

January / March 2017

OZDIVER

AUSTRALIA'S PREMIER DIVE MAGAZINE

**ABROLHOS
ISLANDS****CIRCLE OF
LIFE****PEMBA
AND
MAFIA
ISLANDS****WHITE-TIP
AND
BLACK-TIP
REEF SHARKS****E-19
WRECKS**

DOMINICA

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Editor's Deco stop

The other day I came to the realisation that Australia has some of the best divers and instructors in the world. As my job involves quite a bit of contact with divers from all over the world, my experiences have lead me to believe that overseas, you can dive without the need for any dive qualifications.

Surely with any dive qualification there has to come some skills and knowledge? I was on a liveboard not so long ago and after a hectic schedule decided to take it easy the one day and not do any diving. I sat and watched the divers returning, and after a couple of minutes everyone was back on the boat and kitting off. I noticed one of the returning divers was looking for his dive buddy to sigh his log book, but couldn't find him.

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

The next question that the instructor asked him was, after he lost his buddy, what did he do next. The answer was that his buddy was also a dive master so he just continued the dive. So now his buddy, the dive master, was gone. No one knew where, when or

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

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

I think that instructors and dive masters must realise that they can kill someone with bad training and that they have to start taking responsibility for the safety of their divers – they need to teach them how to survive in situations like this and I think that this particular person is very lucky that he is still alive.

The Editor & Publisher

Johan Boshoff

-it is all about the journey and not the destination

Genesis 1:1

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



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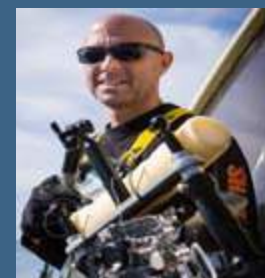
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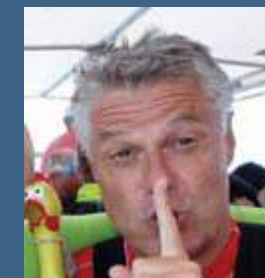
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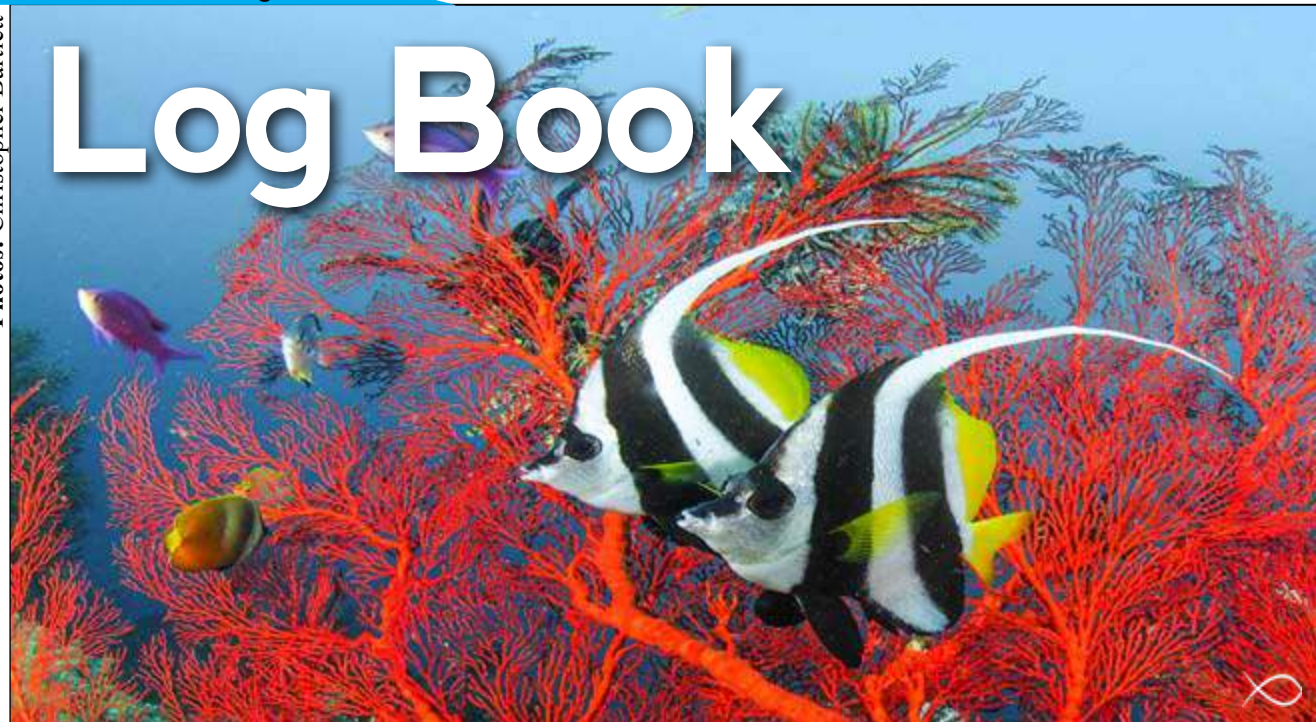


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FEATURE



Log Book



CLOSE CALL

By Michelle Barrow

Good intentions, bad decision. The latter leads a group of divers to a close encounter with a tiger shark.

It was another sunny day in the World and we were driving down the beach to the launch site for Pineapple Reef when we spotted a gray shape lying at the water's edge. We stopped to have a closer look and found a dead 1.5-m baby Risso's dolphin, which had washed up on the beach. It did not have any wounds, scratches or cut marks, and looked as if it was just sleeping.

There was no smell and the body did not seem have rigor mortis yet, which indicated that the dolphin had died recently. It was quite a sad moment and we decided that we would not leave it on the beach to be eaten by the ghost crabs, but would rather give it a sea burial. It seemed like the right thing to do.

At the dive site, Clive gave us the countdown and we descended, with Darryl swimming the dolphin part of the way down. It settled on the sand at the edge of the reef and we said our farewells. At this stage, a resident potato bass named Mrs.

Casper joined us and saw an opportunity for an easy meal. Unfortunately, the dolphin was too big for her and she gave up.

Darryl signaled the divers to follow him as he turned to start diving along the other side of the reef. I decided to say a quick, final farewell to the baby dolphin. When I turned to look across the sand, I froze. I saw the unmistakable square face of a 4-m tiger shark coming closer and closer towards me. (At least I still had Mrs. Casper as my buddy.)

Regardless of the dolphin's lack of smell, the finely tuned shark had picked up a scent trail and decided to see what was for dinner. It turned slowly and deliberately towards the dolphin, at which stage I looked over my shoulder to see where the other divers were. I could see their bubbles and decided to slowly back away, still facing the shark, in order to join the group.

I managed to get Darryl's attention and he signaled all the divers to come and look. We all started swimming back towards what was now a huge green cloud in the water, with fish darting in and out of it.

Mrs. Casper emerged from this cloud of blood with the dolphin's head in her mouth, swam

directly through the middle of us all, straight into a safe crack in the reef. Hot on her fins was the shark! It must have assumed that we had stolen part of its delicious meal and proceeded to circle us for 15 minutes, looking for it. It then realised that the cheeky potato bass was sitting in the reef and switched its focus back to her.

We took this as our signal to leave the dinner party and tried for a sneaky retreat. No one needed to notice we had left. Unfortunately, one of the divers started to fin upwards, instead of backwards, and this movement once again caught the shark's attention.


It followed us for another couple of minutes, but eventually decided that we did not have the rest of its yummy dinner, and slowly swam back out to sea the way it had come.

We did a safe ascent, of course, albeit with no safety stop, and we frantically signaled the skipper to pick us up RIGHT THEN!



WIN

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

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



LESSONS TO BE LEARNED:

Always take your underwater camera with you on all dives.


Stay calm and face the shark at all times.

Do not make sudden movements that could seem threatening or challenging.

Do not ascend while the shark is still there – it gets their attention.

Do not interfere with nature. Even though we had good intentions, we should have left the dolphin where it was.

PS: To all potato bass out there: Make sure you have a safe hidey-hole should you decide to steal a shark's meal.

Better yet, find a few divers to draw attention away from yourself! 

OZ News



OZTek2017 – Less than 3 months & counting

We've less than 12 weeks to go... time is whizzing closer to OZTek2017 March 18/19. Keep the weekend clear and prepare for one amazing event.

Discover what our incredible speakers are talking about: <http://www.oztek.com.au/Speaker-Presentation-Previews> - see a title and short summary of each presentation and watch for the speaker schedule which will be up early in 2017.

Check out new exhibitors joining our ever-expanding exhibition – Nikon Australia with new product, as well as their technicians on Saturday 18th March for sensor cleaning.

Rodney Fox Great White Shark Expeditions – RX Dive and many more. Visit OZTek to uncover new innovations, travel destinations, both in Australia and overseas. All the latest in dive equipment, training, travel and photography. See it here: www.oztek.com.au/OZTek2017-Exhibitors.



When? March 18-19, 2017

Where? International Convention Centre Sydney, Hall 1, Exhibition Centre, Darling Harbour.

Underwater Photographers
– don't forget the OZTek Underwater Photographic Competition, including the Nikon Dive Portfolio of the year ends January 31st – get your entries in.
More: www.oztek.com.au/Photo-Comp

And for those who love to watch and admire there will be glorious Underwater Images in our second Photographic Exhibition, including all the competition winners.

To top off a brilliant weekend, the unmissable OZTek Gala Dinner Awards night – A ticketed event including a magnificent meal, unlimited beers, wines and soft drinks, guest speakers and the presentation of the OZTek2017 Awards.

If you know a diver who deserves an award – nominate them here: www.oztek.com.au/Awards-with-Nomination

For up-to-the minute information go to: www.oztek.com.au or contact the organiser, Sue Crowe at info@diveoztek.com.au

OZTek March 18-19 2017
DIVE CONFERENCE & EXHIBITION



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At the heart of the image



AIDE

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Invitation

Australia's Largest Water Enthusiast's Event

From scuba and free diving, spearfishing, snorkeling, photography and conservation policies and practices to hi-tech equipment, hot dive apparel, super-cool gadgets, dive tours, dream holiday packages as well as expert training and education, this annual Expo event is where the entire industry comes together under one roof to provide water enthusiasts, young and old, beginners and professionals, the latest and greatest in the underwater world.

SNAPSHOT - In 2017, and for the very first time, the Australia International Dive Expo (AIDE) is joining forces with the long-standing and hugely popular Sydney International Boat Show (SIBS) to bring water enthusiasts of all kinds the biggest recreational and sports water oriented event in Sydney, Australia. We will provide amateur and professional divers, and those new to diving, a comprehensive platform to explore and develop their interests and love for the marine world.

VENUE - The newly renovated International Convention Centre (ICC) in Sydney's spectacular Darling Harbour will be host venue for the collaborative event from August 3-7, 2017. AIDE2017 will occupy 20,000m² of floor space and run for 5 days. There will be an estimated 45,000 visitors and 250 exhibitors at the 2017 collaborative event. This is a not-to-be-missed event!

OUR OBJECTIVES - The aim of the AIDE and SIBS collaboration is to showcase products and services to visitors in one convenient location, so that individual interests and needs are met, either above or below the waterline all under one roof.

OUR MISSION - To maintain and develop engagement between the dive industry and existing divers as well as welcoming new divers by keeping them inspired and stimulating their curiosity about the wonders of the underwater world. To promote and provide information re: ongoing marine conservation practices and efforts in Australia and around the world.

OUR PARTNERS - The list, which has grown steadily over the past three years, includes dive certification agencies, tourism bodies, tour operators, dive resorts and centers as well as distributors of dive equipment,



apparel and gadgets. The much bigger and better 2017 collaborative event will see this list expand greatly.

OUR INVITATION TO YOU

If you're keen in exhibiting or would like to get involved, please email us at: info@australiadiveexpo.com

We hope you will join us in welcoming the thousands of water enthusiasts to this great event!

For more information on the event, kindly visit the AIDE website at: www.australiadiveexpo.com

Dive Spots of
Western Australia

The Dive Spots of Western Australia is an indispensable guide for all levels of divers and snorkelers, broadening their horizons on places to visit and dive/snorkel in Western Australia.



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

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For more information visit www.thedivespot.com.au

Dive Schools / Operators / Organisers / Instructors

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

Here's what we need:

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

Please send to info@ozdiver.com.au



OZ DIVER



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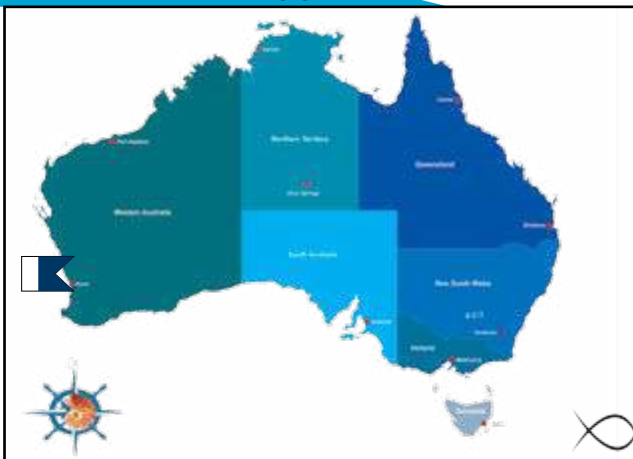
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Abrolhos Islands

where corals and seaweed battle it out.

Just 40 km offshore from Geraldton lies a small archipelago of limestone islands - fossil reefs that are now lifted above the surface of the sea.





Low-lying, made of limestone reef that grew aeons ago when sea level was higher than today, some have shrubs on them while others are relatively bare.

All of them are fringed with luxuriant, living corals. But these corals are mostly of a particular sort – those that can win the competition for living space with seaweeds.

The result is acre after acre of the fastest growing forests of staghorn corals mixed

with table corals and, deeper down, huge expanses covered with enormous whorls of leafy corals.

This group of islands is only half as far offshore as is the Eastern coast's Great Barrier Reef. Like the latter, diving on it is live-aboard diving.

Why so little diving takes place there remains a bit of a mystery, because the sights to be seen underwater are spectacular and, to anyone interested in natural history, it offers a very rare sight indeed because this is at the cool end of healthy coral growth.

Located south of the southern end of the Ningaloo Reef, this area is supplied with larvae and juveniles of all the species that live on the Ningaloo's spectacular reefs located in warmer waters further north.

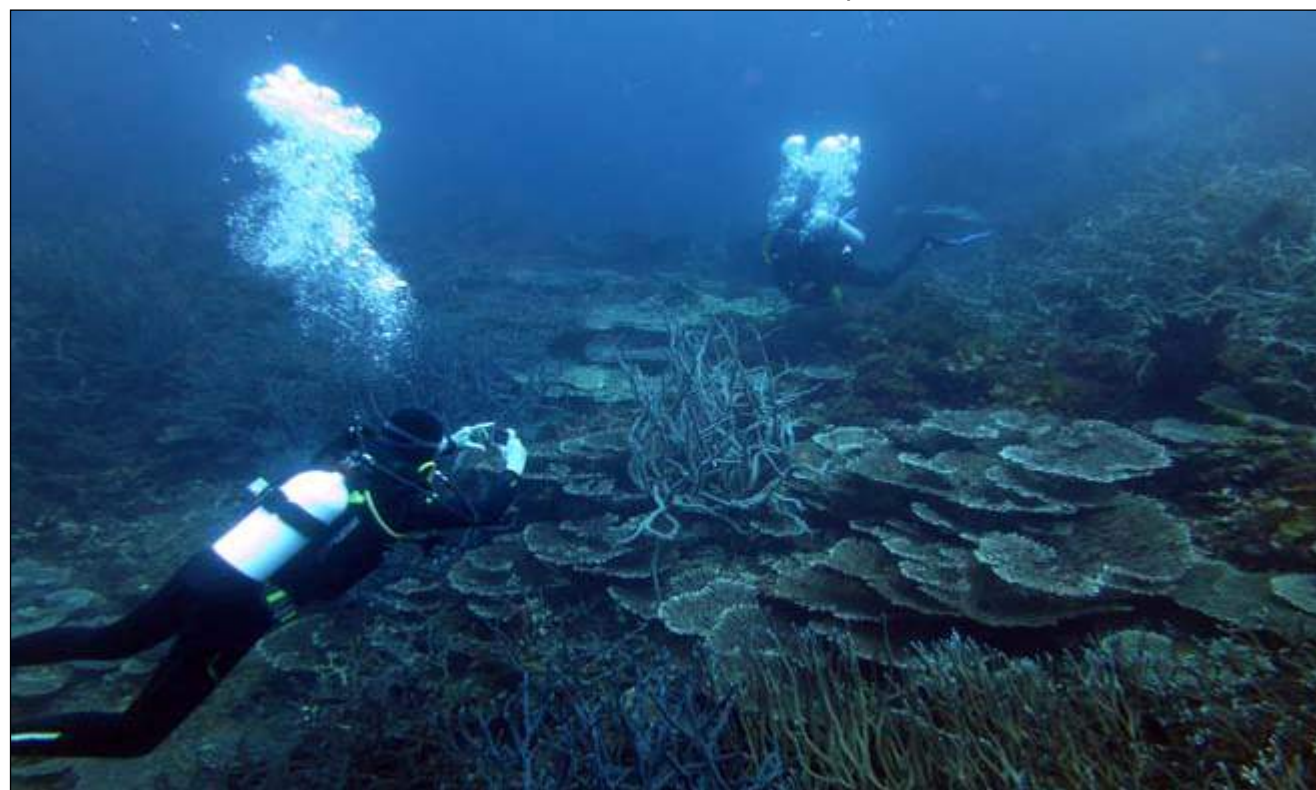
But, being at the cooler end, the Abrolhos reefs are also supplied by southern currents too, notably seaweeds in this case, and this

sets up the conditions for an interesting battle for survival and space between the corals and the seaweeds.

Seaweeds need nutrients to do well, corals don't need much nutrient in the water, and indeed too much can kill them off. Seaweeds grow rapidly in response to light and nutrients but they fray and disappear again quickly when conditions deteriorate for them, while corals grow slowly and more steadily. Cold water coming from the south has nutrients and so favours seaweeds, warmer waters from the north favour corals.

The two meet and mingle at the Abrolhos islands' reefs. Who wins? Both do, but with differences. Quick growing seaweeds cover and smother corals quite easily. But they don't smother the taller, fast growing corals, especially the staghorns.

As you swim over the reefs, you notice firstly the tall height of the staghorns,





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Photo Credit: Brandi Mueller | Location: Great Barrier Reef • Australia

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By Professor Charles Sheppard Photos: Anne Sheppard which, is often a spectacular two meters or more tall. But you notice also that around their base there is commonly large growth of seaweeds too: brown, red and green seaweeds, all flourishing, even some southern kelps. The tall and faster growing corals – the dozen or more species of staghorns – can survive easily, and they do so extraordinarily well.

All the low lying, encrusting and brain forms cannot make it as well because they get smothered by seaweeds. This leads to the Abrolhos being prime territory for the most spectacular fields of staghorn corals that you will see anywhere in the world.

Sometimes, wider ocean events, perhaps warming of the seawater, means that the corals are all killed off in a local area such as a bay.

Then, there is nothing to stop the seaweeds



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For more information:

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Image: Becky Kagan-Schott by Jill Heinerth
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By Professor Charles Sheppard Photos: Anne Sheppard

from dominating everything for acres. But mostly, both coexist in a balance, sometimes corals winning, sometimes seaweeds winning. Over all of this swim the fishes, large schools darting over the reefs.

The islands are the site of several wrecks, and one island - where the Batavia went down and where mutiny and apparently cannibalism occurred amongst the desperate survivors, is a protected grave site.

On some islands there are transient communities of crayfish fishermen, but most are uninhabited, and some have a rich variety of seabirds. So little diving takes place that you can be sure that on most reefs you would be the first ever to have

explored those particular canyons, gullies, and extravagant fields of corals.

Dive Ningaloo have a boat that is purpose made for diving. Operating mostly in Exmouth, it travels south to Freemantle each October when it becomes too hot in Exmouth. There it refits in, and then travels back north again around April. They pass the Abrolhos twice each year therefore.

They take advantage of this remarkable archipelago on both those occasions and so should you!

Contact them on www.DiveNingaloo.com.au to join a trip to these exceptional islands and reefs.





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DEEP DOWN YOU WANT THE BEST

White-tip and Black-tip reef sharks

"Switch to snorkel," said our guide, and so we did, for which we were rewarded with what was for me at least, the spine tingling moment of a first-ever view of a wild shark. They were Black-tip reef sharks, and while that first sighting was many years ago, the magic of it is with me still.



Black-tip reef sharks (*Carcharhinus melanopterus*), and White-tip reef sharks (*Triaenodon obesus*) may not be as breathtaking as their bigger and more famous cousins, but they are a delight to see simply because they are so agile, slick-looking and definitively 'sharky'.

That's because although they occupy different genus (the White-tip is the only living member of the *Triaenodon* genus) they are both classic 'requiem' sharks – just smaller than the ones in the films, that's all.



Both of these reef sharks usually live in clear and shallow water around coral reefs but they have been known to surprise researchers by popping up at drop-offs down to 300m or more. The fact that they tend to be found in such shallow water is one reason why our original guide told us to switch to snorkel, but the other is that they can be quite shy creatures, upset by the bubbles. When they're not disturbed they are often to be found lying motionless at the bottom, especially in caves during the day – lucky divers sometimes stumble across collections of White-tips piled up on each other like braai wood.

They have the ability to pump water over their gills and so don't need to swim to breathe (whatever Woody Allen might say). They hunt actively at night, eating small fish, octopus, and crabs, and while too small to pose any serious threat to people, they have been known to hassle and even bite fishermen and particularly spearfishers who have their catch in the water. Protective eye ridges and tough skin also help reef sharks to 'burrow' into holes and crevices in the pursuit of fish hiding at night.

How do you recognise them? Well the clue

is in the name, but that said it is possible to confuse the Black-tip reef shark with the Black-tip shark (*Carcharhinus limbatus*) and the White-tip with the Silver-tip shark (*Carcharhinus albimarginatus*). The Black-tip is a good deal larger than the Black-tip reef shark at up to 2,6m as opposed to 2m for the reef shark, but even with smaller adults you can tell the difference immediately by looking at the dorsal fin (the classic 'shark' fin on the back). The Black-tip's dorsal fin has a light black tip whilst the Black-tip reef sharks dorsal fin has a dark black tip with an underlying white margin.

Similarly, the difference between the Silver-tip shark and the White-tip reef shark is that the Silver-tip is a much bigger and meatier beastie, getting up to about 3m (the White-tip reef shark grows up to about 2,1m).


Silver-tip sharks have a thin white line along the trailing edges of their fins while the White-tip only has white on the very tips of its fins.

Both species prefer warmer, more tropical. Both species are viviparous, meaning that the pups grow in the mother's womb before

being born live. The White-tip gives birth to a litter of one to five pups after a short (by shark standards) gestation of around five months. The Black-tip has a litter of two to four pups, and while there is some debate about its gestation period, it is reported to be longer – eight months or more.

Both reef sharks are relatively common but they are slow to mature (only reaching breeding age nine years into their 16 year lifespan), which means that it is quite easy to severely deplete populations if they are caught intensively – a fact reflected in their 'Near Threatened' status in the IUCN Red List.

The flipside of that is that their habit of returning to the same habitats and remaining loyal to an area also means that they can potentially be protected by marine reserves. In Hawaii the loyalty shown by White-tips to certain precisely defined reef areas means they are associated with the amakua; the spirits of the ancestors who take human form and return home.

As such they are naturally protected – a neat example of belief and biology working together to preserve the environment. 



Simon De Waele

Salt, Nutrients and the Sun's heat

Why do so many people prefer to dive on the east coast rather than the west coast? The answer, of course, is the water temperature. But what is the reason for this difference in temperature? And, if all the seas are connected, why does the water temperature differ so much? Continue reading to find out.

In the ocean, you get something called the 'great ocean conveyor belt' or the 'deep ocean conveyor belt'. This conveyor belt is an ongoing movement of ocean water around the globe.

But why does the planet need this and how does it work? Don't worry – this is not a make-you-fall-asleep scientific oceanic lecture, it's quite easy to understand and very interesting. I did have to call a professor to answer some questions though...

Quite frankly, the planet needs this conveyor belt to distribute salt, nutrients and the sun's heat around the ocean. If this circulation of heat didn't occur, locations of the same latitude would generally have the same average temperatures.

Cold and warm water currents influence rainfall which in turn influences vegetation of a particular area and the ripple effect goes on and on. We will not go any further into that because then I'm starting to re-write a geography textbook and that is not the purpose of this article. And let's stay in

the water because that's what we actually prefer to do.

Before we discuss one of the other 'parcels' being carried around on the great ocean conveyor belt (nutrients), let's look at how this unseen circulation works. This movement is driven by wind and changes in the density of seawater.

Cold, arctic water is denser than warm, tropical water. Salinity also affects density – the saltier the water, the denser it becomes.

This means that somewhere, these cold waters will sink and that is exactly what happens. As warm surface water is moved away from the tropics, it cools down by releasing heat into the atmosphere, which in turn, influences the climate on land along those areas. The further north the surface water moves, the cooler it becomes.

If you look at the graphic, you'll see just that happening. Near Greenland and Iceland in the North Atlantic, the surface water sinks to the bottom where the



SCUBA DIVERS

TRAINED HERE



conveyor belt system then takes it south as a deep current.

This is where the third 'parcel' comes into play. The deep current, which flows much slower than the surface currents, picks up all the nutrients and minerals that sink to the bottom of the ocean floor (the biomass) and transports this to other areas around the globe.


As wind moves the surface water, this nutrient rich deep water starts to rise at 'upwelling sites', bringing all the nutrients that have been broken down and dissolved at the bottom with it. It doesn't happen overnight though – it takes more than a 1 000 years for this process to happen.

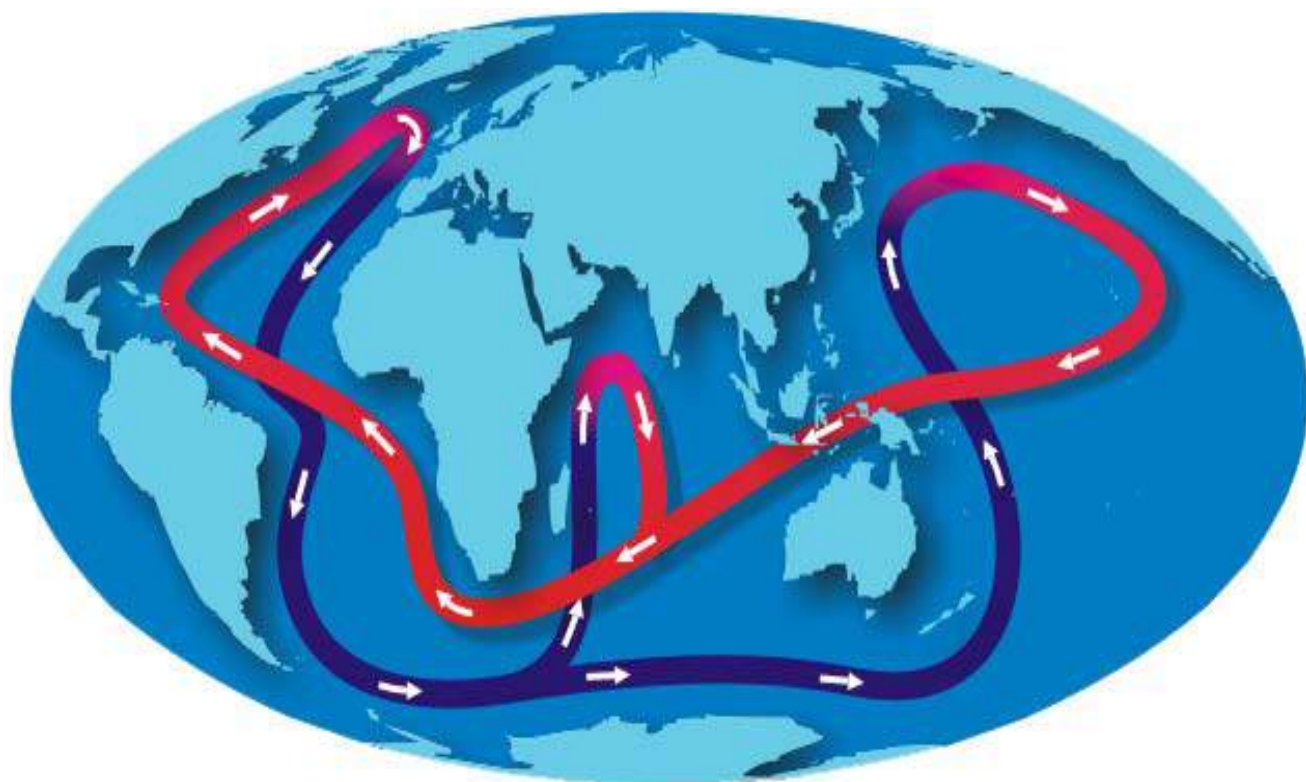
This is a very important cycle because phytoplankton needs these nutrients (such as nitrate, phosphate or silicic acid) to photosynthesise and grow. As we all know, for something to photosynthesise it needs sunlight, therefore, it only lives in the surface layer of the ocean where sunlight is in abundance.

So, without the conveyor belt bringing the nutrients to the sunlit surface, phytoplankton would not be able to survive. Phytoplankton is the primary producer of the ocean and forms the basis of a number of marine food chains.

As we all know, an important waste product of photosynthesis is oxygen. It is vital for all life on earth and phytoplankton is responsible for almost half of all photosynthetic activity on earth. So, the great or deep ocean conveyor belt is of utmost importance to the planet, our diving and of course, human existence.

Yet this system is under threat due to global warming. We need to do our part in helping to stop climate change and the need for us to stand together so save our ocean is now critical.

Our lives and our happiness depend on it. I say to those big countries and companies: "Stop messing with our ocean, we like it the way it is!" 



TDI



Tech Divers Trained Here



The Crown of Thorns

The Crown of thorns starfish (*Acanthaster planci*), is a prickly, venomous starfish which can cause severe damage. When populations reach plague proportions, they can chomp their way through huge areas of coral reef.

Statistics

They are 25-40cm in diameter.

Physical description

The Crown of thorns starfish is covered in long, very sharp venomous spines measuring about 4-5cm. It has 12-19 arms. Their colour depends on where in the world the starfish dwells, but they are typically red.

Distribution

The Crown of thorns starfish can be found throughout the Pacific and Indian oceans.

Habitat

Although they sheltered areas such as lagoons and the deeper water along reef fronts, the Crown of thorns starfish can also be found in shallow waters on reefs where humans may come into accidental contact with them.

Diet

The Crown of thorns starfish feeds on coral polyps. It climbs onto the coral and then pushes its stomach out through its mouth

so that it covers its prey. It then dissolves the polyps into a liquid with its digestive juices, and absorbs the result. One starfish can eat up to 20km² of coral per year.

Behaviour

These starfish are normally found on coral




reefs either feeding or resting. They move from reef to reef along the sandy bottom of the sea. They are venomous, and this venom contains toxic compounds called saponins.

Contact with the starfish gives rise to intense pain and vomiting.

In 1963 populations of the starfish rapidly increased on Australia's coral reef.

The cause was originally thought to be due to the starfish's main predator, the Pacific triton, being over-harvested by shell collectors. Scientists and conservationists feared that the coral would be irreplaceably destroyed by the species, and a large scale attempt to destroy them began.

This included removing the starfish from the water and injecting them with formaldehyde. In the 1970s, research showed that the starfish had previously undergone similar population explosions, followed by a massive drop, suggesting that the explosion in the 60s was a natural part of the animal's cycle. 



The Boat's Emergency Oxygen Cylinder Was Empty!

Whether you're on a liveboard or dive boat the availability of oxygen equipment and someone trained in the effective provision of oxygen is critical.

Case 1: Liveboard, Malaysia: Operator Unprepared

It was during a surface interval on the second day of diving that the diver's symptoms commenced with chest pain that felt to the diver like muscle strain. Upon laying down the diver felt nauseous, the chest pain intensified, and severe itching of the chest and stomach began. Red welts appeared and spread covering most of the torso. Advice was sought from the divemaster who thought it was an allergic reaction.

The diver, having consumed a seafood lunch, considered this a possibility. Over the coming hours the rash became dark red and very painful (with touch and body movement), although the itching had subsided. Advice was then sought from the captain (also a divemaster).

The diver suggested breathing O2 but the captain was positive it was an allergic reaction. Although doubtful, the diver allowed herself to be persuaded to 'wait and see'. By the next day the

rash had improved but there was still some pain. The diver's husband spoke to the captain and suggested that although it might not be a bend, oxygen was 'worth a try'. The captain agreed. It was then discovered that the boat's "emergency" oxygen cylinder was empty so some was decanted from their Nitrox supply. Fortunately, the diver's symptoms subsided and by the next morning the rash had all but disappeared.



DAN Comment

The divemaster and captain should have readily provided oxygen, rather than the diver and her husband having to ask. Being a liveboard it is of even greater importance to be oxygen first aid prepared as often the distance to proper treatment is substantial. The diver was fortunate in that she had ceased diving - continuing is likely to have intensified her symptoms thereby worsening her condition.

It is inappropriate and unwise for a divemaster or captain to withhold oxygen because they don't think a diver is suffering from DCI. Although dive professionals are taught about the recognition and first aid for DCI and other diving accidents, this is relatively basic and most have little or no further and/or extensive diving medical knowledge or experience. For this reason, most dive professionals (and other divers) should never put themselves in the position of trying to diagnose any medical problem, such as possible DCI.

Case 2: Malapascua, Philippines - Emergency Plan in Place

Not wanting to miss the chance to see the Thresher Sharks again, it was the third early morning start for the diver, who was feeling tired. On the way back to shore she started to feel a minor tingling in her knees. Knowing something was wrong she immediately asked for oxygen. Fortunately the boat was equipped and she started breathing O2 straight away and continued doing so until the boat arrived at shore (approx 25 mins), at which point the dive shop manager checked the diver's symptoms and immediately called the DAN DES hotline.

The diver was advised to breathe near-100% O2 for a few hours, for which the operator was adequately prepared, rest and see if the symptoms decreased. The diver's condition did not improve so she was required to travel by boat and car to reach a Chamber in Cebu. Fortunately, the Operator was very prepared and the diver was able to breathe O2 the entire way, nearly 4-hours, whilst being accompanied by a staff member from the dive centre. The diver underwent one recompression treatment, which she responded well to, and made a full recovery.

DAN Comment

This diver was fortunate the operator she chose to dive with was so well prepared and she was able to breathe O2 (although the concentration is unknown) from the very first onset of symptoms to arrival at the Chamber. She still required treatment and one wonders what her condition might have been had the operator been unprepared - she might have been considerably worse and may have required multiple treatments and/or been left with residual symptoms.

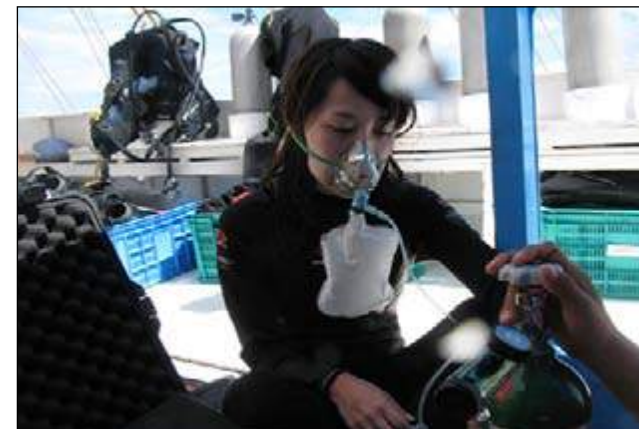
Is Your Dive Operator Prepared?

Oxygen should be available wherever diving is conducted. Even if a dive site may be only 15-20 minutes from shore, what may seem to be a short delay can sometimes affect the extent of recovery, or in some instances, the chance of survival, especially in the event of a cerebral arterial gas embolism (i.e. bubbles in blood vessels supplying the brain). Before you book your next dive trip or liveboard, make sure you ask the operator the following questions, so you know you will be looked after in an emergency:

- Is O2 available on all the dive boats?
 - Can the operator's equipment provide high-concentration O2 to a breathing and non-breathing diver?
 - How many hours O2 supply do they have?
- Is it enough to get to appropriate medical care?
- Is their staff trained in O2 First Aid?
 - Do they have an Emergency Plan?

Let's work together to improve oxygen first aid preparedness in the Asia-Pacific.

Not Yet a DAN Member? Join today at www.danap.org



Global News

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 comes to retrieving it after a dive. So I began my search for a better, easier to use flag. I looked in Australia with no success, and then overseas, but with the same result.

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

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

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

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

Testimonial

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



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Deepblu- the Social Network for Divers

Deepblu, the first social network built for the diving community. Divers can showcase their diving feats, interact with the ocean community at large and plan their next dive trip.

With the launch of Deepblu, the previously wildly scattered diving community now has a single platform to gather, discuss and share underwater moments. Deepblu has all the functionality of a modern social network, with options to create a profile, follow friends and organizations, discuss, comment, like and share.

"Looking at the ways people currently interact in the diving industry and by extension the entire marine community, it's easy to see how fragmented it is," co-founder and CEO James Tsuei explains, "Our ultimate goal is to unite divers, dive businesses and conservationists alike around Deepblu and make diving more exciting for everyone with a passion for the ocean."

All the Functionality of a Modern Social Network

Deepblu allows users to create a profile to interact with others on the platform. This profile includes all the diver's certifications as well as a digital dive logbook, an overview of all diving adventures the diver wants to share with their buddies or the public.

Deepblu dive logs can be created manually, or automatically with a compatible dive computer such as Deepblu's own COSMIQ+ or a 3rd-party computer via the open-source software Subsurface. Deepblu dive logs are beautifully designed, and divers can enrich them with underwater photo- and videography, creating a visually appealing timeline of their dive. It is also possible to add stories and descriptions of gear and diving conditions.



Finally, divers can have their instructors digitally certify their dive logs, and tag their diving buddies.

Users can follow other profiles to explore the photos and dive logs of friends and see what celebrity divers and organizations are up to. A trending page brings up the hottest stories in the world of diving. Meanwhile, divers can discuss various diving topics in one of the many Community Groups for freediving, coral identification, wreck diving, and many more. Users can even create their own groups.

Deepblu is available through web browsers on the desktop or the fully redesigned mobile applications for Android and iOS.

Connecting Divers and Businesses around Planet Deepblu

One of Deepblu's most exciting features is still in the testing phase and slated for release in January 2017. Aptly named Planet Deepblu, this interactive and quickly growing map of over 10,000 dive spots the world over aims to make it more convenient for divers and dive businesses, such as resorts, rental shops, instructors, liveaboards and conservationists to find each other.

Planning a dive trip used to be a tedious and cumbersome job, so divers will be relieved to find that Planet Deepblu's fluid user interface makes it a breeze to plan, while businesses large and small will have a much easier way to reach the community and advertise their services.

"We are really excited about what we are setting up with Planet Deepblu," Tsuei says. "Come January, our users will be able to pick their favorite destination, choose the accommodation with the best reviews and offerings, select the best place to rent their gear from and even the instructor they choose to learn from or dive with."

Deepblu, Inc. is a team of divers and technology enthusiasts whose goal is to use technology and the power of the internet to revolutionize the diving community and lifestyle.

Contact: Deepblu Inc.

Email: info@deepblu.com
www.deepblu.com
www.williamwinram.com
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Send us your news.

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

Here's what we need:

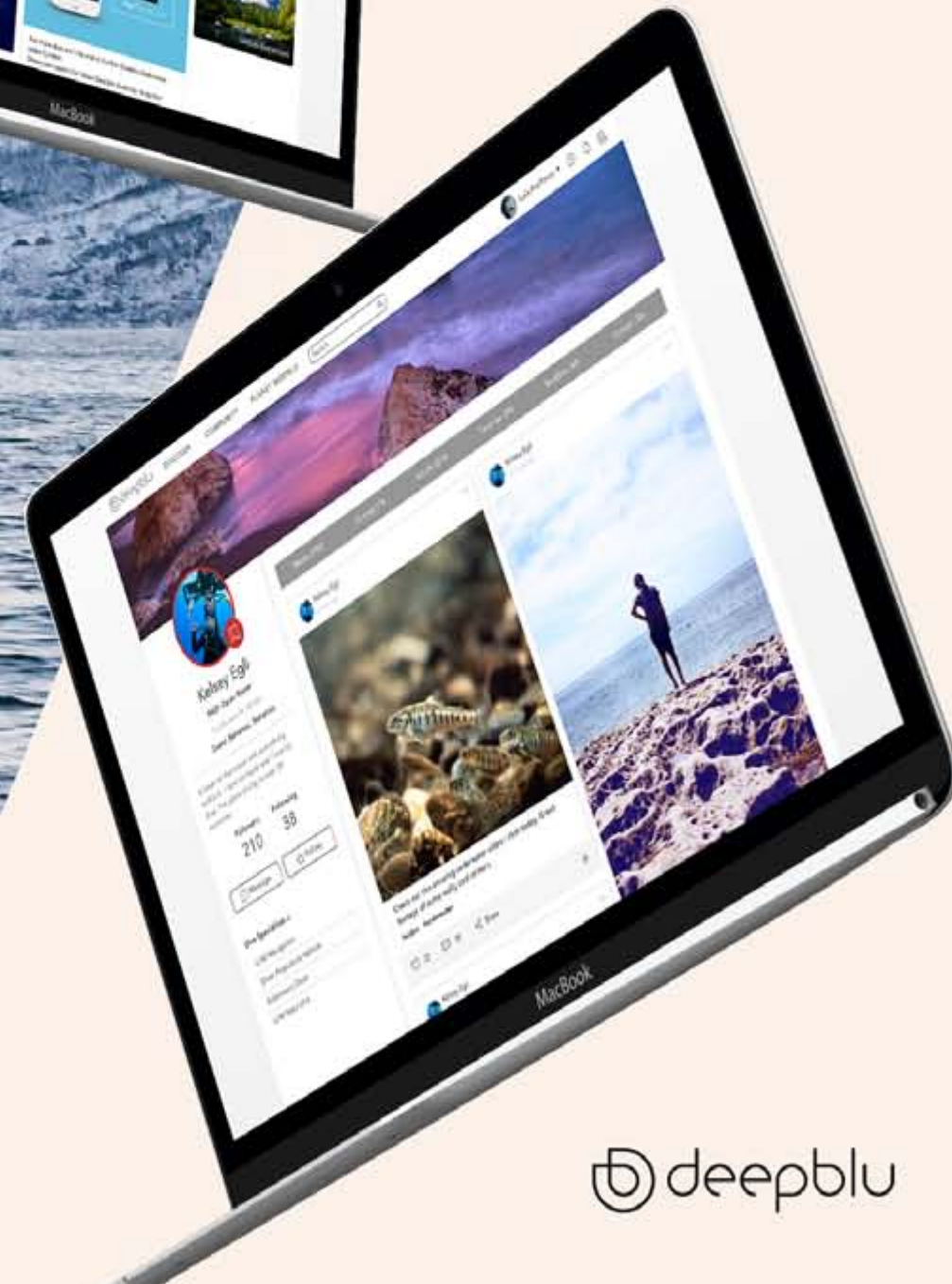
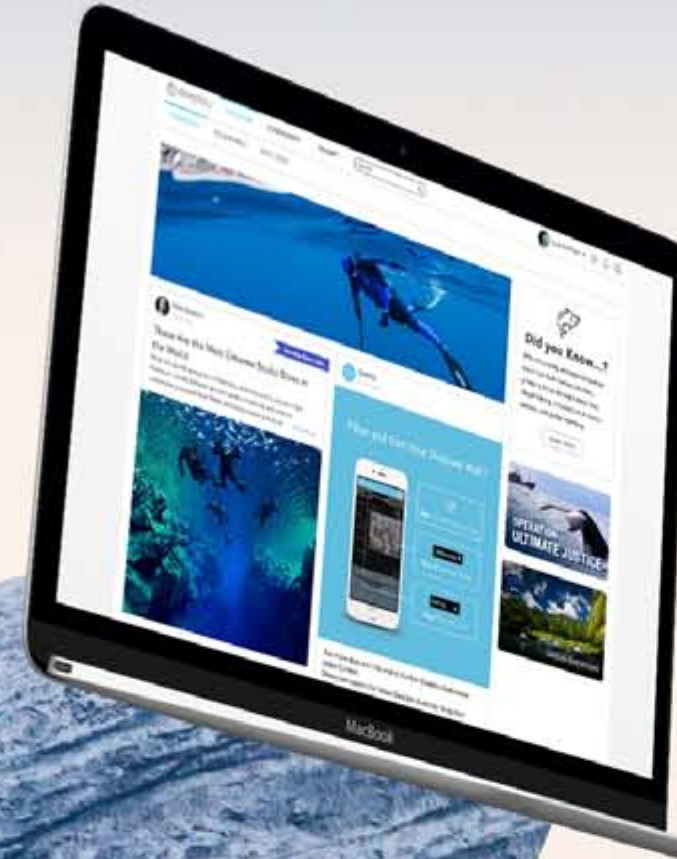
- Newsworthy stories (promotional material will not be accepted)
- Word limit: 150 words
- Text prepared in a Word document
- Accompanying high-resolution image(s) are welcome (please supply caption and image credit)

Please send to info@ozdiver.com.au

OZDIVER

Explore the diversity of the new

Deepblu Community



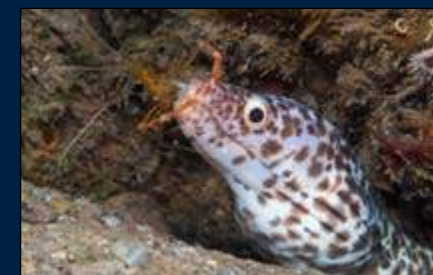
Now available on web: www.deepblu.com



Dominica

- the Emerald Isle

At last I can see Dominica in the distance, or rather the clouds forming over her mountainous peaks, the highest in the eastern Caribbean. I say at last as I am flying LIAT, aka Leave Island Any Time. I'm hoping the "Luggage In Another Terminal" version isn't apt this time. The terrain is rugged undeveloped, wild mountainsides covered in lush forest. We haven't touched down yet but I can see the tree trunks rushing past the port wing tip.



The drive from Melville Hall airport takes me south along the choppy, windward east coast, up winding roads, through switchbacks and settlements of a few houses here and there, across some of the island's 300+ rivers, over a pass in the centre of the island, down the other side and along the tranquil west coast to Roseau, the capital.

Family-owned and run Castle Comfort Lodge and Dive Dominica are my hosts for three days, and greet me with a wicked rum punch. I will soon learn that Andrel the barman has a range of his own concoctions, some of which are award winners. (Andrel's Antidote was my personal favourite, a mix of various rums, juices, and spices that somehow tastes like you could have it for breakfast.)

With no beaches in Roseau, the hotel's bar and restaurant are right over the water,

facing the sunset, and the dive centre is on site. My room, one of 17, was 30 seconds from everything so in no time my bags were in my room, my dive gear in the dive centre fffffor the following day's diving, I was perched on a bar stool chatting to fellow divers guests Martin, Joe, and Marco.

At 0845 the next morning we boarded one of Dive Dominica's dive boats, a twin hulled affair that can take 20 divers. We picked up three from the hotel next door and a group of 10 from Fort Young. With 17 of us on board, three dive guides came along to look after us.

After a 15-minute ride south we were at Scott's Head Drop Off, so called as this promontory is where the British Garrison commander Scott was decapitated by the French. The island changed hands seven times in total, before the British finally



wrested control of the islands for good.

The briefing was full and thorough, and then down into the clear blue Caribbean waters went I. Whilst not having the diversity of other warm water dive destinations, the Caribbean has its own unique fauna, and the reefs here are rich in sponges and endemic corals. Schools of the strikingly blue Tomato swam past on the wall, trumpetfish lurked in wait for prey, and improbably shaped trunkfish pattered around.

It was a pleasant start. The second dive took us to Soufriere Pinnacles, just off shore from the picturesque village of the same name. A series of underwater mounds, the Pinnacles are literally covered with in stovepipe, rope, and barrel sponges, and colourful schools of grunts and snapper.

The guiding was unobtrusive; the guides pointed out fish of interest and looked for critters, but were happy for buddy pairs to explore at their own leisure and both dives overran the intended max dive time of sixty minutes. Nitrox is available but really not necessary, there is reef from deeper than you can safely dive to the safety stop, so long dives on air are easy.

Despite the long dives and even with a surface interval over an hour, we were sitting down for lunch before 1pm. Martin, Joe and Marco were going for a shore dive later that afternoon, but I was signed up for an afternoon whale watching trip. Dominica is home to approximately 50 of the world's largest carnivores, the sperm whale.

Year round mothers and daughters cruise the deep waters a few kilometres off shore and, between January and April when the sea is a little cooler, are joined by males looking to mate.

Using a hydrophone, we listened out for their distinctive clicking, like a superfast morse code. Occasionally the enchanting lullabies of passing humpback can be picked up, but not on this day. After an hour we heard a faint sound, and 10 minutes' cruising later saw our first water spouts.





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By Christopher Bartlett
A mother and calf swam in front of us, their small dorsal fins dwarfed by their body length. After a few minutes they gave a final spurt from their blowholes, raised their tails as if to say goodbye, and dived down into the depths looking for food. Once they commence a deep dive there is no point hanging around, they can dive down to three thousand meters and go down for over an hour.

Fortunately the whales tend to stay close to each other so it only took us a few minutes until the next jet of water was spotted. Over the next couple of hours we observed half a dozen pairs, and when we headed for home, the crew served sundowners n either fruit punch or a gingery, nutmeggy concoction of Andre's confection.

The next morning we dived at Swiss Cheese, so called because of the number of holes and swim-throughs, and Champagne, which earned its moniker due to the bubbling natural warm underwater spring found on the sands at the end of the dive site. Visibility was the same as the day before,

a good 25 meters or more, and divers set off exploring the sites in small groups. The first site was fishy, with more snapper and Tomate and lots of chromis and large, solitary barracuda, the second started with a wall down to 25 meters and tapered up to a sandy slope and then plateau, dotted with coral heads.

In one a small porcupinefish hovered in a window in a sponge, beautifully framed with the sun's rays beaming through the water behind it. Arrow crabs, more like large underwater spiders than crustaceans, lurked under miniature overhangs, in tiny caves, and on sponges. Whilst looking for seahorses on a small bed of seagrass, Marco briefly found a very small Octopus, and Martin found a scorpionfish in four meters of water under the boat. Another very pleasant morning all in all.

After lunch I swapped lenses and went for a macro dive in front of the dive centre. With no rivers nearby and no public access, the water was clear and reef in good shape. I merrily furtled around with my



camera, finding eels cleaner shrimp with eels and small groupers, boxer shrimp and trumpetfish and juvenile angelfish going about their business.

Joe and Marco had hired a small SUV and invited me to explore part of the island with them. After a run through Roseau, a gander at the market, and lunch in a local eatery, we headed up to firstly the spectacular Trafalgar Falls, and then the ethereal Titou Gorge. Trafalgar Falls are actually two waterfalls, Mother and Father, which plummet down from on high.

Next to them lie natural pools of 30-degree centigrade mountain water, a great place to relax and take a natural spa. Though there are other places to do this too.

Nearby Screw Spa has a constant stream of volcanic mineral water feeding a series of stonewalled pools. The higher the pool the warmer the water. With Joe at the wheel the more places we stopped to relax, the better.

Marco took over driving duties for the trip



By Christopher Bartlett

up to Titou Gorge, where the water was a refreshing 21 C and the final swim to the base of the waterfall energetic with a camera housing in hand.

Above the narrow gorge, barely five meters wide in parts the forest is lush and verdant, the full canopy hiding much of the cloud cover, the steamy air filled only with the sound of the rushing water below. From the base of the Gorge it is a five-minute swim through the dark and narrow passage to the open and bright natural light of the shaft carved out by the waterfall.

There isn't much to hold onto and the bottom is five meters below, so once I'd made it as close to the Falls as I could get swimming one handed, I drifted gently back to the entrance, and another warming natural spring.

The most spectacular spring of all though must be Boiling Lake. Located in Morne Trois Pitons National Park, a World Heritage Site, it is a 60-metre wide flooded fumarole at the end of a demanding but spectacular path. The hike goes past thick purples mosses and rare orchids that can only grow due to the sulphuric gasses released through volcanic vents and hot springs. The source of the heat is believed to be a magma chamber beneath the lake. The 4-km return walk takes around six hours and although it can be hard work in places, is a great way to experience pristine Caribbean rainforest.

Colibistrie sits 30 minutes north of the capital, still on the east coast, around 30 minutes south of Portsmouth, once the capital until the French had had enough of the surrounding mosquito-ridden swamps and shifted it south. The names of other settlements bear witness to the island's bilingual past, with Colihaut and Bruce's Castle being more prime examples.

Colibistrie is also the nearest settlement to Sunset Bay Resort, the fruit of 17 years' dedication and graft, the dream of a Belgian couple of restaurateurs, called Marcella and Roger.

Set just back from their own beach of volcanic black sand, the 11 rooms are comfortable and spacious, with a pool, sauna, and river. The in-house dive center is on the premises, just down a short flight of steps from the restaurant terrace. I arrived in time for aperitifs, generous servings from a selection of fine rums, before fish soup and the house speciality, a huge plate of lobster, both spiny rock and slipper varieties, served with frites and croquettes, naturellement. After washing it down with a few Kubuli beers, and Roger's ritual "digestif offert par la maison" of eight-year old rum, I was ready for bed.

The morning birdsong was delightful, and the flat sea twinkled at me as I ate my breakfast of perfect crepes, eggs, bacon, and fruit. There were only three of us diving, and dive guide Stephan, an ex-reef scientist-cum-dive instructor, took us to Rina's Hole, which sounds even more inappropriate when said with French intonation and accent, and Coral Gardens. The reefs here are more of the sloping variety rather than the sheer walls and pinnacles of the south, but the coral and sponge life is just as good, with large coral heads and swim-throughs, fields of swaying fern-like fans, solitary great barracuda and the occasional turtle.

With the amount of sponges around and Bommie to sleep under, it looked like turtle heaven, and evidence of their regular mealtime visits was plentiful.

The house reef is also excellent, dropping off surprisingly quickly, as I hit 35 meters in the afternoon with the bottom some way below me still. Yellow-tailed barracuda swam around a pinnacle at 14 meters, some jacks chased baitfish Whilst garden eels swayed mesmerically on the sandy slopes.

Despite the feasting in the restaurant, lobsters were abundant and ventured further out of their hidey-holes than others I have seen elsewhere. 90 minutes flew by and only my air gauge needle made me surface, though the smells wafting down from the kitchen en as I rinsed my gear



By Christopher Bartlett

dispelled my regrets.

There are a dozen dive sites that Sunset Bay dive regularly, some as out and back circuits from the boat, others as drift dives. Nose reef, a series of Gerard Depardieu-esque proboscii-shaped ridges starting at 40 metres and running up to 14, and Whale Shark were my favourites.

Of course Whale Shark has no whales and no sharks, though I did find a partially eaten dead stingray, but was once the site of sighting, according to local lore. Stephan made an admirable but futile attempt to teach me some endemic coral names; I was finding it hard enough to remember the names of the different rums Roger was giving us.

The northern half of the island also has plenty of non-diving attractions. I went for a rowboat cruise up the Indian River, the only navigable river in the country.

It took an hour to row up to the last

navigable spot (to be more precise, it took the guide an hour to row, I just sat, looked, and listened). The scene with the witch from Pirates of the Caribbean was filmed here, but the attraction for me was the lush scenery, the bird life and the crabs living in the tree roots. The ruins of Hampstead Estate at Hampstead beach, Red Rocks beach, and the Carib territory, where some 3000 Caribs live, are all worth a visit, too.

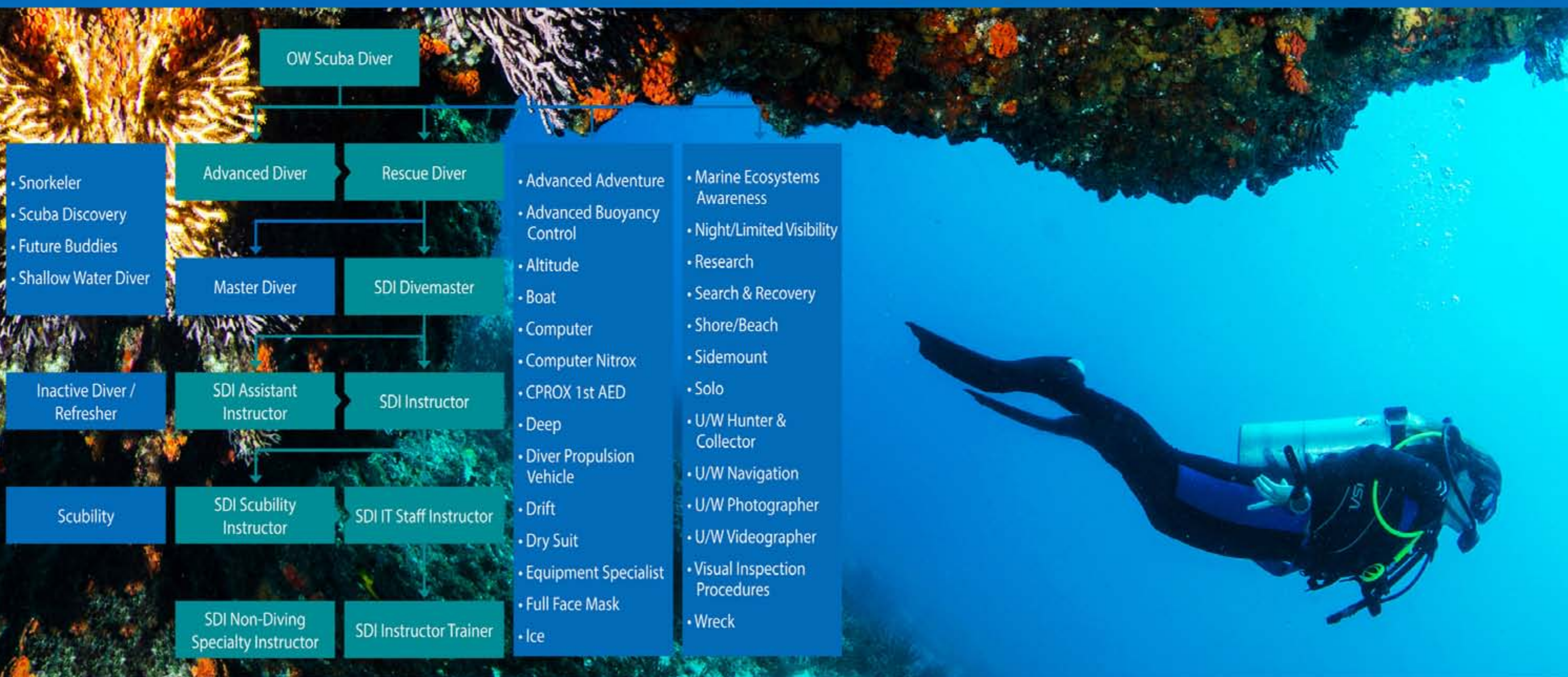
And the island is a hiker's paradise with a 14-segment south to north trail traversing the island. One can do the whole thing in 10 to 14 days, or just a few segments, either camping or staying in guesthouses along the way. For active travelers and nature lovers, Dominica is the jewel in the Caribbean crown.

Indigo Safaris organizes tailor-made trips to Dominica covering accommodation, diving, hiking, guided walks, and vehicle rental. See www.indigosafaris.com or email info@indigosafaris.com





Scuba Divers Trained Here



Pemba & Mafia

the stuff of dreams

Whether you are a diver who would like to spend a few days on safari, or a safari nut who would like to spend a few days diving, Tanzania and its islands have plenty to offer and excellent air links make getting around a cinch. If you're mad about both, like me, then it's a dream come true.



By Christopher Bartlett
Basking in the warm waters of the Indian Ocean, there are three main islands off the Tanzanian coast, each with its particular attractions. Straight east from Dar-es-Salaam, the main port of entry, lie the spice islands of the Zanzibar archipelago, made up of bustling and touristy Unguja (often erroneously referred to as Zanzibar), and the hillier and sleepier Pemba.

Slightly to the south is the flat and sparsely populated Mafia Island, home to the Mafia Island Marine Park.

Pemba Island

The 30-minute, half-empty flight yielded picture-postcard aerial shots of Mnemba atoll and uninhabited islands and reefs before touching down in ChakeChake, Pemba's biggest town, half-way up the west coast at the end of a long, mangrove-lined creek.

The airport is a small ramshackle affair, and despite a plethora of attractions including atmospheric ruins, primeval forest, unique bird species, deserted beaches and some of the best diving in the Indian Ocean, Pemba



often hosts less than 100 tourists at any given time.

ChakeChake has the only ATM on the island and is the main commercial centre, but don't expect to find a Pick n'Pay. There are several narrow streets of small shops, many selling khangas (the local sarong) and fabrics, tailors and the odd local takeaway with soggy chips and chewy meat skewers. There is a market with fresh produce, fishmongers are often seen wheeling their goods around in the baskets of their bicycles, and it's well worth a wander round the dusty streets.

Other than the daladalas (public transport on flatbeds fitted out with bench seats and a low roof), the only traffic to watch out for around the market might be the odd ox-cart. A few hundred metres north of Barclays Bank I went past the main mosque, where a pick-up game of soccer was occasionally interrupted by grazing cattle straying into the penalty area.

The lack of tourism and low coastal habitation have helped keep Pemban reefs in good condition. During the European summer when the cooler water is coming up there are plenty of rainbow runners, kingfish, sailfish, yellowfin tuna, pilot trevallies and big-eye and giant trevallies who like the slightly cooler water coming up from the deep channel between the island and the mainland between May and November.

Renowned marine biologist and author, Dr. Ewald Lieske, thinks that the three gaps of Uvinje, Fundo and Njao are very special, partly due to the diversity of fish, marine scenery and good coral health, and because there are no people that impact the kindergarten as it is too deep.

In an interview in 2010 he said that, "These three gaps always have something to offer the diver. Good coral growth, good fish life and sponge growth. That is important for diversity, these big barrel sponges and finger sponges. Uvinje has a very good fish count.

It is better than 60 places that I have seen on an expedition in the Maldives in spring 2007 with 16 biologists. And that is saying something." It certainly is, and the sheer, coral-covered walls of these gaps are the main reason I keep coming back here. Swahili Divers and the KervanSaray Beach



eco-resort on the northwest coast are run by FarhatJah, with a seemingly eccentric mixture of Turkish and Indian heritage with a British upbringing, and his Dutch wife, Cisca.

Known by locals as Mr. Raf, and just Raf to anyone else, there is something of a young Basil Fawlty in him that, whilst a little surprising initially, is ultimately endearing. The accommodation was built in 2008 from local materials, and the quarry where the bricks were cut is, well, a stone's throw away. It is the best priced on the island with both dorm beds and double suites, and good value packages. Food is wholesome and filling, and is locally-sourced and cooked with love on charcoal stoves (the chocolate biscuit cake is a speciality).

As the RIB zipped across the top of the flat sea, taking us to Deep Freeze, Raf regaled me with stories from his ten years on Pemba. He pioneered much of the diving from the island, and has discovered many of the sites himself, hence the odd names.

You'll find no Aquarium here... Deep Freeze, Slobodan's Bunker (after the ex-Serbian warmonger), Egger's Ascent, and Emilio's Back Passage to name a few. With a wealth of knowledge of the reefs and conditions,

Dive the Globe

Pemba & Mafia

By Christopher Bartlett
years of experience, and a passion for underwater photography and videography, you can pick up a host of tips from Raf, provided you can keep up with the rapid-fire conversation.

The ride had been soothing, re-enforcing the remoteness of this small island 50km off the coast of one of the poorest countries in the world. We passed locals in sailing dhows or dugouts, fishing teams of up to ten men swam nets into a circle, slapping the water as they went to scare fish into the net. A

lone spearfisherman here and there in Jacques Cousteau masks and an elbow-grease-powered spear hunted for dinner. Looking down as we kitted up, the table corals twenty metres down were clearly visible. Backwards roll, hot tub, okay, going down. Equalize, all together? Look around. Wow... With a capital 'W'. On one side was a wall, like the top of a submerged mountain, covered in hard and soft corals of all descriptions, positively teeming with fish.

On the other, the bluest blue, near perfect viz, dropping down, and down, and down. Lucky there is no point talking underwater, because I was speechless. There was not one moment when there was not something to watch. The surface interval snack of still-warm crepes was taken on a deserted island of fossilised coral and white sand before heading off to Slobodan's Bunker, best described by looking down on your hand with digits splayed, each gap a ravine in the reef full of marine life. Skirting round the end of one 'finger', the faint but unmistakable outline of a hammerhead cruised past in the distance.

Sharks and rays are not everyday occurrences here, but I seem to bring luck with me. The following day, at Le Trek, we watched four Napoleon wrasse pass below us and a school of barracuda cruise by as we kept the wall left shoulder. Then one of the five other clients started babbling and bubbling loudly, pointing back to the right. And along came a 6m wingspan manta, accompanied by the largest and ugliest old cobia I have ever laid my eyes upon. She glided by on the outside to the edge of visibility, then turned, slowly soaring back under me and up over the group.

Over the next two days, I had the depths



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and the schools of big-eye jacks of Snapper Point, the barracudas, grouper and assorted morays at Trigger Wall and Trigger Corner, the pipefish of Murray's Wall, the eels, nudibranchs and anemonefish of Egger's Ascent and Chelsea Gin and the gazillion fish of beautiful Manta Point (but no more manta luck) to play with.

Dives were broken up by picnics on tidal sand islands and incredible coves in cyan waters under cloudless skies. It was blissful; more dream diving.

Maybe it's a mix of the remoteness of the island, the remoteness of Raf's sites, and a touch of the dreamer in me, but the diving here felt like real adventure, as if all I needed was a red woolly hat and I was the re-incarnation of Commandant Cousteau. There was little time for dreaming though, as it was time to indulge in some more island-hopping, via Stone Town and Dar, and venture into the unknown to check out Mafia Island.

Mafia Island

Mafia Island lies 30 minutes south-west of Dar-es-Salaam by light aircraft and has

two main attractions: snorkelling with the seasonal whale sharks off the east coast of Kilidoni from December to March, and diving on the outer reefs of the west coast and a couple of passes on the edge of Chole Bay, the location of several dive lodges.

Kinasi Lodge is the pick of the bunch, with a beautiful pool and beach, thoughtfully appointed rooms and plentiful gourmet cuisine. Owner Peter Byrne is a committed environmentalist and the lodge has solar water heating, biogas, composting and grey water recycling projects on the go. With only 13 suites spread around the large grounds, it is easy to relax and feel pampered, and for those who would like further pampering, there is a spa and massage centre on site with a resident Thai masseuse and masseur. In terms of a luxury to price ratio, Kinasi Lodge is certainly one of the best places I have visited, anywhere. The totally chilled atmosphere is reflected throughout. Diving is carried out from a traditional wooden dhow powered by outboards.

Departing after breakfast, lunch is generally taken on the boat between dives, unless



tides dictate an early start in which case a hearty mid-morning snack is the order of the surface interval and late lunch is taken on returning to the lodge.

Kinasi Pass is relatively barren in terms of coral when compared to Pemba, but it has a surprising quantity of fish – snappers are plentiful, morays and schools of barracuda are common, and it is rare to not see at least one large grouper per dive here.

This is due to the tide that brings in fresh sea water and nutrients every twelve hours, which also means that it is important to dive it on a slack tide so as to get the best visibility and the least current.

Of the reefs outside the pass to the north, Dindini Caves north and south are a long series of overhangs in the rock wall that drops from the reef top at 6m down to the bottom at around 30m. Visibility is nearly always over 20m here and often more, and the overhangs are favourite haunts of large potato groupers.



These cuties can grow up to 2m long and 200kg, and often treat divers with curiosity. Twice they happily hung around to have their picture taken and show that they were not disturbed by our presence. There is also good macro-life on the walls with plenty of whip corals and resident gobies.

The sites at Gina's Pass and Juani are covered in soft purple and pink corals and schools of blue-lined, five-lined and Bengal snapper, and are excellent places to encounter turtles.

On my last full day we headed over to the west coast as it was whale shark season. Between late November and March, plankton blooms occur in the channel between the island and the Rufiji River estuary, attracting the biggest species of fish in the ocean on an almost daily basis.

On a custom-built boat with metre-wide flat pontoons we headed off in search of them. Spotting the dorsal fin of a surface-feeding sub-adult, the skipper positioned us in its



Dive the Globe

Pemba & Mafia

By Christopher Bartlett
path and in we went. Finning alongside a four-and-half-metre male, I snapped away hopefully, the sunlight over my shoulder making viewing an almost impossible task, trying to catch the yellow fish riding its bow-wake. Once it had moved on, the boat picked us up and started to take us further ahead again when another one popped up 15m away, followed by a third. In total we probably saw five or six individuals, and during one quiet five-minute spell, a devil ray turned up and started doing underwater loop-the-loops lest I get bored. Fantastic.

It would be remiss to visit Tanzania and not go on safari. The so-called Northern Circuit has the world famous and unforgettable Ngorongoro Crater, the Serengeti and its massive migration, and the lesser known but most enjoyable Manyara and Tarangire National Parks.

The former is a UNESCO World Biosphere Reserve and home to the lake of the same name, huge flocks of flamingos and pelicans, and its famous tree-climbing lions – the latter has its massive and fantasy-world baobab trees, herds of elephants and over 500 bird species. Both are also excellent for most African mammal species, though the UN World Heritage Site Ngorongoro Crater is the only place where black rhinos can be found in Tanzania.

The south is home to the very accessible Mikumi National Park, the beautiful and little-visited gem of Ruaha, the continent's largest National Park, and Selous game reserve, one of the largest conservation areas on the planet.


This rolling wilderness, studded with the great angular-branched baobab trees, and intersected by the Ruaha River, is known for its magnificent elephant population, huge herds of buffalo as well as for other mammals and, in particular, its bird life.

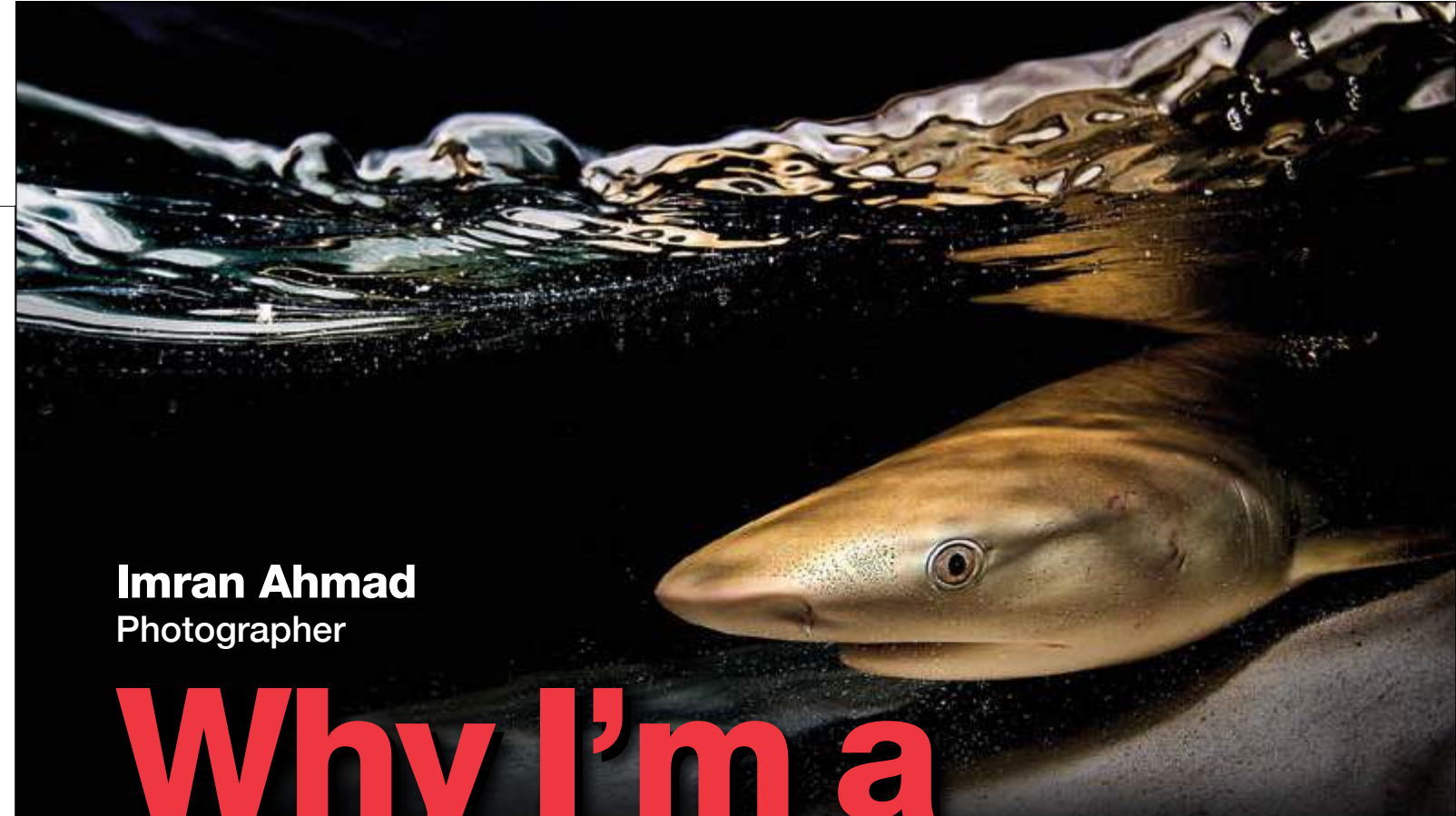
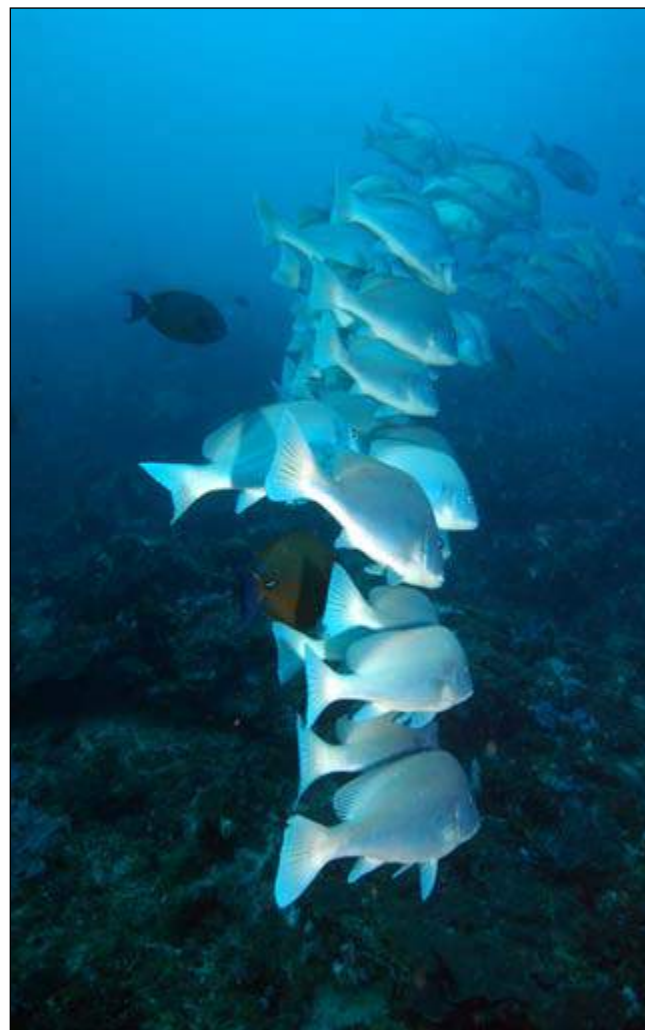
With personal park fees at USD25 instead of the USD100 charged at the flagship parks in the north, and with access from Dar-es-Salaam by vehicle, Ruaha, Selous and Mikumi are attractive options.

As well as diving and safaris there are also treks with donkey portage through the Ngorongoro highlands to splendid Lake

Natron and its flamingos, the Olduvai Gorge, where a 1,8 million-year-old hominid fossil was unearthed, and Oldoinyo Lengai, a 2 878m active volcano. For those who like a real challenge, 4 566m Mount Meru in Arusha National Park is particularly steep in parts, and of course there is the climb to Uhuru Peak, the highest point on the continent atop Mount Kilimanjaro.

There are hundreds of safari companies in Tanzania but KervanSaray and Kinasi Lodge can organise safaris through trusted operators. Depending on where you would like to go, the author has contacts with safari companies too. You can contact him at cb@christopherbartlett.com with any questions you may have.

Further more information from Indigo Safaris, email info@indigosafaris.com, the Tanzanian dive and safari specialist. 



Imran Ahmad
Photographer

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Quilalea

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If you want great diving and to spoil yourself, head up to the tiny island of Quilalea in the Quirimbas National Park. This is boutique diving at its very best.

The uninhabited island is the neighbour of Sencar and the surrounding waters have been designated a marine sanctuary and are endorsed by the World Wildlife Fund. The total protection of this sea has resulted in truly amazing marine life.

At Quilalea you'll never feel part of a crowd. There are two instructors operating from a



well-equipped, PADI dive Resort, so personal service is guaranteed - your gear is kitted up for you should you wish, all you need to do is rock up, do your checks and stroll down to the dive boat. The ever-friendly "marinheiros" (as the local crew are called) do all the hard work. It's simply heavenly to be treated so well!

The reefs are all in pristine condition and the diving is easy, varied and remarkably inexpensive - from December, dives cost only \$25 US - surely one of the cheapest deals in southern Africa! We started with the house reef, which proved to be an absolute delight.

It's only a short swim from the main beach and you're over a shallow and colourful reef where big Napoleon wrasse cruise by, curious green turtles check you out, moray eels and lobster lurk in the limestone crevices and countless colourful reef fish flit in and out of your sight.

There are another dozen dive sites within the sanctuary and this allows you to dive new spots for the duration of your stay. All of these sites are easily accessible on the powerful and comfortable dive boats. There is a host of other activities to amuse non-divers - sea-kayaking trips around the islands and through the mangroves of Sencar, nature walks, sunset dhow cruises and yacht charters, as well as a trip to the nearby historical island of Ibo.



Dive the Globe

Quilalea

By Fiona McIntosh

This was once a major Arab and Portuguese trading port where old forts, a cathedral and other grand, if dilapidated, old houses make for fascinating exploration.

The private island of Quilalea is barefoot luxury at its best, with all the modern conveniences and excellent service you'd expect from a five star establishment (included are satellite television and Wi-Fi internet for those of you who simply can't leave the office behind).

What makes this resort particularly special is the attention to detail. The nine luxurious chalets each have their own wooden deck and shower overlooking the ocean and are widely spaced from each other, ensuring the utmost privacy. Flowers, kikois and bathrobes adorn the big beds when you first walk into your room.

A pre-dinner sundowner is provided for with a bottle of Port and big day-beds provide a perfect place to lounge during the hot days. There are other nice little touches like a book case made from an old dugout canoe and Karma Salaama, a massage parlour built into

the natural rock just above the beach.

At high tide, the water laps just underneath the deck.

The fruits of the sea are delivered fresh every morning by local fishermen in casquinhas and these are then skilfully prepared into gourmet dishes by the innovative chefs. Calamari wraps, crab cakes, fresh lobster and fisherman's quiche are just some of the culinary delights to be enjoyed during your stay.

This is a really special place, with staff that go the extra mile to ensure your every need is catered for. Quilalea has no standing water and is therefore malaria free – an unexpected bonus for your trip.

If you need to distress a bit, I can think of no better place than this little corner of paradise.

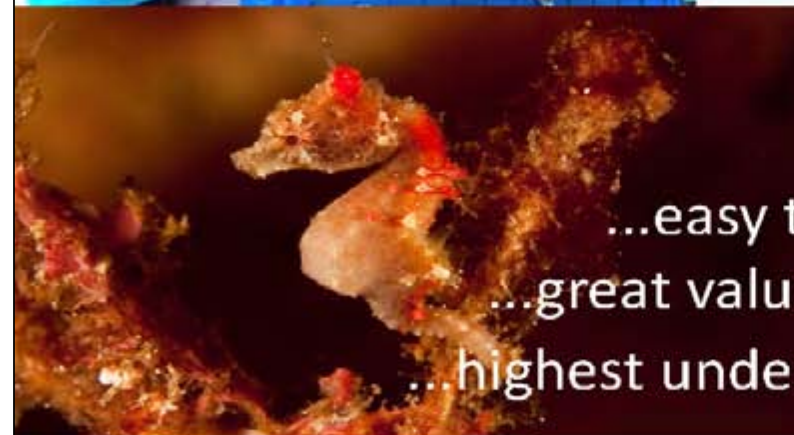
Quilalea reservations: visit their website at www.quilalea.com



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E-19 Massacre Wrecks

Wreck diving has always had a strange attraction to me, sometimes the stark lines and foreboding dark places that become friendly and open with the help of your torch, other times the serenity of an older wreck, the peace and quiet that surrounds the final resting place of something great that once gracefully sailed the oceans.



The history of a wreck never really interested me until I had the opportunity last month to dive 5 wrecks that were all sunk on the same day by the same submarine with no loss of life... this is the story...

I found myself in a sunny Sweden in May, on my birthday, travelling to the little hamlet of Sandhamn in the south of the country with 6 other "hardened" Danish, Norwegian and Czechoslovakian divers.

We kitted up (all on twinsets – full techie setup!!), had some real Biltong and jumped in the duck and off we went. 1 hour and 45 km later we stopped!!

Nico, our very competent skipper, anchored on the first wreck and we started kitting up.

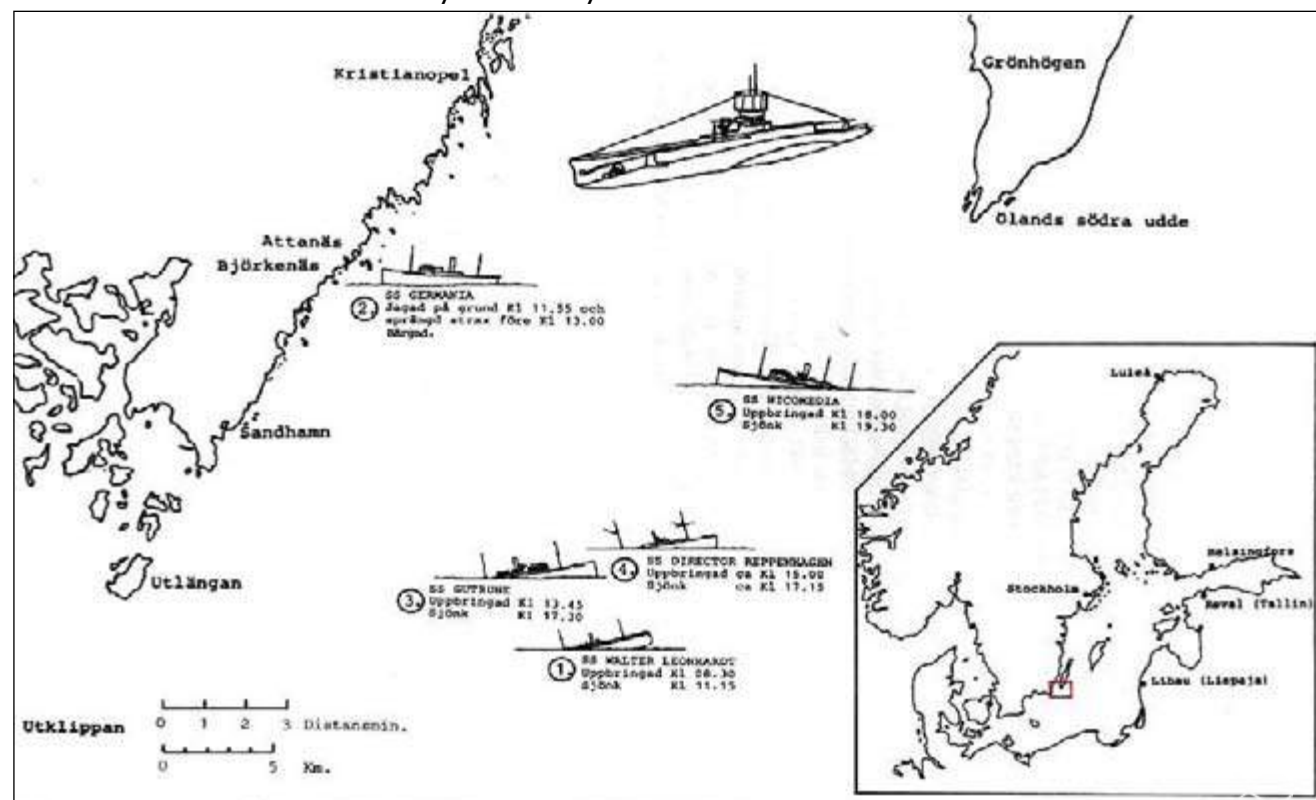
I had my trusty, yet slightly leaky drysuit on with my Otter undergarment which has done faithful duty on many

a "cold" (17 Deg C) cave dive with relatively long deco stops. We were all on Nitrox 36 and had a Nitrox 70 for deco gas (strange deco gas but that's what we had!).

After the standard backroll entry we proceeded down the anchor line to the wreck of the SS Director Reppenhagen. The wreck lies upright and is beautifully preserved in the icy cold waters, viz was up to 15 meters and the water, totally devoid of fish life, a strange green colour.

That's when I realised that I could not feel my lips or hands...or feet. A glance at my computer confirmed what my body had been trying to tell me! 4 degrees C!

The deco stop was sheer hell and getting out of my equipment next to the boat with absolutely no feeling in my entire body was described as "comical" by the others.



By Peter Herbst

They were wearing thermal underwear with all the clothes they possess under their drysuits.

We headed back in the "afternoon" - it was 7 o'clock and the sun was still up. Got back to our guest house and while planning the next day's diving, and finding warm underwear, gloves, hoodies and more warm stuff to wear on the next dive, I discovered the story of the "E-19 Massacre" and the wrecks we were diving.

The English submarine H.M.S E-19, under the command of Lieutenant Commander Francis Cromie, manages in September 1915, as the last of five submarines, to go through the small straight of Oresund, into the Baltic Sea. His task was to disturb the German iron ore traffic through the Baltic which was vital to the German war effort.

But Cromie is not a happy puppy. His first day had not gone well. He had attacked the German steamer Luleå in the south Baltic. None of his four

torpedoes worked, one changed course and missed E19 by only 15 meters, and he had to withdraw. But the next day exceeded all expectations.

Lying south of Öland at 8.30 in the morning of 11th October 1915, Cromie sights S.S. Walter Leonard, a 75 m long German freighter of 1261 tons with iron ore and pulp destined for Germany.

This is still a "gentlemen's war" so, after identifying her as German, he politely asks the crew to man the lifeboats, asks a passing Swedish ship to pick them up and then he sinks Walter Leonard with explosives placed in the hold! The time is 11.15.

Immediately after the Walter Leonard's sinking, a new ship is sighted, the S.S. Germania. She had noticed Walter Leonard going down and tries to flee but runs aground on the Swedish coast. The crew abandons her and E-19 goes up alongside her.

For an hour they loot the Germania and



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after placing explosives in her go out to sea again. The steamer was later salvaged and repaired.

The time now 1 p.m.

Immediately Cromie sights a new target, the 97m long S.S. Guttrune. She was an impressive ship of 3039 tons, a combined cargo and passenger steamer, destined for Germany with iron ore.

E-19 intercepts her and once again the crew is asked to leave their ship.

Once again they are picked up by a passing Swedish ship. Guttrune is sunk by opening the sea cocks.

The time is 2 p.m.

While checking the nationality of another ship, that turned out to be Swedish, E-19 sights a fourth German ship, S.S. Director Reppenhagen, built in 1893, 1683 tons and 80 m long, with iron ore.

The by now well known procedure of asking the crew to leave the ship and then opening the sea cocks is repeated.

The sun was getting low at 5h30 pm but just before dark Cromie sights his last victim, S.S. Nicomedia, 117 m, 1901, a steamer of 4391 tons.

The same procedure takes place but not until the boarding crew is invited for a glass of beer, and a barrel of beer is sent to the rest of E19's crew!

But to no avail, Nicomedia suffers the same fate as all the others.

The crew manages to reach shore in their lifeboats.

So the English submarine E19 had managed to destroy five German ships in one day without using any torpedoes or anyone getting hurt. However, for many years the whole story was

forgotten.

During the summers of 1983-84 all the remaining wrecks were located. Several of the wrecks' interiors were extremely well preserved. Cabin doors and furniture were s

till in place. Curtains were still hanging and other textiles were preserved as well. Inside Director Reppenhagen, mirrors were still hanging on the walls.

The wrecks were documented by photo and in 1985 they were video filmed.

There was also correspondence with Mr. Ben Benson, the last surviving member of E-19's crew, who died shortly afterwards in 1985.

Now, 25 years after the initial investigation, some of the deck structures have started to collapse under their own weight.


This is probably due to rusting after nearly a century. This is typical of the Baltic Sea, where iron rusts gradually, but organic matter can be preserved for centuries.

The beer story has a continuation. When diver Stefan Fransson found cases of the beer on Nicomedia, he found that it was still drinkable! Perhaps this was the same beer that was offered to E-19.!

The idea came up to extract the yeast organisms from that beer and brew the same beer again.

It was a success and a special "Wreckbeer" can now be bought in Sweden!

Like Arnold said...

"I'll be back!!" I am going back in November, with warm clothes and a non leaking drysuit, to do more dives on these wrecks and maybe to sample some "Wreck Beer"!! 



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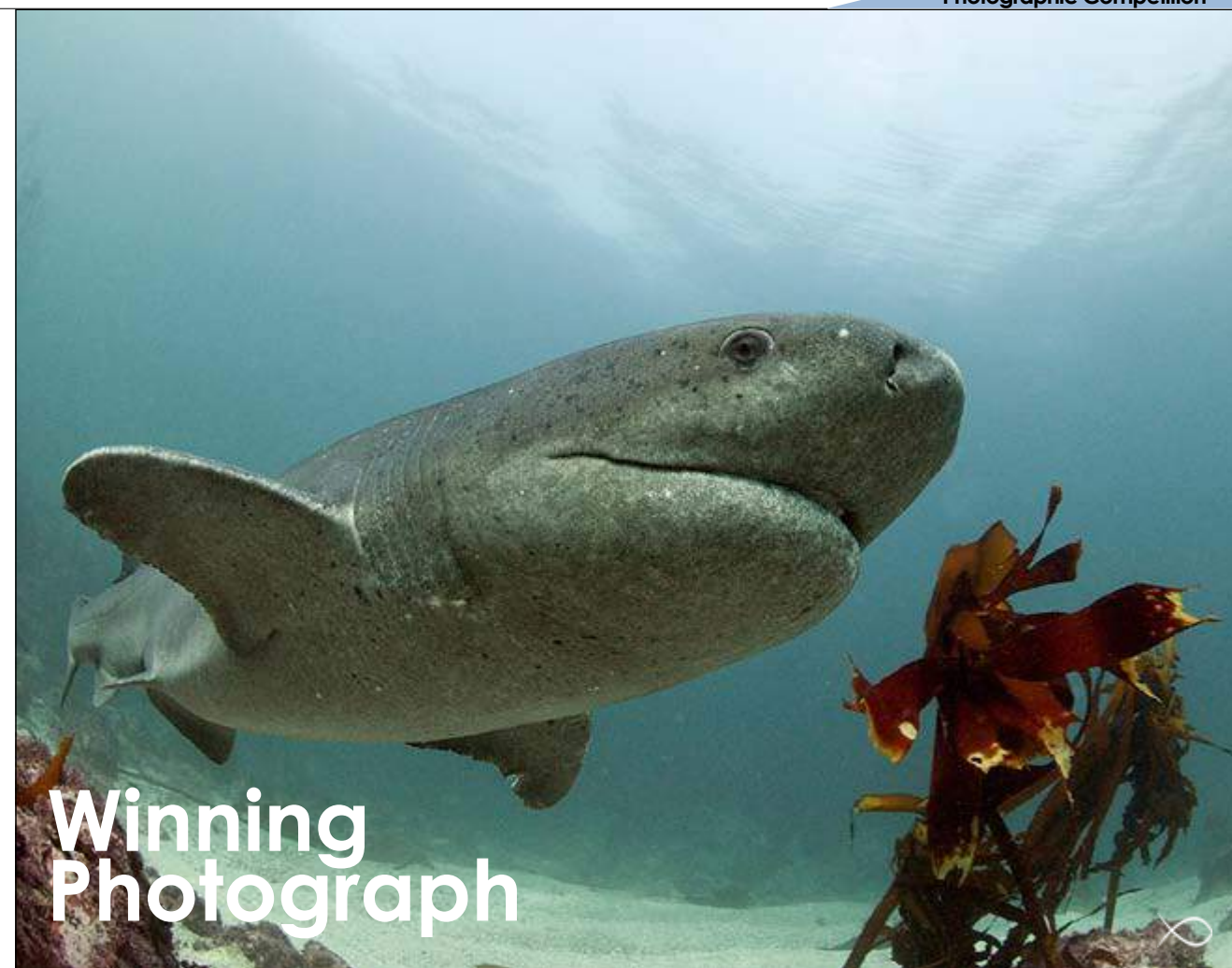
Amilda Smith



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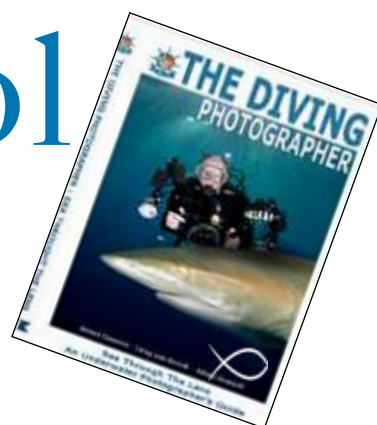
- Photographs may be taken above or below the water, as long as diving remains the theme.
- The Name of the photograph must be the photographer's name.
- Photographs must not be bigger than 5 MB per photo.
- Submit your snaps in high-resolution (at least 150 dpi) in jpeg format.

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Photo School

Composing techniques (Part 6)



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. 

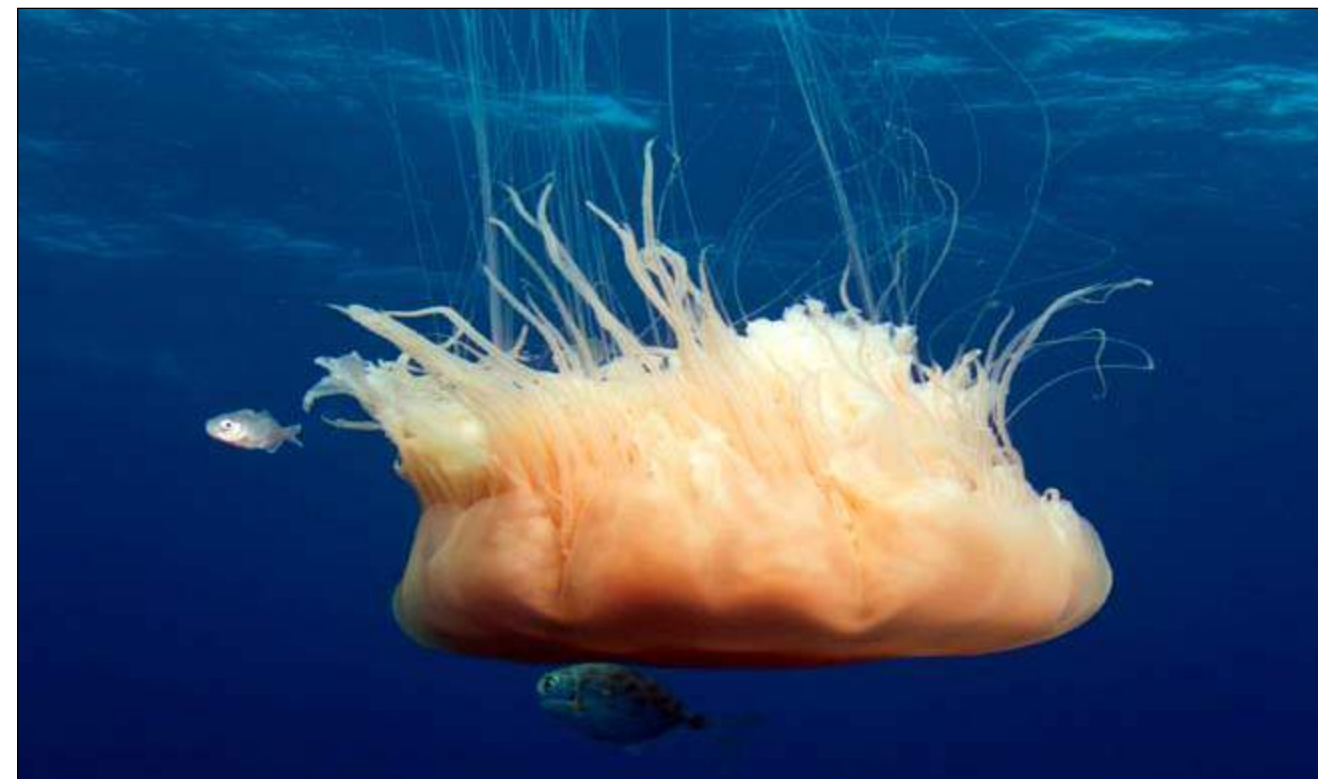


Photo Editing

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:

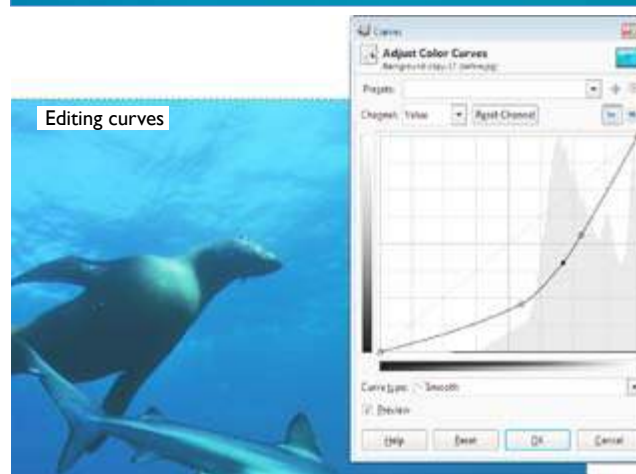
Channel:

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.



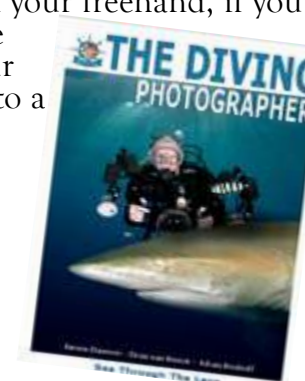
The main Curves working space

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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Circle of life

As divers we are privileged to be able to get up close and personal with the diversity of life that exists on our planet. The purpose of this article is to help you as a diver to understand how the lives we meet under the water are named, interact and possible reasons for their existence. It also tries to explain why there are millions and millions of organisms all constructed into different groups and what their function might be.

By Richard Lomax

If you are lucky enough to encounter, say a seahorse, would you call it a fish? What about Kelp? Is it a plant? What about a sponge?

In the early 1700s, Carolus Linnaeus devised the method by which life is named and which is still used to this day. The system creates a unique name and in so doing classifies the life form.

The abbreviated diagram alongside shows that there are eight principal categories to this classification starting at the top with three domains and ending with millions of species.

The reason why Linnaeus system is still relevant today is because it is able to give unique names to these millions of species. Before microscopes and genetic code identification, classification was simple – if it moved it fell into the animal kingdom, if it was static then it was classified as a plant.

By 1990 genetic evidence showed that most life was microscopic and this microscopic life was not only extensive but diverse. It also changed the way things were classified.

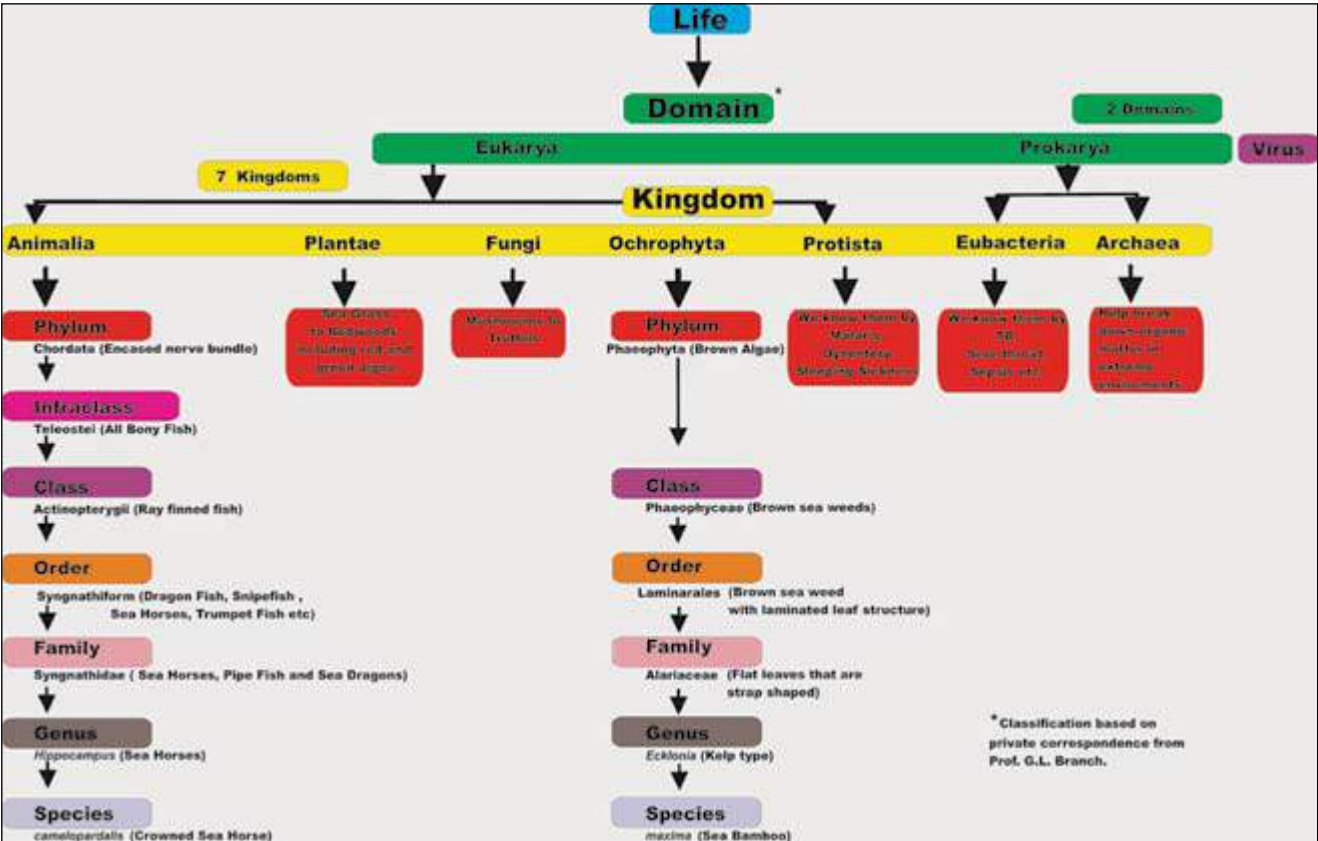
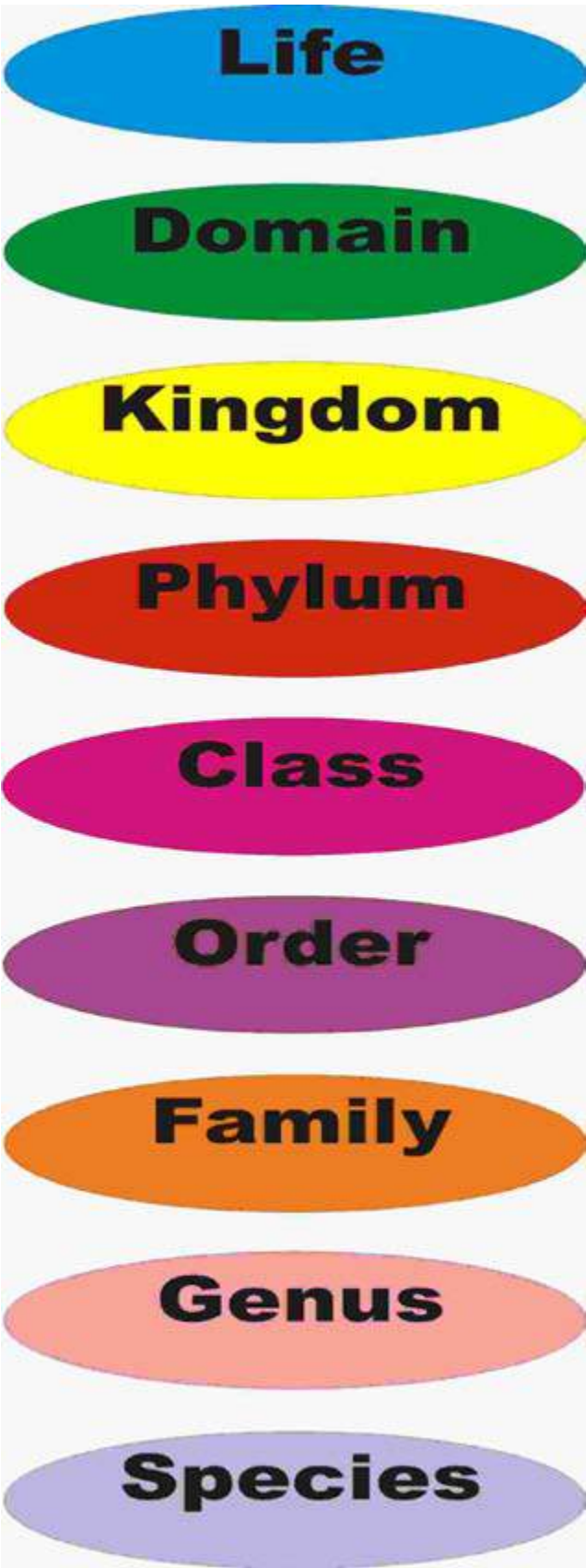
Diagram 2 shows how a seahorse and kelp are named. Naming is based on grouping life forms into categories based on structure, both internal and external, the cellular make up and now recently, also on the genetics.

Let's look at the Crowned seahorse (*Hippocampus camelopardalis* – the seahorse with a dolphin tail, camel's head and leopard spots). You can make up your own mind about how this poor animal got its name! It has cells with a nucleus so it belongs to the domain Eukarya (cell with a nucleus).

Seahorses eat other life forms, move, have a blastula stage and have cells with no cell wall, which makes the part of the animal kingdom. It falls into the Phylum Chordata because of its 'notch cord'.

It has a swim bladder, a skeleton of bone, paired fins, scales and lives in water to name a few characteristics, which makes it fall into the Infraclass Teleostei (bony fish), and because of the fins are webbed, seahorses fall into the Class Actinopterygii (ray small wings).

Seahorses are grouped into the Order



Giant Stride

Circle of life

By Richard Lomax

Syngathiform (with jaw shape) with other fish which have elongated, narrow bodies surrounded by a series of bony rings and small tubular mouths. The family Syngathidae is formed by seahorses and pipefish, Leafy sea dragons and Weedy sea dragons. Trumpetfish, Cornetfish, Snipefish and the like fall into different families.

And finally, all seahorses fall into the Genus Hippocampus. Its unique armoured body profile and upright stature make it different to pipefish. The different types of seahorses are named by their species name. So a 'seahorse' is a fish! And kelp is a type of algae and not a plant!

Diagram three shows the main life forms that we encounter as divers and the reasons scientist have grouped them into these phyla.

For life to exist, atoms need to be extracted from the environment and converted into 'life' molecules to be used as food, energy and building blocks (atoms are the smallest building blocks on which the whole universe is constructed. 'Life' molecules, which are made up of atoms, are the building blocks of life).



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By Richard Lomax

Once the 'life' molecules have been used and excreted, the spent molecules need to be reconverted into atoms or useable 'life' molecules again.

What we know is that every organism exists to keep this cycle working and in balance. How the different organisms interact is still largely a mystery other than to say that their design fits the purpose and niche which they perfectly occupy. What is the purpose of a seahorse? Because we don't know, just shows how little we do know.

Let's illustrate this statement by looking at a recent study involving Pacific kelp (*Macrocystis pyrifera*), Bull Kelp (*Nereocystis leutkeana*) and the Sea otter (*Enhydra species*). The specialised cells in kelp convert carbon dioxide (CO₂, a 'non-life molecule') into 'life sugar' molecules using sunlight as the energy source.

The kelp grows using the sugar molecules and it releases oxygen back into the environment. Without this removal of CO₂ and release of oxygen, life as we know it would die. The other essential 'life' molecules, nitrogen, iron, zinc and phosphorous, are supplied by

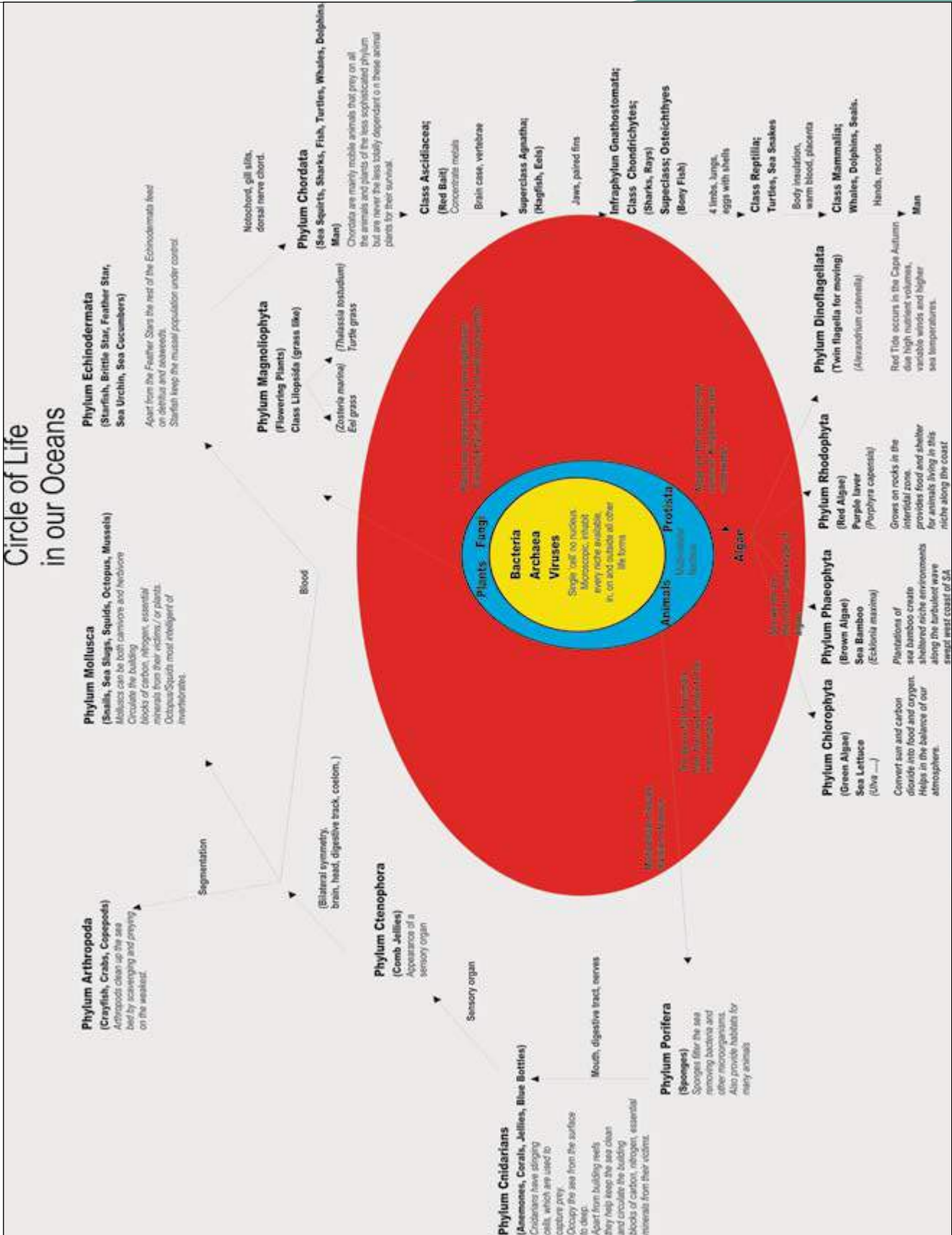
specialised bacteria and archaea living in or on the kelp, which convert these atoms into 'life' molecules. Sea urchins and other animals, eat the kelp.

They are in turn eaten by other animals. One of these animals is the Sea otter, which eats an equivalent of 80 'quarter pound sea urchin hamburgers' a day.

When trapping decimated the Sea otter population, the kelp forests were in turn decimated by sea urchins. Saving the Sea otter saved the kelp forests and all the industries associated with these underwater forests. The simple conclusion reached was, no sea otters, no kelp, no oxygen, no industry, no jobs! Who would ever have guessed?

This cycle of reproducing, growing, eating and dying ensures that the ocean is filtered and cleaned, CO₂ (Greenhouse gas) is removed from the atmosphere and life giving oxygen replenished.

Underlying the whole cycle is a wonderful molecule called RNA. All life is built from the same building blocks – 'life' molecules. The



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A man and a woman are shown from the chest up, wearing black scuba wetsuits with "mares" written on the chest. They are both smiling and looking upwards. The man is pointing his right index finger towards the top right corner. They are on a boat, with palm trees and a clear blue sky in the background. A large red "SSI" logo is overlaid on the image, with a registered trademark symbol (®) to its right. Below the logo, the text "DISCOVER THE SSI REVOLUTION" is written in large, bold, white capital letters, with "SSI" in red.

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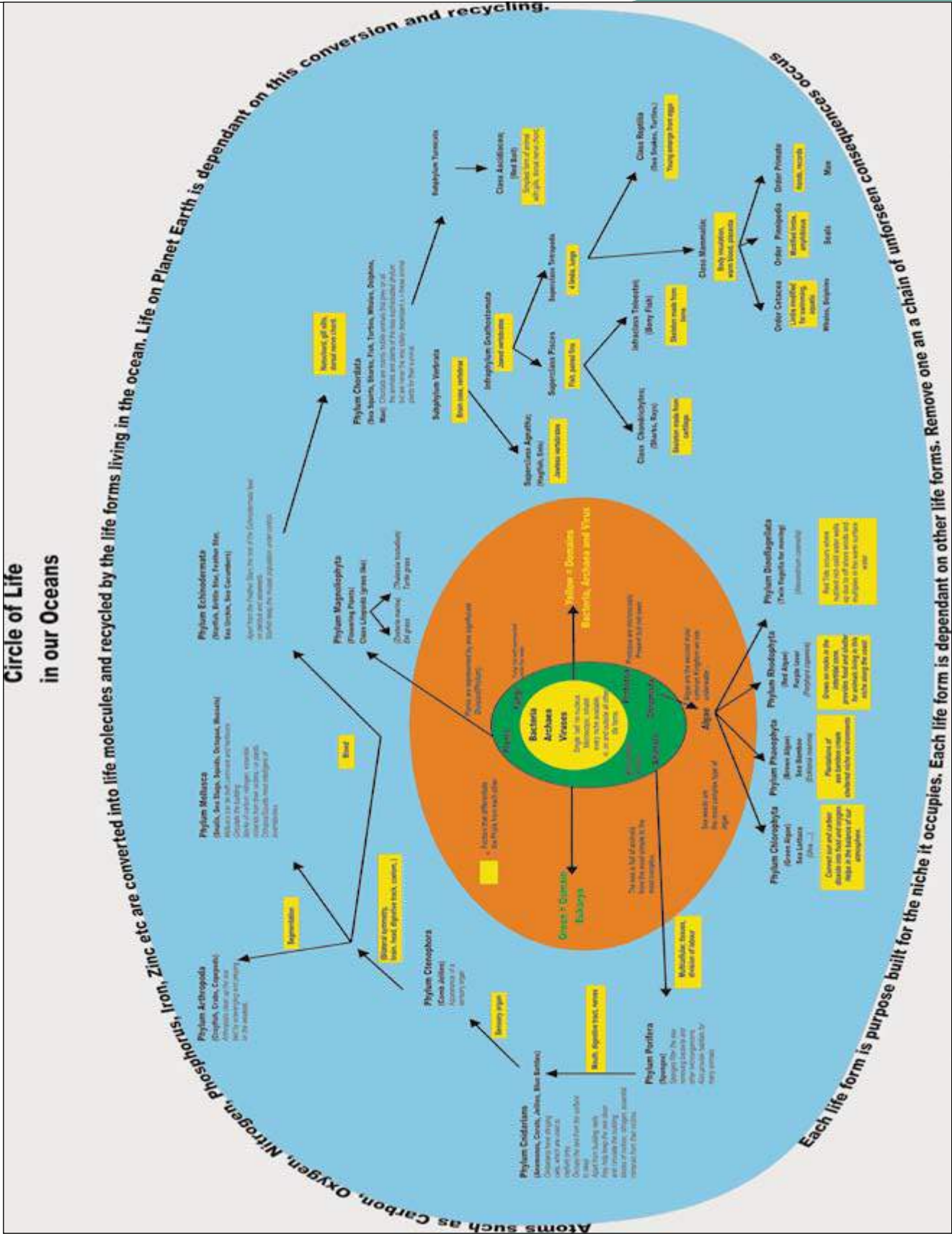
plans for making the 'life' molecules and then putting them together to create a living organism are encoded in the RNA molecule. To explain this idea further think of the 'life' molecules as 'Lego' blocks.

With a few basic 'Lego' blocks the most complex structures can be built. 'Life Lego' molecules build even more incredible structures (life forms), from a microscopic virus to the huge Blue whale. But what is so unique, is that these plans stored on the RNA molecule are used by all life for building the blocks (molecules) and then assembling the blocks into life forms.

And then, when a new life form is created because of a new niche, the blueprint is stored back onto the RNA molecule. Life plans are never lost.

I hope you can now appreciate that all life is special and in general we are ignorant of the purpose of most of the organisms and how they interact with each other to provide a living functioning planet.

So take care of the ocean and all its creatures. We know so little. 🐠🌊



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10 Tips for Underwater Photographers

It is exhilarating to get that perfect shot and preserve your underwater memories, but the protection of fragile environments is key. Before your next underwater photo safari, get familiar with Project AWARE's 10 Tips for Underwater Photographers and inspire your dive buddies to do the same. You will protect your favourite dive site and perfect your techniques at the same time.

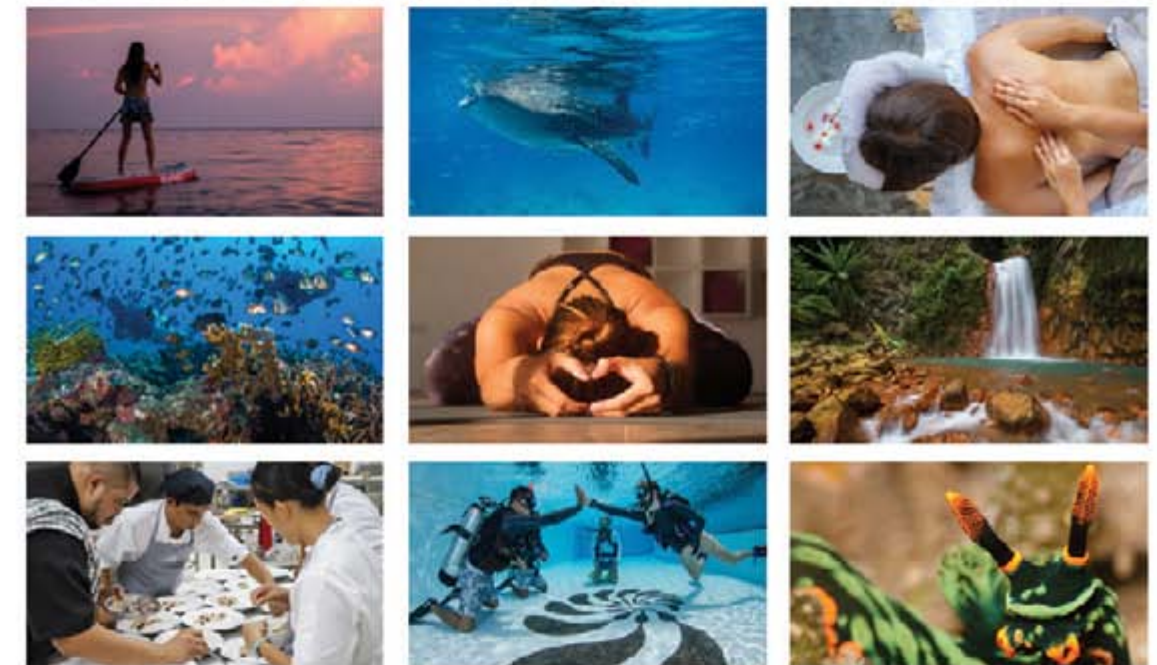
Giant Stride

10 Tips

1. Photograph with care: Dive carefully as many aquatic creatures are fragile regardless of their size. Improper photo techniques can damage sensitive aquatic life and harm fragile organisms with the bump of a camera or tank, swipe of a fin, and even the touch of a hand.
2. Dive neutral: Camera systems may add weight or be buoyant. Be sure to secure photo and dive equipment, and be properly weighted to avoid contact with reefs or other vital habitat. Practice buoyancy control and photography skills in a pool before swimming near sensitive and fragile environments.
3. Resist temptation: Avoid touching, handling, feeding, chasing or riding aquatic life. Avoid altering an organism's location to get the perfect shot. Many aquatic creatures are shy and easily stressed. These actions may interrupt feeding, disturb mating, or provoke aggression in a normally non-aggressive species.
4. Easy does it: While diving, move slowly and deliberately through the water. Be patient and still while photographing – allow organisms to show their natural behaviour for a more significant and meaningful shot.
5. Sharpen your skills: Make sure the difficulty of the dive and the environmental conditions are suitable to your current skills and comfort level. Avoid stabilising underwater by grabbing on to the reef for a better photo. Enrol in PADI's underwater photographer, digital underwater photography and peak performance buoyancy specialty courses to become a more skilled and successful photographer.
6. Be informed: Be aware of local regulations and protocols regarding behaviour around marine mammals and other species before entering the water. These regulations protect creatures and aim to ensure their preservation for future generations.



SALAYA BEACH HOUSES



DUMAGUETE, PHILIPPINES



Photos By Christopher Bartlett

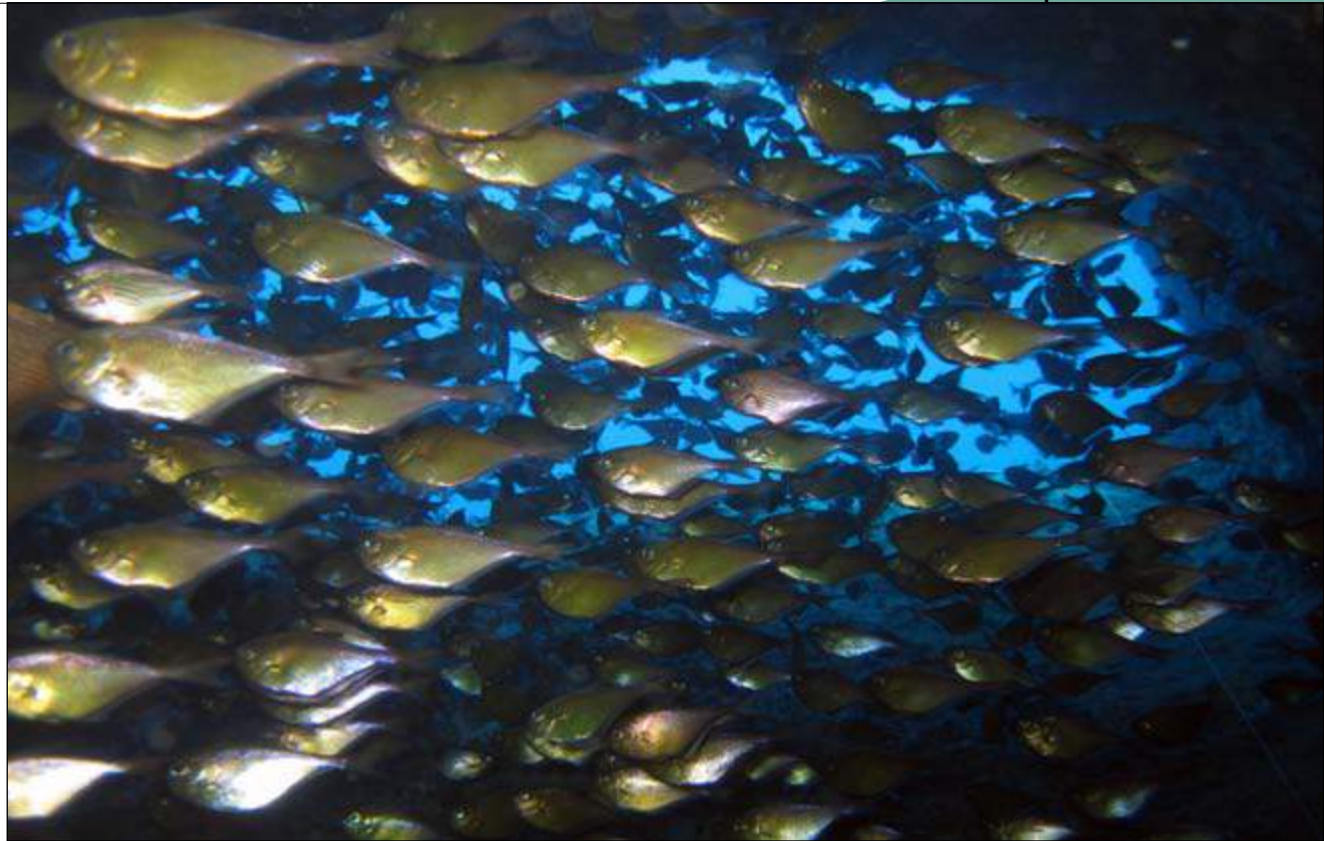
7. Be an AWARE diver: Consider enrolling in an AWARE coral reef conservation, Project AWARE specialty course, or underwater naturalist course to learn sustainable dive techniques and increase your knowledge about the environment that you are photographing.

8. Take only pictures, leave only bubbles: Avoid souvenir collection. Nearly everything found in the aquatic realm is alive or will be used by a living creature. Removing specimens such as corals and shells can disturb the delicate balance and quickly deplete dive sites of both their resources and their beauty.

9. Share your images: Use your images as evidence and report environmental disturbances or destruction. Assist scientific research and improve resource management by contributing your photos to the Whale Shark Project and other monitoring programmes. You may also submit your photos to Project AWARE. Your images have the power to change perspectives and influence conservation.

10. Conserve the adventure: Join the Project AWARE Foundation, the dive industry's leading non-profit environmental organisation. Your support helps to conserve underwater environments through education, advocacy and action.

Download a copy of Project AWARE's 10 Tips for Underwater Photographers from the Education & Awareness section at www.projectaware.org, or e-mail your questions to info@projectaware.org.uk.



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What does isobaric counter-diffusion (ICD) mean?

'Isobaric' means equal ambient pressure, and 'counter-diffusion' means two (or more) gases diffusing in opposite directions. For mixed-gas deco divers, this is a real gas transport mechanism.

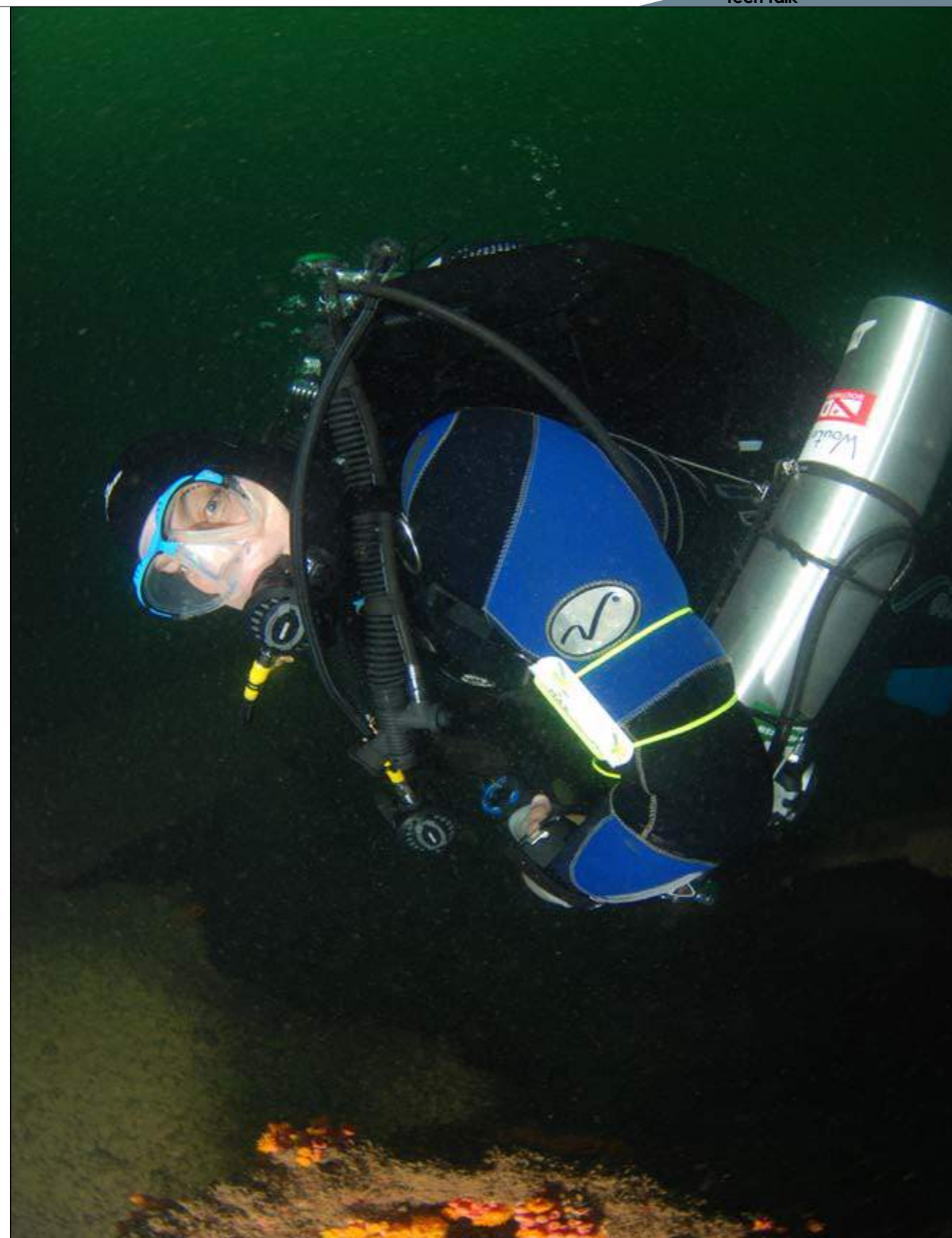
Why is it important?

For divers, the two inert gases are nitrogen and helium. These two gases move through tissues and blood in opposite directions under equal ambient pressure.

The important part is the relative speeds at which the two gases diffuse in and out of the tissues/blood, which can temporarily induce high-tissue gas super-saturation levels and a greater susceptibility to bubble formation and DCS.

Switching from a heavy to a light gas mixture may lead to 'isobaric slam', which can manifest on deep dives as inner-ear vertigo with fluid shifts. The worst-case scenario would be a round window rupture.

A good example would be switching from a deco gas (heavy mixture/higher % of



nitrogen) back to trimix (light mixture/less % of nitrogen) in order to reduce the 'oxygen clock' or oxygen CNS loading.

Another example, and one which has a higher probability of risk due to reasons not fully understood, would be switching from a high percentage of helium mixture in the loop of a rebreather to a lower percentage of helium mixture delivered by open circuit. One of the reasons may well be the longer bottom time's rebreather divers are doing.

Light gases (helium), diffuse faster than heavier gases (nitrogen), and if you were to surround nitrogen-loaded tissues and blood with helium (after switching from open-circuit nitrox gases to trimix back gas), total gas loading will result. The helium will diffuse into the tissue and blood faster than the nitrogen diffuses out, resulting in higher total inert gas tensions which is even more evident switching between rebreather and open circuit.

Divers wearing dry suits filled with light gases while breathing heavy gases may experience skin lesions or 'subcutaneous ICD'. Please bear in mind that not all deco planning software takes ICD into account, so check this with the software designers and compare the run times with alternate logarithms.

If you've been doing this all along and have experienced no such problems, this is probably because most dives in the 80-100m range, for periods not exceeding 60 minutes or so, with short deco switches, do not pose a high risk.

This not to say that there is no risk, however. With more divers doing longer bottom times at these depths, the problem is very real and extra care should be taken, such as careful selection of switch mixers, minimisation of nitrogen, washing out with oxygen/helium (80/20) and then 100 % oxygen – not forgetting the calculation of

the oxygen clock. If the oxygen clock is an issue, stay on 80/20

For the CCR trimix diver, the problem arises if you have to bail out to open circuit. As we all know, the CCR trimix diver does not have to worry about 'slamming' whilst on the loop (provided one does not flush the loop with a different gas), as the pressure gradient in the surrounding tissues and blood is smooth and constant due to the fixed PpO2.


Bail-out gases for the CCR trimix diver need careful consideration, and are very dependent on the bottom time and environment in which you are diving.

To summarise – and to help those divers out there calculating their gases – take some time to look at the full deco-obligation with just your trimix gas, then input deco gases with high oxygen Pp (1.6) considering your CNS loading and keep the helium and nitrogen % mix reduction between 20 or 25%, with each subsequent deco mix gas switch.

Endeavour to reduce the helium and nitrogen gas % in the deco mix evenly but never more than 25%.

At 6msw you have three workable options, and dependent on your individual needs, complete the deco on 80/20 mix or 80% O2 and 20% nitrogen or 100 % oxygen at 6msw. R

remember to keep the reduction of gas percentage below 25 when switching from one deco gas to another and keep the gradients smooth. The downside of this is that deco run times will be longer, the upside is a smoother gas wash out.

I must emphasise that there are no proven scientific facts to any of what I have now explained and the information provided is based on experience gained and dives successfully made in cold and warm waters. 



What are your views on in-water recompression?

Q & A


Nuno Gomes



In-water recompression can be used if the diver is in good enough shape to go back into the water and if the required equipment is available. The most commonly used method is the 'Richard Pyle Method'. This method requires a full face mask

or a diving helmet to be worn by the afflicted diver as well as a means of physically attaching the afflicted diver to a weighted decompression shot line.

The IWR starts with breathing oxygen on the surface for 10 minutes and it progresses to 7,5m if the symptoms have not resolved. It may go as deep as 37,5m using air or an appropriate nitrox. If the symptoms do not resolve early, a 2/8 minute cycle at increments of 7,5m is used to a maximum depth of 37,5m. Usually the afflicted diver would spend 10 minutes on oxygen at the surface followed by 120 minutes at 7,5m on oxygen with five minute air or nitrox


breaks every 20 minutes. The ascent to the surface would take 25 minutes using a 0,3m/minute ascent rate. Once on the surface the afflicted diver would carry on using oxygen until decompression symptoms resolve, oxygen toxicity symptoms are apparent, oxygen supply is exhausted or emergency transport arrives. 

Barry Coleman



The only time I would contemplate in-water recompression would be when diving in a very remote location which provides no alternative. I would also need to have the necessary rebreathers and underwater habitat to facilitate such a

possibility. The only situation that would warrant such action would be in the event of possible DCS – it would be a complete waste attempting any in-water recompression for arterial gas embolism. In-water recompression is a last resort in

a situation where procedures have gone wrong and the location is so far away that the time delay from possible cross border requirements and ascending to altitude would render the risk as high as in-water treatment. Small, one man chambers are not uncommon and not unreasonable to consider for remote location expeditions, and when compared to a diver's life, not unreasonable. If the cost or location prevents surface recompression then the risk to fun ratio needs very close attention. 


Pieter Smith



In-water recompression is a very real option for survival in serious DCS cases. In technical diving the severity of DCS can be as serious as a person only having a few minutes on the surface before it becomes a life threatening situation. It is in

this very small window of opportunity that in-water recompression is the key to life or death. Why do I say so? Because it happened on a dive where I was part of the support team. One diver could not see it through to go back and died, whereas the other one did go back and survived. This person still dives today.

In-water recompression is not necessarily the answer to treatment of all DCS cases, as it most certainly does hold a degree of risk. Where circumstances and facilities allow for a DCS victim to be moved to a better medical facility within the golden hour, then that will be the better option.


In technical diving, in-water recompression must form part of the dive planning and the details be discussed and planned with the entire dive group. As in-water recompression falls within the conscious state of the victim, such a plan must be clearly agreed too and accepted before the diver is taken back down again. 

Pieter Venter



As a back-up diver for deep divers and as a deep diver who has been involved in more than one incidence where in-water recompression was the only option and where it saved a person's life, I know a bit about IWR. For some emergencies it is

the only way that a person's life can be saved and I will not go on a deep trimix dive if no provision is made for in-water recompression. Some emergencies such as a rapid and uncontrolled ascent after a long exposure at depth will be fatal unless the diver is immediately recompressed in-water. In some instances, even if a recompression chamber is waiting ready on the beach five minutes away, I would still take my chances with in-water recompression unless I am unable to dive or am unconscious.

In practice, recompression chambers are hours away from dive sites and are only useful to treat symptoms which arise after a dive has been completed without knowingly missing some or all of the decompression obligations. If I miss decompression stops, I will do in-water recompression or extend my remaining stops whenever I can. Typically, in a severe emergency such as a rapid ascent after a long dive, the person should immediately descend, with assistance, to his first stop, not the deep stops using trimix, and the decompression obligations should be at least doubled, otherwise all available gas and oxygen should be depleted on the extended decompression. The last oxygen stops should be made as long as possible, keeping the possibility of oxygen toxicity in mind. Only after the situation has stabilised should fancy full face masks be used or, if the emergency allows a minute or two, then preferably before the recompression. 

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So you just started diving or have been diving for a while and you want to increase your time on the reef.

So how do you do it? I mean everybody has a limited supply of air or breathing gas on their backs. Once the gas is gone you must leave so the idea is to get as much out of the gas as possible.

You do get different sizes in cylinder capacity and usually larger individuals prefer 15l cylinders but mostly the 12l dumpy is the popular choice. Also, for some reason women are lighter on air than men... There is some speculation around the reason, but let's leave it at that.

A few checks can be performed to increase air consumption underwater. The very first check is to make sure that whoever fills your cylinder does a proper job and that your gauge is at the 200bar reading.

Under-filled cylinders leave you with less bottom time, and after all, you are paying for the gas so make sure you get it.

After the tank is strapped onto your buoyancy compensation device (BCD) or wing, do the normal checks to ensure that all regulators are functioning as well as the inflation valve and wing itself. Also check for any potential leaks on any of the jacks used where hoses are plugged into any type of item. Once this is done close your cylinder and purge the regulators to about 50bar.

This means that the cylinder cannot accidentally waste air when the kit is stacked on the boat. In addition to preventing air loss, the 50bar leaves pressure on the o-ring.

Opening the cylinder on the boat again, the o-ring will be under pressure, already

decreasing the chances of popping the o-ring and potentially spoiling the dive for you. These checks are all checks done on the gear itself, but there are other actions you can take to minimise air consumption.

Once underwater pay attention to how you manage your BCD's air input and output as this is usually where most air is lost. Divers battle with buoyancy and inflate their BCD's too much when they feel they are too close to the reef, thus accelerating their ascent.

When they notice that they are approaching the surface rapidly they usually dump all the air from the BCD which has the opposite effect – now the reef is coming back at a tremendous pace so guess what happens...

Through this scenario, what I am actually just trying to say is, control your buoyancy. Learn how to manage it, go and practice

and don't come with this up and down type of diving as you will get sick.

Next, pay attention to how you swim around the reef. Diving is about relaxing and enjoying the scenery, so don't rush all over the place and swim at full speed. You will get tired quicker and will use more air, so take it easy.

I also know some people experience some anxiety when they go underwater and this can cause the diver to breathe more heavily – the only real way to overcome this is to dive more. Gain the experience, as with everything in life the more experience you have the more you know about it and that leads to a certain level of comfort. Thus check your gear, get your buoyancy sorted and gain experience.

Enjoy diving – hopefully we will meet on a boat somewhere! 



The First Stages



The first stage is probably one of the most important parts of a scuba diver's equipment. Without this small part of equipment, breathing underwater is almost impossible. Here is all you need to know about how this piece of equipment works.

The first stage has two functions:

- To reduce the high pressure in the cylinder to a steady intermediate pressure of 8-12 bar.
- Acts as a distribution and attachment point for high pressure and low pressure hoses.

The first stage of the regulator (mounted to the cylinder via one of the connectors) reduces cylinder pressure to an intermediate pressure, usually about 10 bars (150 psi) higher than the ambient pressure.

A balanced regulator automatically keeps

this constant as the tank pressure lowers with consumption and the ambient pressure varies with depth.

The balanced regulator allows the first stage orifice to be as large as needed to get the flow rate required by a diver doing heavy work with minimum breathing effort.

The first stage generally has several low-pressure outlets for second-stage regulators, BCD inflators and other equipment, and one or more high-pressure outlets which allows a submersible pressure gauge (SPG) or gas-integrated diving computer to read the cylinder pressure.

The valve may be designed so that one low-



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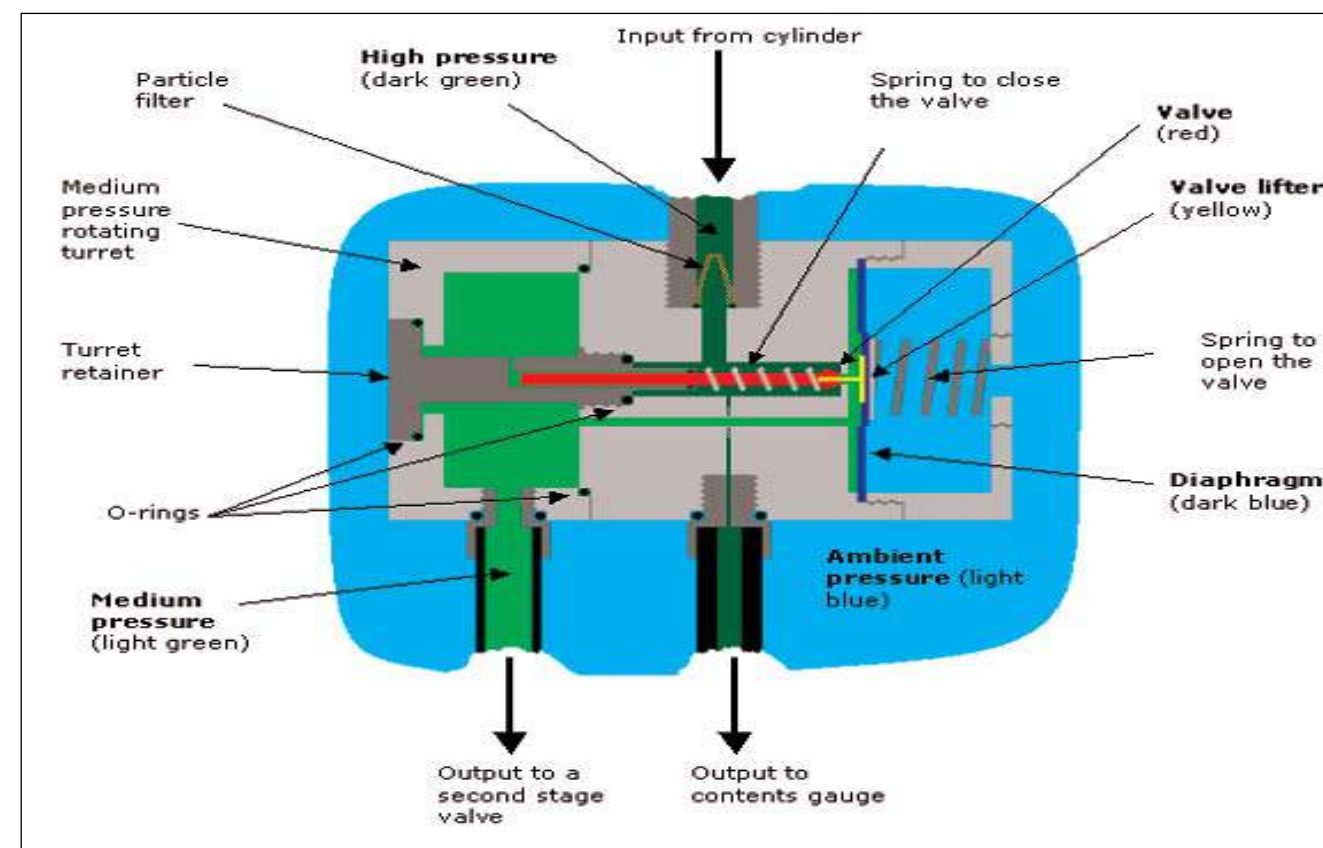
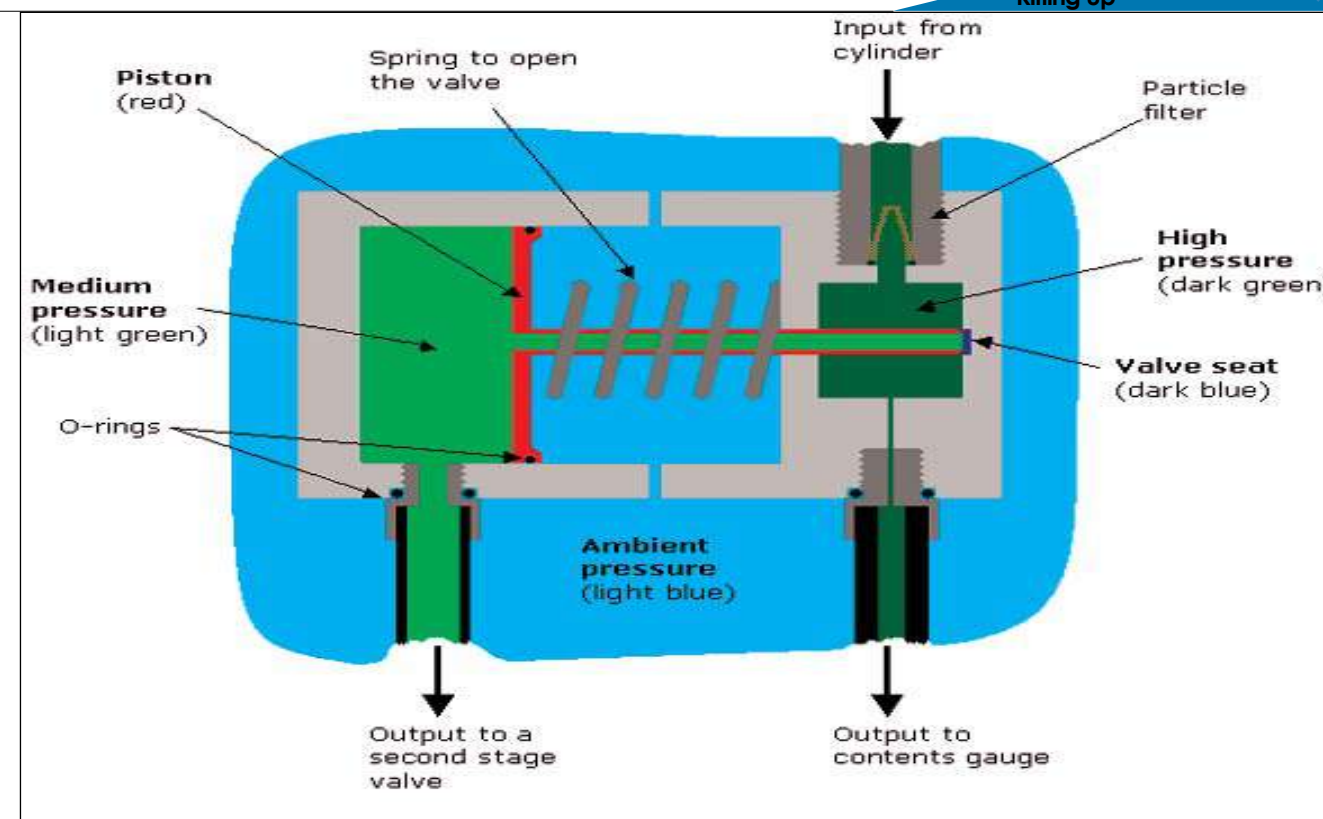
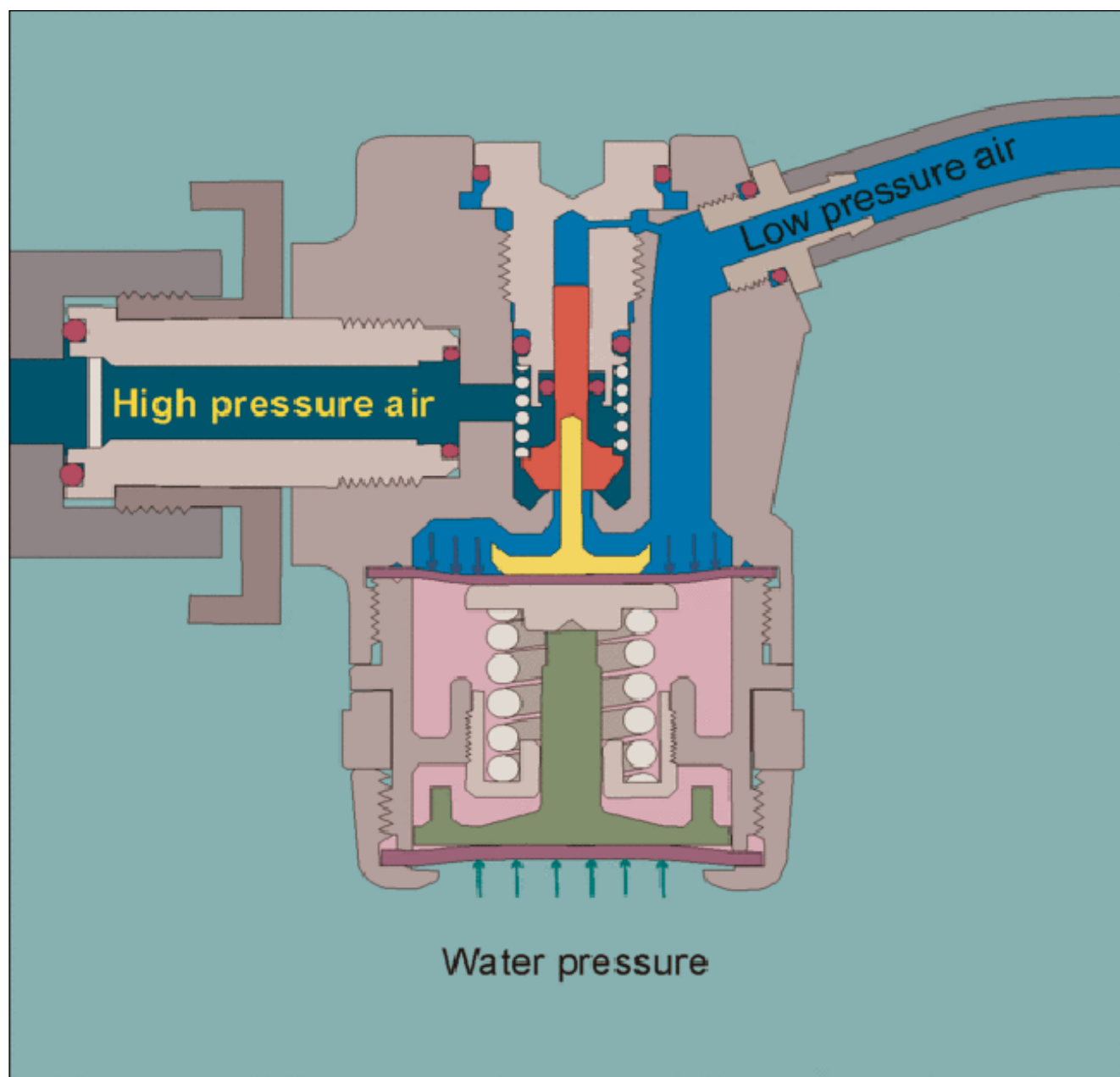
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pressure port is designated 'Reg' for the primary second stage regulator, because that port allows a higher flow rate to give less breathing effort at maximum demand. The mechanism inside the first stage can be of the diaphragm type or the piston type. Both types can be balanced or unbalanced.

Unbalanced regulators have the cylinder pressure pushing the first stage upstream valve closed, which is opposed by the intermediate stage pressure and a spring.

As cylinder pressure falls the closing force is less, so the regulated pressure increases at lower tank pressure. To keep this pressure rise within acceptable limits the high-pressure orifice size was limited, but this decreased the total flow capacity of the regulator.

A balanced regulator keeps about the same ease of breathing at all depths and pressures by using the cylinder pressure to also indirectly oppose the opening of the first stage valve.





OZ DIVER



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WWW.OZDIVER.COM.AU

Marine Species Guide –



Marine Species Guide



Johan Boshoff • Annatjie Rademeyer

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

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

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

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

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

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

The Dive Spots of Western Australia

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

For more information visit www.thedivespot.com.au



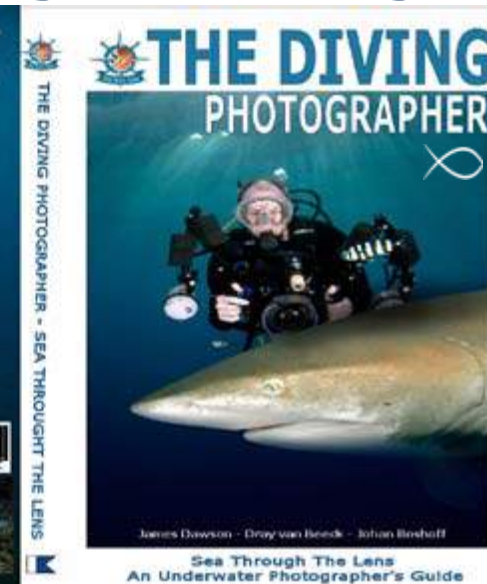
The Dive Spots of Western Australia



Johan Boshoff

DIVE & SNORKEL GUIDE – EXMOUTH TO ESPERANCE

The Diving Photographer –



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

This easy-to-use guide book for the diving photographer can be used by all levels of photographers. It helps you with choosing the right type of camera for your ability – although with all the information presented you will learn

so quickly that you will have to buy a better camera after working through the book! Preparing and setting up your equipment becomes a breeze with easy pointers on how to check and replace o-rings, quick tips on keeping your housing dry and other small things we usually forget to check.

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

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



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


OZDIVER

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



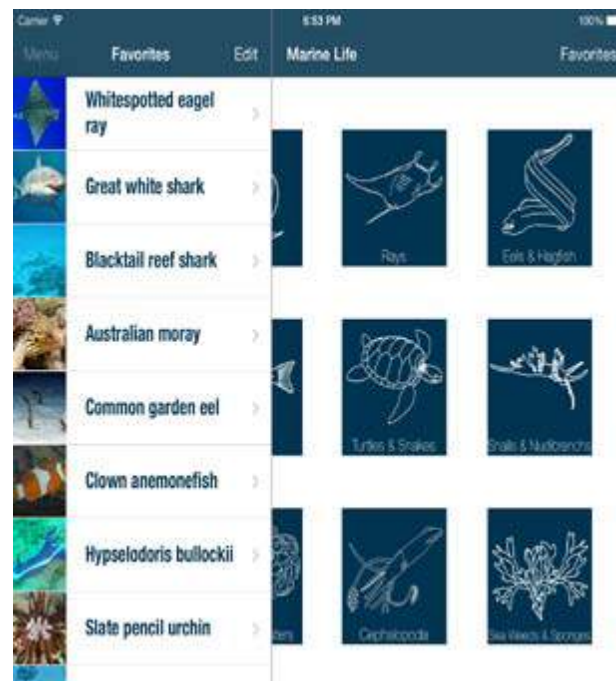
Biological Name
Caretta caretta

Identification

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

Information

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



EZYFLAG for all Divers

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


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

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

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

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

Testimonial

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



The most dangerous situations arise when a diver is diving with a friend or a loved one and needs to impress and so the rules go out the window. It was close to the end of a dive that a 'cool dude' came to the dive master and told him that there was a problem with his regulator and he needed to use the DM's alternate on the ascent.

When investigating the problem at the end of the dive, there was absolutely nothing wrong with the regulator, but was in fact an out-of-air situation which he did not want his new girlfriend to see.

Ever fallen off the boat without clipping your fins closed and ending up leaving them on the boat as you do a backwards roll? It's been done often.

When almost at the dive site the skipper was explaining his count to the new divers. Unfortunately one of the divers was not listening properly and as soon as the word go was mentioned in the explanation this diver did his backwards roll and was off the boat all on his own.

Two divers surface after a long, deep dive. As their heads pop out of the water, a squad of jets (fly low above their heads. The one diver puts his hands over his ears and shouts, "It's those Buccaneers!" To which the other replies, "Yeah, mine are hurting too!"

~~*~~

Bill and Harry had been dive buddies since college. They went diving almost every weekend, summer and winter, dry suit or shorty. On one rare occasion, Bill invited Harry to his home for dinner. (Bill was married, Harry was not).

During dinner, Harry noticed that every time Bill spoke to his wife he used very loving terms - "Honey," "My love," "Darling," "Sweetheart," "Pumpkin," and so on. It was when Bill's wife was clearing away the dishes and carried them to the kitchen that Harry remarked, "That is really nice. After all these years that you've been married, you still keep calling your wife all those pet names."

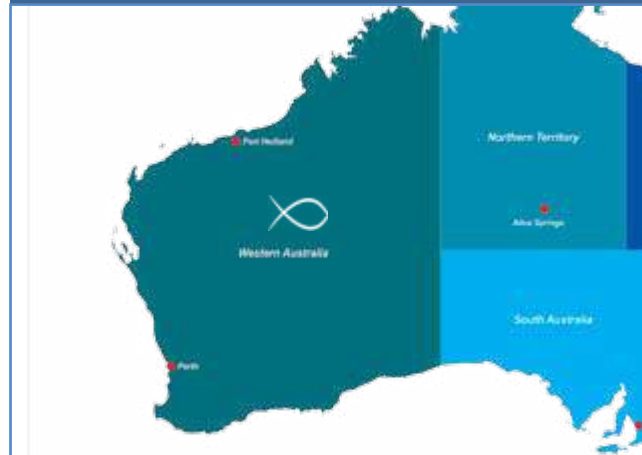
Bill looked round quickly and whispered, "To tell you the truth, Harry, I forgot her name years ago."



Send your funnies to
johan@ozdiver.com.au



Western Australia



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New South Wales



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Australia

Tasmania



Bicheno

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OZDIVER

A large school of yellow-striped snappers (Lutjanus fulvus) is swimming over a coral reef. The fish are yellow with dark vertical stripes and are moving in a coordinated pattern. The background is a deep blue ocean with some smaller fish visible in the distance.

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Christopher Bartlett