Inspiring People to Care About our Oceans Since 1995

DIVERS FOR THE ENVIRONMENT

WWW.EMIRATESDIVING.COM | MAGAZINE | JUNE 2017 | VOLUME 13 | ISSUE 2

DIGITAL ONLINE

REVEALING THIS YEAR'S WINNERS

MOVIE NIGHTS • **RESPONSIBLE SHARK & RAY TOURISM** • KIDS CORNER • **FREE THE DIVER** • DIVING WITH GIANTS • **DIVING IN THE UAE** • ICELAND'S SILFRA CRACK • **GIVE OR TAKE?**

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EDA
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REGULARS

NEWS

KIDS CORNER

REEF CHECK

FEATURES

UW PHOTOGRAPHY

DIVING DESTINATIONS

DIVERS FOR THE ENVIRONMENT

Please note that EDA's magazine, "Divers for the Environment" includes articles written by individuals whose opinions, whilst valid, may or may not represent that of EDA. It is hoped that the magazine can become a platform for individuals to voice their opinion on marine and diving related issues. You are welcome to suggest an article for the next issue of "Divers for the Environment" released in September 2017. Send all articles, feedback or comments to: **magazine@emiratesdiving.com**

COVER

PHOTO BY PHILIPPE LECOMTE
A Digital Online 2017 First Place Winner

REDUCE REUSE RECYCLE

HEALTH

KIDS CORNER – FONT USED: **DYSLEXIE FONT**
Dyslexie font has developed a typeface especially for people with dyslexia called Dyslexie. People with dyslexia have problems distinguishing some letters. They sometimes turn, mirror and switch letters whilst reading. The Dyslexie typeface targets these problems by altering the shape of the letters so they are clearly different from any other letter. As well as this, the spaces between the letters are improved and capitals and punctuation are bolder so people with dyslexia don't read words or sentences together anymore. Representative research among many dyslexics has now shown that the font actually helps them with reading texts faster and with fewer errors.

EDITOR & DESIGNER

ALLY LANDES
Ally is EDA's Project Manager, Graphic Designer, Writer, Editor, Photographer and Videographer. She created and introduced 'Divers for the Environment' back in December 2004 as an educational tool to share information by professionals, conservationists, scientists and enthusiasts from all over the world, to better protect our underwater world.

THE QUARTERLY CONTRIBUTORS

Meet the regular quarterly magazine contributors who share their passions, interests and the expertise of their fields for our readers. Want to contribute?
Email: **magazine@emiratesdiving.com**

SIMONE CAPRODOSSI
Simone is an Italian underwater and travel photographer with a passion for diving and the sea. Simone uses his photography to support environmental initiatives and is heavily involved in local shark and turtle conservation projects.
www.simonecaprodossi.com

PATRICK VAN HOESERLANDE
Diving opens up a whole new world. Being a writer-diver and co-editor of the Flemish divers magazine Hippocampus, I personally explore our underwater world and share it through articles with others, divers and non-divers. You'll find a collection of my articles on **www.webdiver.be**

PAUL WARWICK
Born and educated in the UK, leading to a career as an officer in the British Army. Now a specialist consultant for the UAE Government in between his other interests and passions, which are family, scuba diving (A PADI IDC Staff Instructor), conservation and marine management.

NICO DE CORATO
Blogger, marathon runner, triathlete, divemaster and heli rescue swimmer with Bergamo Scuba Angels. You can check my website **www.dubaiblognetwork.com**, contact me on social networks or email me at admin@dubaiblognetwork.com for information about my articles or just to say hello.

PHILIPPE LECOMTE
Having followed in his father's and brother's love for the sea, French diver and underwater photographer Philippe, took to underwater photography in 2006 after having moved to Abu Dhabi in 2003 and now seldom travels without his camera.
www.plongee-passion-photo.over-blog.com

JESPER KJØLLER
Professionally involved in the diving industry since he started diving in the early nineties, Jesper ran a successful Scandinavian divers magazine for many years. His articles and photos have appeared in books, magazines and websites all over the world. Today he lives in Dubai, involved in marketing but finds time to teach diving to Global Underwater Explorers.

THE UNDERWATER AMBASSADORS

IBRAHIM AL-ZU'BI
EDA Executive Director

Ramadan Kareem! I wish you and your families a Ramadan full of blessings.

I would like to welcome you all to the June issue of 'Divers for the Environment'. Half of 2017 has already gone and we have been really busy at EDA. March saw the Dive Middle East Exhibition (DMEX) – the leading diving exhibition in the region, where the UAE's diving community and the region meets alongside the Dubai International Boat Show to discuss diving updates and share the latest diving equipment news. A visitor survey conducted during the show stated that more than 80% of those that visited DMEX stated that it was good/excellent.

Last month, we held the 9th year cycle of Digital Online – EDA's Underwater Photography and Film Competition which was held at the American University in Dubai (AUD). I thank our underwater photography gurus participating and sending EDA amazing photos of the varied marine life from all the places they have dived. It is very inspiring as usual. I want to congratulate all the participants for enriching EDA's photo library with such amazing imagery – I am sure you will all agree with me when you see the photos in this issue. I also want to thank the judges and the sponsors for another successful EDA event towards promoting for diving, not only in the UAE, but the whole region.

I also want to take this opportunity to thank our EDA Members who continuously share their insightful diving experiences and underwater photography with us. Your insights and articles are imperative in recommending when and where to go diving, as well as what to look out for on trips. We hope your passion and enthusiasm continues and you continue to send us news about your next diving adventures, and we look forward to seeing your next batch of water world snaps! This brings me to believe that all EDA Members, whether you have visited DMEX, attended our EDA Movie Nights with VOX Cinemas or you have participated in our competitions and clean ups, you are all our Underwater Ambassadors, thank you for all your passions!

I do hope you enjoy reading this June issue. We have a busy year ahead with remaining activities and events coming your way. The EDA team is working tirelessly toward another successful year and we're looking forward to seeing you all at the next EDA events.

Happy reading and safe Diving!

Enjoy the summer!

Ibrahim Al-Zu'bi

Ibrahim N. Al-Zu'bi

Inspiring People to Care About our Oceans Since 1995

رمضان كريم

الأعزاء اعضاء الجمعية،
رمضان كريم، نبارك لكم الشهر الفضيل جعله الله عليكم شهر خير و بركة.
نرجو الملاحظة بان ساعات العمل في الجمعية خلال شهر رمضان المبارك ستكون:
التاسعة صباحا و لغاية الثانية بعد الظهر من يوم الأحد و لغاية الخميس.
فريق الجمعية

Ramadan Kareem

Dear EDA Members,
Ramadan Kareem and we hope the holy month of Ramadan will bring you and your families all the best.
Please note that EDA's official working hours will be from 9am to 2pm, Sunday to Thursday.
From the EDA Team

EDA
جمعية الإمارات للغوص
Emirates Diving Association

2017 EDA E-Cards | WWW.EMIRATESDIVING.COM
Photo © Aamer Sulaiman Alhammadi

AN EDA MOVIE NIGHT WITH VOX CINEMAS
MARS THE MAGNIFICENT

On the 10th of May, EDA with VOX Cinemas – Mercato Mall, screened the documentary, Mars the Magnificent, followed by a Q&A with the explorer, Richard Lundgren in person.

FILM SYNOPSIS

The Swedish warship Mars Makalös, (Mars The Magnificent), was built between 1563 and 1564. Mars was involved in one of the earliest 'modern', naval battles. It was the leading ship of King Erik XIV's fleet, and at 60 metres and equipped with 107 guns, was one of the largest warships of that time.

During the Northern 7 Years War in 1564, a Swedish fleet with Mars at the forefront, was sent out to destroy the invading archenemy: Denmark and Lübeck. For many years, people believed that this legendary Renaissance ship could not be found and that it was perhaps just a myth, among many others. But in 2011, after several years of research, it was announced that an old shipwreck had been found by a team of divers, at a depth of 75 metres and around 18 kilometres north of Öland. Mars has a special place in history for being the first ship ever, to sink an opposing enemy ship by gunfire.


VOX
Mars
1564
MAKALÖS
447 YEARS LATER – A MONUMENTAL DISCOVERY
Explorers/Presenters RICHARD LUNDGREN AND JARROD JABLONSKI
Documentary Film MARTIN WIDMAN, DEEP SEA PRODUCTION
Underwater Videography RICHARD LUNDGREN, OCEAN DISCOVERY
Underwater Photography TOMASZ STACHURA, INGEMAR LUNDGREN, OCEAN DISCOVERY
National Geographic JEFF HERTRICK, JENNIFER MURPHY









A RECAP OF DMEX 2017

28 Feb - 4 March 2017 | Dubai International Marine Club, Mina Seyahi

From exciting educational activities aimed at children and beginners, to information on new diving pursuits for the enthusiastic and advanced divers, DMEX gives you the opportunity to experience live and interactive presentations from the industry professionals, find dive shops from around the region in the PADI Village, network with industry leaders in the diving community and gain valuable industry knowledge while discovering the latest and greatest in diving equipment.

DMEX
DIVE MIDDLE EAST EXHIBITION

28 Feb - 4 March 2017 | 3pm - 9:30pm
Dubai International Marine Club, Mina Seyahi

DMEX has something for everyone. Founded in 1988, the Dubai International Marine Club is one of the most established marina and watersports clubs in the region and has become the diving force behind the growth of national and international water sport events in the Middle East. Located on Dubai's rapidly developing waterfront, next to Le Meridien – Mina Seyahi and the iconic Palm Jumeirah, DIMC is the ideal venue partner for the Dubai International Boat Show.

TOTAL VISITORS: 26,389 (151 Nationalities)



DiversDown


SALE
SALE
AQUALUNG





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EXPLORE
PADI


Freedive with NAUI
NAUI
MIDDLE EAST




BEUCHAT




AWARE

SCUBATEC

Dubai International Boat Show
28 Feb - 4 Mar

UNDERWATER WORLD
DMEX
DIVE MIDDLE EAST EXHIBITION

Sea Deep
Marine Art

UNDERWATER
WORLD



BEUCHAT

ENJOY BOATING
ENJOY BOATING




FREE
SHARK DIVE

DEEP TREKKER

DIGITAL ONLINE 2017




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NAUI

DIVE MORE EXPERIENCE

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SCUBA MARINE




PADI

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Sale
50%
Sale





SCUBAPRO


SALE

PREMIERS FOR EQUIPMENT



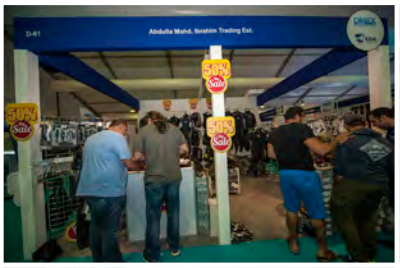

UNDERWATER
WORLD
UNDERWATER
WORLD


BEUCHAT

DIVERS


EDA
YAMAHA

DEEP TREKKER

SCUBAPRO




WHERE THE
ENVIRONMENT
DEMANDS
APEKS
COMMANDS

EDA
PREMIERS FOR EQUIPMENT

SCUBATEC
Hydro
COLLECT YOUR
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PADI



EDA

NAUI
WORLDWIDE

PADI




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ALI BIN THALITH

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Hydro Water Sports
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PADI
EDA
DIVERS
SCUBAPRO
Divers Down
DEEP TREKKER
DMEX
UNDERWATER WORLD
ALI BIN THALITH
PLEDGE TO
'THROW MY RUBBISH IN THE BIN
'USE LESS PLASTIC
'GO GREEN!
What does not belong on the beach?
Keep it clean!
DEEP TREES







SCUBA MARINE
MARINE EQUIPMENT







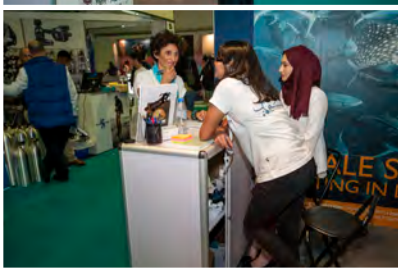


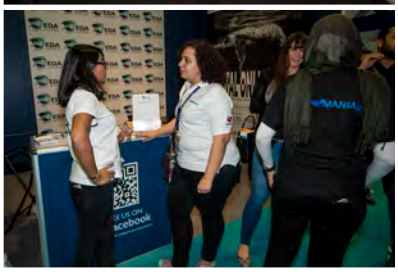






UNDERWATER
WORLD
ALI BIN THALITH







DIVERS
FOR THE ENVIRONMENT

AN EDA SCHOOL PRESENTATION
GEMS AMERICAN ACADEMY, ABU DHABI

On Tuesday the 18th of April, EDA made a small presentation for 4 Grade 5 students at the Gems American Academy in Khalifa City A – Abu Dhabi. Different groups of students are being exposed to different environmental subjects throughout their year in order to expose them to all the available fields. These young ladies are yet to experience a trip to the sea to don a mask, snorkel and fins and see the underwater world through their own eyes.

We talked about EDA's day to day regime, working on putting the magazine together for each quarter, our events with a highlight on our yearly Clean Up Arabia campaign, and we ended the presentation with our film from our cover story's diving trip to the Philippines in Malapascua back in September 2016. This led the girls to ask questions, and in turn, opened the door to curiosity.

A CLEAN UP IN FUJAIRAH
EXTREME WATER SPORTS

On Friday the 14th of April, we had 19 divers complete 2 dives each, spending around 4 hours cleaning up the oceans of Fujairah. In total, we collected an estimated 60kg of rubbish, including dead sea life and everyday rubbish. We also released live sea life from nets. We discovered 2 dead sea turtles which were sent off for testing. We also discovered 2 dead lobsters trapped in nets, along with two live lobsters which were cut free and released. Dead corals were also found. There were at least 80 species of dead fish recovered, along with plastic bottles, plastic bags, and various food packages.

OUR EVENT SPONSORS:
Emirates Diving Association
MEPA (Marine Environment Protection Association)

SUMMER TRIPS WITH AL MARSA TRAVEL






Al Marsa Musandam is a diving and cruising specialist, which offers all sorts of retreats. From short half-day excursions to six-day Liveaboard dive trips, they explore Oman's dramatic northern Hajjar mountain range, Ru'us al Jibal, and its rocky coastline divided by fjords.

From breathtaking scenery to discovering spectacular underwater sea life: from night-time fishing to exploring remote villages; sail along Oman's dramatic coastline in a dhow with Al Marsa Travel Musandam.

Just 120km away from Dubai, this majestic retreat is ideal for short half-day excursions, longer full day trips and can extend to Liveaboard stays, on vessels fully equipped (including satellite communication) for cruising and staying within air conditioned cabins, large open sun decks and freshly prepared meals by the onboard cooks. Enjoy the ride with activities that range from the more leisurely to extraneous – including all the facilities for diving, snorkelling, fishing, kayaking, and swimming. Explore the exotic marine species and dive into the wonders of the sea guided by a professionally trained EFR/PADI Certified crew member who will mentor you through beginner classes to open water diving courses and grant you certification upon completion.

Perhaps more than this is the almost indescribable beauty of nature surrounding you, clear starlit nights, panoramic ocean seascapes, hidden coastal villages with their interesting history and traditions in dhow building and fishing. We have top of the range Arabic Dhows that cruise up into hidden bays, which are for the most part, inaccessible from the land.

At Al Marsa, we have a dedicated, permanent team who are all passionate about diving! Our Instructors, Divemasters and maintenance crew are all highly skilled and qualified, and have an excellent command of English. The team have worked with Al Marsa for many years and bring a wealth of diving knowledge and experience that covers the Musandam area.

SUMMER TRIPS WITH AL MARSA TRAVEL!
What would it be like to swim with the fish and explore the underwater jungle? Submerge yourself underwater and be fascinated by the life that thrives at the bottom of the sea.

Escape the heat and find the perfect summer retreat with Al Marsa Travel! Let us take your experience to a higher level with our exquisite traditional dhow to Khor Qabel and Ras Musandam where you will be captivated by the majestic beauty of the sea and the picturesque mountains in the backdrop.

Prepare yourself to the thrill of swimming with multitudes of colourful fish, mola-mola, and Orcas. Revitalize your summer getaway with energizing water activities, including diving, snorkelling, fishing and kayaking. Be served with a delightful feast of buffet food, snacks and refreshing beverages after a day of fun-filled activities.

Al Marsa offers special rates on a 7 Night Safari Dhow Trip on the Queen of Musandam, leaving on Sunday 4th June 2017 to 11th June 2017 for $1,135 including all meals and 21 dives.

FOR MORE INFORMATION CONTACT:
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www.almarsamusandam.com

RESPONSIBLE SHARK AND RAY TOURISM

World's First-Ever Best-Practice Guide for Tourism Operators Released by Project AWARE Foundation, The Manta Trust and WWF International

For World Wildlife Day, March 3, Project AWARE®, WWF and The Manta Trust were pleased to release Responsible Shark and Ray Tourism: A Guide to Best Practice, the world's first-ever guidelines for shark and ray tourism operators. The Guide aims to provide practical, science-based guidance to help tourism operators, NGOs and local communities develop and maintain well managed tourism operations that help conserve shark and ray species, raise awareness for their protection, and benefit local communities.

Unsustainable exploitation of sharks and rays – mainly driven by overfishing – is widespread with one in four shark and ray species now threatened with an increased risk of extinction.

Yet across the globe, shark and ray tourism is increasing in popularity. Currently, around 400 well-established tourism operations focus on interacting with species of sharks and rays, and it's estimated that this number could more than double over the next twenty years, generating over 780 million USD in expenditures around the world.

Dr Andy Cornish, WWF says, "Shark and ray focused ecotourism has great potential as a conservation strategy. If properly designed and managed, it can provide alternative direct and indirect economic benefits to local communities and economies. Yet sadly there's limited practical guidance out there."

Industry, researchers, authorities and the nonprofit community largely agree that best-practice guidance is urgently needed to ensure that tourism sites are established and operated in a manner that benefits sharks and rays, and local communities, while also inspiring awe, respect and a greater appreciation of the need to conserve these animals.

Isabel Ender, Manta Trust, adds, "Lack of best practice guidance can often leave operators confused about how to assess the impact and improve the sustainability of their operation. We sought advice from scientists and the industry to help bridge that gap and deliver a best practice guide – the first of its kind in the world."

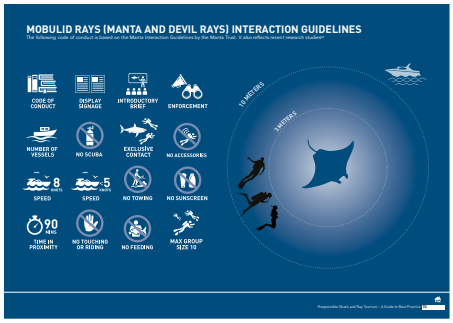
To support operators seeking to commit to best practice, a full suite of free, downloadable tools is available on all of the organizations' websites. "We're excited to launch the guidance on this United Nations, World Wildlife Day," adds Ania Budziak, Project AWARE. "Operators now have access to the latest science based guidance and practical, hands on tools like performance scorecards and checklists. We're looking forward to helping local communities lead the transformation to a responsible shark and ray focused tourism around the world."

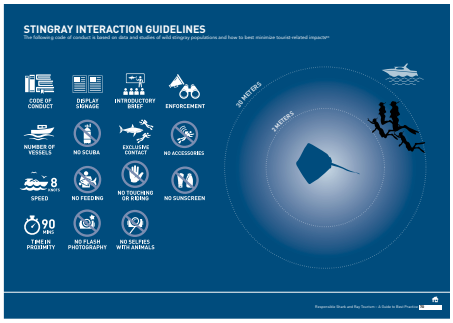
For further information or to download any of the tools, visit Project AWARE, WWF and The Manta Trust websites.

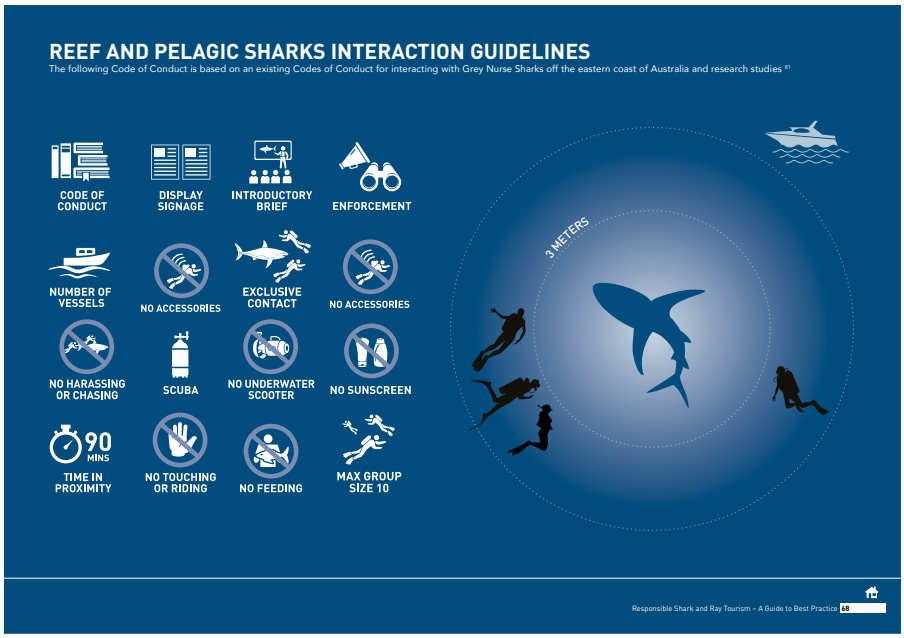
PROJECT AWARE®

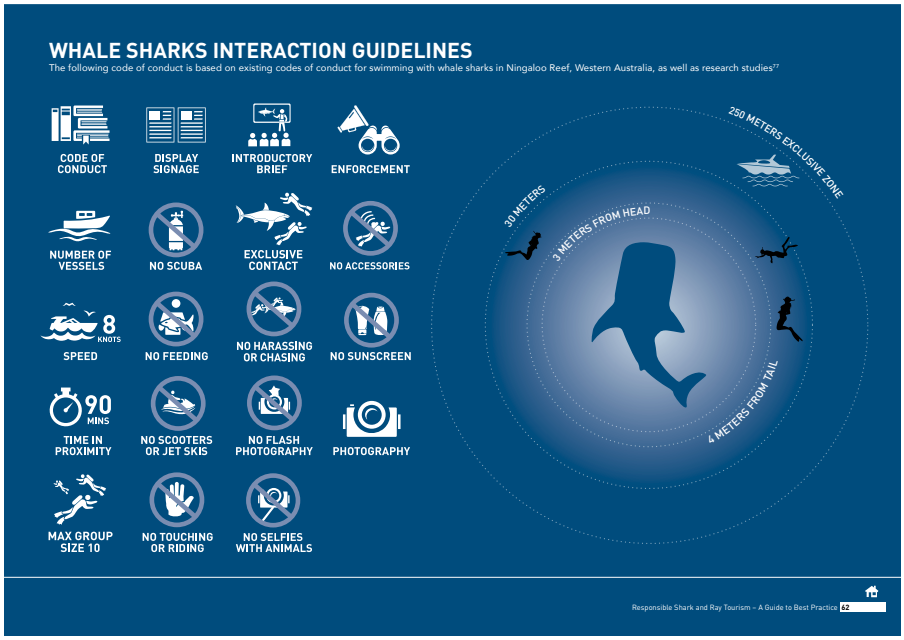
WWF

Manta TRUST
IN PARTNERSHIP WITH THE SAVE OUR SEAS FOUNDATION









UPDATES AT THE DIVE CENTRE

THE Dive Centre first opened its doors in April 2014, tucked away amidst the yachts and palm trees in a cozy corner of the Dubai International Marine Club. Since its inception, it has blossomed into a bustling 5 Star IDC Centre offering a full compliment of PADI courses and opening a second branch at Sandy Beach Hotel & Resort in January 2015. Throughout its history, THE Dive Centre has aimed to deliver the highest quality of teaching, while still retaining the family-centred approach that has set it apart from other larger dive centres.

On the road to becoming THE Dive Centre, the company has undergone several changes, both exciting and bittersweet. Most recently, co-founder Jason Sockett's next steps have taken him away from TDC and we wish him and his family the very best on their new life in Spain! Taking up the reins as new Co-Owner is Jacques Botes, previously the manager of TDC Sandy Beach, keeping the company within THE Dive Centre family as it moves forward. Jacques brings with him a keen passion for freediving and pufferfish, both of which he hopes to keep enjoying in Dubai.

Other changes include environmental initiatives, paving the way for greener diving in Dubai! Exhibited at The Dubai International Boat Show 2017, THE Dive Centre Conservation Project unveiled a new direction for conservation-minded divers in the region.

Great new courses being offered by THE Dive Centre in Dubai include Project AWARE Dive Against Debris, AWARE Turtle Conservation, and AWARE Shark Conservation, to name a few. In addition, we are running Dive Against Debris dives on the last Saturday of every month in Dubai, and the first Saturday in Fujairah, to try and relieve our oceans of their garbage while providing valuable data to Project AWARE. Divers of all levels are welcome!

Another exciting transformation on the horizon, THE Dive Centre's General Manager – Nicola Liddell – will be donning an additional role, that of Course Director. Finishing her course in the Dominican Republic this summer, Nic will be running THE Dive Centre's Career Development Program for those hoping to take their diving career to a professional level.

For more information on our current trips, dives and courses, visit **www.thedivecentre.ae** – and our Facebook page.

CURRENT SEA

THE ILLEGAL FISHING TRADE IN CAMBODIA AND THOSE WHO RISK IT ALL TO INTERVENE

FEATURE **STEPHANIE LINCOLN AND CHRISTOPHER SMITH**

In the Gulf of Thailand, fishing means life or death for some, whether it's those trying to bring fish home to their family or those trying to save the oceans from sure destruction at the hands of illegal trawling.

Over the past year, Stephanie Lincoln and Christopher Smith have been documenting the stories of Paul Ferber and Matt Blomberg as well as the devastating impacts of illegal, unregulated, and unreported (IUU) fishing on the people and marine ecosystems of Cambodia.

When we first arrived in Cambodia, the first thing we noticed was how warm and friendly Cambodians were. We were overwhelmed by the smiles from everyone – the airport attendants, tuk tuk drivers, strangers passing by on their motorbikes. The second thing we noticed was the dust. During dry season, it's a dirty, dusty place. Orange dust absorbs every pore of your body, seeping into your hair and your teeth. During the wet season, the same thing happens but with rain. Water is inescapable – the streets are flooded, it rains for days on end; it feels like you're swimming through the day. These are the extremes of the two seasons of weather in Cambodia. One day can be explosively hot and dry, and then a magical rain can pour down from above, drenching you in the water that you were hoping for just a moment ago.

Maybe the constantly shifting extremes of weather are what make the people in Cambodia so resilient or maybe it's because they've faced so much war and devastation in their recent history. Many people know of the Khmer Rouge that nearly destroyed Cambodia from 1975-1979, killing off over 1.2 million of its own people. What most people don't know about is that much of the Khmer Rouge was targeted against ethnic cleansing, honing in on the Cham, or Muslim Cambodians, as a target of genocidal murders. Today, communities of the Cham survivors of that brutal era are scattered across Cambodia, primarily in fresh or salt water fishing towns.

The small town of Kampot resides upon Cambodia's coast that stretches across the Gulf of Thailand. Within this town is one of those aggregates of Cham survivors – a community of Cham fishermen who fish day in and day out for their livelihood. In 2015, one of these fishermen, Dol Nai Yub, was viciously killed in an attack at sea. Although government authorities have failed to follow through on the investigation, eyewitnesses say he was murdered by Vietnamese fishermen who had crossed the maritime border of Cambodia and Vietnam.

Fights between Cambodian and Vietnamese fishermen are not new to the region. There have been ongoing allegations that corrupt Cambodian government officials (Cambodia is known as the most corrupt country in Southeast Asia) are giving the green light to Vietnamese fishermen crossing the maritime border in exchange of bribes. They allow these fishermen to use illegal trawling methods of fishing that devastate the ocean floor, leaving it a desert for those Cham fishermen who must abide by legal forms of fishing only to cast their nets in vain.

Trawling is a type of fishing whereby heavy nets are dragged along the sea floor, scooping up fish and other creatures indiscriminately. The heavy nets scar the floor, destroying sea grasses, corals, and other delicate ecosystems. The damage from these nets lasts several generations, and their use jeopardizes other forms of small-scale and subsistence fishing.

Over the past 15 years, trawlers have become ubiquitous in the Gulf of Thailand, as they are in many developing countries around the world. While the national and regional government publicly oppose such fishing practices and have policies in place to regulate them, corrupt local officials accept bribes to let the trawlers operate discretely at night without harassment and the policies are rarely enforced.

The trawlers are usually crewed by poor Cambodians or Vietnamese, who, with few alternatives for earning a living wage, take up trawling to support their families. Compounding these issues is the money being pumped into Cambodia by many well-intentioned Western organizations. The work these organizations do would likely be effective in more developed countries, but is often ineffective or ill suited to the political culture of Cambodia. The influx of foreign money fuels corruption but does little to restore balance to the oceans.

We have been following Paul Ferber and Matt Blomberg the past year – individuals who have been living and working in Cambodia for many years and are driven to make a difference in their adopted home. Matt is the kind of hard-boiled investigative journalist who is driven to speak truth to power. We've been following him as he journeys around the region uncovering proof that Vietnamese fishing boats are illegally fishing in Cambodian waters. Along the way he's learned how the illegal wildlife market thrives, where the endangered seahorses are sold, and whom the fisherman must bribe to trawl in these waters.

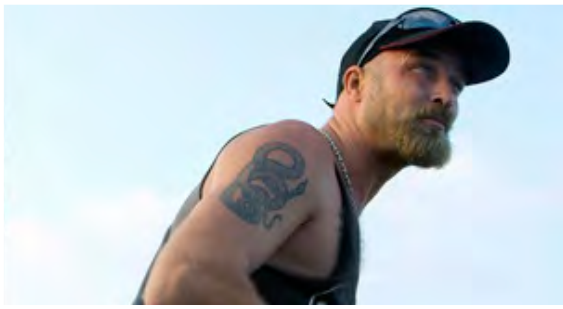
Meanwhile, on a tiny island dozens of kilometers off the coast of the resort town of Kep, Paul and his research team patrol the nearby waters. They are fighting a seemingly unstoppable fleet of Cambodian electric trawlers and much larger Vietnamese trawlers. Paul's organization, Marine Conservation Cambodia, researches the local seahorse population and is working to create a marine reserve to help rejuvenate the local seahorse habitat.

When we first heard about Matt and Paul, we knew that it was important to tell their story because it's the story of strong willed individuals fighting to make a difference in an adopted land, one fraught with corruption. More than that, their story raises interesting questions about why such activism and change efforts often come from outside of Cambodia rather than from within. There are also many Cambodians who are putting themselves in harm's way to make a difference, though they face much

greater risk than their Western counterparts. The new generation of Khmer youth is embracing environmental values and is trying to bring constructive change to a their country – and this is an important part of the story.

Current Sea, is a heart-stopping verité style documentary that follows the stories of Matt Blomberg, a journalist who is investigating the unsustainable harvesting of ocean wildlife and the corruption that enables the black market to thrive, and Paul Ferber, an environmental activist who routinely puts himself in harm's way as he patrols a small part of the ocean. The film also follows two Khmer university students who are some of the first of their generation to pursue careers in marine ecology.

For more about their upcoming documentary film, Current Sea, go to: **www.kickstarter.com/projects/speakthunderfilms/current-sea**



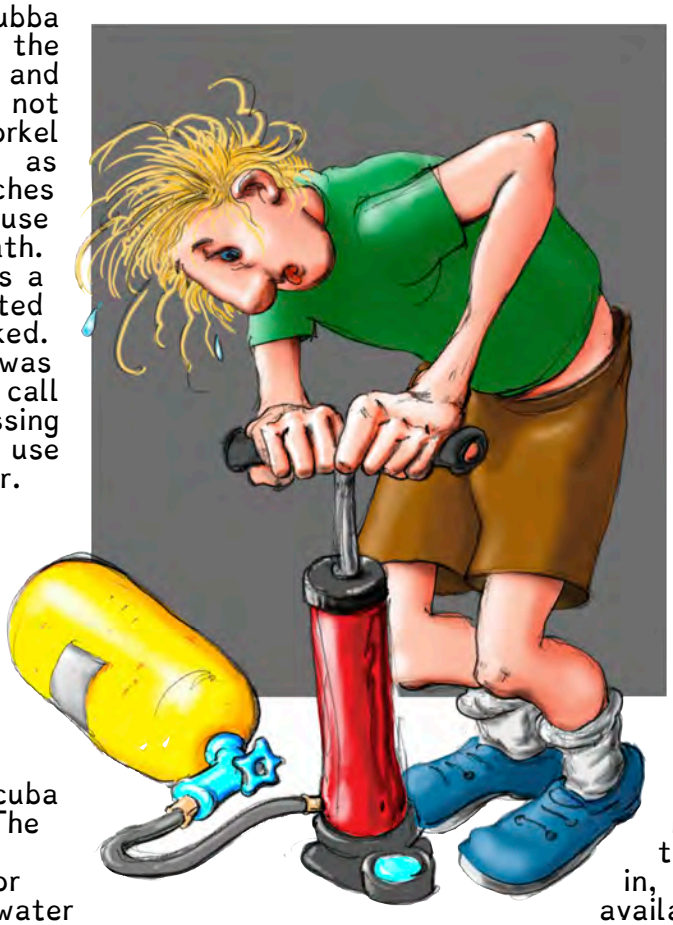
THE SCUBA TANK

STORY BY PATRICK VAN HOESERLANDE ILLUSTRATION PETER BOSTEELS

Now that Skubba was the proud owner of a set of open water fins, his diving equipment set was almost complete. After all, he now had a real mask and a real wetsuit.

In the beginning, cold water limited Skubba's dives, but that was no longer the case. Now it was Fred who was turning blue from standing in the cold, and he was now the one asking to go home. Skubba would sometimes feel cold when changing out of his wet and cold wetsuit into his dry clothes. But he did not complain, he could after all dive. Yet both friends felt that something was missing.

With a snorkel, Skubba could only remain at the surface. He could dive and hold his breath, but not for long. A longer snorkel was not a solution, as Skubba got headaches trying to use one because it was too hard to breath. Diving with a bucket as a diving helmet, connected to an air pump worked. But Skubba felt he was moving too slowly to call it diving. They were missing something so he could use his fins like a real diver.



Such a thing existed from all the diving stories told by the man in the shop. It was only after some research that Fred discovered what it was.

They were missing a Scuba tank and a regulator. The strange word SCUBA, was the abbreviation for 'Self Contained Underwater Breathing Apparatus', a thing carried by a diver to breath underwater.

Further work revealed that it was a device with compressed air inside it. But what did such a device look like and how did it work? Fred discovered that it consisted of, 'a tank of compressed air and a regulator that reduces the pressure to the pressure of the water at the depth where the diver was located'. The first such device was invented by Rouquayrol, Denayrouze and Fernez-Le Prieur, which was then improved in 1943 and commercialized by Emile Gagnan and Jacques Cousteau. He even had a picture to see what it looked like.

They had succeeded in making a pair of fins. Did the shop owner not tell them manufacturers had to work years to develop and produce a new fin? Then they should be able to make something as simple as a scuba tank! Right?

The first thing they had to find was something they could use as a tank. It had to be a sturdy bottle because Skubba did not want it to break while diving. A coke bottle was too soft and would not do the trick. At the plumber's store they found what they needed. The man was kind enough to fit a valve on it. They had to promise him that they would return to show him what they had made. An old shower hose served to bring the air from the bottle to Skubba's mouth.

They didn't know how to obtain 'a pressure depending on the water depth', but they were convinced they would come up with a solution later. The biggest problem right now was to get compressed air into the bottle.

With their bicycle pump, they were able to put some air into it, but Skubba could barely take a breath. Not enough for a long dive. The neighbour's compressor gave more bars. Skubba did not know what a bar had to do with pressure, but he did understand that, the more bars that went in, the more air would be available. And that was the main thing.

The compressor could give up to 8 bars of air. If Skubba properly operated the tank valve, 8 bar was enough to breathe several times. He managed to do that standing on dry ground, but would he also succeed underwater?

There was only one way to find out and that was to dive! With his diving suit, boots, fins, mask, homemade weight belt and the bottle on his back, Skubba felt like a real diver. Fred was proud of his little diver and looked admiringly at his friend who was going to test their Scuba tank.

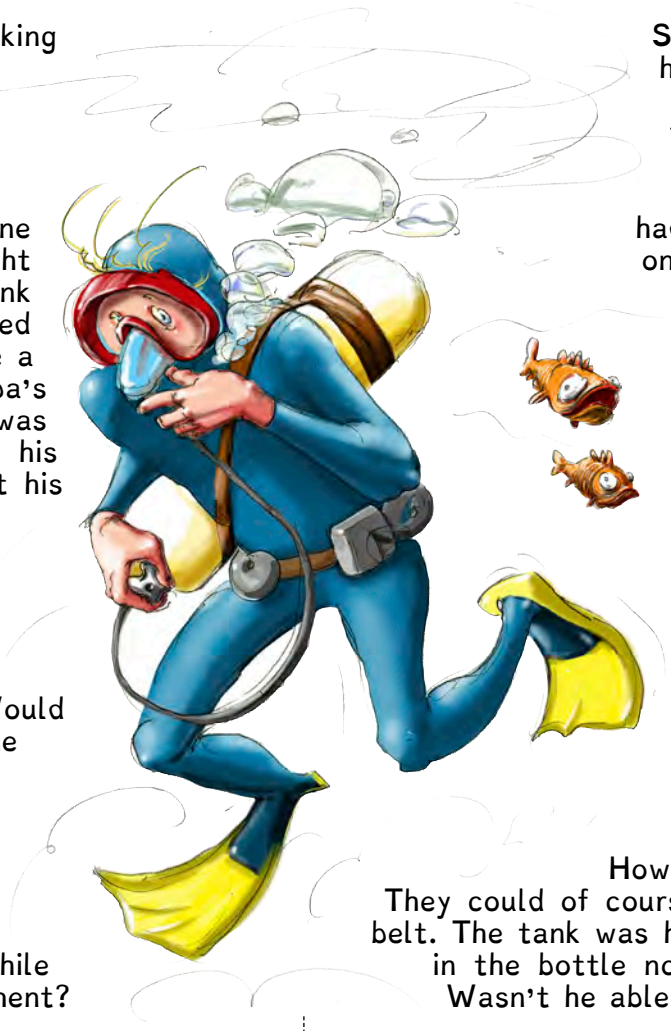
A PRO LOOKALIKE

STORY BY PATRICK VAN HOESERLANDE ILLUSTRATION PETER BOSTEELS

Fred was full of pride looking on at his friend Skubba who was about to test their scuba equipment.

With his wetsuit, neoprene boots, fins, mask, weight belt and homemade tank on his back, Skubba looked like a Pro. "You look like a professional diver" Skubba's mother remarked. Fred was sad he could not join his friend, but water was not his favourite thing.

Although he had read almost everything he could find in books and on the internet, he was feeling a bit uncertain. Would the air they filled with the compressor into the tank be sufficient for diving? Would Skubba be able to operate the valve so that he could breathe underwater? Would Skubba be able to dive while handling the scuba equipment?



When Skubba disappeared underwater, Fred was getting even more nervous. His friend stayed under much longer than his previous dives. Was that a good sign? Should he not move closer to the water? What could he do if something went wrong? He had a lot of questions, and very few answers. He could only wait.

His waiting finally ended when Skubba resurfaced with a big smile on his face. Although he wanted to jump for joy, Fred waited quietly on the side. It was only when his friend was back on dry land that he ran over to him.

Skubba enthusiastically talked about the fish he had seen. How he could follow them. How he could breathe by opening the valve. How he felt like a fish. How he... he was a waterfall of words. Fred was enjoying his happiness and their success.

"Everything went well, except...", said Skubba. What could have gone wrong, Fred thought. They had thought of everything and had solved all the problems they had encountered one by one. Skubba's mum had also done her best by going to the dive shop with them. Fred had seen a lot of things over there. What could he have missed?

"...except that I cannot hover like a fish", Skubba continued. "I have to keep swimming, otherwise I fall to the bottom and see nothing because of the mud."

How could this be solved? They could of course lighten the weight belt. The tank was heavy, but did the air in the bottle not help him to float? Wasn't he able to test this?

Fred asked Skubba to take the tank off his back and put it in the water. He told his friend that he wanted to see if it floated. And no, it did not. So, the weight belt had to be made lighter. The belt should be heavy enough to allow Skubba to dive, but not too heavy to let his friend sink to the bottom. There had to be something else that ensured a real diver to hover...

If the volume of the air in the tank was not big enough, he had to find something to make it bigger. A larger tank was likely to be heavier and thus would also sink. Something light with plenty of air?

Skubba was all too eager to go diving again. But first they had to fill the bottle. Skubba had completely emptied it.

On the way to their compressor they crossed a runner with a CamelBak on his back. Fred thought that maybe a bag like that could be the solution...

CALIFORNIA'S KELP FORESTS UNDERGOING MASSIVE CHANGES

BY **DR. JAN FREIWALD, DIRECTOR OF REEF CHECK CALIFORNIA**

Sunflower star. Photo by David Horwich.

Kelp forest decimated by purple urchins, Sonoma County. Photo by Jan Freiwald.

As Reef Check California begins its 2017 training and survey season, we are keen to find out how the massive changes in the kelp forest ecosystem witnessed over the last couple of years will continue to affect California's nearshore ecosystem. Since 2013, we have documented the west coast-wide decimation of many sea star species due to sea star wasting disease. Sunflower stars (*Pycnopodia helianthoides*) and giant spined stars (*Pisaster giganteus*) declined massively in 2013 and 2014 statewide. Sunflower stars, which can grow up to one meter in diameter and are voracious invertebrate predators on California's rocky reefs, have been all but absent from RCCA sites since 2014 (Figure 1). At sites between Point Arena, Mendocino County in the north and San Luis Obispo in the south, where this species has been abundant in the past, the population experienced a massive decline within one year from the disease's onset. In northern California, the species had experienced a slow decline in previous years and was completely decimated by 2014. In the first year after the decline, anecdotal evidence of many very small individual sea stars provided hope for a recovery of the population. Unfortunately, we have not seen any recovery in 2016. In fact, we saw only two sunflower stars during our statewide surveys – one in the Big Creek State Marine Reserve along the Big Sur coast, and another at our Caspar North site in Mendocino County. In northern California, sunflower stars are the main predators of sea urchins and other invertebrates, and their decline has had widespread consequences for the kelp forest ecosystem. Concurrently with the onset of the wasting disease, the canopy-forming bull kelp (*Nereocystis luetkeana*) disappeared. It is likely that the unusually warm oceanographic conditions referred to as the "Warm Blob" played a role by either reducing growth or leading to recruitment failures. Regardless of the initial reason, the consequent changes to the community are likely a result of this concurrence. The loss of canopy kelp and sea stars was followed by a sharp increase in purple urchin abundance (Figure 2).

Starting in 2014 at RCCA's Ocean Cove site, purple urchins (*Strongylocentrotus purpuratus*) began increasing in abundance; densities that had been well below 10 individuals per transect in previous years increased to several hundred per transect. The following year, purple urchins were present in similar densities at two of the other long-term monitoring sites. Concurrently, densities of understory kelps such as Pterygophora declined. Over the last three years the kelp forests along the Sonoma Coast have been transformed into urchin barrens – areas devoid of kelp, resembling a clear-cut forest, where little other than rocks and urchins remains. This transition from kelp forests to urchin barrens has been observed in other places, but not yet at the same scale seen along the northern California coast. This ecosystem change, from lush forests to barren rock, will have consequences for other species on the rocky reefs, as they depend on the food and shelter provided by the kelp. We have started to see similar changes at sites in central California, where urchin barrens have developed in some areas, as well. Surveys in 2017 will show if these barrens are spreading and what the effects on other species are. Continued, regular long-term monitoring will allow us to understand these changes, and our data can be used to mitigate these dramatic changes through targeted management measures.

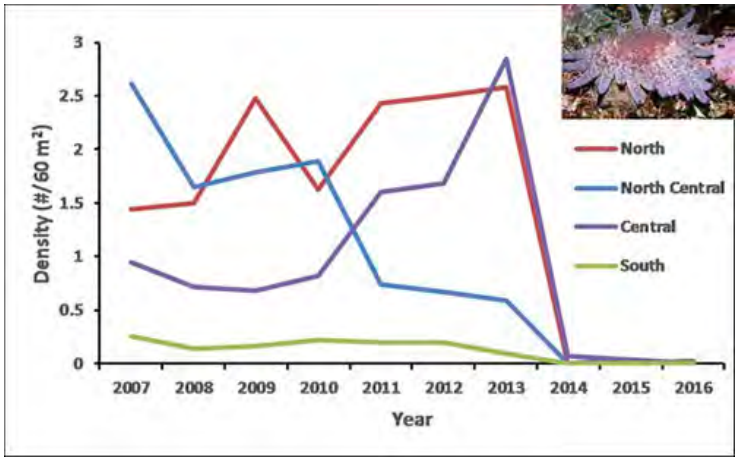


Figure 1. Density of sunflower stars observed in all Marine Life Protection Act study regions monitored in California during annual RCCA surveys.

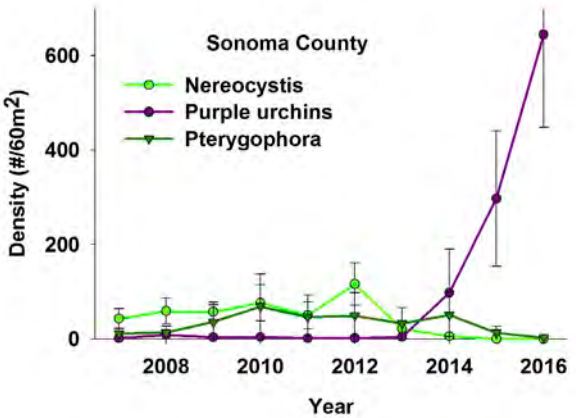


Figure 2. Changes in kelp forest community at RCCA sites in Sonoma County. While purple sea urchins have increased over 100-fold, canopy-forming kelps have all but disappeared at these sites.

FRENCH POLYNESIAN UNIVERSITY STUDENTS INTRODUCED TO REEF CHECK

BY **MATTHIEU PETIT**

Eighteen students from the University of French Polynesia were recently introduced to Reef Check and the EcoDiver program during the course of their studies.

Marine biologist Matthieu Petit provided EcoDiver training to the students, enrolled in their 3rd year SVT degree, in practical and theoretical sessions as part of their ecology and marine ecosystems curriculum. The students traveled to the lagoon of Punaauia to count butterflyfish, groupers and giant clams; record coral bleaching, and measure coral cover, the amount of the seabed covered by living coral. The students have been invited to become part of the Polynesian network to contribute to an improved understanding of the region's coral reefs.

This new initiative in Polynesia was made possible thanks to a partnership between the University of French Polynesia, the NGO Te Mana o Te Moana and Reef Check.

SPOTS AVAILABLE ON ECOEXPEDITION TO INDONESIA

BY **REEF CHECK ITALY**

Reef Check Italy is offering an EcoExpedition to Bangka, North Sulawesi, Indonesia from October 28 to November 5, 2017. Participants will enjoy nine days of day and night dives, lectures, seminars, as well as practice sessions in the lab. This English language course aims to:

- Provide the basic knowledge for identification of hard corals and their diseases;
- Present an overview of the well-established coral reef monitoring approaches, including Reef Check and Coral Watch protocols;
- Teach application of these methods underwater;
- Contribute to the monitoring and conservation of the coral reefs at the Bangka outpost.

The cost of the trip is €1007, which includes accommodation, teaching materials, Reef Check EcoDiver certification, and a small donation to the Bangka Conservation Foundation. The course represents the combined efforts of Reef Check Italia, the Faculty of Fisheries and Marine Sciences of the Sam Ratulangi University (FFMS-UNSRAT), Manado, Indonesia and Coral Eye. Participants will be expected to demonstrate what they have learned and discuss the results.

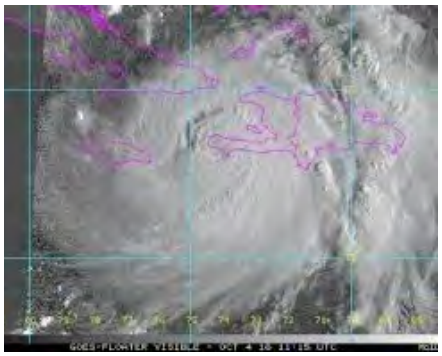
Visit **http://reefcheckitalia.it/bangka-bando-2017.html** for more information. For further details contact Reef Check Italy at **postmaster@reefcheckitalia.it**

REEF CHECK DELIVERS IN HAITI

BY **GREGOR HODGSON & REEF CHECK HAITI**

Hurricane Matthew slammed the west end of the southern peninsula of Haiti on October 4th, 2016, cutting a path through two areas where Reef Check has been working for the past four years – Cayes/Port Salut on the south coast and villages west of Jeremie on the north coast. It was pretty clear right away that the major aid agencies would need a long time to get any relief to these remote areas because it just takes them a long time to gear up for such a major disaster covering a large area.

On October 13th we put out an urgent appeal for immediate help, and many of you graciously responded with donations totaling $4377. Because the bridges and roads to Jeremie were damaged/blocked, our RC Haiti team focused on the families of children we have been teaching in Port Salut and St Jean. After discussing the situation with our students and fishermen, we decided to supply rice and solar-powered lamps that could also be used to charge cell phones. Later we also delivered rice and lamps to the villages located between Anse D'Azur and Anse du Clerc. The villagers were really grateful for both, and this has helped us to gain their trust as we begin implementation of the new network of at least 12 Marine Protected Areas. In total we purchased and distributed 100 lights at $22



each, and the rest went for rice at $16 - $19 per 55-pound bag (depending on purchase location) for a total of 188 bags. Initially, we also included some extras such as 50 gallons of cooking oil and 94 bags of drinking water in Port Salut. We could only carry about 15 sacks at a time in our car due to the poor condition of the roads. Also depending on location, the local fishermen's cooperative and/or mayor divided the rice into smaller amounts for distribution to several hundred coastal families. We also continued to buy meals for the students in our regular classes in Port Salut in schools often without roofs.

We would like to thank all those who generously supported this unusual project. The smiles of the recipients speak for themselves. The RC Haiti team worked hard to figure out a safe and fair distribution system with the right people in each location. We were really encouraged by how much Haitians were helping Haitians as well. In particular, local villagers were helping each other to get their roofs repaired.

RAPID ASSESSMENT OF CORAL REEFS AND MANGROVES – THE GOOD AND THE BAD NEWS

Using RC funds, we were also able to do some rapid assessments of the damage to the reefs on both coasts. The good news is that there are still coral reefs in all locations. The bad news is that the damage ranged from moderate to severe with losses ranging from 30 to 60% of living reefs. The extensive stands of the staghorn coral, an endangered species, were flattened, but thankfully some small branches that were cemented to the reef survived and will be the seedlings for natural recovery. The mound-shaped coral heads were battered but still standing. The waves ripped great holes in the reefs exposing old fossil staghorn branches that make up the inner structure of those reefs, which are probably several thousand years old. We hope to get a more quantitative assessment soon.

LA CALETA MARINE PARK:WIN-WIN CONSERVATION BY RC DOMINICAN REPUBLIC

BY **REEF CHECK DOMINICAN REPUBLIC**

The Dominican Republic's Ministry of Environment and Natural Resources has formally delegated the management of La Caleta Marine Park to Reef Check Dominican Republic (RCDR). Under the leadership of coral reef ecologist Dr. Rubén Torres, RCDR has been co-managing the park for many years using ecotourism as an economic incentive for fishermen to conserve natural resources. Commenting about his project Dr. Torres said, "La Caleta is a prize-winning model of collaboration between government, NGOs and local communities where local livelihoods, conservation, research, education, and management of marine resources meet for a common goal of sustainably using resources for the benefit of all." At Reef Check HQ we are often asked, "How can citizen-science lead to successful conservation?" La Caleta is one more exciting example that will be a model for the Caribbean and the world. Congratulations to Dr. Torres and his wonderful Board of Directors.

From left to right: Vice Minister of Protected Areas and Biodiversity Daneris Santana, Reef Check Dominican Republic's Dr. Rubén Torres, and Minister of Environment and Natural Resources Dr. Francisco Dominguez Brito.

HISTORIC COMMUNITY-BASED REEF SURVEY A FIRST IN OMAN

BY **BIOSPHERE EXPEDITIONS**

For the first time in the history of the Sultanate of Oman, a community-based coral reef survey has been undertaken. Seven Omani nationals and residents gathered at Seeb port this past January 29th and 30th to survey Fahal Island and Ras al Hamar, near Muscat. The divers had all previously trained in the Reef Check methodology by the award-winning, international conservation organization Biosphere Expeditions.

Biosphere Expeditions runs a successful annual reef survey in Musandam which has already resulted in reef conservation measures being introduced there. Biosphere also train local divers in Reef Check methods as part of their scholarship program.

Jenan Alasfoor, an Omani Reef Check graduate, participated in the inaugural community survey group and said, "I am grateful to Biosphere Expeditions for empowering Omanis to survey our own reefs. I am very proud to be part of this first-ever Omani Reef Check team and I hope more people will come and join us."

Dr. Matthias Hammer, founder and executive director of Biosphere Expeditions, also took part in the survey and added, "I would not have wanted to miss this historic event. We have trained Omanis over the last few years in Musandam, and I am delighted to see our placement graduates now taking things into their own hands and surveying the reefs near Muscat too. This is exactly what we need: local people surveying their own reefs so that the natural beauty of Oman can be better managed and passed down to the next generation, as well as safeguarding livelihoods and traditions, including that of the fishermen."

The results of the survey were reported in the local news and can be viewed online: **http://www.muscatdaily.com/Archive/Oman/Musandam-corals-healthy-but-problems-remain-shows-survey-4yiy**.

FEATURE CREATURE

SHARPTOOTH LEMON SHARK (*NEGAPRION ACUTIDENS*)

FEATURE **IUCN RED LIST 2003** PHOTOGRAPHY **PHILIPPE LECOMTE**

RED LIST CATEGORY & CRITERIA: VULNERABLE
Scientific Name: *Negaprion acutidens*
Common Name(s): Sharptooth Lemon Shark

Justification: A widely distributed tropical Indo-west and central Pacific inshore species usually associated with coral reefs, lagoons and mangrove estuaries, and which exhibits very limited movement patterns. Within Australian waters, this species is wide-ranging and captured in small numbers in gill nets, beach meshing and longlines on the east coast and Northern Territory. Catches in Western Australia are also small. In Australia, there are likely to be significant areas of unfished habitat outside the operational ranges of these fisheries, thus the population is assessed as Least Concern. Outside Australia, this species is heavily fished in unregulated and expanding inshore fisheries throughout its range, and this, together with its narrow habitat range and limited potential for recolonisation of heavily fished sites, leads to a global assessment of Vulnerable. Further, in Indonesia there has been little recent evidence of this species at fish markets although it was historically abundant. Widespread damage and destruction of coral reefs and mangrove habitats in parts of South East Asia are also cause for concern. In addition there are records of local extinctions in India and Thailand. This species is assessed as Endangered in South East Asia.

Range Description: Wide ranging in the Indian Ocean and western Central Pacific, extending from South Africa to the Australian region and Oceania (Compagno and Niem 1998). Within Australia, from Moreton Bay (Queensland) to the Abrolhos Islands (Western Australia) (Last and Stevens 1994).

Countries Occurrence: Native: Australia (Northern Territory, Queensland, Western Australia); Fiji; India; Indonesia; Madagascar; Myanmar; Papua New Guinea; Solomon Islands; South Africa; Thailand; Vanuatu.

FAO Marine Fishing Areas: Native: Indian Ocean – western; Indian Ocean – eastern; Pacific – western central.

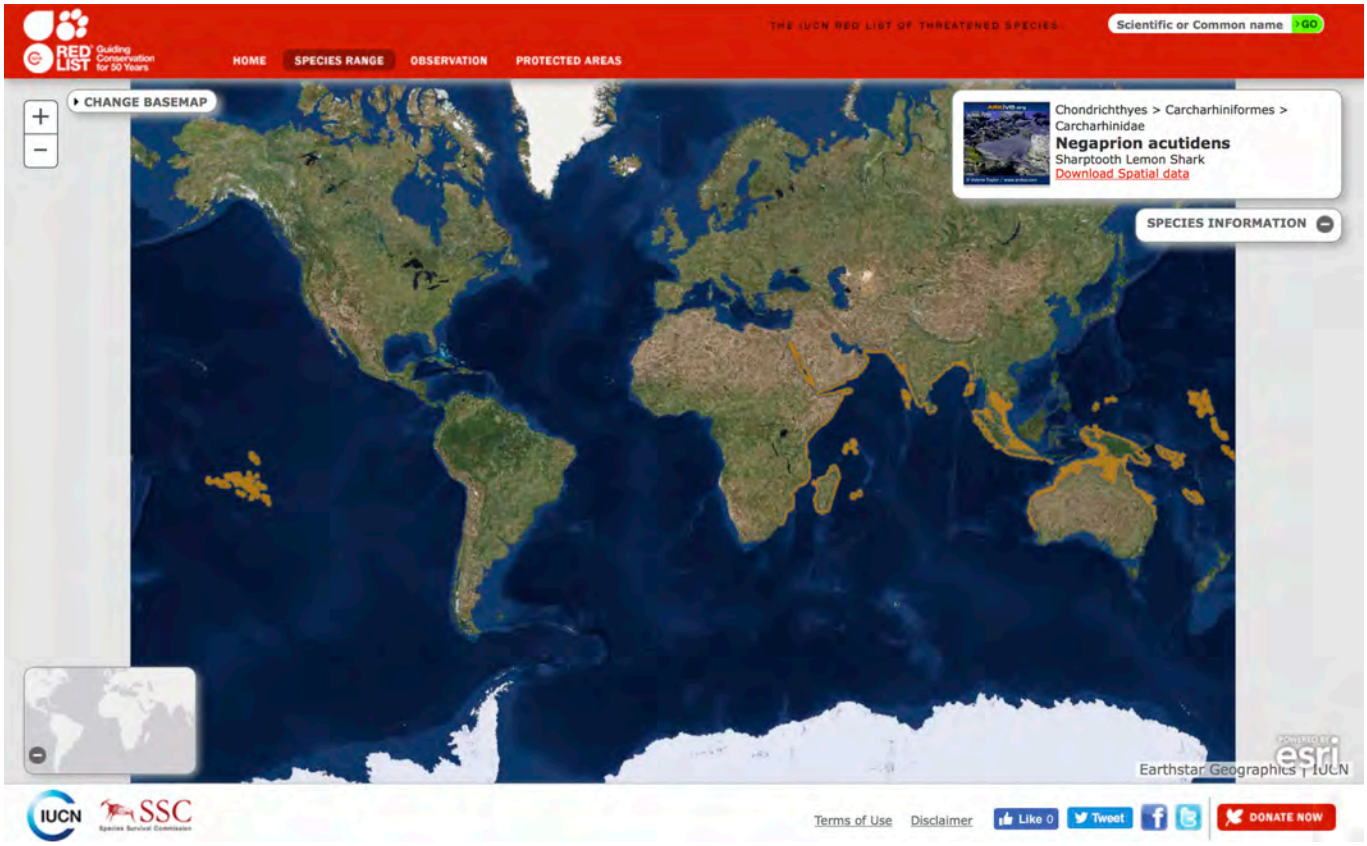
Current Population Trend: Decreasing

Habitat and Ecology: Gestation period: 10 to 11 months .

Reproductive Periodicity: Two years
Size at Birth: 60cm total length (TL)
Average Litter Size: 9.3 (6 to 12)
Size Male Maturity: 220cm TL
Size Female Maturity: 220cm TL
Max Size: 300cm TL
Growth Rates, Juveniles: 12.5 to 15.5cm/yr

Occurs in tropical, shallow inshore and offshore waters near the bottom; often found on and around coral reefs and on sandy plateaus near coral, at depths down to at least 30m (Compagno and Niem 1998). Often found inside coral lagoons but also on reef flats and reef edges (Stevens 1984). It is also known to occur around and within mangrove estuaries (W. White pers.comm.).

Out of 143 animals tagged at 43 sites by Stevens (1984), 19 individuals were recaptured (14.5%) of which five were caught more than once. This data showed that 52% of recoveries were made at the tagging site, 83% within 1km of tagging site and 91% within 2km. The average distance moved by individuals was 1.3km (excluding those animals that did not move from tagging site) and the maximum distance travelled was 5km.



Systems: Marine

Major Threat(s): Within Australia, data from the Northern Territory (Lyle et al. 1984) indicated that catch rates of *N. acutidens* in gill net and long line fishing trials were very low. *N. acutidens* is taken in small quantities (approximately 15 tonnes/yr) in the Western Australia northern shark fisheries. These fisheries comprise a very small number of boats (13 licenses, seven active and only three fishing for six months or more) operating over a very large length of coast. A smaller quantity of *N. acutidens* are also taken as bycatch in trawl and gill net fisheries in northern Western Australia waters. There are likely to be significant areas of unfished habitat outside the operational ranges of these fisheries (R. McAuley, pers.comm).

Threats from inshore fisheries are high outside Australian waters, particularly Southeast Asia, where these sharks are captured by gill nets and longlines. They are particularly susceptible to local depletion due to their very small habitat range and limited movement patterns (Stevens 1984). This species is also likely to be affected by habitat destruction, particularly in South East Asia. For example, extensive coral reef habitat destruction (pollution and dynamite fishing), in addition, this species is known to occur around and within mangrove estuaries, many of which have been deforested or are heavily populated by humans throughout its range (William White, pers.comm.).

Although they are still recorded, albeit very infrequently within Indonesia (W. White, pers. comm.), evidence suggests *N. acutidens* was historically more abundant, and have not been seen for several years in some areas. For example, in a preliminary survey of market catches around Bali, no *N. acutidens* were recorded, and jaws held in the fisheries centre in Jakarta that were several years old were the only evidence that this species was once caught in the region (W. White, pers. comm.). Furthermore, evidence of local extinctions in India and Thailand (L.J.V. Compagno, pers. comm.) indicates that this species is extremely susceptible to local inshore fisheries.

Conservation Actions: There are currently no conservation measures in place for this species.

Citation: Pillans, R. (SSG Australia & Oceania Regional Workshop, March 2003). 2003. ***Negaprion acutidens***. The IUCN Red List of Threatened Species 2003.
www.iucnredlist.org

SAVING THE GREAT AUSTRALIAN BIGHT

FEATURE AND PHOTOGRAPHY **NATALIE BANKS**

In a world where truly wild areas are disappearing before our eyes, it was evident that to risk the beauty and the wildlife of the Great Australian Bight for the potential of oil, was the definition of insanity.

AN EDA MOVIE NIGHT WITH VOX CINEMAS
Emirates Diving Association will screen the documentary 'Operation Jeedara' at VOX Cinemas on the 9th of August. Go to the Upcoming Events on page 115 for more info.

Right in the middle of Australia's "Down Under" coastline, is a magnificent stretch of water called the Great Australian Bight, estimated to be over 1,100 kilometres in distance. Rich in beauty, history and biodiversity, the Bight boasts the world's most significant Southern Right Whale nursery and is visited by Humpback, Sperm, Blue and Beaked Whales.

But it's not just whales that take advantage of the rich waters in the Bight, Australia's most important seal nursery is also found here, along with orcas, white sharks, southern blue fin tuna and a multitude of fish species down to the small pelagics.

I have had the opportunity to visit The Great Australian Bight on land and by sea multiple times; she is breathtakingly beautiful. In fact, the Great Australian Bight is worth $AU1.2 billion dollars per year in tourism alone.

It is for this reason that conservationists have formed the Great Australian Bight (GAB) Alliance, to protect this area from exploration drilling. BP in conjunction with Statoil were among those seeking approvals to undertake drilling in the Bight. Many groups and individuals were up in arms, casting their minds back to 2010 when BP was responsible for the world's largest oil spill accident, the Deep-water Horizon tragedy, when 800 million litres of oil spewed into the Gulf of Mexico for 87 days. BP then used dispersant that made the spill 52 times more toxic to the ocean, marine life and people of the Gulf of Mexico. Seven years on, industries, tourism and the environment have not recovered and millions of litres of oil sits on the ocean floor. Dolphin mothers are sadly giving birth to stillborn calves on an increased scale in this region.

No-one wants a similar incident to occur within the Great Australian Bight. I assume that this is why the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) rejected BP's Environment Plan twice, requiring more information from BP before they could be allowed to proceed with their exploratory drilling.

The rejection from NOPSEMA provided the GAB Alliance the opportune time to undertake an educational campaign on what was at stake should an oil spill occur in the Great Australian Bight.

Sea Shepherd Australia, a key stakeholder of the GAB Alliance, launched Operation Jeedara in May 2015. Jeedara means "white whale" to the indigenous Mirning Tribe whose traditional lands lie in the coastal region of the Great Australian Bight.

Operation Jeedara had the expressed intent of showcasing the beauty of the region, using Sea Shepherd's flagship vessel MY Steve Irwin. Some of the outer-lying islands within the Bight are so remote that there is very little publicly known information about them, and most Australians wouldn't even be able to point out where these islands are located, let alone pronounce their names properly.

I was one of the fortunate 35 crew members on Operation Jeedara to visit these remote islands. Although I had been to the area before, my journeys took me to the more popular areas such as the magnificent Bunda Cliffs and to Neptune Islands to dive with white sharks.

What I saw on Operation Jeedara however, was nothing I could have imagined. Visualise if you can, visiting a remote island where the only inhabitants are sea lions and fur seals in natural rock pools, wallabies that are completely unique to the island, peninsula dragons and large, healthy sea birds; where the blue colours of the waters lapping the red granite rock are something from a postcard. That is Pearson Island. Only one of the various islands and locations the crew aboard the Sea Shepherd ship would visit. Words can not do this place justice. Some people have rated Pearson Island as being similar to or better than the Galapagos Islands. For me, it was pure joy. But although I was overcome with the natural beauty of the island, in the back of my mind all I could think was that this area and her inhabitants had very little hope of surviving an oil spill.

The waters of the Great Australian Bight are deeper, more remote and rougher than those in the Gulf of Mexico and an oil spill here would be impossible to clean up.

In fact, spill modelling undertaken by conservation group, The Wilderness Society South Australian shows that island groups like Pearson would be decimated by an oil spill and would devastate all life residing there. "After

all, oil spills are indiscriminate in their paths of destruction, through open ocean, marine parks and marine sanctuaries, they are boundless in their impact…", expedition leader and Managing Director for Sea Shepherd Australia, Jeff Hansen stated when first visiting Pearson Island.

As we travelled onwards, storms were heading towards us with eight-metre waves predicted. Fortunately, I don't suffer from sea sickness, but all I could think of was how on earth a semi-submersible oil rig, drilling in waters up to 5,000 metres deep, where waves can reach 10-15 metres high, could possibly do so safely, without concerns of a spill.

At each location we stopped at during Operation Jeedara, from Victor Harbour to Port Adelaide, the Head of the Bight and Kangaroo Island, the community resolve grew stronger and media reports of BP/Statoil's plans and struggles to attain environmental approvals increased. Stronger community bonds were being formed with a resolve to "Fight for the Bight" as well-known Australian musicians, actors and politicians joined our crew. The GAB Alliance was winning the public relations battle and BP were on the back foot, hassled by the media to answer questions almost on a daily basis.

Meanwhile, Sea Shepherd Australia continued to gather footage and images of some of the little known areas of the Great Australian Bight like Nuyts Reef, Fowlers Bay and Fenelon Island where we continued to experience a magical treat of nature, including the opportunity to see humpback and southern right whales, common dolphins, majestic seabirds and a serene opportunity to swim with playful fur seals and sea lions.

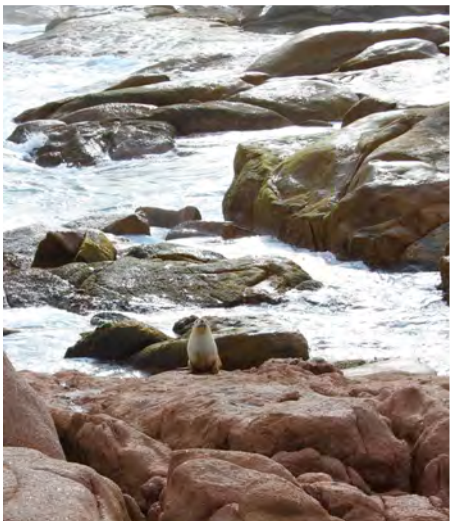
In a world where truly wild areas are disappearing before our eyes, it was evident that to risk the beauty and the wildlife of the Great Australian Bight for the potential of oil, was the definition of insanity.

In October 2015, BP and Statoil withdrew their application to undertake exploratory drilling in the Great Australian Bight, despite the significant investment they had made towards infrastructure for the project which in total would have been approximately $AU605 million.

But BP/Statoil however were not alone in wanting to explore and potentially exploit the Great Australian Bight. 2D and 3D seismic data collection and testing have taken place by Chevron Australia in the Great Australian Bight and more is expected to take place as part of a permit awarded to Karoon Gas Australia. Chevron plans to drill four exploration wells in the Great Australian Bight either later this year or in 2018 and BP's exploration permits could be used later or transferred to an alternative company. Santos Ltd has joined with Murphy Australia Oil to purchase an exploration permit, as has Bight Petroleum.

What I had the honour of witnessing on Operation Jeedara was nothing short of remarkable. As an Australian, I am extremely proud of this region, with its fantastic wilderness in which I hope many people will visit and enjoy, today and into the future.

I have shared just a snippet of the wonder that is the Great Australian Bight. It is our role to protect and care for wilderness areas for the health of our planet, for the health of ourselves and for future generations. We must stop our complete reliance on fossil fuels and invest more heavily in renewable energy. To carry out deep sea drilling in the Great Australian Bight shows a complete disregard for all life on this planet and puts at risk one of the last great wilderness areas in the world.



WHY DID YOU TAKE UP SCUBA DIVING?

(OR MORE IMPORTANTLY, WHY DO YOU KEEP DOING IT?)

FEATURE **PAUL WARWICK** PHOTOGRAPHY **SIMONE CAPRODOSSI**

A question frequently asked by anyone in the scuba diving fraternity when meeting someone new for the first time – generally on a diving trip somewhere exotic… or not so exotic if "your thing is cold water diving"! It is the most common question with which to strike up a conversation, apart from where do you come from, where are you staying, or where do you live? "So what made you take up scuba diving?" I think I have heard almost every possible response, but I am open-minded enough to be receptive to the "odd and unusual" coming from EDA magazine readers – provided it does not involve the vagaries or imaginative use of scuba diving attire or equipment for activities other than scuba diving! The normal spectrum of answers I hear range from, "I was looking for a challenge", "it was peer pressure", "a holiday adventure", "we thought we would give it a try", "they were at the hotel pool and it was free" or "the kids pushed us into it". But do you know only about 5% of those that try diving, either a try dive ("suck it and see") or an official Discover Scuba Diving (DSD) experience, (especially on holiday) actually take the first step and complete an entry level course? Equally amazing is that of those who complete an entry level course, the vast majority, almost 75% end up as infrequent or annual divers, normally diving only whilst on holiday – which might only be once a year.

So which category of scuba diver do you think you fit into; the infrequent, the frenetic, the fanatic or the fantastic? When you think back to why you became a scuba diver, what made you keep it up? Was it perhaps:

- The challenge of learning more advanced skills and expanding your diving scope?
- The lure of the oceans and seas and photography?
- The sense of freedom and adventure?
- To become a professional dive instructor or leader and share your passion with others?

Whatever your reason(s), the common theme throughout whether you are a warm water diver (like myself), or an avid cold water diver, or a deep diving technical diver, we all have an overwhelming passion for our oceans and seas, for the life and wonders it holds beneath the waves that only a qualified and trained scuba diver can experience. But what does scuba diving really mean to you, apart from a "bottomless pit" of expense for the latest in equipment, the scuba diving "toys", this year's colour scheme, as well as that continuous development and training, and of course, the mandatory scuba diving adventure holidays?

To me, scuba diving means many things, both personally and professionally. From a personal perspective, it is:

- Freedom – scuba diving changes the limitations imposed upon us by gravity and our "air world" and allows us the ability to move in three dimensions albeit for the brief time imposed by the size of our cylinder (or a Rebreather for those lucky enough to afford one!), our air consumption, the limits

of decompression or no decompression diving, and of course most importantly, the level of our training and experience.
- Private "us time" with a loved one to enjoy the wonders and sights of our underwater world, and also sharing it with other human enthusiasts and/or inquisitive marine friends we pick up along the way.
- Peace, quiet and relaxation, with only the sound of the water and bubbles venting from your regulator in a slow rhythmical pattern. (Oh and the odd jet ski thrashing around above water!)
- Sensory overload as you try to take in everything that is going on around you and trying to capture as much as you can on your video or camera(s), and more importantly, in your "mind's eye".
- Wonder at our water world, the enormity of the diversity of marine life, the beauty and savagery of that life and the abundant colours, shapes and forms of animate and inanimate creatures.

As a PADI Professional Scuba Diving Instructor, it means other things:
- Sharing my passion for our oceans and seas with like minded people.
- Educating people about our water world and the uncontrolled impact we are having upon it, whether deliberately, through blind ignorance or by sheer accident.
- Seeing the look of amazement and wonder on a novice diver's face after their very first dive in open water, and the sense of awe and the unbounded enthusiasm.
- The enthusiasm, energy and wonder of "little people" experiencing scuba diving for the first time whether in the pool or in open water.
- The dedicated weekend diver getting his "scuba diving fix" that keeps them going through the next week at work.
- Taking a diver from Novice to the Master Scuba Diver (MSD) rating, or indeed Dive Master and seeing them progress and develop under your tutelage.

AGE, AFFLICTION AND DISABILITY

One of the greatest aspects of recreational diving as opposed to commercial and technical diving, is that it is a great leveller for those who are physically impaired whether through age, affliction or injury. I have on many occasions heard people place an age restriction of their continued participation in scuba diving only to be amazed by someone well beyond that age actively taking part and still enjoying both the challenge, and the pleasure of scuba diving. Provided you are still fit, have no chronic ailments which may affect your breathing and swimming, and your doctor is happy for you to participate, there is no reason why anyone should not dive well into their retirement years. I have dived with a few gentlemen and gentle women of a certain age, who by now should be watching television in their slippers with a nice cup of tea. None of them are accepting the historically perceived restrictions of age and diving as often as they can, in as many places as they can. Yes, we have to adjust dive profiles and sites, as well as adapt procedures to suit physical limitations such as donning the scuba unit in the water, and helping them with their gear when exiting the water, but it is little enough effort when you see the huge wide grin on their faces after the dive. I know why they took up scuba diving and why they keep doing it – it really does invigorate and re-energise you and make you feel young again, whatever your age! Chances are as a result, you are socialising with other divers much younger who would benefit from your years of wisdom and experience, and you from their zeal, energy, exuberance and enthusiasm.

Similarly, I have been amazed and astounded at the mental strength, robustness and resilience

of the human spirit in seeing those with real physical challenges, some of which are extremely severe, who overcome tremendous obstacles to learn to scuba dive. Once again, equipment and procedures have to be adapted and additional equipment and closer supervision is required, but nothing is really that much trouble. Moreover, not only is there a tremendous sense of accomplishment for these individuals, but a new found freedom where their physical disability or limitations don't really matter once they are in the water. For these incredible people, scuba diving is their way back to normality and overcoming the emotional and physical limitations they have on land. As an instructor, the pleasure in teaching these unique and gifted people is tremendous, and whilst there is the real sense of achievement on both sides, it is particularly humbling to see them progress physically, mentally and emotionally. It is easy to see that for these people, scuba diving is more than a sport, activity or pastime – it is physical and mental therapy, it makes them feel normal and most importantly, it makes them feel alive again. Physical disability should never be an obstacle, merely another challenge to overcome on behalf of the diver and their instructor, or dive leader.

CHILDREN AND SCUBA DIVING

Scuba diving is not just for adults or "teenage minded oldies", but is also open to children from 8 years old upwards depending upon the organisation/agency that you choose to carry out your training with. It provides a fantastic opportunity for them to see and experience the world from a different perspective whilst at the same time, learning about our natural world and how it interacts with all of us. It also helps with both physical and mental development as well as making them feel comfortable and responsible in and around water. In terms of physical development, it builds stamina, increases lung capacity and strength, improves coordination and develops new motor skills. Contact with other children and adults helps the development of social skills, builds confidence and awareness, whilst training improves comprehension and fosters self reliance. Apart from the obvious benefits, scuba diving for children is great fun, creates the opportunity to meet and make new friends (in and out of the water) and allows "scuba families" to truly enjoy "family time" together.

You cannot but help being affected and "swept away" by the unbounded enthusiasm which children always display when they are doing something they enjoy. Yes, not all children easily take to scuba diving and some are challenged by the training, but if they are comfortable in the water, they will be comfortable scuba diving. Teaching children to scuba dive is both professionally and personally rewarding as well as great fun. It's a pleasure and a privilege to play a pivotal role in the development of their interest in our water world and their education about what is happening to the world around them.

THE CHALLENGE

Scuba diving, like every other activity or pursuit is not for everyone, and some find the physical challenges just too much to overcome. However, age (young or old), affliction or disability is no longer an obstacle to trying it – that is provided your doctor confirms you are healthy enough and your parents (in the case of children) give their permission. You never know, you just might like it and it will open up the doors to a new and interesting world, with adventure and travel opportunities, influenced by scuba diving and new made friendships (both human and marine). I know that I very quickly started writing my "scuba diving bucket list" of places to go, things to see (such as special wrecks, unique dive sites and equally incredible creatures) and the diver training I wanted to do, not long after I began diving. Gradually, I began to "tick off" the training, the adventures and places on my list. The only problem is, the list never seems to end as with every goal accomplished there is always something else or somewhere else to add, with more challenges and more opportunities to be had!

So what does this all mean? Well, we are in real terms a relatively small "band of brothers and sisters" who choose to live and see life to the fullest and to witness first hand, life in a different environment and medium, and challenge the physical boundaries. Whatever your reasons for taking up and continuing with your scuba diving experience, remember we are the "visitors" in someone else's backyard. When we enter habitats and ecosystems, remember these creatures we all love to see, call this "their home". Treat your scuba diving as such and do not abuse the unique opportunities and experiences our activity affords us. Remember to also give something back for all the pleasures you have taken from your visits to our underwater world:

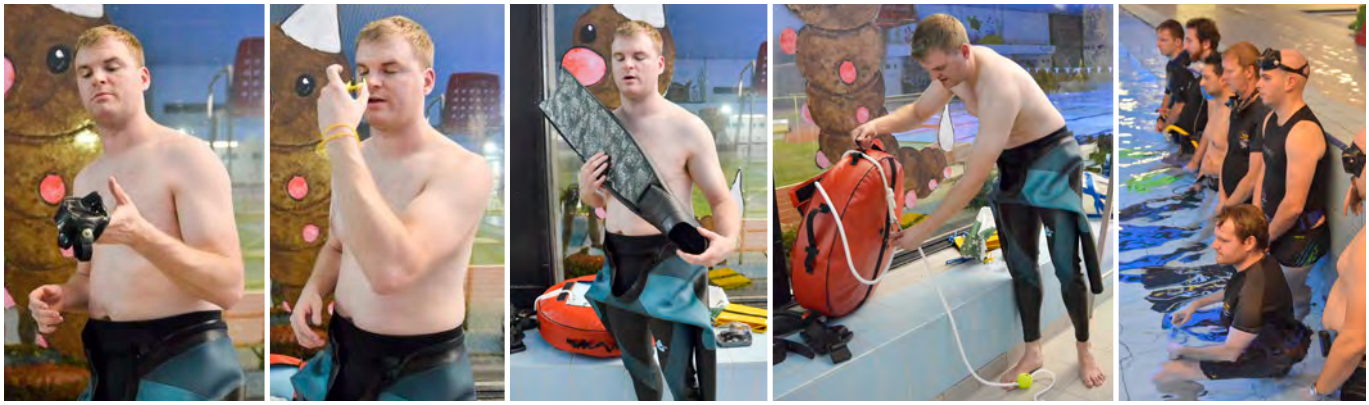
- Give up some of your time and take part in marine clean ups and beach sweeps.
- Help other divers enjoy diving and be considerate of those who need a little longer.
- Take the time to explain to the ignorant, ill informed and downright uncaring about the wonders we have surrounding us.
- If you can, play your part in saving our water world for future generations.

Always remember the Scuba Diver's credo "take only memories and photos and leave only bubbles". Preserve and protect our water world for future generations so that they too can enjoy the wonders that are beneath the waves.

"Always Keeping the Fun in Diving"

FREE THE DIVER

FEATURE **PATRICK VAN HOESERLANDE**



Photos on pages 35-37 by Eddy Torfs

0m: After a few minutes of belly breathing to calm down, I swim serenely to the orange buoy. There, my breathing evolves to a slow belly-chest-shoulder sequence whilst I visualise my dive. I run through all the phases of the dive in my mind. Then, one more before my final deep breath. A pause, preventive equilibrating my ears, and the final, deep, full breath. In one smooth movement, I cross my right arm over my left shoulder to slip effortlessly underwater. A keyhole stroke with my arms gives me a quick but efficient initial velocity.

3m: I anticipate the pressure buildup in my ears by clearing them for a second time while I pay attention to my fin movement to make sure that they are slow and well executed.

10m: Time to equalise my mask with the bit of air in my chubby cheeks. I benefit from that small pocket of air to execute a Valsalva manoeuvre. I know that due to the rapid buildup of pressure, this is the last time I will be able to do this. I realise that my heart is beating slower.

13m: Because I have neutral buoyancy at 6m, gravity now takes over. I am in the free fall zone. No more leg movements. I save energy by letting myself go. Nice.

18m: I feel the differential pressure in my ears increasing. I have not yet mastered the Frenzel manoeuvre, but I manage to equalise my ears. I clearly need more work to perfect this technique if I want to go deeper.

20m: I've reached the tennis ball and know that I have reached the agreed depth. Time to flip around and begin the ascent. With my right hand, I take the rope. I glance at my depth gauge, it indicates just short of 20m. While I turn, I stay a few moments at depth and it seems like time has stopped. I feel more aware of my body. The pressure on it is palpable. I slowly pull twice on the rope indicating to my safety diver that I am starting my return. It also gives me a small initial rate of ascent.

12m: The diminishing pressure makes me feel as if I'm blowing up. I know there is no danger, because I started with air at atmospheric pressure. I hold my breath. No bubbles!

10m: As I look ahead of me, I do not see my safety diver. I feel and know that she is there. I can fully concentrate myself on the last phase of my dive. She will take care of the rest.

8m: The first bubbles escape from under my mask. I should recuperate this excess air, but I need more practice to do it safely.

5m: The rapidly decreasing partial oxygen pressure kicks in, but I thoroughly enjoy the last part. The best phase of the dive starts at this depth, the 'glide'. I stop swimming to feel the invisible hand carefully pushing me up. Great, but far too short. Time to think about my recovery breathing.

0m: I break through to the surface. The moment I do, I start with the recovery breathing. After five cycles, I tell my safety diver 'I am OK'. She'll watch over me for a while because a syncope remains possible minutes after the dive.

WHY FREEDIVE?

A few months before this dive, I was proud of my personal record of 2 mins 15 secs underwater and on plunging to a depth of 6m to admire a sea turtle while on holiday. The plus 2 mins had come at the investment of some weeks of pool training. When I interviewed Belgian Apnea Athlete, Patrick Musimu back in 2008, he claimed that in one day he could teach every SCUBA diver to freedive to 30m. I had put that chunk of information away under the label 'enthusiastic exaggeration'. A few months ago, during an introductory evening to freediving, the depth of 18m was raised as the target to get certified. Even for that number I kept an appropriate level of scepticism.

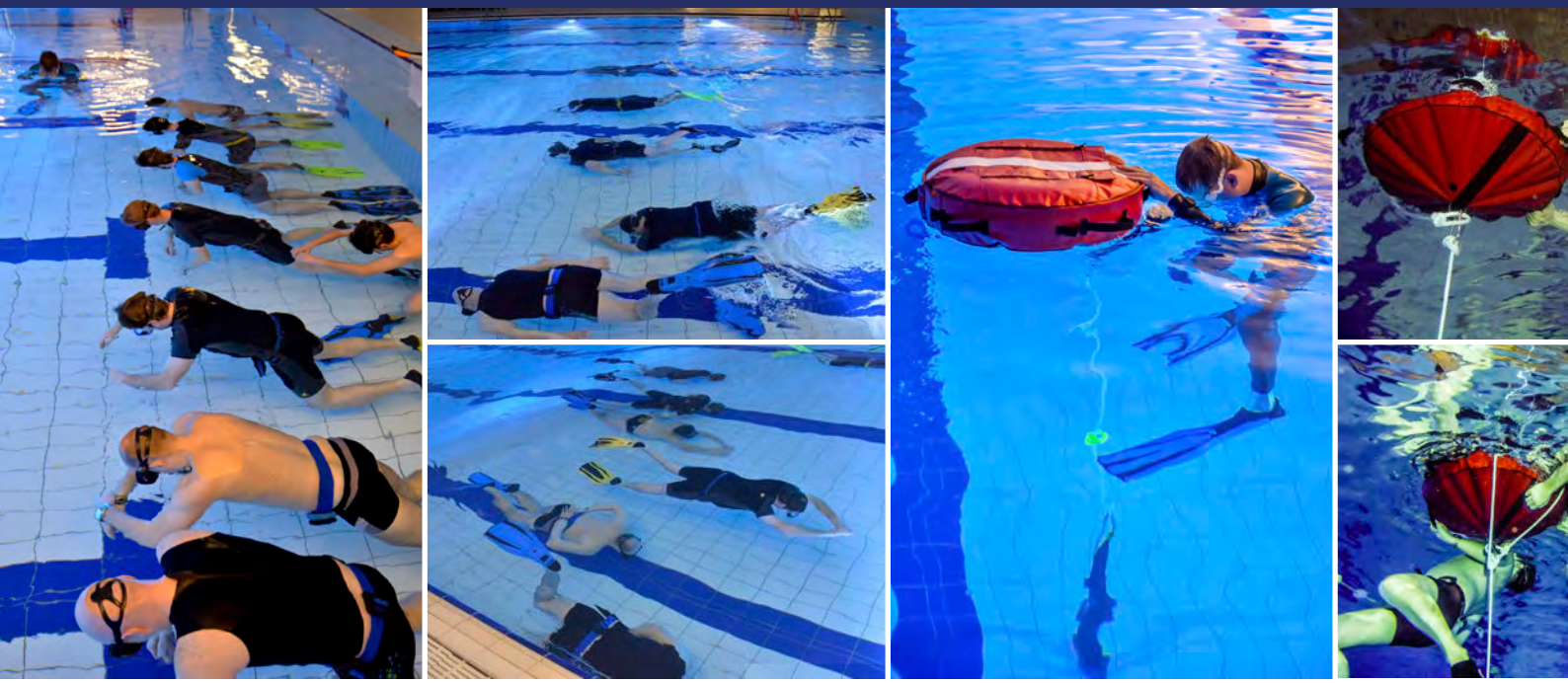
Although I'm not willing to give up my addiction to the bottle, I decide to commence the course 'Adventure Freediver' organised by the diving school, Lagoondivers. I stepped in with an open mind, because if I want to triple my record depth, I must be ready for a different approach. Surprisingly the course is very practical. Almost all the theory is given at the side of the pool, not in a class room.

The course material reads easily and lends itself to self-study. As a diver, you will have already seen most of the theory, even if you think some of the topics are taught differently. Indeed, freediving sometimes differs from SCUBA diving, with good reason.

Pool training. 7 DIY lessons on the how and why. 7 sessions in which you push your limits. On the first day, we stood with six other candidates along the border of the pool. Some of us see this course as a preparation for the physical tests of assistant-instructor within a few weeks because getting used to holding your breath for a long time is a big advantage for these tests. In hindsight, I'm not sure if this is a good approach. Attending a freediving course before you start preparing yourself for the assistant-instructor exam, might be a better strategy.

TRAINING

Our instructor decides to deviate from the standard training schedule to take into account the dimensions of the pool and the experience of his students. We start with physical training and a few sessions of snorkelling. After these exercises, we must try to relax. This is harder than it seems. Once calmed down, he explains the basics of freediving and gives us some time to experiment. I directly stumble on the first difference in technique compared to diving with an air tank: the execution of the duck dive. With freediving you don't have a forward speed and raising your legs is considered too energy-consuming. A duck dive serves to slip efficiently underwater from a still position. Or, you start one while lying on your back holding the buoy. You make a turn-over motion and



disappear underwater. We are advised to clear our ears before and immediately after the start. Indeed, when the duck dive is well executed, you are very quick into the deep and you may be too late to preventively equalise your ears.

The first lesson was over in a flash and that was the same for all the other sessions. The next step was to learn to control our breathing. An apnea dive starts several minutes before the duck dive. There is no hyperventilation allowed as it is counterproductive and, by its effect in delaying the ventilation impulse, it is very dangerous. You must start with good belly breathing. Slowly inhale and exhale twice as slow. The intention is to get well ventilated and to let out all the stress. I cannot really achieve the latter. I have the impression that concentrating on my breathing results in more stress. But with the motto, 'practice makes perfect' I tried to prepare myself as well as possible. Later I discover that when I focused on a visual mark, I would start to calm down.

In preparing the last minute for the dive, you move over to a belly-chest-shoulder breathing technique, performing the three types of breathing one after the other. All three are done simultaneously in one slow, smooth movement. Just before the plunge, you ventilate deeply three times. And then you dive.

After the dive, you start the recovery breathing by exhaling and inhaling shallow and quick. After each inhalation you stop and take care of the extra pressure on your chest so that the oxygen is rapidly absorbed. You do this 5 times. Then pull your mask off, show the OK sign and tell your buddy "I'm OK". This procedure differs from the one you learn during your compressed air course, but this deviation in technique does make a big difference in results.

The strict rule that you always blow air while ascending is replaced with, 'you surface with all the air you started your dive with'. No blowing out. Also, you do not pay attention to other divers. As a freediver, you have priority over everything. Even obstacles! You have the right on a 100% focus on your dive. In reality, proper planning and your safety diver ensures that you don't bump into somebody or something.

During the pool training it strikes me that the ambiance is very serene. I do not look at what the others are doing and try to focus on relaxation and recuperation. I suppose the others do the same. There is barely any talking. Breath-hold diving is clearly something between you and the water. It's every diver for him/herself. Most close their eyes and try to concentrate on what is and will come. The instructor rhetorically asks, "What makes you nervous?".

It is almost unbelievable what can be achieved with this kind of preparation. At the start of most exercises, I think this one is nearly impossible. When the next exercise, a series at 25m starting with a static apnea of 10 seconds, increasing to 60 seconds is announced, I think I cannot complete this one. I bite through the first leg, and on hitting the 30 seconds, things suddenly get better. Nevertheless, the final exercise, a 15 seconds recuperation followed by a 50m dynamic, is a bit too much. Or I did I give up before reaching my real limit?

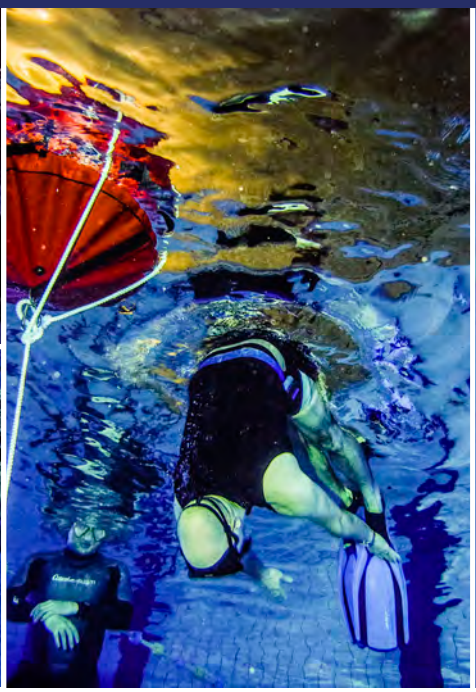
And that was just lesson 2. Along the pool, Kevin shows the specialised equipment for freediving. For the current course, 'Adventure Diving' we do not need to buy supplementary equipment. Our regular diving items are sufficient: pool fins, with or without neoprene socks, wetsuit, weight belt and mask. If you want to evolve further in this discipline, you should first consider buying longer fins. Later an open cell neoprene wetsuit, an elastic weight belt or Marseillaise, a special mask and possibly a nose clip may find a place on your wish list. A lanyard or lifeline and certainly a buoy are considered collective materials and thus do not need to find a home in your dive bag.

Although apnea diving is something between you and the water, you never dive alone. You always have a buddy, or better, a safety diver. This buddy follows you and intervenes if something goes wrong. And that can happen, because you try to push your limits and while doing that sometimes things do not always go as planned. Therefore, the pre-dive briefing is extremely important so that your buddy knows exactly what to expect and when and how to intervene. The task of the safety diver is a little easier during static apneas because you can concentrate better on the diver, while during dynamic disciplines, you have to move too. During deep dives you must also dive in apnea. Although you do not have to follow the diver the whole way down, accompanying the athlete halfway is enough because the last few metres are the most critical ones.

The rescue posture is very different from what we're used to. The hand goes over the mouth of the victim and you bend the head forward. These actions ensure that the victim does not lose any air, while in SCUBA diving you want to keep the airways open to let the excess pressure out. In some strange way you push the victim with the head upwards. You do not have to lock the body under the armpit, clamping the chest between the arms suffice because a freediver is positively buoyant in shallow water. As an instructor with the 'head backwards' technique drilled in, every time I play the victim I throw my head back the moment I feel it being moved forward. Well, habits die hard.

We learn to start with a duck dive from a buoy. This device, similar to a tyre dressed in a dive flag, allows you to focus on your breathing while floating in open water. It is also a distinct starting point of the descent line where you can hook your lanyard on. It is therefore important that





you learn how to slip underwater smoothly while remaining next to the line. This line is also your focus during the dive and the return to the surface, because it allows you to look straight ahead while observing your speed. We are taught the official techniques, but are allowed to experiment with alternative methods. The latter may not be used in official dives or championships, but may be more fun to do.

The next sessions serve to enhance our dynamic apnea. The swimming style should be as optimal as possible. It is a personal search for balance between speed and energy efficiency. The stroke is slightly larger than we are used to, and slower. Also, you never look forward, always down. The lines with two T-stops for swimmers also have their uses for freedivers. And, as it is the case with swimmers, the turning points play an important role in the final result of the performance. A poorly executed turn requires a lot of energy and reduces your potential maximum distance. The art consists of a calm, certainly not explosive, push off and a good use of the driving phase before you start swimming again.

Equalisation is very, very important for a freediver. With a good start, you go down quickly. A 'touch and go' dive profile, rarely performed as a SCUBA diver, is executed more than 20 times in one open water session by an apnea diver. Moreover, due to the ever-shrinking volume of the lungs, the Valsalva manoeuvre is no longer possible from a depth of 15 metres. So, you need to master other techniques such as the Frenzel if you want to reach greater depths without earache. It's not a difficult technique, and you should not overthink it, but you must master it to perfection. As with almost everything in freediving, being in a state of focused relaxation is key.

The last training is to improve our static apnea. Because the purpose is to this time determine our maximum time, we devote special attention on safety and preparation. In short, this means that your buddy intervenes on the first bubble that escapes, when you show signs of a samba (uncontrolled muscle movements), or when you do not respond to the agreed time signal. Before we explore our limits, we warm up with a series of 1 minute 30 second static apneas with decreasing breathing intervals starting from 1 minute 30 to 15 seconds. Again, I think this is an almost impossible exercise and I am surprised that we all succeed. It seems the best preparation for a long stay underwater is to stay underwater. And of course, to relax.

We finished with an attempt to set a personal record. 2 minutes 40 seconds after the countdown, I decide to resurface because I began to have doubts about my safety. Would my buddy be able to react when I overstep the line? Would he be on time? Unjustified concerns that have cost me many seconds because the moment I stopped my apnea, I noticed that both my buddy, the lifeguard as well as the instructor, are standing around me. Well, it's good to know that one third of the oxygen is consumed between the ears.

With a theoretical and practical exam, we conclude the course with 30 multiple choice questions. A good overview on what you as an apneist needs to know at the start of this new hobby. Nothing that cannot be answered after reading the course material, using common sense with the readily available knowledge of every diver. The practice is not heavy: 2 minutes stationary and a 40m dynamic apnea. The tests are taken after a good warm-up. At the start of my static apnea I noticed that the nerves are omnipresent. After the first contact with the water, I feel and hear my heart beating in my throat. As I focus on a point at the bottom of the shallow pool, my heart rate slows down. The effect of the water starts my bradycardia and reassures me that the two minutes will soon be over. All the participants pass the tests!

THE OPEN WATER SESSIONS

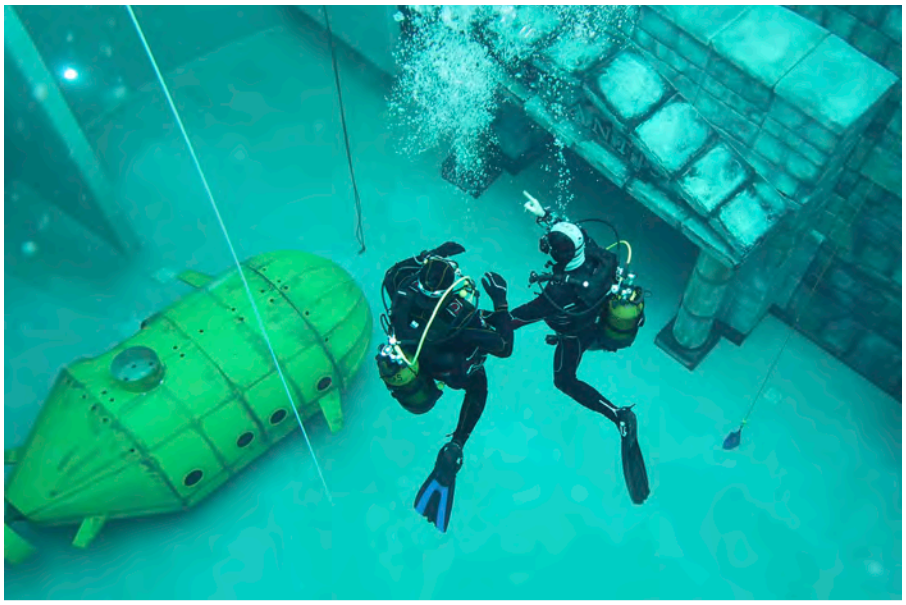
Unlike SCUBA diving you can execute most apnea dives within the constrained space of a pool, but the disciplines of deep diving speaks the most to one's imagination. After the sessions in the pool, the open water part of the course starts. Succeeding the exams means you are ready to go, even though you do not know what to expect.

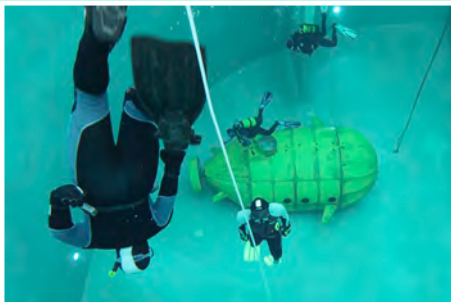
Our first open water session was held in the water tank, Transfo. I hear you thinking, 'That's not open water? Right, but it is deep. Of course, you can plunge in a natural lake, but a closed tank with clear visibility is a better place for the first metres into the deep. The water is quite cold so we need to put on our wetsuits. When I look over the edge of the pool and discover what a bottom of 15 metres means, I think I will never dive that deep. Not today.

Still in doubt, I nevertheless participate in the warm up with short dives to 3 metres. Slowly we move on to practice rescue interventions. This is a standard operating procedure in the preparation for diving in open water. This routine improves your skills as a safety diver and gives mutual confidence in each other's ability to provide a rescue.

Next step is to adjust our weight to get neutral buoyancy at 6m. We dive to 6m to feel whether we float or not. That depth suddenly appears rather deep. Still, I try to relax and get down with a duck dive. I'm, neutral.

Soon after that, it's down to 10m. Equalising ears and dive mask is now the challenge. 10 quickly becomes 12. An amazing performance when you think that I have never been deeper than 7m on one breath. Then we practice diving with a lanyard. The connection with the descent line is so that even in poor visibility





Photos by Frederic Lasters

you're never far from the only safe way up. It also makes it easier for your safety diver to find you when visibility is bad.

Because we practice following the rules of the constant weight discipline, I ask if I may try a free immersion' dive. Following this discipline, you dive by pulling the line, without fin propulsion. This way has the advantage of a very good control of the descent speed. My intention is to go to 12m. All goes well and I manage to equalise once more at 12. Therefore I decide, as briefed, to pull a few more times causing my lanyard to be stopped by the tennis ball hanging at 14m. The ball serves as a prevention against diving too deep and against entanglement. A nice performance to end a successful, first day.

Open water session 2 takes place in the warm deep water pool Nemo 33. The instructors promise us that we can go deeper this time, not just because it is twice as deep, but because the higher temperature of the water facilitates equalisation. The comfort of warm water relaxes the muscles, and those around the Eustachian tube. I'm curious.

Due to the high number of participants, we only had one hour in the deep part of the pool. As it is custom, we started with the rescue exercises to quickly move on to the tests. We were keen to take advantage of the depths offered to fulfil the 18m requirements. Not that it was an obligation to do it on that day, each could do it at their own pace, but it was a good opportunity and we could try it often as we wanted. The moment we decided to go for the mandatory 18m dives, we had to warn the instructor before the duck dive.

During the preliminary dives, I noticed much to my disappointment that the glide phase was very limited. I wore a shorty and due to its small variable volume, the lifting force started at around 2m, even without any extra weight. Next time I would wear my 7mm wetsuit, even if the water is warm. After I was convinced of my abilities, I went for the 18m in 'constant weight', 'variable weight' and 'free immersion'. In the end, I felt that equalising was becoming more difficult.

After an hour at the deep end, we transferred to the 10m pool for the last test: a rescue dive from 10m to the surface. After the 18m dives, we were well warmed up so the exercise was executed flawlessly. Next it was time to try out some techniques and improve others and the ideal opportunity to try out a proper free immersion. I disposed of all my ABC equipment. The only thing I kept was a borrowed nose clip. I felt naked when I started my dive. Although unnecessary, I pinched my nose to equalise. An old habit. Because my vision was blurry, I experienced this particular dive more intensively. Only the water and I. I enjoyed it and repeated it a few times.

You must dive at least four times in 'open water' to become certified. In preparation for these dives, I practiced different equalisation

WHAT DO YOU GET FROM IT?

Although you, as a SCUBA diver, need not buy specialised equipment to finish the first level of freediving, some of it may improve your performance. The most obvious are the long fins and the monofin. Other items are the mask, the lanyard, the Marseillaise and the open cell neoprene. Compared to SCUBA equipment, material for freediving is not expensive.

Unless you completely go for SCUBA diving, you may wonder why bother taking this kind of training. You may start the course out of pure interest, curiosity, or because you like collecting diving certificates, but there are good reasons to consider it as part of your SCUBA training.

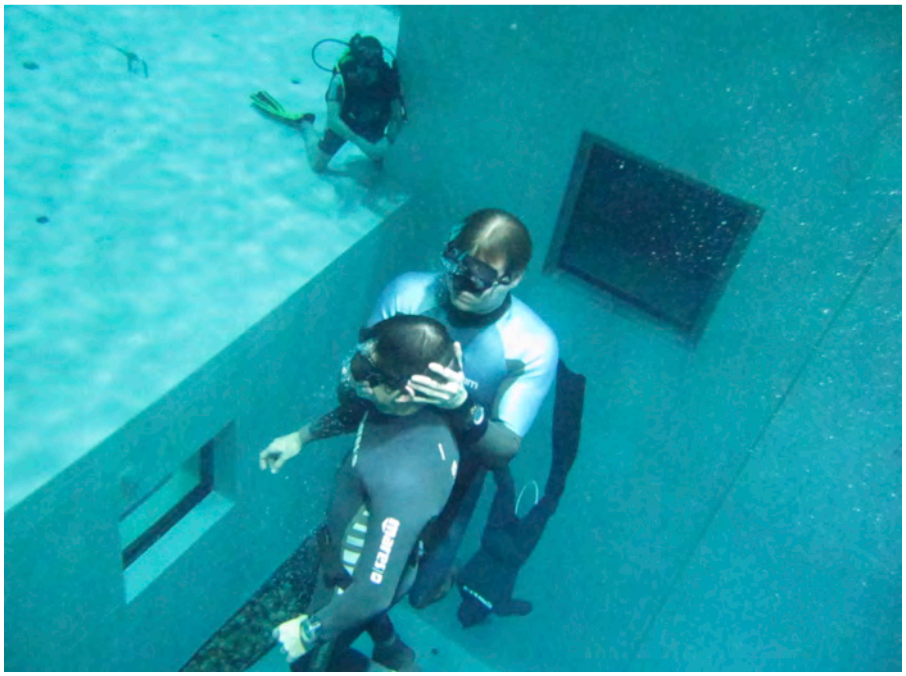
- The training improves your apneas. This facilitates your performance during the certification part in a pool. In that case, it is recommended to complete the course before you start your preparation for an exam because you don't want to confuse yourself with two different sets of safety rules.
- The biggest advantage of the course is the newly acquired state of mind. Focused relaxation makes your other dives more serene. Your breathing rate is slower so you can dive longer. Not only will your dive time increase, but the quality will improve as you'll dive more consciously. It's hard to explain why, but it feels like you added an extra dimension to your diving.
- You learn that there are other techniques than Valsalva to equalise your ears. Having more options available is always an advantage.
- Some fellow divers explained to me that they now dive more cautiously and yet with more confidence because they have an increased knowledge of their personal limits. Although I can empathise with this observation, I have not experienced it myself.

To maintain the above-mentioned positive influences on your dives, I guess you have to continue to freedive. After all, one tends to forget things we do not repeat. So will the positive effect perish with a decline in the skill to reach the state of focused relaxation and the knowledge of your own limits?

techniques during my daily commutes between Zoersel and Brussels. Although breathing and a state of focused relaxation are important, you improve with yoga classes. My first dive convinced me of the importance of proper equalisation and regular exercise is the only way you can master a new skill.

WHAT NOW?

After the course, I wondered how I should proceed. Freediving has definitely improved my experience of SCUBA diving (see sidebars), as well as my knowledge of my limitations, and I look forward to diving into 'real' open water. I'm still hooked on the bottle to completely switch to freediving and yet, sometimes my mind wanders off to the one breath underwater excursions, to feel the invisible hand lifting me upwards… Maybe I'm more inspired than I'm willing to admit?



Photos by Steven Carmans

DISCIPLINES IN FREE DIVING

STATIC APNEA
The aim of this discipline is to stay as long as possible underwater. The freediver floats on the surface with his face forward facing down into the water, holding his breath. This part usually takes place in a pool.

DYNAMIC APNEA WITH FINS
Swimming with fins or a monofin underwater. The goal is to swim the furthest distance possible. This part usually takes place in a pool.

DYNAMIC APNEA WITHOUT FINS
Swimming underwater without fins or a monofin. The goal is to swim the furthest distance possible. This part usually takes place in a pool.

FREE IMMERSION
The diver without fins descends by pulling on a rope, with head facing down or up. At the turning point, the diver turns around and pulls on the rope towards the surface.

CONSTANT WEIGHT
The freediver with fins or monofin swims down. At the desired depth the diver turns around and swims back up. The line should not be touched, except at the turning point. The aim is to get as deep as possible, and of course to do this safely and relaxed.

CONSTANT WEIGHT WITHOUT FINS
The free diver without fins or monofin swims down. At the desired depth, the diver turns around and swims back up. The aim is to get as deep as possible, and of course to do this safely and relaxed.

VARIABLE WEIGHT
The diver with fins or monofin uses a limited weight to descend. This can be a weight or a sled. After the excess weight has been left at the turning point, the diver returns to the surface by swimming or pulling at the rope.

NO LIMITS
This discipline sometimes makes the news because of the spectacular depths that are achieved. The diver uses a weight of choice. Usually, a sled is used. The diver ascends by making use of a lift bag, another propellant, a winch, or something else.

THE CUBE / JUMP BLUES
The diver descends to about 15 metres and swims the greatest possible distance along a large square circuit and then surfaces. It somewhat resembles a combination of 'constant weight' and 'dynamic with fins'.

SPEARFISHING
This is an underwater fishing competition. The fishing rod is replaced by a spear or harpoon. The aim of spearfishing, often within a predetermined period of time, is to shoot the largest or heaviest fish.

DIVING WITH GIANTS

FEATURE **FERNANDO REIS** PHOTOGRAPHY **SIMONE CAPRODOSSI**

How should we behave if we see a whale shark in the water? How close can we get? Is it possible to swim with these endangered whale sharks without disturbing or hurting them? There is a code of conduct.

The first view I had underwater of a whale shark, was its enormous tail swimming from left to right as if time had turned to slow motion – so slow – but ever so powerful at the same time. The individual was not an adult but its caudal fin was more than 2 metres wide, evidently much bigger than I.

At that time, I was on a dive boat coming back from a dive in Tofo, Mozambique when the captain saw the giant fish's fin surfacing the water. The captain did a U-turn, stopped the engine and invited us to jump into the water. When I achieved to swim side by side with this huge whale shark, I felt like one of its relatively small eyes was also observing me. I took a deep look into that shark's eye and then understood its shyness in proportion to its dimensions. That was when I had started to realise how special and unprotected these animals are today. From that day on, as a diver, I feel we are all responsible to share our knowledge and to keep on learning what we can about all marine life conservation, particularly about sharks.

Sharks have evolved in the oceans for over 400 million years. They have survived four massive extinctions. Resisting themselves through adaptation to different habitats, they are today essential for the healthy maintenance of all marine environments. They are today essential to our own survival as human beings.

The whale shark (*Rhincodon typus*) is a highly mobile species driven by environmental conditions and biological stages that can be observed in fairly large concentrations in tropical waters around the world. As far as we know for certain, whale sharks can become really huge. We've all heard they can reach the size of a small school bus – some non-validated claims say they can measure more than 18m in length.

Its scientific name is interesting because '*Rhincodon*' can be translated to 'scraping teeth' and '*typus*' can translate to, 'example of'. In appearance, it is a fish with a body very much like that of a whale's, with a massive flat head, with a truncated snout and a mouth filled with several rows of more than 3,000 tiny teeth the size of small grains of rice.

In fact, whale sharks are the world's biggest fish and one of the three filter feeding shark species. It belongs to the family Rhincodontae, in the order of the Orectolobiformes (the nurse sharks and zebra sharks are their closest relatives), but they are the unique representative of their respective family. The colour of their skin is greyish with spots and stripes of a lighter colour (with a unique pattern only to the individual), with its ventral part of white and three distinct ridges along the upper body.

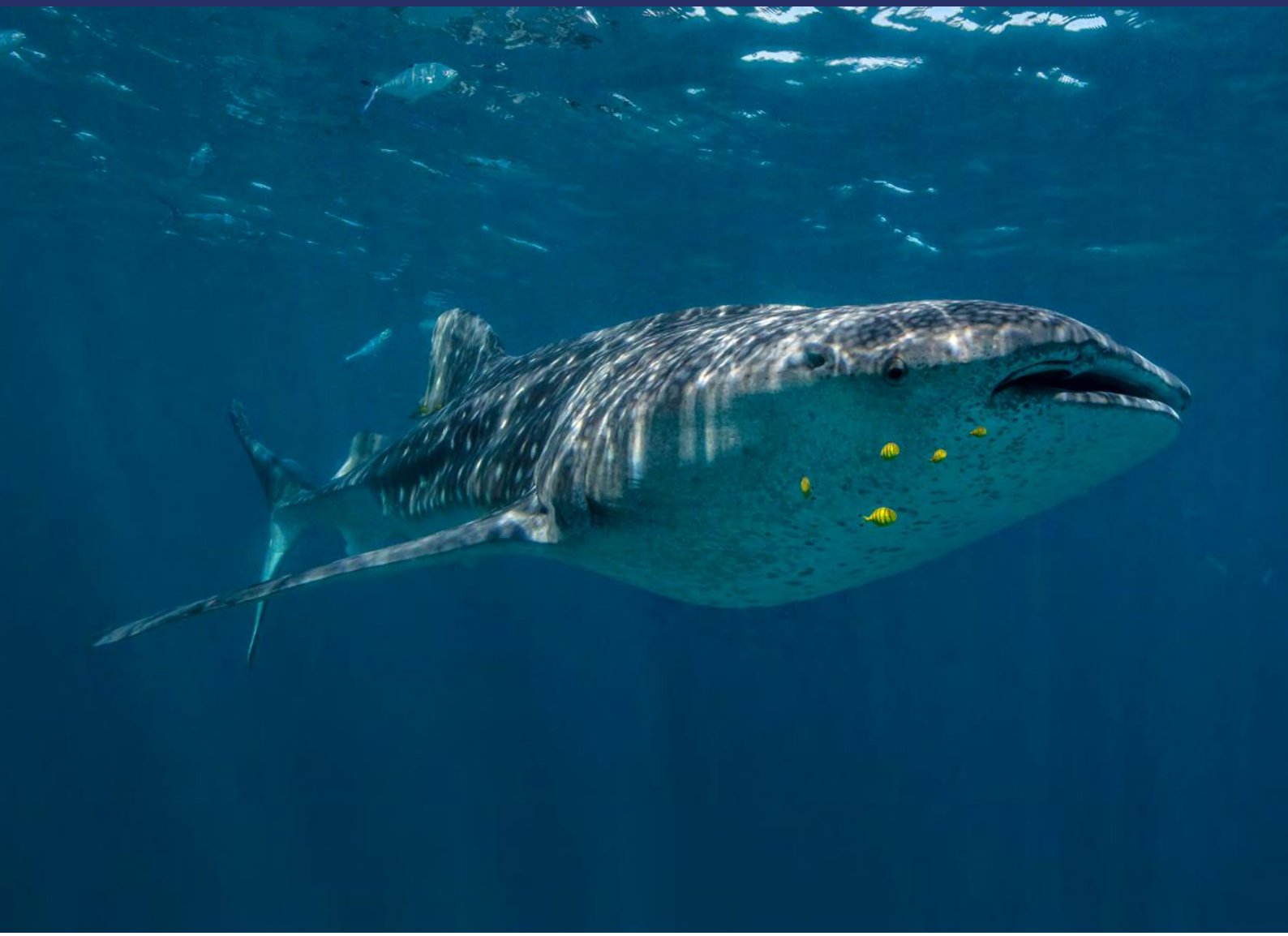
WHALE SHARK BIOLOGY

Despite their size, very little is known about the whale shark biology and living habits. As a result of their large size and evident docility in water when in close contact with people, this species is often treated as the gentle giant of the marine world, never presenting a direct danger to humans.

Their juvenile years are usually very long. According to recent research (Hsu et al., 2014), males are not mature enough to reproduce before the age of 17, and females have to survive up to the age of 19-22 to be able to reproduce for the first time. As some other shark species, whale sharks are viviparous type fish. On examining a capture in Taiwan, it is now known that a single female can hold up to more than 300 pups in her uterus (Joung et al., 1996), at different stages of development.

Without knowing its period of gestation for certain, it has also recently been discovered that females can retain fertilised eggs inside their bodies until each of them hatch. It is the only species of shark known to hold such a large quantity of different stages of developing embryos at the same time.

Despite their size as adults, whale sharks are usually born between 50 and 70cm in length



and the first studies of their life expectancy – still very controversial – projected that they could live up to 80-100 years (Hsu et al., 2014).

The size of its mouth can be more than 150cm wide, with which this beautiful shark only feeds on very small animals. Their diet is based on zooplankton, usually composed of small pelagic and premature crustaceans, fish eggs, small shoaling fish and other small animals filtered in vast columns by their gill branches. They have five big pairs of gills that they use for two functions: to extract the oxygen from the water and to filter out the small prey that has entered their wide open mouths.

Connected to their internal large olfactory capsules, the whale sharks have relatively small nostrils at the front of the head, just above the mouth, but they play an important function in detection of food in the water. Another interesting fact is that their inner ear is the largest of any marine animals. It is supposedly related to adaptations for low-frequency hearing, thus the importance of an approaching and interacting code of conduct.

HABITATS, BEHAVIOURS AND THREATS

Their habitats are coastal and oceanic waters that lie from the surface to a depth of more than 1,200 metres. Their distribution in latitude allows us to find them in the tropical and warm-temperate waters of the Indian and Pacific oceans, where about 75% of their total population lives, and of the Atlantic where we may discover the other 25%.

One of the most amazing aspects of their behaviour is that they are able to use surface frontal zones in the ocean as a strategy to maximize prey encounters as it is observed in other pelagic shark species. It is also known today, according to a fresh new investigation (Ramírez-Macías et al, 2017), that juvenile and adult whale sharks display clear differences in their movement patterns.

As in many other shark species, juveniles like to remain more in shallow and coastal areas, while adult whale sharks prefer to move offshore into the ocean. In fact, the study of whale shark concentrations in pelagic frontal zones require the most relevant attention.

Whale sharks are the true giants of the oceans and as they are harmless, they are approached by divers and swimmers on all occasions. They provide a tremendous pleasure and an unforgettable experience with being in the water so close to such a beautiful creature. This is the good part – but there is also the bad. The easy accessibility that has been exploited most especially in recent years by environmental ecotourism has also contributed to a greater concern about the sustainable survival of the whale shark in the oceans.

The fact that they are also well known to gather in large numbers at certain locations and times of the year, means that large numbers of these animals are also accessible not only to well-intentioned conservationists and tourists, but also to some illegal fisheries around the world.

The numbers that are known today frighten us very much! The occurrence of whale sharks in various common Indo-Pacific observational frontal zones decreased by 50% between 2003 and 2012 (Harley et al., 2013), potentially representing a drop in the abundance of the whale shark subpopulation of this region. There are tonnes of whale shark meat and fins confiscated every year in different seaports around the world.

Ranked in the IUCN Red List of Threatened Species as Vulnerable (VU) since 2000, due to the most recent data and contemporary

threats by fisheries catches, bycatch in nets and vessel strikes, this organisation changed its Red List level last year, to an Endangered Species (EN) Category. Also due to the continuous growth of shipping lanes through whale shark feeding areas, the risk of serious strikes also increased significantly.

Since 2002 whale sharks have also been included in Appendix II of the CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora (which means that it cannot be commercialised by the countries who signed this Convention). Actually, since 2002, no whale shark fishery has been certified as sustainable under the regulations of Appendix II of CITES.

But the persistent presence of whale shark fins in some of Hong Kong's markets, although there are no records in the CITES database, can only suggest that illegal trade is occurring outside the allowed legal system.

DIVERS CODE OF CONDUCT *

How should we behave if we see a whale shark in the water? How close can we get? Is it possible to swim with these endangered whale sharks without disturbing or hurting them?

According to the Department of Parks and Wildlife of the Government of Western Australia and their experience in guiding swimmers sighting visits, some of the best practices have been set as rules that should be respected when interacting with whale sharks. As divers and whale shark experts, it is good to understand that these rules have been developed for the protection of the whale sharks and those interacting with them.

They have ethically defined a restricted "Exclusive Contact Zone" for any type of vessel, and a respectful safety area for any person swimming above or underwater. Although they appear to be 'gentle giants', whale sharks are wild animals that can potentially inflict an injury if they strike a snorkeller or a diver with their body, tail or fins.

So when we are in the water, diving or snorkelling in the presence of a whale shark, we should always try to ensure that we have a safe, enjoyable experience and do our best to prevent the animals from being harmed or disturbed.

There is an "Exclusive Contact Zone" of a 250 metre radius that applies for any vessel around a whale shark. Once we establish this contact zone, only one vessel can enter at a time and must always respect the minimal distance of 30 metres at a speed of 8 knots or less. After that, swimmers, limited to a maximum of 10 persons, can jump into the water ahead of the shark's direction of travel.

When in the water, we then enter in a 'Swim Contact Zone'. In order to respect and follow a sustainable sight, we should try to avoid in any circumstances, touching the whale shark or to restrict its normal movement or behaviour. When swimming close to the shark, we shall not approach closer than 3 metres from its head and 4 metres from its tail. And of course, as we wish not to disturb the animal, we should never use motorised propulsion jets, or cameras with flashes or on extension poles.

* **Whale Shark Code of Conduct – courtesy of the Department of Parks and Wildlife of the Western Australian Government – 2017.**

CONSERVATION AND SUSTAINABLE WHALE SHARK DIVING

What should you do if a whale shark happens to cross your path?

Like fingerprints, each whale shark has distinctive patterns of dots. And they can be very useful in their identification. It's the area located on their left side, between the pectoral fin and the gills that is used to individually identify each whale shark.

If you are at sea and if you are diving, or if by chance you have the opportunity of jumping into the water when you see one, you can help towards research. Please take a photo between the pectoral fin and the gills on the whale shark's left body side and submit your photo and sighting info to the 'Wildbook for Whale Sharks' which is a collaborative conservationist project at: **www.whaleshark.org**.

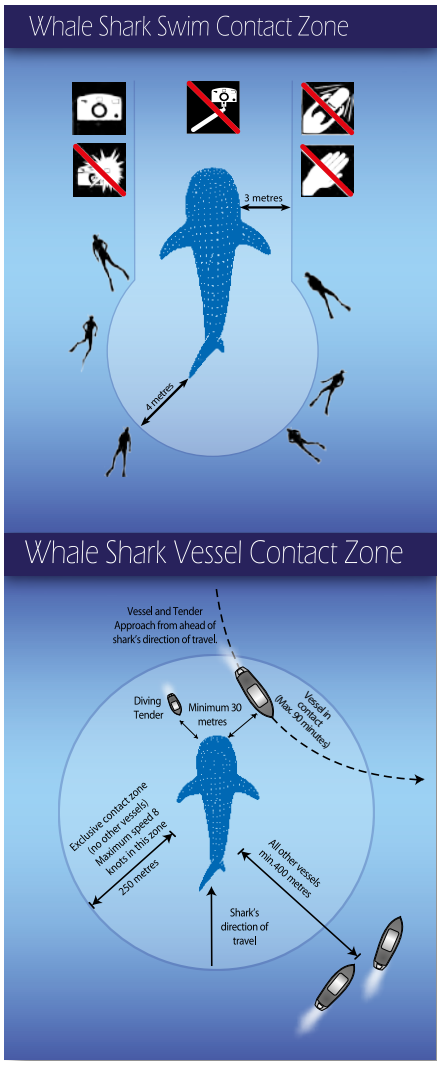
There have been more than 8,000 whale sharks identified worldwide on this database. What we still don't know is if they are separated populations of whale sharks or just one world migratory population. However, the exact number of whale sharks illegally fished each year is unknown.

We already know that whale sharks are clearly not dangerous towards humans, but the question to answer now is to know to what extent we humans are a danger to them! Let's please try to respect them.

We deeply believe that diving or snorkelling with these giants can represent both a challenge and an opportunity for their protection and conservation.

In conclusion, if we present respectful behaviour when in the presence of a whale shark by following the simple set of rules listed above in the code of conduct and we respect well-regulated sighting areas, then whale shark observation can become the most effective tool for their conservation without disturbing these graceful giants.

Just imagine that the majority of whale sharks we find swimming in the oceans nowadays were already around when we were born! What a pleasure and a beautiful sight it is to enjoy as a diver!



Examples of the Whale Shark Code of Conduct – courtesy of the Department of Parks and Wildlife of the Western Australian Government – 2017.

FERNANDO REIS
Shark Advocate, Executive Director of the Sharks Educational Institute, Former president of the Canary Islands Shark Alliance, and Board Member of the Sharks Atlantic Platform.

This article reflects the author's point of view as a shark diver with a special dedication to the study and conservation of living shark species in their natural environment. Thus, it is based on the author's studies and diving experiences with whale sharks (*Rhincodon typus*) in the Indian Ocean, as well as the knowledge of the importance of preserving this species worldwide, and most importantly, sharing his details under a diving point of view.

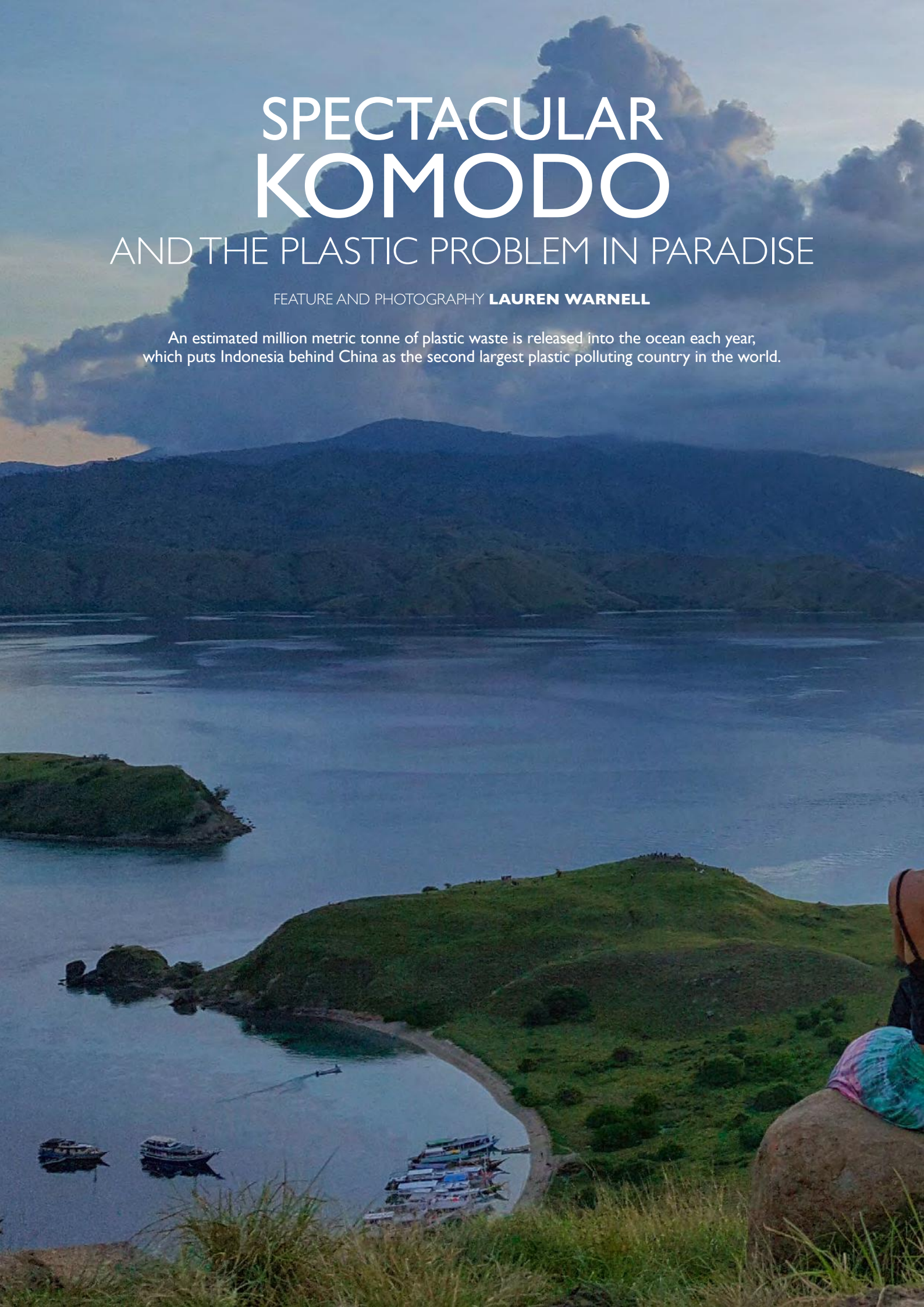
For more information about whale sharks and sustainable shark diving, please email: **info@sharksinstitute.org, sharksinstitute@gmail.com**
or visit the Sharks Educational Institute at: **www.sharksinstitute.org**

SPECTACULAR KOMODO

AND THE PLASTIC PROBLEM IN PARADISE

FEATURE AND PHOTOGRAPHY **LAUREN WARNELL**

An estimated million metric tonne of plastic waste is released into the ocean each year, which puts Indonesia behind China as the second largest plastic polluting country in the world.



Nestled in the centre of the Indonesian archipelago, Komodo National Park is made up of three large volcanic islands and a handful of smaller ones. This is the home of the elusive Komodo Dragon, outstanding natural beauty and some of the most coveted diving in the world.

Located within the Coral Triangle, the waters of Komodo National Park contain some of the richest marine biodiversity known. You can dive in strong currents or peaceful bays, marvel at huge schools of fish, watch manta rays dancing or search out the large array of critters hidden on the reef. The topography is varied and the styles of diving range from black sand muck dives to blue drift dives.

To truly experience the finest sites, by far, the best option is to dive from a liveaboard. I was lucky enough to secure a spot on Adelaar, an exquisite ship which has been operating as a luxury liveaboard since 1993 and has a fascinating history that spans more than a century. Her story involves operating as a cargo ship in Europe, being hijacked as a war vessel in Germany during the Second World War, and winning races in the Pacific.

Stepping onto the vessel, it's hard not to be impressed. The rigging of the 125ft schooner is in tip-top condition and the sun deck with its large teak table, awning and comfortable seating area is immediately inviting. Meanwhile, the interior of the boat has rich teak wood panelling and high ceilings and boasts four large air-conditioned cabins all equipped with en-suite marble bathrooms.

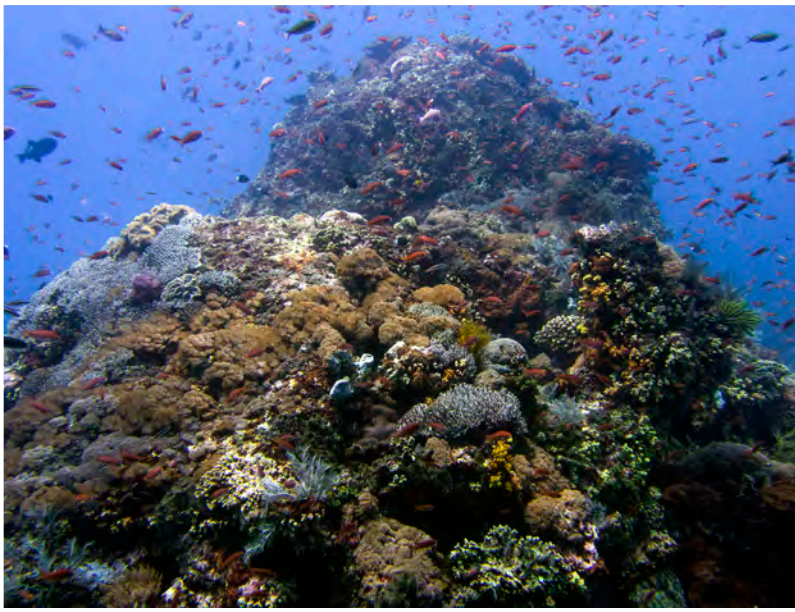
Adelaar runs exclusive round trips from Bali to Komodo, catering to those who enjoy small group luxury sailing and diving. Embarking on the return journey from Bali to Komodo National Park by boat is hands down the best way to go. Not only do you get to travel in style sipping an ice cold beverage while watching the sunset rather than boarding a cramped flight, but you also get to dive some really sweet spots on the 300 nautical mile journey too.

I was sceptical about the dives outside of the park. It's pretty hard to match up to the incredible beauty offered in Komodo, but my doubts were unfounded. Diving off the flank of the active volcano Sangeang Api, offered some of the best macro diving I have encountered. It's an absolute haven for those who like to search for the small stuff. Moyo Island also didn't disappoint. With its clear blue water and strong currents, it brought spectacularly large schools of fish to the site.

But of course the highlight is the park itself and if the beautiful corals, huge schools of fish and abundance of critters isn't enough, it also has a year-round aggregation of manta rays. Large aggregations of up to 80 individuals have been seen at Karang Makassar in the north of the park and Manta Alley in the south. I challenge anyone to drop down and spend an hour underwater with these majestic creatures and not return to the boat grinning from ear to ear.

Sounds like it has it all, right? Komodo is indeed spectacular, but it's not quite perfect, because unsurprisingly even this diving mecca is not immune to the onslaught of plastic debris that is currently choking our oceans.

While we didn't spot as many large plastic items in the water column as in other parts of Indonesia, the problem slapped us in the face when we turned our attention topside.



Indonesia is particularly affected by plastic pollution due to both its geography and its lack of infrastructure. It has 54,720km of coastline (the second largest in the world) and traditional waste disposal is simply to discard trash into the sea, burn it or bury it.

The result? An estimated million metric tonne of plastic waste is released into the ocean each year, which puts Indonesia behind China as the second largest plastic polluting country in the world.

In April, the Indonesian government pledged up to $1bn per year to reduce the amount of plastic and waste products polluting its waters as part of the UN's new Clean Seas campaign. The country hopes to achieve a 70% reduction in marine waste within eight years, partly by developing new industries that use biodegradable materials such as cassava and seaweed to produce plastic alternatives.

Still, worldwide the ocean contains 5 trillion pieces of floating plastic and a report in 2016 predicted that there will be more plastics than fish in the ocean by 2050, a figure that some argue has already been surpassed.

This plastic waste never truly breaks down, the items just get smaller as wind and sun exposure break them into smaller and smaller pieces, until they become as tiny as a grain of sand – the so-called microplastic.

As large filter feeders such as manta rays swim through the ocean with their mouths wide open aiming to eat as much zooplankton as possible, microplastics are inevitably served as a side dish to the zooplankton entrée.

Microplastics already contain toxins, but frighteningly they also absorb other toxins from the water column such as those found in pesticides, so they are laden. Scientists have shown that animals as small as zooplankton ingest microplastics, and as these tiny organisms form such a crucial part of the food chain, the implications are worrisome.

The specific effects of plastic pollution on manta rays has not yet been quantified but Elitza Germanov from Marine MegaFauna Foundation is using her PhD study to find out how much of a threat microplastics are to these charismatic animals. The preliminary findings are disturbing.

According to Ellie, visually counted anthropogenic debris averaged 2,894 pieces per km^2 in Komodo, with plastic films being the most commonly observed items. She has also estimated that manta rays potentially ingest 90 pieces of plastic per hour. Over the next two years, she aims to discover more about how this affects the gentle giants.

Back on the boat, the staff of Adelaar do what they can to help. They distribute reusable bottles to everyone on board and toiletries are provided in large dispensers rather than disposable containers. Dive guides Foued and Mimi always took mesh bags underwater with them and collected trash as and when they saw it, and also did a few spontaneous beach clean-ups during the trip. The dive community all over Indonesia are real ocean advocates in the fight against marine debris, but the work is just a drop in the ocean so far.

FIVE REALLY EASY WAYS TO USE LESS PLASTIC:

SAY NO TO STRAWS

Straws suck! Over 500 million of them are produced everyday and they are one of the top ten items found in beach clean-ups. Bars and restaurants are encouraging you drink faster by using a straw and spend more money. Be smart and ask for your drinks without a straw or if you really need one, grab a reusable bamboo or glass one.

CARRY A REUSABLE CLOTH BAG

Around 2 million plastic bags are used around the world per minute. It's so very easy to take your own lightweight cloth bag and be empowered to say no at the checkout.

DRINK FROM A REUSABLE WATER BOTTLE

Not only are they a huge problem for our oceans but the amount of water it takes to make one single-use plastic water bottle can be up to six or seven times the water it takes to fill it. This is particularly disturbing at a time when 1 in every 9 people on Earth lack access to safe drinking water. If you're nervous about the quality of your local tap water, look for a model with a built-in filter.

BOYCOTT MICROBEADS

The polishing beads in products such as facial scrubs, toothpaste and body washes are actually microplastics. Their tiny size allows them to slip through water-treatment plants and into the ocean and then potentially onto your dinner plate. Choose natural exfoliants such as sea salt and coffee grinds instead.

TAKE YOUR OWN COFFEE CUP

Takeaway coffee cups are lined with plastic which is not biodegradable. Meanwhile, BPA is drawn out of the plastic lid by the acidity levels and the heat as the hot liquid passes through the lid as you drink your coffee. Not only are they bad for the environment, but for your health as well.

DIGITAL ONLINE 2017

EDA'S UNDERWATER PHOTOGRAPHY AND FILM COMPETITION

THE RESULTS ARE IN

EVENT PHOTOGRAPHY **ALLY LANDES**

Digital Online was introduced by EDA for resident photographers to develop a relationship and human interaction with those unfamiliar with the underwater world and environment.

DIGITAL ONLINE

جمعية الإمارات للغوص

EMIRATES DIVING ASSOCIATION

PHOTOGRAPHY AND FILM COMPETITION

DIGITAL ONLINE'S MAIN OBJECTIVES ARE:

- To develop the human interaction with the underwater environment and highlight the beauty of its flora and fauna.
- To gather information on the number of underwater photographers in the UAE (both professional and amateur).
- To discover new promising underwater photographers in the UAE.

Digital Online is open to all photographers and videographers of all skill levels with a valid EDA membership status. EDA membership must be renewed if expired or acquired in order to take part.

EVENT BY EDA

EDA جمعية الإمارات للغوص Emirates Diving Association

EXHIBITION HOST

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AWARDS NIGHT: WEDNESDAY, 31st MAY 2017 | 21:00-22:30 | AUD

EXHIBITION OPEN FROM: 1-7 JUNE 2017 | AUD

Special Guest visit from Ali Bin Thalith with EDA Members and Digital Online Winners, Ahmed Abdalla Al-Ali, Khalid Obaid and Yousif Alali.

ABOUT DIGITAL ONLINE

Digital Online was realised in 2009 by Marcelo Mariozi, a professional underwater photographer who had previously been involved in the organisation and set up of underwater photography competitions in his native country of Brazil.

As there were no other underwater photography competitions existing in the UAE at the time, Digital Online was introduced by EDA for resident photographers to develop a relationship and human interaction with those unfamiliar with the underwater world and environment. The film category was introduced as an extension to the competition in 2012 to share our underwater world through motion pictures.

The event, now in its ninth year, has seen the steady growth of underwater photography participation, the enthusiasm, and the passion step up to another level. The event has attained equal success with the non-divers who come to support the participants at the Awards and Exhibition Opening night.

THE SPONSORS

We would like to thank all our devoted and new sponsors for the support in taking part in Digital Online's event, for without them, the competition would not take place.

Thank you to BFC Travel Management, Tourism Malaysia, Philippines Department of Tourism, Al Marsa Musandam, The Dive Centre, Canon, Grand Stores Digital, Le Meridien Al Aqah Beach Resort Fujairah, Al Mahara Diving Center & Anantara Sir Bani Yas Island Al Sahel Villa Resort, Millennium Resort Mussanah Oman & Oman Sail, Freestyle Divers, Al Boom Diving, MTM Marine LLC, Divers Down, QVolution Sports Wear Trading LLC and Print Works.

THE JUDGES

We would also like to thank Andy Murch, Simon J Pierce, Imran Ahmad, Jonathan Ali Khan and Christophe Chellapermal for being Digital Online's asset guest judges. We are privileged to have such talented photographers/film makers volunteer their time to take part in this event.

THE AMERICAN UNIVERSITY IN DUBAI

A very big thank you to AUD for hosting our Awards and Exhibition for the 3rd year running.

	VIDEO	TOTAL
1	Khaled Sultani	525
2	Pablo Jiménez Novoa	473
3	Alaa Khalil	427
4	Caroline Black	419
5	Levente Rozsahegyi	379
6	Andy Jones	363
7	Yan Xiong	351

	DSLR/MILC	MACRO	WIDE ANGLE	BEST OF THE UAE	BLACK & WHITE	TOTAL
8	Simone Caprodossi	492	492	482	496	1962
9	Iyad Suleyman	464	435	480	456	1835
10	Philippe Lecomte	465	449	413	446	1773
11	Chris Combes	391	442	421	458	1712
12	Stewart Clarke	446	416	426	386	1674
13	Yousif AlAli	406	421	448	369	1644
14	Steven Board	433	393	340	409	1575
15	Yousef Alshekaili	409	318	311	295	1333
16	Peter Mainka	296	308	367	329	1300
17	Mohamed A. AlQubaisi	426	435	405	N/A	1266
18	Khalid Obaid	453	320	458	N/A	1231
19	Ahmed Obaid Al Naqbi	410	N/A	399	377	1186
20	Magdi Hanna	287	328	301	270	1186
21	Abdulla Alali	375	399	373	N/A	1147
22	Ahmed Abdalla Al-Ali	315	N/A	387	392	1094
23	Aamer Al Hammadi	403	N/A	417	N/A	820
24	Kervin Pamintuan	329	N/A	N/A	328	657
25	Khaled Alhosani	329	N/A	N/A	282	611
26	Pablo Jiménez Novoa	396	N/A	N/A	N/A	396
27	Rob Buurveld	320	N/A	N/A	N/A	320
28	Natalie Hore	N/A	316	N/A	N/A	316

	COMPACT		COMPACT	BEST OF THE UAE	BLACK & WHITE	TOTAL
29	Andy Jones		393	356	375	1124
30	Yan Xiong		377	309	305	991
31	Sibylle Blumenthal		424	N/A	435	859
32	Lynette Ferreira		258	293	290	841
33	Pablo Jiménez Novoa		415	N/A	374	789
34	Sultan Althahab		388	397	N/A	785
35	Rob Buurveld		375	N/A	333	708
36	Hassan N.K. Khayal		251	228	222	701
37	Michelle Niemczyk		315	N/A	340	655
38	Magdi Hanna		325	N/A	N/A	325
39	George Eason		305	N/A	N/A	305

DIGITAL ONLINE 2017 PRIZES AND SPONSORS

Digital Online's 20 Prize Sponsors are giving this year's lucky winners 24 prizes to choose from!
NOTE: Participants are only able to win one prize each. Entrants with multiple winning entries will be given priority in the points awarded.

OVERALL DIGITAL ONLINE DSLR/MILC WINNER
SIMONE CAPRODOSSI – 1962

OVERALL DIGITAL ONLINE COMPACT WINNER
ANDY JONES – 1124

OVERALL DIGITAL ONLINE VIDEO WINNER
KHALED SULTANI – 525

UAE NATIONAL PHOTOGRAPHY AWARD
YOUSIF ALALI – 1644

VIDEO 1st PLACE WINNER
THE BIG BLUE | KHALED SULTANI – 525
BFC TRAVEL MANAGEMENT | Destination Package – 5 days/4 nights in Bali, Indonesia.

DSLR/MILC 1st PLACE WINNERS
BLACK AND WHITE | SIMONE CAPRODOSSI – 496
CANON | EOS 700D + 18-55 DC

BEST OF THE UAE | IYAD SULEYMAN – 480
PHILIPPINES DEPARTMENT OF TOURISM | AZURE DIVE & YOGA RESORT | Destination Package – 5 days/4 nights for 2 in Dauin, Philippines.

MACRO | PHILIPPE LECOMTE – 465
PHILIPPINES DEPARTMENT OF TOURISM | MARCO VINCENT DIVE RESORT | Destination Package – 6 days/5 nights for one person in Puerto Galera, Mindoro, Philippines.

WIDE ANGLE | CHRIS COMBES – 442
MILLENNIUM RESORT MUSSANAH AND OMAN SAIL DIVE CENTRE, OMAN | 2 nights stay for two adults in Superior Room, with breakfast and 2 days diving package for two persons.

COMPACT 1st PLACE WINNERS
BLACK AND WHITE | SIBYLLE BLUMENTHAL – 435
DIVERS DOWN | Rebreather Course on Dive Rite O2PTIMA CCR Unit.

COMPACT | PABLO JIMÉNEZ NOVOA – 415
BFC TRAVEL MANAGEMENT | Destination Package – 4 days/3 nights in Terengganu, Malaysia.

BEST OF THE UAE | SULTAN ALTHAHAB – 397
BFC TRAVEL MANAGEMENT | Destination Package – 4 days/3 nights in Aqaba, Jordan.

VIDEO 2nd PLACE WINNER
THE BIG BLUE | ALAA KHALIL – 427
TOURISM MALAYSIA | Destination Package – 5days/4nights to Sipadan, Sabah, Malaysia.

DSLR/MILC 2nd PLACE WINNERS
MACRO | KHALID OBAID – 453
ANANTARA SIR BANI YAS ISLAND AL SAHEL VILLA RESORT AND AL MAHARA DIVING CENTER | Two nights stay at Anantara Sir Bani Yas Island Al Sahel Villa Resort for 2 with 2 dives.

BEST OF THE UAE | YOUSIF ALALI – 448
CANON | Powershot G7 X Mark II

WIDE ANGLE | MOHAMED A. ALQUBAISI – 435
EMIRATES DIVING ASSOCIATION (EDA) | Capture Lens Canon EF-Mount by Peak Design. To carry and change lenses with ease.

BLACK & WHITE | STEVEN BOARD – 409
MTM MARINE LLC | MARES XR Single Tank BCD.

COMPACT 2nd PLACE WINNERS
COMPACT | YAN XIONG – 377
GRAND STORES | [Qudos] Action Light by Knog

BLACK & WHITE | ANDY JONES – 375
CANON | Powershot D30

BEST OF THE UAE | LYNETTE FERREIRA – 293
AL MARSA MUSANDAM | 2 Night Liveaboard Trip in the Musandam

VIDEO 3rd PLACE WINNERS
THE BIG BLUE | CAROLINE BLACK – 419
MTM MARINE LLC | MARES Smart Dive Computer.

DSLR/MILC 3rd PLACE WINNERS
MACRO | STEWART CLARKE – 446
LE MERIDIEN AL AQAH BEACH RESORT & SPA | One night stay in a Superior Room inclusive of Breakfast Buffet at Views Restaurant for two persons.

BEST OF THE UAE | AAMER AL HAMMADI – 417
GRAND STORES | Rollei Actioncam 430

WIDE ANGLE | ABDULLA ALALI – 399
FREESTYLE DIVERS | A weekend of East Coast diving for 2 people combined with an introduction to wreck hunting and wreck surveying techniques.

BLACK & WHITE | AHMED ABDALLA AL-ALI – 392
LE MERIDIEN AL AQAH BEACH RESORT & SPA | 2 night Summer Promotion stay in a Superior Room inclusive of Breakfast Buffet at Views Restaurant for two persons.

COMPACT 3rd PLACE WINNERS
COMPACT | ROB BUURVELD – 375
AL BOOM DIVING | 2 dives in Fujairah with full equipment for 2 divers.

BLACK & WHITE | MICHELLE NIEMCZYK – 340
MTM MARINE LLC | MARES XR Power Plana Fins.

BEST OF THE UAE | HASSAN N.K. KHAYAL – 228
THE DIVE CENTRE | Two dives for two people at The Dive Centre – Sandy Beach.

THE PEOPLE'S CHOICE AWARDS PRIZE SPONSOR
iQ-UV (4 prizes sponsored) UV Protection you Wear | www.iq-uv.com
Judging will take place on Facebook after the Awards Night.

DIGITAL ONLINE
جمعية الإمارات للغوص
EMIRATES DIVING ASSOCIATION
PHOTOGRAPHY AND FILM COMPETITION

THE DIGITAL ONLINE JUDGES

ANDY MURCH | BIG FISH EXPEDITIONS
Wildlife Photographer

Andy Murch is an award winning wildlife photographer and the founder of Big Fish Expeditions. Specialising in images of marine predators over the last two decades, he has probably photographed more shark species than any other diver. Andy's images and shark stories have appeared in hundreds of books and magazines around the world from titles as varied as Scuba Diving, FHM, the New York Times, Digital Photography Magazine and the Journal of Zoology. Andy is the creator of the ever expanding Shark and Ray Field Guide on Elasmodiver.com and the driving force behind the Predators in Peril Conservation Project.

Elasmodiver Shark and Ray Picture Database: www.elasmodiver.com
Marine Life Images: www.marinelifepics.com
Predators in Peril Project: www.PredatorsInPeril.org.

WEBSITE: www.bigfishexpeditions.com
FACEBOOK: Big Fish Expeditions

SIMON J PIERCE | MARINE MEGAFAUNA FOUNDATION
Marine Conservation Biologist & Underwater Photographer

Simon is a marine conservation biologist and a Co-Founder and Principal Scientist at the Marine Megafauna Foundation. Most of his work focuses on the world's largest fish: the whale shark. He also works with other threatened species, particularly sharks, rays, sea turtles, and for the protection and management of important marine habitats. He acts as a science advisor for the Wildbook for Whale Sharks global photo-identification library, and also a Director of Wild Me, the non-profit organisation which oversees it's development. Finally, he's a Member of the IUCN Shark Specialist Group, an invited group of experts that synthesises scientific knowledge and assists in the development of global conservation strategy for these fish. Since 2012 he has become increasingly interested in photography as a way of documenting his work, and for communicating his enthusiasm for nature and wildlife in general. His photographs and videos have been published by a wide variety of media outlets, including New Scientist, the Washington Post, Scientific American, BBC Wildlife, Discovery, Earth Touch, Huffington Post, Yahoo, Rough Guides, and Sport Diver.

WEBSITE: www.simonjpierce.com
FACEBOOK: Simon J Pierce Photography

IMRAN AHMAD | ESCAPEINC. DIVE & PHOTOGRAPHY
Professional Photographer

Imran Ahmad has been capturing the magnificence of life both above and below the water's surface for over 20 years. A celebrated and internationally published professional photographer, Imran is committed to showcasing, preserving and protecting the ocean's environment and its surroundings. Clients can find photographic solutions for corporate, commercial, wildlife, creative arts, publishing, photo clinic and underwater projects. A graduate from Middlesex University with a Bachelor of Arts in Film making, he is the brand ambassador for RGB Lights (Japan), and a member of the Ocean Artist Society.

PUBLISHED BOOKS
- Seychelles Unexpected Treasures (Underwater Photo Art)
- Ocean Tapestry (Underwater Photo Art)
- Hidden Sanctuary (Mabul & Sipadan Underwater Look Book)
- PURE Series

WEBSITE: www.escapeinc.com.sg
FACEBOOK: Imran Ahmad Photography

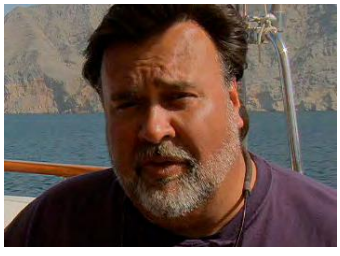
CHRISTOPHE CHELLAPERMAL | NOMAD OCEAN ADVENTURES
PADI, TEK TDI & Rebreather Instructor

Christophe Chellapermal arrived in the United Arab Emirates when he was 7 years old and has been living in the Middle East region ever since. His love of water started as a young child and he has been a diver since he was 12 years old.

Chris became a PADI Scuba Instructor in 1998 and with 25 years of diving experience and 17 years of teaching experience, he has gained much knowledge in the aquatic realm. He is a TEK TDI Rebreather Instructor with Submatix and can teach CCR up to 60m. Founder and owner of Nomad Ocean Adventures since 2004, he loves the ocean and the planet and does all he can to involve Nomad Ocean Adventures with environmental conservation. Being a photography and nature lover, he spends hours in the water taking photos of his underwater adventures.

WEBSITE: www.discovernomad.com
FACEBOOK: Nomad Ocean Adventures Musandam

JONATHAN ALI KHAN | WILD PLANET PRODUCTIONS
Managing Director



JAK is a topside wildlife and underwater cameraman, producer, director and editor with a strong passion for the natural world having worked on a wide range of unique projects in the region and is recognized as an authority on environmental, conservation and diving related issues. His fascination with filming all started after years of working as a photojournalist and shooting underwater stills. His primary interest is in marine subjects that led to the creation of Ocean World Productions in 2003. In 2008, JAK left Ocean World Productions in order to focus entirely on natural history TV development, leading to the recent creation of Wild Planet Productions.

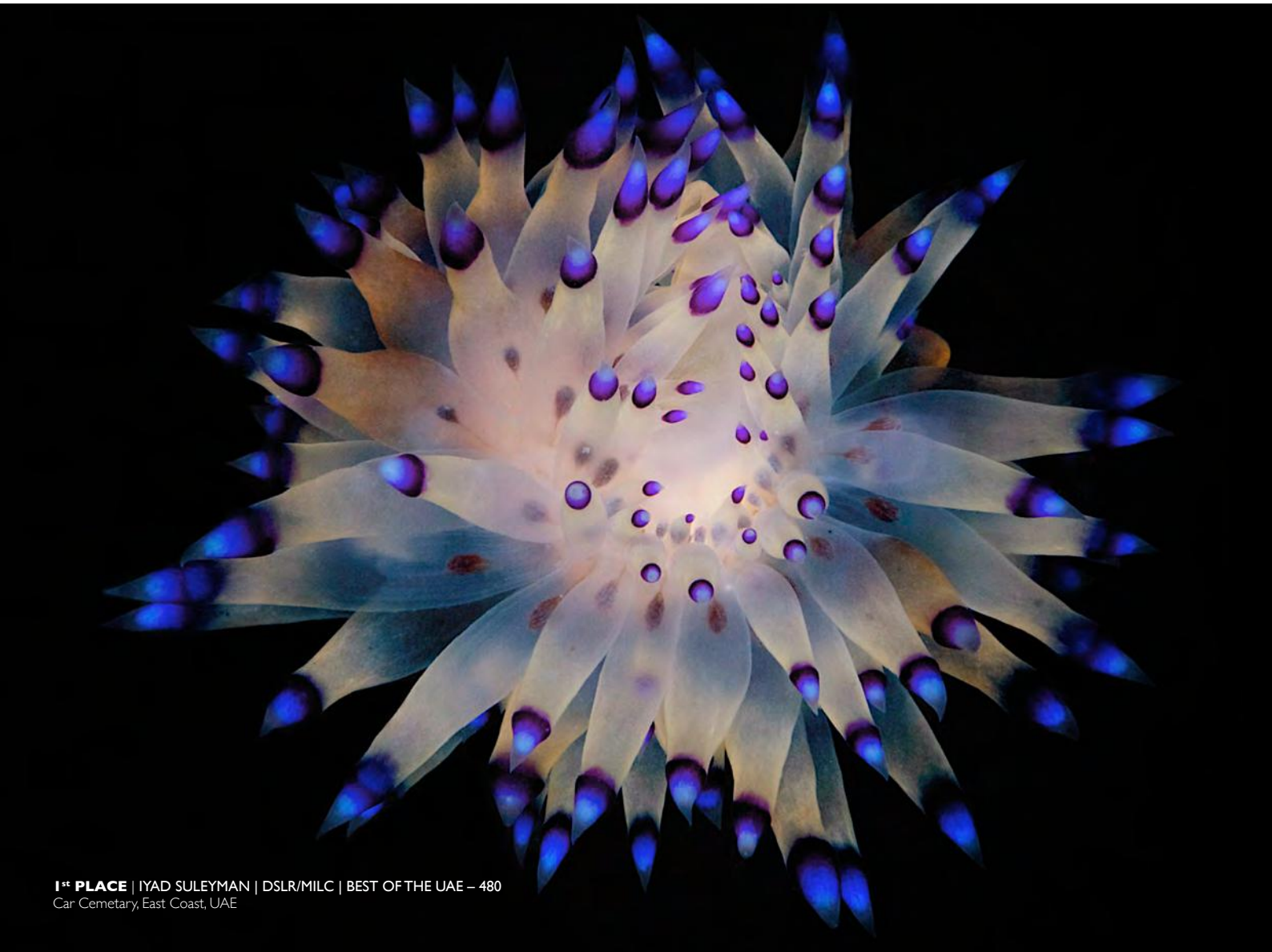
WEBSITE: www.wildplanetfilms.org
FACEBOOK: Wild Planet Productions

ALLY LANDES | EMIRATES DIVING ASSOCIATION
Project Manager, Graphic Designer, Writer, Editor, Photographer & Videographer

Ally has worked with EDA since December 2004 when she created and introduced the quarterly magazine, 'Divers for the Environment', as magazine Producer, Editor and Designer. She branded and helped foresee the development of Digital Online – EDA's Underwater Photography and Film Competition from its launch in 2009 and has since managed the event. Ally keeps busy within her fields of passion, always looking to fill gaps with improvements, developing EDA's brand, designs and managing all the EDA social media and FAM trips. As a qualified PADI Instructor, she utilizes the experience within everyday life at EDA.

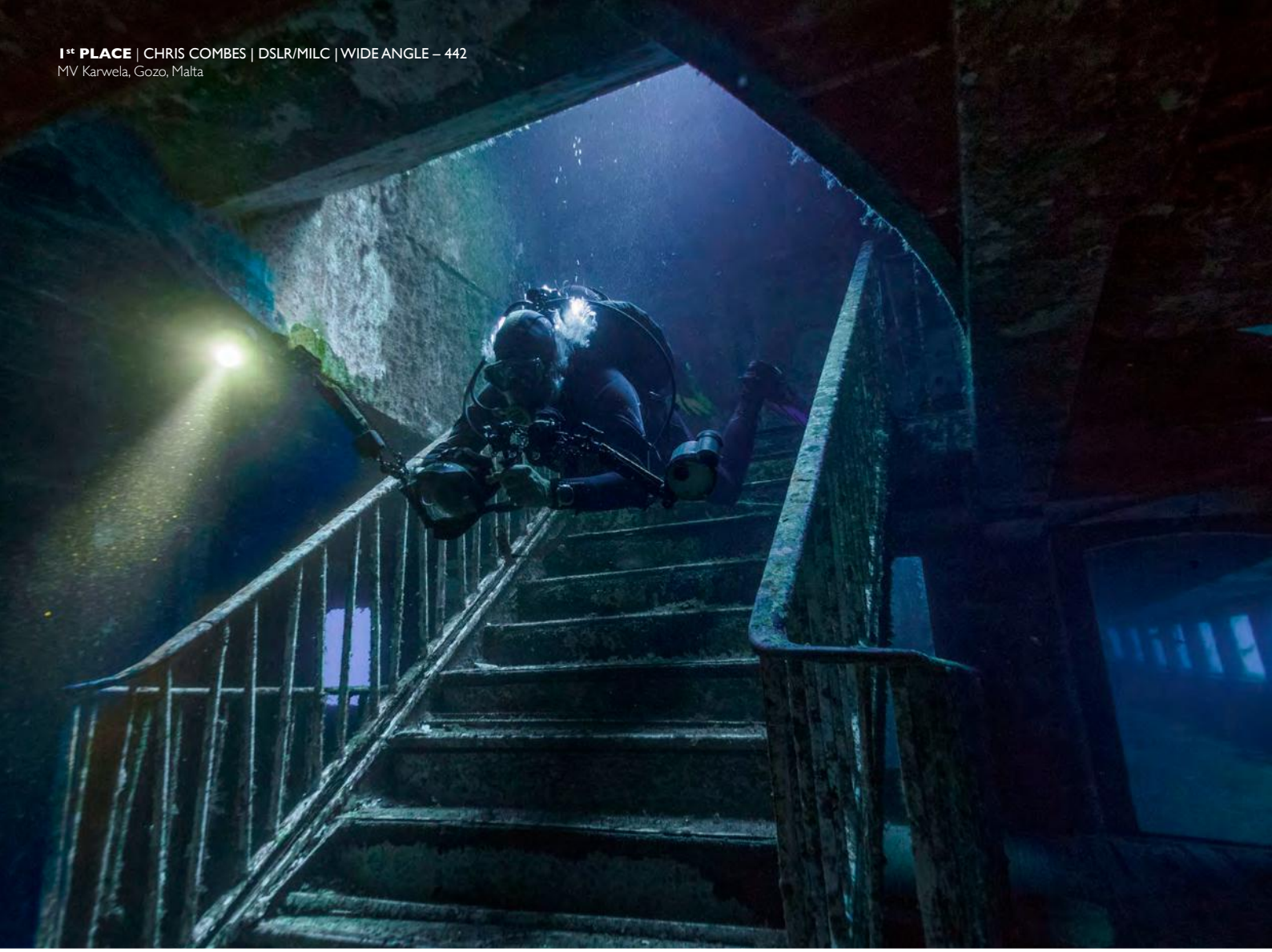
WEBSITE: www.emiratesdiving.com
FACEBOOK: Emirates Diving Association

1st PLACE | SIMONE CAPRODOSSI | DSLR/MILC | BLACK & WHITE – 496
Isla Guadalupe, Mexico



1st PLACE | IYAD SULEYMAN | DSLR/MILC | BEST OF THE UAE – 480
Car Cemetary, East Coast, UAE

1st PLACE | PHILIPPE LECOMTE | DSLR/MILC | MACRO – 465
New Caledonia



1st PLACE | CHRIS COMBES | DSLR/MILC | WIDE ANGLE – 442
MV Karwela, Gozo, Malta

1st PLACE | SIBYLLE BLUMENTHAL | COMPACT | BLACK & WHITE – 435
Lembeh, Indonesia

1st PLACE | PABLO JIMÉNEZ NOVOA | COMPACT – 415
Lembeh, Indonesia

1st PLACE | SULTAN ALTHAHAB | COMPACT | BEST OF THE UAE – 397
Lembeh, Indonesia

2nd PLACE | KHALID OBAID | DSLR/MILC | MACRO – 453
Indonesia

2nd PLACE | YOUSIF ALALI | DSLR/MILC | BEST OF THE UAE – 448
Musandam

2nd PLACE | MOHAMED A. ALQUBAISI | DSLR/MILC | WIDE ANGLE – 435
Jellyfish Lake, Palau

2nd PLACE | STEVEN BOARD | DSLR/MILC | BLACK & WHITE – 409
Daymaniyat Islands, Oman

2nd PLACE | YAN XIONG | COMPACT | – 377
D-Wall, Layang Layang, South China Sea

2nd PLACE | ANDY JONES | COMPACT | BLACK & WHITE – 375
Lima Rock, Musandam, Oman

2nd PLACE | LYNETTE FERREIRA | COMPACT | BEST OF THE UAE – 293
PhiPhi Beach, Khasab, Musandam, Oman

3rd PLACE | AAMER AL HAMMADI | DSLR/MILC | BEST OF THE UAE – 471
Fujairah, UAE

3rd PLACE | STEWART CLARKE | DSLR/MILC | MACRO – 446
Coral Gardens, Khorfakkan, UAE

3rd PLACE | AHMED ABDALLA AL-ALI | DSLR/MILC | BLACK & WHITE – 392
Lembeh, Indonesia

3rd PLACE | ABDULLA ALALI | DSLR/MILC | WIDE ANGLE – 399
Cebu Island, Philippines

3rd PLACE | ROB BUURVELD | COMPACT – 375
North Sulawesi, Indonesia

3rd PLACE | MICHELLE NIEMCZYK | COMPACT | BLACK & WHITE – 340
Tulamben, Bali, Indonesia

3rd PLACE | HASSAN N.K. KHAYAL | COMPACT | BEST OF THE UAE – 228
Dibba Rock, Fujairah, UAE

SIMONE CAPRODOSSI | DSLR/MILC | MACRO – 492
Lembeh, Indonesia

IYAD SULEYMAN | DSLR/MILC | MACRO – 464
Puerto Galera, Philippines

STEVEN BOARD | DSLR/MILC | MACRO – 433
Anemone Deep, Khorfakkan

MOHAMED A.ALQUBAISI | DSLR/MILC | MACRO – 426
Anilao, Philippines

AHMED OBAID AL NAQBI | DSLR/MILC | MACRO – 410
Car Cemetary, Fujairah

YOUSEF ALSHEKAILI | DSLR/MILC | MACRO – 409
Anilao, Philippines

YOUSIF ALALI | DSLR/MILC | MACRO – 406
Lembeh, Indonesia

AAMER AL HAMMADI | DSLR/MILC | MACRO – 403
Fujairah

PABLO JIMÉNEZ NOVOA | DSLR/MILC | MACRO – 396
Komodo, Indonesia

CHRIS COMBES | DSLR/MILC | MACRO – 391
MV Cominoland, Gozo, Malta

ABDULLA ALALI | DSLR/MILC | MACRO – 375
Cebu Island, Philippines

KERVIN PAMINTUAN | DSLR/MILC | MACRO – 329
Lembeh, Indonesia

KHALED ALHOSANI | DSLR/MILC | MACRO – 329
Musandam, Oman

ROB BUURVELD | DSLR/MILC | MACRO – 320
Komodo National Park, Indonesia

AHMED ABDALLA AL-ALI | DSLR/MILC | MACRO – 315
Lembeh, Indonesia

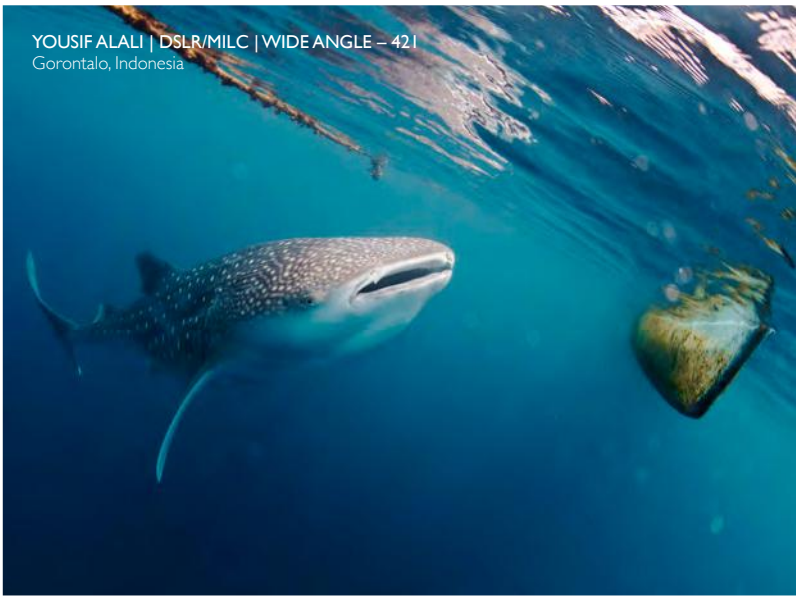
PETER MAINKA | DSLR/MILC | MACRO – 296
Sharm El Sheikh, Egypt

MAGDI HANNA | DSLR/MILC | MACRO – 287
Obhur North, Red Sea, Jeddah

SIMONE CAPRODOSSI | DSLR/MILC | WIDE ANGLE – 492
Sri Lanka

PHILIPPE LECOMTE | DSLR/MILC | WIDE ANGLE – 449
Red Sea, Egypt

IYAD SULEYMAN | DSLR/MILC | WIDE ANGLE – 435
Redang Island, Malaysia



YOUSIF ALALI | DSLR/MILC | WIDE ANGLE – 421
Gorontalo, Indonesia

STEWART CLARKE | DSLR/MILC | WIDE ANGLE – 416
Inchcape 1, Fujairah, UAE

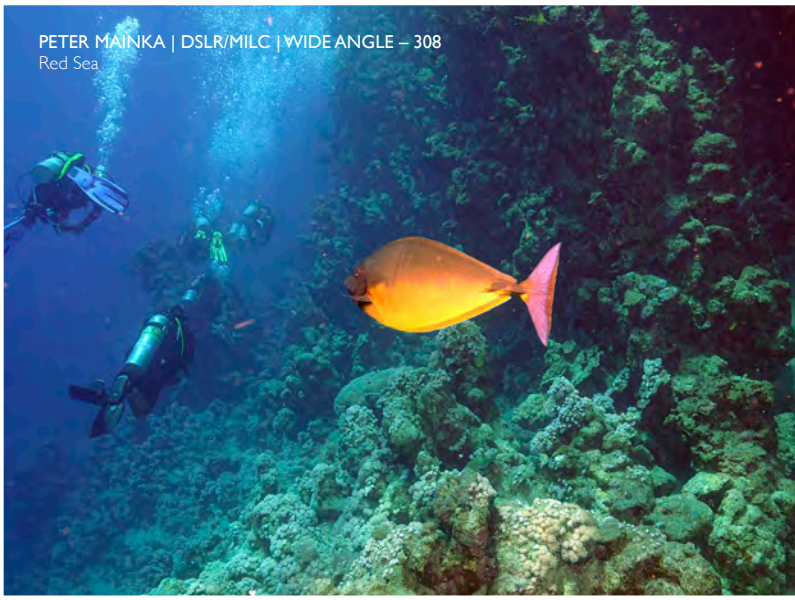
STEVEN BOARD | DSLR/MILC | WIDE ANGLE – 393
Daymaniyat Islands, Oman

MAGDI HANNA | DSLR/MILC | WIDE ANGLE – 328
Red Sea, Sharm El Sheikh, Egypt

KHALID OBAID | DSLR/MILC | WIDE ANGLE – 320
Red Sea, Egypt

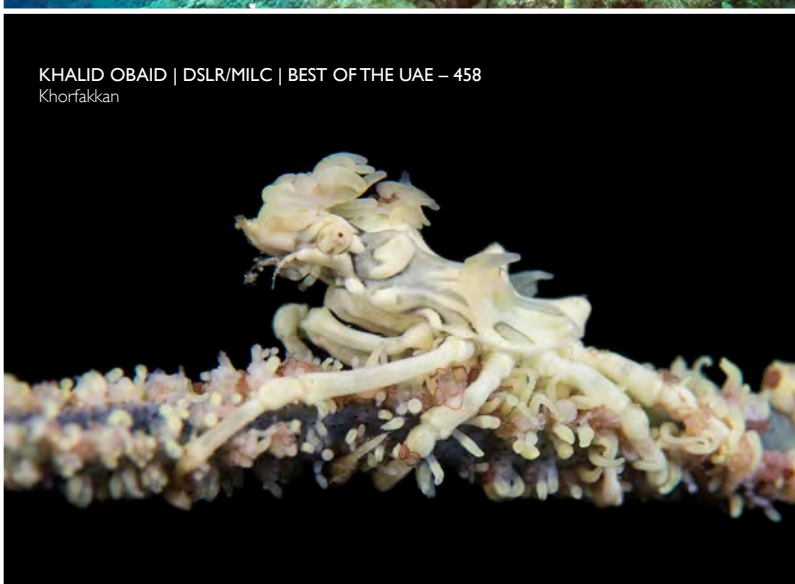
YOUSEF ALSHEKAILI | DSLR/MILC | WIDE ANGLE – 318
Manta Point, Bali, Indonesia

NATALIE HORE | DSLR/MILC | WIDE ANGLE – 316
Beqa Lagoon, Fiji



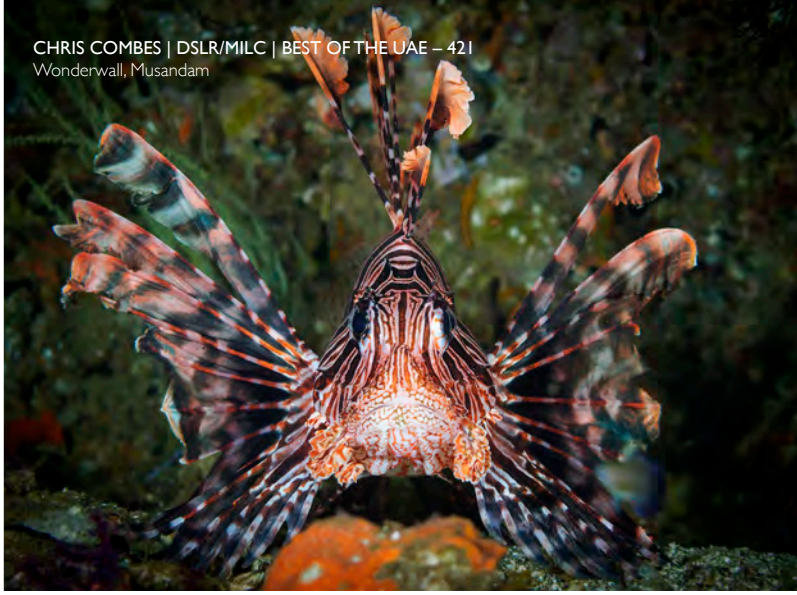
PETER MAINKA | DSLR/MILC | WIDE ANGLE – 308
Red Sea

SIMONE CAPRODOSSI | DSLR/MILC | BEST OF THE UAE – 482
Martini Rock, Fujairah



KHALID OBAID | DSLR/MILC | BEST OF THE UAE – 458
Khorfakkan

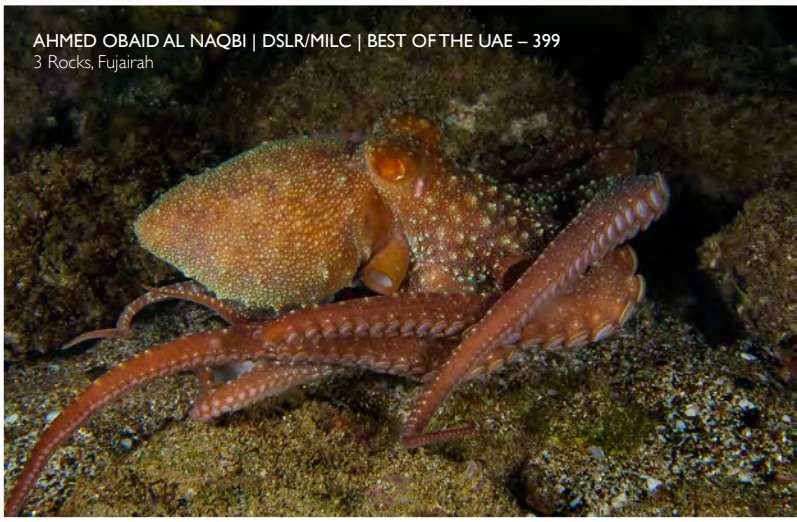
STEWART CLARKE | DSLR/MILC | BEST OF THE UAE – 426
Fujairah



CHRIS COMBES | DSLR/MILC | BEST OF THE UAE – 421
Wonderwall, Musandam

PHILIPPE LECOMTE | DSLR/MILC | BEST OF THE UAE – 413
Abu Dhabi

MOHAMED A. ALQUBAISI | DSLR/MILC | BEST OF THE UAE – 405
Sir Bani Yas Island, Abu Dhabi

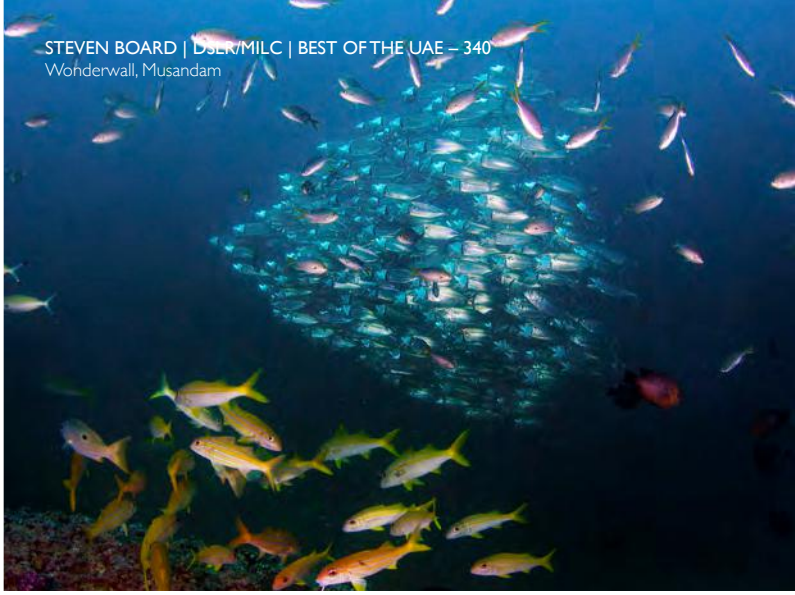


AHMED OBAID AL NAQBI | DSLR/MILC | BEST OF THE UAE – 399
3 Rocks, Fujairah

AHMED ABDALLA AL-ALI | DSLR/MILC | BEST OF THE UAE – 387
Khorfakkan

ABDULLA ALALI | DSLR/MILC | BEST OF THE UAE – 373
Khorfakkan

PETER MAINKA | DSLR/MILC | BEST OF THE UAE – 367
Khorfakkan



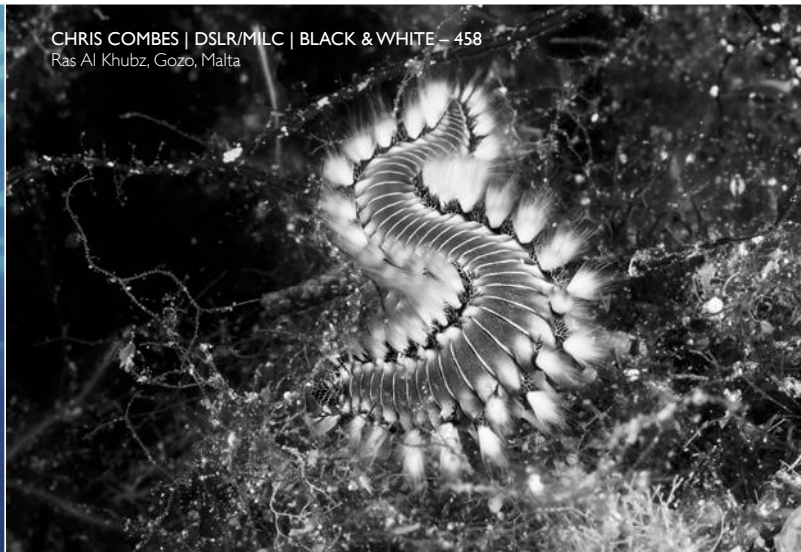
STEVEN BOARD | DSLR/MILC | BEST OF THE UAE – 340
Wonderwall, Musandam

YOUSEF ALSHEKAILI | DSLR/MILC | BEST OF THE UAE – 311
Inchcape, Fujairah

MAGDI HANNA | DSLR/MILC | BEST OF THE UAE – 301
Martini Rock, Khorfakkan

ANDY JONES | COMPACT | BEST OF THE UAE – 356
Shaboos

YAN XIONG | COMPACT | BEST OF THE UAE – 309
Breakwater, Abu Dhabi



CHRIS COMBES | DSLR/MILC | BLACK & WHITE – 458
Ras Al Khubz, Gozo, Malta

IYAD SULEYMAN | DSLR/MILC | BLACK & WHITE – 456
Sipadan

PHILIPPE LECOMTE | DSLR/MILC | BLACK & WHITE – 446
New Caledonia

STEWART CLARKE | DSLR/MILC | BLACK & WHITE – 386
Car Cemetary, Khorfakkan

AHMED OBAID AL NAQBI | DSLR/MILC | BLACK & WHITE – 377
Fujairah

YOUSIF ALALI | DSLR/MILC | BLACK & WHITE – 369
Lembeh, Indonesia

PETER MAINKA | DSLR/MILC | BLACK & WHITE – 329
Maldives

KERVIN PAMINTUAN | DSLR/MILC | BLACK & WHITE – 328
Lembeh, Indonesia

YOUSEF ALSHEKAILI | DSLR/MILC | BLACK & WHITE – 295
Anilao, Philippines

KHALED ALHOSANI | DSLR/MILC | BLACK & WHITE – 282
Musandam

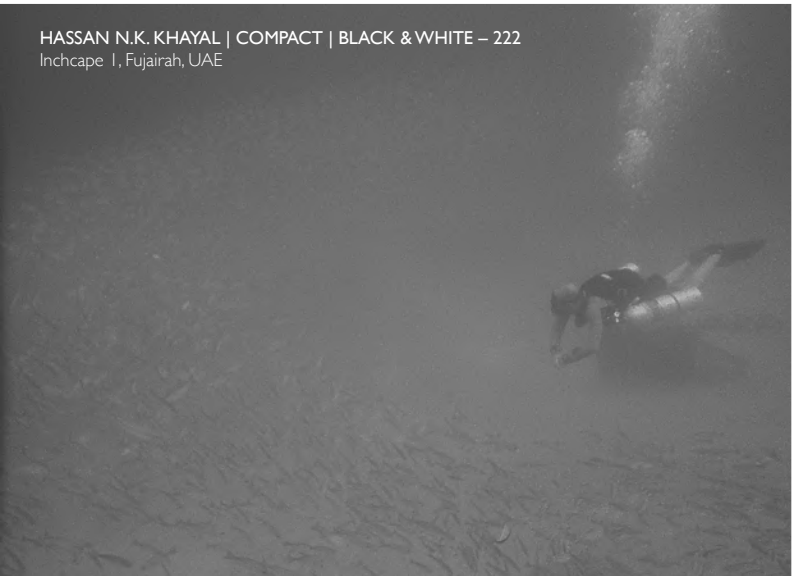
MAGDI HANNA | DSLR/MILC | BLACK & WHITE – 270
Red Sea, Sharm El Sheikh, Egypt

PABLO JIMÉNEZ NOVOA | COMPACT | BLACK & WHITE – 374
Komodo, Indonesia

ROB BUURVELD | COMPACT | BLACK & WHITE – 333
Cenderawasih Bay, Indonesia

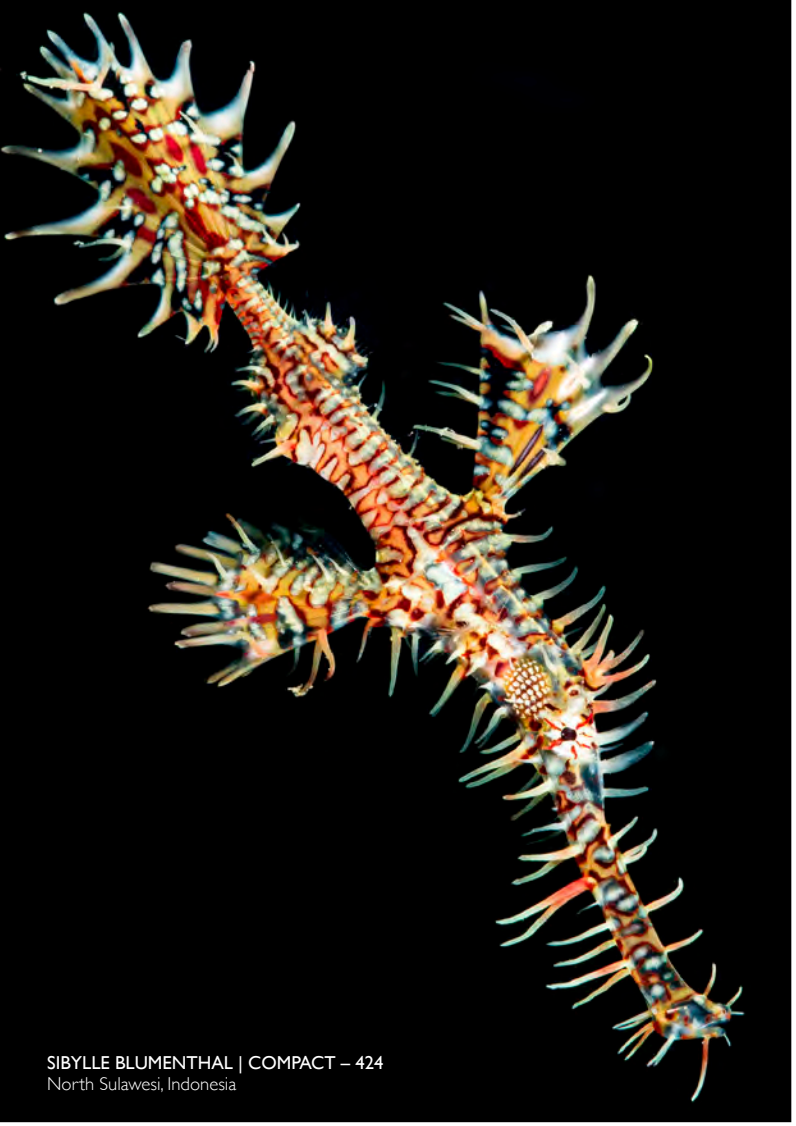
YAN XIONG | COMPACT | BLACK & WHITE – 305
Wrasse Stripe, Layang Layang, South China Sea

LYNETTE FERREIRA | COMPACT | BLACK & WHITE – 290
Earl of Shaftsbury Wreck, Sri Lanka



HASSAN N.K. KHAYAL | COMPACT | BLACK & WHITE – 222
Inchcape 1, Fujairah, UAE

ANDY JONES | COMPACT – 393
Lembeh Straits, Indonesia



SIBYLLE BLUMENTHAL | COMPACT – 424
North Sulawesi, Indonesia

SULTAN ALTHAHAB | COMPACT – 388
Khorfakkan

MAGDI HANNA | COMPACT – 325
Obhur North, Red Sea, Jeddah

MICHELLE NIEMCZYK | COMPACT – 315
Prui Jati, Bali, Indonesia

GEORGE EASON | COMPACT – 305
Lima Rock, Musandam

LYNETTE FERREIRA | COMPACT – 258
Earl of Shaftsbury Wreck, Sri Lanka

HASSAN N.K. KHAYAL | COMPACT – 251
Inchcape 2, Fujairah, UAE

Prize Sponsor, Nicola Liddell from THE Dive Centre awarding prize to Hassan N.K. Khayal for 3rd Place Compact | Best of the UAE with Maitha Al Qader and Ibrahim Al-Zu'bi.

Prize Sponsor, MTM Marine LLC awarded prize by Maitha Al Qader and Ibrahim Al-Zu'bi to Michelle Niemczyk for 3rd Place Compact | Black & White.

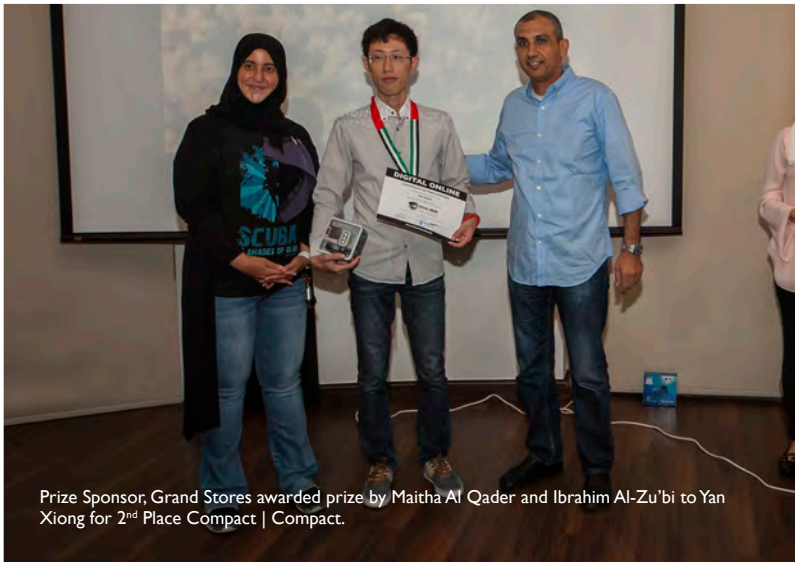
Prize Sponsor, Anu Van der Sande from Le Meridien Al Aqah Resort and Spa awarding prize to Ahmed Abdalla Al-Ali for 3rd Place DSLR/MILC | Black & White.

Prize Sponsor, Marine & Darryl Owen from Freestyle Divers awarding prize to Abdulla Alali for 3rd Place DSLR/MILC | Wide Angle.

Prize Sponsor, Grand Stores awarded prize by Maitha Al Qader and Ibrahim Al-Zu'bi to Aamer Al Hammadi for 3rd Place DSLR/MILC | Best of the UAE.

Prize Sponsor, MTM Marine LLC awarded prize by Maitha Al Qader and Ibrahim Al-Zu'bi to Caroline Black for 3rd Place Video | The Big Blue.

Prize Sponsor, Al Marsa Musandam awarded prize by Maitha Al Qader and Ibrahim Al-Zu'bi to Lynette Ferreira for 2nd Place Compact | Best of the UAE.



Prize Sponsor, Grand Stores awarded prize by Maitha Al Qader and Ibrahim Al-Zu'bi to Yan Xiong for 2nd Place Compact | Compact.

Prize Sponsor, MTM Marine LLC awarded prize by Maitha Al Qader and Ibrahim Al-Zu'bi to Steven Board for 2nd Place DSLR/MILC | Black & White.

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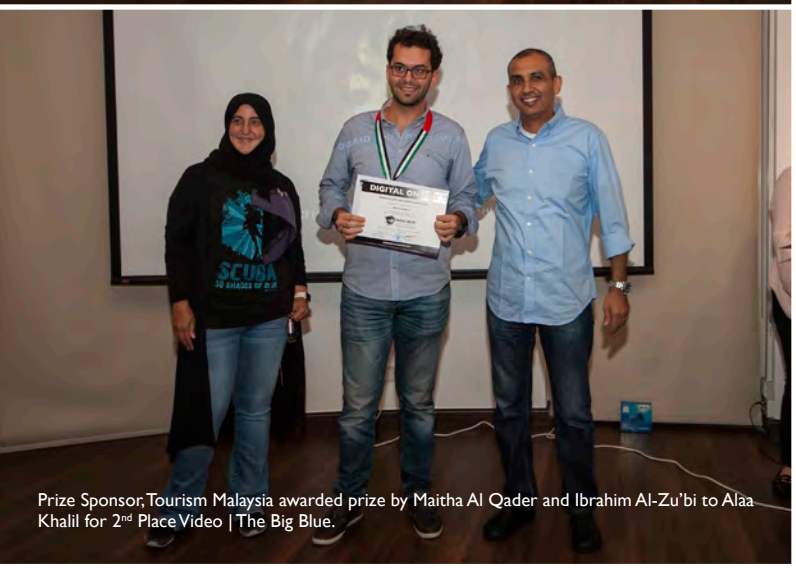

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Overall Digital Online Video Winner goes to Khaled Sultani.

Overall Digital Online DSLR/MILC Winner goes to Simone Caprodossi.

UAE National Photography Award goes to Yousif Alali.

Our dedicated EDA Members who never miss an EDA event, Norman Ali Khalaf, his lovely wife Ola and their daughter, Nora.

Opening by Woodman Taylor, Ph.D. – Chair, Department of Visual Communication and Professor of Art History at the American University in Dubai.

One of our Digital Online Guest Judges, Christophe Chellapermal and his lovely wife, Manisha.

Special Guest visit from Ali Bin Thalith

Ali Bin Thalith

DIVING NOWHERE

FEATURE AND PHOTOGRAPHY **SIMONE CAPRODOSSI**

It was an incredibly thrilling experience to be in a place where truly anything can show up.

A few months ago, I received a call from Richard Bacani the manager of the SEAOMAN Dive Centre at the Millennium Resort Mussanah, Oman who had previously hosted us for some great diving around the Daymaniyat Islands. He wanted me to cover a story for the magazine on one of their new dive sites. They had discovered a site in the middle of nowhere (hence now called 'Nowhere') where they had been seeing some pretty unique and very big fish. He then shared some short clips from previous dives where large Bowmouth (*Rhina ancylostoma*) and Giant (*Rhynchobatus spp.*) Guitarfish were coming up close to divers. I was immediately sold on the visit but had to wait for the water to get warmer to avoid the winter cold and poor visibility.

We finally decided on the last weekend of April and I easily recruited my friends and local shark experts Dr. Rima Jabado and Dr. David Robinson to join in on these exciting two day exploration dives.

So, after work on a Thursday evening, we made our way down to Oman (now a longer drive as you need to loop around the mountains to reach the Hatta border) and were welcomed to some lovely sea view rooms in the very comfortable Millennium resort.

As we met up with Richard – who was busy fixing a camera housing – we got even more excited as he told us of recent encounters with Great Hammerheads (*Sphyrna mokarran*), Devil Rays (*Mobulidae*) and Mola Mola Sunfish (*Mola mola*) at the same site.

At around 9 the next morning, we met at the dive centre after he was finished sending off the groups diving the Daymaniyats for the day, and we set off in our dedicated boat to explore Nowhere. The name is pretty accurate for the site as we basically sailed 45 minutes out into the open sea to reach an apparently random spot in the middle of nowhere only recorded on Richard's personal GPS.

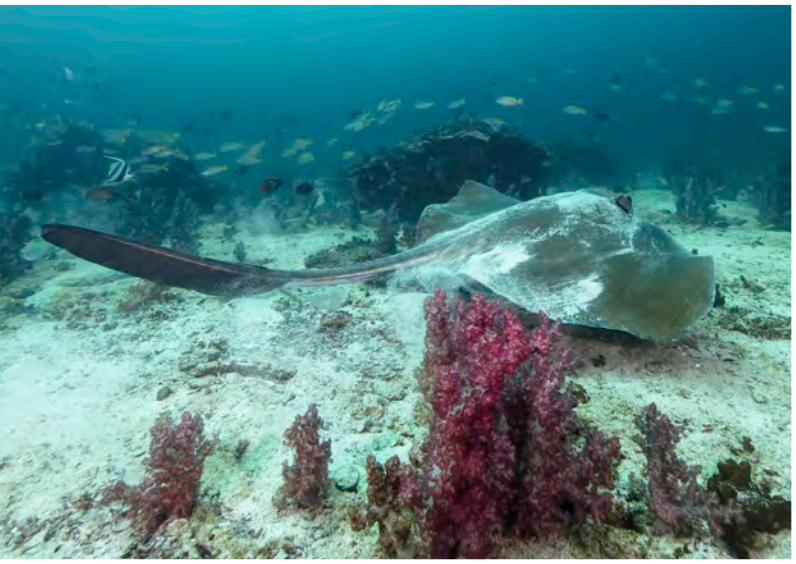
Nowhere is an underwater plateau the size of a football pitch that comes up to a depth of between 18-25 metres. It then smoothly slopes down to 35-40 metres, to then drop off to proper depths of over hundreds of metres.

In absence of any protection, the plateau is constantly swept by currents that can get very strong, making the site un-divable. We had quite a mild current that was still tough to swim against, but manageable. Visibility was not the best, but we still had a good 10-15 metres.

As you get down along the anchor line, the plateau immediately appears in its glorious liveliness. It is covered in massive bushes of bright soft orange and pink corals and thriving with fish life. Schools of fusiliers, batfish, snappers, bannerfish and many other species surrounded us, filling all the spaces. Cuttlefish chase each other in mating rituals between the corals, while massive morays peek out of the rock formations. Around the corals, butterflyfish, cardinals, angelfish and clouds of glassfish dance in constant motion. You could easily spend two days of diving just appreciating the beautiful coral life but we were on a mission to see elasmobranchs and in the limited visibility, we had to move around towards the different edges of the plateau to spot them.

We did not wait long as two Bowmouth Guitarfish (*Rhina ancylostoma*) appeared, but moved along quite fast disappearing into deeper waters. Another Bowmouth soon swam by, a bit closer but I was getting distracted by a hypnotizing school of striped catfish around a gorgeous pink coral, so I missed it. The dive time quickly went by and as we ascended, another one passed under us. They were clearly around but not too keen to play.

On the second dive I was committed to not be distracted by pretty corals and fish and I managed to spot a few Bowmouths that swam past, as well as a massive broad Cowtail Ray that swam right over David's head.



We closed the first day excited about this incredible place and eager to go back the next morning.

The next day the sea was slightly rougher and it took us a couple of trials to hit the plateau. Even with coordinates, it's easy to drift and miss it, landing you in an area with depths of over 50+ metres.

We ended up approaching it from a slightly deeper side and we were surrounded by a beautiful school of large Snubnose Pompano (*Trachinotus blochii*). I had seen one for the first time the day before while swimming alone, but being circled by a school full of them was really special. The plateau was as alive as ever, there was not a single metre not covered by lively fish action. Two Bowmouths soon swam past us and Rima then spotted a Devil Ray (*Mobula kuhlii*) swimming out behind us. I followed it as it did not shoot out too fast and it was soon joined by another one coming out of the blue, to then fly in a pair by me and off in the opposite direction.

At the next and last dive, the current picked up and I kept trying to get at least one shot of the Bowmouths. Despite seeing many, they were never close enough in the average visibility to get a decent ID shot. I was also equipped with a very wide 14mm lens as in past occasions the rays had swam really close to the divers, but they were not as friendly this time.

We had a quick circle around seeing some in the distance, and we were slightly separated from Richard. As we joined him again, we saw him frantically raising his hands with closed fists up to both sides of his head as to which is the diver's signal for, Hammerhead.

We lowered ourselves to the bottom in the rising current and stayed at the edge of the area where the shark was seen. Unfortunately time ran out and we had to surface relatively empty handed on a photo standpoint but totally thrilled about the dive site.

Back on the boat, Richard recounted the experience that we had just missed. While looking out he had actually been hit on his leg by a massive Great Hammerhead (*Sphyrna mokarran*) that swam off and just as he was recovering from the shock, another smaller shark he was not familiar with, swam right past him. He was probably in the middle of a shark chase as Hammerheads do predate on smaller sharks.

When we got back to shore, Richard downloaded his footage that revealed a shark none of us had ever encountered before – a Sicklefin Weasel Shark (*Hemipristis microstoma*). Rima was able to ID this extremely rare shark which has hardly been recorded and with few specimens having only ever turned up dead in the fish markets.

So while I don't have much to show in photography towards this site, it was an incredibly thrilling experience to be in a place where truly anything can show up. We now plan to return and explore in August and I hope to report with some proper photography for our future encounters in the next magazine issue. This small piece is just an appetiser…

MY RECOMMENDATION:
The **Millennium Resort Mussanah** and **SEAOMAN Dive Centre** are located 85km north of Oman's capital city, Muscat and an hour closer to the UAE.

A very big thank you to both the Millennium Resort and SEAOMAN for hosting the trip!

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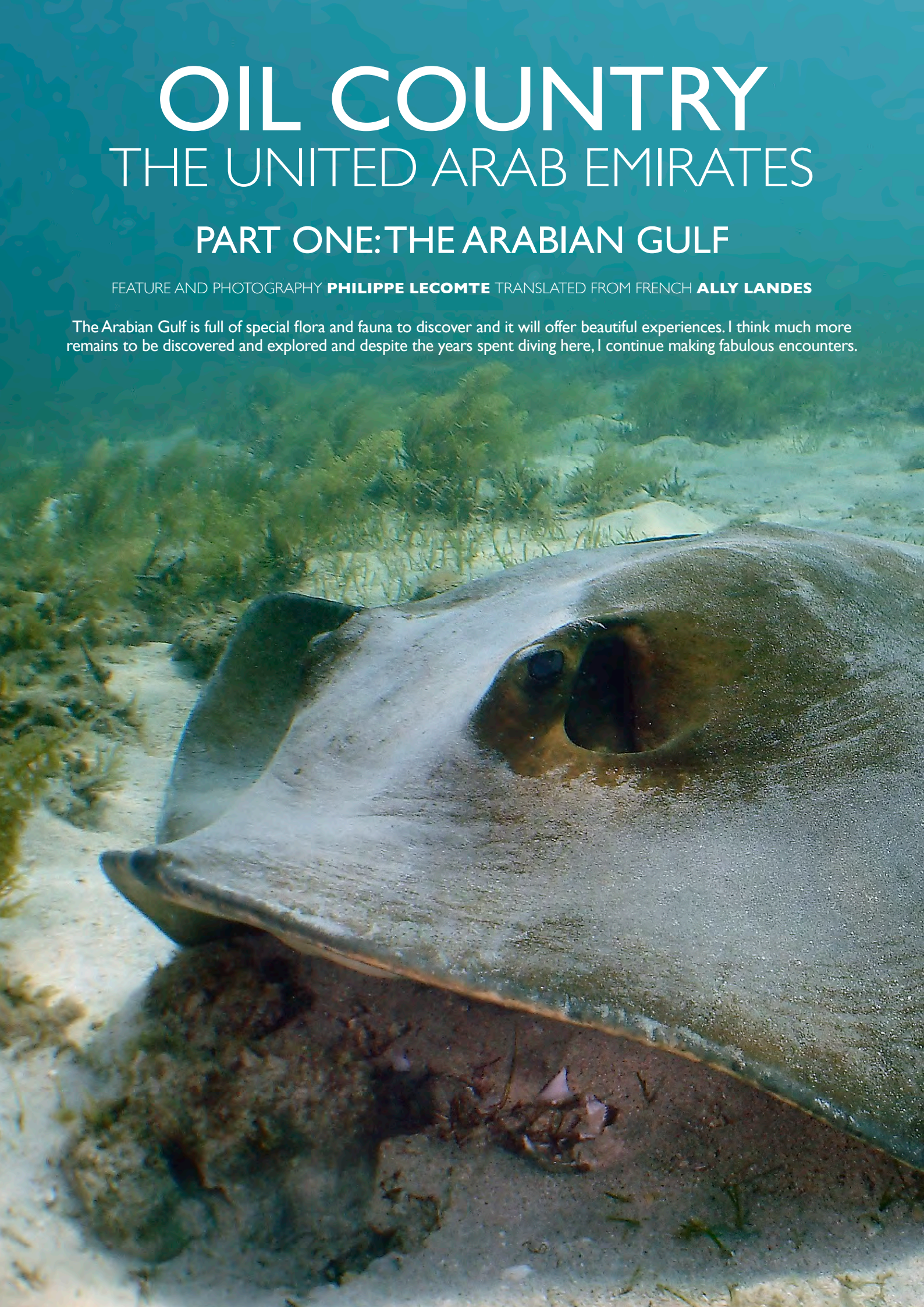
OIL COUNTRY
THE UNITED ARAB EMIRATES
PART ONE: THE ARABIAN GULF

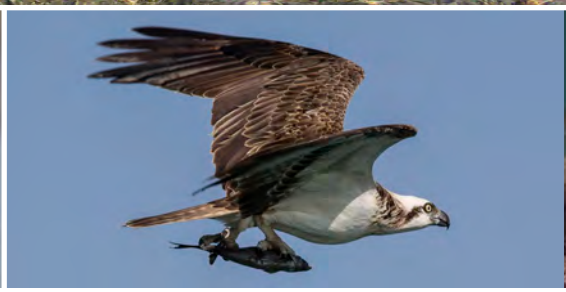
FEATURE AND PHOTOGRAPHY **PHILIPPE LECOMTE** TRANSLATED FROM FRENCH **ALLY LANDES**

The Arabian Gulf is full of special flora and fauna to discover and it will offer beautiful experiences. I think much more remains to be discovered and explored and despite the years spent diving here, I continue making fabulous encounters.







Who hasn't heard of the United Arab Emirates and its capital – Abu Dhabi, with its incredible infrastructures, its Formula 1 Abu Dhabi Grand Prix or Dubai and the luxurious hotels and shopping malls with attached aquarium and interior ski resort! This Middle Eastern country borders with Saudi Arabia on the West and Oman on the East. The UAE is lined by the Arabian Gulf and the Gulf of Oman, which is a part of the Indian Ocean. This state consists of 80% desert and 20% mountains.

The UAE is one of the top 10 world producers of oil and diving was not all that well known back in the day. I have been living in Abu Dhabi for several years now and in that time I have been able to explore the sea beds and all the riches the underwater world has to offer here.

You will get a better picture, although this article cannot describe and list all the species I have seen in my 9 years of diving in the UAE. It will though, give you a taste of some of my observations and discoveries in these tropical waters.

The Gulf of Arabia is a semi-closed sea with the Strait of Hormuz as its only opening. It is a unique sea due to its characteristics and does indeed possess a degree of salinity higher than most of the other seas and oceans. The temperatures can lower to 17°C in the winter and reach more than 34°C in the summer. In spite of these dramatic temperature conditions, various corals, sponges and other seaweeds happily survive in this temperamental sea. All these creatures will amaze you from their colours, their shapes and their diversity.

The greater part of the sea bed consists of a sandy bottom, but there are also cliffs, faults and small caves present. Among these sandbanks, in depths starting from 2 to 7 metres, big areas of seaweed feed a number of fish and other mammals.

DUGONGS

A fact seldom known by the public, the UAE possesses the second largest population of dugongs in the world. These very shy animals meet near the capital of Abu Dhabi, but more so further west in a marine sanctuary called Marawah and around the island of Bu Tinah. They often move in a group of up to ten individuals. It is easier to spot them in a very calm sea as they are very well adapted to long breath holds and very good swimmers. They are rather fearful and quickly hide beneath the surface of the water to the slightest noise.

SEA TURTLES

These animals also take advantage of these seaweed areas amongst which they find easy prey. Green and Hawksbill turtles can be seen throughout the year. The latter stay near the coast and it is not rare to cross them on the surface or during a dive.

DOLPHINS

In the waters of the Gulf, you often see Common Dolphins riding the waves made by the bow of boats. Humpback Dolphins tend to hang back from a distance before diving out of sight to reappear, making themselves very difficult to spot again. These two species of dolphins are seen throughout the year.

MANGROVES

Abu Dhabi possesses numerous mangrove swamps. They hold nurseries for a number of different species of birds and fish. Red Carp, Groupers, Emperors and even Sea Breams are a few of the fish species known to take advantage of these protected mangroves in order to grow and then join the big blue once they have reached adulthood.

Among the different species of sea birds, we can see pink flamingoes, blue egrets, bitterns and many of the other species of plovers. The osprey or the eagle fisherman is often perched on various posts which mark out channels. They wait patiently for a Garfish or other fish to remain on the surface of the water long enough for them to plunge above them and have their feast.

CORALS

Waters of the Gulf are rich in particles and microalgae where the latter often sets off a thick green water appearance. In spite of that, life is very much visible. A large variety of hard corals grow well on any support such as on a wreck, an artificial reef or simply on a rock. Madrepore Corals are a genus of stony corals very common here and mostly found in the shape of a ball or a brain. They have highly detailed variations and their colours can be of a dull chestnut to a striking fluorescent green. Turbinaria Coral is rather common. It is rare to see these beautiful colonial stony corals more than 60cms in diameter. These corals are very fragile – as most of them are – and is unfortunately often destroyed by boat anchors falling on top of them.







Acropora Corals are polyp stony corals often resembling branches or that of deer antlers. They can grow to very large spreads. Care must be taken when around them in order to avoid breaking their porous stems. Take your time to hover above them and look into these magnificent structures to observe the various shrimps, crabs and juvenile fish hiding in between the branches.

SPONGES

Families of sponges are abundant here in spite of high salinity and consequent jumps in water temperatures. Their diversity and their colour will surprise you. The *Dysidea sp.* sponge is rather common and grows in the shape of tubular balls of grey or purple colour. They can grow to the size of a melon. Other species grow to cover whole rocks and other unnatural objects. The latter are of a lively red colour or yellow depending on what will show in wide angle photography.

ANEMONES

If you find yourself near a sandbank during your dive, you will most certainly find a big *Stichodactyla haddoni*, resembling a carpet anemone. These anemones of circular forms have very short tentacles. They can reach 40-50cms in diameter. Their bed of tentacles are used as a refuge to a species of very colourful shrimp with a tail which resembles that of a peacock's – the Glass Anemone Shrimp (*Periclimenes brevicarpalis*). If you do not see one walking in the heart of the anemone, keep the location in your memory and return a few weeks later – a couple will certainly have taken up residence there during this lapse of time.

Another anemone present in Abu Dhabi waters are Bubble-tip Anemones (*Entacmaea quadricolor*). These ones, unlike the carpet anemones, possess bulbous tips on their long tentacles. The unique Clark's Anemonefish (*Amphiprion clarkii*) of the Arabian Gulf often shelters in them. I've observed small colonies of these clownfish spread over a dozen metres. It is always a pleasure to spend a few moments with these fish as they dance with the current, sweeping in and out between the tentacles. They, unlike other fish, are immuned to the poison which the anemone secretes offering them the ultimate protection against other predators.

STARFISH

During my multiple dives, I have found two species of starfish. One is of a standard shape of dark blue and light brown with 6 arms measuring 6-8cms long. It is openly found hanging on rock surfaces. The second is the *Astrerina burtoni* which is on the other hand, more discreet. It only comes out at night and hides under small rocks. This one is of a hexagonal shape with small, short arms and is light grey in colour.

SEASHELLS

Seashells of different forms and various sizes are also common in the waters of Abu Dhabi. Moreover, waters of the Gulf were renamed for their abundance in oyster pearls in the past. The economy thrived on the trade created by pearl divers and the profits the pearls brought in long before the discovery of oil. In some sandy locations it is not rare to cross patches of pearl oysters. The culture of oysters in the Pacific dropped the market prices and brought an end to pearl diving in Abu Dhabi in the 1940s.

In small cavities, different Bivalves of orange or red colour are found filtering the water all day long. Their lips of colourful motifs move at the rate of the current as if they were sails in the wind. If you look in more detail through the crevices, you can also see a very slow moving shell covered in seaweed. Don't be fooled, it is in fact the Marbled Shrimp, (*Saron marmoratus*) who in camouflage, often goes unnoticed by many divers. The Henderson's Hinge-Beak Shrimp (*Cinetorhynchus hendersoni*) knows how to be even more discreet, coming out only at nightfall. The most unsuspected of all, is the Porcelain Crab (*Neopetrlisthes sp.*), hiding out in cracks not much thicker than a coin of one Euro. It filters the water with its antennas dedicated to the task of collecting plankton, its favourite food.

Beneath the sand, numerous small shells wait for night to come out in search of food. The sand dollar (*Clypeaster subdepressus*), on the other hand makes its tracks below the surface of the sand completely hidden, only leaving a puffy trail behind it. If you are lucky enough, you will find the famous Venus Comb Murex, (*Murex pecten*) often inhabited by the hermit crab.

SANDBANK FISH

To dive on the large sandbanks may seem







boring to some, but by properly exploring them we discover that this environment shelters a lot of life. During many of my dives around the capital, I have crossed paths with a lot of unsuspecting creatures. For example, well hidden under the sand lies the Flathead fish with notably flat heads, (*Platycephalidae sp.*) and they can reach more than 40cms in length. Another more difficult specimen to observe is the Stargazer (*Uranoscopidae*). It lays buried under the sand with only its eyes protruding in wait for prey to pass by.

There are several different species of burrowing gobies to occupy you. To give you a few as an example, the Luther's Prawn-Goby (*Cryptocentrus lutheri*), the Butterfly Goby (*Amblygobius albimaculatus*) or the Sixspot Goby (*Valenciennea sexguttata*) appears among the most beautiful and the easiest to find. These fish are always found with their companion, the Tiger Pistol Shrimp, (*Alpheus bellulus*). The complicity which exists between these two species is very interesting to contemplate for a few minutes.

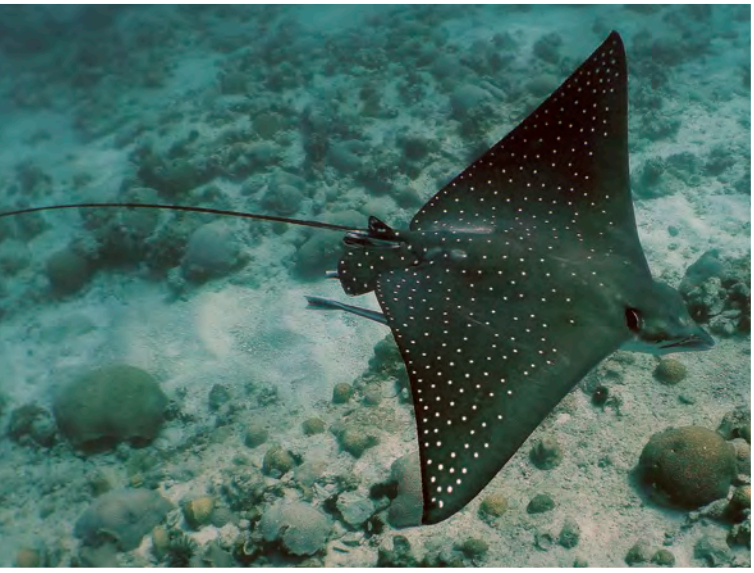
NUDIBRANCHS

For the macro photography diving enthusiasts, the underwater world of the Gulf also possesses a large variety of Nudibranchs. The *Flabellina* is common especially on wrecks and other artificial structures. Their delicate, tasselled bodies dance to the flow of the current. The very colourful *hypselodoris infucata* however, knows how to be discreet and is very difficult to find. The one most often found and easy to spot, is the *Chromodoris annulata*. It moves very slowly and is often motionless on a wall in the shelter of light.

I have recently discovered with the help from my friend and nudibranch specialist, Stewart Clarke, the beautiful and very tiny, *Costasiella*. This particular nudibranch is no more than 1cm, and is always found on the same species of seaweed.

SEA SNAKES

Swimming along the surface to breathe or swimming between the two elements of water and air, the Arabian Gulf Sea Snake (*Hydrophis lapemoides*) is very common and can be seen all year round. It is not fearful but it is advised not to try to catch it because as with all sea snakes, it is very poisonous. Its teeth are found at the back of its mouth, so it can only bite very small parts of the body. It is often seen hunting gobies as part of their favourite food. They swim by shuffling their noses to the ground and do not hesitate getting into goby holes in the sand. I once surprised a snake I came upon with its body half in, half out of a den.



RAYS

The winter is the best season to see rays when they come to reproduce in the shallow waters around Abu Dhabi. I usually see 4 different species.

First of all, the Longtail Butterfly Ray (*Gymnura poecilura*) is without a doubt the most common. Normally found buried or just resting on the sand, they generally allow you to approach them without too much fuss, provided you start from a distance and gradually come in.

Its ordinary shape is wider rather than long, giving the impression it has large, graceful beating wings as it swims by.

Bigger and of a geometric proportions, the Reticulate Whipray (*Himantura uarnak*) is easily recognisable with its speckled black attire. Resting on the sand like its cousin the Butterfly Ray, this one will most certainly surprise you during its flight as it whips its long tail through the water.

The Spotted Eagle Ray (*Aetobatus narinari*) is also rather common in the Gulf. These are big swimmers and always very majestic to watch in their effortless stride, very often in small groups.

Finally, the Cowtail Stingray (*Pastinachus sephen*) can be found in any type of habitat; sandy, reef or in fields of seaweed. They can get very big and seem clumsy, but it is not so. If they feel disturbed, they will disappear very quickly leaving only a cloud of sand behind them.

Apart from these four rather common rays around Abu Dhabi, you may have the opportunity to cross paths with the Gulf Torpedo Ray (*Torpedo sinuspersici*), the Bull Ray (*Pteromylaeus bovinus*), as well as the Jenkin's Whipray (*Himantura jenkinsii*).

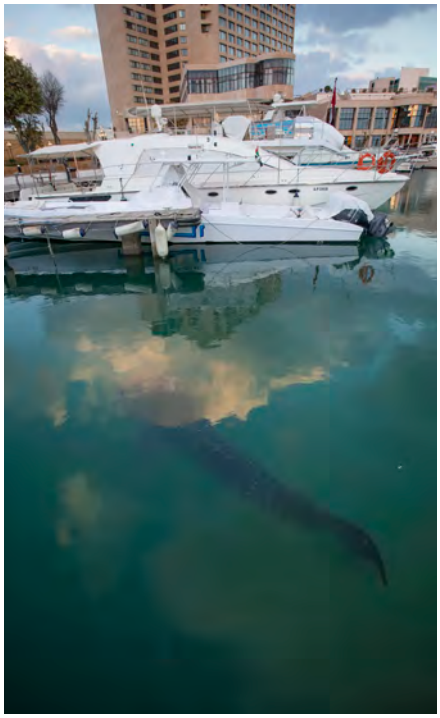
In the shallower waters, in sandy bottoms with areas rich in seaweed, the Sharpnose Guitarfish (*Rhinobatos granulatus*) is often spotted. It is best to slowly approach it from an angle and it will allow you a short moment to gaze at it. They are fast movers and will give you the slip when you least expect it. It is also possible to see the Bowmouth Guitarfish (*Rhina ancylostoma*). I've managed to get in close proximity of 2 metres with one, but this ray is on the constant move and very rarely takes a rest – making them difficult to observe. Time with this ray is always too short.

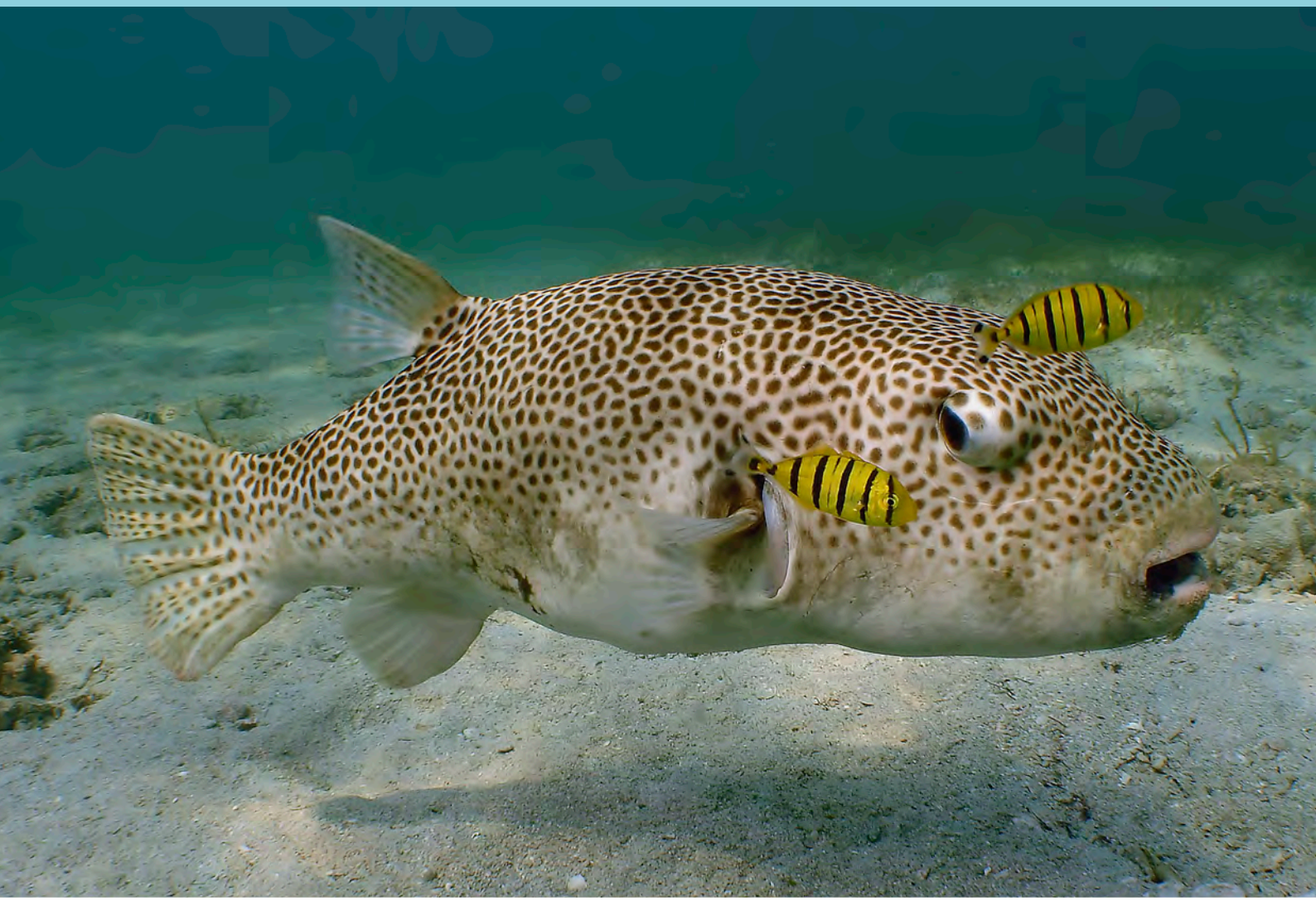
SHARKS

Many sharks are also present in the Gulf sea and can be seen in the first 10 metres. The Blacktip Reef Shark (*Cacharhinus melanopterus*), the Leopard Shark (*Stegostoma fasciatum*) or the Grey Reef Shark (*Carcharhinus amblyrhynchos*) are amongst the most common.

On the other hand, if you look below large rocks or in small crevices, you will surely find a very shy and totally harmless shark – the Arabian Carpetshark (*Chiloscyllium arabicum*). This small brown shark with a length of 60-70cms rests most of the time, well hidden under corals. With an appearance similar to that of the Nurse Shark, it feeds exclusively on crabs and other small crustaceans and shellfish.

Like all tropical seas, it is possible to see the biggest fish in the world. The Arabian Gulf is indeed home to a large population of Whale Sharks (*Rhinocon typus*). It is not unusual to cross their paths while out on a boat. Every year newspapers report that some are seen in the marinas of Abu Dhabi and Dubai swimming quietly along the quays.





FISH

Many species of fish present in the Gulf, are identical to those found in the Indian Ocean. However, they are smaller in numbers as some species do not tolerate the very high salinity rate we have in the Gulf.

Nevertheless, you will still be surprised by the amount of fish you will encounter during your dives. In particular, the Malabar Grouper (*Epinephelus malabaricus*) and the Yellowfin Hind (*Cephalopholis hemistiktos*) adapt to all the habitats in the area.

Without mentioning them all, several kinds of Cardinalfish (*Apogon*) hide in the faults or in the branches of the Madrepore corals. Around the corals, the Blackspotted Rubberlip (*Plectorhinchus gaterinus*) or the Minstrel Sweetlips (*Plectorhinchus schotaf*) swim in gentle and calming groups.

The very common Yellowbar Angelfish (*Pomacanthus maculosus*) dwells in all types of habitats. Metallic blue-coloured juveniles with white stripes are very active and do not stop swimming around their rock which serves as a shelter from predators. Damselfish are also commonly encountered during dives. The Arabian Damsel (*Pomacentrus arabicus*) and the Paletail Damsel (*Pomacentrus trichourus*) are very curious and like to observe the intruders who come into their area.

In the Butterflyfish family, the Black-spotted Butterflyfish (*Chaetodon nigropunctatus*) is the most common. Solitary or living in small groups, this very active little fish loves Acropora corals in which it can easily hide. This behaviour is acquired during its youth as it remains hidden in these corals during all of its juvenile stages. The easily recognised Arabian Butterflyfish (*Chaetodon melapterus*) with its vibrant yellow/orange colours, make it stand out like a sore thumb amonst the rocks and corals. They are always in a pair and swim swiftly in a zigzag motion in search of food.

The Bluetail Trunkfish (*Ostracion cyanurus*) pops out from time to time and knows how to quickly sneak under the rocks despite it being an awkward swimmer, and then come back out another side. On the sandy bottom, the Stellate Puffer (*Arothron stellatus*) may seem to be alseep but once you get too close, it quickly flees out of sight.

As you can see, the waters of the Arabian Gulf are full of special flora and fauna to discover and it will offer beautiful experiences. I think much more remains to be discovered and explored and despite the years spent diving here, I continue making fabulous encounters. Do not hesitate to take a dive and make the discoveries for yourselves.

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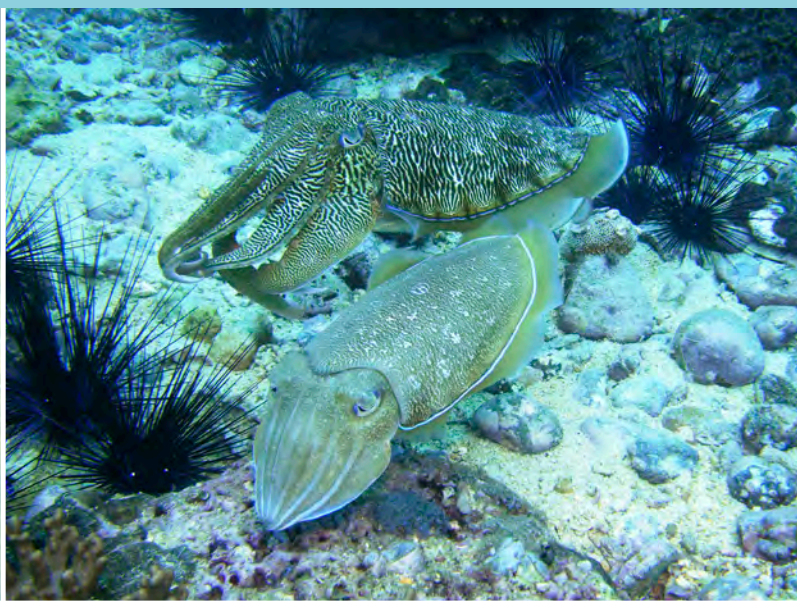
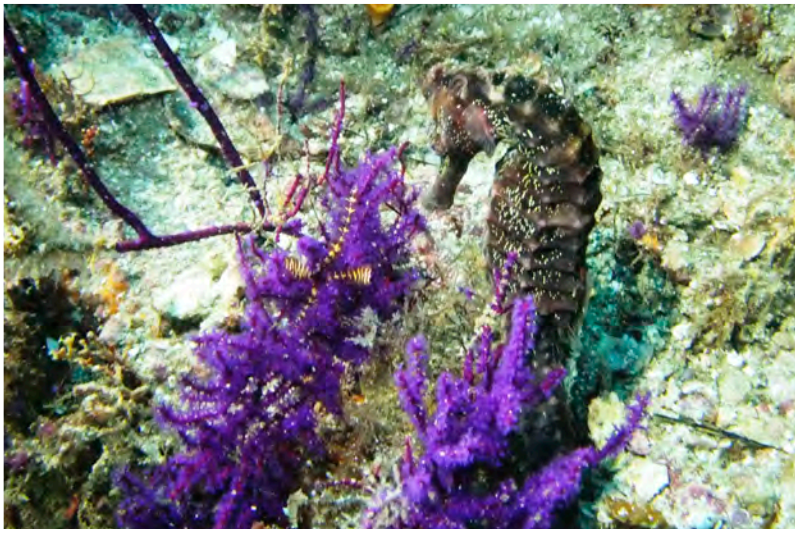




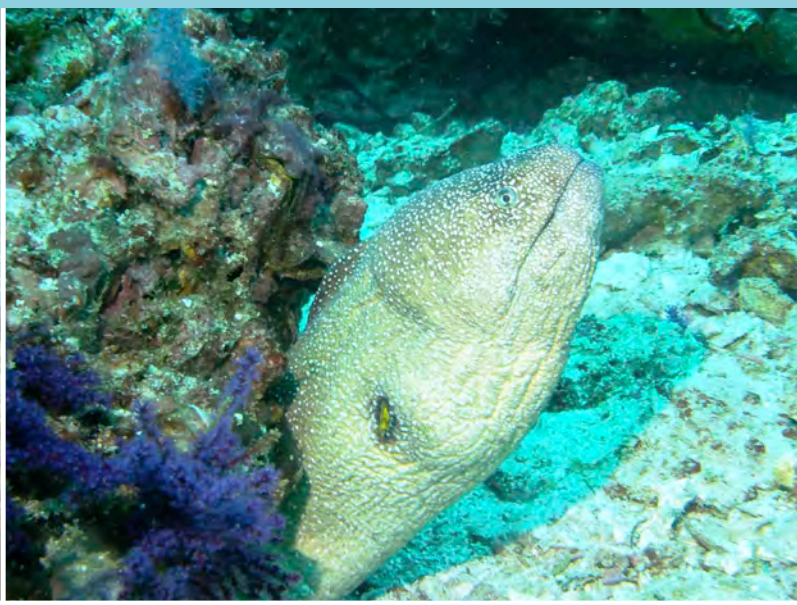
UNDERWATER REFLECTIONS OF THE UNITED ARAB EMIRATES

FEATURE AND PHOTOGRAPHY **PAUL WARWICK**

Having been in the UAE for almost eight years and now planning to leave for the somewhat colder shores of the United Kingdom and our home, I look back upon our time here and the diving experiences we have had in the fantastic underwater world surrounding the UAE and Gulf Region, and the base it has provided for the opportunity to travel further afield on other diving adventures. Not only do the people of the UAE have strong connections to desert and wastelands of the Arabian Peninsula, they also have a rich and varied history, culture, tradition and connection with the waters of the Arabian Gulf and the Indian Ocean; from pearl fishing, to a major historical hub for the spice and gold trade from Asian Minor and even piracy, for which they were both feared and respected. These customs and traditions live on in today's Emiratis and are evident for all to see despite the massive changes to both the land and seascapes, the inclusive multi-cultural nature of the society they have built and their strong commitment to conservation and marine management, as well as international leadership in this area. It goes without saying that for most participants, scuba diving, environmental protection, marine conservation and management go hand it hand. We all have an obligation to protect and preserve that which we enjoy, not only for future generations but for the future of our planet.

Depending upon who you speak to, you will receive a varied response to diving in the UAE and I suspect that most will say they prefer the East Coast (Indian Ocean and Gulf of Oman) to the West Coast (Inner Gulf). In most cases I would agree, the beautifully fjorded coastline of the East Coast running up to the Musandam, provides the ideal geophysical land and seascapes for a wide spectrum of marine habitats and ecosystems. The marine life is much more colourful, varied and abundant and you always get the chance to see visiting and transitory pelagic giants such as whale sharks, giant mantas, tuna and other shark species.

The marine geography of the West Coast on the other hand is largely shallow waters (maximum 90 metres anywhere within the Gulf) and a sandy bottom with sporadic open water reef complexes. This means that weather (especially the wind) plays a disproportionate role in the underwater visibility, diving conditions and the sea state. In addition, the scale of development on the West Coast is far more evident and despite the inclusion of environmental impact assessments, it has significantly changed the geophysical land and seascapes. This has undoubtedly impacted upon traditional sea grass beds, local natural reefs, tidal flats, mangroves and beaches and as a consequence destroyed or altered many natural habitats and breeding grounds as well as influencing the direction and strength of traditional currents and tidal flows. But strangely and fantastically enough it has not completely destroyed the unique ecosystems or indeed the marine life which has traditionally inhabited them.

The massive scale of development on the West coast, increasing populations, developing tourist facilities (ie golf courses, hotels, attractions) and the beautification programmes has resulted in an ever increasing demand for resources and none more so than fresh water. Most fresh water in the region is produced by desalination which requires huge amounts of energy and the residues of the process – the salts and minerals – are ploughed back into the sea, thus increasing the salinity of the water. Clearly this increase in salinity has impacted upon the basic chemistry of the waters of the West Coast (gulf at large) and one would think that given the sensitivity of marine life to heat, salinity, pollution and other man made activities, it would leave the waters around the region a lifeless marine desert. However, this is not the case, new ecosystems are developing around these man-made megaliths and the sea life is demonstrating incredible resilience and robustness in adapting and indeed evolving to survive in these ever changing conditions. All around the coast where there are permanent structures, hard and soft corals are thriving, various species of molluscs are returning in huge numbers and the piscal life, where it is left alone, is surviving and both numbers and variety are increasing. However there are problems, increasing human populations have placed greater demands on fishing and despite national efforts to control overfishing, the future of some species in and around the UAE and Gulf region at large is a major concern and will remain so for some time to come.

The East Coast on the other hand benefits from the oceanic currents of the Indian Ocean and the Gulf of Oman which sweeps across the coastline refreshing the coastal waters which reach right up the Straits of Hormuz maintaining healthy, vibrant conditions for all kinds of sea life to thrive. However, these conditions can sometimes also provide the ideal conditions for plankton or algael blooms and we have seen a number of these in our time here. Green Plankton Blooms are a benefit and a boon; they attract the large pelagic animals that feed on the plankton and they consume carbon dioxide to produce oxygen, but they can stifle the sea life below as they cut out sunlight. On the other hand, Red Blooms (which are algael) are far more destructive, they starve the oceans of oxygen, block out the sunlight stopping photosynthesis and release deadly toxins into the water that kills almost everything in its path. On two occasions that we can remember in our time here, there have been major Red Tides which have affected almost all of the East Coast and resulted in the destruction of coral reefs with a significant reduction in marine life, killing some and driving others away from their natural homes into deeper waters. Luckily, on both occasions, the ecosystems have been robust enough to recover and once again are teaming with resident and transitory marine life.

The UAE's waters are rich in marine biological diversity and home to some unique species of marine mammals such as the Dugongs and Dolphins, marine reptiles such as Sea Turtles and Sea Snakes and other sea life. Indeed the UAE is home to the second largest population of Dugongs in the world and so has a responsibility for their continued protection. There are over 34 species of shark in the region, not counting the larger transitory species, and a number of species of dolphins. We have even seen Orcas off Saadiyat Island, a rarity you may say, but this is happening more frequently in and around the UAE. In addition to the temporary visitors, a number of invasive species are now becoming a problem in and around the coast of the UAE. For example, increasing numbers of Lionfish are being seen and as apex predators, they can decimate small and juvenile fish populations and with no natural enemies, they rule the reefs. Crown of Thorns Starfish are also increasing in numbers along the East Coast and are beginning to impact upon some of the coastal reef complexes, causing the destruction of some unique ecosystems.






The UAE recognises its long affiliation with the sea and despite the ravages of economic development, there is a need to protect all the unique marine environments surrounding the country as well its inhabitants and transitory species. As a result, the UAE is signatory to a number of international conventions which cover marine conservation and protection and are world leaders in some specific species. The work of conservation is taken extremely seriously and as a regional leader, a great deal of work has and is being done by the authorities and local volunteer groups to conserve and preserve the UAE's marine heritage. This work includes:

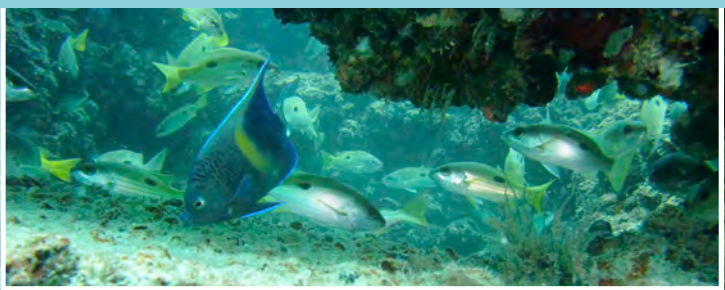
- Securing the patronage for conservation and marine management from members of the Royal Families.
- Direct action from the Environment Agency to control issues such as overfishing, by-catch, shark finning, trading in sea turtles etc.
- Targeted education programmes for local fishermen to ensure conservation and management of fish stocks not only in local waters, but in the region.
- Education programmes for children to ensure that they continue to actively participate in the UAE's efforts at marine conservation and marine management.
- Annually sponsored Clean Ups of beaches and underwater sites across the UAE under the auspices of organisations such as PADI – Project AWARE, EDA – Clean Up Arabia, and EAAD.
- The establishment of local and national Marine Protected Areas (MPAs) designed to minimise the impact of marine activities, including fishing, in order that species and ecosystems are given the opportunity to recover and strengthen.
- Sponsorship of education programmes and research which covers endangered species and species unique to the UAE such as Dugongs.
- Encouraging the development of artificial reefs around the shallow waters of the UAE by public and private sectors, not only to establish safe havens for the marine life to thrive, but also to protect the sensitive coastlines from extremes of changing weather patterns and marine erosion.

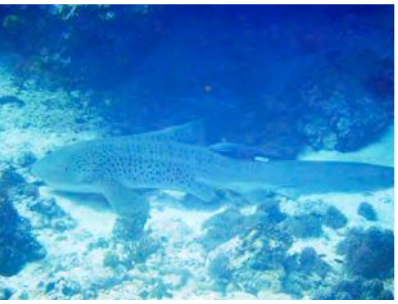
There are many dive sites in and around the UAE providing opportunity for every level of diver, although to get any real depth, "techies" would definitely have to go to the East Coast. That said, depth is not the be all and end all, the majority of our most pleasurable and exciting dives have been less than 15 metres, just bimbling along a reef complex or exploring an established breakwater complex or a shallow wreck. Within easy recreational depths you get to experience wrecks, new and ancient reefs, sea grass beds, mangroves, man-made structures and the unique sea life. Local dive centres will be more than happy to accommodate your diving proclivities and show you the best sites around their local areas. We have also dived a little further afield than main cities, although still in and around the UAE:

Sir Bani Yas Island: This is a scuba diver's dream, with numerous rarely dived sites providing everything from over 36 local wrecks, of different ages (not all of which have been discovered and identified) to pristine reefs and an abundance of marine species which have been relatively untouched. Many of the wrecks lie in less than 20 metres making them ideal sites for diving specialities with lots of bottom time. Much of the marine geography has yet to be fully explored and properly mapped out. The Desert Island Watersports Centre located at the Anantara Hotel and Resort is always keen to follow up on leads about new sites and new wrecks, so you never know, you could end up discovering a new dive site which could have your name on it.

Musandam Trips: Dhow trips with Al Marsa Travel & Tours has always been a favourite way to spend a weekend, whether just as a couple or booking an entire dhow for a group of like-minded individuals. The dhows are spacious with air conditioned ensuite cabins and the itineraries are as flexible as your imagination and the weather allows. We have arranged everything from weekend trips with friends, to full charters for PADI courses and a couple of unique variations between for visiting dive buddies. On every occasion from the reception, through all the diving, up to the departure, we have always been well looked after by Al Marsa and their incredible staff. Not only that, the diving opportunities are endless and depending on the time of year, there are opportunities to experience pelagic giants transiting the islands and coastline by the Straits of Hormuz.

Daymaniyat Islands: Known previously as the Trucial States, the UAE has strong connections with Oman, indeed travel between the two for business, social, family and recreation is common place and very easy. Oman has one of the only UNESCO recognised Marine Nature Reserves in the Region – The Daymaniyat Islands. This is an archipelago of three groups of small islands off the East Coast, North of Muscat. Access is strictly controlled and there is a premium for all who


wish to visit or dive around these islands, but it is worthwhile and will stimulate all your senses; we have been lucky enough to see and experience everything from pelagic giants to a visual cacophony of mating cuttlefish, dancing seahorses and incredible ballets of schooling fish. They truly are the crown jewels of the whole region.

The UAE also lies at the heart of some of the best diving destinations in the world all of which are only about 4 hours flying time away, from the Red Sea, to the Maldives, Seychelles, Mauritius and Sri Lanka. For those dedicated divers committed enough, Thailand, Malaysia, Indonesia and the Philippines are only a few hours more flying time away from the UAE – still within relatively easy reach. All of these destinations provide the opportunities for some fantastic diving to see marine life in full bloom and experience everything from micro to macro to mega. There is something for everyone whatever the level of your diving or your diving experience. Just make sure that you have your camera close at hand to get that special shot of sharks, giant mantas, tuna, bait balls and elegant Spanish Dancers. The Red Sea is also a magnet (excuse the pun) for those who enjoy exploring wrecks. There are a plethora of wrecks throughout the Red Sea dating back as far as the early 17th Century to as recently as 2006 (MV Salem Express) and all provide diving enthusiasts with lots to explore (with or without penetration for those unqualified or slightly more nervy).

The UAE has provided us with the opportunity for some fantastic diving opportunities amongst not only great groups of people who share our passion for the conservation of our oceans and seas, but also amongst those we now count as friends. Diving knows no cultural, ethnic, religious, gender or age boundaries, we are just a happy band of like-minded individuals who love to explore and experience what all our oceans and seas have to offer with nothing but a camera and our imagination. Is it the best diving you will ever find? It is not, but I say, seek and yee shall find, open your eyes and there is lots to find and see and every dive brings different sights, sounds and experiences.

The annual Clean Up campaigns across the UAE are fantastic and much, much more than just environmental events. They bring together the leadership of government agencies, local businesses who provide sponsorship, local schools and educational institutes who encourage volunteering as part of the social development curriculum and local and national diving groups from all over the UAE of all ages and gender, with the ability and desire to make a difference to save our oceans and seas. Not only do these events achieve real benefits in bringing the effects and extent of marine pollution and debris to the attention of the public at large, they bring people together in the spirit of mutual respect and cooperation, creating lasting and meaningful friendships that span countries, cultures and ages. I hope these environmental events continue to run and receive the widespread support of everyone who values the importance of our water world for our quality of life and our future.

As an instructor I have also had the pleasure of teaching both novice and qualified divers from almost every nationality, introducing them to the UAE's underwater world. Many start by saying "visibility is poor", "not much to see", "too salty" but with a little education, slowing down dives and getting them to really "open their eyes", they soon find that there is lots to see and observe if you know when and where to look – it is not always in plain sight, but they are there. You just have to take your time and enjoy the sensory experiences afforded by diving in UAE waters. It is also true to say that if you can dive and navigate in the waters off the West Coast of the UAE with its relatively poor visibility, control your buoyancy in the saltier waters and develop the third eye in knowing where to look for and find sea life, then you will be able to dive almost anywhere (Ice and Cavern diving precluded of course). It was also my opportunity to ensure that they learned about our water world and its importance to every aspect of our lives now and even more so, to future generations.

Remember, for most of us, the sea is our maternal home and for some people around the world it forms the core of their culture, national heritage and identity and none more so than in the UAE. The waters surrounding the UAE are rich in biological diversity which have demonstrated incredible resilience and robustness in adapting and evolving to meet the challenges of the rapidly changing land and seascapes proving that there is a strength in nature that is indeed wonderful.

So enjoy your warm water diving and take the time to really explore the complex and diverse underwater world which is available to you in and around the UAE. I think that you will find that provided you take your time, there is much to see and experience on both sides of the country as well as the opportunity for wider exploration. Farewell UAE and thank you for having been home.

"Always Keeping the Fun in Diving"

ICELAND'S SILFRA CRACK
AS CLEAR AS IT GETS

FEATURE AND PHOTOGRAPHY **JESPER KJØLLER**

It's not only above water that Iceland's distinctive geological history creates fabled natural phenomena. Under the surface, too, unique visual experiences await. Diving in Iceland is especially associated with the über-clear fresh water of the Silfra Crack. This dive straddling two continents in the clearest water in the world will take your breath away.

UNESCO has declared Thingvellir a World Heritage Site for both its cultural and historical significance as well as the natural and geological uniqueness of the area.

It's raining cats and dogs. We're alone in the parking lot preparing our diving gear, just a few steps from the solid steel staircase that leads down to the water in Silfra. It feels a bit strange to be wearing scuba equipment in the middle of a historic inland national park. Then again, here in the pouring rain a dry suit is not the worst choice of outfits either.

I walk down the stairs and put on my fins. When I dip by head underwater, I get a shock. I was prepared for clear water – but not this clear! I pull myself together and glide under the surface. Immediately, I'm overcome with a weightless feeling that, combined with the seemingly endless visibility, is the closest I've come to the feeling of flying. The water around me cannot be seen – only sensed. The barren landscape, brownish cliffs and deep blue colour of the water column in the distance is simply breathtaking.

The temperature is lingering at four degrees Celsius (40 degrees Fahrenheit) and I'm quickly reminded that I am in fact in water, even though the fluid around me is invisible. It's August, and this is as warm as the water here gets.

As I begin to swim, I feel the weak flow of the water from the glacier pushing me gently forward and away from the stairs – into Silfra. The melting ice from the edge of the Langjokull glacier, some 50 kilometres (30 miles) away, seeps very slowly through a giant field of petrified lava. It takes the water some 50 years to reach Silfra as it flows from the glacier. The porous fossilised lava acts as a very efficient water filter and removes all impurities from the already clean glacial melting water. Before the water is deposited in Iceland's largest natural lake, Tingvallavatn, it flows through the Silfra Crack – a fissure created by two large tectonic plates constantly moving away from each other. This is a magical place created by the infinite march of time and a mixture of geological coincidences and anomalies.

While I'm swimming around in this water so abnormally clear, I ponder the fact that I'm submerged in a fluid that left the glacier around the same time that John F. Kennedy was shot and The Beatles released "I Want To Hold Your Hand", the Fab Four's first number one single in America.

CRADLE OF DEMOCRACY

Silfra is located in the middle of the Thingvellir National Park, a 45 minute car ride east of the capital, Reykjavík. This place is more than a geological theme park and playground for divers. Thingvellir plays an important role in Icelandic history as the birthplace of the democracies of the Nordic countries. The word *thing* can be found in the names of the parliaments in Denmark, Sweden and Norway – Thingvellir literally means parliament plain.

The first parliamentary proceedings in the summer of 930 AD laid the groundwork for Iceland's common cultural heritage and national identity. The Althing at Thingvellir was the legislative and judicial authority until 1262 AD. On the edge of the national park, Logberg (literally Law Rock) was the focal point of the Althing and served as a natural platform for speeches. The inauguration and dissolution of the assembly took place at the Logberg, where rulings made by the law council were announced, the calendar was confirmed, legal actions were brought forth and other announcements were made concerning the entire nation.

Ordinary people also gathered at Thingvellir for a wide variety of reasons. Merchants, sword-sharpeners and farmers sold goods and services, entertainers performed and ale-makers brewed drinks for the assembly guests. News was recounted from distant parts and games and feasts took place here, too.

Thingvellir was a meeting place for everyone in Iceland, laying the foundation for the language and literature that have been a prominent part of the lives of the country's citizens right up to the present day. UNESCO has declared the National Park Thingvellir a World Heritage Site for both its cultural and historical significance as well as the natural and geological uniqueness of the area.

In a thousand years, this dynamic place will look very different – the walls lining the crack in the lagoon will have moved apart an additional 20 metres

THE CATHEDRAL

Bad viz is an underwater photographer's worst enemy. In Silfra, however, you're spoiled with the clearest water in the world and would have to be blind not to find photographic opportunities everywhere.

Some underwater photographers try to avoid having exhaust bubbles in their shots and even go as far as deleting otherwise perfect images if the model was exhaling when the photo was taken. I don't mind bubbles in the images – they enhance the feeling of being underwater and add another compositional element. And that rings particularly true in Silfra where bubbles are often the only giveaway that water is actually present…

The Icelandic word Silfra means something like Silver Lady. And while the origin of this rather poetic name is unclear (no pun intended), the metaphor is very appropriate for the light effects that occur when the sun dapples the clear water.

In some places the walls lining the crack are far apart, while in other areas you almost have to squeeze your way through. Here and there, enormous boulders have fallen and remain stuck between the walls – often you can choose to fin your way over or under them. The water is sometimes so shallow that a snorkel would suffice, while in other areas the water is more than 50 metres (160 feet) deep.

After I pass through a narrow and shallow section, the crack suddenly opens and becomes gigantic. I've arrived at the Silfra Cathedral! It's easy to understand the inspiration for the name. There's almost a religious atmosphere that prevails inside this enormous space – especially considering that I've just made my way through a floating maze to get here. I recognise the views from the many pictures I've seen from here. It's like being in Manhattan or at the Pyramids for the first time. I'm here, I made it!

YOUNG COUNTRY

Geologically speaking, Iceland is a very young country – approximately 20 million years old. Much of the landscape has yet to be subject to erosion and some of Europe's most powerful waterfalls tumble from great heights here. The island is home to over 30 active volcanic systems and is part of the Mid-Atlantic Ridge, a mountain range that stretches along the entire Atlantic Ocean. In this rift system, the two tectonic plates are pushed apart, leaving a gap in the middle where hot magma rises and crystallises on the ocean floor.

As I'm driving around Iceland to see some of the famous sites on land, I realise that something is missing. Then it dawns on me – there are no trees! Well, almost no trees, except for some small bushy conifers here and there. It feels like I'm driving in the mountains high above the tree line, even as I'm cruising along the coast. And this particular landscape has given birth to a popular joke: What do you do if you get lost in an Icelandic forest? You stand up!

Icelanders are fond of quipping, "Why do you want trees? They just ruin the view!"

100 METRE VISIBILITY? NOT QUITE.

Visibility is a slippery phenomenon. You often hear divers rave about good visibility on a tropical reef dive, exclaiming that it was at least 100 metres (330 feet). Theoretically, however, 100 metres of visibility is not even possible in pure H_2O. As soon as particles are dissolved in water the visibility drops because the light waves are scattered. And what is described as 100 metres viz is often far fewer than 30 metres (100 feet). Of course, that is still very good visibility, but a long way from 100 metres. The fact is, it's very difficult to judge distance underwater. And visibility also depends on available light as well as the size, shape and colour of whatever you're looking at from the distance.

Its lava-filtered water makes Silfra one of the very few places on the planet where you can dive in water so pure that it reaches the theoretical limits for visibility.

THE LAGOON

I get my next surprise when I turn left after admiring the Cathedral. After passing through a shallow area where stones and rocks lie helter-skelter, I enter the Lagoon. Once again, an unreal but still somehow familiar sight greets me. In the shallow pond here you can really feel the infinite visibility – the bank on the opposite side is over 100 metres away, but it looks like you could reach out and touch it. The lagoon is lined with bright green plants and the bottom is covered with a fine layer of sand and organic material that gets stirred up if you so much as think about getting too close with your fins.

I look around and see almost no life. Some seaweed and a few small trout from the lake are all that meet the eye in terms of living organisms here. But then again, you don't come to Silfra to explore interesting marine life – the main attraction is the visibility. In other words: there is nothing to see, but you see all of it very clearly.

In the middle of the lagoon, a giant fracture in the bottom reminds me that this is a dynamic milieu and a place that, a thousand years from now, will look completely different thanks to the toll of the tectonic forces.

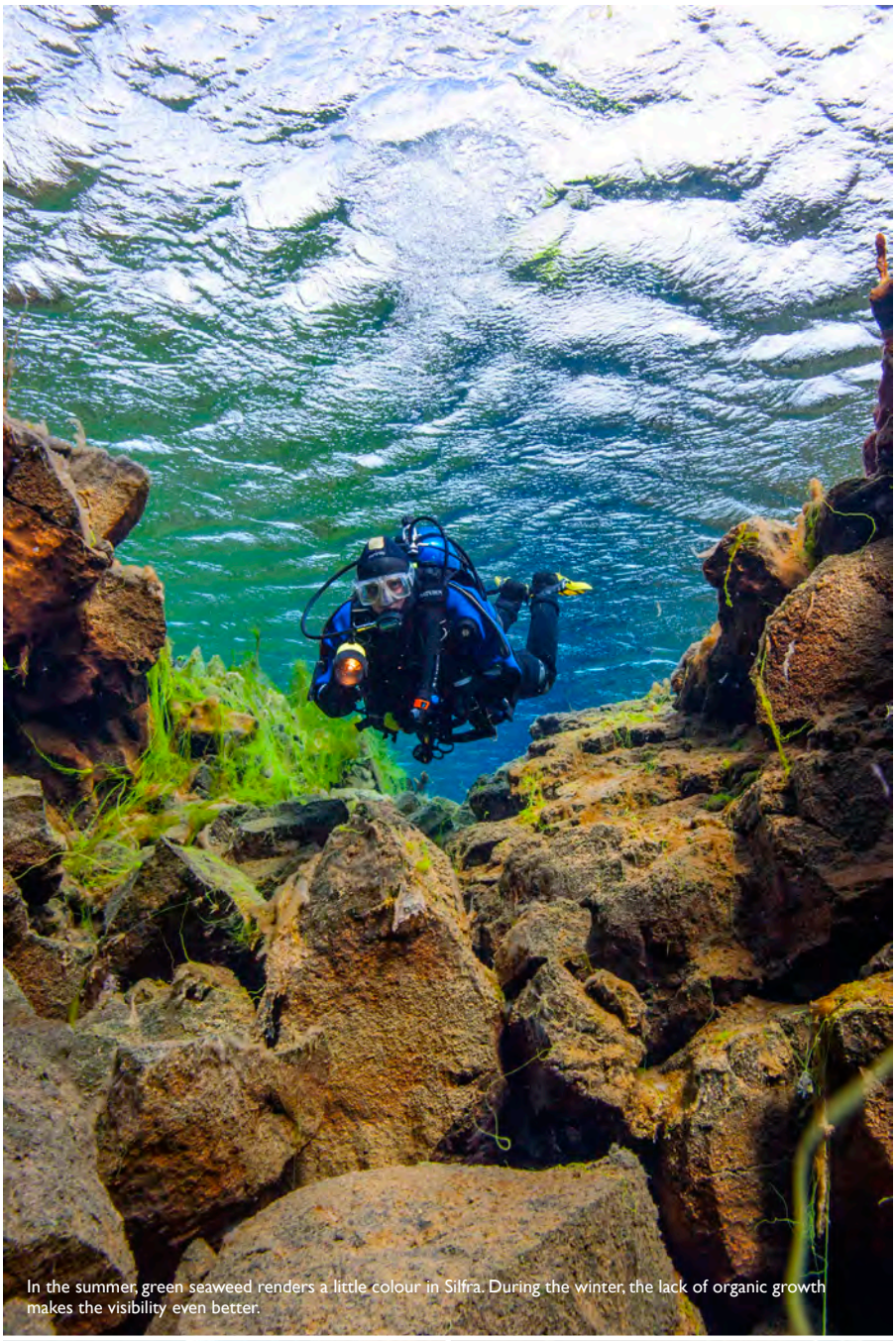
The rain has stopped and the totally calm and flat surface mirrors the underwater landscape perfectly, giving the impression that this inner space where I'm diving has grown twice as large. It's a marvellous sight!

We make our way back through the Cathedral to the stairs where our dive started. When I look at the two walls lining each side of the crack, it's very hard to imagine that the one on the left belongs to Europe and the one on the right to North America – that is, in a geological sense, of course. The crack is still moving a couple of centimetres each year, but I only have so long to admire it – after 45 minutes, the freezing water has made me colder than strawberry ice cream, but I'm having too much fun to let the icy temperatures bother me.

During the final swim back to the stairs I feel the water flowing against me, and it's good to work out a little to bring some warmth back into my dry suit. There's no need to rinse my equipment and underwater camera after the dive. In fact, it's probably cleaner than it was when I got in! If you're thirsty, just remove your regulator and take a sip – the icy water tastes great and could easily be sold in bottles for a fortune.

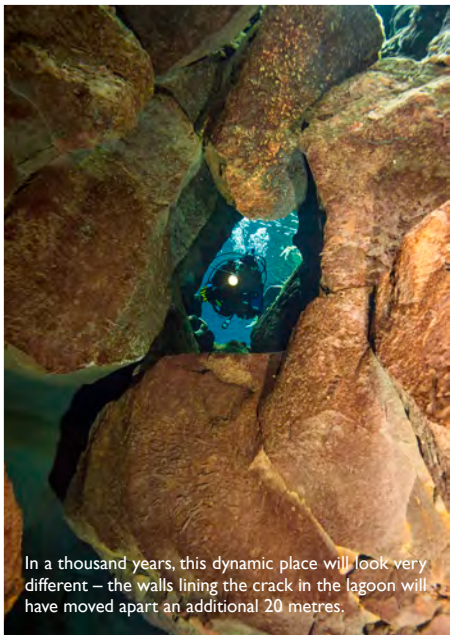
THE WORLD COMES TO ME

The dive centre DIVE.IS has operated for over 15 years. From the beginning, it was run by Tomas Knutsson, an Icelandic legend who almost single-handedly developed the Icelandic dive industry and made Silfra world famous. Other operators have since arrived, but Tomas is still Mr Diving in Iceland. In 2006, German dive instructor Tobias Klose took



In the summer, green seaweed renders a little colour in Silfra. During the winter, the lack of organic growth makes the visibility even better.

A diver bridges the divide between the Eurasian and American tectonic plates.



In a thousand years, this dynamic place will look very different – the walls lining the crack in the lagoon will have moved apart an additional 20 metres.

Exhaust bubbles are the only indication that we are, in fact, submerged. Otherwise, the water is as clear as gin.

over the operation. Tobias is married to an Icelandic woman, has three children and has been a resident of the island for many years. He even speaks the very difficult Icelandic language like a native. Tobias has settled in well and could not imagine living anywhere else. As he says: "Earlier, I travelled around the world. But now the whole world comes to me". Among the many international visitors there are celebrities like King Carl XVI Gustaf of Sweden, Ben Stiller and Tom Cruise, who paid Silfra a visit during the production of the Hollywood blockbuster Oblivion.

"The dive with Tom Cruise went very well and he is a solid diver. He did his first ever dry suit dive with us and he nailed it. But that's only expected of a guy that does most of his own stunts," says Tobias.

Do you know the feeling that occurs when you're at a famous place for the first time? I've wanted to dive in Silfra since I first heard of this mythic place, many years ago. But then suddenly you find yourself at the location, realising you could easily be disappointed – expectations often exceed reality, after all. But after three days of diving here, I was hardly disappointed. In fact, I was hungry for more. Silfra is a place that's truly unique and deserves to be very high indeed, on any diver's bucket list.

ICELAND FACTS

DIVING All diving in Silfra is done in dry suits. DIVE.IS has rental suits in different sizes, but it's recommended that you bring your own – along with some experience of diving in cold water. The weather doesn't impact the diving here, but the visual experience is best when the sun is shining. Ocean diving in Iceland is also excellent, with WWII wrecks and the hydrothermal chimneys in the Akureyri area to explore. For more information, go to: **www.dive.is**

SEASON Silfra can be dived year-round. The water temperature fluctuates within a few degrees above the freezing point.

CLIMATE The warm ocean currents of the North Atlantic provide a higher average temperature in Iceland compared to other countries at the same latitude. That means mild and windy winters and cool, humid summers. Despite the proximity to the polar region the coast is ice-free in winter. The climate varies slightly in different parts of the country – the south coast is generally warmer than the north coast and the highlands are coldest.

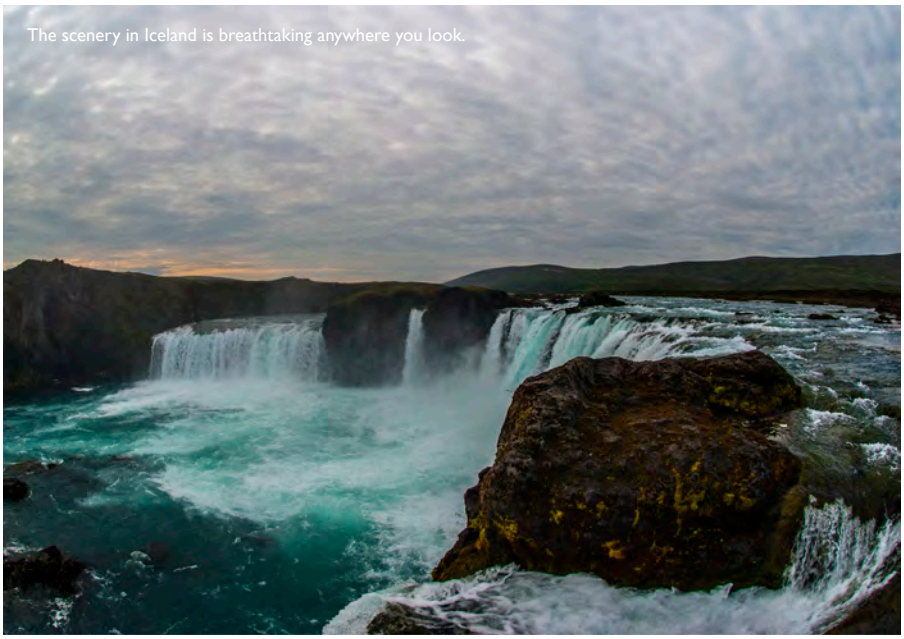
LODGING Silfra is only 45 minutes from Reykjavík, with many lodging possibilities in the capital of Iceland ranging from B&Bs and guesthouses to luxury apartments and five-star hotels. Before the financial crisis hit the country in 2008, it was very expensive to live here. Now your Euros or Dollars are hard currency against the Icelandic Króna and prices are similar to other Nordic countries.

HEALTH Reykjavík has a decompression chamber.

LANGUAGE The Icelandic language is supposedly one of the hardest to learn. But there's no need to torture yourself – Icelanders speak English very well and most also speak Danish, too.

CURRENCY 1,000 Icelandic Króna are equivalent to 8.7 Euros or 9.60 USD. (May 2017)

ELECTRICITY 220 Volts in European standard sockets, European-style plugs used.



The scenery in Iceland is breathtaking anywhere you look.

You don't have to be a scuba diver to enjoy Silfra. Dive centres in Iceland offer snorkeling in dry suits for non-certified visitors.

SUDDEN HEARING LOSS AFTER A TRIMIX DIVE

FEATURE **CAREN LIEBSCHER**

November 2015, Italy. Gabriel*, an experienced Spanish diving instructor in his forties, travelled to Italy with his friends by car. He is enjoying his first dive of the day using a closed-circuit rebreather. He is on trimix (oxygen, helium and nitrogen) and wears a Petrel dive computer.

By the end of his dive, he clocks up a total bottom time of 95 minutes at a depth of 40 metres (with a maximum of 45 metres). His dive was uneventful but during his ascent he felt a muffled sensation in his right ear which did not disappear right away. This was not the first time he experienced something similar – so he didn't worry too much about it. He assumed the sensation would clear up during the forthcoming hours, as it always had before. However, thirty hours go by – without any improvement. Unfortunately, Gabriel felt worse.

Two days later, he realised he couldn't hear anything from his right ear after trying to use his mobile phone. He started to get worried and experienced some postural vertigo. Gabriel felt miserable and wanted to go home. He decided to return to Spain the following day and seek medical treatment there.

Back in Spain, Gabriel stopped at the ER of a hospital. The doctors there believe it was an ear barotrauma and recommend some ibuprofen. Being an experienced diver and instructor, Gabriel tried to explain he believed it was not a common ear barotrauma. Unfortunately, the doctors simply recommended for him to come back the following day for a more detailed ENT check. At that point it was already late in the evening. What was he supposed to do? So he returned home.

The next morning, Gabriel decided to get a second opinion from doctors specialised in diving-related illnesses and hyperbaric treatment at another hospital. He was not at all surprised when he received a new diagnosis: sudden deafness. The doctor explained the sudden deafness in a diver is not a sequel of decompression sickness, but the result of a problem with the stato-acoustic sensorineural nerve that causes a sudden loss of hearing. It's not necessarily a dive-related condition. Anybody, even non-divers, can get it. But due to the pressure changes, it can happen to divers too.

The hyperbaric doctor prescribed him 20 sessions of hyperbaric oxygen treatment (HBOT). He also explained that it cannot be treated with classic ENT treatments but sometimes improves or even recovers completely with hyperbaric oxygen therapy. Improvement will never happen only after one HBOT session but good results have been produced by proceeding with the treatment for 3 weeks. Sometimes there is sudden restitution towards the mid or the end of the treatment period. So they start Gabriel on the HBOT.

WHAT IS SUDDEN DEAFNESS?

In sudden sensorineural hearing loss or sudden deafness, the stato-acoustic sensorineural nerve is affected for some unexplained reason and causes rapid loss of hearing – usually in one ear – either at once or over several days. If it occurs, it is of paramount importance for patients to see a doctor immediately. Delaying diagnosis and treatment may decrease the effectiveness of treatment outcome. People often notice the hearing loss when they try to use the deafened ear, for example, when they use a phone. Dizziness and/or ringing in the ears (tinnitus) can be accompanying symptoms. Typically adults in their 40s and 50s are affected. About 50% of the cases recover their hearing spontaneously usually within 1 to 2 weeks. 85% of patients receiving treatment recover some of their hearing. In about 15% of the cases, the cause can be identified as an infectious disease, head injury or brain trauma, an autoimmune disease, drugs that harm the sensory cells in the inner ear, blood circulation problems, a tumour on the nerve that connects the ear to the brain, neurologic disorders like multiple sclerosis, or disorders of the inner ear.

The condition means complete and permanent hearing loss and therefore impairment for the majority of activities in life. Although it is a rare problem, it has been known in the diving field for many years. As mentioned earlier, it's not a condition specifically in divers. Anyone, even non-divers, can get it. However, in divers it may be triggered by pressure changes whereas in non-divers the trigger factor can be something else.

HOW TO TREAT SUDDEN DEAFNESS?

A proven and promising treatment is hyperbaric oxygen treatment (HBOT). Another common treatment in the non-diving world is with corticosteroids. They reduce inflammation, decrease swelling and help the body to fight illness. Steroids can be taken orally or can be directly injected behind the eardrum into the middle ear (intratympanic corticosteroid therapy). Additional treatment may be needed if an actual underlying cause is discovered. Infections, drug allergies or autoimmune disorders can cause the immune system to attack the inner ear. Antibiotics, immune system suppressive or other drug treatments may help.

HOW IS SUDDEN DEAFNESS DIAGNOSED?

A hearing test called pure tone audiometry is the method of choice. It helps to determine whether the hearing loss is caused by sound not reaching the inner ear because something obstructs the way, or by a sensorineural deficit, meaning that the ear cannot process the sound. The diagnosis is positive if the test shows a loss of at least 30 decibels in three connected frequencies.

When in doubt, remember that the DAN Europe medical team is always at your disposal to give medical advice via its 24/7 emergency hotline. Just reach out for help. As an active member, always keep DAN emergency numbers close to you.

Unfortunately, we heard from Gabriel that, despite the HBOT treatment, his hearing hasn't returned yet. We wish him the best and hope his hearing will eventually recover.

* Name changed by the editors.

VIAGRA – CURSE OR BLESSING FOR A DIVER?

FEATURE **CAREN LIEBSCHER**

It's relatively likely that some males in their 40s, 50s, and 60s take viagra and may also be SCUBA divers. Therefore, they should be warned about the fact that Viagra taken before diving is very likely to increase the risk of DCS whereas taken afterwards, it may be a remedy.

When researchers decide to treat small rodents with drugs and send them diving in a hyperbaric chamber, SCUBA divers know these researchers are hoping to find a remedy for decompression sickness. Even more, a study like this surely attracts attention when the drug in question is viagra, probably the most well-known drug ever.

However, less well-known may be viagra's active substance, sildenafil, which was originally tested as a drug for lowering hypertension. Its beneficial effect for the male part of humanity was more or less a side effect which was then extensively marketed by Pfizer – as we all know only too well.

Nowadays, sildenafil is licensed to treat pulmonary hypertension and other vascular diseases. In an off-label use it has successfully been used to treat swimming induced pulmonary edema (SIPE) in triathletes. The main difference to viagra is that it is administered in lower doses than its famous relative.

PDE-5-INHIBITORS, EXOGENOUS AND ENDOGENOUS NO, AND VASODILATION

In general, sildenafil acts on the endothelium – the inner layer of blood vessels and dilates them by simply potentiating the vasodilator effect on smooth muscle relaxation. It does this by inhibiting an enzyme, phosphodiesterase type 5 (PDE5). In short, it is a PDE5-inhibitor. It lowers blood pressure by dilating vessels. These effects are similar to the effect NO (nitric oxide) has on vessels – it also dilates them. Therefore, scientists thought a vasodilator like sildenafil (viagra) could be protective against decompression sickness (DCS) in SCUBA divers. DCS develops from bubbles that form from micronuclei in blood vessels after decompression and NO-releasing agents are believed to have the ability to reduce this bubble formation and prevent serious decompression sickness.

SILDENAFIL PRE-TREATMENT STUDY

However, all hopes for a new remedy for DCS were destroyed when the scientists – Blatteau, Brubakk, Gempp, Castagna, Risso, and Vallée – investigated the effect of pre-treatment with sildenafil in an animal model and found that sildenafil doesn't protect against DCS at all but would instead be harmful and that divers should be warned about it.

To evaluate the clinical effects of sildenafil, the researchers pre-treated small rodents with 10mg/kg of sildenafil one hour prior to exposure. Then the rodents underwent a simulated dive to 90 msw for 45 minutes in a hyperbaric chamber before staged decompression. Half an hour after the dive, neurological DCS symptoms, blood cell count and quantification of the level of circulating bubbles in the right

cavities were clinically assessed. The control group was not pre-treated with sildenafil but received the same volume of water prior to the dive of equal conditions.

NEGATIVE OUTCOME OF THE STUDY

As mentioned above, the scientists' hopes were refuted: there were more cases of DCS in the sildenafil group than in the untreated control group. Further findings were: reduced platelet counts in the sildenafil group – a biomarker for decompression stress. This is owed to the fact that in DCS gas bubbles damage the vascular endothelium and provoke an inflammatory response resulting in the activation of leukocytes which transmigrate through the vascular endothelium after DCS, explaining the reduction in counts.

BENEFICIAL EFFECTS ON SWIMMERS

However, as disappointing as these findings were in regard to decompression sickness, they should not be mixed up with the beneficial effects sildenafil has on SIPE (swimming induced pulmonary edema) in triathletes in which it has effectively mitigated the symptoms of swimming induced pulmonary edema when taken before starting the activity. Swimming, although a water sport activity as well, is a totally different kind of sport compared to SCUBA diving. Greater depths and higher pressures in SCUBA diving make the main difference. What is good for one can be bad for the other.

EXPLAINING IT

The researchers' explanation for the increased risk of DCS when taking sildenafil prior to diving is that the increased cerebral blood flow due to sildenafil's vasodilator effect in the central nervous system, is causing a higher blood flow in the brain with a higher load of considerably more inert gas during hyperbaric exposure which may then generate bubbling and severe DCS in neurological tissue.

SO, WHAT DO WE KNOW NOW?

Sildenafil as well as NO (i.e. endogenous or exogenous) are both powerful vasodilators. In preconditioning studies, NO has shown to be an effective agent in reducing the risk of DCS. But it's not that simple that the use of a vasodilator alone lowers the risk of DCS. There is obviously a difference between endogenous/exogenous NO donors and a drug like the PDE5 inhibitor sildenafil. An endogenous NO donor is released as consequence of exercise, an exogenous NO donor can be taken in as food. In the above mentioned study, sildenafil was not able to reduce bubble formation in an animal model, but NO (nitric oxide) is known to reduce bubble formation in rodents as well as in man as was demonstrated in preconditioning studies (see Balestra et al.). Thus, NO donors must involve properties and mechanisms different from those encountered with sildenafil. This suggests that the presence of gas nuclei attached to the vessel wall is not directly influenced by the vasodilator effect related to the relaxation of the smooth muscle. NO seems to have specific effects that are involved in the reduction of the number of gas nuclei adhering to the surface of the endothelium. It can also diffuse to the luminal surface of the endothelium and trigger important physiological effects such as scavenging superoxide radicals, inhibiting platelet aggregation, modulating endothelial layer permeability and attenuating leukocyte function.

Sildenafil, however, does not seem to have these specific effects.

POSSIBLE REMEDY AFTER DECOMPRESSION

However, what may not be beneficial in one situation can be beneficial in other circumstances: the elevation of cerebral blood flow and the improvement of functional recovery of ischemic tissue have been shown to be beneficial in the treatment of a stroke with sildenafil 24 hours after onset of an ischemic stroke. This gives new hope that sildenafil could be useful as an adjuvant (i.e. supportive) treatment of ischemic neurological DCS in divers who have not recovered after initial treatment with hyperbaric oxygen.

WHAT DO WE LEARN FROM THIS?

SCUBA DIVERS: Preconditioning methods (like sauna and light exercise) are beneficial when done prior to diving. They trigger the release of endogenous NO which scavenges micronuclei from the inner layer of blood vessels and are therefore likely to reduce the risk of DCS.

Heavy exercise or sauna within 24-48 hours after diving increases the risk of DCS because it increases the blood flow in most tissues and leads to increased bubble formation from off-gassing nitrogen.

In the animal model, sildenafil increases the risk of DCS when taken prior to diving. (We have no knowledge of cases in human divers.)

If already hit by DCS and already treated in a hyperbaric chamber, sildenafil may be beneficial after diving and HBO treatment because it might help alleviating the symptoms of neurological DCS by increasing cerebral blood flow. This is an assumption based on stroke studies in rodents and requires more research.

SWIMMERS, TRIATHLETES AND OTHER EXTREME ATHLETES: Successful off-label use of the drug has shown that sildenafil taken in low doses can successfully treat the symptoms of SIPE and/or altitude sickness.

A WARNING

The researchers of this study conclude that pre-treatment with sildenafil (viagra) – or other drugs with a similar effect mechanism (i.e. PDE-5-inhibitors) – promotes the onset and severity of neurological decompression sickness (DCS). This is an important finding and should be spread among the community of divers.

As always with taking any drugs in SCUBA diving, divers should first consult with their (diving) physician. This is especially true for viagra. Possible interactions with other drugs and interferences with underlying diseases in the ambience of diving should always be discussed and clarified upfront.

TO SHED MORE LIGHT ON IT…

Research has shown that further studies on oxidative stress markers in the central nervous system (CNS) are needed to better understand the underlying mechanisms of sildenafil in DCS.

SOURCES:

Link to this paper:
www.ncbi.nlm.nih.gov/pubmed/23580342

Paper on preconditioning: Blatteau JE, Gempp E, Balestra C, Mets T, Germonpre P (2008) Predive sauna and venous gas bubbles upon decompression from 400 kPa. Aviat Space Environ Med 79(12): 1100–1105 [PubMed]

Paper on Sildenafil and SIPE:
www.medicalnewstoday.com/articles/306754.php

DAN | AlertDiver

HOW WOULD YOU LIKE YOUR JELLYFISH? WITH SALT AND VINEGAR?

FEATURE **CAREN LIEBSCHER**

In the fictitious American movie 'The Heartbreak Kid', the famous Hollywood actor Ben Stiller anecdotally encounters a stinging, jellyfish-like marine creature. Stung by the feared Portuguese Man o' War (which is not really a jellyfish, but a colonial organism called "siphonophore"), Stiller is seen screaming on the beach during his Mexican honeymoon, and the only life-saving remedy is: fresh urine from his wife. No wonder the world of divers and swimmers are yearning for another treatment.

The Portuguese Man o' War is a colonial organism made up of a myriad of specialised minute individual organisms, while a jellyfish is a single multi-cellular organism. What these two have in common though, is their stings. Jellyfish carry cells on their tentacles that can effectively fire microscopically sharp harpoons filled with potent venom at whoever comes too close to them. To a water sports enthusiast, this means uncomfortable pain and skin rash (erythema) – for the jellyfish, it is a survival mechanism.

Luckily, warm urine is not the only treatment for jellyfish stings and the like. Different jellyfish fire different venom, thus effective treatment may differ as well. In fact, research scientists at the Division of Emergency Medicine from the Department of Surgery of Stanford University School of Medicine have recently investigated which treatments are best suited to different stings. A good treatment for jellyfish stings would effectively relieve pain, reduce and inactivate the discharge of venom and prevent skin inflammation.

Unfortunately, being on a dive boat sometimes offers a limited range of options for emergency treatment. Most rescue and first-aid courses encourage deactivating the venom by washing the affected area using vinegar of 4% or 6% acetic acid solution, followed by hot water immersion. If hot water doesn't reduce the annoying sting, we are recommended to use cold water, alcohol, papain meat tenderiser or sodium bicarbonate. Lidocaine – a local anaesthetic, cortisone – an anti-inflammatory drug or sterile saline solution – a liquid similar to seawater, could also work.

If none of the above remedies work, use the same medium the jellyfish lives in! Seawater. Any change of osmolarity can trigger a discharge of nematocysts. In order to avoid this, saline solution might be a good replacement for seawater, while freshwater can be replaced by tap water.

The good news is, it's just first aid – back on land we will be in healthcare heaven. Then we can see a doctor who will eventually give us the real stuff – painkillers, antibiotics, disinfectants, and anything else you might need. The risky part to first-aid treatments on board is, if you use the wrong treatment, you might trigger the discharge of not yet fired little harpoons still sticking on your skin. And then the pain will start all over again.

If jellyfish encounters only caused skin rashes and pain, they would probably be just a nuisance. But sometimes the venom may contain haemolytic, neurotoxic or cardio toxic components that may lead to death from anaphylactic shock, respiratory or cardiac failure. In this particular study, 96 volunteers allowed themselves to be stung on their forearm by the *Chrysaora chinensis* jellyfish. Treatments were applied and the response measured as scores for both pain and erythema. To microscopically examine the effect on the increase or decrease of discharging nematocysts, the same treatments were also tested in an in vitro model on nematocysts. Treatments in question were isopropyl alcohol, hot water, acetic acid, papain meat tenderiser, lidocaine, and sodium bicarbonate. Surprisingly, the most effective pain reliever was papain – an enzyme found in papaya fruit, known to be a strong digester of proteins and is believed to break down the jellyfish venom. None of the other topical treatments reached any statistical significance since it reduced pain and erythema and did not trigger nematocyst discharge.

Meanwhile, the often recommended vinegar was not the best option at all. Sodium bicarbonate was the most effective in reducing erythema within 30 mins after getting stung. Sodium bicarbonate and papain together were effective after an hour. Acetic acid and isopropyl alcohol caused nematocyst discharge, while sodium bicarbonate, papain, heated water, or lidocaine did not. Plain seawater, as a matter of fact, induced no nematocyst discharge at all and would probably always work to rinse the skin without causing new stings. The scientists assumed that nematocyst discharge correlates with human pain perception. Therefore, Nematocyst discharge triggered by treatment had to be avoided.

It was recommended to stay away from acetic acid and isopropyl alcohol when washing off the stung area to prevent triggering nematocyst discharge.

This research was inspired and funded by DAN (Divers Alert Network). Although research was conducted very precisely and statistical tests were sophisticated, the authors warn about the limitations of their study and the overall applicability of their findings to all kinds of jellyfish species. There might still be room for new surprising findings. Keep yourself updated regularly by reading our medical news about the latest research in diving medicine – or turn in your own research ideas to DAN!

REFERENCES: Efficacy of Topical Treatments for Chrysaora chinensis Species: A Human Model in Comparison with an In Vitro Model. Wilderness Environ Med. 2016 Mar; 27(1): 25-38. DeClerck MP1, Bailey Y2, Craig D2, Lin M2, Auerbach LJ2, Linney O3, Morrison DE4, Patry W5, Auerbach PS2. – Epub 2016 Jan 27.

UPCOMING EVENTS

DIGITAL ONLINE 2017 EXHIBITION

1-7 June 2017 | Exhibition Open to the Public
9:00-17:00 on week days and 14:00-17:00 on Fridays at the American University in Dubai, Rotunda Gallery.

DIGITAL ONLINE
جمعية الإمارات للغوص
EMIRATES DIVING ASSOCIATION
PHOTOGRAPHY AND FILM COMPETITION

EDA MOVIE NIGHT WITH VOX CINEMAS

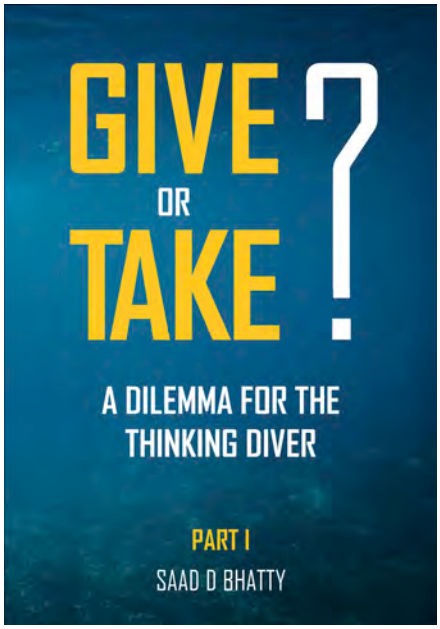
9th August 2017 | 18:30 Registration, 19:00 Start | Operation Jeedara & Operation Jairo

2 short Sea Shepherd Documentaries will be shown back to back in VOX Cinemas – Mercato Mall.

OPERATION JEEDARA which is mentioned in the feature on page 30 by Natalie Banks, documents the journey of conservation group Sea Shepherd's ship, The MV Steve Irwin on campaign to film and document the beauty of the Great Australian Bight while examining the consequences if BP were allowed to bring their largest oil rig into it to undertake exploratory oil drilling.

OPERATION JAIRO documents the story of Jairo Mora Sandoval, the sea turtle conservationist that was murdered in May 2013 in Costa Rica while working to protect leatherback turtles. A gripping documentary that explores the plight of endangered sea turtles, with particular focus on efforts by the Sea Shepherd Conservation Society to protect threatened species of sea turtles in Costa Rica from poachers.

WHAT IS YOUR RESPONSE TO OUT-OF-AIR EMERGENCIES?



A new book by UAE-based diver and instructor Saad Dawood Bhatty has just been published. It explores the intricacies of out-of-air emergencies, air-sharing protocols and the difficult choice which confronts thinking divers – from novices who have just taken up the sport, to experienced divers who have been enjoying it for years.

The book is written as an engaging discussion spread across five chapters. Photographs, illustrations and sidebar commentary make the journey more enjoyable.

Available from Amazon in the US, UK and Europe (ISBN 978-9697756-001).

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MISSION STATEMENT

To conserve, protect and restore the UAE marine resources by understanding and promoting the marine environment and promote environmental diving.

LEGISLATION

Emirates Diving Association (EDA) was established by a Federal Decree, No. (23) for the year 1995 article No. (21) on 23/02/1995 and chose Dubai as its base. The Decree stipulates the following responsibilities for EDA.

- To legislate and regulate all diving activities in the UAE.
- Ensure environmentally respectful diving practices in all EDA members.
- Promote and support the diving industry within the UAE by coordinating the efforts of the diving community.
- Promote diving safety in the commercial and recreational diving fields through standardization of practices.
- Promote and preserve historical aspects of diving within the gulf region and enhance environmental education to diving and non diving communities through EDA activities.

PUBLISHED BY

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