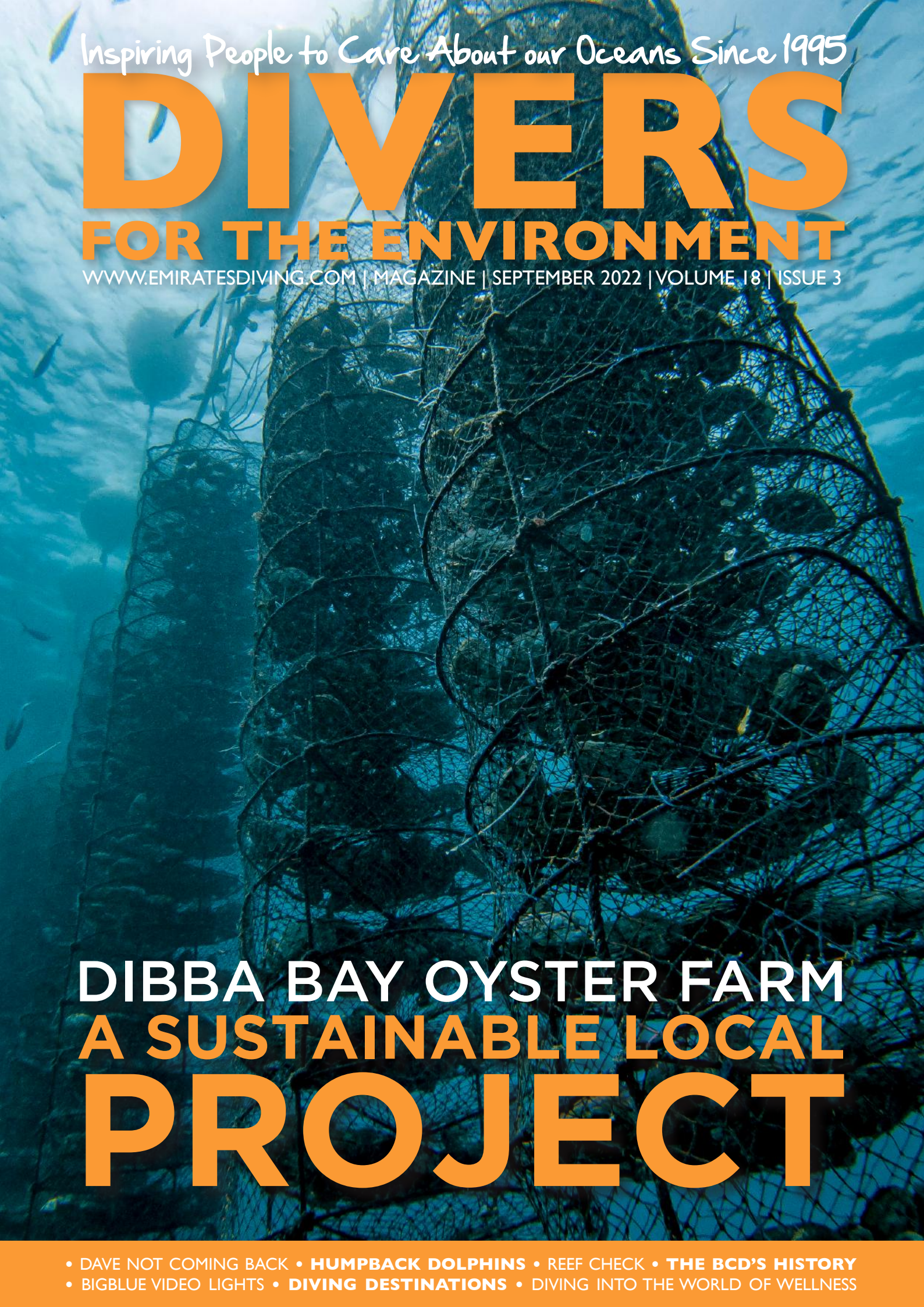


Inspiring People to Care About our Oceans Since 1995

DIVERS FOR THE ENVIRONMENT

WWW.EMIRATESDIVING.COM | MAGAZINE | SEPTEMBER 2022 | VOLUME 18 | ISSUE 3

DIBBA BAY OYSTER FARM
A SUSTAINABLE LOCAL PROJECT

• DAVE NOT COMING BACK • **HUMPBACK DOLPHINS** • REEF CHECK • **THE BCD'S HISTORY**
• BIGBLUE VIDEO LIGHTS • **DIVING DESTINATIONS** • DIVING INTO THE WORLD OF WELLNESS

Reef Check
UNITED ARAB EMIRATES

Join the Reef Check
ECODIVER CERTIFICATION COURSE

LEARN TO CONDUCT REEF CHECK SURVEYS TO COLLECT DATA ON REEF HEALTH, AND HELP ASSESS CLIMATE CHANGE IMPACTS

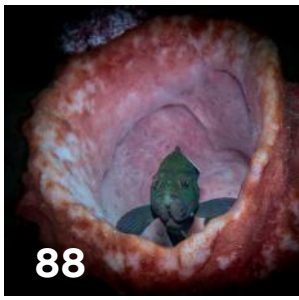
When you join a Reef Check EcoDiver Training Course, you will learn about our local ecosystems and you will be able to participate in our regular survey dives which will help us to understand the threats our corals are facing by providing important data.

EDA
جمعية الإمارات للغوص
Emirates Diving Association

EMAIL: reefcheck@emiratesdiving.com **WEBSITE:** www.emiratesdiving.com/events/reef-check

EDA IS A NON-PROFIT NGO ACCREDITED BY UNEP AS AN INTERNATIONAL ENVIRONMENTAL ORGANISATION

EDA
جمعية الإمارات للغوص
Emirates Diving Association



REGULARS

NEWS

KIDS CORNER

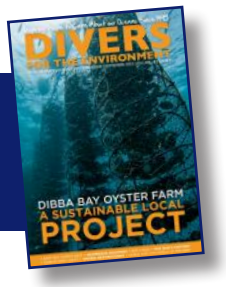
REEF CHECK

FEATURES

PRODUCT REVIEW

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's. The magazine is 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 released in December 2022. Send all articles, feedback or comments to: **magazine@emiratesdiving.com**

COVER
PHOTO BY ALLY LANDES
A look at Dibba Bay's oyster lanterns at one of their underwater concessions.



REDUCE REUSE RECYCLE

UNDERWATER PHOTOGRAPHY

DIVING DESTINATIONS

HEALTH

EDITOR & GRAPHIC DESIGNER

ALLY LANDES
Ally is EDA's Project Director, Event Planner & Coordinator, Graphic Designer, Writer, Editor, Photographer & Videographer. She created and introduced 'Divers for the Environment' back in December 2004 as a free educational tool to share information by scientists, conservationists, underwater photographers, and other like-minded individuals from all over the world with a passion to conserve and protect our delicate marine life and underwater world.

THE QUARTERLY CONTRIBUTORS

Meet the magazine contributors who share their passions and interests with our readers. Want to contribute? Email: **magazine@emiratesdiving.com**

FARHAT JAH
Farhat opened his first dive centre in the Andaman Islands in 1995. In 1998 he moved it to Pemba Tanzania. In 2012, with his wife Francisca, he founded the African and Oriental Travel Company, selling tailor made safaris and unusual dive adventures. When he is not doing his day job, he writes stories about diving, travel, expeditions and aviation. Farhat is a NAUI Instructor trainer, a PADI instructor and a fellow of the Royal Geographical Society.
www.orientafricatravel.com

ALDO GUSTAVO GALANTE
Cardiovascular Surgeon, Rescue Diver and Underwater Photographer. Aldo has travelled to 68 countries, in which he has dived 42 of them. He began his underwater photography in 1996, focusing mostly on capturing exotic species and has portrayed marine life amongst marine debris since 2005.
www.instagram.com/aldogalante8

LEVENTE ROZSAHEGYI
Levente started photography back in 2001 and has travelled various parts of the world since 2005. He takes photos both under and above the water, sharing his experiences and highlighting environmental issues. His underwater photography has won him several international competition awards.
www.instagram.com/levente.photography

PATRICK VAN HOESERLANDE
Diving opens up a whole new world. Being a writer-diver and co-editor of the Flemish divers magazine, Hippocampus, Patrick personally explores our underwater world and shares his experiences through his articles. You'll find a collection of them on **www.webdiver.be**.

GIUSEPPE DI TURSI
Giuseppe is an Aerospace Engineer and a near-graduate Biomedical Engineer, passionate about physiology in extreme environments, specifically in diving. He is also a PADI Master Scuba Diver Trainer, EFR and DDI Instructor.

A HOT BUSY SUMMER

IBRAHIM AL-ZU'BI
Co-Founder & Executive Director

It is my great pleasure to present to you our September issue of 'Divers for the Environment'. As always, I am overjoyed with the support, not only through our diving campaigns and clean-ups, but also by the quality and quantity of articles we regularly receive from our loyal readers, fellow divers and friends; including those from around the world who send in their experiences and advice to other divers, and keep us updated on international diving, marine environment and conservation efforts.

It has been a hot summer – if not the hottest in years for many people around the world. Global temperatures are rising and most of us are living climate change now. As you may know, rising temperatures have a direct effect on rising sea levels and a huge impact on the fragile marine life. Most Scientists consider marine life, and especially coral reefs, the planet's first defence line against climate change as the first eco system to be impacted by the rise of temperatures is the marine life. We have all heard about coral bleaching in some countries as a result of global warming. As responsible divers, we act as Ambassadors and Eco Warriors because we see the change in marine life as a positive or negative, we live it, we film and photograph it, and most importantly we report the status of the coral reefs. Being environmental divers, we should raise awareness to as many people as we can – even if they don't dive – as everyone on this planet has the responsibility to protect our planet, whether it's on land or underwater.

As you all know, EDA is a Reef Check (RC) Training Facility, global divers and the RC movement are using tools such as 'Divers for the Environment' to promote and share their work, so I am sure you will enjoy reading our Reef Check news and finding out what your fellow divers are up to in other countries. You will also read about all the great work organised by EDA's member dive centres in our news section – from clean-ups and courses, to all the fun activities you can have as a diver.

EDA's annual Cleanup Arabia will be starting in November this year in partnership with the UAE Ministry of Climate Change and Environment, and the local municipalities. I am sure you are all excited to join us to ensure we do the best we can to keep our oceans as clean as possible. We are looking forward to seeing you all there! A big thank you in advance to all our clean-up volunteers, and of course, our sponsors.

I hope you have all managed to have a diving holiday to explore somewhere new this summer. It's a wonderful world.

Together, we can make a difference.

Dive Safe!

Ibrahim Al-Zu'bi

INTRODUCING EDA'S NEW MEMBERSHIP MANAGER

MEMBERS, MEET LARA!
Please welcome Lara Allaham to the EDA team as our newly appointed Membership Manager. As our members' new point of contact, Lara will be available to help answer any questions you may have or direct you to the right person.

Lara grew up in the UAE, she is an avid diver, currently a PADI Divemaster and looking to soon start her IDC. We know she will be an asset to the team and we look forward to all of you meeting her.

YOU CAN EMAIL LARA AT:
projects@emiratesdiving.com

"I left the corporate world to follow my passion so I can share my love for scuba diving and inspire people to appreciate our oceans through my videos."

THE GHOST NET CAMPAIGN
EDA SUPPORTS THE CAUSE

WHAT ARE GHOST NETS?
Ghost nets are fishing nets that have been lost, abandoned, or discarded at sea due to several reasons, i.e. illegal fishing, bad weather conditions, lack of experience dealing with fishing nets, lack of information, etc.

Fishing nets are responsible for trapping and killing millions of marine animals including sharks, rays, fish, turtles, dolphins, whales, crustaceans, and birds. Ghost nets cause further damage by entangling live coral, smothering reefs and introducing parasites and invasive species into reef environments.

In general, there are also other types of fishing gear lost or dumped into the ocean which continues to do what it was designed to, trapping marine life. These we all count as silent killers and we take responsibility to remove them from the sea.

WHO ARE THE DVDT?
The Dubai Voluntary Diving Team are volunteer divers dedicated to protecting the marine environment against fishing gear and other harmful obstacles that have negative impacts on marine life since 1995.

They carry out weekly dive trips specially to search for fishing nets and to inspect the dive and fishing sites in the United Arab Emirates. They search at depths and long distances throughout the year.

فريق دبي للغوص التطوعي
DUBAI VOLUNTARY
DIVING TEAM

To know more about the DVDT team and see what they do, follow them on their social media platforms:
www.instagram.com/dubai.v.diving
www.facebook.com/DVDivingTeam

If you find abandoned fishing nets on your dives, give the DVDT the coordinates or a pin drop so they can investigate the area and clean-up the ghost nets.

GHOST NET HOTLINE:
+971 55 666 8070

THE DVDT'S SUPPORTERS PROVIDE THE EQUIPMENT AND SERVICES NEEDED
There are many costs involved in running the Dubai Voluntary Diving Team. Maintenance of the boat and its engines is without a doubt an important factor that enables them to reach the dive sites safely, and special equipment is required for search and recovery. Lifting heavy nets that can reach up to 500kg per dive gets very expensive.

ZAYED SEARCH & RESCUE TEAM POD EVENT SUPPORTED BY EDA

PHOTOS BY **JESPER KJOLLER**

The Zayed Search and Rescue Volunteer Team held a private diving event for the Zayed Higher Organisation for People of Determination (DOP) with 7 candidates taking part at Deep Dive Dubai on the 27th of June which was sponsored by EDA.

The Zayed Search and Rescue Volunteer Team confirmed their readiness to support sport and community events. Hussein Al-Hammadi, the head of the Zayed Search and Rescue Team said, "The 'Asahab El-Hamm' diving initiative achieved its goals to sustain development, enhance capabilities and develop skills. We want to uplift our national goals, support sustainability of development in activities and events for those with disabilities which are in line with the trends of the Zayed

Higher Organisation, to achieve leadership and quality in professional performance in the various disciplines, and integrate DOPs into society, improve their motor and psychological abilities, while practicing scuba diving to enhance their participation in marine sport activities and various events at state level."

He added, "We're proud to contribute to our community responsibilities, providing an environment that fosters the abilities and skills of the stakeholders. The initiative included a live demonstration of diving practices, and the use of a wheelchair for concerned boat owners. In addition to raising the Emirates flag underwater, the oath of allegiance was done in sign language."

Al-Hammadi expressed his thanks and appreciation to the other supporters, such as the Abu Dhabi Civil Defence Authority in the presence of the General Secretary, His Excellency Abdullah Abdul Ali Al-Hamidan, Top Perfumer, Abu Dhabi Ports Group, and the event sponsor, the Emirates Diving Association.

AN EDA MOVIE SCREENING **DAVE NOT COMING BACK**

We held our third EDA Movie Screening social event on the 4th of August to show Dave Not Coming Back, an extraordinary and tragic story that deserved to be told. A big thank you to Jonah Malak and Don Shirley for the rights to screen it, and to Deep Dive Dubai for continually supporting EDA and hosting our quarterly screenings.

SYNOPSIS

Two high level scuba-divers and long-time friends, Don and Dave, broke a world record for depth in the Boesmansgat cave in South Africa. It would take them 15 minutes to reach the bottom, but 12 hours to surface. Having reached the bottom, against all odds, they find a body. They decide to come back and retrieve it.

AN INTERVIEW FROM LRM ONLINE 2020

Jonah Malak first heard about the story in 2012 – 7 years after the event. He got in contact with Don Shirley in 2014 to start telling this story.

In his own words, Jonah explains what he wants the audience to take away from his film, "There is a cathartic value to watching a tragedy on screen because it bounces back to your own life. You see this happening and it makes you think of your own mortality, your own fragility, and maybe the mitigating risks is beyond what we are used to as normal urban human beings. For example, Don breathing for hours and hours on his own and saying there is no one else who can do that for us. We can connect to that. If you have someone who is sick, in a terminal phase of cancer for example, the situation is exactly the same, the emotions are exactly the same, the tragic aspect of it, that there is nothing anyone else can do but to live in the moment, moment by moment, until it ends. These kinds of strong emotions have a cathartic value, that I hope will stick with the audience once they get out of the movie. Independent of the diver, and I know divers will take even more specific stuff to their sport and how they mitigate risk and think about their families, and think about diving."

Don explains his thoughts, "I think the story has been told correctly, and everything that was said there was exactly spot on. And I think, that the way this story has been told, it doesn't necessarily need to be about diving. People may think, oh I'm not going to go to this film because it's a diving film, but you don't even feel you're in the water when you watch it because it's so true to life and it can be applied to any situation I believe. I've given talks on this film almost in a motivational aspect, because what it boils down to is you need to do what you need to do now, and that's all you can do. And if you decide that you can no longer do it, then that is correct. You can't do it. One of the sayings that I have now, 'believe you can, believe you can't', either way, you're right. My saying is 'believe you can', because you can and at no time did I personally think that I wouldn't come out. And when the book was being written, I suddenly realised that's exactly how I was thinking. And this film I believe puts that across well. So anyone that watches this and listens to the story can think of what needs to be done, and this is what I'm going to do. I believe that you could take water out of this story and it would really be a magic story in itself."

WANT TO JOIN OUR EVENTS?

Our social event and online EDA Movie Screenings are only accessible to EDA members. The screenings have limited spots available. Registration to join them is necessary in order to join the guest list to our social event, or to receive the special link to view the films online.

You can register for EDA membership or renew it via our website here:
www.emiratesdiving.com/membership-form


FRAGMENTS DISTRIBUTION
PRESENT
AND NEMESIS FILMS
A JONAH MALAK FILM
DAVE
NOT
COMING
BACK
WRITTEN AND DIRECTED BY JONAH MALAK WITH DON SHIRLEY, DAVE SHAW AND ANN SHAW
PRODUCERS AUDREY-ANN DUPUIS-PIERRE, JONAH MALAK EXECUTIVE PRODUCERS BOB MOORE, MARWAN HAROUN
IMAGE MARWAN HAROUN, HUGO GENDRON SOUND GENEVIÈVE THIBERT EDITOR JONAH MALAK
SOUND DESIGNERS SYLVAIN BRASSARD-GAËL POISSON LEMAY COLORIST JULIEN MAILHIOT-GUYON
POST-PRODUCTION SUPERVISORS JULIEN TREMBLAY, MÉLANIE GAUTHIER ORIGINAL MUSIC MARC BELL, GABRIEL THIBAUDEAU
Québec
difuze
TÉLÉFILM

WOMEN'S DIVE DAY

CELEBRATED AT THE NATIONAL AQUARIUM ABU DHABI

BY **KATHLEEN RUSSELL**, PADI COURSE DIRECTOR AND OWNER OF AL MAHARA DIVING CENTER
PHOTOS BY **SHOAIB AHMED JAN**

PADI Women's Dive Day was celebrated across the blue planet this year on the 16th of July. Thousands of female divers took to the waters and hosted beach clean-ups, sunset yoga sessions, local guided dives, shark dives and so much more. Female divers used this day and everyday to promote more inclusivity in diving. In its 7th year, this event has brought many female divers together to engage in environmental activities and promote diversity. The ocean does not discriminate.

"It was an amazing experience! I got to see the sharks so close. The baby stingrays are so friendly and sweet that they will come closer and try to greet you. It's so at peace too, just looking at them all and how synchronised they are. I will definitely do it again. Thank you for letting me experience it!" – Tathee, female PADI Diver

"I felt really lucky that I got to dive with sharks on shark week and on PADI's Women's Dive Day. Not only did I get to enjoy the dive with an awesome support system, but I also got to have a jaw dropping experience by enjoying the dive in the company of these incredible creatures (sharks)." – Meitha, Abu Dhabi Female Diving Group

THE EVENT

Al Mahara Diving Center in Abu Dhabi, invited female divers to a short presentation to learn about the female pioneer divers from the first invention of the aquarium to the current ocean and shark advocates of our time. Additionally, this event was held at The National Aquarium in Abu Dhabi where the ladies got a chance to dive with sharks and rays, the inhabitants of the largest aquarium in the Middle East. Our team of female guides from Al Mahara Diving Center led the divers to the main tank to showcase the graceful hammerhead sharks, bowmouth sharks, leopard sharks and shovelnose ray, eagle rays, and a plethora of other sting rays and tropical reef fish. On the second dive, they went to dive with the sand tiger sharks, lemon sharks, black tip reef sharks, tawny nurse sharks, and golden trevallies. We thank all the 16 female participants who joined us to celebrate PADI Women's Dive Day and build awareness for shark conservation. Everyday for us is PADI Women's Dive Day.

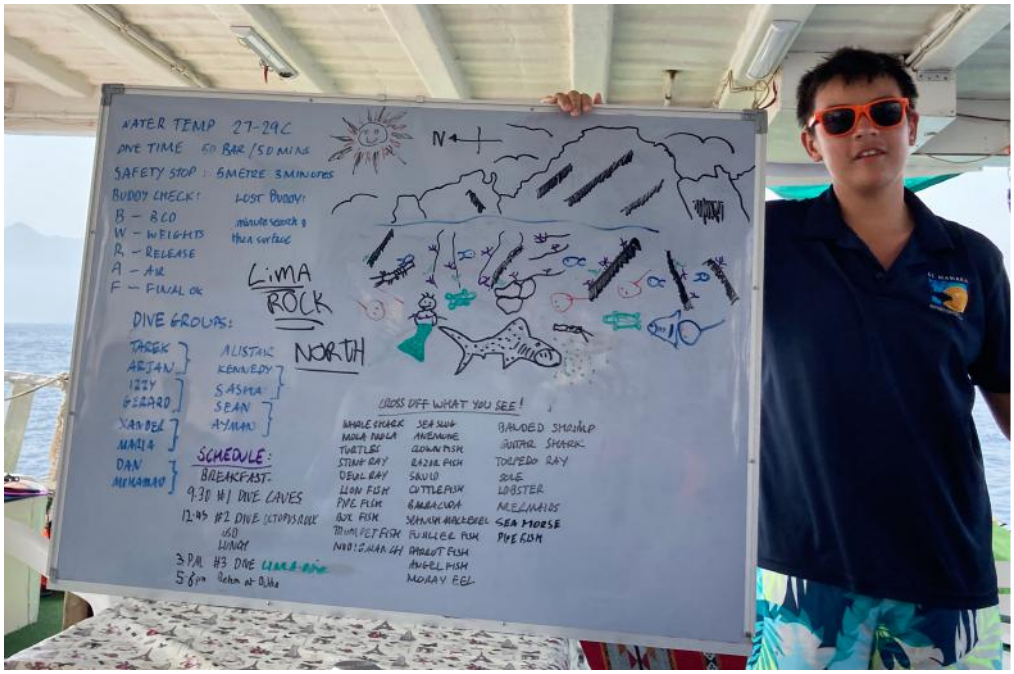
SHARK & AQUARIUM DIVES:
Al Mahara Diving Center is an authorised PADI dive centre able to conduct the shark dives and the PADI Aquarium Shark Dive Speciality at The National Aquarium of Abu Dhabi.

FOR MORE INFORMATION:
Email: info@divemahara.com
WhatsApp/Call: +971 50 1118125

*EDA members get a discounted rate from Al Mahara Diving Center for the shark dives and PADI courses.

CONGRATULATIONS
TO OUR FIRST UAE PADI JUNIOR DIVEMASTERS

BY **KATHLEEN RUSSELL**, PADI COURSE DIRECTOR AND OWNER OF AL MAHARA DIVING CENTER



In 2019, PADI launched a youth programme for those who were under the age of 18 and had a keen interest in scuba and diving knowledge. This was a new pilot programme which was offered to some of the world's first PADI dive centres. We would like to congratulate Xander Russell (15 years old) and Paulina Slawek (17 years old) on earning their PADI Junior Divemaster certification with Al Mahara Diving Center in Abu Dhabi! They are some of the first youth divers to earn the Junior Divemaster rating in this region.

This youth initiative is designed to prepare 15-17 year olds for their next steps in the full PADI Divemaster course. As a Junior Divemaster trainee, they need to be at least 15 years old with a few prerequisites, including: Emergency First Response Primary and Secondary, Rescue Diver certified, 20 logged dives to begin with, and 40 logged dives for certification.

On being asked about his course, Xander explained, "Over the years of diving, I have picked up many different bits of information, tips, techniques, and overall help. So by doing this course I feel that it really empowered me and allowed me to properly mentor other youths to guide them on the best path in their diving journey."

Paulina went on to say, "Personally, the junior Divemaster course was a great experience! I continued to learn about diving itself but also all about the mechanics of the dive shop and how it runs. Thanks to the course, I feel very comfortable and confident in the water and ready to assist other divers as much as I can."

The course teaches youth divers how to become a more confident diver and mentor through similar hands-on practicals, workshop and skills development, and real life scenarios. It allows the trainee to experience similar training conditions to a full on Divemaster. The candidates learn a wide range of skills including: dive environment awareness, dive site mapping, concise skill demonstration, assisting in dive logistics, and dive site briefings! The course includes a short internship to include PADI AWARE's Dive Against Debris (DAD) and the Shark Awareness Conservation speciality; ultimately leading them to become a PADI torch bearer and making a difference to our world.

AL MAHARA
DIVING CENTER L.L.C.

FOR MORE INFORMATION:
We hope more youth divers will follow their passion in scuba diving and earn their PADI Junior Divemaster certification.

For more information on PADI Junior Divemaster programmes and internships with an EDA membership discount, please contact our dive centre at:
info@divemahara.com

www.instagram.com/diveabudhabi
www.facebook.com/diveabudhabi
www.twitter.com/diveabudhabi

KATHLEEN RUSSELL
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DIBBA BAY OYSTER FARM OBTAINS FRIEND OF THE SEA CERTIFICATION
MAKING IT THE ONLY CERTIFIED AQUACULTURE FARM IN THE REGION

On the 5th July 2022, a Friend of the Sea Sustainable Aquaculture certification was officially awarded to the Dibba Bay Oyster Farm in Fujairah, United Arab Emirates. Friend of the Sea is the leading global certification standard for products and services that respect and protect the marine environment. Dibba Bay is the first farm in the Middle East to grow gourmet oysters and is located on the East Coast of the UAE in Dibba; where they grow millions of oysters in the pristine and nutrient-rich waters of Fujairah.

To be a certified Friend of the Sea institution, aquaculture facilities must meet strict sustainable policies, waste management regulations, and social responsibilities. The Friend of the Sea certification covers Dibba Bay's sustainable aquafarming for oysters, covering the *Crassostrea gigas* species. The certification also covers Dibba Bay's packing and export operations with traceability being a key focus.

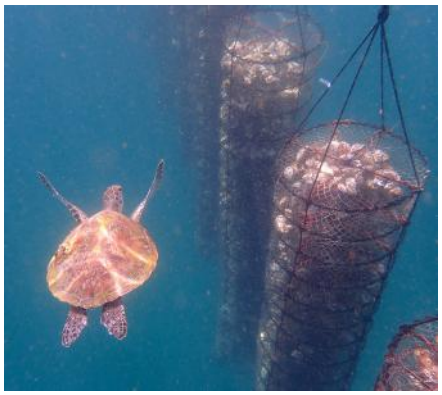
"Our mission as an oyster farm has always been to protect our oceans and involve sustainable practices in all aspects of our business to safeguard the integrity of aquatic life. We are proud to be acknowledged by Friend of the Sea for our sustainable farming practices. It's important to us that there is an accredited third party certifying our work; sustainability demonstrated with a third-party certification will help consumers choose more consciously" says Ramie Murray, Founder and CEO of Dibba Bay Oysters.

Friend of the Sea's Sustainable Aquaculture Certification criteria involves an environmental impact assessment which must confirm no impact on critical habitat, compliance with water quality parameters, no use of harmful antifouling nor growth hormones, compliance with water quality management, social accountability, and continuous improvement of waste and energy management.

As part of their waste management programme, dried Dibba Bay oyster shells are being returned to the ocean in non-pollutive gabion cylinders that are 80cm high which act as building blocks to protect coral reefs in Dibba, Fujairah. The shell structures are offering a substrate for coral growth and new habitat for marine life.

"Obtaining this certificate proves not only that Dibba Bay conducts a responsible farming operation according to Friend of the Sea's standards, but also that the company has a broader commitment to protecting the environment," said Paolo Bray, Founder and Director of Friend of the Sea.

As the first farm in the UAE to receive the Friend of the Sea certification, Dibba Bay is supporting the country's Food Security goals by providing a certified sustainable food product for local and international consumption.



DIBBA BAY® OYSTERS

ABOUT DIBBA BAY

Founded in 2016, Dibba Bay is the first shellfish farm in the Middle East, based in Dibba, Fujairah. Dibba Bay oysters are farmed in Dibba, Fujairah, UAE by East Coast Shellfish LLC. The farm is a 90 minute drive from Dubai and harvesting takes place three times a week, every week of the year to ensure incredibly fresh oysters are delivered to customers in a regular and reliable fashion. The Dibba Bay oyster is a sustainably farmed local product of the UAE with a growing reputation as a world class gourmet product. In 2021, Dibba Bay completed a new state-of-the-art production facility which is gearing up to produce half a million oysters a month. A large percentage of the produce is going for export to countries that include Hong Kong, Maldives, Mauritius and Seychelles.

The company has strengthened its production line and brand strategy with a mission crafted to translate its further growth, notably in becoming a global shellfish company. Achieving this goal will put yet another unique UAE product under the international spotlight and show the ability of the country to continuously innovate.
www.dibbabay.com

FRIEND OF THE SEA®

ABOUT FRIEND OF THE SEA

Friend of the Sea, a World Sustainability Organisation project, awards sustainable practices in Fisheries, Aquaculture, Fishmeal, and Omega-3 Fish Oil. In addition, the organisation promotes projects related to restaurants, sustainable shipping, whale and dolphin- watching, aquaria, ornamental fish, UV creams, and others. It is the only sustainable fisheries and aquaculture certification programme recognised and supervised globally by European National Accreditation Agencies.
www.friendofthesea.org

IN THE PRESENCE OF HER EXCELLENCY THE MINISTER OF CLIMATE CHANGE AND ENVIRONMENT, EAD'S EXPERTS HIGHLIGHT ABU DHABI MARINE BIODIVERSITY CONSERVATION AND REHABILITATION EFFORTS DURING THE NATIONAL AQUARIUM TOUR

Abu Dhabi, 28 July 2022: The Environment Agency – Abu Dhabi (EAD) on Tuesday led a high-profile tour of The National Aquarium attended by Her Excellency Mariam bint Mohammed Almheiri, Minister of Climate Change and Environment and Her Excellency Dr Shaikha Salem Al Dhaheri, Secretary General of EAD to celebrate Shark Week, held between the 24th and 31st of July.

Also attending were, Ahmed Al Hashemi – Executive Director of the Terrestrial and Marine Biodiversity Sector at EAD, alongside Alyazia Saeed Al Meheiri, Development Manager at Al Baraka Holding and other officials from the Ministry of Climate Change and Environment, EAD and the National Aquarium.

The delegation was able to see the diverse species of sharks that can be found at the National Aquarium and were provided with a general brief about the different species by an EAD expert. These include: shallow water bay species such as the Arabian Whipray, Arabian Carpet Shark, Halavi Guitarfish, as well as a number of rays. They were also briefed on the Blacktip Reef Shark, Sicklefin Lemon Shark, Scalloped Hammerhead Shark and the Whitespotted Wedgefish.

The visitors were also given a tour on a glass-bottomed Bu Tinah boat, allowing them to enjoy a unique view of the marine species accompanied by detailed explanations of their names and characteristics.

The delegation was also updated on EAD's sea turtle rehabilitation programme, run in collaboration with the National Aquarium. Turtles that are rescued by specialists or the general public are treated at the Rehabilitation Centre and provided with the most advanced veterinary care before release back into their natural habitats. To date over 500 turtles have been rescued and released by EAD and the National Aquarium.

On the occasion, Her Excellency Mariam bint Mohammed Almheiri said, "Our marine waters are the mainstay of our fishing and tourism industries, and provide habitats for a diverse range of species. Conserving marine biodiversity is a collective responsibility that we encourage the community to take on. Shark Week aims to educate the general public, particularly children and youth, about the key role sharks play in keeping marine ecosystems in balance and the importance of safeguarding our oceans from the mounting pressures they face due to diverse factors, such as overfishing and marine pollution." The Minister applauded the work of EAD and the National Aquarium in protecting marine life in the UAE.

Her Excellency Dr Shaikha Salem Al Dhaheri said, "In celebration of Shark Week, it is an absolute honour to partner with the Ministry of Climate Change and Environment on this visit to the National Aquarium, to be updated about our vast array of marine biodiversity species inhabiting Abu Dhabi's waters, especially our diverse shark species."

She added, "The National Aquarium is an aesthetically pleasing location, allowing the general public the chance to experience our wide range of species without having to venture into deep waters – making it a vital educational tool. Abu Dhabi has a vast number of marine species that several people know nothing about, and through encouraging visits to locations such as the National Aquarium we can bridge this information gap."

She further elaborated, "At EAD, we have exerted boundless efforts to protect our marine species, especially sharks, and we ensure that if they ever reach shallow waters, as they have on several occasions, we take very good care of them and return them back to their natural environment so they can continue to thrive.

In fact, in 2020 we engaged in the world's longest shark rescue, where we assisted a Whale Shark that was stuck in a manmade lagoon and moved it over 20km to safety. The shark was moved in a specially designed transport bag and escorted to open sea and monitored where it managed to travel for 273km into the middle of the Arabian Gulf within the first five days."

She concluded, "We are also very dedicated to propagating our turtle species through the rescue and rehabilitation programme via our partnership with the National Aquarium, and in the last few years we have returned a large number of turtles back to the sea so they can inhabit and breed once again in their natural habitats."

Paul Hamilton, General Manager of the National Aquarium, said in a statement, "At the National Aquarium, we are very proud of the work done in the past two years with the Environment Agency - Abu Dhabi on the rescue, rehabilitation, and release of sea turtles. This project contributes to the increasing success rate of animal survival in Abu Dhabi and, more importantly, to the significant impact on marine habitats protection."

He added, "The aquarium has the most extensive diversity of elasmobranches – sharks and rays – in the region, which offers visitors of all ages a remarkable opportunity to learn about these animals and transform fear into fascination. For example, sharks are one of the most overharvested creatures in the ocean, and their population has decreased dramatically. Hence, our responsibility is to raise awareness and advocate for their survival in the wild.

THE ENVIRONMENT AGENCY – ABU DHABI

BLUE CARBON PROJECT SELECTED AMONG 12 UPLINK OCEAN TOP INNOVATIONS

Abu Dhabi, 2 June 2022: The Environment Agency – Abu Dhabi (EAD) has announced that its Blue Carbon Environmental and Social Responsibility Project, in collaboration with ENGIE and Distant Imagery, has been selected among the 12 Uplink Ocean Top Innovations.

The drone technology developed by Distant Imagery for the EAD was one of the winners of the Blue Carbon Challenge, which was launched by Friends of Ocean Action, Uplink and the Mangroves Working Group. Conservation International, Coastal Oceans Research and Development – Indian Ocean (CORDIO) East Africa, REV Ocean, and GIB Asset Management were also part of the effort as supporting partners.

The Blue Carbon Challenge on UpLink recognises innovative solutions, projects, and enabling tools that can harness the potential of blue carbon markets to support environmental conservation, habitat restoration, and coastal management for people, nature, and help combat climate change.

The selected 12 UpLink Ocean Top Innovators will receive technical support and valuable connections to implement their projects.

The Blue Carbon Project, undertaken by EAD in partnership with ENGIE and Distant Imagery, involves striving to plant more than 35,000 mangrove seeds in the Mirfa Lagoon in Abu Dhabi using highly innovative drone planting technology. This project aligns with the recent ambition by the UAE entitled the Abu Dhabi Mangrove Initiative launched by His Highness Sheikh Khalid bin Mohamed bin Zayed Al Nahyan member of the Abu Dhabi Executive Council and Chairman of Abu Dhabi Executive Office and Prince William, Duke of Edinburgh in February of this year.

Ahmed Al Hashmi, Executive Director – Terrestrial & Marine Biodiversity on the occasion said, "At EAD, we are always striving to work using innovative and state-of-the-art technology for the implementation of our projects. Being recognised by Uplink for our Blue Carbon Project is a reflection that we are on the right path. Our project was very ambitious and pioneering because it had never been done before in the region, and through using cutting edge drone technology to plant mangroves we are striving for high success rates for restoration."

He added, "Blue Carbon – carbon stored in aquatic ecosystems, like mangrove forests and seagrass beds, has the potential to store five times as much carbon per square foot as terrestrial ecosystems. Through projects like ours we will be able to reduce emissions and capture carbon in natural carbon sinks offering a transitional step to Net-Zero by 2050, which is one of the main goals of the UAE."

"We are delighted that through our partnership with the EAD we have been able to evolve our drone technology. Our collective success is thanks to adoption of an ecological-led approach throughout each project phase; the seeds are dropped at the right time, tide level, soil depth, and in the perfect location, but it is nature that takes its course and makes it a success" comments Jane Glavan, Co-founder, Distant Imagery.

Florence Fontani, Vice President of Communications and Sustainability at ENGIE Africa, Middle East, and Asia (AMEA) added, "Technology and sustainability have come together wonderfully in this unique conservation project in Abu Dhabi. This project is truly a first in the world and I am proud that we have received such recognition for the innovation demonstrated. The project demonstrates a novel approach to rehabilitating the Emirate's mangrove habitats using drone technology. An effective way to mitigate the effects of climate change and restore natural habitats and biodiversity, we look forward to sharing the learnings of this first-of-its-kind project and implementing similar initiatives that will accelerate our goals towards carbon-neutrality."

The UAE based Unmanned Aerial Vehicle environmental analysis company, Distant Imagery, developed extremely accurate maps and analysed potential planting sites. Distant Imagery drones made from simple and scalable 3D-printed components, coupled with very accurate planting can be a benchmark in mangrove restoration. Their technology can drop 2,000 germinated seeds, or 500 seedballs, in ten minutes.

THE ENVIRONMENT AGENCY – ABU DHABI

REFLECTS ON MANGROVE RESTORATION EFFORTS UNDERTAKEN IN ABU DHABI

Abu Dhabi, 26 July 2022: The UAE is always looking ahead, and as a nation it has developed strategic initiatives and plans up to 2050 and beyond. The vision for the UAE was inspired by its Founding Father, the late Sheikh Zayed, who, with one eye on the future, saw beyond the present and the past. He is also known as the First Environmentalist and pioneered most of our environmental conservation efforts. The Environment Agency – Abu Dhabi (EAD) is consistently walking in his footsteps because he paved the way for the nation's environmental efforts.

During COP26 last year in Glasgow, the UAE Minister of Climate Change and Environment, announced a nationwide plan to plant 100 million mangroves by 2030. Additionally, in February of this year, Abu Dhabi set out ambitious plans to establish the emirate as a global hub for research and innovation in support of conservation through the Abu Dhabi Mangrove Initiative. This was announced during HRH Prince William, the Duke of Cambridge's landmark visit to the UAE. This initiative is an extension of the Blue Carbon project, focusing on the importance of mangroves and their role in combatting climate change through carbon sequestration.

The Agency plays multiple roles in the drive to combat climate change, and aims to improve its data collection process through the use of technology, artificial intelligence and spatial techniques, providing data on greenhouse gas emissions, and carbon dioxide in particular.

Another Agency goal is to clarify mitigation measures that will minimise environmental impact from different sectors, including health, water and infrastructure, in addition to developing ways to reduce the impact on species and ecosystems.

In addition to their climate-related benefits, Blue Carbon ecosystems are valuable to coastal communities like Abu Dhabi. They protect shorelines, improve water quality, and provide nursery grounds for a wide range of terrestrial and aquatic species. They also support responsible coastal tourism and have important cultural and social value.

The UAE was one of the first countries to recognise the importance of coastal habitats, and mangrove restoration, and conservation efforts have been in place since the 1970s. Moreover, the Abu Dhabi Blue Carbon Demonstration Project was implemented and led by the Abu Dhabi Global Environmental Data Initiative (AGEDI), together with EAD – as Abu Dhabi was the ideal setting for such a project due to its innovative concepts and commitment to environmentally-responsible development.

The project found that, overall, Blue Carbon ecosystems in Abu Dhabi are calculated to store within the soil and biomass more than an estimated 41 million tonnes of carbon dioxide equivalent. To put this into context, it accounted for more than the emirate's annual emissions from the oil and gas (26.4 million tonnes) or water and electricity (30.9 million tonnes) sectors at that time. The success of the project led to Phase II, known as the National Blue Carbon Project in 2015, which extended the understanding and valuation aspects of coastal Blue Carbon ecosystem services throughout the UAE.

Abu Dhabi has the oldest known mangrove restoration and afforestation initiatives anywhere in the world, with some stands in the emirate being nearly 100 years old. In 2015, mangroves occupied an estimated 14,117 hectares in scattered locations throughout the emirate. During the past 10 years, at least 15 million young mangroves have been planted along the coast of Abu Dhabi.

In February of 2022, in partnership with Etihad Airways, the national airline of the UAE, EAD launched the Etihad Mangrove Forest to provide guests, corporate accounts and partners the ability to adopt mangroves in Abu Dhabi to help reduce their carbon footprint.

The Etihad Mangrove Forest is the culmination of multiple joint programmes between Etihad, EAD, Jubail Island, The Storey Group, and other partners to support UAE mangrove conservation projects, and develop new carbon sinks and natural resources to absorb carbon from the atmosphere following the principle of: "Abu Dhabi for the World".

The Environment Agency – Abu Dhabi also announced the successful completion of its Blue Carbon Environmental and Social Responsibility Project, which aims to protect mangroves in the emirate. The project was implemented in collaboration with ENGIE – the low carbon emission service provider, in partnership with Distant Imagery, which specialises in drone engineering and restoring blue carbon, and involved striving to plant more than 35,000 mangrove seeds in the Mirfa Lagoon in Abu Dhabi using highly innovative drone planting technology. The success rate exceeded 35%.

EAD continues to take the lead for mangrove restoration in the emirate of Abu Dhabi and its future plan involves developing cost effective, technology and innovation led mangrove restoration programmes, restore lost, degraded and potential mangrove areas with the best international practices and to engage stakeholder, and involve public and private entities in mangrove conservation and restoration initiatives.

NEW STUDY PROVES
TOURISTS WANT TO CREATE OCEAN CHANGE
GREEN FINS & PADI PARTNER TO SUPPORT MORE PURPOSE-DRIVEN TOURISM

Photo by Rayna O'Nan

With travel opening up again, tourists are ready to travel, and they are reevaluating what's important to them when making their decisions. Ensuring travel is sustainable for both local communities and ecosystems is a priority, according to a newly published study from the team behind Green Fins, who conducted the survey with the support of PADI. The most significant findings indicated that 83% want enriching educational experiences on how to protect the ocean and 75% are willing to pay more for trusted sustainable experiences while on holiday.

"The eagerness to travel again is coming back globally, with 85% of respondents from the recent Green Fins study noting they are planning to take a trip in the next year," says Florian Allgauer from the team behind Green Fins. "But their travel desires, especially that of the digital generations of Gen Z and Millennials, have evolved, with the majority willing to pay more for regenerative stays and experiences.

They are actively seeking out ways to educate themselves and make a difference while on holiday, both as a way of self-expression and to give back. Their consumption habits directly align with their beliefs, including tourism operators they book with."

To support this growing demand to hold travel businesses responsible for taking action to protect their surrounding natural ecosystems, PADI® and the Green Fins network are teaming up to work with the over 6,600 PADI Dive Centres in supporting them to become Green Fins Members – which will allow them to be easily identifiable to consumers as working with sustainable marine tourism operators, making dive tourism a force for good. Eliminating the possibility of "greenwashing" allows for consumers to put their tourism dollars towards sustainable and regenerative businesses, eliminating something the study shows is currently a challenge.

Green Fins is an initiative implemented globally by The Reef-World Foundation and, in partnership with the UN Environmental Programme, protects and conserves coral reefs through environmental guidelines that promote a sustainable diving and snorkelling industry. The partnership between PADI and Reef-World will further grow the global adoption of the programme with the launch of the Green Fins Hub, sponsored by PADI.

"This partnership is creating positive ocean change," says Emma Daffurn, CSR Specialist for PADI Worldwide. "A key action point on PADI's Blueprint for Ocean Action is to reduce and offset the carbon footprint of the entire diving industry. Now our members have actionable steps and support in tracking their sustainability goals and our divers can easily identify experiences that enrich – instead of detracting from – our shared blue planet."

All marine tourism operators (including non-diving operators) are invited to register as Green Fins Members through the Green Fins Hub, which is designed to empower tourism operators to easily manage their sustainability journey. This includes self-evaluating their operations and identifying four annual, achievable and sustainable action points to take, along with connecting to other members and sharing solutions to various environmental challenges faced globally.

To further hold the tourism industry accountable, the Green Fins Global Top 10 Member will be highlighted by Green Fins for having the lowest environmental impact. PADI will be working closely with PADI and Green Fins Members who are exhibiting exemplary levels of environmental achievement to elevate their commitment, guaranteeing divers that they are amongst the greenest tourism operators on the planet.

To register as a Green Fins Member, sign up at the Green Fins Hub. For a list of all current Green Fins Members visit: **www.greenfins.net/countries**

PADI AWARE LAUNCHES 'ADOPT THE BLUE' PROGRAMME TO PROTECT 30% OF THE OCEAN BY 2030

Rancho Santa Margarita, California, 1 June 2022: PADI® and PADI AWARE Foundation have launched an ambitious new initiative to establish the world's largest network of conservation sites aimed at safeguarding ocean habitats and species threatened with extinction. Managed by the PADI AWARE Foundation™, Adopt The Blue™ will activate a global network of dive sites across the planet to establish more Marine Protected Areas with the support of PADI Members, divers, and ocean torchbearers.

Over the next decade, the Adopt The Blue programme will serve as the connective tissue to drive forward PADI's Blueprint For Ocean Action, the organisation's road map that underpins all local conservation efforts on marine debris, protection of vulnerable species, restoration of coral reef systems and tackling climate change. These local actions, when replicated and scaled up, will truly help drive global impact.

"Our goal is to create 10,000 Adopt The Blue sites by 2025, working with local communities and PADI operators to accelerate local conservation efforts where they are most needed, and to actively contribute towards protecting 30% of the ocean by 2030," says Danna Moore, Director of PADI AWARE Foundation.

Adopt The Blue is supported by PADI MPA Programme founding partner Blancpain, who shares a rich history rooted in the exploration and preservation of the world's oceans. Together, PADI and Blancpain are committed to establishing the largest inventory of Marine Protected Areas in the world.

PADI's Mission Hubs are at the heart of Adopt The Blue – the 6,600 dive centres and resorts and more than 128,000 professional members worldwide who will serve as the backbone for the programme's global footprint, providing unprecedented scale and unmatched potential for participants to take direct action that will drive measurable conservation impact at the local level – all tied to the global commitment to protect 30% of the ocean by 2030.

"Over the years we have been consistently amazed by the passion and readiness of the diving community to take action where and when it's needed. With the scale and support of our mission hubs, divers and ocean torchbearers will be able to help countries meet their ocean conservation commitments as well as driving forward the creation of coastal MPAs," continues Moore. "This global collective effort of meaningful action at local levels will help us move the needle on the most urgent conservation issues facing our blue planet."

The programme does not require Adopt The Blue sites to be diveable, meaning PADI Members can identify any underwater site anywhere in the world that is important to them. These sites could contain an iconic habitat or species, such as mangroves, shallow water seagrass beds, nursery sites, or breeding grounds; even sites that are of particular economic benefit to local communities – as they all contribute to PADI's overall vision to restore balance between humanity and the ocean. Once the sites are adopted and listed on the Adopt The Blue platform, PADI AWARE Foundation will coordinate the appropriate local, regional and national conservation efforts.

To join the network and have your site listed, visit:
www.padi.com/aware/AdoptTheBlue/Join.

THE PINK MASK

STORY BY SLAVA NOOR – WWW.THEPINKMASK.NET

COULD THE MASK BE WRONG?

The day of the battle finally arrived. Ula was terribly frightened. At breakfast she dropped her marmalade toast, her hands were shaking so much that she couldn't even take a sip of tea. "Are you feeling unwell?", Ula's mother asked very worried. Ula shook her head in silence. More than anything she wanted to tell her everything, but she knew her mother probably would not believe her. She would put her to bed and not let her out of the house, and Ula would let everyone down who believed in her.

Ula didn't go to school but instead headed to the seashore.

She stood at the edge of the water as a tiny dark-haired girl in a pink bathing suit with a pink mask in hand. She had a belt with pockets around her waist. Inside there was a magic shell and a net – thin but very strong; a flashlight – small but bright; and a small first-aid kit.

TigRRR held the second shell. He rubbed against Ula's leg and looked at the sea surface. A sharp fin cut through the waves. It was Brunhilde. Ula exhaled with relief, she was happy to know she would have company underwater. The sand at the girl's feet moved and tiny crabs appeared carrying a seashell of unearthly beauty. "No, it's not magic but the most beautiful one we could find. We hope it brings you luck". Ula hid the seashell in a pocket on her belt. She then took a deep breath and entered the water.

She hadn't swum further than a few metres when she heard a familiar voice.
"Wohoo!!! The smartest, the bravest and the kindest girl on earth is going to fight the Trash Monster!"

"Rita, do not shout so loudly" pleaded Ula. "What if the Trash Monster hears you?"

"Let him hear and be afraid", continued Rita. "Come, I know where his nasty castle is located. Once you defeat the Trash Monster, all will be well, just like in the good old days!"

The magic shell jiggled in Ula's belt pocket. As soon as Ula pulled it out, she heard TigRRR's voice, "There's a giant wave coming towards the shore!" and at the same moment Brunhilde shouted "Look out, to the right!"

CAPTURING THE TRASH ARMY

Ula turned her head and was shocked by the view of the incalculable army of the Trash Monster was coming at her like a tsunami. Thousands of plastic and glass bottles, broken and whole; millions of Pepsi cans, myriads of plastic bags and medical masks were moving towards her. That's what the huge wave was made of. The trash army was about to crush her and Rita! What should she do?

"The net! Hurry!" shouted TigRRR.

Had Ula been training so hard for seven days for nothing? She blew into the shell, sending a counterwave toward the trash army. She jumped in the current while taking the net out from her pocket. Brünnhilde glided past her exclaiming, "Make the spell I taught you!"

"Twist, twist, you can't resist!" Ula shouted, and threw the net toward the trash army. The current picked up the net, spread it out, and all those cans, bottles, bags, wrappings, scraps, plastic bags and old medical masks fell right into the net.

"Twist, twist, you can't resist!" Brünnhilde shouted, and the net snapped, turning into a giant sack, that could not be escaped. The sack was the size of a dozen Brunhildes or two blue whales. At once, the ocean became very clean. The little fish came out of nowhere and started dancing.

"We did it! Glory to the human girl!" someone shouted from above her.

Ula almost dropped the magic shell. It turned out to be Rita, who had come out of her hiding spot under the stones, and now frantically clapped with her flippers. That's it, if after Rita's first screams the trash army appeared, now for sure the Trash Monster himself would show up. But the sea bottom remained quiet. Only the fish were frightened, and Brünnhilde flinched, muttered something about children left unattended, flicked her tail, and disappeared into the depth of the blue water.

"Rita, please don't scream like that. You scared all the fish away. Do you still want to show me the castle of the Trash Monster?"

"Of course, human girl! Let's swim there."

Ula was about to follow the turtle, but then slowed down. The giant bag of garbage was still in the water. The garbage army was trying to break free. No, they couldn't leave it unattended. Ula spoke into the shell, "Land, land, I am sea. Over!"

"Sea, I am land," came TigRRR's voice. "What happened? Who shouted? Even the seagulls got scared by the noise."

"Rita shouted in joy. We've managed to capture the trash army. And now we need guards to keep an eye on it."

"Got it. I'll send someone over."

Suddenly, dozens of little crabs appeared from the coral reefs and the sea grass. They surrounded the net with the trash army, and Ula and Rita were on their way to the Trash Castle.

THE TRASH CASTLE

The swim did not take too long. Ula and Rita passed vibrant coral reefs and a sea grass field where dugong cubs were playing. Rita did not stop chatting the whole way – talking about how nice it was to live in the old days when the sea was clean, when there was a lot of fish and yummy jellyfish to eat. Suddenly she became very silent, as if she had been switched off. The Trash Monster's castle appeared in front of them.

It was much smaller than they had expected. Ula thought that the castle of such a scary and powerful monster would stretch from the bottom of the sea, all the way up into the sky. But this one... It looked more like a pile of random trash. As the girl and the turtle swam closer, Ula saw that the walls of the castle were made from rusty cans. They clung to each other as if whoever had built the castle had decided to create the ugliest structure in the world. And the dirty white wall surrounding the castle was indeed thousands of plastic forks and spoons intertwined with each other. At the top of the castle there was a large grey and blue flag. When Ula looked closely, she noticed that the banner was made of dozens of medical masks. Some had completely lost their colour, and others were still very new.

There wasn't a single sea creature near the castle. Not even seaweed grew here. The castle stood in complete darkness and isolation.

"Well... you're on your own now..." Rita whispered.

Before Rita had a chance to swim away, a little window opened in the castle wall and two ugly snakes appeared in front of Ula. When they opened their mouthes full of scary sharp teeth, Ula remembered that she had seen them before. They were the guardian moray eels. So that's whose castle they were guarding!

"Allow me to introduce myself. I am Rita," Rita muttered, turning even greener.

"I'm the Flesh Tearer!"

"And I am the Baby Eater!"

Even their harsh voices were scary, almost as spiky and sharp as their teeth.

"Is that what your parents named you? Rita asked with a trembling voice. "I knew a squid once, his name was Black Ink. By the way, do you know why the whale shark is called, Brunhilde? Oh, that's a whole different story..."

The moray eels tried to get a word in, but Rita did not pause at all. She kept going on and on, sharing all her favourite stories before switching to her favourite topic: how good it was to live before the trash monster appeared, when the seaweed was bigger and greener, and the water more blue, and how the Gen Z took such little care of their environment.

While Rita was distracting the guards with her never-ending chatter, Ula dived into the open hole in the wall to get into the castle. There were no windows or doors. Only a narrow, dark crevice. How was she supposed to enter the castle?

I WANT TO SEE THE TRASH MONSTER!

Ula decided to consult with TigRRR when she suddenly heard a strange noise coming from inside the castle, and then someone asked with a muffled voice, "Who dares to disturb my peace? What do you want?"

The girl clenched her fists as hard as she could and answered loudly, "I am Ula, and I want to see the Trash Monster!"

"Are you seeking death? No living thing in the world can stand the sight of me or survive the power of my deadly gaze! You will die, but first you will go mad with terror."

Ula was already horrified by the voice of the Trash Monster. She wished she were thousands of miles away now, in that beautiful city by the green mountains with apple gardens where she lived before, where she felt at home. The pink mask was wrong, she should have chosen a superwoman with her super powers, not an ordinary little girl! She backed away from the crevice.

The magic shell on her belt vibrated. With trembling hands, Ula took it out and put it to her ear.

"Sea, sea, I am land, over!" said TigRRRR.

"I'm here, Ula whispered faintly."

"Are you in the castle? Do you see the Monster?"

"I am afraid..."

"Ula, listen," TigRRR's voice became warmer. "Fear has big eyes, and I trained you to see things as they really are. Use that skill, and the mask will help you. I believe in you, and so does the mask."

"I...all right, I will try."

Ula quietly swam up to the hole in the castle and took a look through it. It turned out that the walls of the castle were not very tight, and there was light going through numerous holes. In this light, a huge black shadow was moving on the opposite wall. It was exactly like in her dream, except there wasn't enough lightning.

But...wait...it was only a shadow. Where was the Trash Monster? Ula adjusted her mask and took a closer look. There was a lot of trash in there. Cans, diapers (ewww), plastic cups and plates, a broken scooter, a torn rubber ball, plastic bottles...wait!

There was something in the ball. That something was moving and twisting bags, the tentacles on the wall were moving too. Ula closed her eyes, counted to three, opened them and glanced at the ball.

There was a small orange crab inside of it. The little crab took a big tin can and whispered into it, "Are you still here? Get ready to die!" It was the voice of the Trash Monster!

What did it mean? Does it turn out that the scary Trash Monster who is terrorising the ocean and its inhabitants is just a little crab?!?

ILLUSTRATIONS BY MADINA KAZANTAYEVA

SCUBA SIBLINGS

HOW SCUBA DIVING BECAME OUR LIFESTYLE

BY **ABIGAIL KATE PAIS – AGE 17**



The summer of 2017 was like every other summer, but little did we know, it was just the beginning of something great. My brother, Aaron and I come from a very ambitious and risk-taking family. My father is the root of our ambitiousness and has always been fascinated by marine life and the underwater world. That summer, he suggested that scuba diving would be a unique activity to try out as it could broaden our exposure to the world. I was 12 and my brother was 10, we grabbed this opportunity with excitement and before we knew it, we were in Al Boom diving centre, being introduced to the activity that was about to become our lifestyle.

We began our open water diving course with a lot of theory work and the whole day in the swimming pool. We learned the giant stride and the backward roll, and then spent a couple of hours practicing underwater. Sitting at the bottom of the pool, I looked up and had a glimpse of the sun penetrating through the bubbles of my regulator. It was surreal. I thought to myself, 'wow, this is beautiful' and I couldn't wait to experience this in the depths of the ocean.

Our first dive in Fujairah was the most memorable one, not only because it was our first-time diving in the open sea, but because we were lucky enough to encounter a shark, a stingray, and a turtle on our very first dive. Everything about our first scuba experience was dreamlike. There were a few obstacles that I personally faced like forgetting to equalise while descending, or controlling my buoyancy well, but this was no reason to panic or be fearful, it was my reason to try again so I could perfect my skills. That day, my brother and I poured our hearts out to our parents about how mind-blowing life is beneath the surface.

It was not long before we caught ourselves already planning our next dive. The scuba diving courses stood out as a fun challenge to complete, so we set out on our journey to accomplish more fun diving experiences while learning new skills for each course. A common interest that my brother and I share is photography. We love taking photos and wanted to be able to capture the marine world to finally show our parents how amazing it truly is. So, our parents gifted us a GoPro Hero7 that we take on all our dives to record everything from the boat, to our encounters underwater.

What once was a small hobby, became a strong passion and I must mention that what makes it so special isn't limited to the 45 minutes we spend underwater, but also the whole process that makes our scuba diving experience feel a part of our real lives. We wake up at 5:45am on a typical scuba day and my mother prepares our breakfast which we devour to fuel ourselves for the next couple of hours. My dad drives us to Fujairah and within our 2-hour journey, we discuss fun topics, listen to music and most importantly, enjoy the stunning views of an early morning road trip. The many straight roads, old architecture, mountains, tunnels, and the blazing sun of our scenic route to Fujairah almost foreshadows a beautiful diving day, and that's just one of my favourite things about what others may call a long, boring, early morning drive.

Over the past 5 years, we completed many scuba courses and acquired several licenses for each. Some of our favourites are the Deep Dive course that allowed us to explore a wider range of marine life; the Underwater Photography course, which helped us improve our photography skills; the Wreck Dive, which was certainly fun to explore; and our top favourite, the Night Dive course as it was the most thrilling and unique one to us. I can proudly say that the never-ending support and motivation from our parents was what drove us to building this strong passion for scuba. Additionally, every member at Al Boom Dubai and Fujairah, from Course Director, admin, and instructors are very friendly and supportive and were crucial in creating such great memories for us.

Currently, we are working towards achieving our Divemaster qualification and are so exhilarated to have gained this much exposure and skill from each of the different courses. Previously, my brother and I participated in 'Cleanup Arabia,' where alongside other divers, we cleaned up trash from the oceans. We look forward to attending more of them in order to give back to our community. Being a member of EDA, my family and I regularly have the privilege to watch different dive screenings and we are very grateful to be a part of the dive group.

This summer, my brother has been given the wonderful opportunity to intern at Al Boom Dubai where he assists new scuba divers and therefore, also reviews his previously learned skills. It's truly great how much of an impact scuba diving has made on our lives – it has largely shaped us into the people we are today and it's an experience I would never trade. Our scuba diving journey has only just begun, and we can't wait to explore scuba diving in broader waters.

INVASIVE SEAWEED
FOUND IN CALIFORNIA MARINE PROTECTED AREA

On the 12th of May 2022, a team of citizen science divers with Reef Check California observed *Sargassum muticum*, an invasive species of seaweed, in the State Marine Reserve at Point Lobos State Park. *Sargassum muticum*, also known as "wireweed," is native to the temperate coastal waters of Japan.

Reef Check citizen science divers observed the wireweed growing near the boat ramp in Whaler's Cove. The specimens were observed growing in several clusters of multiple individuals in shallow water, approximately 2-3ft deep.
Whaler's Cove is located inside the marine portion of Point Lobos State Park and the Point Lobos State Marine Reserve. This area is one of the oldest marine reserves in the state and is prized by divers for its unparalleled beauty and diversity.

Reef Check has been conducting monitoring at two sites in the Point Lobos Reserve for 17 years. Reef Check's citizen science divers undergo specialised training to identify and quantify problematic invasive species, along with nearly 80 other species that indicate ecosystem health.

Wireweed was first documented in Washington in the early 20th Century, fouling boats and fishing equipment. Wireweed is known to have established itself in locations along the US West Coast including Puget

Sound, San Francisco Bay, and at locations in the open ocean in Southern California, and has previously been observed in Elkhorn Slough and along Pebble Beach, Monterey County. This is the first recorded observation in a Marine Protected Area along the open coast of Central California.

Long-term monitoring programmes like Reef Check are critical for tracking species range expansions, including for invasive species, and checking kelp forest ecosystem health. Frequent ocean observations by Reef Check's vast network of citizen science divers, coordinators, and ecologists help inform and advise policymakers, resources managers, and scientists so they can be proactive before challenges like these become a major issue. *Sargassum horneri*, also known as hornweed, a separate invasive Sargassum species, has invaded countless miles of kelp forests in Southern California, particularly around Catalina Island. In 2020, Reef Check citizen science divers observed hornweed growing in Monterey at San Carlos beach. Reef Check notified the California Department of Fish and Wildlife of that observation and department divers proceeded to search the area and remove any hornweed plants that they found. Without Reef Check divers being on the lookout for invasive species, they may go unnoticed for an extended period allowing them to proliferate and potentially impact the local environment.

Invasive species can invade new territories by being carried over great distances by ships, in addition to being transported by ocean currents. Invasives can be incredibly harmful to local ecosystems. In many instances, they have no natural predators to control their populations. If left unchecked they can outcompete native species for resources such as food and sunlight, and put pressure on the services the ecosystem naturally provides. This ultimately might lead to a collapse of the ecosystem, especially if it is already under pressure from climate change and species extinctions.

NEW REEF CHECK PROGRAMME LAUNCHES IN ECUADOR

We are happy to announce there is a new Reef Check coordinator and training facility in Ecuador, led by Conservación Marina Ecuador (CONMAR). They share this introduction to their organisation below:

One of CONMAR's main objectives is to increase the efforts on scientific research and monitoring of coral reef ecosystems in continental Ecuador. Looking into how we could do this, we came across Reef Check. We really liked the standardised reef health survey methods they use and decided it was time to implement it here in Ecuador, while also creating EcoDiver teams at different local coastal communities.

We invited marine biologist and Reef Check EcoDiver Course Director Andrew Taylor, from Blue Corner in Bali, Indonesia, to train us to become Reef Check EcoDiver Trainers. We dived every day for about two weeks, conducting reef health surveys, while learning more about coral communities in Ecuador. We also updated indicator species for the East Pacific according to what we saw during our surveys. Now, we are only a team of four people, but we are hoping to grow more over the coming years, showing citizens the importance of coral reefs, ecosystem monitoring, and how each one can help to conserve our ocean backyard.

Please visit the Reef Check Ecuador page for more information:
www.reefcheck.org/country/ecuador/

REEF CHECK MALAYSIA CELEBRATES BUSY OCEAN MONTH IN JUNE

BY **REEF CHECK MALAYSIA**

Each June, the world celebrates World Coral Day on the 1st of the month, World Environment Day on the 5th, World Ocean Day on the 8th and Coral Triangle Day on the 9th. While for us at Reef Check, every day is an important ocean day, nevertheless it's great to celebrate these days alongside the public who may only think of ocean issues on these special days.

In conjunction with what we call the Ocean Month, our team in Malaysia has tirelessly worked with and alongside government officials and the local community.

The team over in the islands in Mersing, Johor conducted a beach clean-up at Pantai Teluk Cina, Pulau Sibu – a beach not easily accessible to villagers. As part of the #cleanseas campaign, seven people were involved in the clean-up and a total of 447kg of trash was collected.

Reef Check Malaysia was also invited to participate in a conservation activity in conjunction with World Coral Day. Seven divers from the Department of Fisheries and one representative from Reef Check Malaysia conducted maintenance activities at one of the coral replanting sites at Pulau Mentigi, and Pulau Tinggi. Among the activities that took place, were brushing off algae from the structures, and removing barnacles.

With the local community, the team at Mersing conducted a virtual presentation via Facebook Live through the Majlis Daerah Mersing's (The Mersing Local District Office) Facebook account. The talk, "Kepelbagaian Ekosistem Marin di Mersing – Tanggungjawab Bersama" (Marine Ecosystem Diversity in Mersing – A Shared Responsibility) was in celebration of World Environment Day. A virtual tour of the island, eco-diving and talks on the importance of protecting the ecosystem and an introduction of the various ecosystems in Mersing were part of the presentation.

In another Sabah series of activities for World Ocean Day, a team also completed their annual Reef Check survey for Mabul and Kapalai Island with trained EcoDivers. The dedicated volunteers also did underwater clean-ups after finishing the surveys. This survey was supported by the Ministry of Tourism, Culture and Environment of Sabah (KEPKAS). On June 10-12, the team in Sabah also held an EcoDiver training with youths from Mabul and Mantanani Island.

Heading over to Tioman Island, the team held a beach clean-up and reef rehabilitation with MTG Capital Sdn Bhd. The 'Reef Rehabilitation and Beach Clean-up' campaign on the 5th and 6th of June was done in conjunction with World Ocean Day. During the event, 15 people planted 100 corals and collected a total of nine bags of trash, amounting to 70kg of trash collected. As we all know, the work never ends! The Tioman team went for another beach clean-up in conjunction with Coral Triangle Day on the 9th of June.

Also, Reef Check Malaysia's General Manager, Julian Hyde joined 140 people from Yayasan Sime Darby and Sime Darby group of companies at Pantai Kelanang for a clean-up for World Ocean Day. The group successfully collected 1,074kg of trash all in a day's work.

DIBBA BAY OYSTER FARM
A SUSTAINABLE LOCAL PROJECT

FEATURE AND PHOTOGRAPHY **ALLY LANDES**

We've gone through an aggressive growth period. Now we're entering a consolidation period. It was very stressful operationally, expanding especially into the deeper site. Now that we've expanded our land based facility and have two ocean concessions, we are focusing on increasing our exports while continuing to make the Dibba Bay oyster accessible to the local market. We've got more farm to table concepts opening up in Dubai, we also have an oyster bar opening in JBR very soon.

COVER PHOTO: This oyster farm strives in these pristine waters, feeding on the abundant plankton which allows them to quickly grow into a world-class product.

ABOVE: The oyster lanterns are positioned 5m below the surface and are cleaned once a month to allow the oysters to be able to properly feed throughout their growth.

It was such a privilege to visit the state-of-the-art production facility of Dibba Bay and meet with its Founder and CEO, Ramie Murray. I received a complete lowdown on this unique shellfish farm which is the first of its kind in the Middle East based in Dibba, Fujairah.

I grew up eating imported oysters, my Dad worked in catering and was a member of La Chaîne des Rôtisseurs back in the late 70s, early 80s so I ate a lot of gourmet imported products back in the day and I can honestly say, Dibba Bay's oysters are truly outstanding! Knowing these are a locally sustainable product, free from chemicals and now certified by Friend of the Sea, it's another step in the right direction in our goals of living sustainably. This is one of my favourite local projects and I'm excited for its future.

It's a remarkable feat to have taken a historical UAE symbol from the cultural days of Pearl Diving and given it a completely new lease of life by introducing luxurious edible oysters. Who knew it was possible to farm such spectacular oysters here within our warm waters.

How has the local population taken to the spin on oysters now being an edible gourmet product?

Generally, with pride, many locals I speak to are very interested and very proud of the fact there is this gourmet product coming from the oceans here in the UAE. Traditionally, they wouldn't eat the local pearl oysters, so there isn't a culture of eating oysters amongst the local population, however the younger generation are branching out and happy to try them. We've introduced cooked oysters onto our menu not only for the locals, but for anybody not too sure about eating them raw – it's a lovely introduction to them to have them cooked.

How did you come to be an oyster farmer? Where did it all start?

I started here, I grew up in Dubai and I was actually down in Oman trying to start a lobster farm. Lobsters were everywhere when I was young and I was working there in later life and found out that they had almost become endangered because they had been massively overfished, so I looked into other species that could potentially work in this environment. Aquaculture is blowing up all over the world to meet food requirements. If you look at the whole Saudi Red Sea coast, the Yemeni coast, the Omani coast and the UAE's coast, there was basically nothing happening aquaculturally wise, and it's a very productive ocean. It's only really in the summer in Dibba when the water becomes quite clear. The rest of the time, it's quite greenish, especially on the surface. If you dive down deeper, less so, but that's the phytoplankton which is the algae that's growing. That's the basis for life in the ocean, everything feeds off of that, the small fish eat off of that, the bigger fish feed on them which is the whole basis of the cycle, so it's a very productive ocean, and therefore the right type of aquaculture in that ocean should be very successful.

While we were looking at it, oysters came up. Traditionally, it's assumed oysters would only grow in a cold ocean, but what we know now, it's not necessarily about the temperature affecting the oyster, it's the temperature affecting the food of the oyster. Normally you only get the upwellings of the phytoplankton in the cooler oceans, whereas here, because it's so deep in Fujairah and very close to the shore, even when the surface water is very hot, you've still got much cooler deep water so you still get an upwelling of nutrients and food. These special conditions are where you've got lovely warm water which encourages the fast growth of an animal, but also the food to support that growth.

Where do these oysters start their lives?

We use the Pacific Oyster (*Crassostrea gigas*) which originally comes from around China





ABOVE: Ahmed inspecting some of the oyster lanterns at the shallower concession site. **BELOW:** The Dibba Bay team are out on the barge cleaning the oyster nets.

and Japan, and this species accounts for 90% of the world's farmed oysters. There are 200 species of oysters, and as with any animal that is farmed, particular breeds of the species lend themselves to farming. With oysters, the *Crassostrea gigas* is the hardiest and has the largest temperature range. It can be in very cold or very hot environments. The same species that comes from China and Japan has been introduced all over the world. It's the species that is grown in France, in the UK, in Alaska – because it gives a very nice product. The oysters look and taste different from all over the world, for the same reason that you can take a Sauvignon Blanc vine from France and plant it in Chile and it will taste different. It's the "terroir" (the complete natural environment in which a particular wine is produced, including factors such as the soil, topography, and climate) – with oysters, we refer to it as "merroir" because they're filter feeders, so they take all their nutrients and their food from the environment that they're put in. You can get baby oysters from the same hatchery put it in France, put it here, in Alaska, put it wherever, and they'll all look and taste different because they build their shell with the minerals they find in the water. You notice our shells are very white. That's because of the high calcite in our waters because of the limestone mountains. European oysters are more grey because the calcites aren't as high, it's purely aesthetic. But they build with what's in the water and then they feed on the phytoplankton – we've identified 40 different types, but there's probably more – there's different ones at different times of the year so that's what gives their taste, what allows them to grow, and what they build their bodies from.

How exactly are they born?
They're born as larvae and swim around in the water columns for a couple of weeks, and then they fasten onto a little fragment of shell from another oyster, then they start secreting onto that, and that's how they start building their shell. In the wild, they have a 0.1% chance of survival because they have to find the right bit of chip of stone or shell to latch onto.

In France they traditionally put out nets full of broken shells at the right time of year and the larvae will wash over in the current, they'll latch on and you'll get free baby oysters. In recent times, there's been so much disease in the waters around Europe that kill the baby oysters, now most farmers buy from hatcheries. They're a bit bigger and hardier, so they've got a better survival rate.

We're not big enough to justify our own hatchery just yet, so we are still buying them from hatcheries which are all over the world. The one we use at the moment is from the west coast of France.

How many of those do you acquire to get your population going?
We're purchasing tens of millions.

How long do your oysters take to grow to full size?
Approximately nine months. It can take 2-3 years in colder waters. We get a much faster growth rate because of the conditions in the water here.

How do your 2 concessions work with the different depths?
The shallower site is where we started. Shallower water is easier and safer from a diving point of view to work in. When we were just a little startup we went for the shallower water, operating in 10-12 metre depths. That gives a lot of food, but it also gets a lot warmer in the summer, so what we wanted to do was get a deeper site so we could sink the lanterns down to cooler water in the summer months. The algae moves seasonally and you get more flexibility if you're in deeper water. We had to build up to that though, that was the operational challenge. As a diver to go from 10m to 30m is a big difference, so we had

ABOVE: A surface view of the oyster farm with the beautiful Hajar mountains as the backdrop. **OPPOSITE PAGE:** A look at more lanterns at the deeper consession site.

to be sure we were ready. It's all very well to have a leisure dive at 30m, but working at that depth operationally, we had to be very careful.

We didn't have the big barges to begin with, we had old fishing boats and we were hauling things up by hand so there was no way we could have operated in deeper water until we had the barges and the cranes to make that happen.

How often do you have to clean the oysters and the lanterns?
Minimum, once a month. And all that growth is a good sign, because that's the productivity of the ocean. The oysters grow really fast, but so does everything else, so you get all the biofouling, the predators, etc – it's definitely not a laid-back business.

Why do you have to clean them if that's all good for them?
We clean them because if they get completely encrusted in barnacles, especially the smaller oysters, it gets too heavy and they can't open anymore to feed. Also, they're competing, as barnacles are filter feeders too, so we brush them all off to favour our oysters.

The concessions are in a very open area, there's no shelter from storms. How do the lanterns fare in rough weather?
Our lines are very well secured at 5m below the surface. We're fairly storm resistant. Of course if something massive were to come through, we may remove some of the flotations from the surface and sink them down lower. The technique we're using is used in the Atlantic Ocean as well so we know it can stand up to some pretty serious weather.

How many oysters are you producing?
We're continuously growing and we're at a steady state of production at this point in time. Right now we're producing between 200,000 and 300,000 pieces a month. This is phenomenal growth for us – 2 years ago we were at 30,000-40,000 a month so we've had a massive growth spurt. We're building up to half a million in the very near future.

What is the process these oysters go through when they're ready to come out and go through to packaging?
During their growth cycle, it's simply about cleaning them, removing predators, and grading them. You don't want a mix of oysters of different sizes together because the big oysters will steal all the food. They're like little vacuums, one big oyster can suck in 200 litres of water a day so you need to grade them and keep all the smalls together, the mediums together and all the large ones together. All we're doing throughout the main life cycle is bringing up the nets, spraying them and cleaning them to stop them fouling up because you want a good flow so there's food coming through, removing any predation, grading them, and moving them to new bags. That's the overall grind of farming, the repetition of that.

At the end of the growth cycle, it's time to harvest them. They are brought in and they get meticulously cleaned. If we didn't clean them, we would put them in a box, send them to market, the oysters would be fine, they close up and can stay alive for a couple of weeks, but everything on the outside of the shell would have died, and would smell. You'd open the box and there would be this stink of rotting seaweed and dead barnacles which is not ideal. So we clean them for that reason, and also aesthetically. We're very proud of how pristine they look when they come to market. We clean the outside of the shell, we take them in and we weigh them as they sell by weight, and then we cleanse them by depurating them in our tanks. We don't use any chemicals at any point in the whole process. They feed naturally in the ocean, so we clean them with pressurised sea water only. We chip them by hand, spray them with sea water, and then we put them

ABOVE: The Dibba Bay oyster facility where the oysters are brought in for harvest and meticulously cleaned for market through the different processes.

in the tanks of sterilised sea water. Again, no chemicals are involved, we just put them through a recirculation and a UV light and then you get the sterilised sea water which the oysters suck through their bodies looking for food – which there isn't any of – so it empties their stomachs and intestines and cleanses them. We're also cooling them down in that process so they don't go into thermal shock taking them directly from the ocean to putting them in a fridge. We're very careful with the cold change and very gradually reduce the temperature so by the time they get to the customer, they're very cool but weren't traumatised in the process. They are a live animal. It's not like dead fish that gets thrown on ice. We purge our oysters, we cool them, and then they're packed and sent to market.

Why do you put an elastic band around them when you package them?

We do that because the oysters will open and close in their boxes. We pack them the right way up, but if the box got turned onto its side and the oysters didn't have the band around them, they would open up to have a look as to why they're the wrong way up. The water would then drain out which is their life support system, and they would then start to die.

Not only do the bands increase shelf life, but its also about preserving the unique flavours and smells and taste of Fujairah. This got picked up by some oyster sommeliers in our export markets. They would take off the bands and smell Fujairah and the freshness of the ocean from them. They could tell there was a big difference between Dibba Bay oysters and the others.

What is your carbon footprint?

It's very low. We import the spat – the name for baby oysters – which are about 4-6mm in size and a box has a million baby oysters in it. The impact is marginal compared to when you import full sized oysters on the market. We are environmentally positive within the ocean because we are creating habitats and filtering water. We do burn fuel for the boats and barges, but that's about it.

We're also positive in taking shares from imported oysters. We now have about a 40% market share. Before we came along, 100% were being imported by air freight every week and so there was an average of 300,000 or 400,000 oysters a month being flown in. It's basically like importing rocks. The carbon footprint of imported oysters is enormous. Our carbon footprint is very low producing them here, but our main contribution is the displacement of those imported oysters.

How has the underwater environment changed since you started the underwater farms?

It was most visible right at the beginning. We started with one line of baskets. I have pictures and it was totally clear, there was nothing going on around the seabed, there were hardly any fish, and then about 3 weeks later when there started to be growth on the outside of the nets, we went out with the fish

ABOVE: The final packaging for market; The farm shop in Fishing Harbour 2 in Umm Suqeim 1 where we have enjoyed a platter of oysters and other local products on several occasions.

finder and could clearly see the lanterns and this big mass of fish coming to feed on the outside of the baskets. We'd created a floating reef. Now we've got over a hundred lines in place and there are so many shoals of fish that the fisherman have placed their traps all around the farm because we've made a fish nursery. The juvenile fish can hide inside the nets from predators, and the bigger fish hide in the shadows of the nets. It has been a real explosion of fish.

What are your plans for the future?

We've gone through an aggressive growth period. Now we're entering a consolidation period. It was very stressful operationally, expanding especially into the deeper site. Now that we've expanded our land based facility and have two ocean concessions, we are focusing on increasing our exports while continuing to make the Dibba Bay oyster accessible to the local market. We've got more farm to table concepts opening up in Dubai, we also have an oyster bar opening in JBR very soon. And of course, boxes can be collected directly from our farm shop in Dibba too!

Are you getting involved with other marine projects?

We're working with the Fujairah Government on their plans to create reefs all along the Fujairah coastline. We are drying cleaned Dibba Bay oyster shells and returning them to the ocean in non-pollutive gabion cylinders that are 80cm high which act as building blocks to protect coral reefs. The shell structures are offering a substrate for coral growth and new habitat for marine life.

Oyster shells are the perfect building block for reefs, especially for the life cycle of the larvae. It's the same for the pearl oysters, the local oysters and the scallops, they all work in the same way, so if you have reefs of broken shells from other shellfish, it's a perfect breeding ground.

PLEASE NOTE: Dibba Bay is a private area and not open for leisure diving.

UPDATE FROM THE FIELD:
HUMPBACK DOLPHINS, HUMPBACK DOLPHINS...
WHERE ART THOU?

FEATURE **BRYANA COPE & ADA NATOLI** – UAE DOLPHIN PROJECT INITIATIVE & ZAYED UNIVERSITY

Humpback dolphins were usually sighted very close to shore in Dubai.
Now in 14 months of surveys only one sighting has been recorded.

COVER PHOTO: Indian Ocean humpback dolphins are named for their characteristic "hump" in front of the small dorsal fin.

ABOVE: Indian Ocean humpback dolphins are frequently observed socialising, interacting with other peers or young, often performing quite elaborated displays of activities.

The Indian Ocean humpback dolphin (*Sousa plumbea*) inhabits the coastal waters of eastern Africa, the Red Sea, the Arabian Gulf, Pakistan, all the way down to Sri Lanka along the Indian west coast. It has been recognised as a new species only recently in 2014 after morphologic and genetic studies proved its identity was different from the closely related easternmost form, *Sousa chinensis*. This new species is listed as Endangered by the IUCN Red List (Braulik et al, 2017).

Indian Ocean humpback dolphins prefer very coastal, shallow water, and this make their habitat highly impacted by anthropogenic pressures, especially as large cities expand toward the ocean. They are generally resident species, meaning that groups do not travel long distances and prefer to stick together in the same location.

Globally, there is very little information on the status of local populations and the specific threats they face as there is no dedicated research in place in many countries across the species' range. This is especially true in the Gulf. Here, humpback dolphins are known to occur in some part of the Iranian coastline (Mohsenian et al., 2022), in Kuwait, in the Gulf of Salwa, bordering Saudi Arabia, Qatar and Bahrain (Preen 2004). Interestingly, this species frequents the Musandam area, then disappears along the UAE and Omani Indian Ocean coastline until Sur (Oman).

Recent surveys conducted in the Abu Dhabi Emirate in 2014-2015, estimated a population of Indian Ocean humpback dolphins between 473-845 individuals (Lopez et al., 2017). The authors identified 220 different individuals overall, but only 2% of those were re-sighted in different areas of their original one, confirming the high site fidelity of this species, extending no more than 100km.

The UAE Dolphin Project Initiative and Zayed University have been in the field surveying Dubai waters since February 2021 with the research still ongoing, thanks to the support of our sponsors Atlantis the Palm, Dubai and F3 Marine. Sightings of Indo-Pacific bottlenose dolphins have been frequent and sightings of Indo-Pacific finless porpoises, while less, have also been relatively common. However, in the first year of the surveys there were no sightings of Indian Ocean humpback dolphins. This data is in sharp contrast with the results obtained during the previous survey conducted in Dubai waters in 2013-2014. During that period, humpback dolphin sightings were the most frequent, with 8 sightings recorded. A total of 23 individuals were identified, of which about 40% were resighted more than once during the survey period.

The project has also been collecting citizen science data since 2012, and the sightings reported by the public were analysed up until April 2019. During that period, there were 484 reported sightings in the Arabian Gulf and the Sea of Oman. Of those 103 were reported in Dubai waters, indicating an average of 16 sightings a month of this species in its waters (Natoli et al., 2021). Citizen science data from May 2019 has only reported 5 sightings of humpback dolphins until now. While population estimates have not yet been calculated in Dubai waters, the drastic change in occurrence is a sign of concern.

But there is hope! A sighting of humpback dolphins was reported by the public in early 2022 and while the survey continued, the team kept surveying coastal waters in hope

TOP: A group of four Indian Ocean humpback dolphins getting ready for a longer dive. Humpback dolphins generally perform a "tail up" before a descent. **BOTTOM:** Despite their considerable sturdy body size and capabability to swim long distances, they do not like offshore waters and are usually found very close to the coastline.

of sighting humpback dolphins for themselves. Knowing their preferred coastal habitat, the team designed a specific survey along the coast specifically to intensify the coverage in their preferred habitat. Finally, in late March 2022, the team had a sighting! A tail fluke was spotted and the characteristic hump in front of the small dorsal fin was seen. The animals were, as always, very close to shore, less than 500m from a rocky wave break, in a group of less than 10 individuals. The team stayed with the animals for over 2 hours taking photos for photo ID analysis and observing their behaviour. The animals were travelling very slow, socialising with each other and performing tail slaps, backflips, and scouting the boat with inverted swimming and chuffing.

The team is in the process of analysing the photo IDs, but at least one individual was recognised from the previous years. This individual was also recognised in the sighting reported by the public in early 2022 as well. This shows promise that humpback dolphins still occur in Dubai waters, while less frequent, they are still present.

We don't exactly know what causes this drastic decline in occurrence of this species in Dubai waters, and continuous monitoring is crucial to pinpoint the more compelling threats. The results from the recent publication of citizen science data in the Gulf concluded that a large proportion of suitable habitat for humpback dolphins is impacted by the anthropogenic presence in Dubai and Abu Dhabi, therefore developing and implementing dedicated mitigation measures to protect this species is crucial (Natoli et al., 2021).

This sighting highlights the need for continued monitoring of Dubai waters and the importance of public involvement. Citizen science has been a crucial component to the UAE Dolphin Project, showing how impactful the public can be in aiding scientific studies. If you are lucky enough to spot dolphins, no matter the species, please report them to **sighting@uaedolphinproject.org**!

Photos help to confirm the presence and species, and approximate location helps in analysing habitat preference and occurrence.

Keep your eyes peeled when at sea and Keep Reporting!

U.A.E. DOLPHIN PROJECT

REPORT YOUR SIGHTINGS!

WHAT TO DO TO HELP:

If you encounter a whale or a dolphin, collecting information is extremely useful to us.

1) Take videos or photos (if you can). You are there in that moment so you are the scientist. Only you can make a difference. Every image of any quality is better than nothing and will help experts to confirm the species. If you can take photographs and videos when you are on the side of a whale or dolphins so the fins are clearly visible, it can help scientists track the individuals, but please keep a safe distance!

2) CALL as soon as possible if you are witnessing a special sighting or you encounter a dead animal so experts can hopefully reach the site and gather more information.

3) Take note of the date, time, and approximate location – if GPS is not available, a dot on google maps works great! Also report how many individuals you see.

4) Share your data with us:
www.uaedolphinproject.org
www.facebook.com/UAEDolphinProject/
www.instagram.com/uaedolphinproject/
+971 56 671 7164
+971 50 955 1742 or +971 56 671 7164


DEEP DIVE DUBAI
DEEP DIVISION

THE EQUALISATION WORKSHOP WITH ANDREA ZUCCARI

FEATURE **NATALIIA ZHARKOVA** PHOTOGRAPHY **JESPER KJOLLER**

Since its opening last year, Deep Dive Dubai have hosted a few unique events providing the underwater community with opportunities to grow, develop and unite in an effort to explore humankind possibilities. This article is about one such event which took place in the first week of June with the incredible Andrea Zuccari who reached 185m on a single breath. Andrea gave a series of workshops about equalisation techniques – an essential tool in underwater exploration.

Since its opening last year, Deep Dive Dubai have hosted a few unique events providing the underwater community with opportunities to grow, develop and unite in an effort to explore humankind possibilities. This article is about one such event which took place in the first week of June with the incredible Andrea Zuccari who reached 185m on a single breath. Andrea gave a series of workshops about equalisation techniques – an essential tool in underwater exploration.

Andrea was one of the first freedivers to see and know about Deep Dive Dubai. He was invited as a consultant to the construction site and made his impact on the project back in the day. It was only fair that he became one of the first teachers to facilitate all the greatness of the deepest pool in the World.

Participants from 6 countries around the World came to learn from the man who is the original source of much equalisation knowledge which many freedivers use in their everyday practice. Back to 2006 when Andrea started to set his World records, very few people knew how to teach equalisation in more detail beyond, "pinch your nose and blow". In 2012, Andrea released his innovative didactic material on all the organs involved in equalisation, and a new era began. Nowadays it is possible to learn to equalise to 60, 70, and even 100m within just a few weeks! Back to Pelizzari times, it would take months to get at least 1m deeper…

What's in it for scuba divers? One of the days at Deep Dive Dubai was dedicated to equalisation in scuba. And if you are somehow sceptical about what a freediver has to teach to his scuba peers, you might be interested to know another fact about the man of the day: Andrea is a TDI tech diver and a PADI Tech Instructor himself. So if you dive with tanks on your back, Andrea knows your language too.

Equalisation is an important part of any kind of diving no matter whether you choose to submerge using scuba gear, or do it on a breath hold.

Why does most knowledge on how to prevent our ears and sinuses from collapsing under pressure come from freediving? Because during breath hold dives, there is a decreased volume of air available for equalisation, so freedivers learn to make very good use of it by digging into the anatomy, physiology and even phonology.

The importance of equalisation training has been appreciated even by some diving insurance agencies as a vast number of cases happen to be related to barotrauma of the ear drums, middle ears and sinuses. This is how the "Equaleasy" programme was born in collaboration between Andrea and DAN.

We asked Andrea a few questions so you can get to know the man himself!

Why do you think someone should consider getting into freediving?
Freediving can be different things: a recreational activity or a sport. Do you want to enjoy the underwater environment without heavy gear? This is freediving. Do you want to challenge yourself to discover your actual limits? This is freediving as well!

What do you think made you progress to where you are now?
Dedication and passion! I like freediving 360°. When I freedive it's to discover the underwater

environment, or challenge myself to discover how deep the human being can go. I wish to help more people discover this activity.

What would be your most important advice to someone who wants to freedive?
Look for a good instructor, and please, don't try to learn via the internet. Give yourself an appropriate time to learn, and don't push yourself too hard.

Do you think anyone can freedive?
Yes, as soon as you are able to feel comfortable in the water swimming, then you can freedive.

What holds most people back?
There are a lot of wrong conceptions out there that 'only those who are super fit can freedive', or 'freediving is only good for competition', and other such nonsense. But this is not true, you can be 12 or 70 years old – it is never a wrong time to start freediving. And you don't need to perfect your skills everyday – freediving is a perfectly fun activity to do even if you only want to do it during your vacations.

What is different about your teaching methods?
I like the "protocols". I believe that as soon as I start a new activity, I need to study, understand the route I'll need to follow, and give myself a reasonable target. When I teach, I try to let my student use this approach. 1st Theory, 2nd Dry Activities, 3rd Pool Activities, 4th having fun in the sea or deep pools.

What was important for you to teach these workshops at DDD?
DDD is the perfect environment to teach and learn freediving and equalisation: nice classrooms, the gear is provided, there is an amazing team of people always ready to help you at any moment, and finally, the pool itself! The water temperature is 30°C which is not too cold, and not too warm. There is a perfect gear setup with buoys, lines, lanyard stopper, bottom plate etc, and the depth is available for a huge range of freedivers from beginners to top athletes. They can challenge themselves to a 60m depth!

In your opinion, can training in a pool such as DDD's, help someone out to dive in the sea? If so, how?
Is freediving in the pool the same as diving in the sea? No, but sometimes it's better to start in a friendly and safer environment to pick up your self confidence. After that, go and experience the difference in the sea.

When your first attempt at deep diving starts with minutes or hours of navigation with the boat under a hot sun, only to find bad visibility, currents and waves, it can turn what was supposed to be an amazing experience, into a bad experience. Starting in a controlled environment such as DDD's, guarantees you will gain knowledge and self awareness that will help to deal with those experiences as you will face them sooner or later anyway.

FUTURE WORKSHOPS

The next workshop with Andrea Zuccari is planned for the first week of March. Follow us to stay updated!


ROBY
PIERRE
JAN
GUY
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LEO
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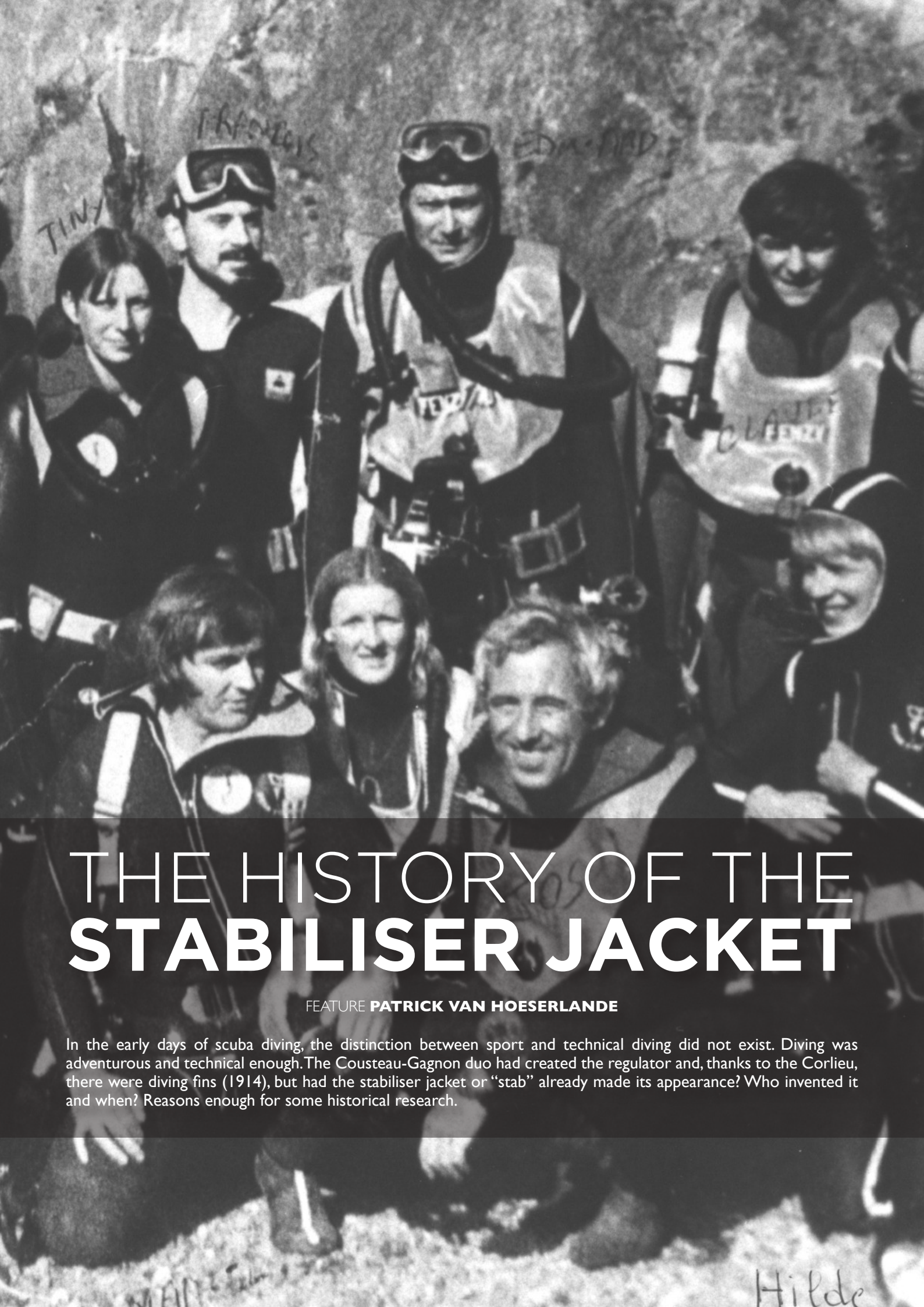


THE HISTORY OF THE **STABILISER JACKET**

FEATURE **PATRICK VAN HOESERLANDE**

In the early days of scuba diving, the distinction between sport and technical diving did not exist. Diving was adventurous and technical enough. The Cousteau-Gagnon duo had created the regulator and, thanks to the Corlieu, there were diving fins (1914), but had the stabiliser jacket or "stab" already made its appearance? Who invented it and when? Reasons enough for some historical research.

ABOVE: The oldest depiction of divers is found on an Assyrian woodcut of swimmers with air-filled animal skins.

In the early days of scuba diving, the distinction between sport and technical diving did not exist. Diving was adventurous and technical enough. The Cousteau-Gagnon duo had created the regulator and, thanks to Corlieu, there were diving fins (1914), but had the stabiliser jacket or "stab" already made its appearance? Who invented it and when? This was reason enough for some historical research to be done.

If we want to delve into history in search of the ancestry of our diving equipment, we have to determine exactly what we are looking for. Although we use it as a common name for this particular type of diving equipment, you will read further on in this article that a 'Stab Jacket' is in fact a type of 'Buoyancy Compensator Device' or BCD. A BCD is a device attached to a diver that can hold a variable amount of air to influence the diver's buoyancy. By this, changes in the diver's buoyancy caused by other dive equipment is compensated.

A life jacket has a positive influence on a diver's ability to float, but since it can only be used once, we do not classify it as a BCD. If this lifejacket could be used several times and if inflation is not an all-or-nothing condition, an adventurous diver would use it as a BCD. Although the above definition is not perfect, it allows us to dive into history in search of the origins of this piece of equipment.

THE BEGINNING

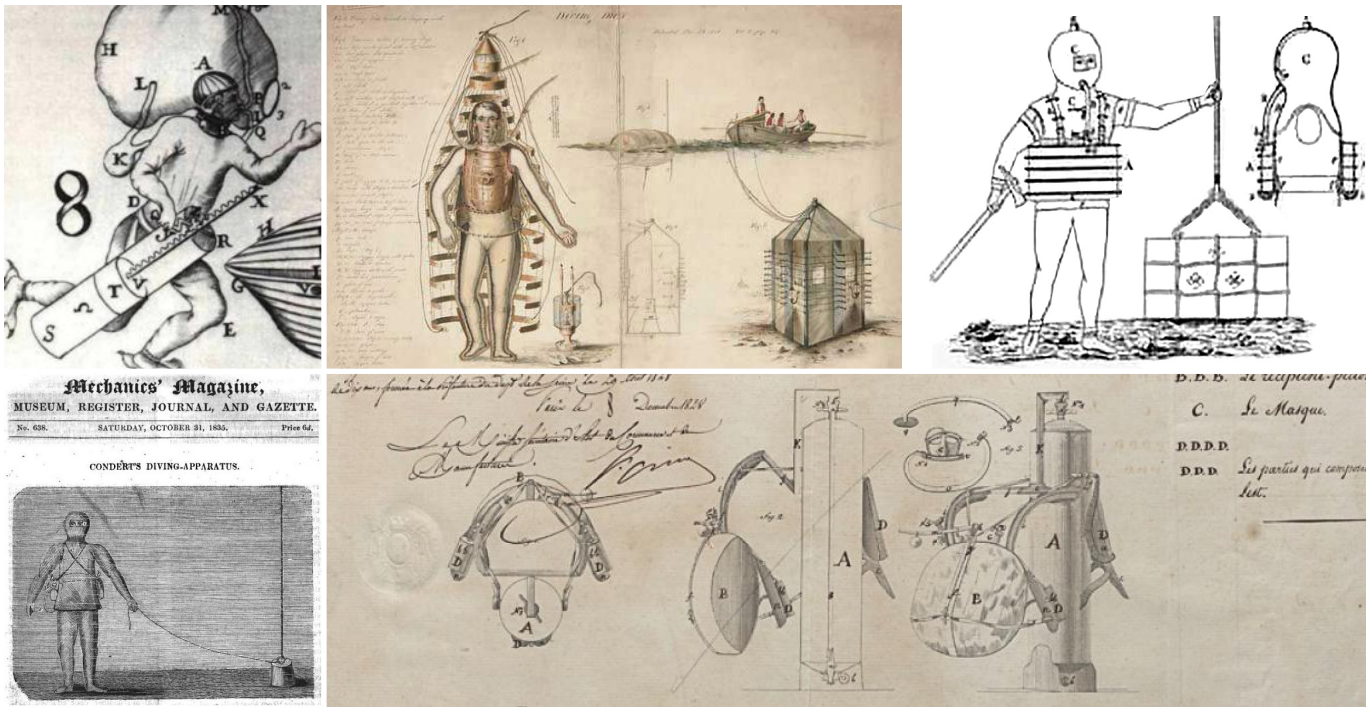
Herodotus wrote about the most famous diver of antiquity: the Greek, Scyllis. When he was brought on board as a prisoner of the Persian King around 460BC, he heard that Xerxes was planning to attack the Greek fleet. He grabbed a knife and jumped overboard. Under the cover of night and with the help of a hollow cane, he swam from ship to ship and cut all the anchor lines. As a result, the entire fleet drifted off and a Persian victory was foiled. However, in freediving or snorkelling, even between enemy ships, there is no need for a BCD. So we can leave these disciplines aside in our search.

The oldest depiction of divers is found on an Assyrian woodcut of swimmers with air-filled animal skins. Was this bag an air supply or a means for floatation? If used as an air supply, the diver probably exhaled into the water. Blowing the air back into the animal skin would have led to headaches that early divers would have quickly experienced. This is a pity, because we would have discovered the first application of a 'Closed Circuit Rebreather' (CCR). Assuming that the bag was an air supply, the diver's buoyancy would have decreased the longer he stayed underwater. A BCD could then have been useful, but his 'diving bottle' did not have the capacity to inflate it. Unless he blew out into a second bag or counter lung, which would not have influenced his buoyancy. The woodcut, however, does not show two bags and so the Assyrians cannot lay claim to the first BCD.

We find references in ancient Egyptian, Greek and Roman writings of underwater activities with diving bells and freedivers, so the credit to inventing the BCD does not go to any of these peoples. However, we must give a Greek a share of the credit, although he did not realise it at the time. Archimedes was a well-known scientist 200 years before our era, and as such, received a special assignment from his king. The king had had a crown made from a lump of gold. But was the crown made entirely of gold, or had the goldsmith added silver on the sly? The goldsmith lived beyond his means and the king found that suspicious. The weight was right, it was exactly as much as the lump of gold that the king had given to the royal goldsmith. That did not prove that the crown was made entirely of gold and with the science of the day it was not possible to prove that the goldsmith had stolen from the crown.

The brooding king asked Archimedes to investigate whether the crown was 100% gold. Archimedes went to work. He knew that gold had a greater density than silver, but in those days one could only calculate the volume of regular figures. He was able to hammer the crown into a cube, but the king had explicitly instructed him not to damage the golden object.

Archimedes decided to take a bath to think for a while. He sat down in his bath and watched the water rise. Then it suddenly hit him! If an object sinks into water, the water rises. And so he figured that objects made of the same material and having the same weight should also move the same amount of water. "I've got it!", he cried, "Eureka!" He jumped out of the bath and ran naked into the street, shouting "Eureka!" over and over again. Later, he showed the king and the court how he could determine the volume of an object by the amount of water that ran out of a bucket. According to Archimedes' calculations, the crown was indeed not made of gold alone.



ABOVE L-R: Giovanni Borelli's drawing of a CCR; Chauncey Hall's Diving Suit; William James' iron belt connected to a copper helmet; Charles Condert's diving apparatus based on William's patent and the Deane brothers' diving suit; and Lemaire d'Augerville's copper air cylinder. As can be seen in the drawings, the rig was equipped with an independent 'Adjustable Buoyancy Lifejacket' or ABLJ, with its own emergency cylinder, with both an inflation valve and an exhaust valve for ascending and descending. The weight belt could be released quickly by operating a lever at chest height. When the diver ran out of air, he dumped his weights, stuck his finger in the exhaust valve and inhaled the remaining air in the air pocket until he reached the surface. This is the first, real BCD!

Archimedes' law, together with the ideal gas law, plays a major role in the functioning of the BCD.

After antiquity, interest in the underwater world ebbed away. Until the Renaissance, no noteworthy attention was paid to underwater activities. However, some devices were invented during the Renaissance. For example, Leonardo da Vinci (1452-1519) described systems for breathing underwater and is sometimes credited with the first design of scuba equipment. There were probably people who did something similar before him, but his sketch is very similar to our current equipment. In his Codex Atlanticus, he described a piece of equipment with an air supply and a means of controlling the floatation. He did not want to give details so as not to give ideas to unsavoury types (to sink ships or to rob and murder). That was not such a strange thought at the time. He had designed the equipment to sink the Turkish fleet that threatened Venice. Unfortunately, the Turks were driven out before his scuba equipment could be used. Nevertheless, Cousteau would have been inspired by this design.

THE FIRST ATTEMPTS

Giovanni Borelli (1608-1679) was a mathematician and physicist. He was very inventive and is often remembered by diving enthusiasts for his drawings of a CCR. His illustrations show a giant bag of chemical components that was supposed to allow the diver underwater to breathe in and out of the bag without getting a headache, unlike the Assyrians. Although the device probably never existed, its design with fins on the feet, is the first to depict a free-swimming diver. Since this diver is not required to walk on the ground, he must be able to control his buoyancy. Staying with one's feet on the ground is a matter of carrying enough weight, free swimming requires more finesse. Pressure had yet to be invented, otherwise the designer would have realised that his invention could not work.

If you look closely at the drawing, you will discover a one-metre-long piston-like device that the diver holds in his hands. This device is a BCD with a rigid body. The volume does not vary with depth, but only by the diver's setting. I do wonder what the maximum depth was at when the diver still had the strength to adjust the volume by means of the lever.

Some historians call Doctor Freminet the father of scuba because of his 'Machine Hydrostatergatique' invention in 1771. He is said to have reached a depth of 15 metres and stayed there for several minutes with the help of a copper helmet and an air tank. Unfortunately, his design did not require a BCD.

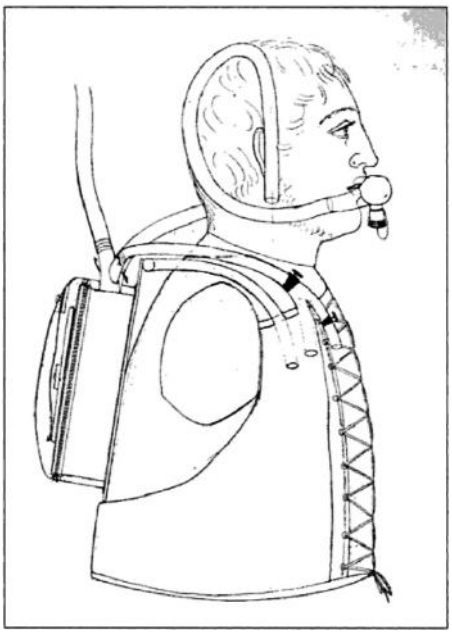
In the early history of diving, people sought refuge in diving bells for deep and long dives. Equipment for free-swimming divers was difficult to design and manufacture. In 1810, Chauncey Hall filed a patent for a special one-person diving bell, 'Hall's Diving Suit'. An interesting feature of this design is the manually operated valve in the centre of the diver's chest. On the drawing, this valve appears to be in a protective cage. It probably served to let excess air escape at depth. Although this suit dates from the period when the supply of air by means of pumps began to develop, air circulation was ensured by two pipes, each with a one-way valve which were blown by bellows. Bellows were more reliable than the first piston pumps.

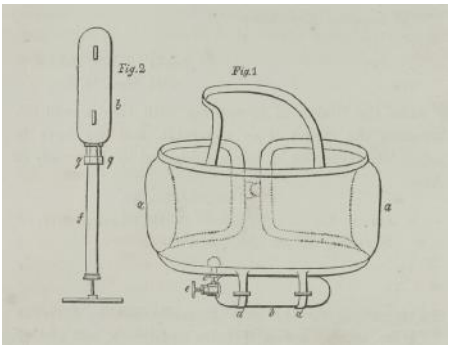
However, it is possible that Hall's valve did not only serve to release excess air from the suit, but was part of an early buoyancy control device. The idea of a diver-controlled ascent to prevent further problems at the bottom was very popular in Britain in the 1830s. However, it is guesswork whether this was the case, as without written specifications we cannot know for sure.

In 1825, the English inventor William James developed scuba equipment consisting of an iron belt connected to a copper helmet. The belt contained enough pressurised air (up to 30 bar) for a 7-minute dive. Although William applied for a patent, he probably never built his device.

Three years later, Charles Condert built a diving apparatus based on William's patent and the Deane brothers' diving suit. He made several dives to 6 metres with it. Although this would make him the original scuba inventor, we do not find a BCD in this design either. A cord with a weight can hardly be recognised as a real BCD.

In that same year, 1828, the French dentist Lemaire d'Augerville took scuba a step further with a patent for a copper air cylinder at 23 bar that was worn like a rucksack. A hose delivered air to the diver, which constantly flowed into an air bag attached to the chest. When the diver went deeper, he operated





M. SIEBE'S IMPROVED PUMP AND DIVING-DRESS.

TOP TO BOTTOM (L-R): Manuel Théodore Guillaumet's double hose regulator; Hoxton Thornthwaite's inflatable belt winning design; Augustus Siebe's combination of a diving helmet made by the Deane brothers with a waterproof, rubber diving suit; Frédéric Dumas' 'bouée collerette gonflée'; and Maurice Fenzy's invention to become the first commercially successful and fully-fledged BCD. **OPPOSITE PAGE:** SCUBAPRO's Stabilising Jacket, better known as the Stab Jacket; the Watergill At Pac; the Dacor Nautilus; and the BCD as we know it today.

a valve to get more air. A diver could reach a depth of 20 metres and dive for an hour. As can be seen on the drawings, the rig was even equipped with an independent 'Adjustable Buoyancy Lifejacket' or ABLJ, with its own emergency cylinder, equipped with both an inflation valve and an exhaust valve for ascending and descending. The weight belt could be released quickly by operating a lever at chest height. When the diver ran out of air, he dumped his weights, stuck his finger in the exhaust valve and inhaled the remaining air in the air pocket until he reached the surface. This is the first, real BCD!

Ten years later, in 1838, the French doctor Manuel Théodore Guillaumet of Argentan applied for a patent for a double hose regulator. The diver received air from the surface by means of a hose connected to an 'on demand' regulator. The exhaled air escaped through a second hose. He presented his device to the committee of the French Academy of Sciences. The doctor provided the diver with a vest that he could inflate or deflate at will. Although this is clearly a BCD, the drawing does not show how the diver used the vest.

In the same year, Hoxton Thornthwaite won a prize in London for his design of an inflatable belt for divers. This band was worn under the arms around the waist and equipped with a cylinder of compressed air. The description mentions a turn of a crane to fully inflate the belt. As there is no other way to inflate the belt, we must conclude that this is a rescue belt and not a BCD.

This fruitful period for inventions of floatation devices came to an end around 1837. In that year, the German Augustus Siebe was the first to combine a diving helmet made by the Deane brothers with a waterproof, rubber diving suit. This fully enclosed diving suit with helmet quickly became the standard equipment for helmet divers and is still the prototype of today's equipment for professional divers. Siebe has been described as the father or godfather of diving.

Working at the bottom of the sea by no means meant that divers were condemned to a benthic existence. With some skill, they could ascend and descend in the water by regulating the amount of air in their suits. Siebe's helmet-suit combination allowed them to use their entire diving equipment as a BCD. This feature made the pressure to develop a BCD disappear and is probably the reason why the BCD was forgotten for about 120 years. Cousteau and Gagnon may be considered by most divers as the real fathers of sport diving, but they were diving without any means of influencing their buoyancy.

USABLE BCDS

This was the case until 1950 when Frédéric Dumas, together with Jacques-Yves Cousteau and Philippe Tailliez, one of the diving pioneers and then a contractor at the 'Groupe d'Etudes et de Recherches Sous-marines' (GERS) of the French Navy, brought this invention out of its lethargy. He calls it a 'bouée collerette gonflée' or loosely translated a 'blown up collar buoy'. In fact, in his own words, he "invented and cobbled together an underwater safety collar". The collar could be inflated by means of the mouth or the air supply and was thus possibly more than just a life jacket. He also added a function that he specified as follows in his first description of this piece of equipment: "If during the ascent, with the collar inflated, the need to breathe becomes urgent, one can breathe the air that escapes from the buoy".

We have to make a time jump via the British Fleet Air Army, where in January 1940, a journalist described the pilots' equipment. When he talked about the life jacket, he mentioned that it was better known under the name 'Mae West'. An inflated life jacket would bear some resemblance to the large bosom of the American film actress Mary Jane 'Mae' West

(1892-1980). Because years of experience had been built up with this type of life jacket and there was an oversupply after World War II, they soon appeared in the world of diving. In the beginning they were mainly used to increase the buoyancy at the surface, but soon the use evolved to self-rescue at depth. In 1958, variants were first offered in the US Divers catalogue. The lifejackets, specially designed for divers and equipped with a between-the-legs harness, could be inflated with a CO_2 ampoule or by mouth. At the time, self-rescue for divers was a growing market with, among others, the Res-Q-Pac.

In 1961 Maurice Fenzy applied for a patent for a device invented by the French GERS. This ABLJ consisted of an inflatable ring that, in the first versions, was inflated underwater by mouth. Later versions had their own cylinder with compressed air mounted on it. Some had an ampoule of carbon dioxide, a development that was abandoned when valves were introduced that enabled divers to breathe from the inflatable inner bag. Due to its ease of use and durability, within a few years divers all over Europe were wearing 'Fenzys'. With the possibility of using air from the dive tank, his invention soon became the first commercially successful and fully-fledged BCD.

Ten years later SCUBAPRO introduced the 'Stabilising Jacket', better known as the 'Stab Jacket'. With its classic look and increased stability thanks to a patented design of a 360 degree flow of air in the jacket, this trim vest caused a revolution. That it was a revolution can be seen in the use of the word 'stab jacket' as a synonym for a BCD.

The manufacturers did not sit still and improved their various models and their components year after year. The inflator was important in these improvements. Not only did it become more powerful, but it also integrated inlet and outlet buttons and got a "quick disconnect". In 1978 SCUBAPRO applied for a patent for the AIR II. This complete inflator also integrated a second stage.

In order to circumvent the Stab Jacket patent, the vest was split under the arm. Another method was to replace the front part by a strap, later a detachable strap. The BCD began to resemble the current models.

In 1972, the company Watergill Manufacturing launched the 'Watergill At Pac'. This model contained a number of introductions, such as the 'cummerbund' or waistband, the wings, and the integration of the regulators in a 'shell system', whereby everything is neatly stored in a hard shell. It was also the first integration of lead into the BCD. The diver could discharge the lead pellets in case of an emergency. With so many novelties in one model, the design was considered dangerous and it was advisable to undergo special training before diving with it. The model was not a success, but the ideas did find their way via later models to the diving community.

In 1976, the Dacor Nautilus came onto the market, which worked according to the principle of the rigid body BCD of Giovanni Borelli. This time the diver did not have to manually adjust the piston as the volume was kept constant by an automatic valve and compressed air. The promise of a continuous adjustment of the fluidity was not fulfilled by the variations due to the air consumption and the compressibility of neoprene. As a result, this innovative design also slipped into oblivion. History teaches us that an invention must not only be innovative, it must also be written down and preserved. In addition, it must not be too innovative, otherwise it might have too many design issues or fail to catch on.

Based on a traffic sign, cave diver Greg Flanagan made the first back plate in 1979, and he drew inspiration from the SCUBAPRO Stab Jacket. Intelligent copying is a good way of innovation. Similarly, the side mount grew out of the use of English cave explorers to carry scuba tanks into caves in case they had to pass through a flooded section. The idea was 'designed' by Lamar Hires in the mid-1990s and distributed by the company Dive Rite as the first commercial side mount system.

In recent years the BCD design has not changed much, at least not to the extent that it deserves a note in the history books. The manufacturers have not introduced a completely new approach, but have concentrated on comfort, design, models, sizes, and streamlining. Perhaps the application of new technologies will soon change this? Or will they make old, forgotten ideas possible again?

SCUBA

Christian Lambertsen invented the 'Lambertsen Amphibious Respirator Unit' (LARU) rebreather in 1939. The US Navy initially rejected his invention, but three years later he successfully demonstrated the LARU to the Office of Strategic Services (OSS), the predecessor of the CIA. Over the years, he became responsible for most of the technology used in Combat Swimming Operations in the USA. His inventions laid the foundation for technology used by NASA, the Navy SEALs, the Green Berets, the US Coast Guard, and diving enthusiasts around the world. He is sometimes called the 'Father of the Frogmen'.

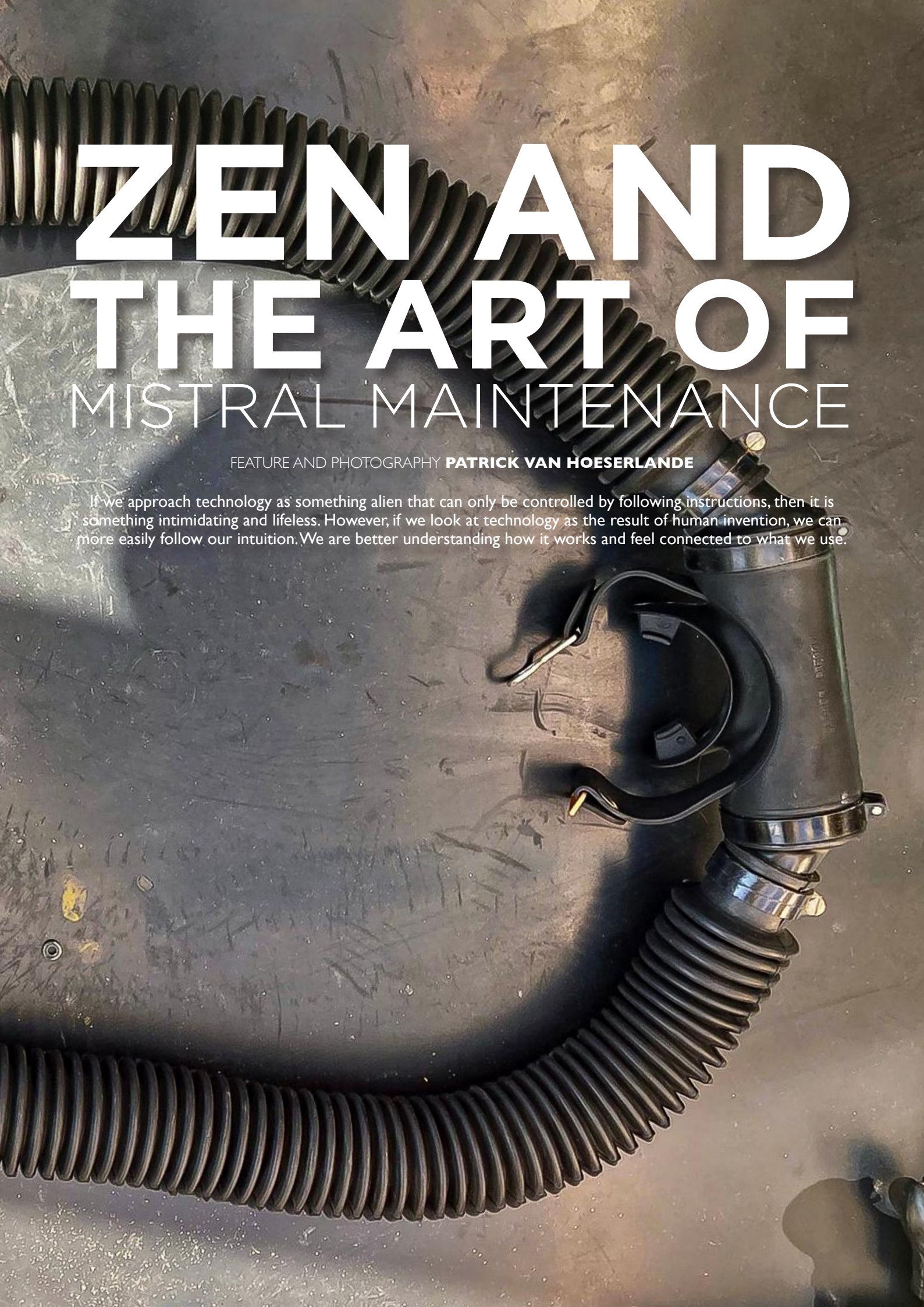
In 1952, Lambertsen and a colleague wrote a paper for the National Academy of Sciences. In it they described the "Self Contained Underwater Breathing Apparatus", which they abbreviated to "SCUBA". This was the first time the word SCUBA had been used.

ROYAL
MISTRAL

ZEN AND THE ART OF MISTRAL MAINTENANCE

FEATURE AND PHOTOGRAPHY **PATRICK VAN HOESERLANDE**

If we approach technology as something alien that can only be controlled by following instructions, then it is something intimidating and lifeless. However, if we look at technology as the result of human invention, we can more easily follow our intuition. We are better understanding how it works and feel connected to what we use.



"Serendipity", the occurrence and development of events by chance in a happy or beneficial way, is an English word that is difficult to translate, but whose meaning is easy to grasp. In 1943, people dived for the first time with a regulator that would conquer the world. To celebrate the 75th anniversary, I wrote three articles on sport diving in 2018. The last article in the series was about a dive with this type of regulator. I searched for months for a Mistral that I could dive with, but to my surprise, the proud owners I first found thought that their Mistral deserved to stay in its display case intended as its final resting place. Dive with it? No, rather not!

It is probably a textbook example of misplaced anthropomorphism, but I find it sad when old technology is put on display and is therefore no longer allowed to fulfil its original function. An old, working breathing apparatus belongs in the water and should not be shining in a protected environment behind glass. The result of human invention feels more at home in the demanding environment it was designed for. However, this emotionality did not bring me any closer to a dive. It was only at the last moment and after I had given up, that I lay my hands on a probable working model.

Of course, I was not going to jump into water without someone's knowledgeable assurance that it was in full working order. With a bit of convincing, I managed to persuade Ronny Desmet of Scuba Service to disassemble the borrowed Mistral and give it a thorough check. Although he had no experience with single stage regulators, he was my best choice and at that time the only one I trusted for the job. You can read the resulting dive experience in the June 2019 issue of Divers for the Environment.

My suit was barely dry from that vintage dive when my cousin pushed a plastic bag into my hands and said, "it's just gathering dust in my closet". In it, was an incomplete Mistral. "Serendipity": the moment you stop looking, an opportunity presents itself. The article may have been written, but I was still receptive to finding a perfectly working model. The dive had not been ideal and certainly did not characterise the qualities of these solid, first regulators. The Mistral deserved a second, honest chance. Was this regulator the key to that perfect dive?

Hardware is only one element. Who had the expertise and the parts to turn a closet dweller into a diving one? Here too, a happy coincidence lent me a hand. Tim Vertongen responded to my question on social media by saying that he wanted to help me. However, it took years before "my" single-stage machine and I stood at his door and rang the bell.

THE BEGINNING

The house I was standing in front of shows the approach of 'do-it-yourself-ers'. It is a project with vision that matches the available budget. The owners are confident in their abilities and know what they want. When Tim opened the door, he looked much younger from the mental image I had of him. My world view that someone with an interest in old technology must be an old person does not always match reality.

After a brief introduction, we made our way to the veranda where the morning sun provided a cosy warmth. The operating table had been carefully prepared with a black rubber mat for the patient, along with a stainless steel ultrasonic bath for thorough cleaning and, of course, the necessary tools. The tools covered a range from precision instruments that would not look out of place in a watchmaker's shop, to a heavy spanner that had to be lifted with both hands. Next to the table was a box of spare parts that could probably assemble five regulators. I had clearly arrived at a passionate maintenance technician's home.

I placed my imperfect adopted child with care onto the dissecting table. After a visual check, Tim identified it as a 'Royal Mistral'. In 1962, the company 'La Spirotechnique' introduced this improved version of the Mistral. It is a

single-stage regulator with greater ease of use and some versions – such as the one we had in front of us – was equipped with a high-pressure port for the connection of a manometer. I had my doubts. For some reason, it seemed that connecting a pressure gauge to a relic diminished the romance.

However, that extra connection option opened up a dialogue about using a Fenzy. This orange "toilet seat" and predecessor of the current "jacket" is no more than a ring that you can fill with air and through which you have to stick your head. The official name is an Adjustable Buoyancy Life Jacket (ABLJ), but it is better known under the name of the inventor Maurice Fenzy who introduced it in 1961. The first versions required the diver to blow air in it, but later models used a dedicated small air cylinder or a single-use ampoule of CO_2. It was only when medium pressure became available and two-stage breathing valves took over the market that the Fenzy was no longer used as a mere life jacket, but also as a buoyancy control device.

The connecting piece between the tank and the regulator was missing. Tim had already found a solution for this issue. In preparation to our meeting, he had modified a modern A-clamp so that it would fit the Mistral. This saved me from having to look for an older model of a scuba tank fitted with a smaller valve to dive with my Royal Mistral. With this modification, I could use my modern tank.

A striking oddity was the lack of one-way valves in the mouthpiece. He explained that these valves were removed from the regulators to be used for pool training. This made training with single-stage regulators more difficult. The underlying philosophy was that difficult training increased safety during open water dives. Because diving with valves is more pleasant, he had a set ready. Although they came from a modern diving helmet – Tim works as a part-time technician at 'De Zeeman PRO', a shop for professional diving equipment – they fit perfectly on the 50 year old, original mouthpiece. It was amazing how the old and new spontaneously fit together.

DISMANTLING

While he was disassembling the regulator, we started a conversation about the origins of his passion for old and ancient diving technology. Like many divers, old and young, Tim admired the underwater films of Jean-Jacques Cousteau. After watching these films, it did not take him long to look for a diving school. While I used single-stage regulators during pool training, years later Tim was standing at the edge of the pool looking at the modern descendants in amazement. Where is the second hose? They had to explain to him that people no longer dived with double hose regulators. They were no longer readily available. The disappointment of not being able to dive like his hero did did not stop him from searching for the origins of sport diving.

We took a look at my specimen, which had been partially dismantled. The parts were in good condition. The years in a closet did not do the regulator any harm. Is retiring old technology not such a bad thing after all? The two hoses showed hardly any signs of wear and were still flexible. Only the regulator showed traces of rust. Without consulting a manual, Tim removed the only two O-rings in this piece of technology. Yes, only two! He had to fish for a minuscule seal through a small hole. I wondered how he was going to get it back in there. One by one the parts disappeared into the bath. The boiling water from the kettle filled both the bath and my mug with instant coffee. Maintenance and comfort flow from the same jug.

I admired the dancing patterns on the surface of the ultrasonic bath, and my thoughts wandered to the simplicity of the Royal Mistral. This is a stroke of genius. Every part had been thought out and strictly necessary. Nothing is superfluous. Tim told me about the existence of a two-stage regulator, brought out years before the Mistral. The 'Scaphandre

Cousteau-Gagnan' or simply the 'CG45', was patented in 1945. Breathing air was reduced to two stages from the high pressure in the tank, to the ambient pressure. A process that required a fairly complex mechanism. Both stages were located in the same housing. So the first commercial regulator was a two-stage! Without a balanced first stage, this version offered no particular advantage and so the designer and supporter of simplicity, Émile Gagnan, decided to scrap this prototype back to just one stage. The Mistral was born.

The rust stain did not appear to be oxidised metal. In fact it could not have been, but you never know of course. Dried up grease? It came off and that was the most important thing. Normally, the air hoses also need to be cleaned, but not in this instance. Fortunately, Tim had a spare pair and so we swapped dirty against clean. This allowed us to shorten the maintenance time.

It's not only movies that motivate people to dive, it's also books. 'Le Monde du Silence' made a lot of people yearn to explore the underwater world. We agreed that Cousteau and his companions were true pioneers. Some of their experiences would be a perilous adventure even with today's modern and reliable equipment. Of course back then, they knew less about the dangers of the deep. The first sport divers in Belgium can also be called pioneers of diving. Sport diving was synonymous with technical and minimalist diving. Dry suits? Jackets? Nope, there were only a few single-stage regulators mounted onto dive tanks with a reserve handle for the whole club. The adventurous members took turns diving with a "full" set from the diving club. Such a set cost more than a month's salary. If you were unlucky, the tank was empty before it was your turn. Better luck next time?

Over the years, Tim's collection of shiny scuba gear has grown. Once people know you collect something, a kind of attraction process starts. If they don't know what to do with a single-stage regulator, they give it to Tim. He collects these things and that is better than throwing them away. And like so many collectors, his hobby got out of control.

TECHNOLOGY PHILOSOPHY

Before the reassembly, the regulator needed to be calibrated. Tim performed an initial adjustment with a homemade jig. He adjusted the breathing resistance with the help of two screws and an adjustment nut. In order to avoid bending the plate on which the lever rests, it is necessary to work iteratively. Every adjustment of the adjusting nut needed to be accompanied by the prior loosening of the two fastening screws.

The scene I witnessed reminded me of the passages in Robert Pirsig's book 'Zen and the Art of Motorcycle Maintenance', in which the main character maintains his motorbike with great love and conviction during his road trip. The author claims that if we approach technology as something alien that can only be controlled by following instructions, then it is something intimidating and lifeless. However, if we look at technology as the result of human invention, we can more easily follow our intuition. We are better understanding how it works and feel connected to what we use.

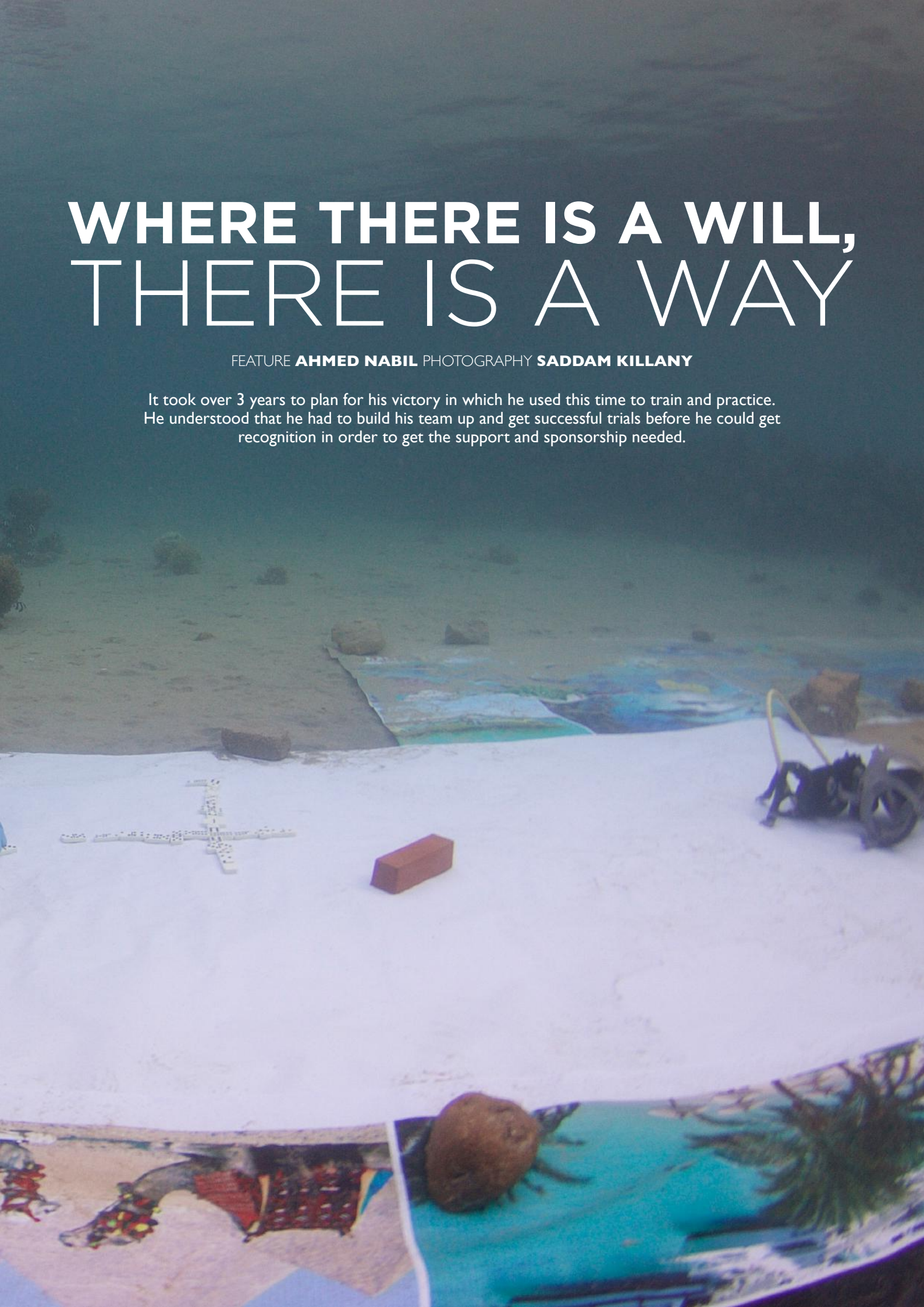
You don't have to read the bulky book to get that insight. You acquire it when you see your life's essential regulator maintained by a passionate technician, and when you "experiment" with your configurations and material within the limits of safety. The material you use then becomes part of you, as it were, and not something you take with you to dive.

After a few hours of philosophy, I stepped outside with a polished and fully functioning Mistral Royal. There was only one thing left to do: to dive with it. I no longer had to search for an original Mistral…

WHERE THERE IS A WILL, THERE IS A WAY

FEATURE **AHMED NABIL** PHOTOGRAPHY **SADDAM KILLANY**

It took over 3 years to plan for his victory in which he used this time to train and practice. He understood that he had to build his team up and get successful trials before he could get recognition in order to get the support and sponsorship needed.



As a diving instructor, I often get asked what the deepest dive is, at what depth, location, who made it, etc. Surprisingly I have never been asked about the longest dive, so I took it upon myself to find out.

As per the Guinness World Records, the longest open saltwater scuba dive lasted 145hrs, 25 mins and 25 secs long. It was achieved by Saddam Killany in Dahab, Egypt on the 11th of November 2020. This historic feat took place from the 5th to the 11th.

I decided I wanted to meet and interview this world record breaker. Saddam lives in Dahab city, where he works as a scuba diving instructor. When I established contact with him, I was greeted with a warm welcome and a humble attitude as he talked about his attempts and efforts.

Saddam's relationship with the sea began in 2012. He moved to Sharm el Sheikh to work at a dive centre as an admin employee with no previous experience in diving. He started his diver training with their help and received his Divemaster certification in 2013. It was in 2014 when the idea to do the longest dive first came to him.

Saddam shared his idea with his contacts and friends. First impressions from the diving community were not encouraging. It took over 3 years to plan for his victory in which he used this time to train and practice. He understood that he had to build his team up and get successful trials before he could get recognition in order to get the support and sponsorship needed.

Saddam's team consisted of 3 groups:

1. The medical team – led by Dr Adel Taher
2. The team leader – Samir Darwish, a diving instructor
3. The support group – his friends

The medical team was the project's foundation. They provided all the medical and scientific support needed, with continuous follow-ups and encouragement. Everything was taken into account, including the gases and decompression dive tables, his underwater diet to keep him fuelled, the pre-dive preparations for a healthy and safe dive, and a workout programme to maintain a healthy physiological and psychological status underwater during the long dive.

His diet consisted of 70% blended fresh fruits and vegetables. Honey was added to the list for sugar. A dehydration solution of 500ml was given to Saddam every half hour, and chocolate was given from time to time to inspirit and provide calories.

To maintain his muscle mass, weights were organised for upper body muscle exercises, and a gym bicycle was used to exercise his legs. For balance, Saddam walked along the sea floor with the help of properly distributed weights to allow him walking exercises. To maintain a good mental condition and present mind, chess and backgammon were played. Painting with oil paints was also introduced which drove to inspire another Guinness World Record which

won the largest underwater painting at 7.92sqm in Dahab, Egypt, on the 30th of September 2020.

The team leader, Samir Darwish took care of all the logistics, including the dive equipment, cylinders, weights, support teams above and below the water, as well as the teams' tasks and rotations. During the early trials, it was considered a big learning curve for them with most of the resources funded by themselves, apart from the air which was sponsored by the dive centre.

The first exposure suit used in the beginning was a dry suit which had been made locally in Sharm el Sheikh that had no discharge valve which was compulsory for the duration of the project. The team had to figure out a solution ASAP researching what was available on the market to solve the problem. In the end, his dry suit was customised to have the flexibility he needed.

There wasn't a single dive regulator that could provide the long duration required throughout the whole dive. Multiple regulators had to be used, so an equipment specialist joined the team to be available from the surface at all times as continuous support for the maintenance to ensure proper performance of all the equipment.

For the event, Saddam had 5 video cameras used with locally customised housings made and had them hook back up to the surface via a large screen so passersby could get a look at his life underwater. His surface team could also monitor everything going on at all times of the day.

The three years of trials were not only racing against time and costs, there was one other major parameter to race against; the existing world record.

Before Saddam's record, the world record at the time was registered to a Turkish champion with 72 hours. This champion tried to defend his record by increasing his dives from 72 hours to 142 hours.

The world record was finally settled by Saddam and he achieved his glory with 145 hours and 25 minutes.

When Saddam started his dive in Dahab, only his family and close friends were there for him seeing him off from the surface. However, the longer he stayed underwater, the more people started to believe in his dream and started to flock to the dive location. By the time he surfaced triumphant, Dahab city was there waiting to welcome him!

I asked him, "Saddam, despite all of these hardships, why did you decide to pursue this project?" Saddam replied, "Because I needed to believe in myself."

Saddam continues to enjoy teaching scuba diving in Dahab. Happily married, he looks forward to being a father, and being able to proudly narrate his story to his own children, being their role model and an inspiration to believe in their skills and themselves. Where there is a will, there is a way.

BIGBLUE

LITTLE LIGHTS WITH BRIGHT RESULTS

FEATURE AND PHOTOGRAPHY **ALLY LANDES**

These lights blow my Light and Motion GoBe's right out of the water. Size, weight, and burn time are perfect, and the light output has surpassed my expectations. There is a lot more diving to be done to test these beauties' full performance, but I can safely say, I've made a solid investment.


ares
R30
bigblue

LEFT AND RIGHT: Examples with, and without light. No matter how much natural light you get, even shallow dives look better with good wide angle lighting to bring out the lost colours and details of your subjects. These cloudy and turbid water conditions are of no exception.

THE BIGBLUE TEST

Diving conditions as of late have thrown low visibility and high turbidity on both trips I've managed to schedule out on the East Coast to test my new dive lights by BigBlue. These would otherwise be good conditions to test lighting in – apart from the swaying currents making a photoshoot more than difficult to get steady shots – but these lights have made a significant difference to the quality of my shots all done with GoPros. I haul heavy weight equipment around enough as it is without having to add to my underwater photo and video setup. I only had a few prerequisites. I needed to keep my equipment minimalist, at small scale mainly for travel, but which would give me big enough results for publications.

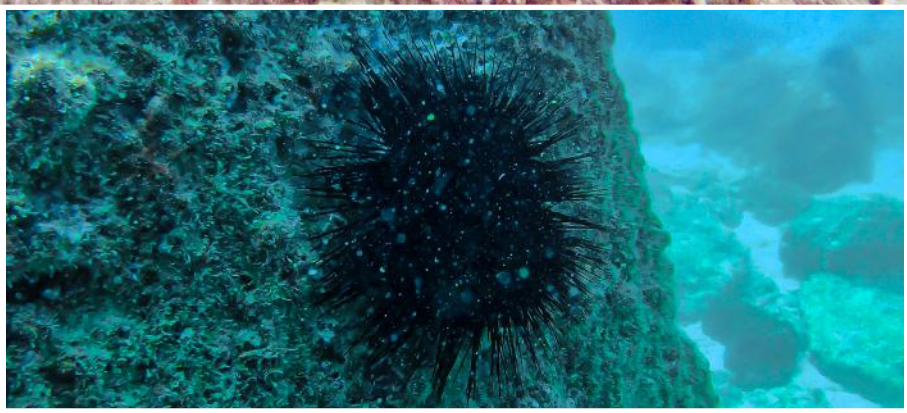
I had been using two Light and Motion GoBe 700 Wide lights for years and had so often struggled with their performance and functioning reliability. The only thing I appreciated about them was how compact they were, including their charging cables.

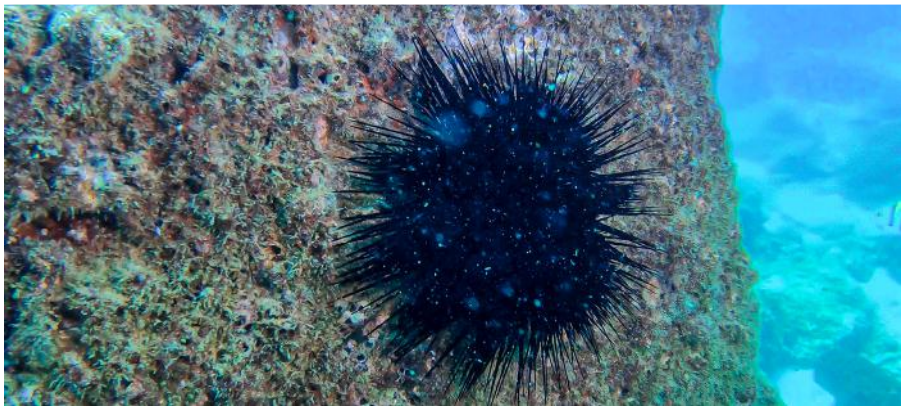
After a lot of lighting research, I became even more undecided and had to ask filmmaker David Diley for some help, whether he could suggest a brand that would work for me. He pointed me straight to BigBlue. After a short look through all their video and photo lights, I settled on two Black Molly V: 2600 Lumen Video Lights. I had finally found an affordable upgrade with optimal wide angle lighting which would keep my system compact and light for travel – with quality being my top priority.

With an extra wide beam angle of 120-degrees, I get perfect all around lighting which is great for both video and photography, and with the power of 2600 lumens I've doubled my illumination. The Black Molly V has built-in red LEDs for enhanced focusing and night video work, they come with a yellow removable filter, and a standard one-inch ball for easy video system mounting.

The ball mounting does not however work with my system and the only qualm I've got are the accessories available for my existing rig. I use ½ inch Loc-line flexiarms (I like these for the flexibility they give to moving lights around quickly) on both my existing trays which are still in good working condition so I wasn't prepared to spend more money replacing them and lose use of something I already have. The only solution was to order separate ½ inch loc-line mount adapters (2 sets of 2 which alone increased the costs by an extra $128) to fix the lights to my segments. I ordered two YS Adapters, and two DA-006 Light Adapters to connect the lights to find the DA-006 adapters are well and truly awful!

They don't hold the lights steady threaded through the YS adapters (the threads continuously turn without locking the placement that is exactly what needs to happen here) which makes the lights rattle under any movement and continuously in current. On my last test dive with them, the lights wouldn't hold up at all and rendered useless without tape to hold them in place. It could have just been the one adapter that was faulty, but as





you have to purchase them per piece, it turns out these are of poor quality which I will have to report back. Duct tape may for the time being be my only backup until I can solve this problem long term. If you are good to use the standard one-inch ball mounts, you're good to go and won't be disappointed!

The separate rechargeable batteries are a fantastic perk to what I used to have! The battery chargers take up slightly more space than the GoBe charging cables did, but I'm now able to order spare batteries to have fully charged extras at the ready which is a game changer. There are four power settings to reduce the lighting intensity and the rechargeable Li-ion 26650 batteries give you two hours on the highest setting so they can last a really long time depending on how you use them.

THE VERDICT

These lights blow my Light and Motion GoBe's right out of the water. Size, weight, and burn time are perfect, and the light output has

ABOVE: It might not look like much light from this angle being such a shallow dive with a lot of natural light, but they kick a punch in camera.

surpassed my expectations. There is a lot more diving to be done to test these little beauties' full performance, but I can safely say, I've made a solid investment thus far.

The Black Molly V: 2600 Lumen Video Light is priced at $339.99 and is available in black or orange/silver. BigBlue sponsored my second. **www.bigbluedivelights.com**

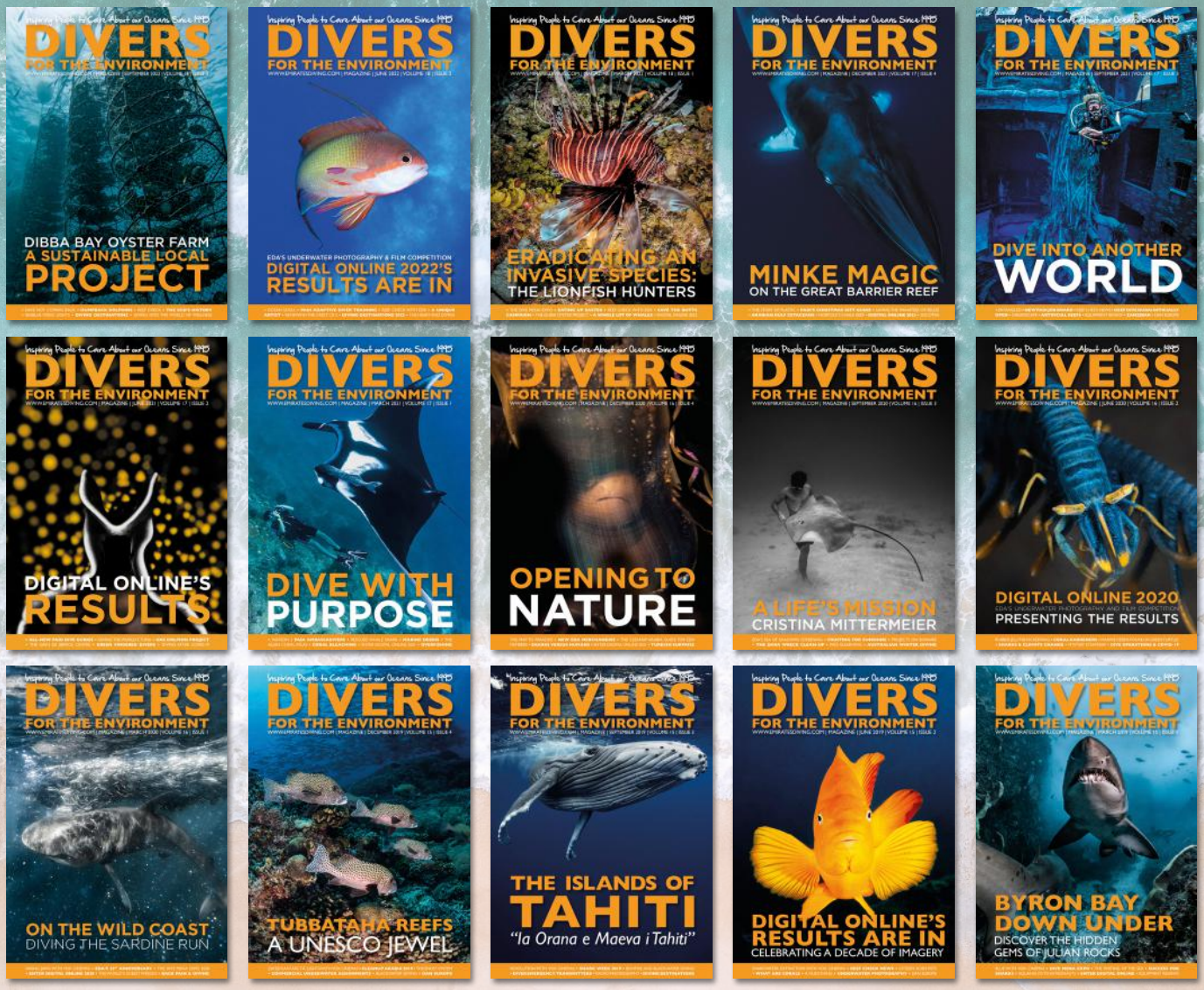
bigblue®

PRODUCT SPECIFICATIONS:
Package Weight: 2lbs
Lumens: 2600
Beam Angle: 120°
Burn Time: 2 hrs (level IV), 4 hrs (level III), 8 hrs (level II), 20 hrs (level I)
Light Source: 4 x XML LED + 2 x XPE Red LED
Power Source: Rechargeable Li-Ion 26650 Battery
Colour Temperature: 6500K (Cool White)
Weight: 218g (including battery)
Buoyancy: 105g (including battery)
Size: Dia. 35.5mm x L. 126.8mm
Maximum Depth: 100 Metres Tested
Housing Material: Anodized Aluminum Alloy
Colour: Black, or Orange/Silver

THE BOX INCLUDES: (seen left)
- Light (minus the DA-006 adapter)
- Rechargeable Battery
- Charger
- 1" Ball Mount
- Removeable Yellow Filter
- Lanyard
- Two Spare O-rings
- Silicone Lube
- A Dry Bag
- Owner's Manual
- Manufacturer's 1 Year Warranty

FOR THE OCEANS

OCEAN STORIES | CONSERVATION | DIVE TRAVEL



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CENOTES & WHALE SHARK PHOTOGRAPHY IN MEXICO

FEATURE AND PHOTOGRAPHY **LEVENTE ROZSAHEGYI**

Until then I hadn't quite understood why people would want to cave dive… the peace, the clear water… the zen.

COVER PHOTO: The Carwash Cenote.

If you are a diver and afraid of closed spaces, such as those of shipwrecks, then read on, this is amazing…

PREPPING FOR THE CENOTES

Cenotes are types of sinkholes that contain groundwater and are a very special gift from mother nature in Mexico on the Yucatán Peninsula. I have seen many incredible photos from there before, however, I told myself I must experience this for myself and see it with my own eyes. Initially I got invited to join the Wetpixel's photo group, however due to unforeseen circumstances and a few cutbacks, I couldn't make it. I then contacted Tom St George who lives in Tulum. He has been diving the cenotes for years and takes incredible photos which have won him multiple awards on a global scale. He came back to me with a proposal for 2 days of diving near Tulum with serious briefing sessions via zoom to get ready before the actual dives took place. This was my first time to dive in a proper cave. In the past I've only managed a few swim-throughs and shipwrecks. This trip however required some preparation.

I had two 3-hour zoom calls with Tom to prepare for these dives in the cenotes. There is a lot of information to go over. The environment is incredibly fragile as well as being very cold, and we have to be careful with any movements made.

Tom showed me a lot of images during those calls and we discussed the various techniques we would use to take, or attempt to take similar photos. According to Tom, given the circumstances, there is no way to take the same photo twice, so we are looking for the magic ahead of us.

I luckily managed to get my brand new Marelux housing for my Z6II camera delivered to Florida so I could use the new setup especially for this trip. Marelux is a new brand in the underwater photography world, and thanks to Rene Capozzola, I received my unit early. Marelux is now available in the UAE at **www.marelux.ae**.

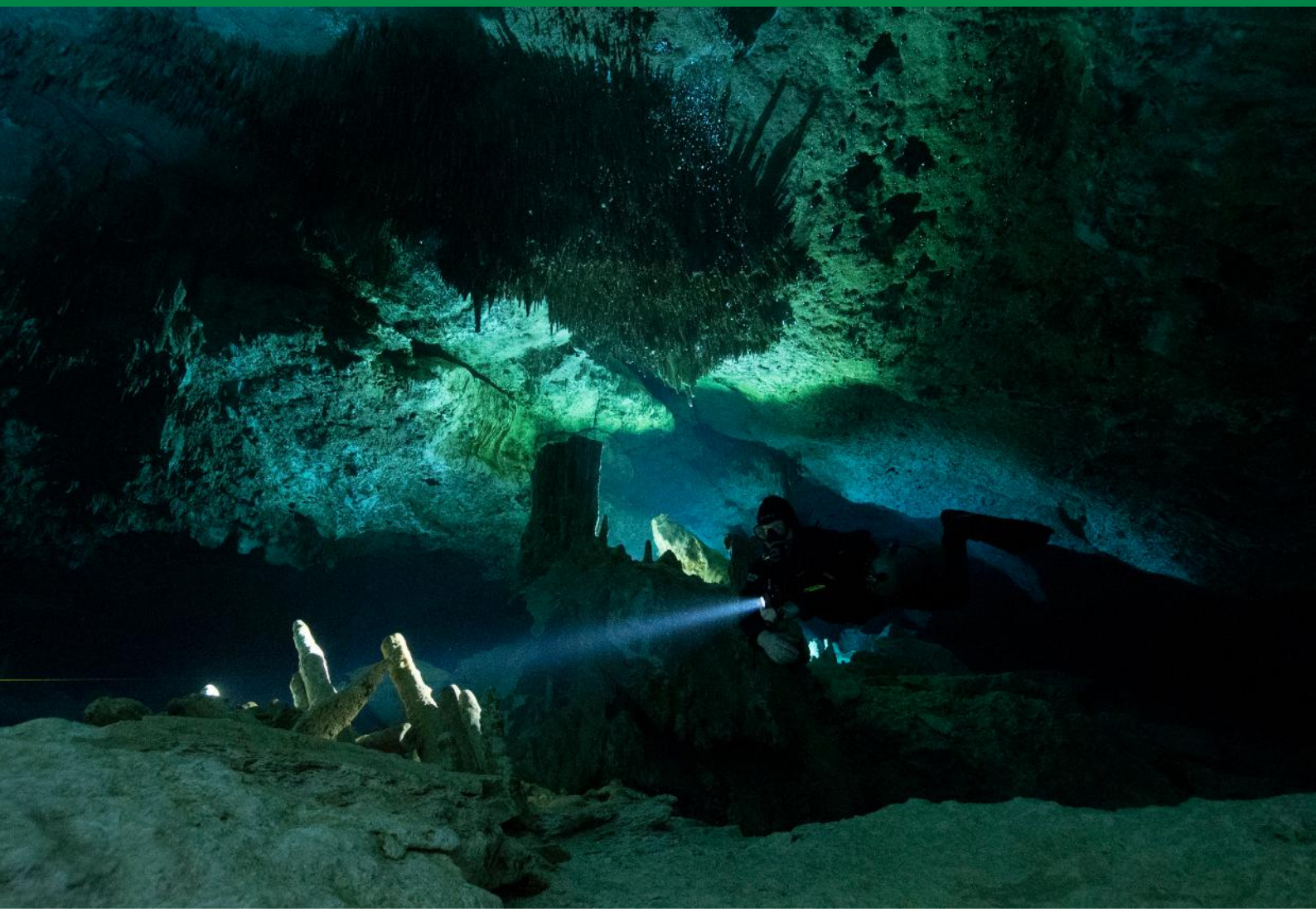
I planned 4 days in Mexico which is a short flight from Florida, with 2 days searching for whale sharks, and the remaining 2 days diving in the cenotes. To explain just how small the diving world is, I went to the Bahamas back in 2016 to dive with Hammerhead sharks off the coast of Bimini where I met two Italian brothers there who run Bullshark dives in the Yucatan. The guys also run the whale shark snorkelling trips out of Cancun.

THE WHALE SHARK TRIP

There are a couple of things we need to know about whale sharks here. First off, they are amazing! There is no need to be afraid of them, they have no teeth, they swallow huge amounts of water that they filter through their gills for the small plankton that they consume, making them the gentle giants of our oceans. They also migrate between Mexico and Cuba during the summer months of July and August each year when the water at the surface (which is great for us observers) is full of small animals that they enjoy "eating".

Any animal populations in the world these days are of an endangered species, hence when swimming with whale sharks, there is no touching allowed as we could transfer bacteria to their skin that could be very harmful to them. The local authorities have come up with new regulations that only allow two jumps into the water with the whale sharks so you can imagine how limited we were for time with them. Flash photography is strictly prohibited (makes it easier to swim to be honest without

ABOVE: Diving Angelita at the layer of hydrogen sulfide that looks like smoke creating this eerily special atmosphere underwater.



ABOVE: The spectacular Tajma Ha Cenote using off camera lighting techniques where Tom placed torches in the cave to light up the formations from different angles.

strobes, and the ambient light from the sun was great). I had brought my freediving fins with me as I learnt my lesson from the past swimming with dolphins and whale sharks, these guys move their bodies at least 5 times faster than I can.

My good friend Luca was waiting for me that morning and we boarded the boat together with a few other people. It was a good hour's boat ride out to the channel between Mexico and Cuba where a bunch of other boats were also searching for whale sharks. This year was not the most eventful in numbers as the animals had decided to stay elsewhere, however we managed to find 3-4 whale sharks as they fed at the surface. Interestingly enough, the whale sharks come to the surface in the morning hours and stay there until midday, then the water warms up and the whale sharks dive deeper to disappear into the cooler waters.

It was interesting to get some interaction with these magnificent fish. It felt short, but the time we had was better than nothing and I managed to capture a few of them while feeding.

THE CENOTES

Now in Tulum, Tom was ready to roll, and I had to setup my gear and my strobes. It was good to have had a test run with my mirrorless camera on the whale sharks – practice makes perfect – at least one hopes.

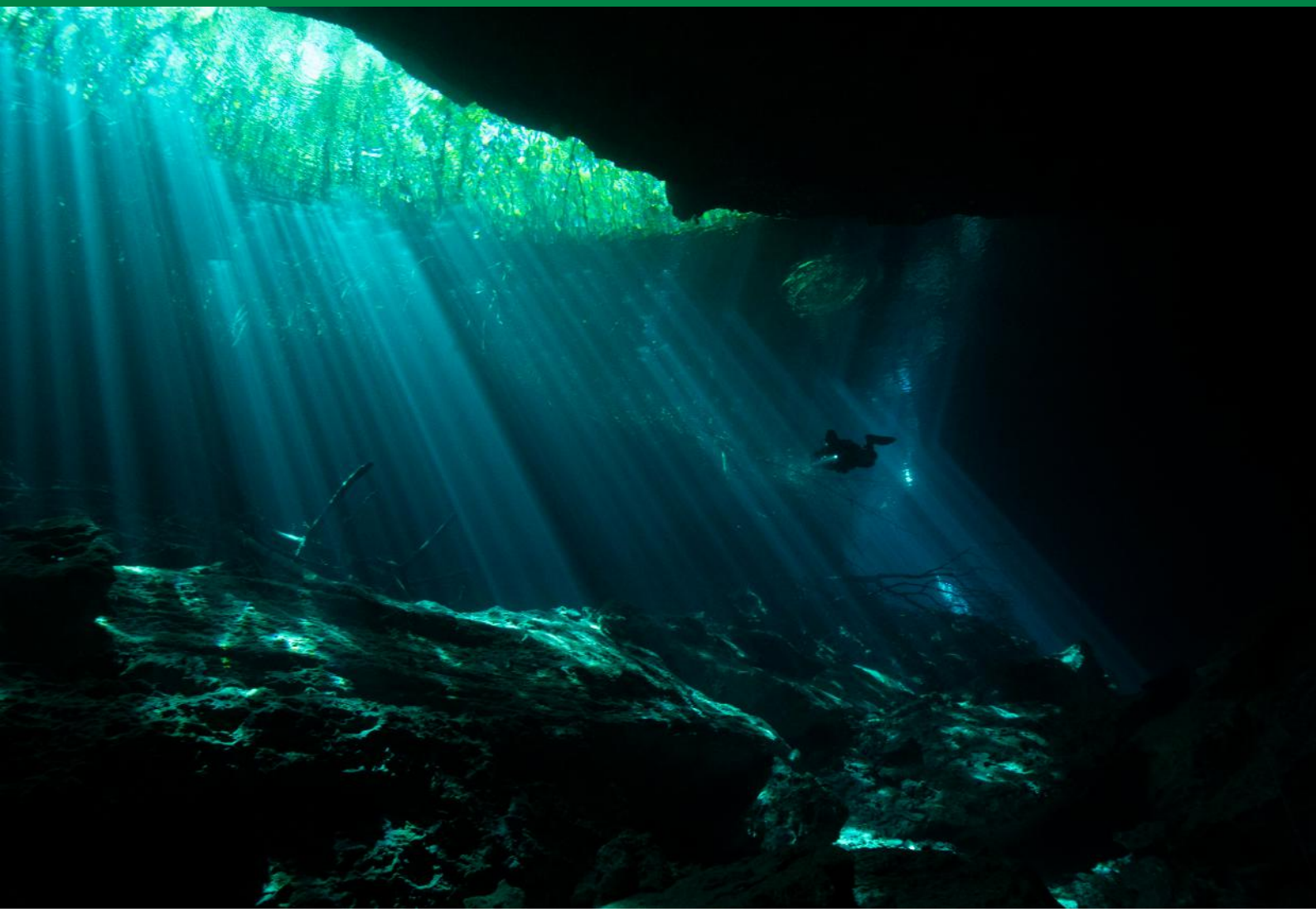
Adding unfamiliarity to my gear, I had bought new torches now attached to my rig, and I had to use a 5mm wetsuit – most people use drysuits in the caverns, but this was sufficient enough for me except I ended up having a slight wardrobe malfunction. I have a Diverite travel BCD that I have been using a number of years and I had an insulation ring missing from my BCD that connects to the hose (no big deal when you have to dive to 35 metres and everything gets compressed), so I managed to "MacGyver it" – if you don't know what this means, you are too young! I had a temporary seal in place that kind of worked for the first two dives, however beyond 15 metres the seal started losing air – despite all of this, I managed to hover somehow to get through this dive.

Angelita is a very special cenote, imagine an almost column like hole that used to have a top cover. This had broken inwards down into the soil and rocks, landing in the middle of the column at 60 metres. Further up at 30 metres, an island has been created with some tree branches on top of it. That alone is interesting, but now there's a layer of hydrogen sulfide which is 3 metres thick that looks just like smoke hanging at 30-35 metres creating this eerily special atmosphere underwater. We were luckily the only ones in the water as we got to the cenote early enough, allowing me some extra time to take photos.

Ascending from Angelita, the light rays started to shine into the water through all the stillness.

The second Cenote of the day was at the Carwash. I'm not sure where the name came from, however I understood that there is a large opening to the long cavern system, with a bunch of lilies near the large lake's surface. Given the timing of my trip, mother nature was good to me as it rained quite a bit before I got there. This is good as the water was stirred up and created a magical and colourful view from the inside of the cave. We dived down to 10 metres deep where Tom carried out "model" duties around the opening area. There was a school of fish that I also managed to capture in the frame. The view was magnificent! On the way up, I tried to take photos of the lilies, but was unfortunately unsuccessful as the water was too stirred up for it.

Back at the hotel, I had another zoom session with Tom to review the photos, and plan for the next day.



ABOVE: Diving in the Ponderosa Cenote with its light-beam magic. **BELOW:** Some great feeding interactions with the whale sharks.

We dived the Ponderosa Cenote with its light-beam magic. You can only enter the cavern from the large lake side where a lot of people swim. Diving down 5-10 metres into the cavern within 2-3 minutes, we arrived at an opening where you couldn't get into the water, however the light could. Light is always magic as you never know what to expect. It was great timing by Tom for the dive, there were only a few of us diving there so we had some time to take photos and adjust settings. We made our way further into the cavern, it was still very shallow at 5-8 metres only, so air consumption was not an issue. Ascending back to the lake, we spent some time taking split shots as the water was completely still before moving to the afternoon session's location.

The last dive was an even more special one as we planned to use off camera lighting techniques where Tom placed torches in the cave to light up the formations from different angles. This cenote is called Tajma Ha. During this dive we actually went deep into the cavern and used lines as references, this was quite spectacular.

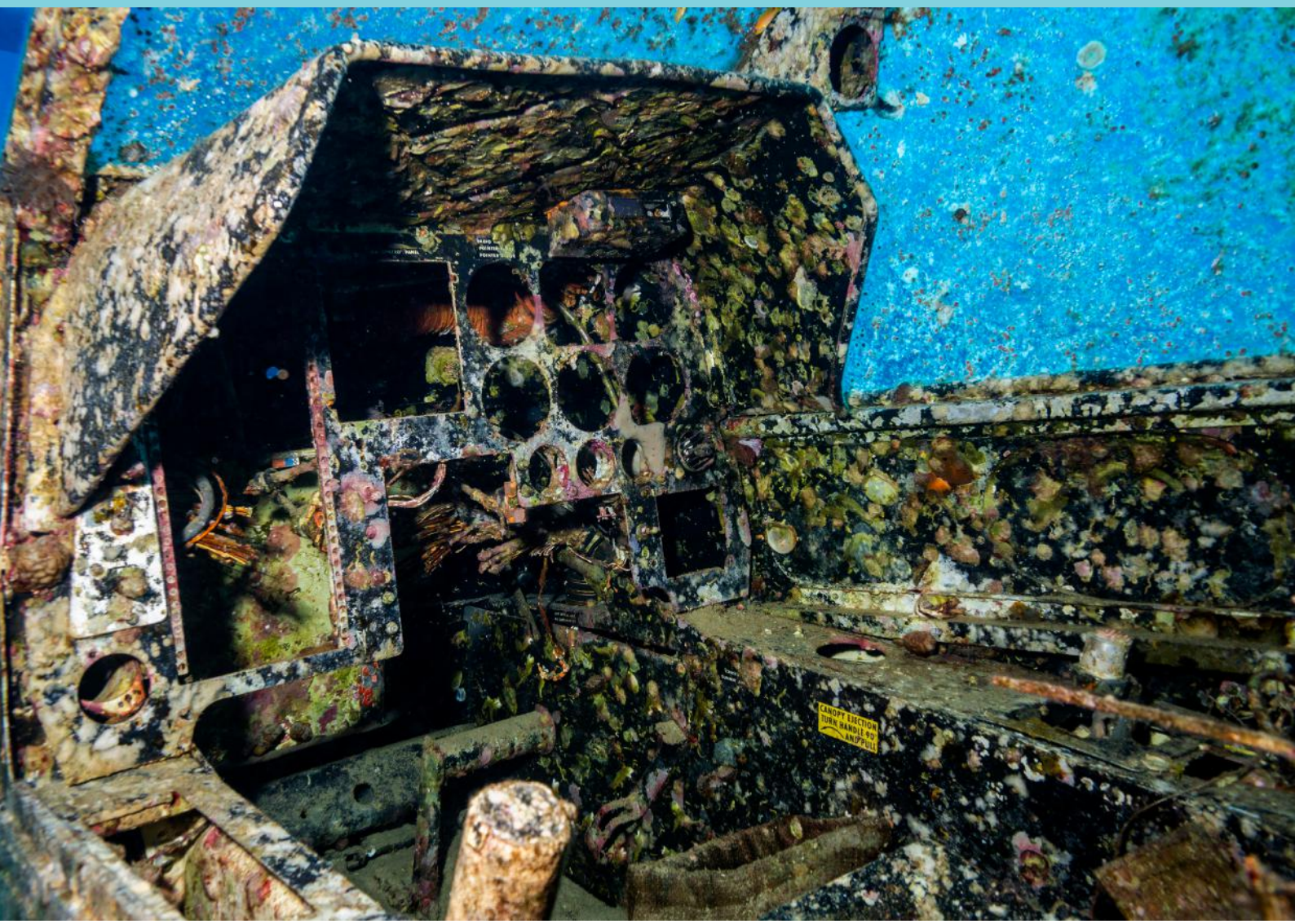
Until then I hadn't quite understood why people would want to cave dive… the peace, the clear water… the zen.

EXPLORING THE ENTIRE JORDANIAN & EGYPTIAN RED SEA

FEATURE AND PHOTOGRAPHY **FARHAT JAH**

The expedition to dive the entire west coast of the Red Sea north of Sudan took five dive trips. One to Jordan in August 2021, a two-week expedition to find dive sites in May 2022, and three one-week dive trips in August 2021 and August 2022. The gaps in our expeditions are the Sudan coast, Saudi Arabia and the Gulf of Suez north of El Tur. As the world opens up further to international travel, I cannot help but feel a return trip to the Red Sea is looming.

COVER PHOTO: Francisca inside the hold of the SS Thistlegorm.



ABOVE: The Cobra Helicopter cockpit overgrown with corals at the Underwater Military Museum in Aqaba.

Farhat Jah's day job is organising safaris and unusual dive expeditions around the world. Covid-19 put a temporary stop to some of the more exotic destinations, so with time on his hands, he returned to his former life as a travel and dive writer. His main project, in-between lockdowns, was diving the west coast of the Red Sea from Aqaba to Zabargat. It took more than one trip, plus an unusual 2-week continuous dive safari, to achieve this. Here is his story.

In 1992, I dived in Eilat and thought the diving was nice, but a one-day jeep safari to the Egyptian Sinai was the highlight of my trip. The steep walls and stunning colour of the coral made the inexperienced me realise that the Red Sea was a truly special place. In 1993, I returned to Sharm El Sheikh and dived the Straits of Tiran. In 1993, National Geographic magazine published an article on the Red Sea. Written and photographed by David Doubilet, he had to compress a journey of 1,400 miles into a few pages. When I first read it, I was mesmerised and dreamed of being able to dive the entire Red Sea – a dream that I've since been able to realise.

By 2002, I was diving off Dahab from pickup trucks with Bedouin drivers. I thought I should venture offshore and in 2006, we boarded a truly horrid live-aboard from Hurghada. A combination of incompetent and uncaring fellow divers, bad Zodiac drivers and negligent dive guides found me on the surface, alone and with the waves smashing me into the reef at Daedalus. The only way out was down. I swam slowly at 8 metres, surrounded ironically by some very interesting (and possibly interested) sharks, waiting for someone or some vessel to appear. Eventually I heard a Zodiac, surfaced and boarded it. On the long ride back to the live-aboard, I decided my love affair with the Red Sea was firmly over. I would not be back.

A decade later, a friend asked me to bring a group of divers to join him in the Red Sea. He swore that the cruise director, Sandra was professional and not overbearing. Swedish Sandra soon worked us out and simply pointed us in the right direction – to an experience that was a revelation. There was absolutely no doubt that the MV Nouran was a vessel where safety was paramount, but also where clients' diving experiences were respected. We were trusted to respect the boat and its rules, and so were largely left to our own devices. With Red Sea Explorers, we had struck gold, and we gladly returned in 2018 and 2019. Then Covid-19 shut down most of the world, but being less affected than Europe, Egypt very sensibly opened her borders earlier than others, with Jordan following soon after.

AQABA, JORDAN

With the rest of the world closed to the pandemic, I felt it was time to embark on my long-cherished Red Sea project. I didn't have the time, influence, or resources to charter a vessel as Doubilet had, and our dives would have to be done in 5 to 16-day stages over a few months.

Sitting in Istanbul, I called an old friend and editor of Xray magazine, Peter Symes for advice. "Jordan is a great destination, but I am not sure that it's a dive destination," said Peter. "I need to go there Peter, it's part of my Red Sea project." I replied. Silence. I persisted, "I really want to dive as much of the Red Sea's length as I can." Came the reply, "Well, have fun and let me know how it goes." And that was that.

My wife Francisca (Cisca) and I flew direct from Istanbul to Jordan and took a series of buses and taxis across the desert to Jordan's only coastal town, Aqaba. Nestling below the jagged brown mountains and jammed in between Saudi Arabia, Israel and Egypt, Aqaba

ABOVE: Khaled (chieftan) tanks and US made 155mm howitzers in Aqaba, Jordan; the Cedar Pride. **BELOW:** Francisca in the holds of the Cedar pride.

was a welcoming place. It wasn't large, but had a series of restaurants, a thriving market and a welcoming population.

There are a few dive centres on the Jordanian coast, and we chose Sea Star Watersports, owned and operated by veteran Jordanian diver William Sahlawa. Dive guide, Taher Jaqman was highly experienced and after an initial dive check, confirmed our respective abilities. He didn't keep me or Cisca on a leash and once we were on the dive site, we were free to explore the waters pretty much on our own terms.

Scuba diving in Jordan during covid was a 'back to basics' affair. A rusty minibus would take us to a strip of beach surrounded by harsh rocky mountains. We would get into our wetsuits, strap on our tanks and walk gingerly over the gravel-like stones to the water. It was 45°C on land, but only 25°C in the water, and while it may have been an instant relief to be cool, it took a few minutes for us to appreciate our 5mm wetsuits as we swam out to our target reef or wreck.

Our first dive was on the Hercules, a transport aircraft which had been sunk as a wreck. Aluminium does not have great structural integrity when battered by currents, and this C130 looked as though it had crashed onto the sandy bottom and then broken into four main sections, scattering debris all around. The reality was less dramatic: a storm had broken the aircraft up two years ago. The four sections had become vibrant mini reefs, and we spent a good amount of time in the tail and cockpit sections.

HE King Hussein of Jordan was an avid scuba diver, and he created Jordan's first wreck dive when an old freighter, the Cedar Pride, was selected as a wreck for divers. She was scuttled some 35 years ago, settling on her side, surrounded by sunken barges and a coral reef. We swam out behind Taher towards her, the dark shape loomed out of the blue, and we hit her top section. Sitting on a series of rocks, we were able to swim under her and find schools of jacks and rabbit fish. We slowly ascended along the edge of the cargo hatches and swam through the upper sections, finding a large air pocket of rancid air (not to breathe in!). Towards the superstructure, we found a school of mackerel, as well as the usual array of reef fish, and then as we made our way to our safety stop, I could see all the sunken barges and cables in now-excellent visibility, all of which were below 30 metres.

After the passing of King Hussein, his son King Abdallah encouraged more dive sites, and the marine authorities responded enthusiastically. In coral-free areas, you'll find sunken tanks, helicopters and armoured cars, while in coral shallows, you can fin around a sunken Tristar airliner or a lone armoured vehicle.

The very northern edge of the Gulf of Aqaba is not known for its visibility but we often found ourselves diving in 50 metres visibility on pristine reefs (or tanks) surrounded by fish. By this time, all the divers knew each other, so every morning, we'd walk from our respective hotels to a café where a minibus would pick us up. Some days, we'd be diving an aircraft, on other days, steep coral walls. Our fellow divers were some down-to-earth Dutchmen, totally at home with the down-to-earth diving.

Every evening, we'd be dropped back in the charming town, and Cisca and I would stroll down to the Rovers Return, a heavily air-conditioned gastro pub with a terrace overlooking the sea. There we would watch the sun set over Egypt with an ice-cold beer before grabbing a shawarma from a street vendor. The week slipped by and soon we were drying gear and dismantling cameras. I dragged the Dutchmen down to the Rovers

ABOVE: The Deep South of the Red Sea.

Return and in return, they took us to dinner at a deluxe restaurant.

Covid had severely limited flights, so we were back on the taxis and buses to Amman. After an obligatory night in the famous (and excellent) Peacock Hotel, a pre-dawn taxi took us out to the airport for a London flight. Bleary-eyed, I sipped my last Arabic coffee for a while and texted Peter: 'Jordan is definitely an underwater dive destination!'

THE GULF OF AQABA

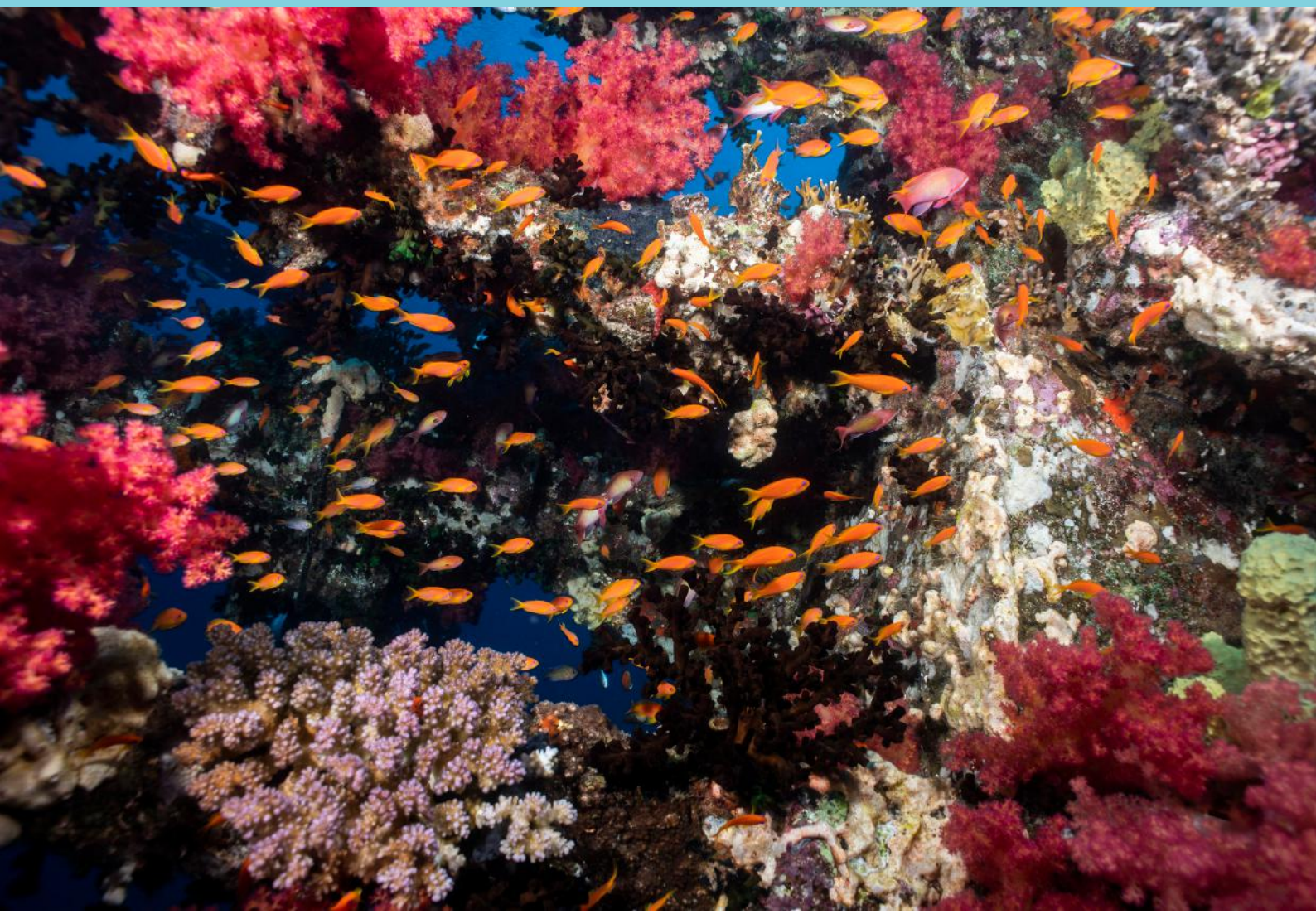
At 0530, I sat up in my berth and realised that I wasn't going to sleep. Looking out of the large cabin window, I saw the Sinai Peninsula, so climbed out of bed and walked to the aft deck of the MV Nouran. There, I saw the sun slowly rising over the peninsula 15 nautical miles distant, an ethereal film of mist lying on the sea surface. I brewed a pot of coffee and stared at the mist – for a full 30 minutes. I had the entire Gulf of Ababa to myself. Then a very small freighter appeared, steaming north close to the Arabian coast. It disappeared and I was alone again. Faisal appeared, rubbing the sleep from his eyes, and stared at the fresh coffee pot. I handed it over and we sat in silence. Eventually he said, "Let's dive here." "Sure," I replied. "You know. I've no idea what we will find," stated Faisal, "that's why it's called an expedition." "Great man! Let's go," he exclaimed, and with that, he was gone down the stairs to prepare cylinders and tell the guides what he had planned.

Faisal Khalaf is the owner of Red Sea Explorers. I had persuaded him to operate a 2-week dive expedition from the Gulf of Aqaba to Zabargat Island in the south so we would be diving the entire Egyptian coast. It had taken some doing as filling a dive boat in the aftermath of Covid-19 was not easy. When our party filled just over half the boat, Faisal took over, cajoling every friend he had to come and join us. We had tech divers, recreational divers, some snorkellers and two young ladies from Lebanon with their father, learning to dive. Our guides, Maisara Sayed and Le'Reyce Josephs, would have their hands full!

An hour later, we jumped into waves from the expertly-piloted Zodiacs. We were looking to see what we might find in this undived area of the Red Sea – the answer was miles of very important but less than impressive seagrass. Our Belgian tech divers dropped down to 55 metres and found more of the same. The visibility was 8 metres at best and we cruised through the silty water looking for something interesting. Eventually we came across a rocky reef full of fish and the occasional turtle. We ended the dive surprisingly buoyant – there is something special about exploratory diving.

After a couple of classic Dahab wall dives, we arrived at a very small cove with nothing in it: this was Gabr El Bint. We entered the water on a steep slope made up of pinnacles with lots of anthias. We dropped down to 34 metres but could easily see down to 60 metres. A school of small tuna swam by, an extremely large grouper watched us from below. This was a stunning underwater 'ras' or point in clear blue water. We saw scores of angelfish, long nose hawk fish, yellow and blue goat fish, soon chased off by a small coral grouper. The inevitability of nitrogen algorithms saw us ascend slowly past some enormous fans to a coral-covered ridge at 6 metres. We ended our dive with a turtle and swam back to the boat. Best of all, we had the cove entirely to ourselves.

After some time, Bedouin children came running down to the beach to wave at us. Ever generous, Faisal Khalaf filled boxes with sweets and chocolate biscuits, jumped into a Zodiac and motored over to the shoreline. He gave all the sweets and biscuits to the children while taking time to greet the village elders who had appeared. Faisal is nothing if not gracious.



ABOVE: The carnatic, Abu Nihas.

Moving further south, we dived the bells and blue holes. Despite some rather odd carpets hanging on the reef in the shallows, the deep sections of the wall were magnificent. We steamed slowly south to the MV Million Hope lying at 22 metres after being wrecked on the coast. The impact had smashed and cracked the vessel in many places, and Faisal wanted to complete his wreck maintenance project on the vessel. This involved him putting on jeans and a t-shirt, placing lead weights in his pockets and taking a toolbox down to turn a nut or two. Two other divers acted in support with spare cylinders, and I was conscripted as photographer for the whole affair. After posing outside, we entered the smashed section and placed lights in various places while Faisal took off his mask, handed over his tank and posed for the camera. I had about 45 seconds to wait for the bubbles to dissipate before shooting the scene – quickly followed by Faisal waving urgently for a cylinder to re-oxygenate his lungs! While it was an exciting project, I saw little of the wreck itself and would love to return!

Steaming further south, we reached the Straits of Tiran. When I first dived here, the islands were Egyptian, now they belong to Saudi Arabia. We moored up and waited. A large grey ship made its way slowly towards us – it was an American troop landing ship with sailors, clad in helmets and body armour, stood beside their heavy machine guns staring at sunbathing ladies on tourist boats.

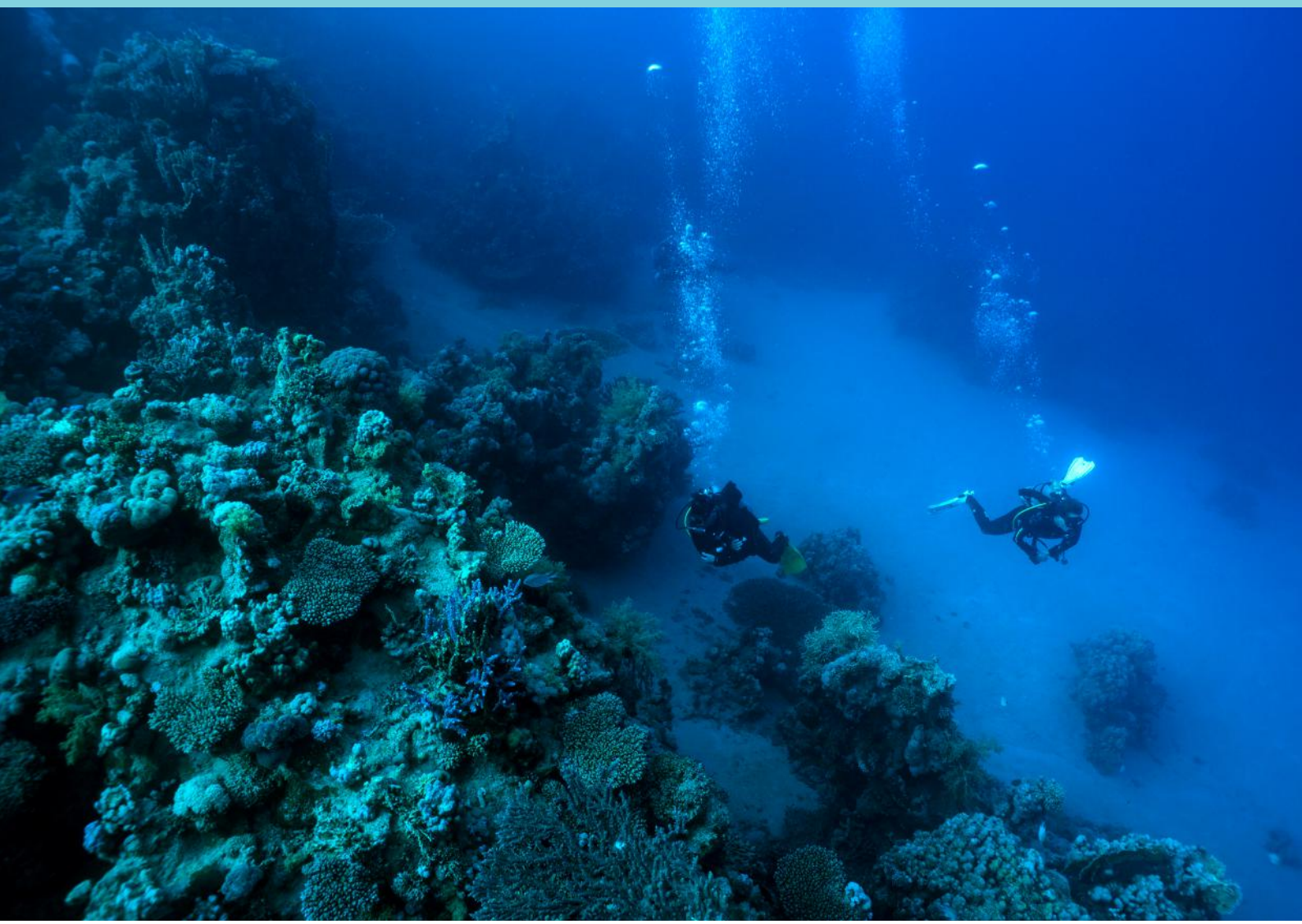
This was our last dive of the day, and only four of us went out in a small Zodiac to be expertly dropped on the edge of the reef where the current split. The mild current picked up and became extreme. There was no way to take photos, so we simply flew along the wall, looking for somewhere to take refuge. This was the classic Red Sea reef dive with a very steep wall, soft coral everywhere, and some hard core at the base. Massive kingfish swam by, while schools of surgeonfish zipped past, but we were now in a series of down currents and we spent our time finning sideways to get out of them. Eventually, when we were about to be swept off the reef system into the blue, we tucked in behind it and sent up an SMB. The surface current tore the marker and me off the reef, I struggled back and found a barren rock to which I tied the SMB. We did our now-mandatory safety stops and waited until we saw the Zodiac appear some minutes later. Leaving the reef and surfacing in the boiling current, our kit was hauled in by driver Bonnie, a tall, thin always-smiling Nubian who said, "Long way, Raf!" There was little we exhausted divers could say, other than "I need a beer!" as uttered by fellow diver Paul Bailey.

THE GULF OF SUEZ

By the time we got around the southernmost point of the Sinai Peninsula at Ras Mohammad, we had dived almost every known dive site, and a few more besides, from Aqaba to Sharm El Sheikh. At Ras Mohammad, we had jumped onto a fierce current, Paul and his buddy went with it, but Cisca and I found a large enclave in the wall and sat in it, watching the snappers, jacks and Suez fusiliers jockey for position in the current. After surfacing, we sat on the aft deck and Paul contemplated the Nouran's self-service fridge.

He was just about to open a beer when dive guide Le'Reyce Josephs appeared to ask why we had only done two dives. "Well, that was today's itinerary," said Paul, reaching for the ring pull. "Surely you want to do a third dive today?" she queried. I asked, "Don't we need to get to the next anchorage?" "Yes, but we can dive Jackfish Alley," Le-Reyce replied. "Never heard of it," said Paul. We looked at each other and then at our dive buddies, Cisca and Neil – it would be foolish to miss a dive.

Paul reluctantly replaced his beer in the fridge, we pulled on our damp wetsuits and



ABOVE: Jackfish Alley in the Ras Mohammad National Park. **OPPOSITE PAGE BY ROW:** Rocky Island; waking up in the Gulf of Aqaba; and night diving in Fury Shoals.

grumbled for this year (2022), the water had been unseasonably cold at 21-23°C. But in reality, we were delighted to be diving again with the sun low in the sky, and all the day boats having returned to Sharm El Sheikh, leaving the waters just for us.

We descended to 15 metres and swam along a sandy channel, with a steep wall to our right, sand below, and a small but very long ridge of reef to our left that dropped slowly off into the blue. As the name suggests, we saw lots of massive jackfish darting along the reef above us. We moved to the edge, swam deeper and found an enormous school of very large barracudas circling in a tornado at 23 metres. With some slow swimming, I managed to get into the tornado until they surrounded me. Wherever I looked, I could see no divers, just a wall of barracudas. Having taken some photos, I politely asked the barracudas if I might leave. They stared at me, but as politely parted to allow me to rejoin a bemused Cisca. As we made our way back to the wall and the shallows, we were confronted with even more fish. Perhaps nutrients were mixing with the natural run-off from the Gulf of Suez, enhancing conditions for marine life. Whatever the reason, we'd been treated to a view of the Red Sea that I hadn't seen in 25 years.

THE SS THISTLEGORM

Sailing further round into the Gulf of Suez, we tied off on a wreck at Safe Anchorage F. Safe had turned out not to be safe for the SS Thistlegorm, as in 1941 she'd been spotted by two Luftwaffe Heinkel bombers. Operating out of Crete, they had been searching for the RMS Queen Mary, an ocean liner packed with Commonwealth troops that had actually slipped through the Suez Canal a day earlier. Caught by chance in the moonlight, the SS Thistlegorm became their secondary target. She fought off her attackers with anti-aircraft guns, but the German pilots were successful in their attack and bombs smashed into her no. 4 hold. Fires spread and her cargo of ammunition exploded, sending the ship to the bottom in two pieces. The action took the lives of five naval gunners and four merchant navy crewmen, with the remaining survivors rescued by light cruiser HMS Carlisle.

Decades later, the SS Thistlegorm is a majestic wreck, sitting upright and imbued with solemnity as befits the grave of Royal Navy and merchant navy seamen. We dived on her numerous times, and I was inspired by the Belgian technical divers and their method of using video lights in wrecks, so Paul and I rented scooters and took lights. We dropped in and went straight down to 28 metres, there to scoot about just above the bottom on a compass bearing towards the wreck. We knew we were close when we entered an unfamiliar debris field.

I thought it rather odd and unfamiliar. No wonder – we'd come across a burst full-size railway water bowser. I rechecked my compass, went a bit more to the right and some minutes later, we arrived at the stern. The current and Paul's lousy navigation had almost made us miss the wreck! I took some snaps of Paul at the stern and we then cruised up along the bomb blast area to the rear of hold no. 3.

Our guide had said we'd find a hole we could enter, we moved and looked around the bulkhead and found it. We entered hold 3 and stopped over the remains of the coal, then zoomed straight into the lower deck of hold 2 and 1, searching for a place to put our lights. After some hilarity and more shooting, we managed to get a couple of photos and left the wreck through a school of jacks. The Gulf of Suez was literally boiling with fish – it was as though the riches of the Indian Ocean had moved 1,000 miles north through the Bad El Mandab to the edge of the Sinai.


MV NOURAN

ABOVE: Paul Bailey in the engine room of the Giannis D; Kimon M Wreck; The Krissoula K Wreck; Rec or Tech, Red Sea Explorers welcome all divers.

THE STRAITS OF GUBAL

The islands of Gubal are officially on the African side of the Gulf of Suez, but an Admiralty chart shows them to be clearly in the middle of the straits. They are afforded some protection from the headland to their north, and so are easier to reach from Hurghada when winds are high. We had steamed across the open section of the Straits of Gubal and then dropped anchor. Looking east, we could still see the multitudinal mountain ranges of the Sinai Peninsula. Shadwan Island was to our south and when we looked west late in the day, we could just see the sun setting over Africa.

We had dived extensively on three of the four wrecks at Abu Nihas, which were packed with fish, and Francisca had been greeted by a passing shark, but we took the most joy in penetrating the wrecks. The engine room of the Giannis D was particularly rewarding.

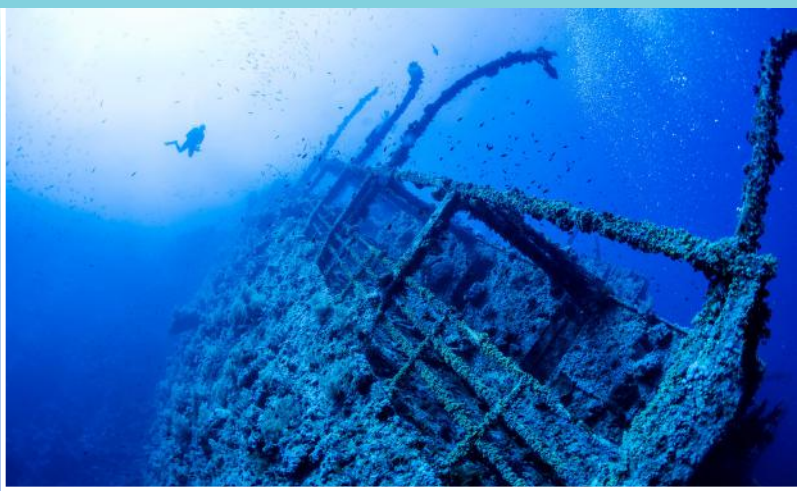
The last wreck that we dived, the Kimon M, had been the liveliest reef since Ras Mohammad. We thought this was unusual until we dropped in on Erg Somaya, a dive close to a rather rundown-looking police post. This consisted of a wall that ended at 15 metres, a narrow plateau and then another extremely steep wall with swim-throughs and large fat box-like pinnacles. The water was so clear that at one stage we could see the sun, clearly going down. As soon as we were all accounted for, the captain started his engines and we set off south to The Brothers.

THE BROTHERS – ABU KIFAN & DAEDALUS

It's no longer possible to moor overnight at The Brothers, and so we carried on through the night to arrive at 0430. The deck crew were soon out in their Zodiacs tying us up to the mooring under the spotlights.

The Brothers are two islands on a reef system in the middle of the Red Sea, adorned with a small brick lighthouse and famous for shark diving in season. We were also excited by the prospect of diving the wrecks of the SS Numidia and the Aida. After a wall dive where most divers saw a passing hammerhead shark, our guide

Vini emerges from the Krisoula K after penetration.



ABOVE: Ras Mohammad was literally boiling with fish; the SS Numidia at Brothers Island; detail on the SS Numidia.

Le'Reyce briefed us on what to expect – the two wrecks and lots of current. Most of us had dived here before, and Paul's new buddy was Vini, a former Luftwaffe pilot and an excellent technical diver. His company had made diving the Thistlegorm extra special, as he had given us a pilot's perspective on how the WW2 Heinkel crews might have been thinking on that fateful night. Vini and Paul agreed to try and find the engine room of the Numidia, not easy as she sits at a very steep angle that makes her quite disorientating inside.

The Zodiac driver dropped us in right on top of the wreck and the four of us shot down 14 metres onto her. I paused for a second to evaluate the very slight current, and Vini and Paul made their way deeper down the deck without hesitation. Using hand signals, I told Cisca to wait by the wreck and swam away up current, taking a photo that showed how enormous the wreck was against the tiny diver. Then we too made our way down the deck in the sunlight, a few other divers mooched around looking at the davits and coral, and I then saw a stream of bubbles emerging from a skylight. I peered inside and saw Paul and Vini ascending inside the engine room.

From my vantage point, I could see the impressive steam engine, snapped a rather bad photo and decided that perhaps I wouldn't enter today. The other two exited with massive grins and headed off along the wall. A glance at my computer told me that my remaining time at 37 metres was limited so Cisca and I ascended to 22 metres and drifted onto the wall. We swam gently along this reef until I caught sight of the Aida, the wrecked supply vessel. I spotted movement, looked more closely and saw that it was Vini and Paul coming off the wreck. The pair must have had the air consumption of a small gerbil!

Further south from The Brothers was Daedalus Island. If we had thought The Brothers was small, Daedalus was a tiny speck of land in the middle of the Red Sea. Here the team were intent on searching for hammerhead sharks, but the August water was unseasonably warm. We dived fruitlessly again and again on the sheer walls, and some of the divers went out deeper searching for the pelagic action. Vini took twin cylinders and dived deep into the cracks and caves at around 50 metres. But it was fruitless. After three days, we had seen a single hammerhead way below us. I was sick and tired of Daedalus, so Paul and I hired scooters and went for a motorised zoom around the southern plateau. It turned out to be the day that every fish in Egypt decided to come to the southern plateau – and it was also the day that I left my big camera behind, so the less said about that the better. Perhaps Daedalus is jinxed for me.

ROCKY AND ZABARGAT

I was getting used to waking up pre-dawn. I stepped out of the cabin and looked at the tiny island called Rocky. Due to an ear infection Cisca couldn't dive, so she decided to kayak. Captain Ramadan told her that under no circumstances was she to fall in or swim – advice that she took seriously when she spotted a trio of oceanic white tip sharks lazily patrolling the reef.

Rocky is the southernmost Egyptian island that is dived by tourists in the Red Sea. I was buddied up with Paul again and we enjoyed watching seven massive tuna hunting balls of mackerel. A few barracudas wandered lazily by, while blue fin trevally chased smaller reef fish. The wall itself was stunning, soft coral abounded with swim-throughs and massive deep cracks. Once again, the other divers saw a hammerhead which this time, swam right up to them to check them out before swimming off into the blue. Paul and I had excellent dives on Rocky, but we were slightly put out by our lack of hammerhead action.

Next to tiny Rocky Island is Zabargat Island, the highest in the Red Sea. The Egyptian armed forces control access and only allow diving on one side. When we landed in the evening, we took a Zodiac to the shore to watch the sun go down. Being able to get on land was a huge pleasure after so many days on a small dive boat. The next morning, I dived with a young chap who wanted to boost his confidence. He was a very good intermediate diver who suffered from peer pressure. We had a relaxed dive to 34 metres to the edge of the drop-off, he photographed


The Brothers

ABOVE: The Red Sea Explorers also run free diving trips.

some pretty soft corals and fans, and we then came back to the shallow wall which was beyond gorgeous. As we looked up from 10 metres, we clearly saw Cisca on her kayak, the water was so transparent that she appeared as though she was hanging in mid-air.

FURY SHOALS

After heading north for 7 hours, we came to a large series of reefs called Fury Shoals. We were on our last two days of diving, and the two-week expedition was almost over. We dived the sites of Claudio's and Maksoor, two very different reefs. Claudio's was a series of swim-throughs in a large rock lump, festooned with coral and packed with fish. We made our way through the tunnels, bumping into rabbit fish, moray eels and the occasional shark. We popped out onto a small wall and made our way into a punchbowl, surrounded by reefs. A narrow exit was jammed by a large school of back snapper which parted to let us go through. Maksoor, on the other hand, was a long thin reef that rose off the Red Sea floor to break the surface. On either side was a submerged balcony at about 20 metres that attracted schools of barracuda and jack fish, while endless steep walls dropped down hundreds of metres into the deep blue.

And then we were done, leaving us the task of disassembling and washing dive equipment. Many of us went off to Cairo by minibus to simply hang out in this great bustling city. We had all seen it before, but we loved it. Three days of sweet tea by the Nile was well worth every moment.

POSTSCRIPT

The expedition to dive the entire west coast of the Red Sea north of Sudan took five dive trips. One to Jordan in August 2021, a two-week expedition to find dive sites in May 2022, and three one-week dive trips in August 2021 and August 2022. We were lucky enough to have the same core group of divers on all our Egyptian dives. Apart from the excellent Moha of Blue Force Fleet, our boats were run by Le'Reyce Josephs and Maisara Sayed. Faisal Khalaf, the owner and co-organiser of the expedition, joined us for the majority of the Egyptian dive trips. We were nearly always alone on our dive sites, with a few notable exceptions.

We found that Covid-19 had been kind to the Red Sea, allowing an immediate regeneration of marine life. What perplexed us was the fact that in early 2022, the sea stayed very cold for too long, and that the marine life in 2022 was even more prolific than the previous year. Consulting with other dive operators, the picture remained the same. Even the dive sites one hour north of Hurghada and one hour south of Safaga have seen pelagic action that is completely unexpected, with, for example, massive jacks and tuna hunting. The gaps in our expeditions are the Sudan coast, Saudi Arabia and the Gulf of Suez north of El Tur. As the world opens up further to international travel, I cannot help but feel a return trip to the Red Sea is looming.

KNOW AND GO

There are many operators in the Red Sea, some of whom are outstanding. This is how we got there.

FLIGHTS

We flew on a series of combinations:

- Turkish Airlines
- Egypt Air
- Royal Jordanian
- British Airways

Turkish Airlines always stand out from the crowd with their 30kgs diving allowance, seat back TVs on all flights, and excellent inflight meals, all of which are included in the ticket price.

AQABA DIVE OPERATOR

SEA STAR WATERSPORTS
www.aqabadivingseastar.com

EGYPT DIVE OPERATORS

BLUEFORCE FLEET
(the Sinai Peninsula)
www.blueforcefleet.com

RED SEA EXPLORERS
(from Hurghada)
www.redseaexplorers.com

HOTELS

- Marriot
- Captains Inn

ADDITIONAL JOURNEY

An additional journey through Egypt was organised by:
SPRING TOURS
www.springtours.com

NEED MORE HELP?

If all of this seems a bit daunting, you could ask Raf and Francisca to put the entire itinerary together for you!
Email: **hello@orientafrica.com**
Or visit: **www.orientafricatravel.com**

ANOTHER HIDDEN GEM
FUVAHMULAH IN THE MALDIVES

FEATURE **KATHLEEN RUSSELL**, PADI COURSE DIRECTOR AND OWNER OF AL MAHARA DIVING CENTER

With a negative entry and a blue water descent in 30 metre plus visibility, we encountered hammerheads, threshers, tiger sharks and whale sharks. Last May, the Pelagic Diver crew spotted a pod of 15 pilot whales while heading back from this same dive site. We will continue to return to this tropical equatorial island atoll to discover more authentic shark encounters. This is uniquely Fuvahmulah.

COVER PHOTO: By Fabi Fregonesi.

ABOVE: Photo by Ahmed Inah.

Back a few years ago, the latest word was about safari boats heading to the deep south of the Maldives for tiger shark encounters. As more divers started to post on their social media accounts, we all learned of this newly found diving mecca and everyone wanted to go there. Then came the liveaboards and the establishment of local dive centres. Where was this Fuvahmulah City Island atoll in the deep south?

After a bit of research, we found it close to the equator in the southern hemisphere on the southernmost island atoll of the Maldivian archipelago in the Indian Ocean. It is an island with incredibly unique geographical features and rock formations and more recently, it was declared a UNESCO Biosphere Reserve.

It is considered the third largest island in the Republic of the Maldives. It covers an area of approximately 5 square kilometres and has a population of 13,000. Fuvahmulah has been inhabited over many centuries and some of the nobility from the various dynasties of the Maldives were born and lived there. One would say, the scholars come for this island. There are historical sites found all around the island that show pre-Islamic coral-stone buildings such as a Buddhist stupa and several century-old mosques. A land tour after diving would be a great way to explore the cultural and historical sites and hear the stories from some of the elderly fishermen.

DIVING WITH TIGER SHARKS

The anticipation of diving with tiger sharks can create a feeling of exhilaration or terrifying fear. I wasn't sure how I felt yet before the first encounter. Diving with sharks is a growing market and we have seen this happening in Fuvahmulah with the tiger shark dive aka Tiger Zoo. The local Maldivian dive guides tell us of how their grandfathers and fore fathers fished off the island for centuries and there have always been tiger sharks around. They would occasionally catch the sharks and use the shark liver oil (SLO) to proof the wooden boats. Of course, modern day boats are built with fibreglass and chemical alternatives are available for proofing the boats.

As the fishermen returned from their daily tuna and pelagic fish catch of bonito, wahoo, marlin, giant trevallies and other meaty fish, they would clean the fish and dispose of the internal guts, tails and heads into the sea at the boat launch. This attracted more fish and more sharks, and the tiger sharks would come and swim around the shallow boat launch harbour area. Local divers then discovered that the entrance of the harbour was where the tiger sharks were present looking for the occasional fish head that the fishermen would drop into the water. Then local dive centres started to open as the potential for tourism started and the new airport on Fuvahmulah was built in 2011 and passenger ferries from nearby Gan Island and Addu Atoll became available.

My fascination of this destination started in 2019 when I saw many liveboard safaris advertised to the deep south Maldives to dive with tiger sharks. That tagline sold me. In 2020 I arranged on a half charter on JJ Homes, a liveaboard managed by a passionate Taiwanese dive company and his dive guides from Fuvahmulah. Luckily, we made the last trip before the Covid-19 global lockdown. During this trip we were only diving one day at Fuvahmulah, and one of the dives was the Tiger Zoo.

We had been given time slots much like going to school and this was our class time and duration. When it was our turn, we had a thorough shark briefing about how to interact on this dive. First, we had to carry long PVC sticks for safety. The guides explained that if the shark swam too close, we can just thrust the stick vertically in front of us to make ourselves larger for our safety. I wasn't too convinced by this method but we all ended up carrying a stick each and dragging it with us on the dive. We never used it except to prod my dive buddy jokingly. The guides hid a fish head into some rock rubble in the centre of a sandy

ABOVE: Photo by Fabi Fregonesi.

patch while the divers knelt on the white sandy bottom at a depth of 8 metres. That's when the show started.

First came the giant trevallies, large parrotfish, rainbow runners and titan trigger fish following the tuna or bonito scent. A few moments later, a couple of 3-4 metre female tiger sharks made their way to the rock rubble. Their nose pointed straight towards the direction of the fish scent and their large muscular bodies turned swiftly around to protect the food source to not allow other sharks or fish to come close. Now more tiger sharks appeared from the craggy deep drop-off and circled around all the divers. We looked upwards, left and then right, and they were now everywhere. They passed closely by the divers with their eyes looking right at us. We were told to keep eye contact with the sharks at all times. I thought I would stare her down but she didn't bat an eye or roll her eyes back doing the nictating membrane action.

We could now see the beautiful blueish silver stripes and patterns on their shark skin which they were aptly named after. Just a thought that these sharks are some of the largest species of the shark realm and here we were in their majestic presence. All the divers were in awe with excitement. Thirty minutes came and went quickly and then we had to swim off the reef as another group of 20 divers waited by the drop-off to take our place. This one-day excursion left us wanting to return to Fuvahmulah for more memorable shark encounters. I was certainly hooked. The deep south liveaboard excursions are an amazing trip as we dived in different atolls and most dives are all channel dives which meant deeper dives in strong currents to catch more shark and pelagic fish action.

After this liveaboard, I knew I wanted to return back to see the tiger sharks and learn more about the local dive sites around Fuvahmulah. Fast forward to 2022 and again two more visits on Fuvahmulah was all it took for me to fall in love with this equatorial paradise. Upon our return, we stayed in a newly built eco-friendly local resort called Ataraxis which actually means the absence of mental stress or anxiety, peace of mind, peacefulness, repose, serenity, peace, heartsease, etc. It opened in December 2021 during the pandemic when the Maldives was just inviting international travellers back again. Its location is nestled around a small residential area surrounded by tall coconut palm trees in the northern part of the island called Thundi Beach.

This time daily tiger shark dives were conducted by the entrance of the harbour drop-off and on the sandy plateau. We dived with a local PADI 5 Star dive centre called Pelagic Divers founded by Ahmed Inah, a local Maldivian PADI Instructor from Fuvahmulah. He is one of the OG pioneer divers of Fuvahmulah. He has dived all over the Maldives for over a decade and came back to Fuvahmulah. He started his business during the covid-19 lockdown and sustained it throughout the pandemic. All of his instructors and divemasters, boat crew, and captain are also from Fuvahmulah. It was great to be supporting local businesses.

Interestingly, Pelagic Divers and another local dive centre have documented over 200 individual tiger sharks the with majority of them identified as females. During our last visit in August, we saw 2 heavily pregnant 3-4 metre females swimming around the shallow harbour entrance. Inah taught us to respect the tiger sharks and understand their individual behaviours as they are all unique. Don't be a complacent diver, tiger sharks are apex predators and not a friendly domesticated animal. We learned to always be vigilant and observe their actions, and not get in their way. We also learned, we didn't need to carry a stick or bang on the tank to make any noises. Divers should stay calm and observe the sharks and other large pelagic fish swimming around the divers. So much more observation is needed to better understand their behaviour in their natural environment.

OPPOSITE PAGE: Hammerhead and Thresher Shark photos by Boaz Samorai. **ABOVE:** Tiger Sharks by Ahmed Inah and Manta by Sahar Levy.

DIVE SITES OF FUVAHMULAH

We soon discovered other amazing dive sites along the south-eastern coastline and the western coastline. Diving year-round in Fuvahmulah was possible. Inah enthusiastically told us that tiger sharks and thresher sharks are also seen all year round but threshers are spotted more frequently when there are cold water currents running through the island atoll. Scalloped hammerhead sharks are also encountered in August through to April; while whale sharks are seen between January and May. NGO Manta Trust Maldives representatives visit the island when oceanic mantas are present and cruising along the reefs. There are plenty of healthy hard corals fringing around the island especially the western coastline. There are also large green and hawksbill turtles foraging along the reefs along with a plethora of reef fish and moray eels. It's an underwater photographer's haven for both wide angle action and macro magnificence. On our latest visit, we had our bucket list thresher shark encounter on Farikede, a deep plateau dive on the south east side. With a negative entry and a blue water descent in 30 metre plus visibility, we encountered hammerheads, threshers, tiger sharks and whale sharks. Last May, the Pelagic Diver crew spotted a pod of 15 pilot whales while heading back from this same dive site. We will continue to return to this tropical equatorial island atoll to discover more authentic shark encounters. This is uniquely Fuvahmulah.

CONSERVATION

We were very grateful to contribute to some community service initiatives by participating in a beach clean-up organised by Pelagic Divers, Ataraxis and the Fuvahmulah Surfing Club. Collectively, we weighed in over 100kg of marine and plastic debris. Other amazing conservation work done by Inah and his team is to eliminate single use plastics from "Shark Island" Fuvahmulah. Through their non-profit organisation called Nature Friends of Maldives, they are raising awareness and funds to sponsor a water filter to be placed in each household on the local island to reduce plastic bottle waste from 2.4 million plastic bottles to 100,000 or less. Currently, 1,600 water filters have been installed in the local homes. Thirdly, shark and coral conservation are hot on their list to better study and provide the scientific community the much-needed surveys and data about Fuvahmulah's unique flora and megafauna.

DESTINATION INFO

GETTING TO FUVAHMULAH ISLAND

Diving on Fuvahmulah should be on every shark lovers' bucket list. The healthy coral reefs and megafauna and biodiversity offered at this diving destination provides some of the most memorable and authentic diving experiences in the world. Diving packages range between 5 to 10 days, or they can be customised.

Divers will fly to Male International Airport and take domestic flights to Fuvahmulah. Dive packages will include the domestic flights which operate 1-2 flights daily. Book early since domestic flights might be full on these smaller airplanes.

DIVE LEVELS

There can be strong currents and vortex currents, its recommended to be a PADI Advanced Open Water Diver or equivalent and have experience diving in currents. Good buoyancy is a must for all the wall and plateau dives. The island doesn't provide enriched air diving yet.

LANGUAGE

English is widely spoken and the national language is Dhivehi.

CURRENCY

Maldivian rufiyaa is the local currency and on this island, it's good to have some local currency exchanged before landing. US dollars are also accepted and some places have credit card facilities, including dive centres and local supermarkets.

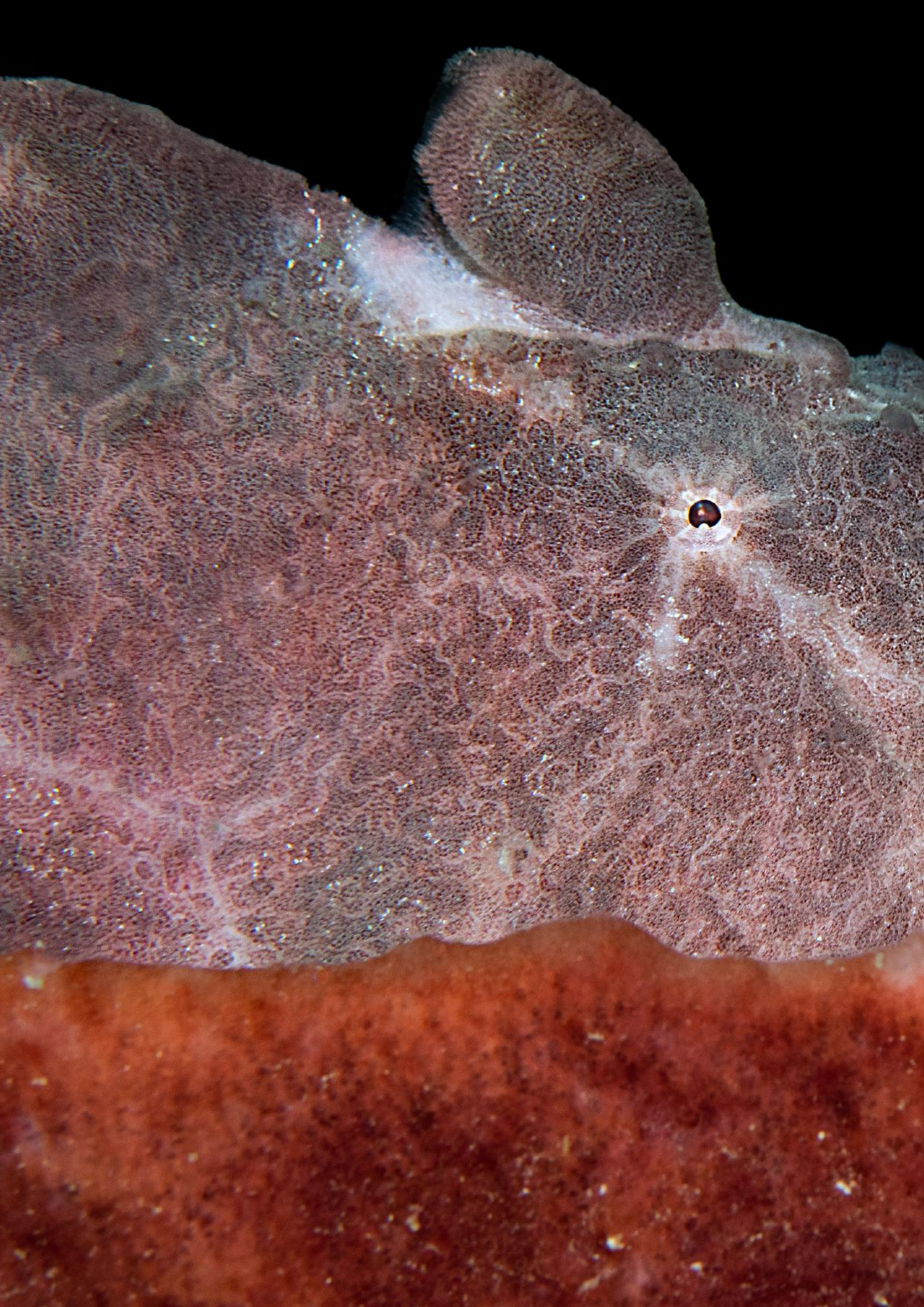
ELECTRICITY

All power is British standard with standard voltage at 230V. The frequency is 50Hz (plugs are standard G type plugs). Bring adaptors. Some resorts have built in USB wall chargers.

DIVE OPERATOR

PELAGIC DIVER FUVAHMULAH

Tel: +960 790 0966
Email: info@pelagicdiversfuvahmulah.com
www.pelagicdiversfuvahmulah.com



THE MAGICAL ISLAND OF **KOH LIPE**

FEATURE AND PHOTOGRAPHY **ALDO GUSTAVO GALANTE**

I could say that Koh Lipe is one of the world's capitals of soft corals, of clownfish and their anemones, drift dives, deep dives, wide angle photography, and macro diving. It has excellent snorkelling with abundant marine life just 5 metres from shore, lush white sandy beaches, excellent food, decent hotels, and a group of magnificent professional divers. Can you ask for anything more? I think not, and that is why this Island deserves an absolute 10/10!




Koh Lipe is a small island 2km long by 1km wide, located in the southern Andaman Sea, 70km off the southwestern coast of Thailand, near the Malaysian border. It is part of the Tarutao National Marine Park, an archipelago consisting of 51 islands.

On the island lives a community of chao lei or "gypsies of the sea", of Buddhist religion but above all, of animist beliefs. They are famous for their deep knowledge of the sea and for living in a semi-nomadic way on boats for generations. The name Koh Lipe means "paper island" in their language.

GETTING TO THIS ENIGMATIC ISLAND

The fastest way to reach Koh Lipe is from the wonderful and splendid Bangkok, flying from there to Hat Yai or Trang, the latter being somewhat further away. Then you take a minivan that takes between 1.5-2 hours from the Airport to the port of Pak Bara, where you get on a speedboat that will take an additional 1.5 hours to arrive at the island, with 2 stops along the way for short breaks on two beautiful islands. The trip is long but well worth it to discover this wonderful place that, for me, is the most beautiful and enjoyable in Thailand.

Another route is from Phuket and/or Krabi by minivan and speedboat. Or, only by speed boat which will take about 4-5 hours, stopping at islands such as Koh Muk, Koh Lanta, and the famous Koh Phi Phi. In our case, we did the return by speedboat to the port of Pak Bara and then by Minivan to Krabi, this being another unmissable place in Thailand.

Koh Lipe can also be reached from Langkawi in Malaysia. In any case, if you go on your own as in our case, the diving company arranges all the transfers from wherever you want and they make it easy for you.

BEST TIMES TO VISIT KOH LIPE

The best times to visit Koh Lipe are from January to May, although the peak season, based on the weather, is from November to May.

The low season, also known as the "green season", runs from May to October. During this time there are fewer tourists, it is much cheaper and the beaches are less crowded. I have also been told by dive guides that the low season is the high season for whale sharks, and the waters are clearer. That is to say, from what they have told me, there would not be a very low season as such, but rather each season has something good to offer.

Weekends tend to be very busy throughout the year as local Thai and Malaysian tourists flock to the island for a weekend getaway. That is why the ideal time would be to avoid them, although every day on Koh Lipe is wonderful and, in fact, during the day there are hardly any people on the beach, since oriental tourists usually like to enjoy it only after sunset.

KOH LIPE BEACHES

This island, in addition to being a great place for diving, has dreamy white sandy beaches, such as Pattaya Beach, which I believe is the best beach on the island despite what is usually written about the beaches of Lipe. You will get to catch each sunrise and sunset due to the layout of the island, and it is the beach where you can access the entrance of the " Walking Street", the island's commercial pedestrian street. At night there are bars and restaurants on the beach that are lit up with torches and create truly magical evenings.

In addition to Pattaya, it has two other famous beaches. The first is Sunrise Beach (or Hat Chao Ley), with beautiful white sand, and a sand bar at the end of it which looks fantastic from the top of the Mountain Hotel's viewpoint, and you can get some great footage of it with a drone. The other famous beach is Sunset Beach (or Hat Pramong). There are other beautiful small white sandy coves, such as Pitiusas and Sanom beach, which are the

most beautiful of the small coves the island has to offer.

When it comes to food, you will eat well everywhere in Thailand, and Koh Lipe is no exception. The restaurants specialise in seafood as well as all the traditional Thai food; although there are all kinds to choose from, including Italian, Indian, Korean and Japanese food, amongst others.

There is an emblematic Thai place on Walking Street called Madame You Hoo, a name derived from the call made by the friendly owner every night to encourage tourists who pass by to enter her restaurant.

A night stroll along Walking Street and its white beaches with cold sands is priceless and another of Lipe's magical things to do.

DIVING IN KOH LIPE

I will be honest. I had not dived in Thailand since 2006 and my expectations were not very high because I had previously dived in the area of Phuket, the Similan and Phi Phi, which compared to dives in the Philippines and Indonesia, were of a lower quality at least for my personal taste, except for the mythical Richelieu Rock which is another must-see as well as some other rare spots in Similan.

These low expectations changed when I first immersed myself in Lipe.

I want to start by highlighting the excellent and professional dive operation at Pura Vida Diving Koh Lipe who dedicates its dives to exploring the Turatao National Park with more than 30 dive sites. In them I found wonderful and warm hosts who have made my stay on the island unforgettable. In fact, I had organised my trip to stay 15 days in Lipe and then travel to Similan and, as I had not booked anything there in advance, we decided to change and stay an additional 10 more days, completing a total of 25 days, making 45 dives, including night ones.

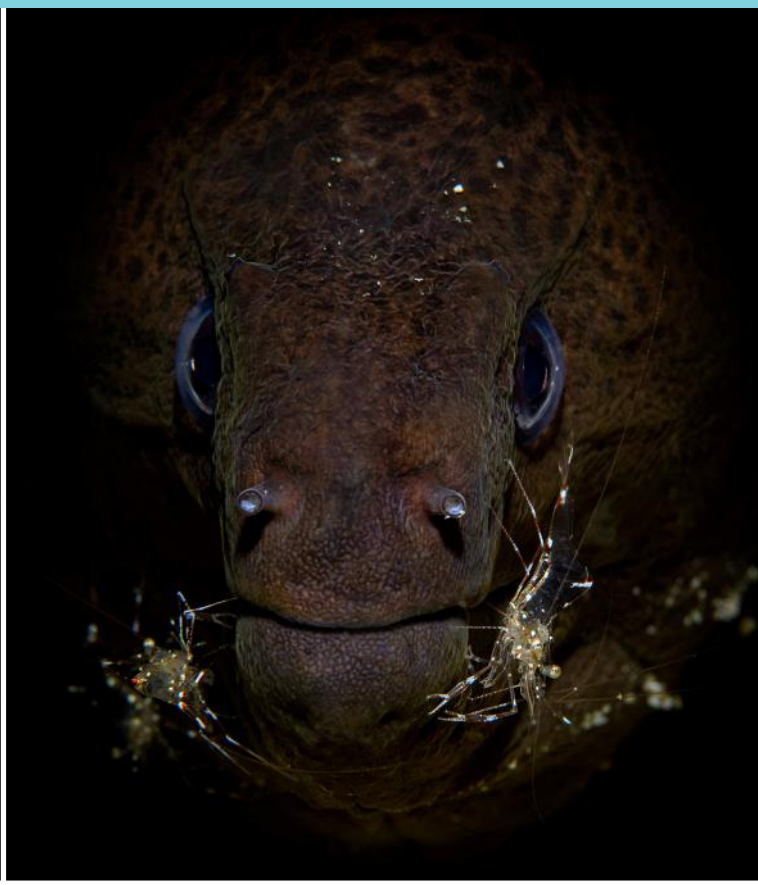
I did my dives with the phenomenal staff of Spanish divers with Samuel (Samu), the manager of Pura Vida Diving Koh Lipe, and the great duo, Jordi the Catalan, and Javi the Hispanic-Argentinian. All of them excellent guides and dive instructors.

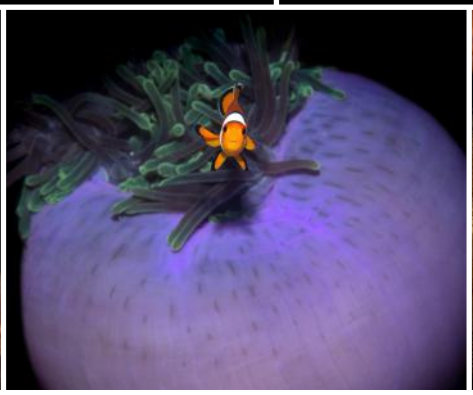
When I arrived at the dive centre on the first day, I was greeted by Paula – Samu's wife – a charming woman, always ready to answer any questions. For this, I brought up some doubts I had about macro photography on the island. As many of you may know, I am passionate about this discipline and Paula told me that Samu was also a fan of macro photography and all my questions were answered and I could relax and enjoy the adventure.

My first dive was at the emblematic dive site, Stonehenge, one of the best in Lipe and in all of Thailand. In my opinion, Lipe should be considered one of the soft coral capitals of the world, with no doubt. Specifically in this place, it is where everything is profusely upholstered with multi-coloured soft corals, and the stone structures resemble those of the United Kingdom's, hence the name of this site. In addition, impressive marine fauna can be seen here, such as large schools of fish, a large school of barracudas, stonefish, lionfish, seahorses, shrimp, amongst others. Whale sharks can also be seen at Stonehenge, mainly in the off-season.

We did the second dive at Steps, another very famous place where you can see cat sharks, nudibranchs, lots of large seahorses, the so-called "tiger tails" that are seen in the Andaman Sea, ghost pipefish, clownfish of different species that can be seen throughout the island's dives.

Another site that amazed me was Seven Rocks. It's a very special place that should be renamed "Clownfish City", since it is




completely upholstered with different types of sea anemones and inhabited by copious amounts of all the different clownfish over a really large area.

At Koh Sai we found a pair of Giant frogfish (or Commerson's frogfish), which are one of my favourites. They were perched on sea sponges on a very colourful reef. It is a site that, depending on the tides, can have strong currents like many other Lipe dive sites.

Pattaya Corner is another place that I really enjoyed. It is very close to the dive centre and has a lot of macro diving to offer, from different species and colours of nudibranchs, to tiger tail seahorses in the deepest depths, pipefish, and we were lucky enough to spot a harlequin shrimp which was much appreciated by the divers and photographers due to their colourful attire.

Another site, and the furthest from Lipe, is 8 Miles Rock, located very close to the island of Langkawi (Malaysia). It's a submerged reef full of pelagic life, inhabited by tuna, large batfish, stonefish, parrotfish, turtles, you can sometimes see mantas, and it is the place where you go in search of the giant and gentle whale shark. It's also an ideal site for wide angle photography.

Another unmissable site that Pura Vida Diving usually takes its divers to, is the so-called "Far Islands", an hour away by boat. It's characterised by being covered with soft and hard corals in perfect condition. There are lots of pelagics, and that, together with Stonehenge, are a delight for the eyes and wide angle shots. It is an all-day outing with 3 dives done at different dive sites. After the second dive you disembark on an island with a white sandy beach called Monkey Island, which is inhabited with macaque monkeys. They welcome the divers by coming over to observe them closely while having lunch before the third dive is done at another site. It's an exceptionally fun day of diving.

Night dives are done on Pattaya Beach in front of the dive centre. This dive site is accessible on foot from the coast and Samu takes you to visit the coral plantation that he patiently and personally planted during the pandemic. It has grown at a surprising speed within these rich waters which is populated with crabs, saron shrimps, parrotfish, and so much more.

It should be noted that in the entire Turatao archipelago there are many more dive sites that we visited, but it would be impossible for me to describe each one of them.

Finally, I want to talk about the most special place for me in the area, since I consider it the capital of macro photography in all of Thailand due to the number of different species that we found, together with Samu, Jordi and Javi. Fortunately some areas are unknown to other dive centres, allowing the marine life to really strive here. I refer to the east coast of Adang Island, at a dive site named Waterfall because of the waterfalls that can be seen from the coastline. The place is a small "Lembeh Strait", but with white sand. We saw so many seahorses, ghost pipefish, dwarf pipefish, nudibranchs and shrimps of different sizes and colours in great quantities which is ideal for











macro photography. I would recommend this place to anyone who wants to see a variety of different species in white sandy areas.

The water temperature varies between 27-30°C with great visibility of about 20 to 40 metres on most dives. It changes at other dive sites since it depends on the currents, the rains and the plankton, and can fall below 15 metres.

I only have words of gratitude for the wonderful staff at Pura Vida Diving Koh Lipe. They have given me all the pleasures and have been able to satisfy all my demands as a photographer specialised in macro photography. Thanks to the professionalism and interest taken in each diver's needs, the dives were prolonged, always putting the diver's safety first but accompanied without the anxiety or haste to finish. They threw us a fantastic farewell Argentinian-styled barbecue on our last day, together with strong and warm hugs that will not be forgotten. We will return again.

I could say that Koh Lipe is one of the world's capitals of soft corals, of clownfish and their anemones, drift dives, deep dives, wide angle photography, and macro diving. It has excellent snorkelling with abundant marine life just 5 metres from shore, lush white sandy beaches, excellent food, decent hotels, and a group of magnificent professional divers. Can you ask for anything more? I think not, and that is why this Island deserves an absolute 10/10!

Until the next dive…

www.puravidakohlipediving.com

DIVING INTO THE WORLD OF WELLNESS WITH PADI
"THE SEA CURES ALL AILMENTS" – PLATO


Photo by @jackfish44

It's not just a myth, being in or near the ocean really is good for you. And for thousands of years, civilisations around the globe have leveraged its healing power.

In this edition, PADI®, the world's largest and most popular diver organisation, highlights the healing powers that the ocean can provide us with, whether you are simply within close proximity of it or diving beneath the salty surface for an underwater adventure.

THE SCIENCE BEHIND THE HEALING POWERS OF THE SALTY SEA

PADI wants to ensure all of humanity to benefit from the healing powers of the salty sea, so they are on a mission to create one billion torchbearers for ocean change – working together to restore our blue planet's healthy balance.

Whether or not you are a diver, saltwater offers us a natural healing superpower that enriches each of our lives – and the best part? There is no cost to this. There's a science behind how this unique body of water that comprises more than 70% of Earth can truly help each and every one of us. It's no coincidence our bodies are 70% water – as is our planet.

Ever wonder why you feel so much better at the beach or at sea? We have the scientific answers that prove it's much more than just a mindset.

1. **Saltwater Rejuvenates You**
   Thanks to the high magnesium levels in saltwater, being in or near the ocean will literally help regulate your muscles and nerve functionality, moderate blood sugar levels and improve your sleep. This will leave you feeling rejuvenated, with the rhythmic sounds of the waves equally helping balance out your circadian rhythm. Magnesium is a critical element in our bodies – and one many people are deficient in.

2. **Saltwater Improves Your Skin**
   Vitamin Sea is not just a cute ocean pun; it highlights how saltwater is an essential nutrient for our body's biggest organ – our skin! Saltwater is rich with minerals such as magnesium, zinc, iron, and potassium, which all help reduce inflammation, protect our skin, and heal any scrapes, cuts, or sores. Saltwater can also help enhance the flow of lymph, which can reduce the appearance of cellulite.

3. **Saltwater Increases Your Consumption of Trace Minerals**
   Our bodies need trace minerals to function and develop optimally. It just so happens that saltwater has many of the essential trace nutrients we need, including magnesium, manganese, cobalt, sodium, calcium, potassium, and boron. You do not need to drink saltwater to get these trace minerals. They will simply be absorbed by your body through your skin – your largest organ – when you are in or near the ocean.

4. **Saltwater Improves Your Breathing**
   Swimming, diving, or even simply floating in saltwater can enhance your breathing abilities. In fact, it can also alleviate symptoms from hay fever, sinusitis and asthma too. This is because the saline in the ocean reduces inflammation and mimics your body's own fluids.

Because sea air has high salt content, it is quite thick. This means that as you breathe it in, it's clearing your throat and respiratory system, allowing clearer breathing and better-quality sleep. Sea air is also known to keep you awake and energetic during the day because it is much cooler.

5. **Saltwater Literally Grounds Us**
   Have you ever felt at peace with the world when you walk barefoot on the beach? There is a scientific reason for that known as "grounding." Positive electrons in the form of free radicals can build up in our bodies and direct contact with the sand

Photo by PADI

and saltwater, which have negative charges, literally balances this out. This is why you likely feel more energised and relaxed at the same time when on the beach – and why many of us feel naturally drawn to the sea.

6. **Saltwater Boosts Our Immunity**
   Did you know that saltwater has been proven to help heal those with weakened immune systems, anemia, and high blood sugar levels? In fact, saltwater is now being used in modern medicine now more than ever before – specifically for its ability to help our immune system stay strong against viruses, bacteria and pathogens. Ocean water strengthens the body against viruses, low defenses, bacteria and pathogens. In fact, saltwater from the ocean and our blood plasma are 98% identical.

PADI'S TOP BENEFITS OF SCUBA

Want to dive deeper into the healing powers of saltwater? As a PADI Open Water Diver, you will be able to optimise the wellness benefits that our blue planet gives us all.

1. **Get a Boost of Vitamin D**
   The last two years have specifically shown the correlation between vitamin D and our overall health. A great way to get your daily boost of vitamin D is by being outside in the sunshine. A daily dive in the ocean (wearing reef-safe sunscreen) will ensure your body gets the right dose of this essential vitamin.

2. **Be Conscious of Your Breath**
   The golden rule in scuba diving is to never stop breathing. So naturally, you are going to focus on your breath in ways that you may not do so while on land. Breathing mindfully will not only help you stay neutrally buoyant but equally calm your nervous system, boost your immune system and get rid of any negative emotions.

3. **Find That State of Flow**
   Being present and in a state of flow is something that naturally occurs while diving. In fact, you will likely find yourself in a meditative frame of mind when beneath the surface as you will be fully immersed in diving, breathing, and the magical blue world surrounding you – with your worries left far behind back ashore. There are several studies behind the "blue mind" theory: the mildly meditative state we fall into when near, in, on or under water.

4. **Enhance Your Fitness**
   Diving will give you a workout without you even realising it. The physical movements you do while diving will feel relaxed but equally get your heart pumping, your muscles toned, and your endurance enhanced. Water is a great medium to exercise in, providing pressure from every angle without impact.

5. **Decrease Your Blood Pressure**
   While your heart rate will undoubtedly increase from excitement when you encounter a dolphin, shark, or manta ray underwater, the overall diving experience is a relaxing one. That means often stress and anxiety levels decrease, along with your heart rate and blood pressure being lowered.

6. **Enjoy a Boost of Dopamine and Serotonin**
   Diving and being in the moment will give you happy hormones, known as dopamine and serotonin. Exploring, being present, and seeing a whole new world beneath the surface is not only stimulating but directly aids in our body producing more of these happy hormones and will leave you feeling great for the rest of the day.

7. **Improve Your Quality of Sleep**
   There is no better way to follow up a great day of diving than with an evening of relaxation. Many divers find it easier to sleep after a day of diving, especially as the hits of dopamine and serotonin wear off later in the day. Chances are you may even have more vivid dreams of the magical underwater world you just experienced firsthand.

SHOULD WE TREAT CHILDREN AS SMALL ADULTS WHEN IT COMES TO DIVING?

FEATURE **GUY THOMAS**

Depending on the dive training organisation or country, starting from the age of eight, children can participate in introductory diving activities in a pool or suitable confined water, and from the age of ten, they can participate in "junior" diving courses. While this in itself is not necessarily a problem, parents, doctors issuing fit-to-dive evaluation certificates, and dive instructors need to consider several pertinent aspects before allowing young children to dive.

An important question is: does the child want to dive, or is it the parents that want their child to dive? Parental pressure is not uncommon. This is a red flag. You should never force a child to undertake a diving course when they feel uncomfortable or feel obliged to participate. This makes for a very unsafe situation for all.

The child needs to be medically evaluated and the doctor should be aware of at least the following considerations:

- Pulmonary development until the age of eight, where the diameter of the airways and lung elasticity are not fully developed.
- Higher pulmonary closing volume (the volume in the lung at which its smallest airways, the respiratory bronchioles collapse).
- Functional immaturity of the Eustachian tube opening mechanism.
- Inner ear/sinus problems, which are more prevalent in small children and can pose problems when diving.
- The presence of any cardio/respiratory or musculoskeletal system issues.
- Incomplete bone development.
- Unfavourable body surface to weight ratio, which increases the risk of hypothermia.
- Emotional instability.

Finally, dive instructors need to evaluate the maturity of the child. The following questions are important:

- Is the child capable of listening, understanding, following rules and interpreting hypothetical questions?
- Is the child capable of understanding mathematical and physical laws?
- Is the child capable of identifying and interpreting fear, and reacting appropriately when stressed, scared or frustrated?
- Is the child capable of communicating problems, asking for help and offering help?
- Does the child possess the ability to self-care and to take care of others?
- Does the size of diving equipment present any issues in relation to the size and form of the child?
- Is the child able to tolerate increased thermoregulation/metabolism?

It is important to understand that a child will lose heat faster than an adult, and may become hypothermic within a relatively short period.

- Will the child be comfortably able to enter and exit the water when fully equipped, and to manage any adverse dive conditions such as currents and wave swell?
  Children may simply be not physically capable of taking care of themselves or others in many of the aspects of safe diving.
- Will the child be able to handle the stress of the underwater environment, and are they comfortable in water?

There is no specific psycho-technical test to assess a child's overall ability to dive safely and comfortably. Consider the reaction of many children to distraction and concentration. A child may have a greater sense of adventure but a low-risk awareness. Children use concrete thinking and are less able to react adequately in situations that are different from those described by their instructors.

DIVING COURSES FOR &WITH CHILDREN

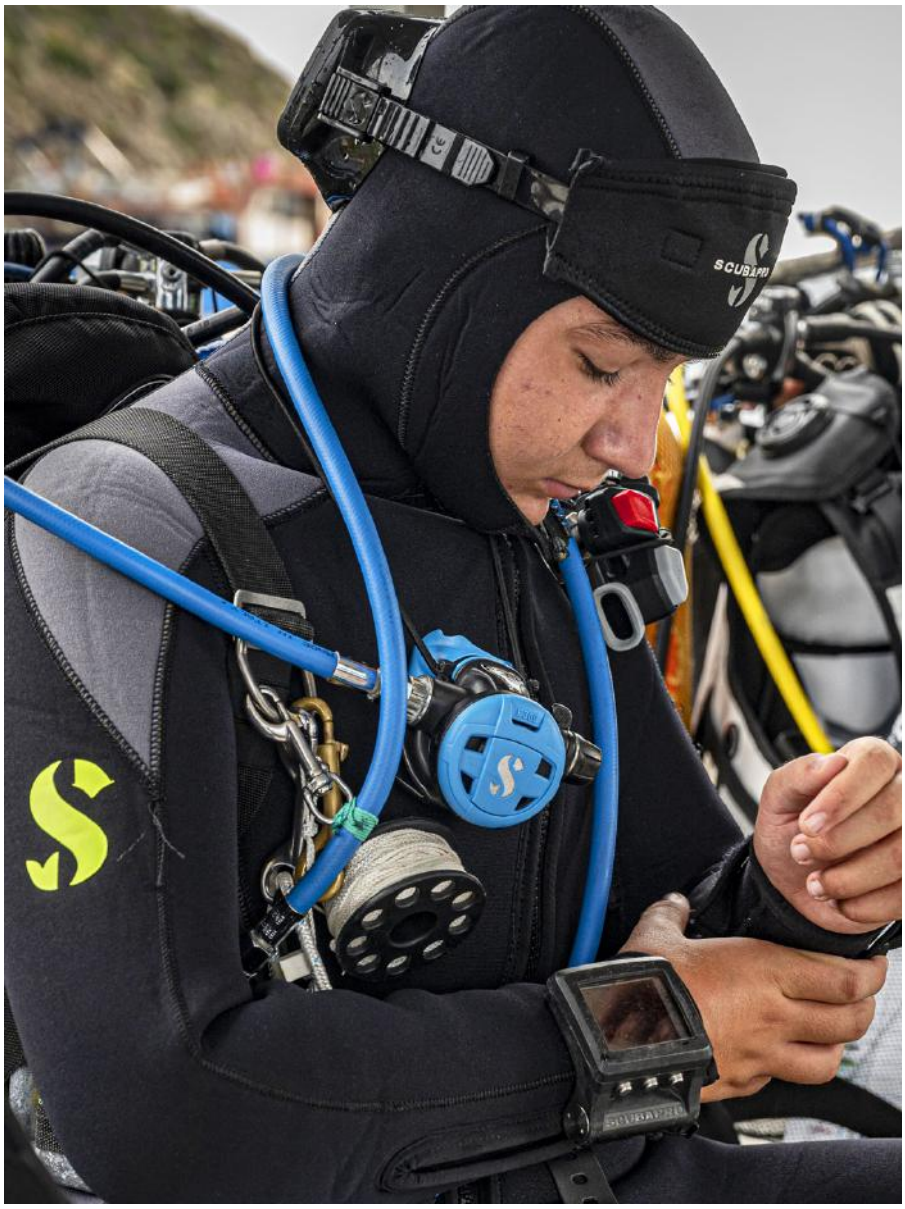
As a parent, you want to be confident that the instructor is knowledgeable and experienced when taking your child into water; as a diving instructor, you want to make sure you have what is needed to do this safely.

Dive organisations have specific safety standards, but these are mainly applicable to adult course standards, with some restrictions (depth limits), and or special requirements for the diving buddy. As a result, children will be learning from training materials produced for adults. It is therefore important that the instructor is able to explain certain concepts, and or have the tools that can help explain these to the child, and also to their parents.

Most dive organisations do not offer or require additional training from their instructors to dive with children, and so it is important for the instructors to understand the many considerations that apply to teaching children to dive. It is not only a diving depth limitation. Instructors should be aware of the responsibility they have and inform themselves thoroughly to mitigate all the risks.

Diving equipment for adults might cause discomfort, difficulties, stress or even panic in a child. An adult small size BCD might be too big and result in the cylinder pulling the child to one side, which, in addition to a safety problem, will also ruin the fun. The instructor or dive centre needs to have child-sized equipment, which includes:

- Appropriate BCD sizes.
- Child (low profile) masks, which are easier to clear when flooded.
- Smaller snorkels: Due to the dead space and potential for CO_2 build-up in snorkels, the volume for children should not exceed 150ml, whereas for adults, the volume can be up to 230ml.



- Fins with soft blades will give the needed propulsion, but will help avoid leg cramps.
- A child size diving suit: A child loses temperature faster, so the dive suit needs to have a good fit and an appropriate thickness.
- Lightweight regulators, with shorter hoses and smaller mouthpieces.
- Small/lightweight cylinder.
- Weight system: Consider using an integrated weight system to avoid the weight belt slipping off children's smaller hips.

AFTER THE COURSE

Many of the same concerns as described above remain valid. The child's dive buddy, which may be the parent, needs to understand the diving limits, and plan dive trips to appropriate destinations taking into consideration both the local diving conditions, as well as, the availability of the equipment that the child will need.

Clearly, a child will not be able to participate in every type of diving and the buddy needs to be qualified, experienced for the type of dive planned, and physically fit. They also need to be confident in caring for, assisting and even rescuing a child.

To conclude, while we can say diving for children can be fun and safe, it is important to understand that everybody involved with training and diving must understand the limits and not simply consider children to be small adults.

ABOUT THE AUTHOR

Guy Thomas is an expert Diving and First Aid Instructor Trainer and works full-time as Director of Safety Programs at DAN Europe, where he is responsible for the development and implementation of the DAN Europe Safety Initiatives. He also is a member of the Special Rescue Team of the Italian Red Cross and operates as a Helicopter Rescue Swimmer/Diver Medic, onboard a SAR helicopter of the Italian State Police.

DAN | AlertDiver

DIVING INTO PHYSIOLOGY & MEDICINE

TAKE A PLUNGE INTO THE DAN EUROPE INTERNSHIP 2022

FEATURE **GIUSEPPE DI TURSI**

Every diver throughout his training has been exposed to the fascinating notions of diving physiology and medicine. In this regard, DAN Europe strives to conduct cutting-edge scientific research while promoting safety culture thanks to a variety of initiatives involving the community and inspiring the new role-players.

The 2022 DAN Europe internship has been a sensational success from this standpoint. Interns' background was very broad, ranging from biology, conservation, medicine, engineering, nursing, biotechnology and neuroscience. The cooperation with the students of the Bachelor in Diving and Safety Management and the accessibility to the recent advancements in diver's telemonitoring technology have been the added values to this edition.

The internship was held at the Institute of Tourism Studies on the island of Gozo, Malta, and spread out over two-weeks with lectures, conferences and practical training.

The first week started with an overview of DAN Europe's departments and organisation, past and upcoming projects with a particular focus on the Hazard Identification and Risk Assessment (HIRA) programme, accompanied by the DAN Basic Life Support & Defibrillation (BLS-D) training. This was followed by a series of talks on applied diving physics and pathophysiology fundamentals, saturation diving, diving ergonomy, underwater analogue space missions, nitrogen narcosis and telemedicine in diving.

The second week has seen the group trained on the subclavian (O'Dive device) and precordial Doppler technique. This latter was used both on surface and underwater during the organised diving research sessions as a means to detect bubbles in the blood flow after the dive. Urine specific gravity via a portable refractometer and body composition estimation through bioelectrical impedance analysis were also collected and all data uploaded on the Diver Safety Guardian website, together with the dive profiles. The portal is able to return feedback in terms of dive risk analysis, whereas the rest of the medical data are used by DAN Europe's personnel for further research.

The newly developed diver's telemedicine prototype has also been deployed and tested. The system comprises a smart t-shirt to be worn under a dry suit which is able to monitor heart rate and diver position underwater, a specifically designed device attached to the diver linked to the shirt via Bluetooth, an acoustic modem allowing this latter to communicate with a surface buoy which, via a simple smartphone, would eventually send data online and is viewed at the surface.

The solution has engaged DAN researchers and the candidates in captivating discussions, especially around the possible introduction in the near future of additional parameters to follow-up. Amongst all, the seismocardiogram, a signal reflecting the heart mechanics and being studied on divers by the research group led by prof. Caiani at Politecnico di Milano, has raised particular interest as statistics show that about one-third of all diving accidents are due to an acute cardiac event.

At the end of the programme, participants continued to collect Doppler recordings on their own personal dives, enriching the DAN Europe database.

The 2022 DAN Europe internship has gone beyond expectations, significantly contributing to sensibilise the community to be prepared for an era of innovations which diving has never seen so far. Divers turned into data collectors, personalised decompression and telemedicine in diving are only some of them. Stay tuned!

UPCOMING EVENTS

REEF CHECK ECODIVER TRAINING

BECOME A CERTIFIED REEF CHECK DIVER

EMAIL: reefcheck@emiratesdiving.com if you would like to receive the next available training dates. Places are limited and on a first come, first served basis.

Reef Check
UNITED ARAB EMIRATES

When you join a Reef Check EcoDiver training, you will learn about our local ecosystems and you will be able to participate in our regular survey dives which will help us to understand the threats our corals are facing by providing important data.

Upon completion of this course, you will be able to join the EDA Reef Check team and assist in our regular underwater surveys in the UAE, as well as other underwater surveys in the Indo-Pacific region. This 4-day course includes both classroom, fieldwork, and an exam.

CLEANUP ARABIA ANNUAL CAMPAIGN 2022

DIVE & BEACH CLEAN-UPS | EAST COAST

Saturday 5th November 2022 | 9am
(EDA Members & Partners Only)

CLEANUP ARABIA
SINCE 1995

The campaign is made up of EDA members and stakeholders that participate in dive site and coastal clean-ups which help shape their consciousness concerning marine litter and saying no to single-use plastics! Inspiring change to make a difference together.

DID YOU KNOW?

PARLEY FOR THE OCEANS

PARLEY

Parley is the space where creators, thinkers, and leaders come together to raise awareness for the beauty and fragility of our oceans and collaborate on projects that can end their destruction.

Parley for the Oceans addresses major threats towards our oceans, the most important ecosystem of our planet.

We believe the power for change lies in the hands of the consumer – given we all have a choice – and the power to shape this new consumer mindset lies in the hands of the creative industries.

Artists, musicians, actors, filmmakers, fashion designers, journalists, architects, product inventors, and scientists have the tools to mould the reality we live in and to develop alternative business models and ecologically sensible products to give us earthlings an alternative choice, an everyday option to change something.

To succeed, we need to find ways to synchronise the economic system of humankind with the ecosystem of nature. And make environmental protection fiscally lucrative for pacesetting major companies.

Parley has been created to accelerate a process of change that is already in progress. No other big movement in the history of humankind has developed faster than the environmental cause. We want to make sure we are fast enough to meet the ultimate deadline and turn the ship around before we lose a treasure we have only just started to explore and still don't fully understand: the fantastic blue universe beneath us – The Oceans.

www.parley.tv

EDA
جمعية الإمارات للغوص
Emirates Diving Association

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 standardisation 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.

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Instagram: emiratesdivingassociation (EDA News)
Twitter: @EDA_UAE
YouTube: Emirates Diving Association
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UNITED ARAB EMIRATES
MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT

EDA
جمعية الإمارات للغوص
Emirates Diving Association

INSPIRING CHANGE TO MAKE A DIFFERENCE TOGETHER

CLEANUP ARABIA 2022 | THE UAE'S ANNUAL CLEAN-UP CAMPAIGN!
REGISTER FOR THE 5th OF NOVEMBER EAST COAST DIVES & BEACH CLEAN-UP

Tel: +971 4 393 9390 | **Email:** projects@emiratesdiving.com | **Website:** www.emiratesdiving.com
EDA is a non-profit voluntary federal organisation and is accredited by UNEP as an International Environmental Organisation.

Like our group page on **www.facebook.com/emiratesdivingassociation** Follow us on **www.twitter.com/emiratesdivingassociation** Follow us on **www.instagram.com/emiratesdivingassociation**