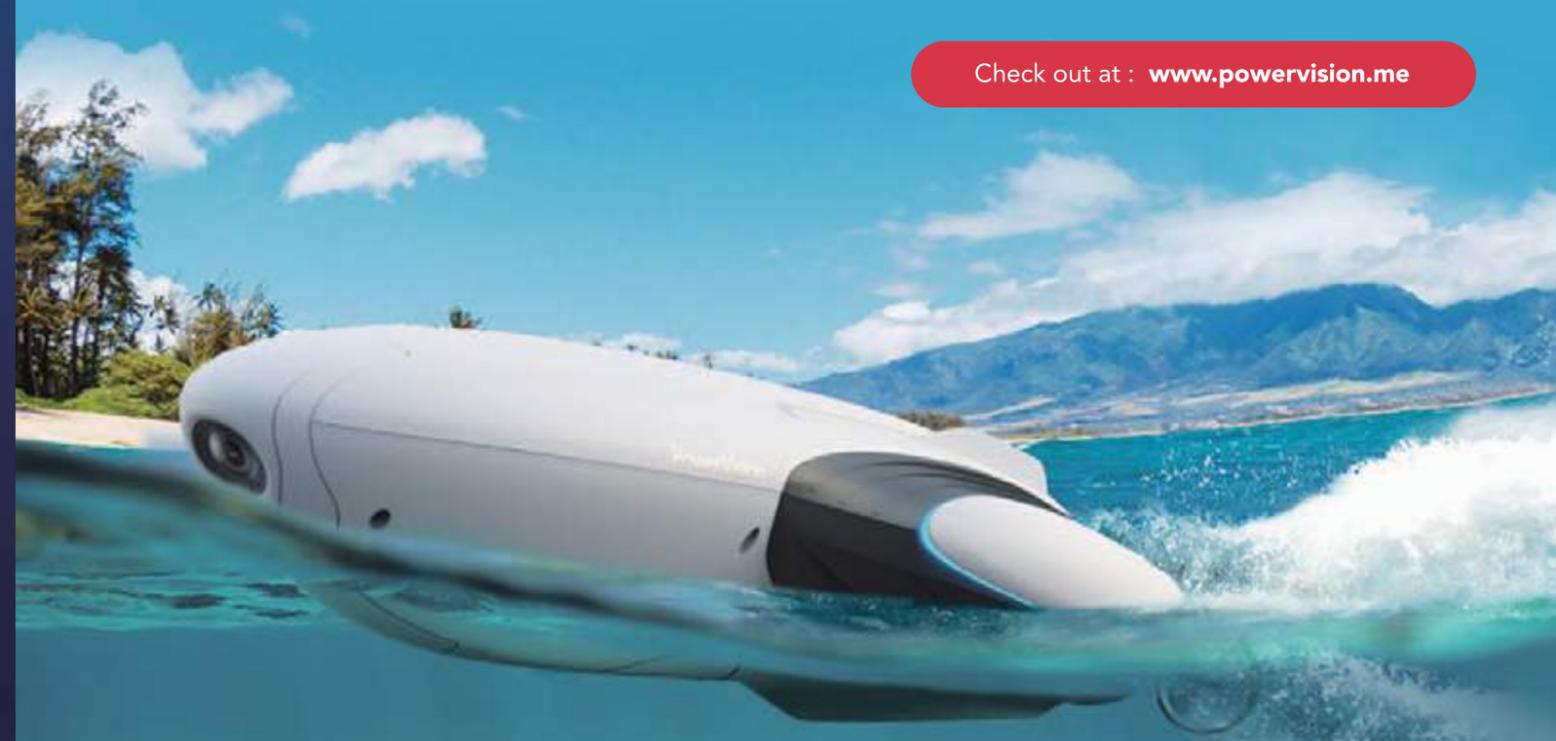


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What is your opinion regarding partial pressures, and when does it become a problem?

Q & A

Nuno Gomes



What partial pressure of oxygen is safe during a dive? Firstly one needs to remember that a partial pressure of oxygen of less than 0.15-0.16 bar can be fatal; this lower limit is probably more critical than the upper limit.

If one goes back quite a few years, there were divers such as Dr. Hans Hass (born in 1919) that carried out dives in the sea, on oxygen rebreathers, using 100 percent pure oxygen to as deep as 35m. That is a partial pressure of 4.5 bar! Dr. Hass is a living legend having done thousands of dives on 100 percent oxygen to depths that are considered off limits today.

This tells me that there are no magical, absolutely safe limits for every person on the planet – we are all different. Basically we need to work on partial pressure figures that are safe for 99,99

percent of the diving population. Acute oxygen toxicity, at any depth, will probably be fatal, especially during an open water dive; in a dry hyperbaric chamber this is less problematic.

The internationally accepted figures are a partial pressure of 1.6 bar for stage decompression and 1.4 bar for the swimming part of the dive.

I accept these limits and feel that divers should follow these upper limits, except under extraordinary circumstances. In certain situations these limits might even have to be reduced, especially for dives that require an abnormal work rate. 

Barry Coleman

With rebreather diving, the oxygen partial pressure (PpO2) is a manageable constant which can be manipulated for the optimum effect. For example, on



some rebreather units the PpO2 is controlled automatically by what is commonly known as the 'Set Point'. The sport recreational units have no user input and the set point is changed dependant on depth, providing the best mix considering the NDL and CNS sport limits.

With other rebreather units the diver can change the 'Set Point' and get the best mix for the type of diving they are planning.

This does require the CCR diver to have a better understanding and working knowledge than the sport CCR diver. I like to be able to control the PpO2 in the loop from 1.4 on a recreational dive to 1.6 during a decompression obligation and down to 1 or 1.2 at the bottom during a deep dive.

All divers need to ensure that the PpO2 they are breathing is within the CNS limits and managed correctly to prevent any problems. 

Pieter Smith



Two oxygen toxicity parameters are typically Partial pressure of a gas becomes either narcotic or toxic when reaching a certain pressure (as a result of depth in case of diving).

Over the years researchers have been developing certain safety levels in order for sport diving to train divers and to execute dives safely and according to standards. Divers experience the effect of partial pressures of gasses differently and also differently on each dive.

For those of you that have experienced narcs, you will know that on the same exact dive (same depth, bottom time, site, but on different days), you may experience narcs differently. The same goes for oxygen toxicity.

Maximum partial pressures for different gasses have therefore been developed to protect the broad spectrum diver. Should you exceed such limits, it is not

necessary that you are in immediate danger.

For example: Training agencies cap the depth on air at 40msw. This is the safety margin for nitrogen (narcotic) of $0.79 \times 5 = 3.95$ bar and oxygen (toxic) at $0.20 \times 5 = 1$ bar. Oxygen becomes toxic at 1.4 to 1.6 bar. The deep dive record on air is 123msw, that is in the case of oxygen; $0.20 \times 13.3 = 2.66$ bar (a dive done to 155msw not officially recognised), well over the limit of 1.4 bar.

Exceeding the safety levels developed is extremely dangerous and irresponsible and must be avoided at all times. 

Pieter Venter



For decompression on high oxygen partial pressure mixes, the PpO2 should be taken into account.

I personally do not think you have to stick to 1.2 and this can be varied within reasonable limits. Long ago, I witnessed in water decompression starting for a few minutes at 12m which saved someone's life, which was double the recommended PpO2.

I would also not hesitate to take a few breaths from a nitrox mix beyond its recommended depth if it is the only way to get to my buddy for the correct mix in the case of an emergency.

Also, if the deep part of a dive was at a relatively low PpO2, I would not think much of using pure oxygen for the last three minutes of the 9m stop. However, bending the rules must be within reason and is probably a no-no for rebreather diving where the PpO2 is kept constant for a long time.

Long high oxygen exposure burns the lungs and is certainly not good in the long run.

Also, acute oxygen toxicity is rare but usually fatal. 

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Urinating Underwater

Can urinating underwater result in any medical problems and what effects can the urine have on your skin?

Urinating in your wetsuit while underwater isn't the most hygienic thing in the world, but I suspect there are quite a few divers, especially males, who have indulged in the practice at one time or another.

Aside from the temporary warming effect, the urine is rapidly diluted by the water in the wetsuit.

Rinsing the wetsuit off later with fresh water and showering after the dive are normal post-dive procedures and would then remove any residual urine or the development of a disagreeable odour on the suit.

Excess production of urine (polyuria) or an uncontrollable need to urinate could result in the passing of urine while underwater. These situations may reflect underlying illnesses such as diabetes or prostate enlargement and, should they occur, the diver should make an appointment with their doctor as soon as possible.

Simple cold water exposure can also raise the metabolic rate and encourage urine production, while the use of diuretics to

control high blood pressure could also result in increased urine excretion.

Urine has no real harmful effect with short exposures to intact skin. Millions of babies urinate in their nappies and remain without being changed for longer periods than the average dive.

A good cleanup and change of nappy then leaves their skins smooth and healthy. The same would apply to divers – using soap and clean water to rinse the area is the best after-dive procedure to follow.

Theoretically, problems could occur if the diver was sloppy or lazy in rinsing their wetsuit or wore it for several hours after the dive, especially in the sun.

Residual urinary products such as urea, uric acid, protein or glucose (in the case of diabetics) could act as a growth medium. This would facilitate fungal development in the warm, moist environment and lead to a fungal or yeast dermatitis such as Dhobie's Itch around the groin area or ringworm anywhere on the skin.

A break in the skin surface such as an abrasion or accidental cut becomes boggy and devitalised following immersion in water.

Aside from infection with marine bacteria, if the diver has a bacterial urinary tract infection, most commonly due to the intestinal bacteria *E. coli*, secondary infection of any skin wound could occur with suppuration or even a spreading cellulitis.

Urinary bacterial infections are more common in women because of a shorter urethra (the urinary outlet from the bladder) than men, making them more susceptible to bacteria migrating up into the bladder with resultant cystitis.

This contamination is facilitated by using toilet paper to wipe forwards instead of backwards after passing a stool.

Bilharzia is another potential problem. An infected host excretes the parasite's eggs in the urine.

As a secondary host (a species of snail) is

now required for the parasite to develop its lifecycle further, urinating in a dam cannot directly pass the disease to other divers.

It could, however, contaminate the dam and if a suitable snail is in the area, result in the dam being a source of Bilharzia.

The parasite cannot survive in seawater, so there is no concern in that respect.

A particularly horrible species of catfish, *Urinophilus erythrurus* (also called candiru or canero) lives in the Amazon River. It is between 3 and 50 millimetres in length and a few millimetres in diameter. Attracted to urine, it swims up the urethra and into the bladder.

Surgery is usually needed to remove this little demon from the organ. It's highly recommended that anyone mad enough to dive in the Amazon River wears a wetsuit and refrains from urinating underwater.

The message is clear - if you gotta go, then go. Just wash up properly afterwards. And don't do it while swimming in the Amazon River! 



Do You Know Your Oxygen-Delivery Masks?



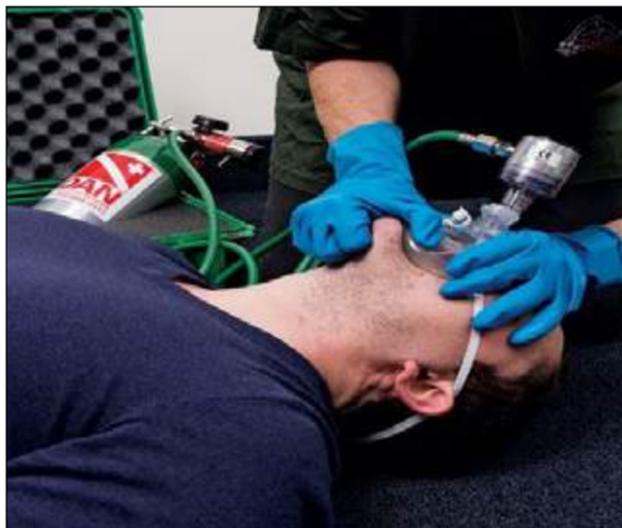
When a dive accident occurs, prompt action can greatly improve the outcome – if the rescuers respond appropriately.

Oxygen administration is a critical element of first aid for dive accidents, but there are several ways to do it. Oxygen units include various delivery systems, including tight-sealing oronasal masks for use with a demand valve or for resuscitation, non-rebreather masks and, possibly, a bag-valve-mask resuscitator, so divers should know the appropriate mask to use in each situation.

Oronasal (resuscitation) Masks

The demand valve with tight-sealing oronasal mask (often referred to as a pocket-style or resuscitation mask) is the most versatile and effective delivery device in most circumstances.

When used properly, it can deliver a high percentage of oxygen to breathing, responsive, injured divers. In addition, they can be used to provide oxygen-supplemented ventilations to unresponsive injured divers who are not breathing on their own.



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DANAP.ORG

By Patty Seery

This mask can also be used with manually triggered ventilators, which are used to deliver 100% oxygen to divers who are not breathing on their own.

The resuscitation masks have air-cushioned edges that adapt to a variety of face shapes and elastic straps to facilitate a good seal. They also feature oxygen inlets for administering supplemental oxygen when using the mask to provide ventilations to a nonbreathing diver.

These masks are reusable, provided they are cleaned, and their one-way valves are replaced.

When using a resuscitation mask, rescuers should ensure a good seal by using the elastic strap and proper hand positioning.

When the injured diver is breathing and responsive, the diver can help with maintaining the mask seal.

Rescuers using the mask for CPR or to support inadequate breathing should use two hands to create an effective seal around the entire perimeter of the mask, while, at the same time, tilting the head back and supporting the jaw.

Non-rebreather Masks



Non-rebreather masks are a first-aid option for distressed injured divers who are unable to activate demand valves effectively. These single-use, disposable masks feature an attached reservoir bag that captures the flow of oxygen to the mask to ensure a ready supply.

These masks do not conform to faces as effectively as oronasal masks, however, so some oxygen escapes, and some ambient air enters the mask via perimeter gaps. As a result, injured divers using non-rebreather masks receive a lower percentage of oxygen compared with resuscitation masks.



When using a non-rebreather mask, it is important to tighten the mask's elastic strap and adjust the nosepiece, but there is not much more rescuers can do to improve the mask's efficiency.

Non-rebreather masks use a continuous flow of oxygen, which exhausts the oxygen supply more quickly than with other means of oxygen delivery.

Bag Valve Masks

Bag valve masks (BVMs), which are used only on divers who are unable to breathe adequately on their own, are devices that enable rescuers to provide ventilations — with or without supplemental oxygen.

They may be disposable or re-usable. Using a BVM is less fatiguing for rescuers than delivering rescue breaths through oronasal



masks. These masks come with flexible tubing that connects to continuous-flow outlets of oxygen units. They also have reservoir bags that collect oxygen and are capable of providing high concentrations to injured divers.

Oxygen delivery using a BVM requires two rescuers: One rescuer maintains the mask seal and the injured diver's open airway, while the other squeezes the bulb to deliver ventilations. The other primary disadvantage of BVMs is that, like non-rebreather masks, they deplete oxygen supplies relatively quickly.

Regardless of the mask used, a rescuer's technique affects the concentration of oxygen

| Delivery Device | Flow Rate: litres per minute (lpm) | Inspired Percentage* |
|-------------------------------|------------------------------------|------------------------|
| Resuscitation (Oronasal) Mask | 10 - 15 lpm | ≤ 0.45-0.65 (45%-55%)* |
| Non-rebreather mask | 10 - 15 lpm | ≤ 0.8 (80%)** |
| Bag valve mask | 15 lpm | ≤ 0.9-0.95 (90%-95%) |
| Demand Valve | N/A | ≤ 0.9-0.95 (90%-95%) |

delivered to the injured diver. To optimise oxygen delivery, be sure to seal the mask to avoid leaks, and continually monitor both the seal and the injured diver. Do not depend on the injured diver to keep the mask secure; their comfort, changes in their level of consciousness and fatigue can compromise mask seal.



*May vary with respiratory rate
 **Less variation with changes in respiratory rate
 + Delivery percentages vary with equipment and techniques used. This table summarises various oxygen-delivery systems and potential values of inspired oxygen with their use.

Part of being a responsible diver is understanding that different oxygen masks exist, serve a different function, and offer a different level of effectiveness in terms of oxygen delivery.

Should you ever require oxygen you will be able to ask that a flowrate be set to the most effective level. Knowing, having, and using the correct mask and correct flowrate is very important in the first aid management of DCI. For more diving health and safety information, follow DAN World on Facebook

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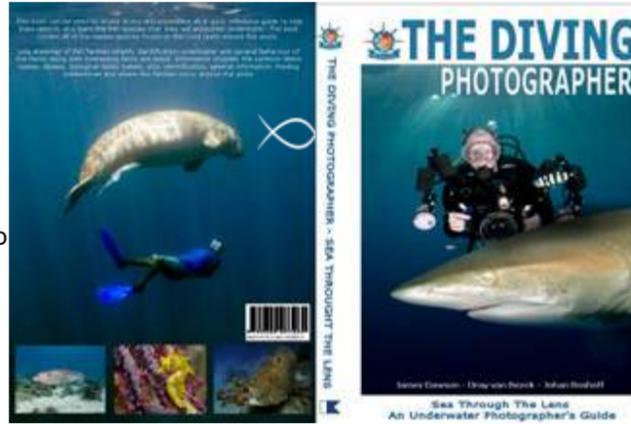


WWW.OZDIVER.COM.AU

The Diving Photographer –

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

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



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

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

Marine Species Guide –

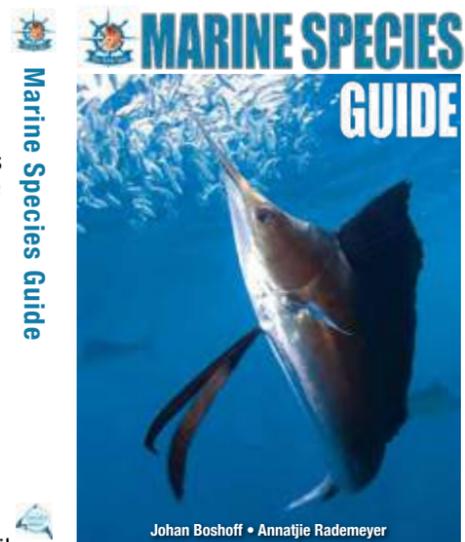
Yes, it happened...I had to buy a larger bookshelf. The latest book from The Dive Spot has landed on our shores – The Marine Species Guide.

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

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

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

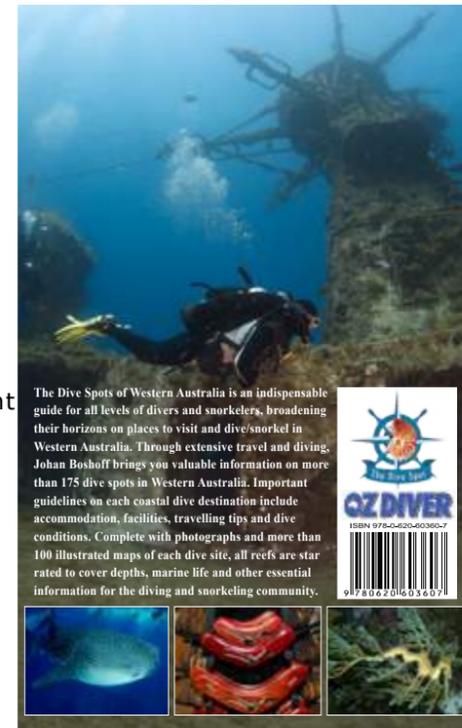
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Johan Boshoff • Annatjie Rademeyer
A quick reference guide to the marine species found on coral reefs around the world

The Dive Spots of Western Australia

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



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



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The PowerRay and The PowerVision

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

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

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

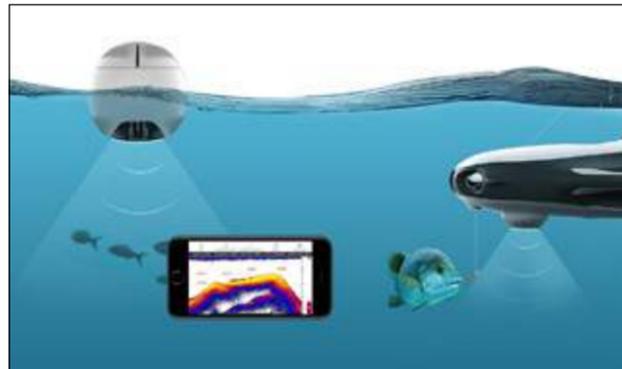
If you are a fisherman, you can add fantastic accessories like the PowerRay Angler package that was specifically designed for fishermen, accessories include Precision Remote Bait Drop which allows you to place the fish bait at a desired position and the PowerSeeker/Fish-finder can dock directly into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

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

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

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

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



EZYFLAG for all Divers

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

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

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

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

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

Testimonial

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



Diving Medical Acupuncture

Diving, medical problems and acupuncture needles... Have you ever heard about this combination?

Diving Medical Problems

Not being able to clear the ears or having difficulty equalizing is the most common problem experienced by divers and it's often caused by a common cold, rhinosinusitis and allergic or non-allergic rhinitis. Having to stop a dive when just getting under the water surface due to equalization problems is very frustrating, besides that it can be painful with risk of an ear drum perforation when ignoring the ear pressure. The fact that acupuncture can help to get rid of these ENT disorders and other diving medical issues is not well known to most divers around the globe.

Benefits for the Diver

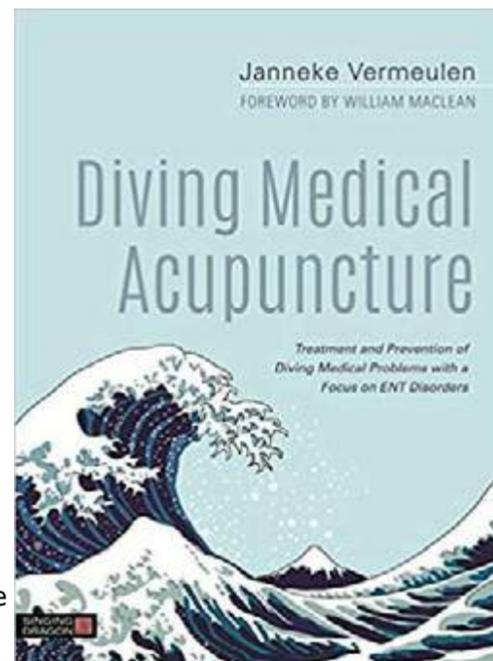
In her practice in The Hague, the Netherlands, Janneke Vermeulen, physiotherapist, acupuncturist, Chinese herbalist and specialist in Western diving medicine, treats divers from the whole country with a wide range of health issues: especially chronic or recurring ENT disorders that affect pressure equalization of the ears and sinuses. Furthermore: TMJ disorders, sea sickness, stress, tiredness, high blood pressure, migraine, lung disorders, addiction to smoking, being overweight, neck and back disorders, muscle cramps, etc. The diver with medical problems can benefit from the positive effects of acupuncture treatment. Acupuncture can transform phlegm and reduce its production, decrease swelling of the mucous membranes in the nose, sinuses, Eustachian tube and middle ear and address underlying energetic disturbances (such as deficiency or stagnation of Qi). When the Eustachian tube has a free air passage, the diver will normally be able to equalize the middle ear pressure well (in case the clearing techniques are performed correctly).

When having more energy, less stress and a better immunity as a result of acupuncture the diver will become ill less quickly in general. For sure that the diver will feel better under and above the water surface! The lung function can be improved whereby breathing will be easier and the diver will be able to stay under water longer. When having lower back problems jumping into the ocean may be fine but climbing at the stairs of the boat can be very painful. Acupuncture can relieve pain, muscle tension and improve the mobility of the spine.

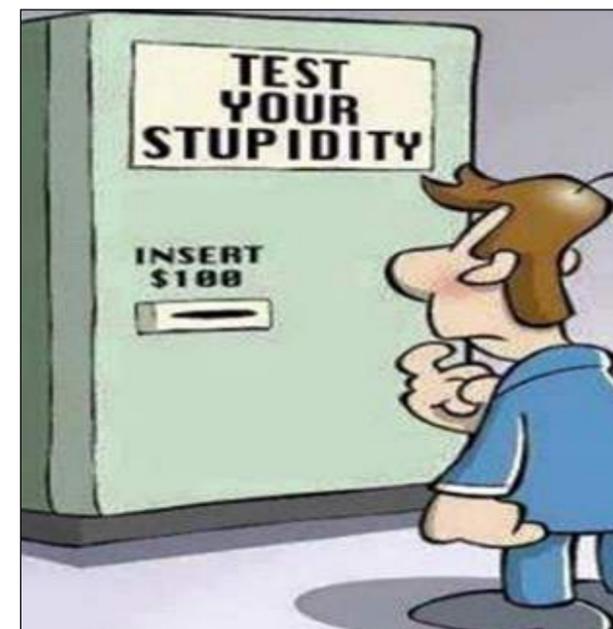
Acupuncture also can contribute to lower certain risk factors on decompression illness like tiredness, being overweight and decreased blood circulation (but of course to prevent D.I. all diving rules regarding the laws of physics need to be performed well in any circumstance!).

Book

All Janneke's diving related knowledge is collected and structured in her well endorsed book Diving Medical Acupuncture (published by Singing Dragon the 19th April 2018). This way innovative information can be shared with acupuncturists, non-acupuncture medicals and divers worldwide. Diving Medical Acupuncture describes the medical conditions that can prevent, complicate or result from diving and other water sports, and provides effective clinical treatments. It's an integration of Western diving medicine, diving techniques and Chinese medicine. Complete with anatomical diagrams and acupuncture point charts, this is a practical resource for acupuncture clinicians who deal with the issues associated with diving. Advice for divers is given at the end of each chapter, and is available as a handout in downloadable form. 



of



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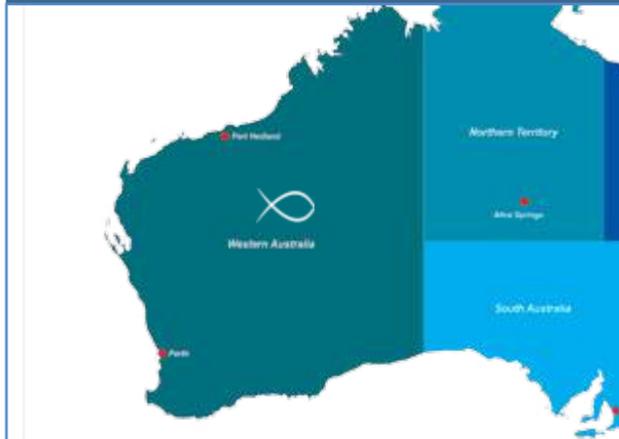
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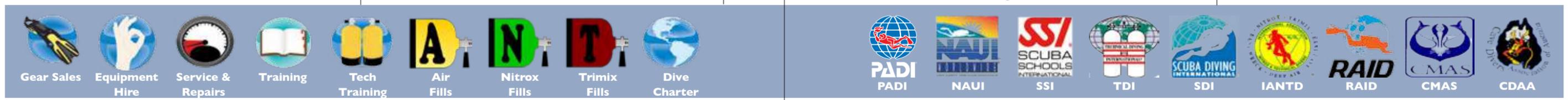


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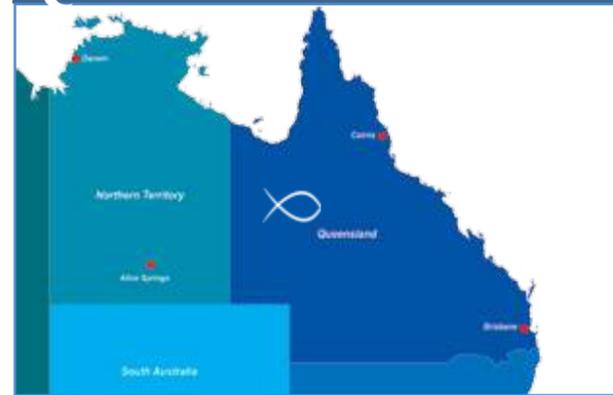
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OZ DIVER

An underwater photograph of a vibrant coral reef. The scene is dominated by a large, bushy orange coral structure in the center. To its right, a delicate, fan-like coral with thin, pinkish-red branches extends upwards. A long, thin, yellowish-orange filamentous coral arches from the left side towards the center. The water is clear and blue, with numerous small, colorful fish swimming around the coral. The overall lighting is bright, highlighting the textures and colors of the marine life.

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Christopher Bartlett

